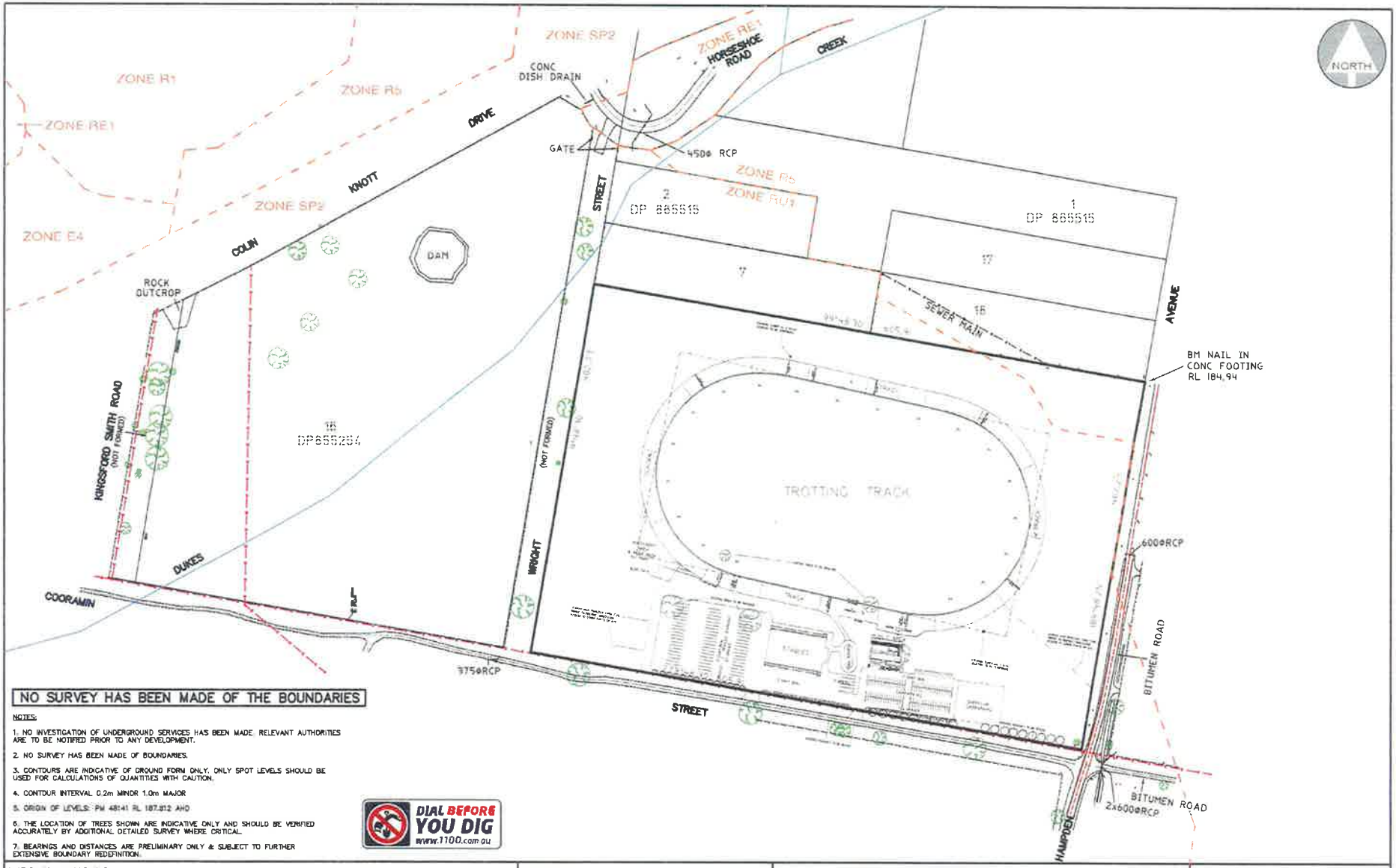
Proposed Site Plan

2014STH020 (DA14/0448)

Harness Racing Facility

Wagga Wagga



NO SURVEY HAS BEEN MADE OF THE BOUNDARIES

NOTES:

1. NO INVESTIGATION OF UNDERGROUND SERVICES HAS BEEN MADE. RELEVANT AUTHORITIES ARE TO BE NOTIFIED PRIOR TO ANY DEVELOPMENT.
2. NO SURVEY HAS BEEN MADE OF BOUNDARIES.
3. CONTOURS ARE INDICATIVE OF GROUND FORM ONLY. ONLY SPOT LEVELS SHOULD BE USED FOR CALCULATIONS OF QUANTITIES WITH CAUTION.
4. CONTOUR INTERVAL 0.2m MINOR 1.0m MAJOR
5. ORIGIN OF LEVELS: PM 48141 RL 187.312 AHD
6. THE LOCATION OF TREES SHOWN ARE INDICATIVE ONLY AND SHOULD BE VERIFIED ACCURATELY BY ADDITIONAL DETAILED SURVEY WHERE CRTICAL.
7. BEARINGS AND DISTANCES ARE PRELIMINARY ONLY & SUBJECT TO FURTHER EXTENSIVE BOUNDARY REDEFINITION.

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IMPORTANT NOTES

- THIS PLAN HAS BEEN PREPARED FOR DEVELOPMENT APPLICATION PURPOSES ONLY
- ALL DIMENSIONS AND AREAS SHOWN ARE SUBJECT TO SURVEY
- DO NOT RELY ON THIS PLAN FOR THE LOCATION & TYPE OF EASEMENTS THAT MAY AFFECT THE LAND. THESE SHOULD BE ASCERTAINED BY SURVEY SEARCH AND/OR FIELD SURVEY.
- FUTURE EASEMENTS MAY BE REQUIRED FOR SERVICING OR OTHER REASONS & AS SUCH ARE SUBJECT TO FINAL SURVEY AND/OR ENGINEERING DESIGN
- THE LOCATION OF BUILDINGS IS INDICATIVE ONLY AND TRUE POSITION IN RELATION TO BOUNDARIES IS SUBJECT TO SURVEY

SCALE

0 50 100 150 200m

PLAN 1 : 4000

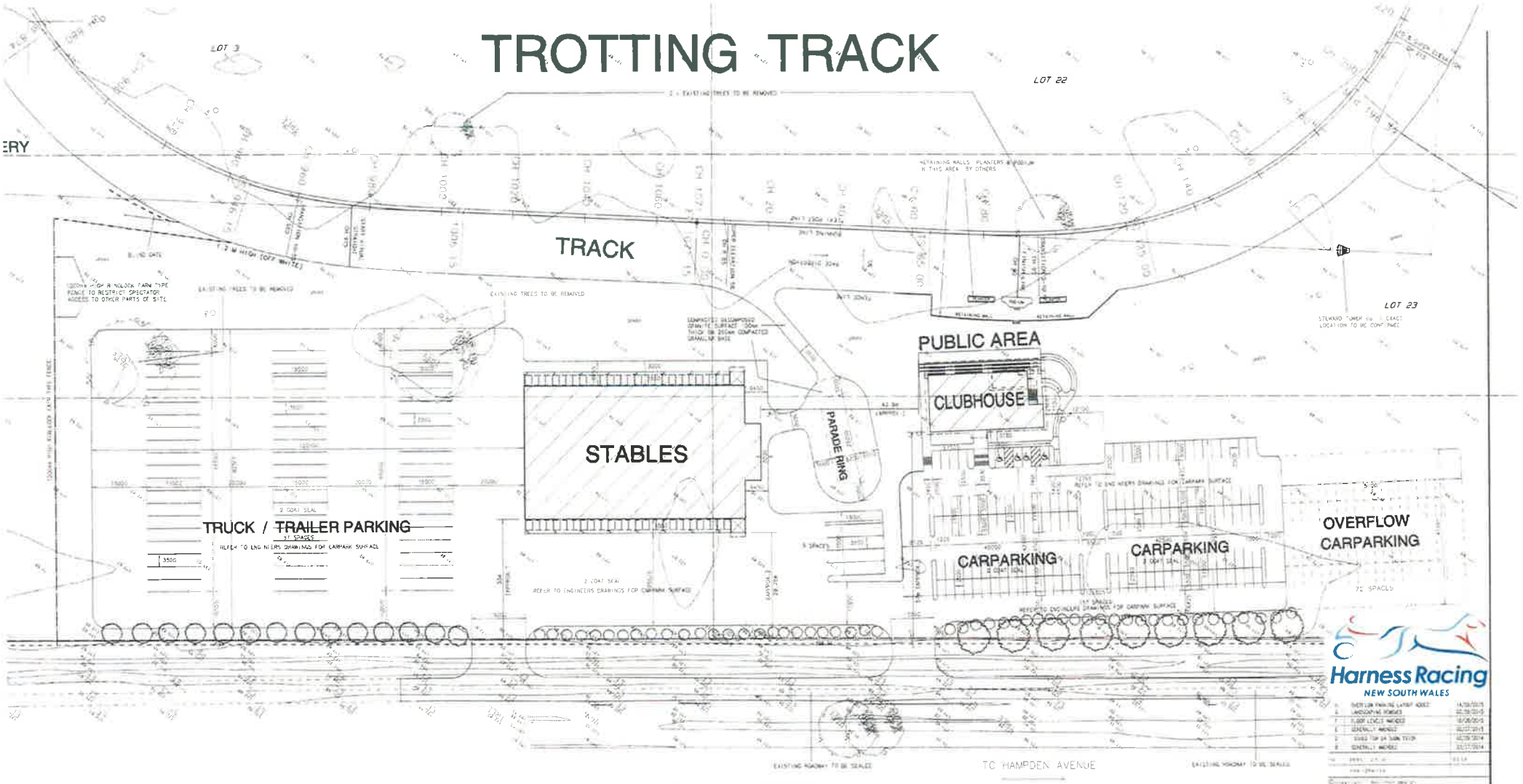
PROPOSED WAGGA WAGGA HARNESS RACING CLUB FACILITY
LOTS 1 - 6 AND LOTS 19 - 24 DP 2655, HAMPDEN AVENUE AND COORAMIN STREET, CARTWRIGHTS HILL

FIGURE 3 - PROPOSED SITE PLAN

DATE	REFERENCE	SHEET
7.09.2015	13064DA	3 OF 4

PETER BASHA
PLANNING & DEVELOPMENT
Phone 6361 2955 Fax 6360 4700
P.O. BOX 1827 ORANGE NSW 2800

TROTTING TRACK



PROPOSED PART SITE PLAN 1:500

DEVELOPMENT APPLICATION ONLY

NOTE: LEVELS SHOWN ARE A GUIDE ONLY FLOOR LEVELS, FINISHED SURFACE LEVELS & RETAINING WALLS TO BE CONFIRMED WITH CIVIL ENGINEERS DESIGN

NOTE: LANDSCAPING BY WAGGA HARNESS RACING CLUB NOT TO BE INCLUDED IN TENDER

NOTE: REFER TO ENGINEERS DRAWINGS FOR TRACK, CARPARK & ROADWAY DESIGN

Harness Racing NEW SOUTH WALES

PROPOSED WAGGA HARNESS RACING CLUB FACILITY, AT LOTS 1-6 & 19-24 (DP 2666) COORAMIN STREET & HAMPDEN AV. CARTWRIGHTS HILL. N.S.W.

HARNESS RACING N.S.W.

DEVELOPMENT APPLICATION PROPOSED PART SITE PLAN

mckinnon design

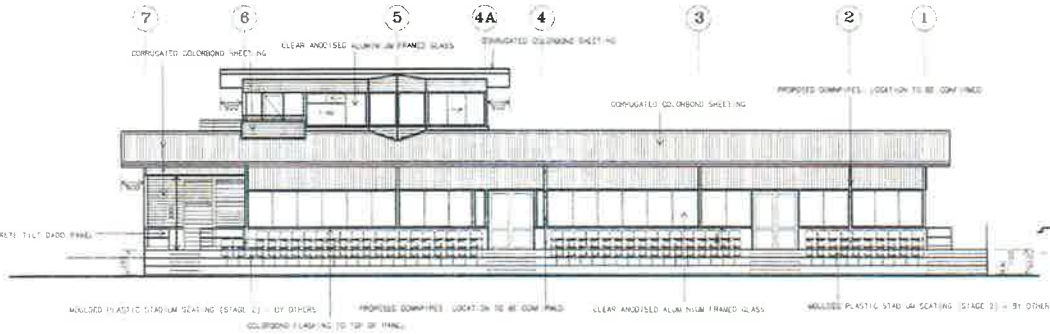
13073 | da4 | H

Clubhouse & Stables Elevations

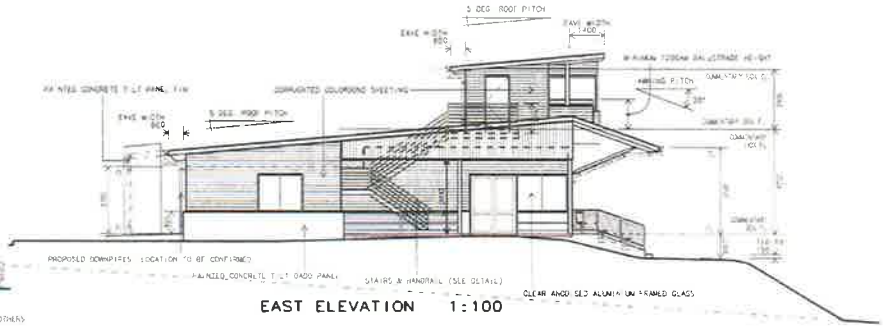
2014STH020 (DA14/0448)

Harness Racing Facility

Wagga Wagga



NORTH ELEVATION 1:100



EAST ELEVATION 1:100

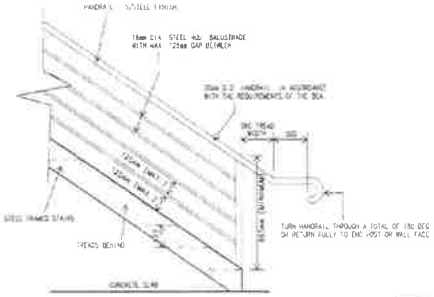
STAIR NOTE

NEW STAIRS BUILT IN ACCORDANCE WITH THE REQUIREMENTS OF THE BCA

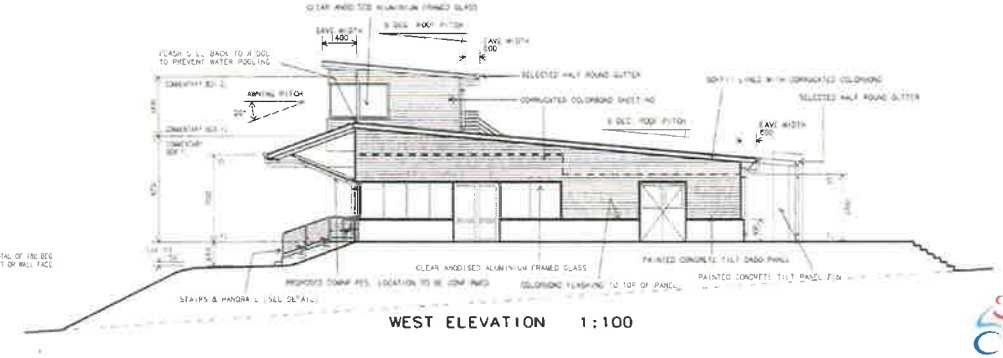
RISERS = MIN. = 190mm
MAX. = 190mm
GOING = MIN. = 355mm
MAX. = 355mm
2R + G = MIN. = 700mm
MAX. = 700mm

STAIR HANDRAIL NOTE

FIXED AT A HEIGHT OF NOT LESS THAN 865mm ABOVE THE NOSINGS OF STAIR TREADS & THE LANDINGS
(TO COMPLY WITH PART 3.9.1.2 OF THE B.C.A.)



TYP. HANDRAIL DETAIL 1:20



WEST ELEVATION 1:100

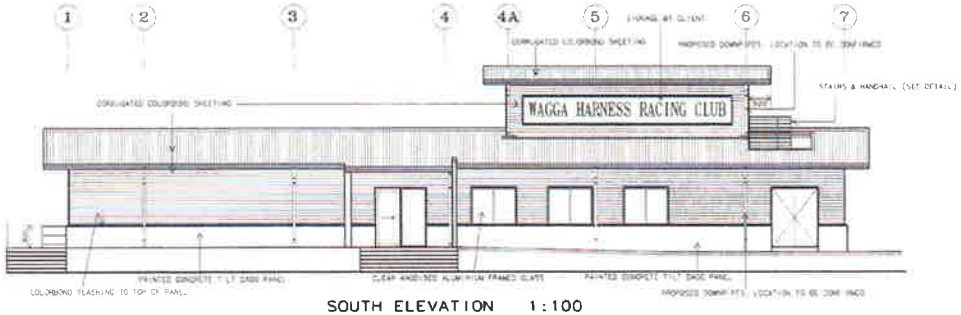
BALUSTRADE NOTE

SELECTED 1000mm HIGH HANDRAIL OR BALUSTRADE WITH VERTICAL BARS AT 125mm MAX CTS
(TO COMPLY WITH THE B.C.A.)

DEVELOPMENT APPLICATION ONLY

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION

NOTE: LEVELS SHOWN ARE A GUIDE ONLY
FLOOR LEVELS, FINISHED SURFACE LEVELS & RETAINING WALLS TO BE CONFIRMED WITH CIVIL ENGINEERS DESIGN



SOUTH ELEVATION 1:100

Harness Racing
NEW SOUTH WALES

1	FLOOR LEVELS INCREASED	16/08/2013
2	GENERALLY AMENDED	25/07/2013
3	ISSUED FOR DA SUBMISSION	25/07/2013
A	GENERALLY AMENDED	25/07/2013

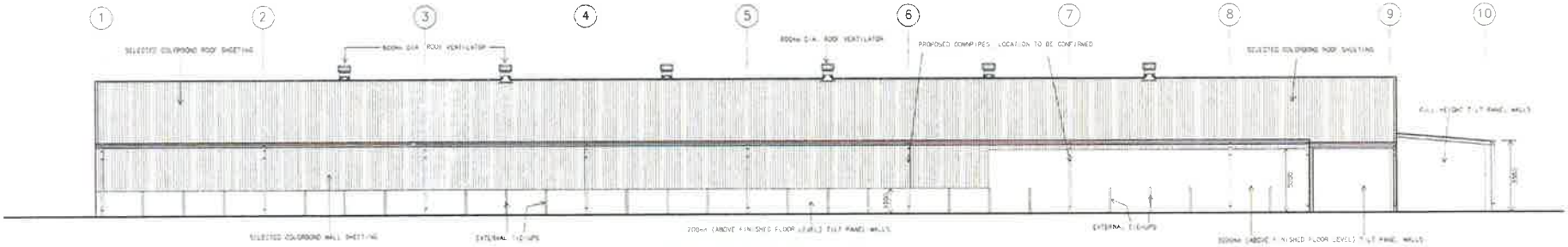
PROPOSED WAGGA HARNESS RACING CLUB FACILITY,
AT LOTS 1-8 & 19-24 (DP 2655)
COORAMIN STREET & HAMPDEN AV.
CARTWRIGHTS HILL. N.S.W.

HARNESS RACING N.S.W.

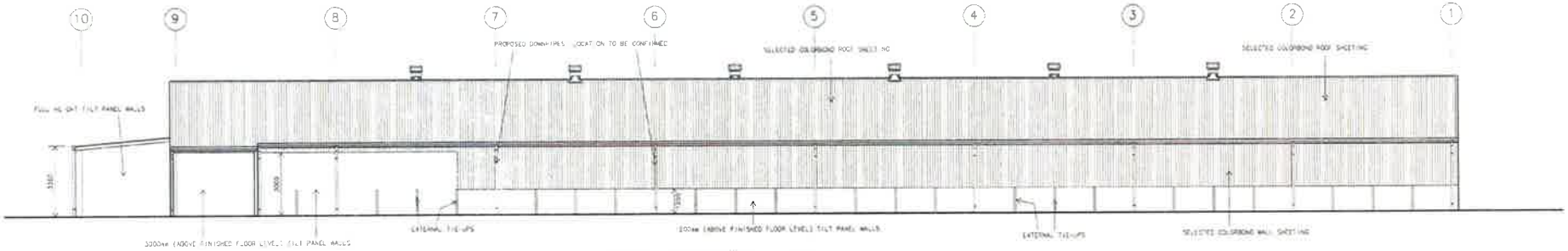
DEVELOPMENT APPLICATION ELEVATIONS CLUB BUILDING.

mckinnon design

13073 | da6 | F

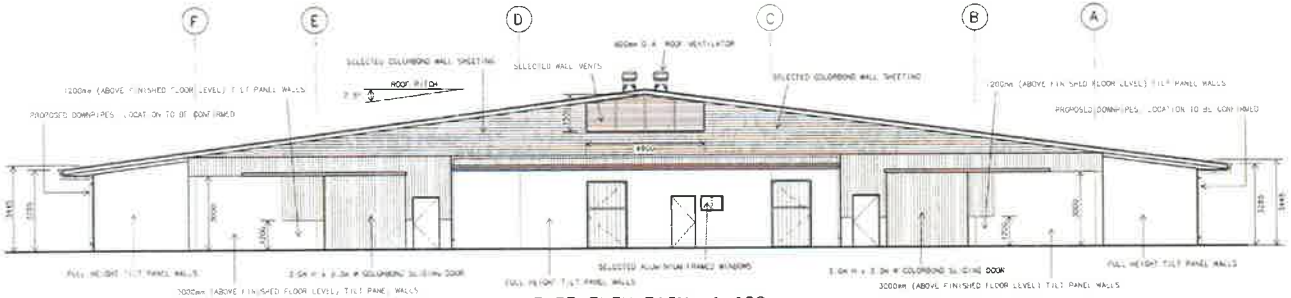


SOUTH ELEVATION 1:100

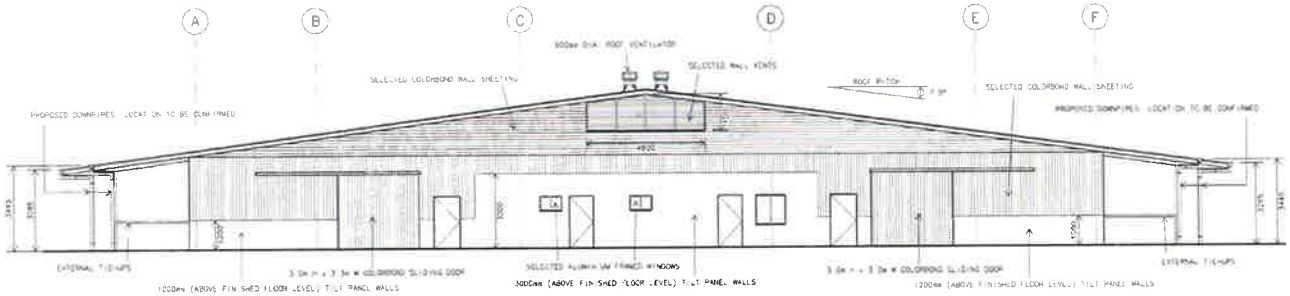


NORTH ELEVATION 1:100

NOTE: LEVELS SHOWN ARE A GUIDE ONLY
FLOOR LEVELS, FINISHED SURFACE LEVELS & RETAINING WALLS TO BE CONFIRMED WITH CIVIL ENGINEERS DESIGN



EAST ELEVATION 1:100



WEST ELEVATION 1:100

DEVELOPMENT APPLICATION ONLY
THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION

Harness Racing NEW SOUTH WALES

C	GENERALLY AMENDED	12/07/2013
B	ISSUED FOR DA SUBMISSION	12/06/2013
A	GENERALLY AMENDED	24/07/2013

PROPOSED WAGGA HARNESS RACING CLUB FACILITY,
AT LOTS 1-8 & 19-24 (DP 2656)
COORAMIN STREET & HAMPDEN AV.
CARTWRIGHTS HILL N.S.W.

HARNESS RACING N.S.W.

DEVELOPMENT APPLICATION
STABLES
ELEVATIONS

mckinnon design

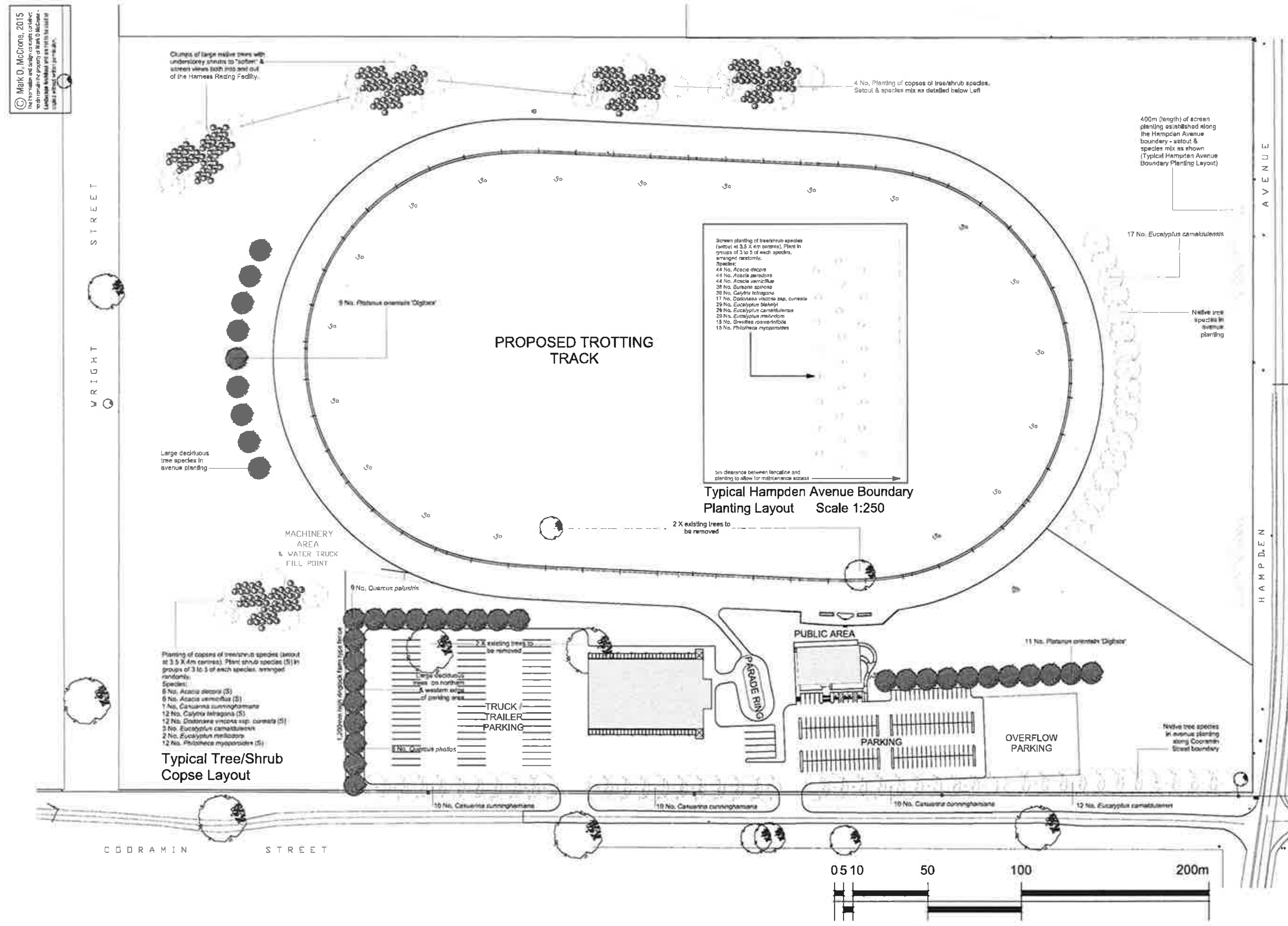
JOB NO.	DRG NO.	ISSUE
13073	da9	E

Landscape Master Plan

2014STH020 (DA14/0448)

Harness Racing Facility

Wagga Wagga



Planting Schedule

No	Botanical Name	Common Name	Container Size
74	*Acacia decora*	Western Golden Wattle	Tube
44	*Acacia paradoxa*	Kangaroo Thorn	Tube
74	*Acacia verniciflua*	Varnish Wattle	Tube
38	*Bursaria spinosa*	Blackthorn	Tube
98	*Calytrix tetragona*	Fringe Myrtle	Tube
35	*Casuarina cunninghamiana*	River She Oak	Tube
77	*Dodonaea viscosa ssp. cuneata*	Hop Bush	Tube
39	*Eucalyptus blakelyi*	Blakely's Red Gum	Tube
73	*Eucalyptus camaldulensis*	River Red Gum	Tube
39	*Eucalyptus melliodora*	Yellow Box	Tube
15	*Grevillea rosmarinifolia*	Rosemary Grevillea	Tube
75	*Philotheca myoporoides*	Eriostemon	Tube
20	*Platanus orientalis* 'Digitata'	Cut-leaf Plane Tree	300
9	*Quercus palustris*	Pin Oak	300
8	*Quercus phellos*	Willow Oak	300

Legend

- Existing trees
- Tree planting
- Evergreen native tree species
- Deciduous shade trees
- Screen shrub planting
- Proposed Buildings

Proposed Wagga Wagga Harness Racing Club Facility, Cartwrights Hill

Landscape Master Plan

Scale; 1:1,000 (@A1)
Dwg. No. 14/324/LD-02A
23.09.15

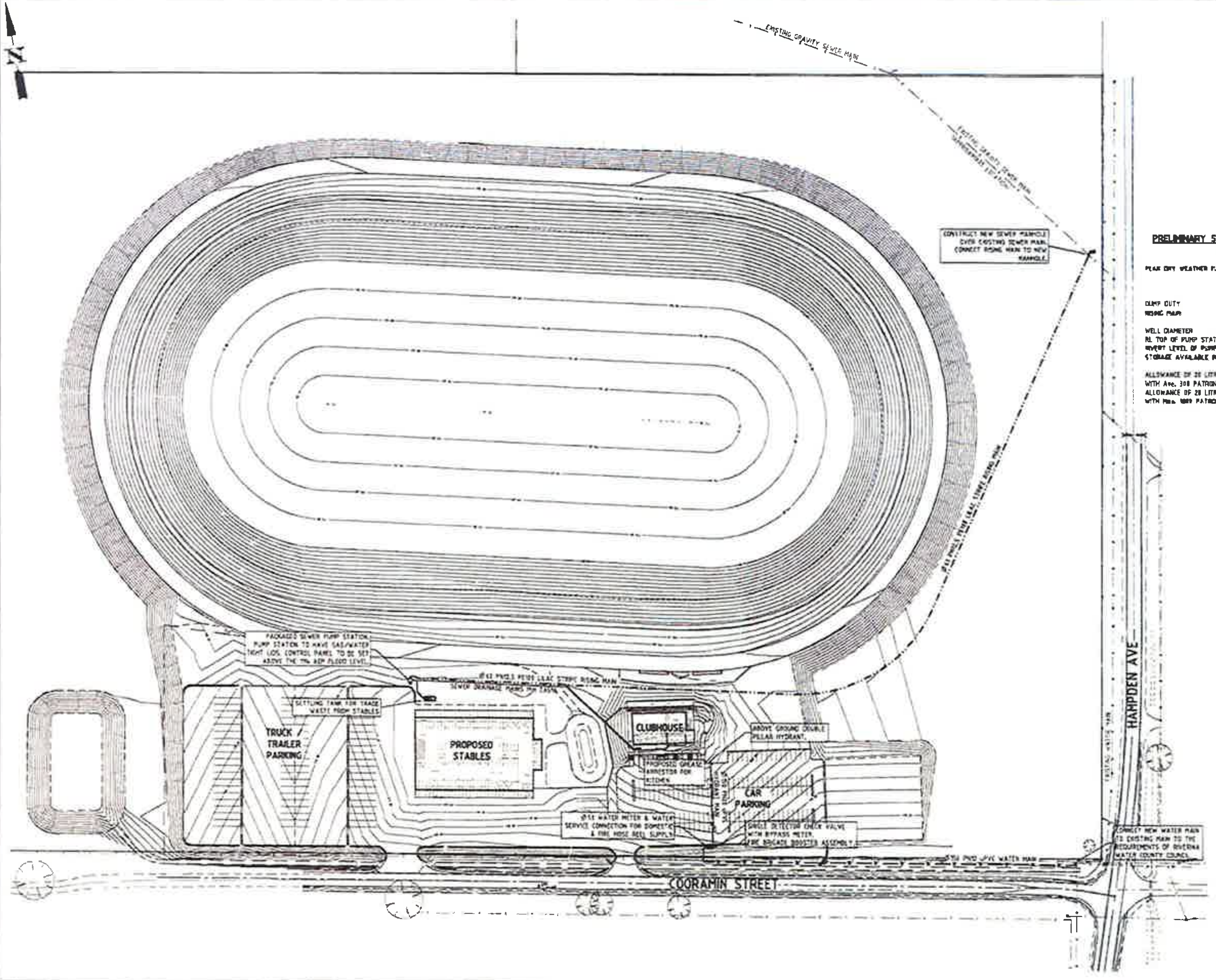
Prepared by:
MARK D. McCRONE LANDSCAPE ARCHITECT
P.O.Box 1053,
Wagga Wagga,
NSW, 2650
p. 04 0790 7958
e. larch_therock@bigpond.com
ABN : 35 336 150 981

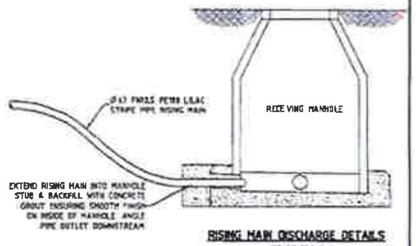
Sewer & Drainage Plan

2014STH020 (DA14/0448)

Harness Racing Facility

Wagga Wagga





RISING MAIN DISCHARGE DETAILS

NOT TO SCALE

PRELIMINARY SEWAGE PUMP STATION DESIGN INFORMATION

PEAK DRY WEATHER FLOW = [illegible] (EQUAL TO PROBABLE SIMULTANEOUS WATER SUPPLY FLOW RATE FOR THE SITE)

PUMP DUTY = 1.7L/s @ 20m HEAD
RISING MAIN = 63mmØ PN12.5 PE100 PIPE

WELL DIAMETER = 2.4m
RL TOP OF PUMP STATION WELL = 179.60
INVERT LEVEL OF PUMP WELL = 175.60 (APPROX)
STORAGE AVAILABLE IN WELL = 15 000 LITRES

ALLOWANCE OF 20 LITRES/PATRON WITH Ave. 300 PATRONS = 6 000 LITRES
ALLOWANCE OF 20 LITRES/PATRON WITH Max. 1000 PATRONS = 20 000 LITRES

PUMP AND MOTOR DATA

MAKER: FLYGT OR EQUAL
TYPE: [illegible] OR EQUAL (2 OFF - DUTY & STANDBY)
CAPACITY: [illegible]
HEAD: 20 m
IMPELLER: -
MOTOR: [illegible]

PACKAGED PUMP STATION DATA

MAKER: -
TYPE: FIBRE REINFORCED PLASTIC
TANK DIMENSIONS: [illegible]
INTERNAL PIPES: [illegible] HDPE
STANDARD EQUIPMENT: GATIC GAS TIGHT COVERS WITH REMOVABLE SAFETY MESH SCREENS UNDER, INTEGRAL VALVE CHAMBER, FLUSH VALVE, MULTITRODE MT2PC CONTROLLER AND ROD, BRACKETS, UPPER GUIDE BAR BRACKETS, DISCHARGE CONNECTIONS, GUIDE RAILS, STAINLESS STEEL CHAIN HOOKS AND GALVANISED PUMP LIFTING CHAINS
CONTROL PANEL: LOCKABLE WEATHERPROOF DUAL PUMP CONTROL PANEL. MANUAL OFF AUTO. AUTO ALTERNATION. HIGH LEVEL ALARM WITH FLASHING LIGHT AND MULTITRODE MT2PC CONTROLLER. PANEL DIMENSIONS TBC

WATER FIXTURES & LOADING UNITS

FIXTURE	LOADING UNIT/FIXTURE	No. IN BUILDING	LOADING UNITS
BUILDING - CLUB HOUSE			
BASINS	1	4	4
SINK	3	2	6
W.C.	2	7	14
URINAL	2	2	4
DISHWASHER	3	2	6
HOT WATER SYSTEM	4	1	4
HOSE TAP	8	2	16
			60
BUILDING - STABLES			
BASINS	1	5	5
SINK	3	1	3
W.C.	2	5	10
URINAL	2	3	6
HOT WATER SYSTEM	8	1	8
HOSE TAP	8	10	80
SHOWERS	2	2	4
			116
TOTAL LOADING UNITS			176
PROBABLE SIMULTANEOUS FLOW RATE (FROM TABLE 3.3 AS3500.1)			1.62 L/s
FIRE HOSE REEL FLOW - 2 FIRE HOSE REELS REQUIRED TO OPERATE SIMULTANEOUSLY @ [illegible]			0.66 L/s
TOTAL FLOW REQUIRED FOR THE SITE			2.28 L/s
WATER METER SIZE REQUIRED = DN50			

LEGEND

- EXISTING SEWER MAIN
- EXISTING WATER MAIN
- PROPOSED STORMWATER PIPE
- PROPOSED SEWAGE RISING MAIN
- PROPOSED SANITARY DRAINAGE
- PROPOSED DOMESTIC WATER SUPPLY
- PROPOSED WATER MAIN
- PROPOSED FIRE HYDRANT LINE
- NATURAL SURFACE CONTOURS (0.2m INTERVAL AHD)
- FINISHED SURFACE CONTOURS (0.2m INTERVAL AHD)

DEVELOPMENT APPLICATION ISSUE
NOT FOR CONSTRUCTION

DIAL BEFORE YOU DIG

No.	DATE	AMENDMENT DESCRIPTION	APP'D
B	[illegible]	AMEND TO SUIT REVISED LAYOUT	R.A.H.
A	[illegible]	ISSUED FOR DEVELOPMENT APPLICATION	R.A.H.

SURVEY:	CRAIG JAQUES	DATE:	NOV. 2013
DESIGN:	R.A.H.	DATE:	AUG. 2015
DRAWN BY:	A.R.	DATE:	AUG. 2015
CHECKED BY:		DATE:	

SCALES: SCALE 1:1000 (A1) 1:2000 (A3)

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HEATH CONSULTING ENGINEERS
251 SUMMER STREET
PO BOX 2401
ORANGE NSW 2800

CLIENT: Harness Racing

JOB No.: 1

DRAWING No.: 19065-C16

PROJECT: PROPOSED HARNESS RACING CLUB FACILITY DEVELOPMENT TO LOTS 1-6 & 19-24 (DP 2655) COORAMIN STREET & HAMPDEN AVENUE, WAGGA WAGGA

DRAWING TITLE: SEWER DRAINAGE & WATER RETICULATION LAYOUT

Sheet No. 16 of 16 Sheets

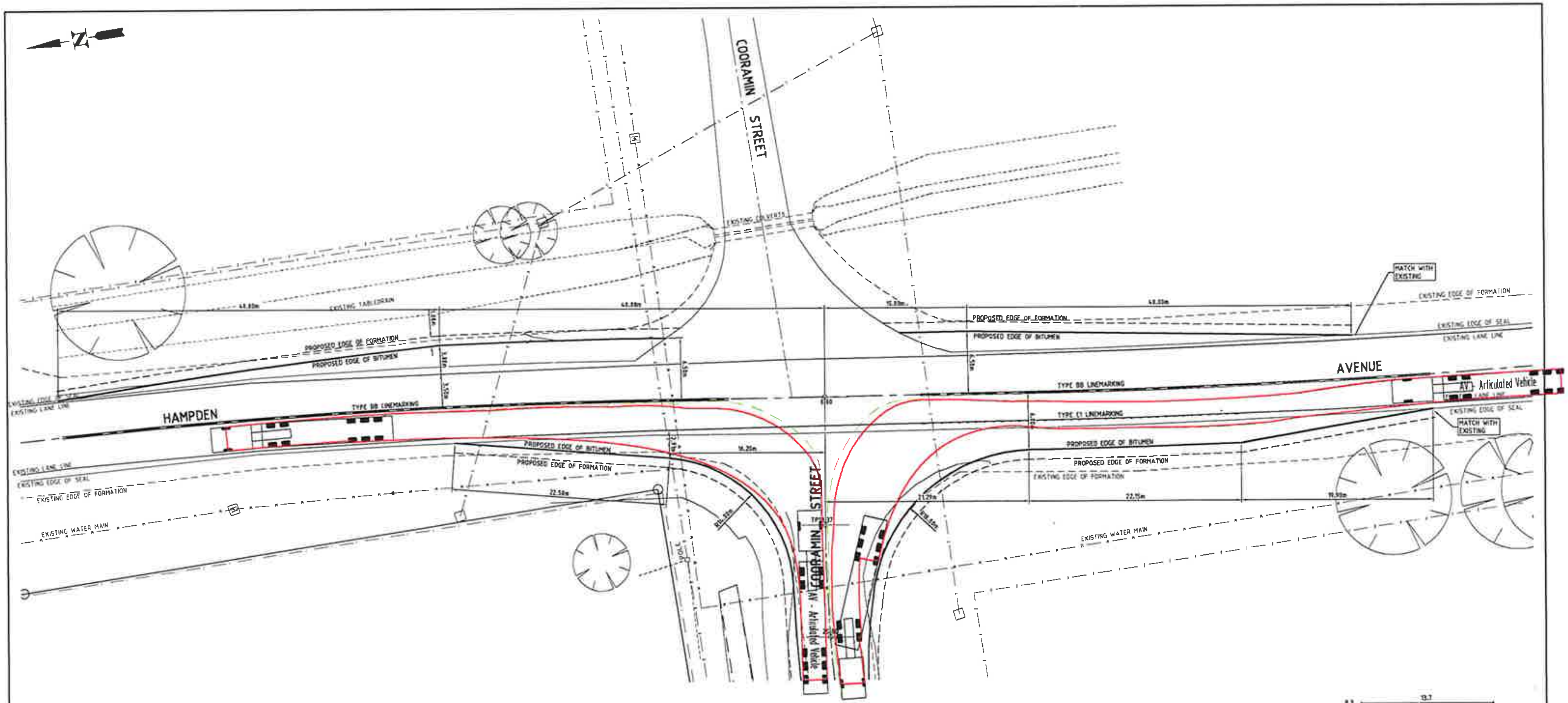
REV. B

Cooramin Street / Hampden Avenue Intersection Design

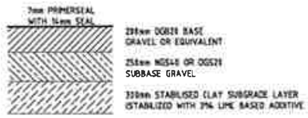
2014STH020 (DA14/0448)

Harness Racing Facility

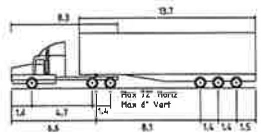
Wagga Wagga



TYPICAL CROSS SECTION - HAMPDEN AVENUE WIDENING
NOT TO SCALE



HAMPDEN AVENUE PAVEMENT WIDENING
* SUBJECT TO GEOTECHNICAL INVESTIGATION & DESIGN



AV - Articulated Vehicle

Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock to Lock Time	6.00 sec
Curb to Curb Turning Radius	12.500m

LEGEND

- PROPOSED CENTRE LINE
- PROPOSED EDGE OF BITUMEN
- PROPOSED EDGE OF FORMATION
- PROPOSED LIMIT OF CUT/FILL
- PROPOSED CONTOUR INTERVAL 0.2m AHD
- EXISTING SURFACE CONTOUR INTERVAL 0.2m AHD

DEVELOPMENT APPLICATION ISSUE
NOT FOR CONSTRUCTION

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No.	DATE	AMENDMENT DESCRIPTION	APP'D
B	17/08/15	AMEND TO SUIT REVISED LAYOUT	R.A.H.
A	04/09/14	ISSUED FOR DEVELOPMENT APPLICATION	R.A.H.

SURVEY:	CRAIG JAQUES	DATE:	NOV 2013
DESIGN:	R.A.H.	DATE:	AUG 2015
DRAWN BY:	A.R.	DATE:	AUG 2015
CHECKED BY:		DATE:	

SCALES: SCALE 1:200 (A1) 1:400 (A3)

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HEATH CONSULTING ENGINEERS
351 SUMMER STREET
PO BOX 2501
ORANGE NSW 2800
Telephone: (02) 6360 0755
Facsimile: (02) 6360 0766
Email: admin@heathce.com

CLIENT: Harness Racing

PROJECT: PROPOSED HARNESS RACING CLUB FACILITY DEVELOPMENT TO LOTS 1-6 & 19-24 (DP 2655) COORAMIN STREET & HAMPDEN AVENUE, WAGGA WAGGA

Sheet No. 11 of 16 Sheets

JOB No. 13-065

DRAWING No. 13065-C11

DRAWING TITLE: COORAMIN STREET AND HAMPDEN AVENUE INTERSECTION PLAN

REV. B

Traffic & Parking Report

2014STH020 (DA14/0448)

Harness Racing Facility

Wagga Wagga

HARNESS RACING NSW

TRAFFIC AND PARKING REPORT FOR PROPOSED HARNESS RACING FACILITY, CARTWRIGHTS HILL

FEBRUARY 2014

COLSTON BUDD HUNT & KAFES PTY LTD
ACN 002 334 296
Level 18 Tower A
Zenith Centre
821 Pacific Highway
CHATSWOOD NSW 2067

Telephone: (02) 9411 2411
Facsimile: (02) 9411 2422
Email: cbhk@cbhk.com.au

REF: 9197

TABLE OF CONTENTS

1. INTRODUCTION

1.1 Colston Budd Hunt and Kafes Pty Ltd has been commissioned by Harness Racing NSW to prepare a report examining the traffic and parking implications of a proposed harness racing complex at Cartwrights Hill. The site is on the northern side of Cooramin Street, west of Hampden Avenue, as shown in Figure 1.

1.2 The site is currently vacant. The proposed harness racing facility will replace the existing facility in Turvey Park to the south.

1.3 The traffic and parking implications of the proposed development are assessed through the following chapters:

- Chapter 2 – describing the existing conditions; and
- Chapter 3 – assessing the traffic and parking implications of the proposed development.

2. EXISTING CONDITIONS

Site Location and Road Network

2.1 The site is lots 1-6 and 19-24 in DP 2655 at Cartwrights Hill, as shown in Figure 1. It is on the northern side of Cooramin Street and west of Hampden Avenue. The site is currently vacant. Surrounding land use is generally rural and rural-related businesses.

2.2 Cooramin Street is a two lane two-way unsealed road which provides access to rural properties. It intersects Hampden Avenue at a four way priority controlled intersection.

2.3 Hampden Avenue is a two lane two-way rural road with sealed shoulders and an 80 kilometre per hour speed limit. North of Cooramin Street it provides a 60 kilometre per hour speed limit. It provides access to rural properties.

2.4 North of the site, Hampden Avenue intersects Horseshoe Road at an unsignalised t-intersection. There are give way controls on the Horseshoe Road approach to the intersection. Horseshoe Road is a two lane two-way road with a 60 kilometre per hour speed limit. It provides access to tourist accommodation and rural properties.

2.5 West of Hampden Avenue, Horseshoe Road connects to the Olympic Highway at a roundabout. Coolamon Road provides a fourth (western) approach to the roundabout. The Olympic Highway provides one traffic lane in each direction with sealed shoulders. It connects to Junee and Temora to the north.

2.6 South of the site, Hampden Avenue intersects with Mill Street at an unsignalised t-intersection controlled by give way signs, with Hampden Avenue having priority. There is a right turn bay in Hampden Avenue and separate left and right turn lanes in Mill Street at the intersection. Mill Street provides a connection to Oura, Wantabadgery and Gundagai. It provides a 60 kilometre per hour speed limit with one traffic lane in each direction. There is a connection to Marah Street which forms a fourth (western) approach to the intersection.

Race Meet Parking Conditions

2.7 In order to gauge parking conditions on a race day, we have undertaken counts of the number of vehicles parked at the existing facility in Turvey Park on Sunday 12th January 2014. This was a day meeting with eight races held. The results of the surveys are summarised in Table 2.1.

Table 2.1: Number of parked vehicles on Sunday 12 January

Time	Number of parked vehicles
11:00 am	20
12:00 pm	13
1:00	31
2:00	91
3:00	78
4:00	133
5:00	116
6:00	96

2.8 Table 2.1 shows that the peak parking demand at the existing facility on the race day was 133 vehicles, at 4:00 pm. Of the 133 vehicles at 4:00 pm, some 45 were horse floats and the remainder was cars.

Traffic Flows

2.9 The Wagga Harness Racing Club's usual meeting day is Friday. Traffic generated by the proposed development will have its greatest effects during Friday afternoon periods when it combines with other traffic on the surrounding road network. In order to gauge traffic conditions, counts were undertaken on a Friday afternoon (7 February 2014) at the following intersections:

- Olympic Highway/Horseshoe Road/Coolamon Road;
- Hampden Avenue/Horseshoe Road;
- Hampden Avenue/Cooramin Street; and
- Hampden Avenue/Mill Street/Marah Street.

2.10 The results of the surveys are shown in Figure 2, and summarised in Table 2.2.

Table 2.2: Existing two-way (sum of both directions) peak hour traffic flows

Road	Location	Afternoon peak hour
Olympic Highway	North of Horseshoe Road	430
	South of Horseshoe Road	550
Coolamon Road	West of Olympic Highway	315
Horseshoe Road	East of Olympic Highway	125
	West of Hampden Avenue	130
Hampden Avenue	North of Horseshoe Road	120
	North of Cooramin Street	265
	South of Cooramin Street	275
	North of Mill Street	320
	South of Mill Street	660
Cooramin Street	East of Hampden Avenue	15
	West of Hampden Avenue	4
Mill Street	East of Hampden Avenue	450
Marah Street	West of Hampden Avenue	30

2.11 Table 2.2 shows that The Olympic Highway, Coolamon Road, Mill Street and Hampden Avenue (south of Horseshoe Road) carried some 250 to 700 vehicles per hour two-way during the surveyed afternoon peak hour. Flows on Horseshoe Road and Hampden Avenue (north of Horseshoe Road) were lower at some 120 to 130 vehicles per hour two-way. Marah Street and Cooramin Street carried low flows of less than 50 vehicles per hour two-way.

Intersection Operations

2.12 The capacity of the road network is largely determined by the capacity of its intersections to cater for peak period traffic flows. The surveyed intersections shown in Figure 2 have been analysed using the SIDRA computer program. SIDRA analyses the operations of intersections to provide a number of performance measures. The most useful measure provided is average delay per vehicle expressed in seconds per vehicle. Based on average delay per vehicle, SIDRA estimates the following levels of service (LOS):

- For traffic signals, the average delay per vehicle in seconds is calculated as delay/(all vehicles), for roundabouts the average delay per vehicle in seconds is selected for the movement with the highest average delay per vehicle, equivalent to the following LOS:

0 to 14	=	"A"	Good
15 to 28	=	"B"	Good with minimal delays and spare capacity
29 to 42	=	"C"	Satisfactory with spare capacity
43 to 56	=	"D"	Satisfactory but operating near capacity
57 to 70	=	"E"	At capacity and incidents will cause excessive delays. Roundabouts require other control mode
>70	=	"F"	Unsatisfactory and requires additional capacity

ρ For give way and stop signs, the average delay per vehicle in seconds is selected from the movement with the highest average delay per vehicle, equivalent to following LOS:

0 to 14	=	"A"	Good
15 to 28	=	"B"	Acceptable delays and spare capacity
29 to 42	=	"C"	Satisfactory but accident study required
43 to 56	=	"D"	Near capacity and accident study required
57 to 70	=	"E"	At capacity and requires other control mode
>70	=	"F"	Unsatisfactory and requires other control mode

2.13 It should be noted that for roundabouts, give way and stop signs, in some circumstances, simply examining the highest individual average delay can be misleading. The size of the movement with the highest average delay per vehicle should also be taken into account. Thus, for example, an intersection where all movements are operating at a level of service A, except one which is at level of service E, may not necessarily define the intersection level of service as E if that movement is very small. That is, longer delays to a small number of vehicles may not justify upgrading an intersection unless a safety issue was also involved.

2.14 The analysis found that the roundabout controlled intersection of Olympic Highway with Horseshoe Road and Coolamon Road operates with average delays of less than 20 seconds per vehicle during the afternoon period. This represents level of service B, a good level of service.

2.15 The unsignalised intersections of Hampden Avenue with Horseshoe Road, Cooramin Street and Mill Street/Marah Street operate with average delays for all movements of less than 15 seconds per vehicle during the afternoon period. This represents levels of service A/B, a good level of service.

3. IMPLICATIONS OF PROPOSED DEVELOPMENT

3.1 The proposed harness racing facility will replace the existing facility in Turvey Park. The proposed facilities include a trotting track, clubhouse/marquee, stables, parade ring and on-site parking. Vehicular access is proposed from Cooramin Street, which will be sealed between Hampden Avenue and the site access points.

3.2 This chapter assesses the implications of the proposed development through the following sections:

- parking provision;
- access, internal circulation and layout;
- traffic generation and effects; and
- summary.

Site Operations

3.3 The harness racing event calendar indicates that some one to five meetings are typically held per month. These can be on weekdays or weekends during the day, twilight or night. Race meets can be regular meets or trials which typically attract a lower attendance.

3.4 The usual meeting days are Fridays, with other meeting days including Saturdays, Sundays and occasionally other weekdays. The number of races at a meet can vary but is typically between some six and 10, with eight being typical.

3.5 People attending a race meeting arrive prior to their races and are able to leave once their commitments are completed.

3.6 The applicant expects that the activities at the proposed facility will be similar to those at the existing facility. Most people attending a race day are owners/trainers and those associated with the organization of the race meeting. The number of spectators attending is typically small.

Parking Provision

3.7 As previously discussed, the peak parking demand measured at the existing facility was 133 cars on a race day, including some 90 cars and 45 horse floats.

3.8 The proposed parking provision at the facility is 210 spaces comprising 150 spaces for cars plus 60 spaces trucks/trailers/horse floats. The proposed provision will therefore readily cater for the parking demands on race days.

Access, Internal Circulation and Layout

3.9 Vehicular access to the site is proposed to be provided from Cooramin Street. Two driveways are proposed: one to the truck/trailer/horse float parking areas and one to the general car parking area. An internal connection will be provided between the two parking areas.

3.10 The driveways will cater for two-way traffic and will be provided in accordance with the Australian Standard for Parking Facilities (Part 1: Off-street car parking and Part 2: Off-street commercial vehicle facilities), AS 2890.1:2004 and AS 2890.2 – 2002 to cater for the size and type of vehicles proposed. Vehicles will be able to enter and exit the site in a forward direction.

3.11 The larger vehicle parking area will provide for vehicles ranging in size up to small semi trailers. Spaces will be 15 metres long and 3.5 metres wide. These spaces will cater for cars/trailers, rigid trucks and small semi trailers.

3.12 Within the general car park, parking spaces will be 2.5 metres wide by 5.4 metres long, with two-way circulation aisles a minimum of 6.5 metres wide. These dimensions are considered appropriate, being in accordance with AS 2890.1:2004.

Traffic Generation and Effects

3.13 Traffic counts undertaken at the existing facility on a race day indicated a peak hour traffic generation of some 130 vehicles per hour two-way (some 100 in and 30 out). This generation occurred earlier during the event when people were arriving. As noted above, people are able to leave the event once their commitments are completed, for example, following the completion of a race. Our traffic counts recorded lower generations later in the day.

3.14 We have assessed a traffic generation of 130 vehicles per hour two-way. The additional traffic has been assigned to the road network. Existing peak hour traffic flows plus the additional traffic from the proposed development are shown in Figure 2, and summarized in Table 3.1.

3.15 Traffic increases in Cooramin Street, from where access is proposed, would be some 130 vehicles per hour two-way at peak times. Increases on Olympic Highway, Coolamon Road, Horseshoe Road, Hampden Avenue and Mill Street would be lower at some 10 to 75 vehicles per hour two-way.

Table 3.1: Existing two-way (sum of both directions) peak hour traffic flows			
Road	**Location**	**Afternoon peak hour**	
		Existing	Plus development
Olympic Highway	North of Horseshoe Road	430	+25
	South of Horseshoe Road	550	+25
Coolamon Road	West of Olympic Highway	315	+15
Horseshoe Road	East of Olympic Highway	125	+65
	West of Hampden Avenue	130	+65
Hampden Avenue	North of Horseshoe Road	120	+10
	North of Cooramin Street	265	+75
	South of Cooramin Street	275	+55
	North of Mill Street	320	+55
	South of Mill Street	660	+40
Cooramin Street	East of Hampden Avenue	15	-
	West of Hampden Avenue	4	+130
Mill Street	East of Hampden Avenue	450	+15
Marah Street	West of Hampden Avenue	30	-

3.16 The intersections previous analysed in Chapter 2 have been re-analysed with SIDRA for the additional development traffic flows shown in Figure 2. The analysis found that the intersection of Olympic Highway with Horseshoe Road and Coolamon Road would continue to operate with average delays of less than 20 seconds per vehicle during the afternoon period. This represents level of service B, a good level of service.

3.17 The unsignalised intersections of Hampden Avenue with Horseshoe Road, Cooramin Street and Mill Street/Marah Street would continue to operate with average delays for all movements of less than 15 seconds per vehicle during the afternoon period. This represents levels of service A/B, a good level of service.

3.18 Therefore, the road network will be able to cater for the additional traffic from the proposed development.

Summary

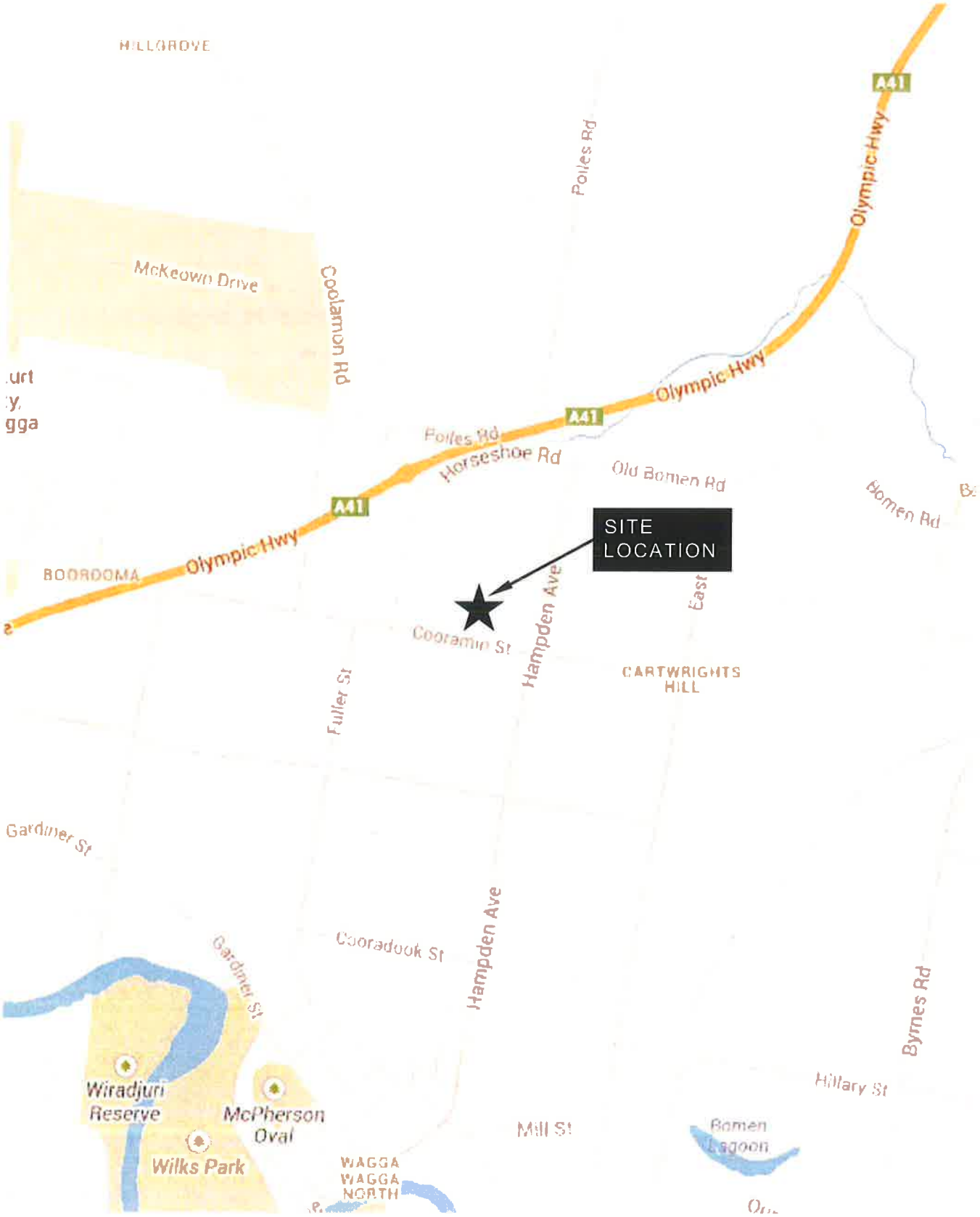
3.19 In summary, the main points relating to the implications of the proposed harness racing facility are as follows:

i) the proposed facility would replace the existing facility in Turvey Park;

ii) the proposed parking provision is considered appropriate;

iii) vehicular access, internal circulation and layout are considered appropriate; and

iv) the road network will be able to cater for the additional traffic from the proposed development.

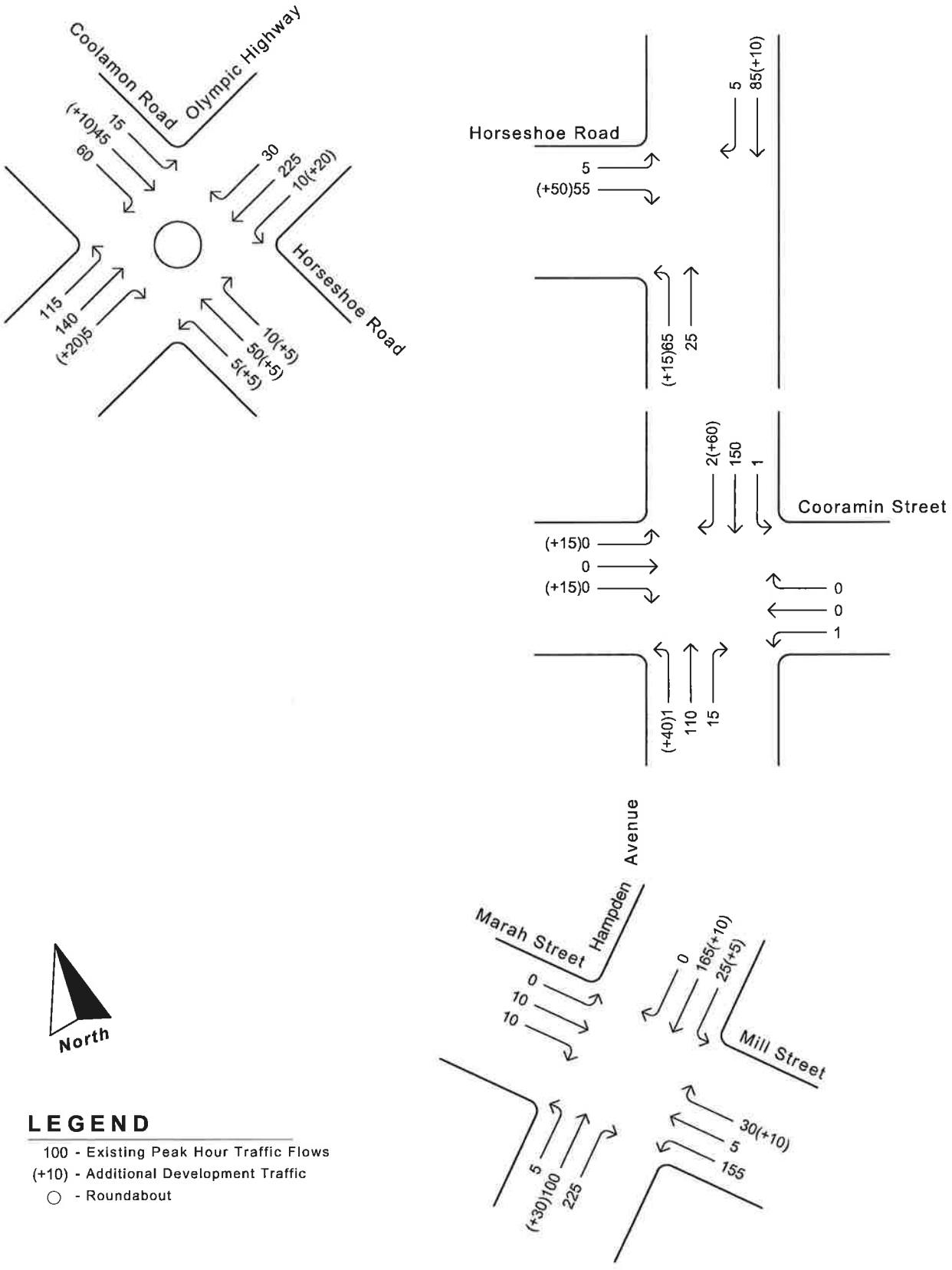


Location Plan

Colston Budd Hunt & Kafes Pty Ltd

DRAWN BY CBHK Pty Ltd_hs Ref: 9197 18 February 2014

Figure 1



LEGEND

100 - Existing Peak Hour Traffic Flows
(+10) - Additional Development Traffic
○ - Roundabout

Existing weekday afternoon peak hour traffic flows plus development traffic

Colston Budd Hunt & Kafes Pty Ltd

DRAWN BY CBHK Pty Ltd_hs Ref: 9197 18 February 2014

Figure 2

Addendum to Traffic & Parking Report

2014STH020 (DA14/0448)

Harness Racing Facility

Wagga Wagga

Co□sto□ Budd □u□t □ Kafes Pty Ltd
as Trustee for C □ B U□it Trust
ABN 2□ □23 □1□ □□□

Tra□sport P□a□□i□g
To□□ P□a□□i□g
Retai□Studies

Our Ref: JH/9197\jj

14 September, 2015

Harness Racing NSW
c/- Peter Basha Planning & Development
PO Box 1827
ORANGE NSW 2800

Attention: Peter Basha
Email: peter@bashaplanning.com.au

Dear Sir,

RE: PROPOSED HARNESS RACING COMPLEX, WAGGA WAGGA

1. As requested, we are writing regarding matters raised by council in relation to the above development. Council's letter of 27 April, which includes matters raised by the JRPP, includes the following:

Traffic and Parking Report

The minutes require an assessment of the impacts of traffic and parking including assumptions of patronage for all likely events with proposed mitigation measures.

The following questions and issues have been raised with regard to the details of the traffic and parking report.

1. *There is no data given on anticipated vehicle occupancy rates. Is this data available from the survey of the existing facility?*
2. *How much parking is available at the existing Wagga facility and is it limited by current site constraints? Much of the data is taken from events at the Wagga facility and therefore specific information would assist in determining how comparable the facilities are.*
3. *Little real information is provided about parking arrangements for peak events. It is suggested that a peak event would involve about 2,000 patrons, while a normal event would be 150 to 200 people. If a vehicle occupancy rate of 1.5 persons per vehicle were suggested, this would create a parking demand of perhaps 133 spaces, consistent with the 150 spaces proposed. Applying the same criteria to peak events would see a demand of 1,330 spaces, a shortfall of about 1,180 spaces. Where would these overflow vehicles be parked and what access arrangements would be put in place?*

Suite 1801/Tower A, Zenith Centre, 821 Pacific Highway, Chatswood NSW 2067
P.O. Box 5186 West Chatswood NSW 1515 Tel: (02) 9411 2411 Fax: (02) 9411 2422
Directors - Geoff Budd - Lindsay Hunt - Stan Kafes - Tim Rogers - Joshua Hollis ACN 002 334 296
EMAIL: cbhk@cbhk.com.au

4. *The traffic and parking assessment hinged on a single meeting at the existing facility on Sunday 12th January. What was the attendance on that day and how typical was it of normal operations?*
5. *Like noise impacts, what traffic numbers have been generated at the new Bathurst facility if it is to be similar to the one proposed at Wagga Wagga?*
6. *No assessment is provided of construction traffic impacts.*

2. We have previously prepared a report[1] which was submitted with the application for the proposed development. The above matters raised by the JRPP largely relate to likely attendance at the proposed facility and whether the survey results in our previous report are representative of future operations.

3. The Wagga Harness Racing Club has provided the following attendance figures for race meetings in 2014 and 2015 based on gate takings:

- 13 December 2014: some 160 people;
- 24 February 2015: some 254 people;
- 7 March 2015: some 446 people;
- 2 May 2015: some 180 people; and
- 23 May 2015: some 150 people.

4. The above race days were generally Saturdays, with one Tuesday. The highest attendance, on 7 March 2015, was for the club's biggest meeting in 2015. The club has advised that at other meets, for example, on Fridays, attendances are lower and admission fees are not charged. The above figures are therefore attendances for generally busier race meetings.

5. The above attendance figures include the club's estimate of some 80 to 100 people associated with horses plus some 20 race day staff and club officials.

6. As noted in our previous report, people attending a race meeting arrive prior to their races and are able to leave once their commitments are completed. Therefore, the above attendance numbers represent the total number of people over the day, not the peak number on site at one time, which is lower.

7. As also noted in our previous report, our traffic and parking surveys were undertaken on 12 January 2014. The peak number of vehicles counted parked on the existing site at Turvey Park was 133 vehicles, at 4:00 pm.

8. We also undertook counts of the number of people on the site over the survey day. The peak number of people counted on the site, which was also at 4:00 pm, was 174 people.

[1] Traffic and Parking Report for Proposed Harness Racing Facility, Cartwrights Hill, February 2014.

9. Therefore, regarding point 1 above raised by the JRPP, the effective car occupancy on the survey day was some 1.3 people per vehicle. In relation to point 4 above, based our count of 174 people at the peak time, the survey days was one of the busier days of the year.

10. As well as counting the number of vehicles parked on the site, our surveys recorded the number of vehicles parked on surrounding streets over the day. These streets included Docker Street, Bourke Street, Urana Street, College Avenue and Lusher Avenue, which are adjacent and close to the site. They would be the streets used by vehicles associated with the facility and not parked on the site.

11. The survey area in the above streets provides parking for more than 500 cars. Over the day, there was little demand for on-street parking, which ranged between some 14 and 24 cars (three to five per cent of the available supply).

12. Over the day, there was little or no correlation between the increase in on-site parking and any change in parking conditions on surrounding streets. Therefore, regarding point 2 above, on the survey day, there was little or no on-street parking by vehicles associated with the facility.

13. Regarding point 3, the club has advised that the estimate of some 2,000 people is not correct. A review of the historical gate takings indicated that attendance figures are significantly lower.

14. Experience indicates that as attendances at sporting fixtures increases, average car occupancy also increases. This can be due to a range of factors including the availability of parking, and the fact that busier days may attract more members of one family or group who travel together, compared to a quieter day where only enthusiasts in that family or group attend.

15. Amended plans have been prepared for the development. These show parking for some 291 vehicles, including:

    - 157 vehicles in the main car park;
    - 62 vehicles for trucks/trailers/horse floats; and
    - some 72 vehicles in an overflow parking area adjacent to the main car park.

16. Based on:

    - the busiest attendance day of 2015 (attended by some 450 people as noted above);
    - some 80 per cent of people being on site at the one time; and
    - a car occupancy of 1.5 people per vehicle;

the parking demand would be some 240 vehicles. The proposed provision of some 291 spaces would therefore cater for these demands.

17. Additionally, on busy days, the club will implement a plan to manage parking on the site. The plan will be prepared prior to operation of the facility and would include the following principles:

- encourage car-pooling for people travelling to the event;
- provision of a charter bus service to transport people to and from designated points in Wagga; and
- on-site marshalls to direct people to available parking.

18. Regarding point 5, it is considered that it is most appropriate to compare the proposed development to the existing facility. This is consistent with RMS guidelines, which indicate that that estimates of traffic generation should be based on surveys of similar developments.

19. We have therefore based our assessment on the existing facility, which is being relocated. A comparison with another facility at Bathurst, which is several hundred kilometres away, is considered to be less representative.

20. However, a review of attendances at the facility in Bathurst following the opening meeting on 19 October 2014 shows the following:

- average attendance of some 256 people;
- 85th percentile attendance of some 292 people; and
- 93rd percentile attendance of some 469 people.

21. The above busy days at Bathurst therefore attracted similar attendances to that found at busy days at Wagga.

22. In relation to point 6 (construction traffic impacts), a detailed construction management plan will be prepared prior to construction certificate, once a builder has been appointed and detailed construction methodology and staging is known. This will include available parking areas and traffic management arrangements for the various stages of construction. An appropriate condition of consent could be included requiring preparation of this plan prior to construction certificate.

23. It is not expected that construction traffic activities will generate significant traffic volumes on the surrounding road network. The greatest activity would occur during site works and transporting construction material to the site, including bitumen to seal the hard stand areas.

24. It is expected that there would be some 30 to 40 vehicles per day visiting the site during these periods of construction. These are low volumes which would be equivalent to some five to 10 vehicles per hour at busy times. These traffic flows would not be noticeable on the surrounding road network.

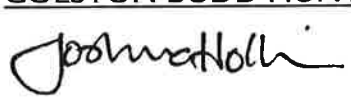
25. Appropriate area will be available on the site for parking of construction employee vehicles. There are not expected to be a significant number of construction employees (up to some 20) throughout the period of construction.

26. The construction traffic management plan will include the following principles:

- maintain traffic access in Hampden Avenue and Cooramin Street;
- manage and control construction traffic movements on the adjacent road network and vehicle movement to and from the construction site;
- maintain traffic capacity at intersections and mid-block near the site;
- maintain access to properties located in the vicinity of the site at all times during the construction process;
- erect construction fencing/scaffolding where required around construction activities;
- maintain safety for site visitors and construction workers;
- restrict construction vehicles to designated routes through the area;
- construction vehicle access to be provided at designated points from Cooramin Street; and
- construction activity to be carried out in accordance with the approved hours of work.

27. We trust the above provides the information you require. Finally, if you should have any queries, please do not hesitate to contact us.

Yours faithfully,
COLSTON BUDD HUNT & KAFES PTY LTD



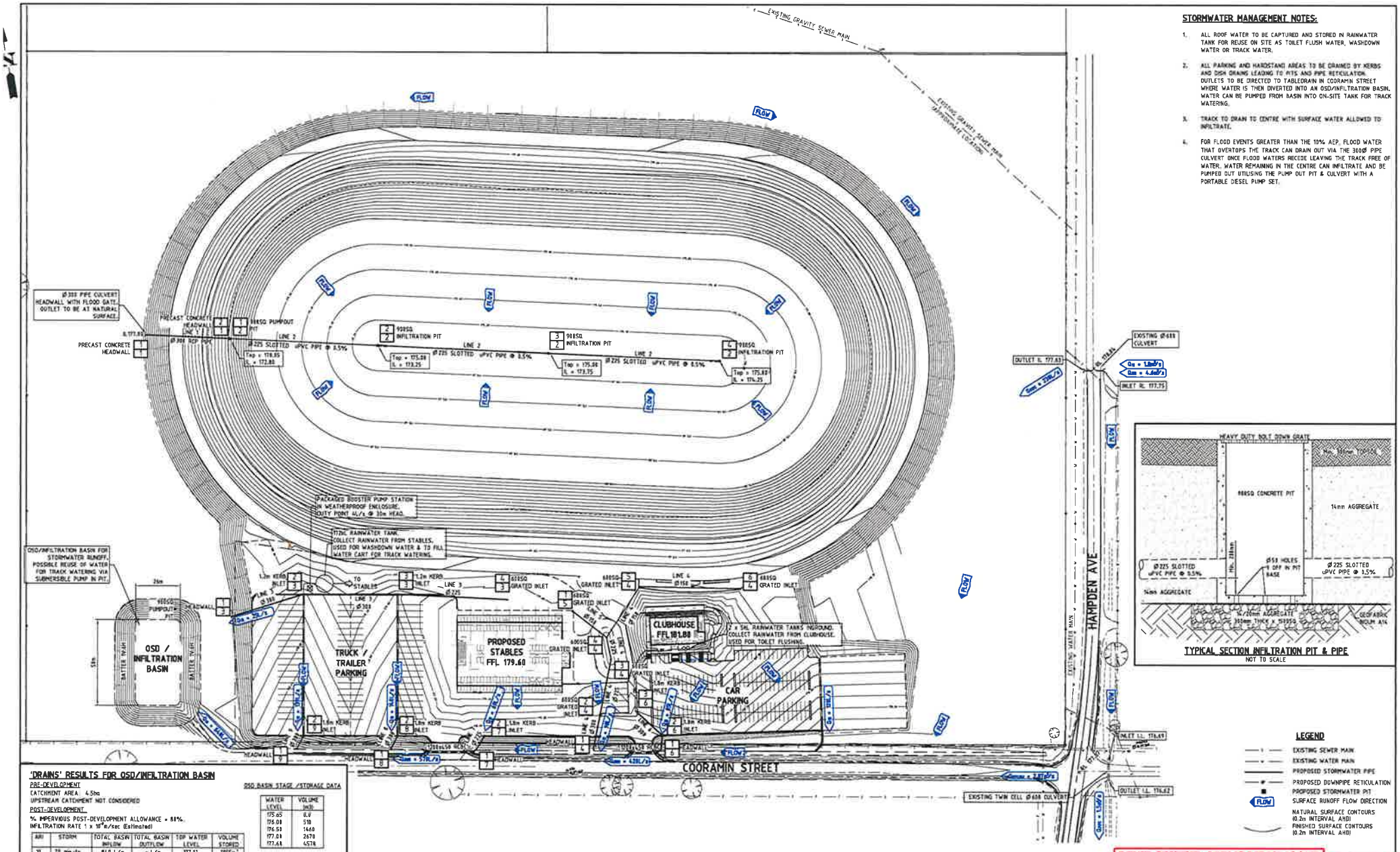
J Hollis
Director

Stormwater Management Plan

2014STH020 (DA14/0448)

Harness Racing Facility

Wagga Wagga



STORMWATER MANAGEMENT NOTES:

1. ALL ROOF WATER TO BE CAPTURED AND STORED IN RAINWATER TANK FOR REUSE ON SITE AS TOILET FLUSH WATER, WASHDOWN WATER OR TRACK WATER.
2. ALL PARKING AND HARDSTAND AREAS TO BE DRAINED BY KERBS AND DISH DRAINS LEADING TO PITS AND PIPE RETICULATION. OUTLETS TO BE DIRECTED TO TABLEDRAIN IN COORAMIN STREET WHERE WATER IS THEN DIVERTED INTO AN OSD/INFILTRATION BASIN. WATER CAN BE PUMPED FROM BASIN INTO ON-SITE TANK FOR TRACK WATERING.
3. TRACK TO DRAIN TO CENTRE WITH SURFACE WATER ALLOWED TO INFILTRATE.
4. FOR FLOOD EVENTS GREATER THAN THE 10% AEP, FLOOD WATER THAT OVERTOPS THE TRACK CAN DRAIN OUT VIA THE 3600Ø PIPE CULVERT ONCE FLOOD WATERS RECEDE LEAVING THE TRACK FREE OF WATER. WATER REMAINING IN THE CENTRE CAN INFILTRATE AND BE PUMPED OUT UTILISING THE PUMP OUT PIT & CULVERT WITH A PORTABLE DIESEL PUMP SET.

TYPICAL SECTION INFILTRATION PIT & PIPE
NOT TO SCALE

LEGEND

- EXISTING SEWER MAIN
- EXISTING WATER MAIN
- PROPOSED STORMWATER PIPE
- PROPOSED DOWNPIPE RETICULATION
- PROPOSED STORMWATER PIT
- FLOW SURFACE RUNOFF FLOW DIRECTION
- NATURAL SURFACE CONTOURS (0.2m INTERVAL AHD)
- FINISHED SURFACE CONTOURS (0.2m INTERVAL AHD)

'DRAINS' RESULTS FOR OSD/INFILTRATION BASIN

PRE-DEVELOPMENT
CATCHMENT AREA: 4.5ha
UPSTREAM CATCHMENT NOT CONSIDERED

POST-DEVELOPMENT
% IMPERVIOUS POST-DEVELOPMENT ALLOWANCE = 81%.
INFILTRATION RATE 1 x 10^{-5}m/sec (Estimated)

ARI	STORM	TOTAL BASIN INFLOW	TOTAL BASIN OUTFLOW	TOP WATER LEVEL	VOLUME STORED
10	20 minute	840 L/s	- L/s	177.33	1895m³
100	15 minute	1479 L/s	- L/s	177.42	2985m³

NO POST DEVELOPMENT OUTFLOWS FROM OSD/INFILTRATION BASIN.

OSD BASIN STAGE /STORAGE DATA

WATER LEVEL	VOLUME (m³)
175.65	0.0
176.08	570
176.53	1460
177.08	2670
177.68	4574

DEVELOPMENT APPLICATION ISSUE NOT FOR CONSTRUCTION

DIAL BEFORE YOU DIG 1100.com.au

No.	DATE	AMENDMENT DESCRIPTION	APP'D
B	17/08/15	AMEND TO SUIT REVISED LAYOUT	R.A.H.
A	14/09/15	ISSUED FOR DEVELOPMENT APPLICATION	R.A.H.

SURVEY: CRAIG JAQUES DATE: NOV. 2013
DESIGN: R.A.H. DATE: AUG. 2015
DRAWN BY: A.R. DATE: AUG. 2015
CHECKED BY: DATE:

SCALES: 10 0 10 20 30 40 50m
SCALE 1:1000 (A1)
1:2000 (A3)

HEATH CONSULTING ENGINEERS
NEWCASTLE PTY LTD ACN 103 488 345
351 SUMMER STREET PO BOX 2501 ORANGE NSW 2800
Telephone: (02) 6360 0755
Facsimile: (02) 6360 0766
Email: admin@heathce.com

CLIENT: Harness Racing

PROJECT: PROPOSED HARNESS RACING CLUB FACILITY DEVELOPMENT TO LOTS 1-6 & 19-24 (DP 2655) COORAMIN STREET & HAMPDEN AVENUE, WAGGA WAGGA

JOB No. 13-065

DRAWING No. 13065-C15

DRAWING TITLE: STORMWATER MANAGEMENT PLAN

Sheet No. 15 of 16 Sheets

REV. B

Flood Impact Assessment

2014STH020 (DA14/0448)

Harness Racing Facility

Wagga Wagga

Craig McKinnon
Principal – McKinnon Design
162 Kite Street (PO Box 1929)
Orange NSW 2800

113024-03/20150907_R

7 September 2015

Attention: **Mr C McKinnon,**

Dear Craig,

Re: Flood Impact Assessment for Proposed Harness Racing Track in North Wagga

This letter details the flood impact assessment carried out by WMAwater for the proposed Harness Racing Track in North Wagga.

INTRODUCTION

Harness Racing NSW (HRNSW) is proposing to build a horse racetrack and associated infrastructure in North Wagga. The location of the track and infrastructure is 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.

Flooding in this area is dominated by riverine flooding from the Murrumbidgee River. The proposed development is subject to flooding in a 10% AEP event.

WMAwater has carried out previous flood impact assessments for two different racetrack and infrastructure options at this location (WMAwater 2013 and 2014a) utilising the 2010 Murrumbidge River model (WMAwater, 2010). After the 2010 and 2012 flood events in Wagga Wagga, Wagga Wagga City Council (WWCC) engaged WMAwater to undertake modelling work. The modelling work (WMAwater, 2014b) consisted of extending the model at the upstream and downstream ends as well as revising and updating calibration, validation, hydrology, river bathymetry, bed roughness and the proposed main city levee upgrade. As such, the flood impact assessment is required to be updated with the latest design utilising the WMAwater 2014b hydraulic model.

The proposed works are relatively minor in the context of the floodplain, with levels being well below 1% AEP flood levels and minimal fill being involved. Results of the modelling work indicate that the impact of the proposed racetrack works on flood levels is negligible for events less than 1% AEP and zero for the 1% AEP event. The lack of impact relates to the fact that the proposed works are, as noted before, relatively minor.

HYDRAULIC MODEL

The TUFLOW 1D/2D hydraulic model developed by WMAwater (2014b) has been utilised in carrying out this flood impact assessment. The model extends from approximately 5 km upstream of Oura to 9 km downstream of Malebo Gap, giving a total river reach of approximately 63 km.

The model grid is defined by a 20 m by 20 m finite difference grid. The model's ground elevation has been informed by ALS data recorded in 2008 by Fugro Spatial Systems Pty Ltd for the entire Murrumbidgee River floodplain. River bathymetry survey was undertaken by a qualified hydrosurvey firm who produced a dataset of 668 cross sections. The cross sections were utilised to create a DEM of the river bed for later integration with the floodplain DEM. Figure 2 depicts ground levels along the floodplain and at the development site.

Levees have been included in the hydraulic model as 'breaklines'. The main city levee has been included as per the proposed 1% AEP flood protection upgrade. The North Wagga levee has been included from existing survey levels, whilst the remaining levees on the floodplain were informed by ALS data (2008. This included the Tarcoola Quarry levee. Any other provisional levees built post 2008 by private landholders or Council have not been included in the hydraulic model.

Design flows have been developed via Flood Frequency Analysis (FFA). The WMAwater 2014b report was very much in favour of FFA approach as previous reports have also utilised FFA due to the long stream gauging record in the Murrumbidgee River at Hampden Bridge instead of traditional rainfall/runoff models. Continuous stream gauge information at Hampden Bridge is available since 1892. Prior to 1892, four flood events that occurred in 1852, 1853, 1870 and 1891 exceeded 10 m at the Hamden Bridge gauge and caused significant flooding in the region. These events were also included in the FFA.

Calibration and validation of the hydraulic model has been carried out utilising flood intelligence information collected for the 2010 and 2012 flood events.

The hydraulic model layout is shown in Figure 3. Further model details are provided in the WMAwater 2014b report.

METHODOLOGY

Design level information for the proposed racetrack has been provided by McKinnon design. The information can be summarised as follows:

- **Racetrack**: The majority of the racetrack level is at 180.25 mAHD with exception of the southern side which is at 179.88 mAHD;
- **Public Stand**: 181.78 mAHD, and;
- **Stables**: 179.6 mAHD.

Figure 4 shows design plans and levels for the proposed racetrack and infrastructure.

Racetrack and infrastructure information have been incorporated into the hydraulic model as following:

- The race track has been defined as a 3D breakline with elevations ranging from 180.25 to 179.88 mAHD, and;
- The public stand and stables have been defined as separate polygons which block the passage of floodwaters. Whilst the floor level of these structures are at 181.78 and 179.6

mAHD respectively, the structures' walls impede the passage of floodwaters through the structure.

The 10%, 5%, 2% and 1% AEP design events were run incorporating the changes described above.

Peak flood impact, levels, depth, velocity and provisional flood hazard maps have been prepared to show the flood impact of the proposed development.

RESULTS

Results are presented in Figures 5 to 20. In a 10% AEP flood event the proposed racetrack and infrastructure cause a maximum peak flood level increase of 0.02 m in open areas at properties adjacent to the racetrack precinct (Figure 6). In 5% and 2% AEP flood events the maximum increase in peak flood level is 0.01 m at adjacent properties (Figures 9 and 12) which is negligible. Again, it is only observed in open land. In the 1% AEP design event no peak flood level increase is seen outside the proposed racetrack precinct (Figure 15).

Impact on peak flood velocity

Current peak flood velocities in the vicinity of the racetrack precinct range from 0.3 m/s in a 10% AEP event to 0.6 m/s in a 1% AEP event.

In the 10% AEP flood event minimal change in peak flood velocity is observed outside the racetrack precinct (Figure 7). Isolated changes can be observed between -0.25 to 0.25 m/s. In the 5%, 2% and 1% AEP events an increase in peak flood velocity of up to 0.25 m/s can be seen in open areas at properties north of the racetrack (Figures 10, 13 and 16). This increase in peak flood velocity is unlikely to cause any impact on soil conditions at those properties.

Impact on provisional hydraulic hazard

For the range of design events investigated current provisional hydraulic hazard at the racetrack precinct and adjacent properties is identified as High Hazard. Figures 17 through to 20 show the change in provisional hydraulic hazard after proposed racetrack works. Modelling results indicate change in provisional hydraulic hazard from High to Low only at the racetrack perimeter as a result of change in flood depth. This change occurs in all design events except for the 1% AEP.

As seen in Figures 17 through to 20 the proposed racetrack works will not affect existing provisional flood hazard in the floodplain.

Flood warning time

Murrumbidgee River flooding at Wagga Wagga primarily originates in the upper areas of the Murrumbidgee River catchment with releases from Burrinjuck and Blowering dams. Rainfall downstream of Burrinjuck Dam generally provides a relatively modest contribution to flow. The Erringoarrah stream gauge is the next gauge upstream of Hampden Bridge. It provides Wagga Wagga with sufficient warning time during flood events for evacuation purposes. The last flood in 2012, which was estimated to be a 3% AEP event, took approximately 21 hours to travel from Erringoarrah to Wagga Wagga. Note that flood travel time is indirectly correlated to flood size (i.e. the larger the flood, the shorter the time it takes the flood wave to arrive).

For design events, current travel time of flooding from Oura to North Wagga are as following:

- 10% AEP: 22 h
- 5% AEP: 18 h
- 2% AEP: 14 h
- 1% AEP: 12 h

Modelling results indicate the construction of the racetrack will not affect flood warning time.

Rate of rise

The rate of rise describes the average increase in river level, in meters per hour, at a given location. Current rate of rise values within the racetrack precinct are presented below:

- 10% AEP: 0.16 m/h
- 5% AEP: 0.18 m/h
- 2% AEP: 0.19 m/h
- 1% AEP: 0.20 m/h

Modelling results indicate that construction of the racetrack will not affect rate of rise of floodwaters.

Should you require further clarification do not hesitate to contact Ivan Varga on 9299 2855 or varga@wmawater.com.au.

Yours Sincerely,
WMAwater

Ivan Varga
Senior Engineer

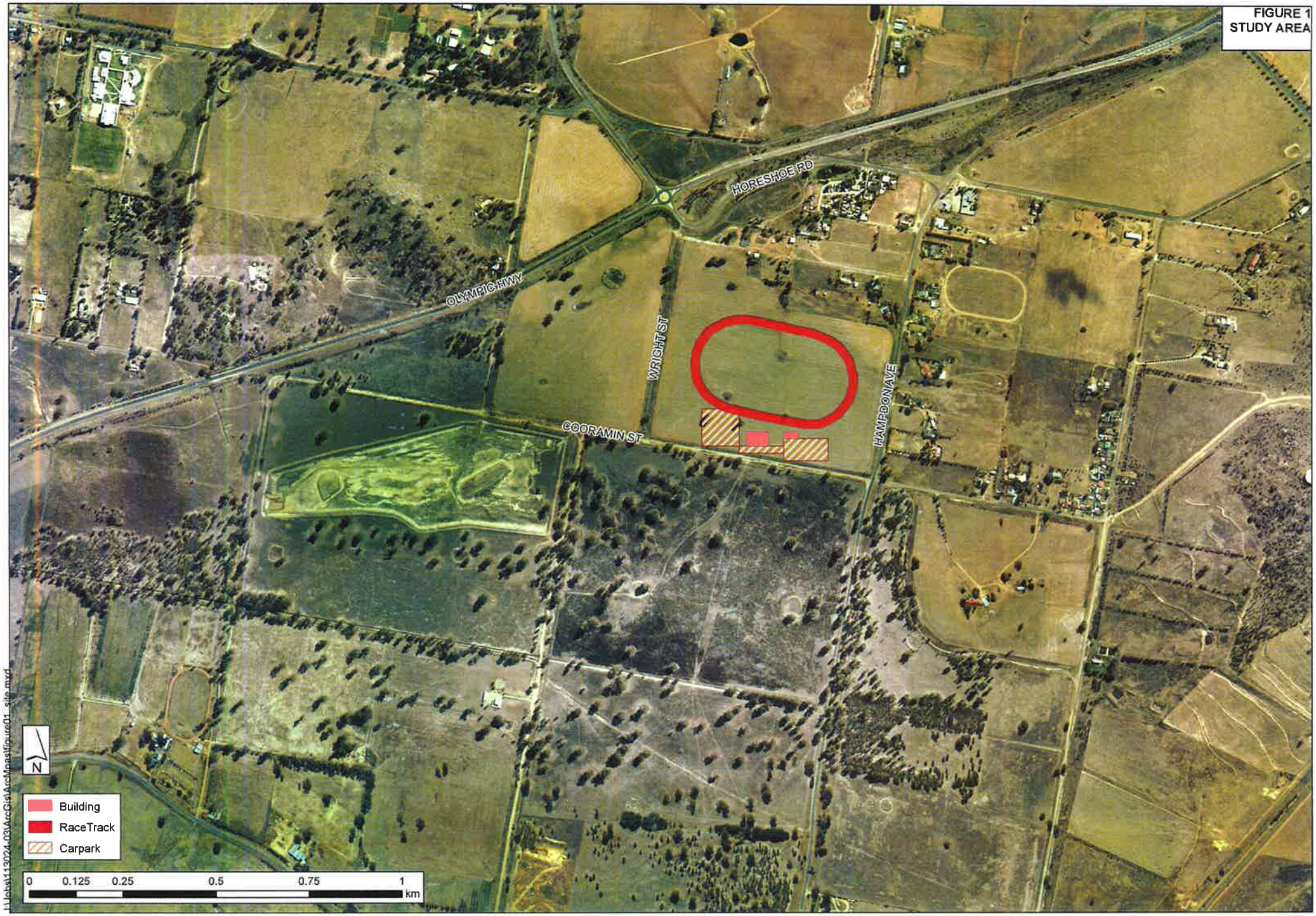


FIGURE 1
STUDY AREA
HORESHOE RD
OLYMPIC HWY
WRIGHT ST
HAMPDON AVE
COORAMIN ST
N
Building
RaceTrack
Carpark
0
0.125
0.25
0.5
0.75
1
km
J:\Jobs\113024-03\ArcGis\ArcMaps\figure01_site.mxd

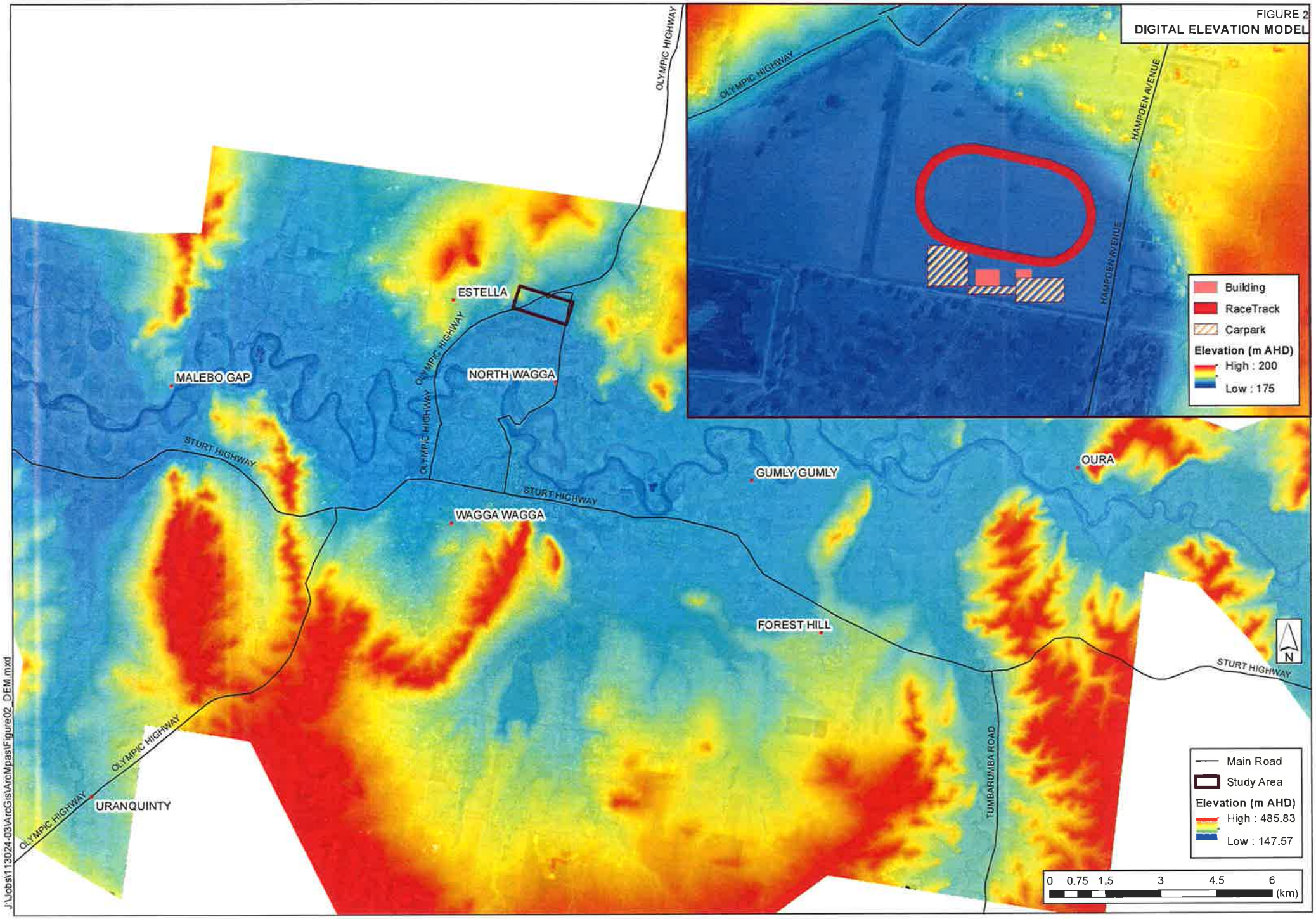
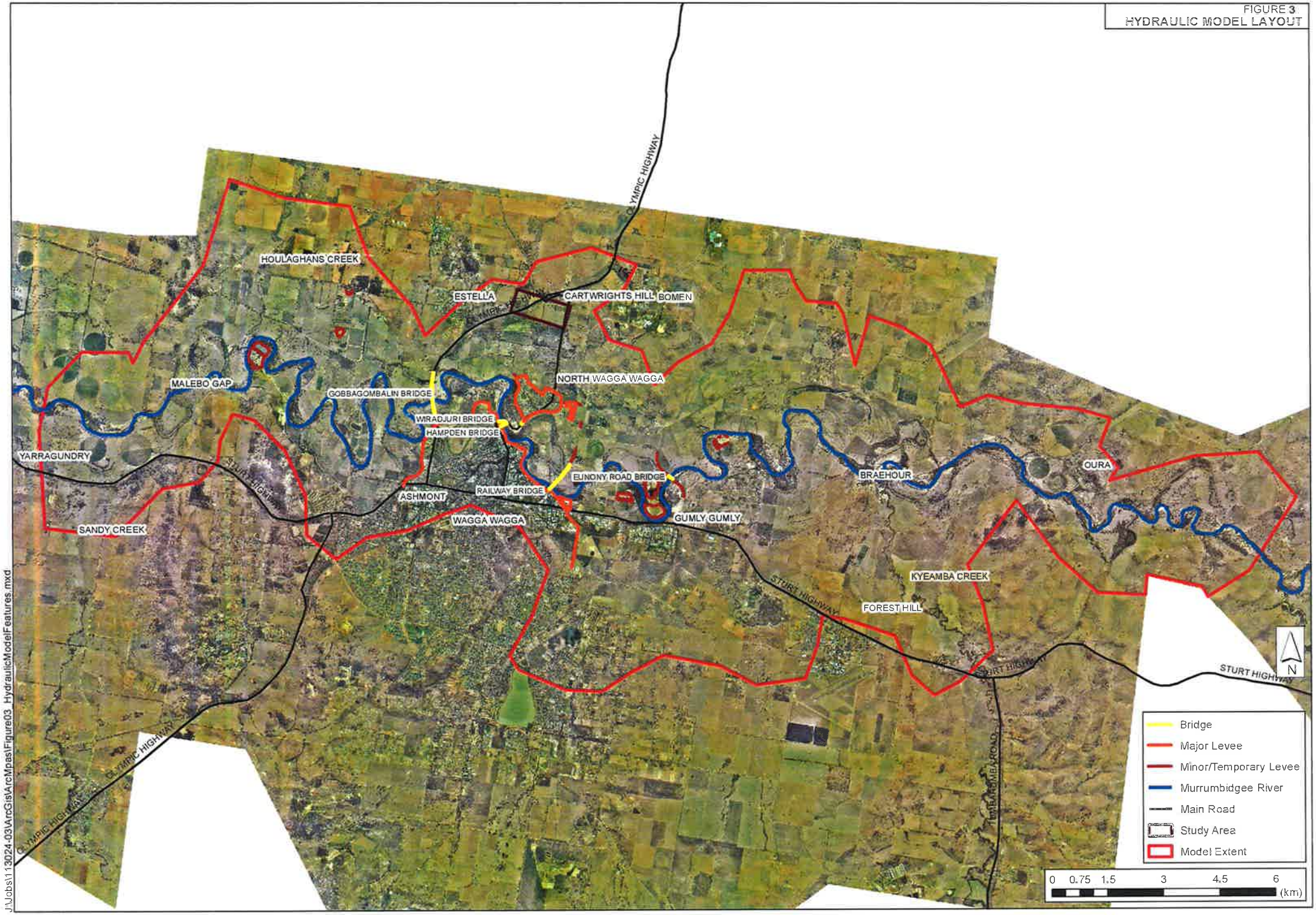


FIGURE 2
DIGITAL ELEVATION MODEL
OLYMPIC HIGHWAY
HAMPDEN AVENUE
Building
RaceTrack
Carpark
Elevation (m AHD)
High : 200
Low : 175
ESTELLA
NORTH WAGGA
MALEBO GAP
STURT HIGHWAY
WAGGA WAGGA
GUMLY GUMLY
OURA
FOREST HILL
TUMBARUMBA ROAD
URANQUINTY
N
Main Road
Study Area
Elevation (m AHD)
High : 485.83
Low : 147.57
0 0.75 1.5 3 4.5 6
(km)
J:\Jobs\113024-03\ArcGis\ArcMpas\Figure02_DEM.mxd

FIGURE 3
HYDRAULIC MODEL LAYOUT



J:\Jobs\113024-03\ArcGis\ArcMaps\Figure03_HydraulicModelFeatures.mxd

FIGURE 4
PROPOSED RACETRACK LAYOUT

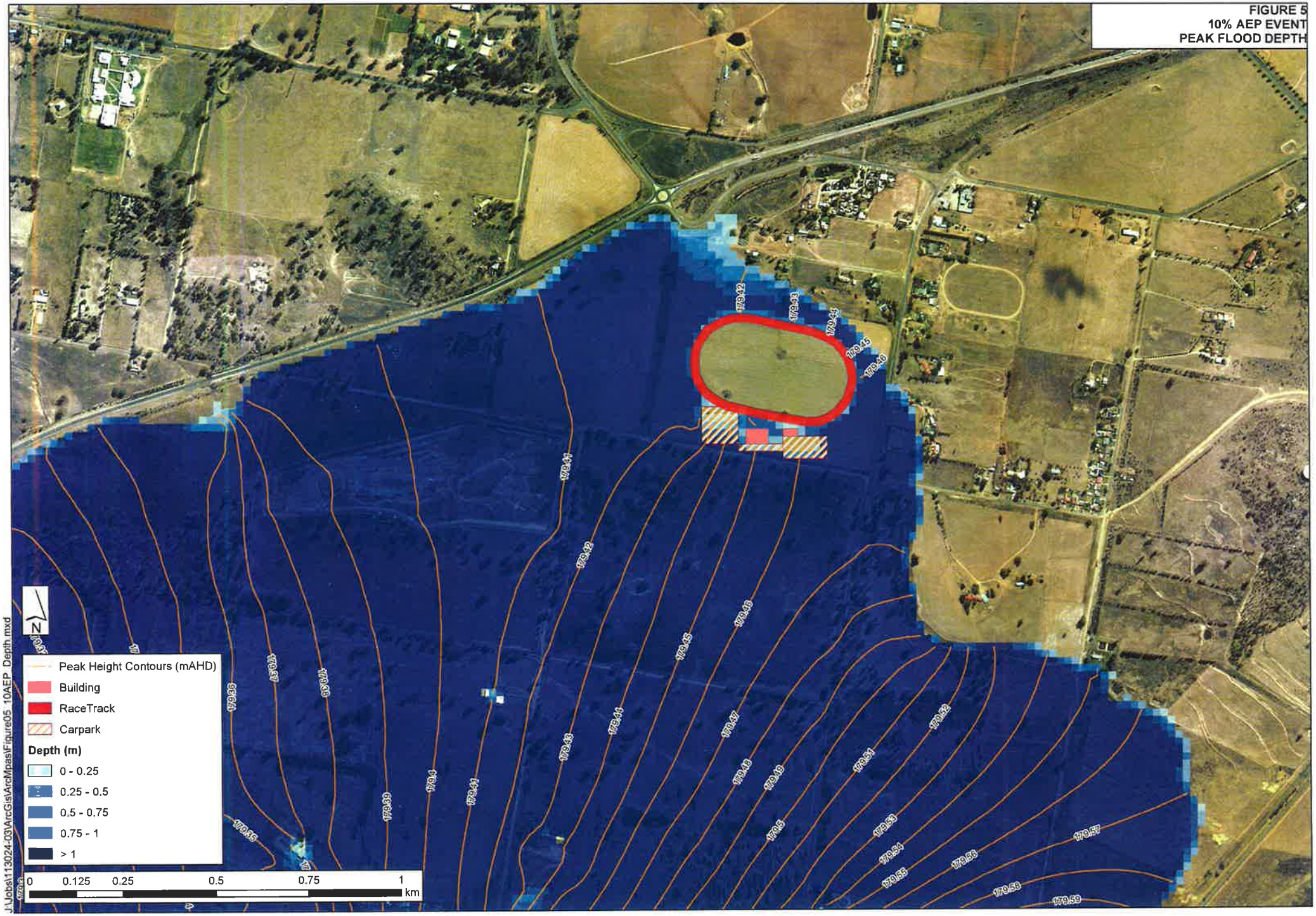


FIGURE 5
10% AEP EVENT
PEAK FLOOD DEPTH
N
Peak Height Contours (mAHD)
Building
RaceTrack
Carpark
Depth (m)
0 - 0.25
0.25 - 0.5
0.5 - 0.75
0.75 - 1
> 1
0 0.125 0.25 0.5 0.75 1
km
J:\Jobs\113024-03\ArcGis\ArcMaps\Figure05_10AEP_Depth.mxd

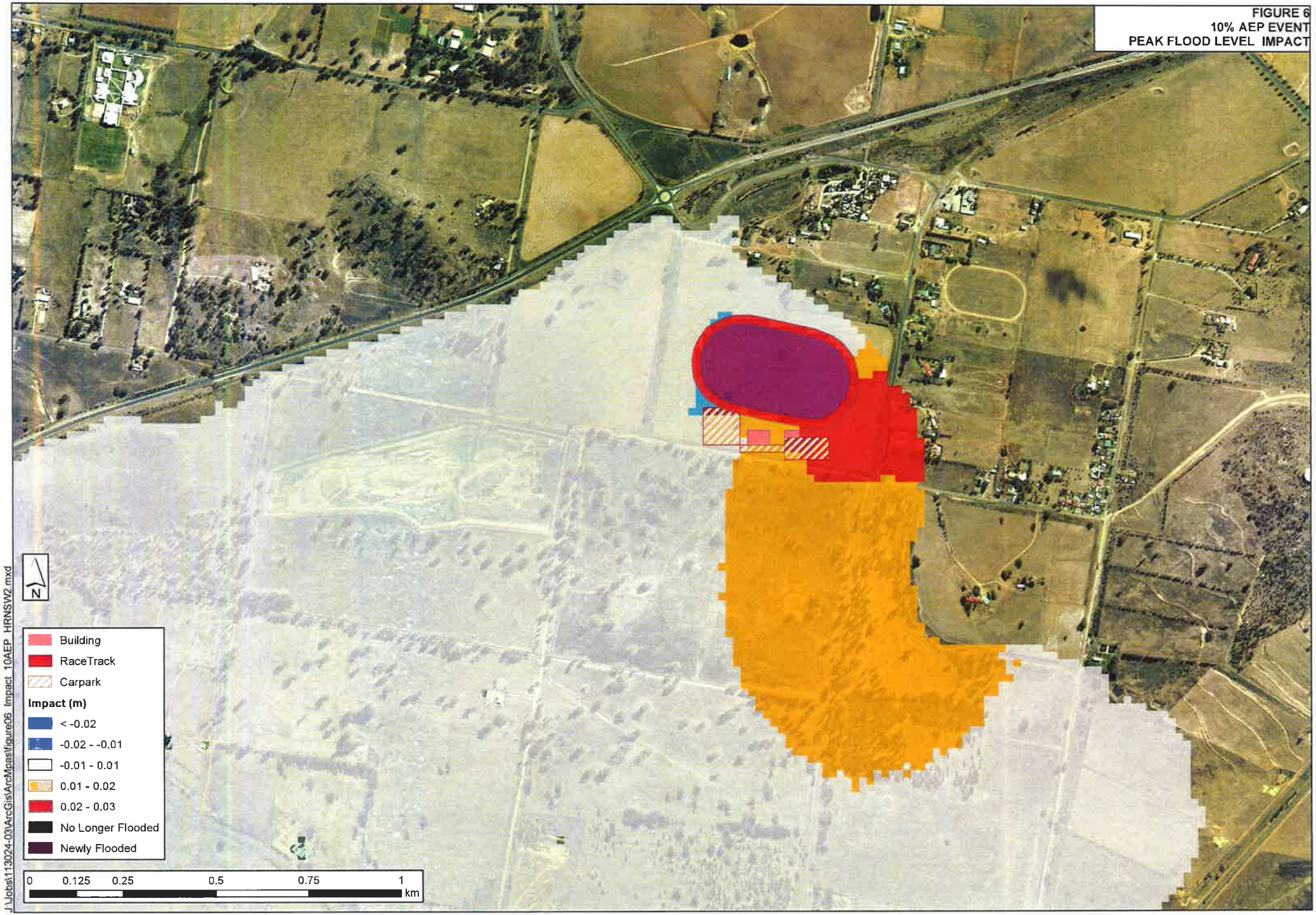


FIGURE 6
10% AEP EVENT
PEAK FLOOD LEVEL IMPACT
N
Building
RaceTrack
Carpark
Impact (m)
< -0.02
-0.02 - -0.01
-0.01 - 0.01
0.01 - 0.02
0.02 - 0,03
No Longer Flooded
Newly Flooded
0 0.125 0.25 0.5 0.75 1
km
J:\Jobs\113024-03\ArcGis\ArcMaps\figure06_Impact_10AEP_HRNSW2.mxd

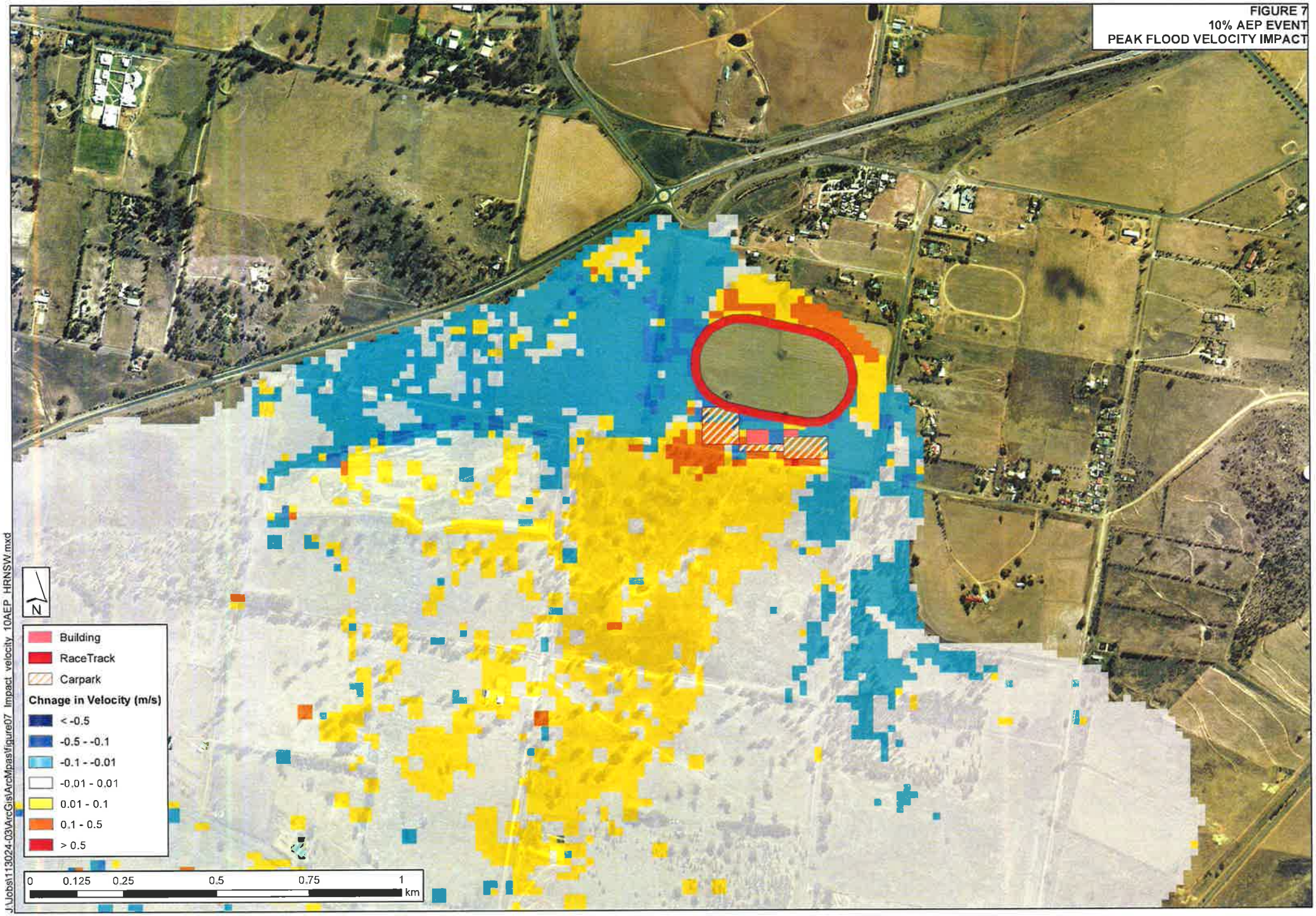


FIGURE 7
10% AEP EVENT
PEAK FLOOD VELOCITY IMPACT
N
Building
RaceTrack
Carpark
Chnage in Velocity (m/s)
< -0.5
-0.5 - -0.1
-0.1 - -0.01
-0.01 - 0.01
0.01 - 0.1
0.1 - 0.5
> 0.5
0 0.125 0.25 0.5 0.75 1
km
J:\Jobs\113024-03\ArcGis\ArcMpas\figure07_Impact_velocity_10AEP_HRNSW.mxd

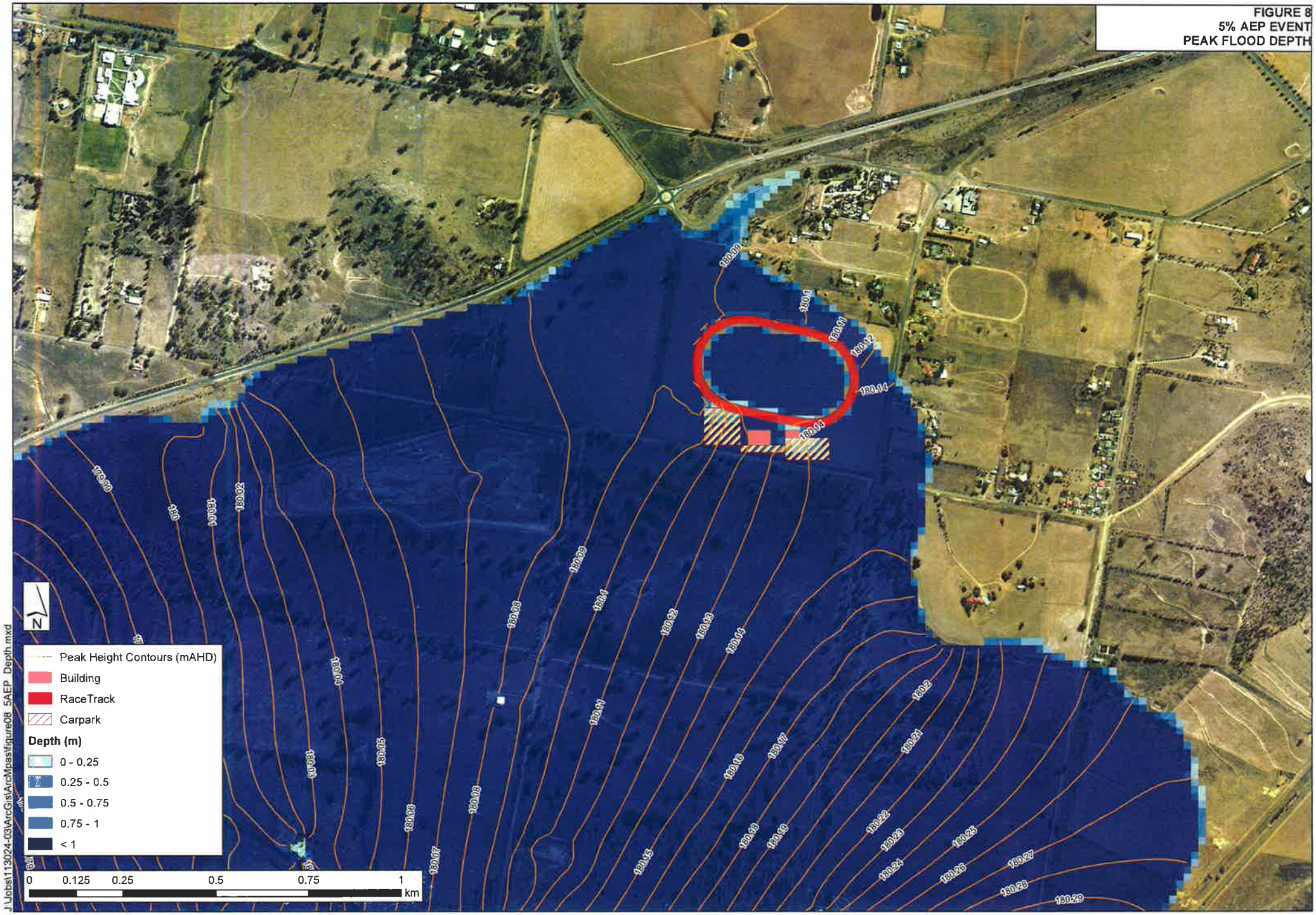


FIGURE 8
5% AEP EVENT
PEAK FLOOD DEPTH
N
Peak Height Contours (mAHD)
Building
RaceTrack
Carpark
Depth (m)
0 - 0.25
0.25 - 0.5
0.5 - 0.75
0.75 - 1
< 1
0 0.125 0.25 0.5 0.75 1
km
J:\Jobs\113024-03\ArcGis\ArcMaps\figure08_5AEP_Depth.mxd

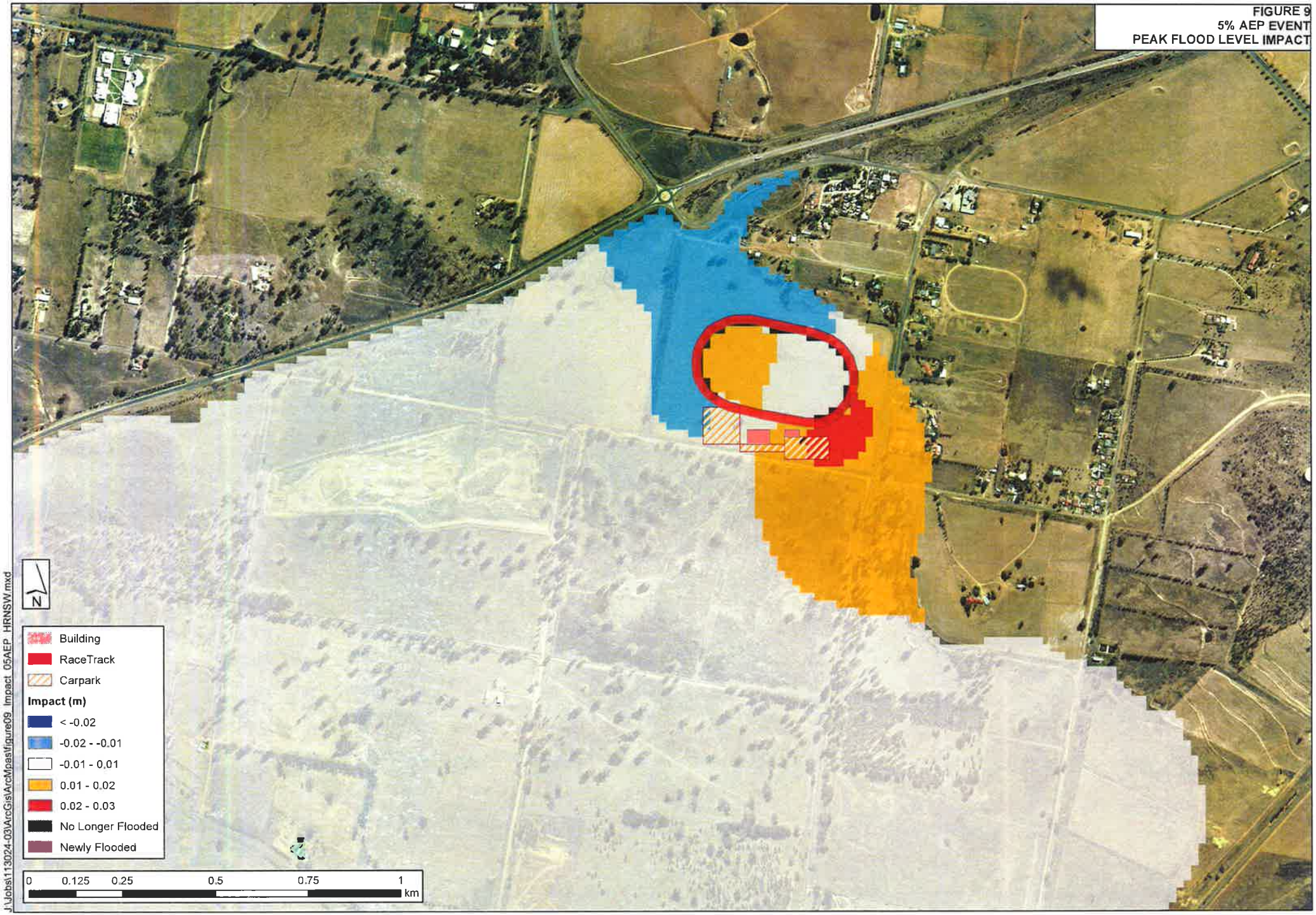


FIGURE 9
5% AEP EVENT
PEAK FLOOD LEVEL IMPACT
N
Building
RaceTrack
Carpark
Impact (m)
< -0.02
-0.02 - -0.01
-0.01 - 0.01
0.01 - 0.02
0.02 - 0.03
No Longer Flooded
Newly Flooded
0
0.125
0.25
0.5
0.75
1
km
J:\Jobs\113024-03\ArcGis\ArcMpeg\figure09_Impact_05AEP_HRNSW.mxd

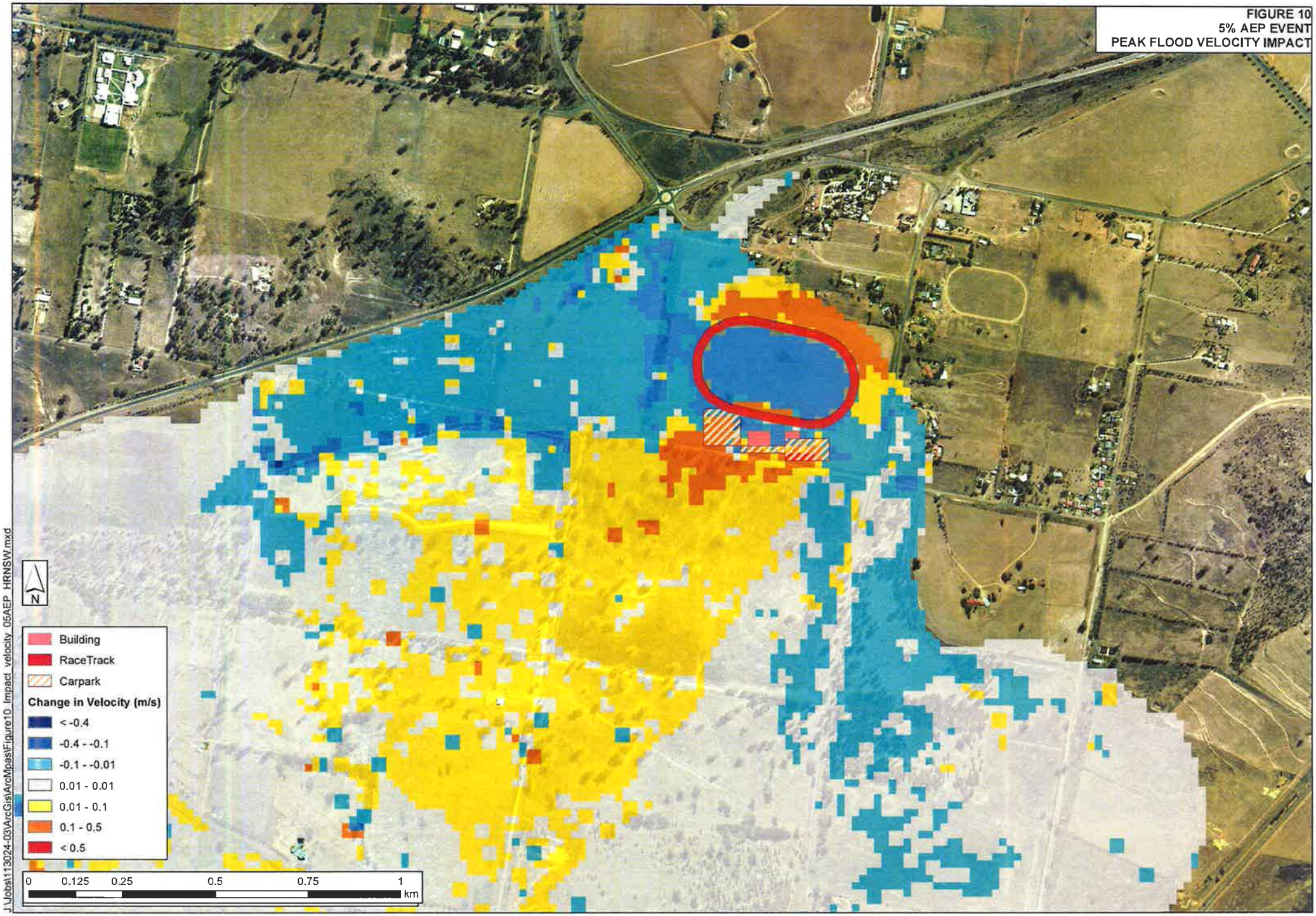
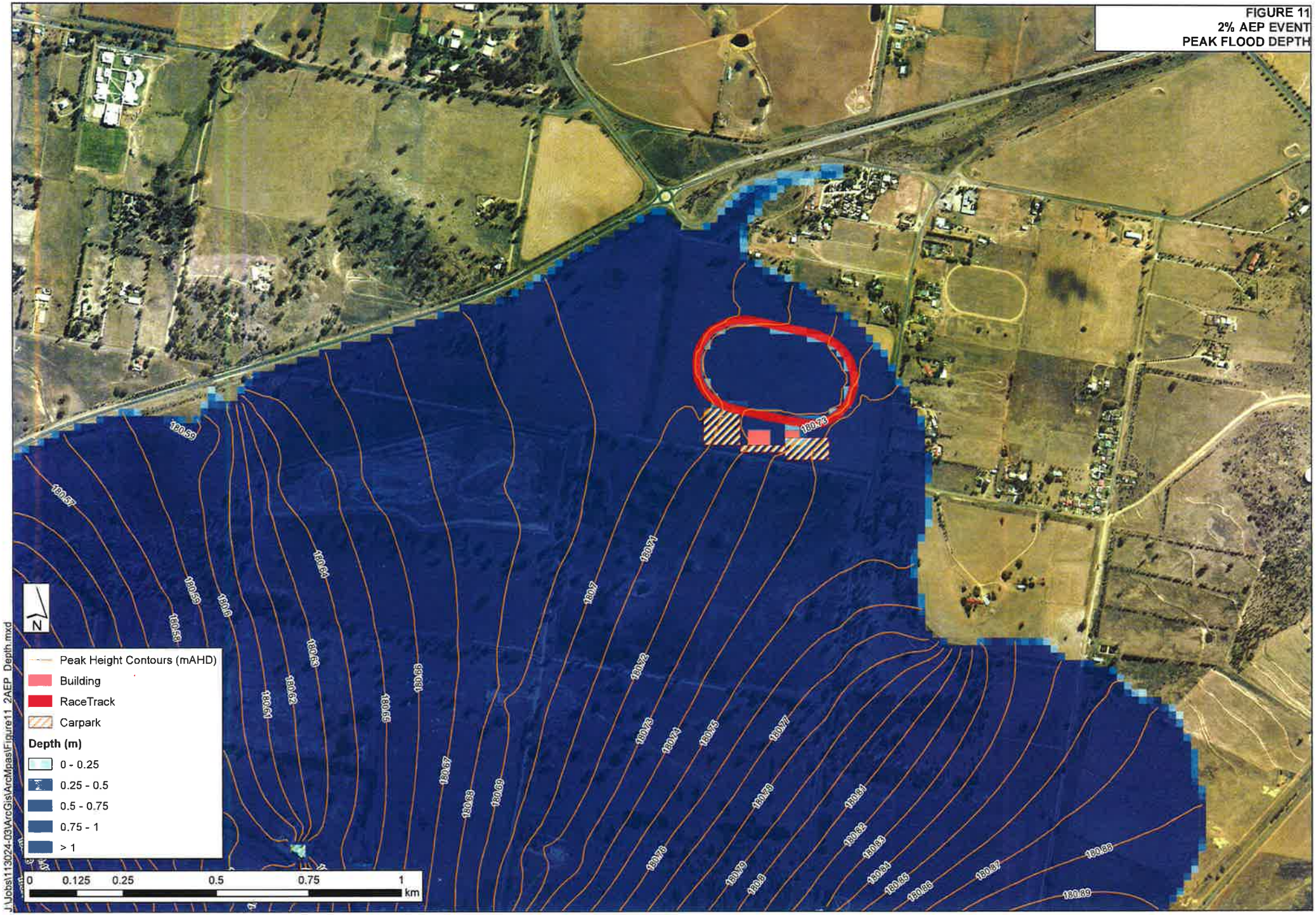


FIGURE 10
5% AEP EVENT
PEAK FLOOD VELOCITY IMPACT
N
Building
RaceTrack
Carpark
Change in Velocity (m/s)
< -0.4
-0.4 - -0.1
-0.1 - -0.01
0.01 - 0.01
0.01 - 0.1
0.1 - 0.5
< 0.5
0
0.125
0.25
0.5
0.75
1
km
J:\Jobs\1113024-03\ArcGis\ArcMaps\Figure10_Impact_velocity_05AEP_HRNSW.mxd

FIGURE 11
2% AEP EVENT
PEAK FLOOD DEPTH



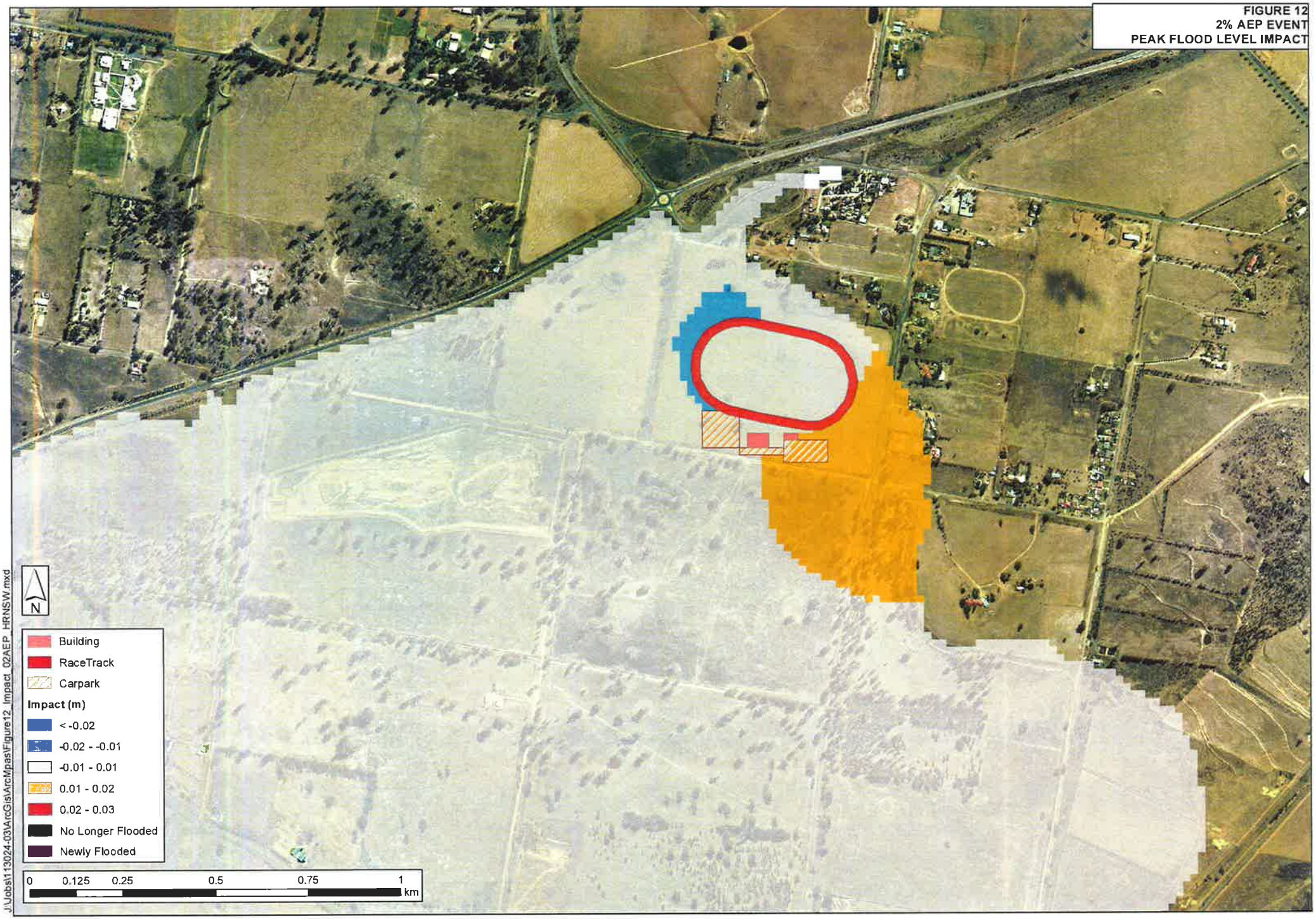
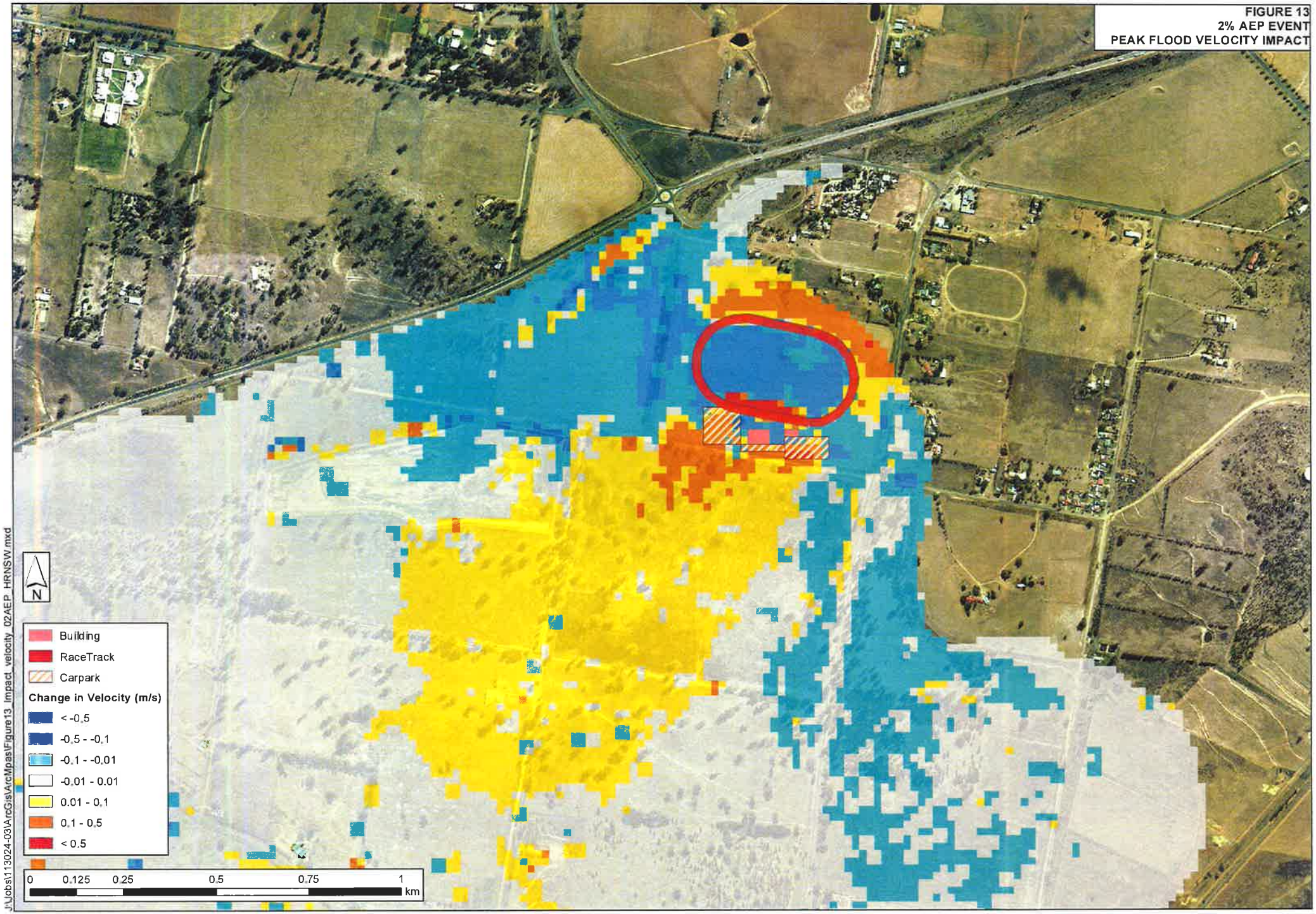


FIGURE 12
2% AEP EVENT
PEAK FLOOD LEVEL IMPACT
N
Building
RaceTrack
Carpark
Impact (m)
< -0.02
-0.02 - -0.01
-0.01 - 0.01
0.01 - 0.02
0.02 - 0.03
No Longer Flooded
Newly Flooded
0
0.125
0.25
0.5
0.75
1
km
J:\Jobs\113024-03\ArcGis\ArcMpas\Figure12_Impact_02AEP_HRNSW.mxd

FIGURE 13
2% AEP EVENT
PEAK FLOOD VELOCITY IMPACT



J:\Jobs\113024-03\ArcGis\ArcMaps\Figure13_Impact_velocity_02AEP_HRNSW.mxd

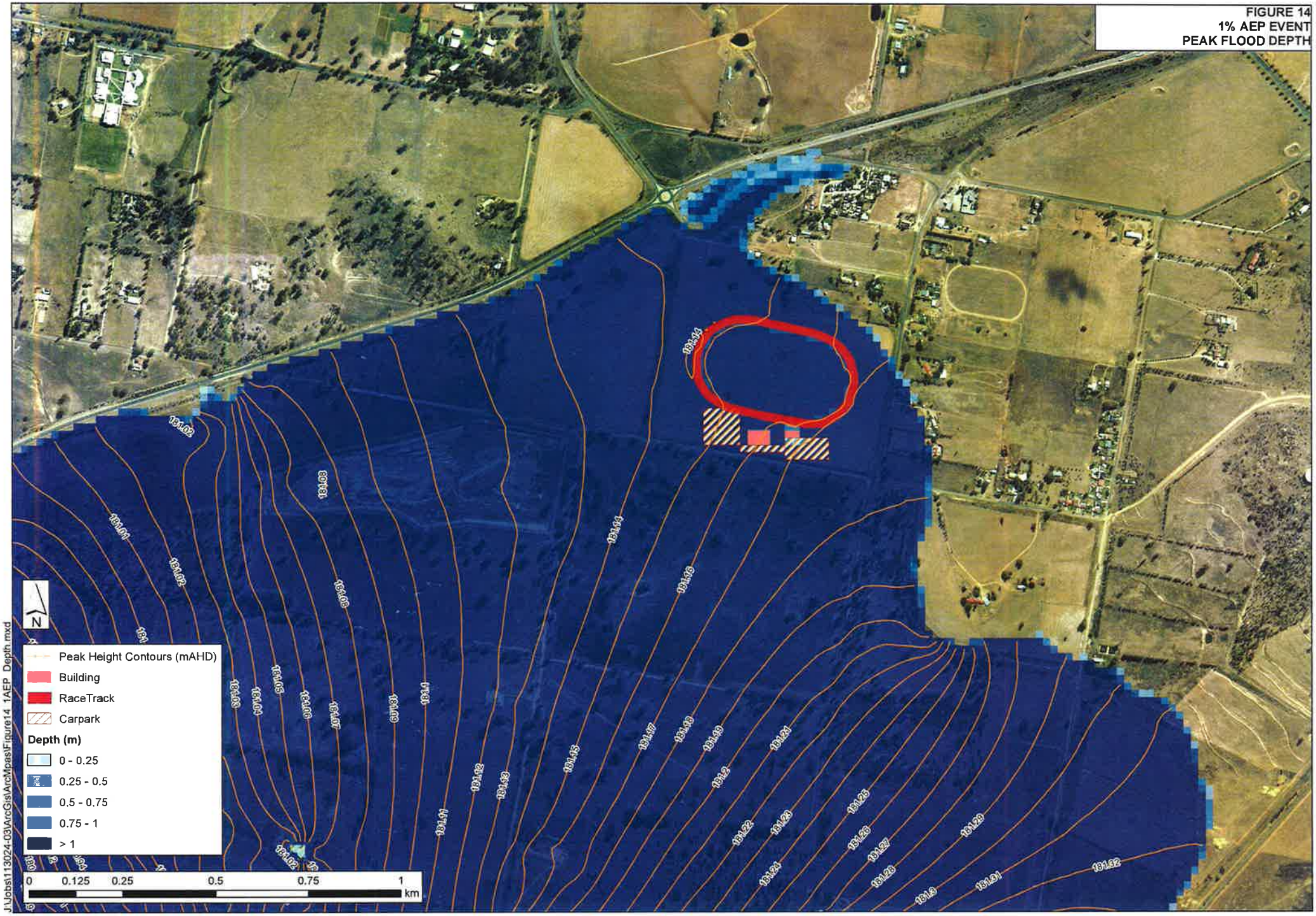


FIGURE 14
1% AEP EVENT
PEAK FLOOD DEPTH
N
Peak Height Contours (mAHD)
Building
RaceTrack
Carpark
Depth (m)
0 - 0.25
0.25 - 0.5
0.5 - 0.75
0.75 - 1
> 1
0 0.125 0.25 0.5 0.75 1
km
J:\Jobs\113024-03\ArcGis\ArcMaps\Figure14 1AEP Depth.mxd

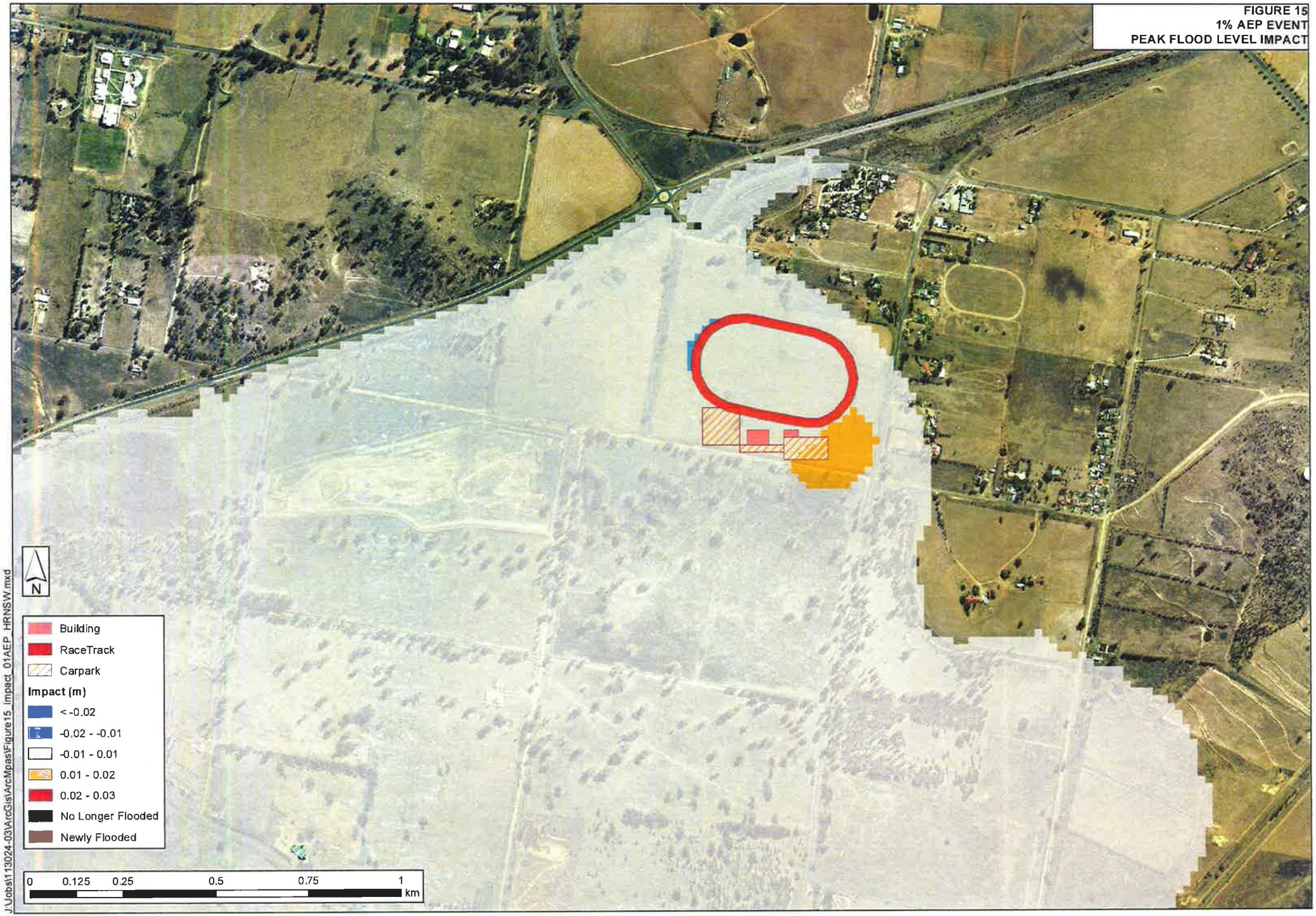


FIGURE 15
1% AEP EVENT
PEAK FLOOD LEVEL IMPACT
N
Building
RaceTrack
Carpark
Impact (m)
< -0.02
-0.02 - -0.01
-0.01 - 0.01
0.01 - 0.02
0.02 - 0.03
No Longer Flooded
Newly Flooded
0 0.125 0.25 0.5 0.75 1
km
J:\Jobs\113024-03\ArcGis\ArcMaps\Figure15_Impact_01AEP_HRNSW.mxd

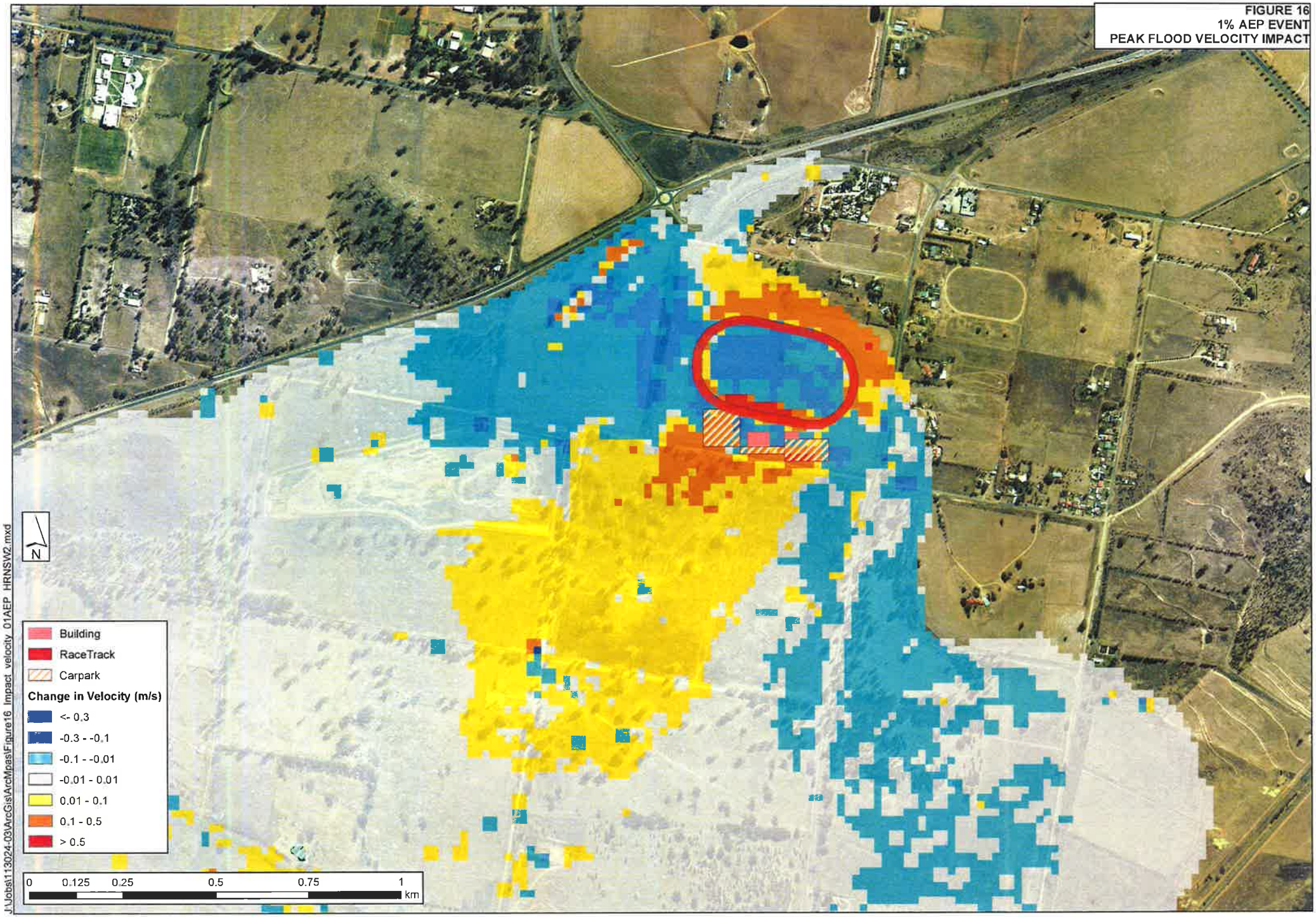


FIGURE 16
1% AEP EVENT
PEAK FLOOD VELOCITY IMPACT
N
Building
RaceTrack
Carpark
Change in Velocity (m/s)
<- 0.3
-0.3 - -0.1
-0.1 - -0.01
-0.01 - 0.01
0.01 - 0.1
0.1 - 0.5
> 0.5
0 0.125 0.25 0.5 0.75 1
km
J:\Jobs\113024-03\ArcGis\ArcMaps\Figure16 Impact velocity 01AEP HRNSW2.mxd

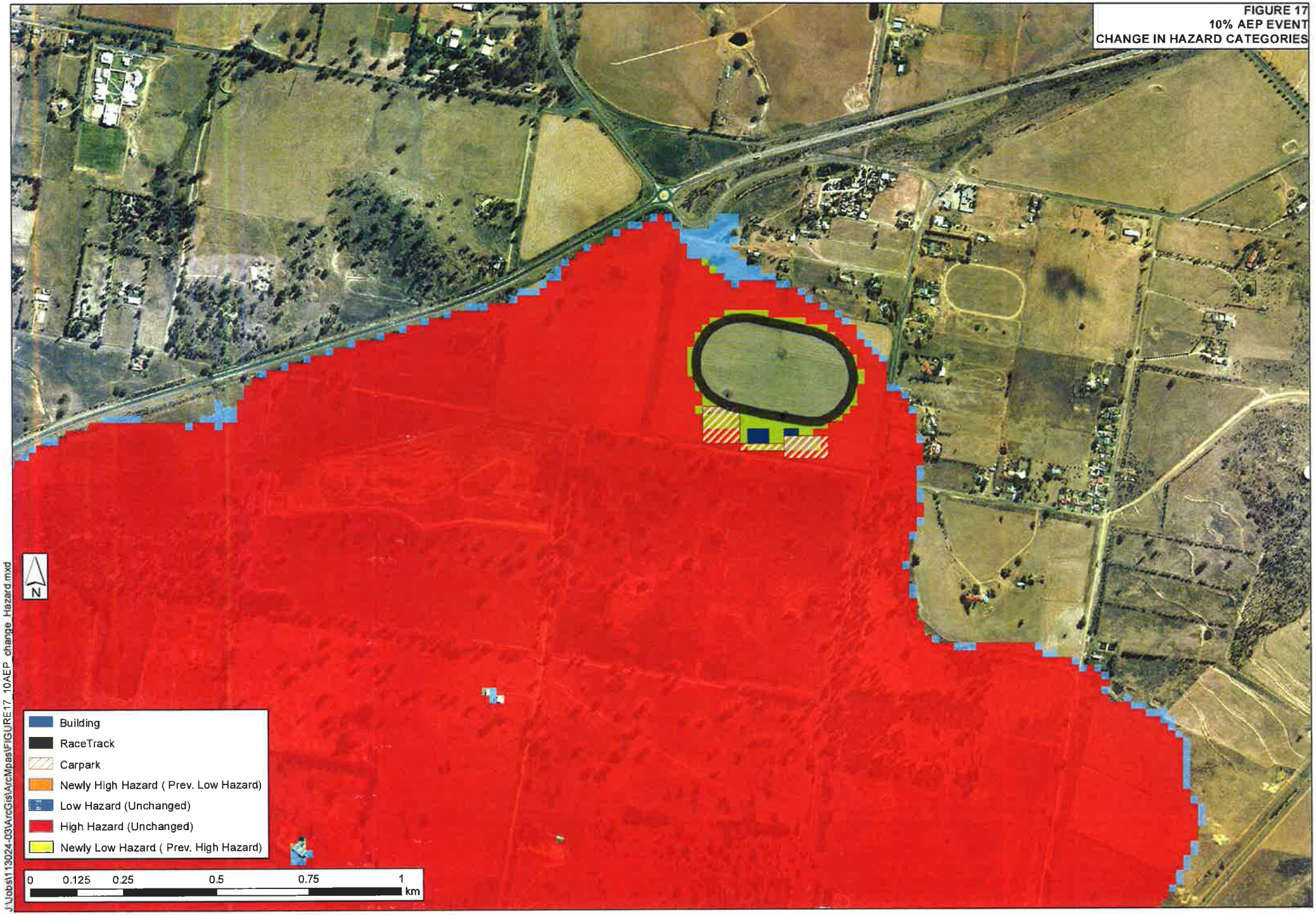


FIGURE 17
10% AEP EVENT
CHANGE IN HAZARD CATEGORIES
N
Building
RaceTrack
Carpark
Newly High Hazard (Prev. Low Hazard)
Low Hazard (Unchanged)
High Hazard (Unchanged)
Newly Low Hazard (Prev. High Hazard)
0 0.125 0.25 0.5 0.75 1
km
J:\Jobs\113024-03\ArcGis\ArcMpas\FIGURE17_10AEP_change_Hazard.mxd

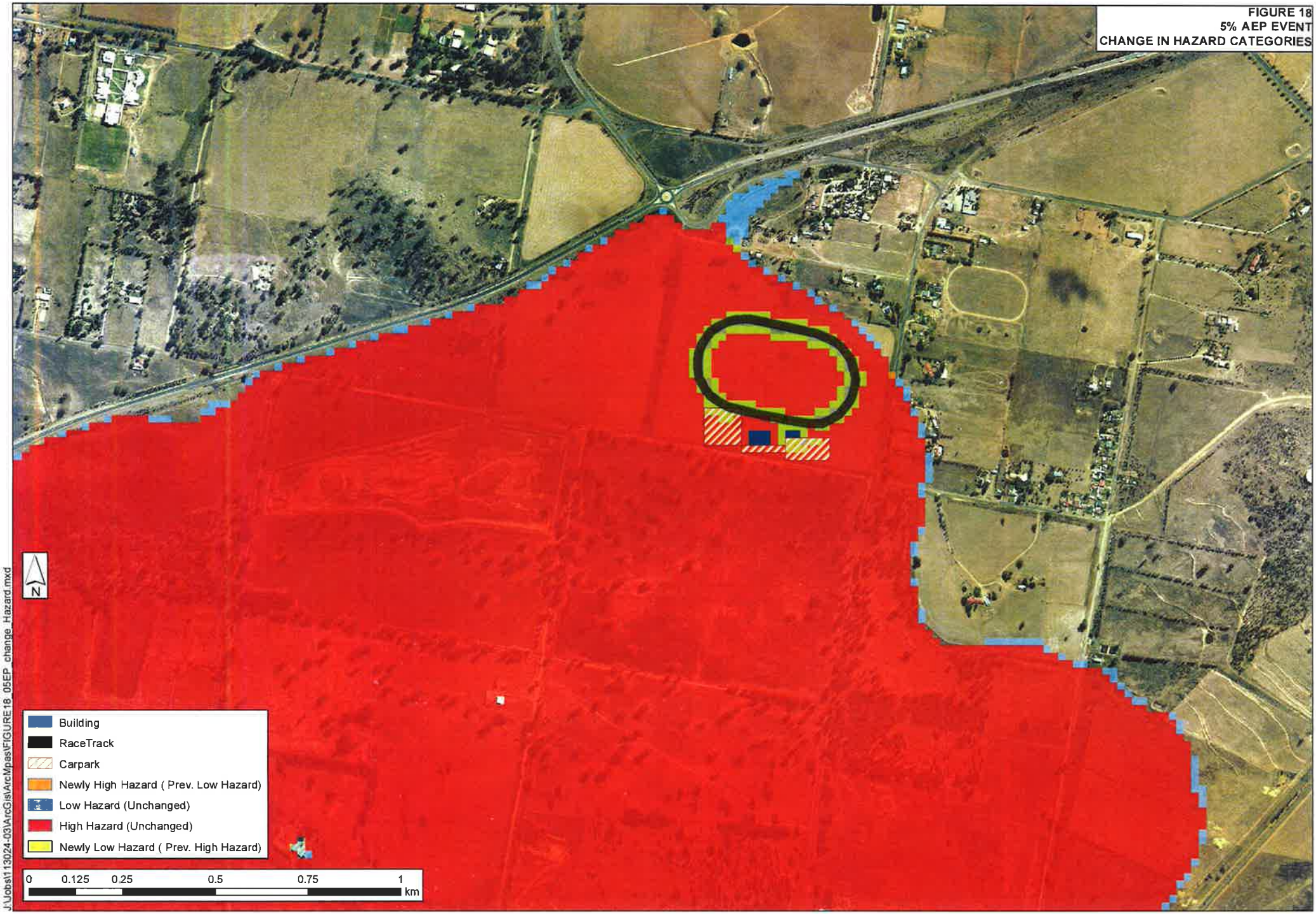


FIGURE 18
5% AEP EVENT
CHANGE IN HAZARD CATEGORIES
N
Building
RaceTrack
Carpark
Newly High Hazard (Prev. Low Hazard)
Low Hazard (Unchanged)
High Hazard (Unchanged)
Newly Low Hazard (Prev. High Hazard)
0 0.125 0.25 0.5 0.75 1
km
J:\Jobs\113024-03\ArcGis\ArcMaps\FIGURE18_05EP_change_Hazard.mxd

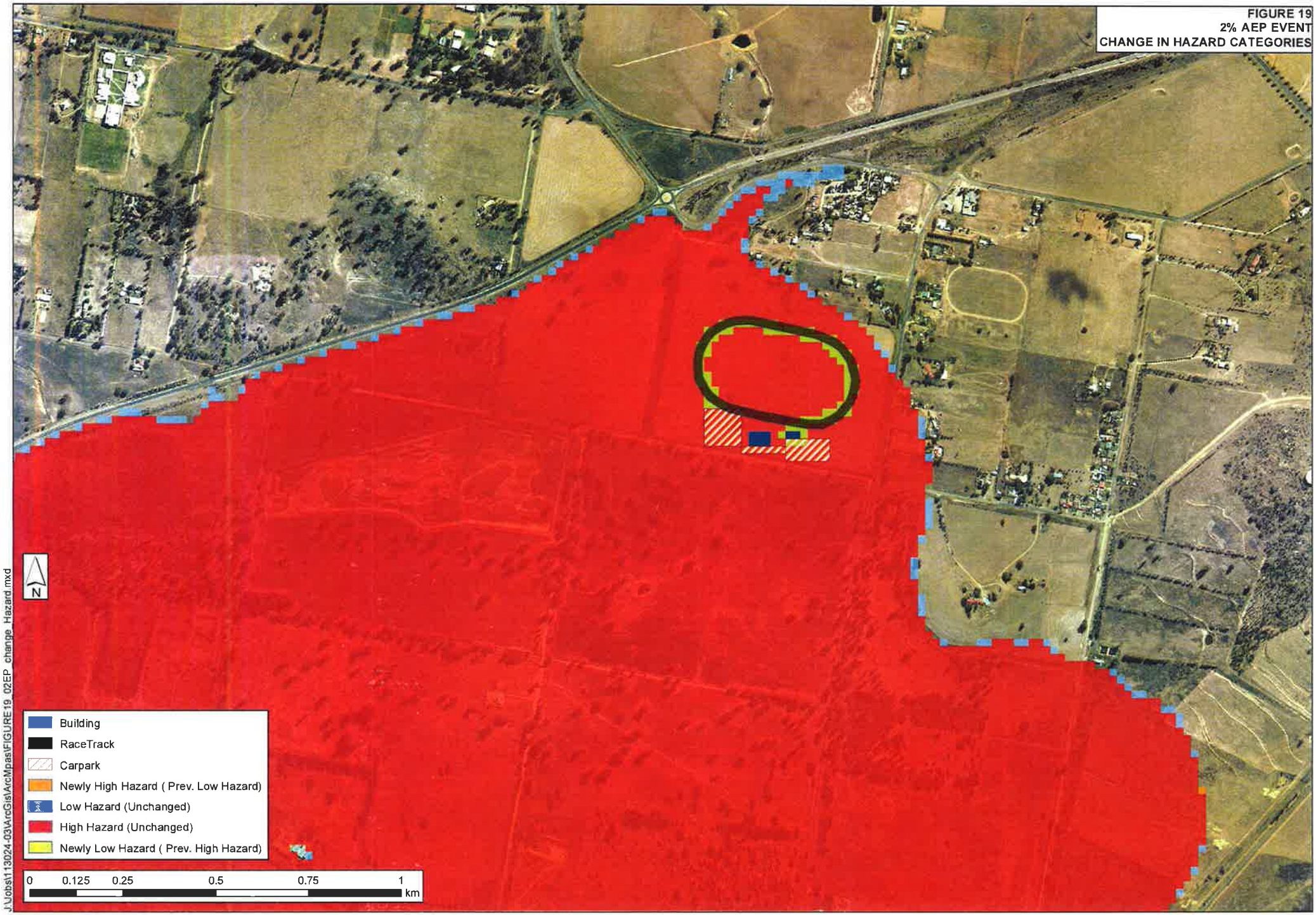


FIGURE 19
2% AEP EVENT
CHANGE IN HAZARD CATEGORIES
N
Building
RaceTrack
Carpark
Newly High Hazard (Prev. Low Hazard)
Low Hazard (Unchanged)
High Hazard (Unchanged)
Newly Low Hazard (Prev. High Hazard)
0 0.125 0.25 0.5 0.75 1
km
J:\Jobs\113024-03\ArcGis\ArcMaps\FIGURE19_02EP_change_Hazard.mxd

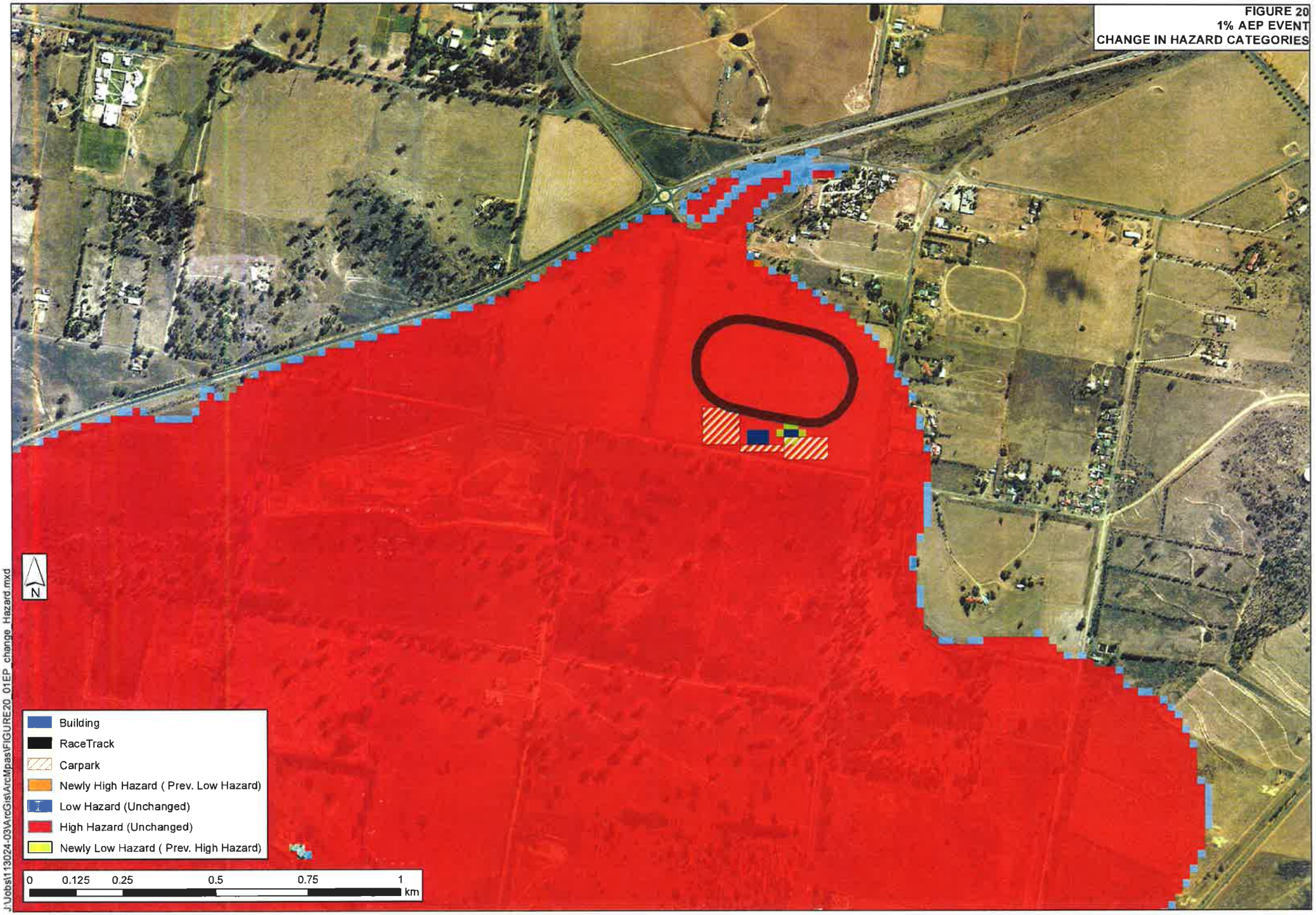


FIGURE 20
1% AEP EVENT
CHANGE IN HAZARD CATEGORIES
N
Building
RaceTrack
Carpark
Newly High Hazard (Prev. Low Hazard)
Low Hazard (Unchanged)
High Hazard (Unchanged)
Newly Low Hazard (Prev. High Hazard)
0 0.125 0.25 0.5 0.75 1
km
J:\Jobs\113024-03\ArcGis\ArcMpas\FIGURE20_01EP_change_Hazard.mxd

Noise Impact Assessment

2014STH020 (DA14/0448)

Harness Racing Facility

Wagga Wagga

ACOUSTICS AND AIR

WAGGA WAGGA HARNESS RACING

NOISE IMPACT ASSESSMENT

REPORT NO. 13330
VERSION A

SEPTEMBER 2014

PREPARED FOR

HARNESS RACING NSW
PO BOX 1034
BANKSTOWN NSW 1885

WILKINSON MURRAY

DOCUMENT CONTROL

Version	Status	Date	Prepared By	Reviewed By
A	Draft	4 September 2014	Nic Hall	John Wassermann
A	Final	4 September 2014	Nic Hall	John Wassermann

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TABLE OF CONTENTS

GLOSSARY OF ACOUSTIC TERMS

Most environments are affected by environmental noise which continuously varies, largely as a result of road traffic. To describe the overall noise environment, a number of noise descriptors have been developed and these involve statistical and other analysis of the varying noise over sampling periods, typically taken as 15 minutes. These descriptors, which are demonstrated in the graph below, are here defined.

Maximum Noise Level (L_{Amax}) – The maximum noise level over a sample period is the maximum level, measured on fast response, during the sample period.

L_{A1} – The L_{A1} level is the noise level which is exceeded for 1% of the sample period. During the sample period, the noise level is below the L_{A1} level for 99% of the time.

L_{A10} – The L_{A10} level is the noise level which is exceeded for 10% of the sample period. During the sample period, the noise level is below the L_{A10} level for 90% of the time. The L_{A10} is a common noise descriptor for environmental noise and road traffic noise.

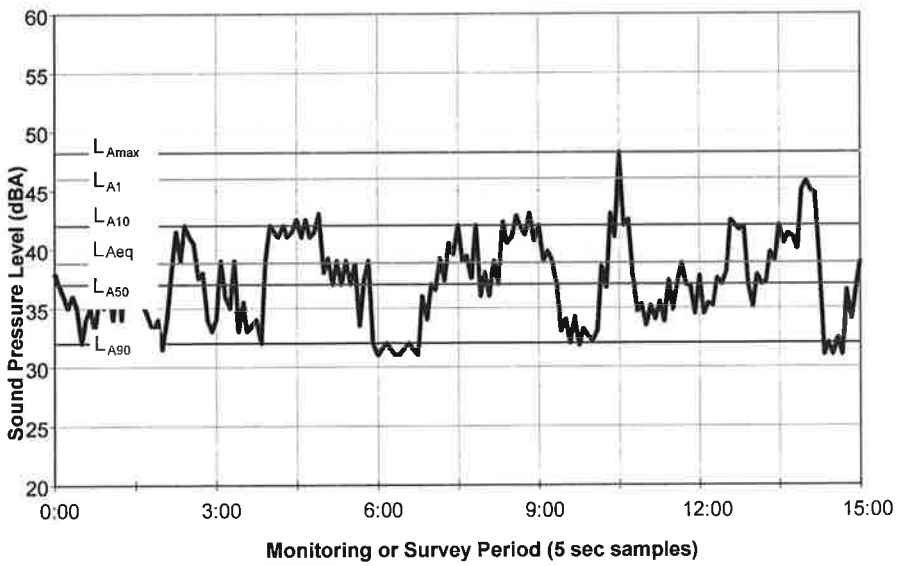
L_{A90} – The L_{A90} level is the noise level which is exceeded for 90% of the sample period. During the sample period, the noise level is below the L_{A90} level for 10% of the time. This measure is commonly referred to as the background noise level.

L_{Aeq} – The equivalent continuous sound level (L_{Aeq}) is the energy average of the varying noise over the sample period and is equivalent to the level of a constant noise which contains the same energy as the varying noise environment. This measure is also a common measure of environmental noise and road traffic noise.

ABL – The Assessment Background Level is the single figure background level representing each assessment period (daytime, evening and night time) for each day. It is determined by calculating the 10th percentile (lowest 10th percent) background level (L_{A90}) for each period.

RBL – The Rating Background Level for each period is the median value of the ABL values for the period over all of the days measured. There is therefore an RBL value for each period – daytime, evening and night time.

Typical Graph of Sound Pressure Level vs Time



1 INTRODUCTION AND PROJECT DESCRIPTION

1.1 Introduction

The Wagga Wagga Harness Racing Club (WWHRC) are proposed to establish a new harness racing track on a parcel of rural land approximately 6 kilometres north of the Wagga Wagga CBD.

Wilkinson Murray Pty Ltd (WMPL) has been commissioned to conduct an assessment of potential noise impacts associated with the construction and operation of a new harness racing track.

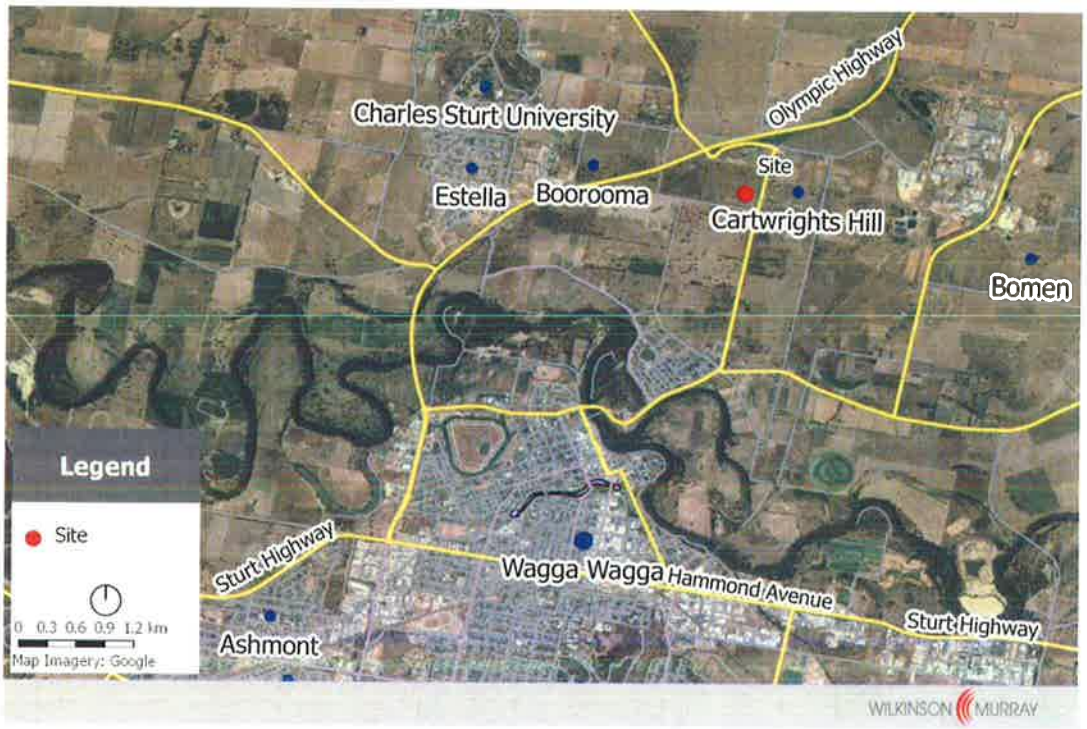
This assessment has been conducted in accordance with the following NSW EPA guidelines:

- *Noise Guide for Local Government* (EPA, 2013);
- *NSW Industrial Noise Policy* (EPA, 2000);
- *NSW Road Noise Policy* (DECCW, 2011); and,
- *Interim Construction Noise Guideline* (DECC, 2009)

1.2 Site Location

The site is located on the north western corner of the intersection of Hampden Avenue and Cooramin Street at Cartwrights Hill, approximately 6 kilometres to the north of Wagga Wagga. The site location is shown in Figure 1-1.

Figure 1-1 Site Location



1.3 Surrounding Land Use and Sensitive Receivers

The land use surrounding the site is predominantly rural. The land to the south and west of the site is vacant rural land, while a number of rural dwellings are located to the north and east of the site. The most affected receivers have been identified and are presented in Table 1-1 and Figure 1-2.

Table 1-1 Sensitive Receivers

Receiver	Address
R1	404 Hampden Avenue
R2	390 Hampden Avenue
R3	371 Hampden Avenue
R4	369 Hampden Avenue
R5	355 Hampden Avenue

Figure 1-2 Sensitive Receivers

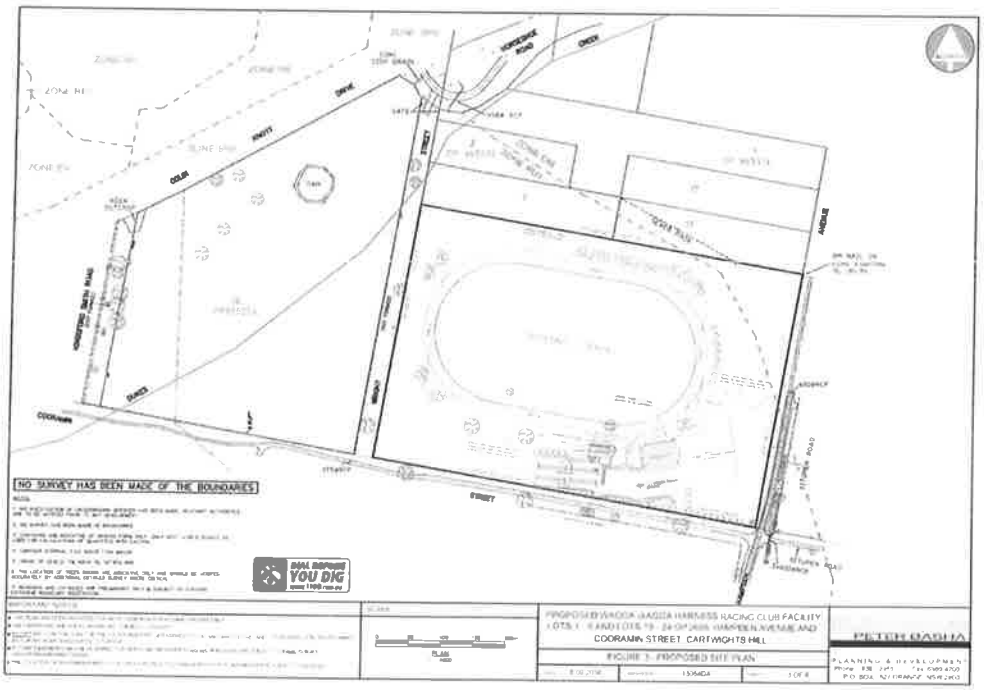
1.4 Project Description

The proposed project involves construction of the following:

- New harness racing track and support structures including track lighting, stewards towers and podium;
- Clubhouse including:
    - Lounge, function and meeting rooms and tote
    - Kitchen and bar facilities and associated cool room and dry store
    - Administration area comprising offices and reception
    - Male and female toilets
    - External grandstand style seating and elevated viewing platform
    - Broadcast box on first floor
- Stable complex comprising:
    - 89 stables
    - Public viewing aisles
    - Wash bays, swab bays and vet room
    - Male and female toilets and change rooms
    - Office, stewards room and owner's/trainer's room
- External support areas including parade ring, marquee area and machinery area; and,
- Vehicle areas including 150 space car-park and 60 space truck/trailer parking.

The proposed site plan is shown in Figure 1-3.

Figure 1-3 Site Plan



1.4.1 Typical Operations

The annual racing calendar for the WWHRC varies from year to year, and typically involves approximately 35 racing events per year.

To provide an indication of the typical hours of operation for the site, the 2014 racing calendar consists of:

- 20 daytime meetings, run during the hours 1.00pm til 6.00pm;
- 4 twilight meetings, run during the hours 5.30pm til 8.00pm; and,
- 11 night meetings, run during the hours 6.30pm and 10.30pm.

No events are expected to occur after midnight or before 7.00am.

Spectator attendance at regular race meetings is typically around 150 people. The WWHRC conducts two drawcard race meetings each year which are:

- The Carnival of Cups which is held in March and attracts approximately 2000 people; and,
- The Saturday Night May Meeting which attracts approximately 1000 people.

In addition to the race meetings identified above, it is hoped that the new facility attracts other events such as:

- Markets;
- Car shows;
- Social events and functions within the clubhouse building;
- Cycling races; and
- Other equine events such as gymkhanas and stock horse events.

1.5 Assessment Methodology

The focus of the following noise impact assessment is typical race meetings and other small events which attract in the order of 100 – 200 spectators/patrons. This represents the vast majority of the intended use of the proposed development.

Consideration will also be given to extraordinary events such as the two annual drawcard race meetings. The assessment of these events will not be as detailed as that for typical events, as it is only intended to provide a conservative estimate of maximum noise levels at receivers as opposed to demonstrating compliance with typical noise criteria. It is expected that noise levels at nearby receivers from extraordinary events will exceed typical noise criteria, and that an Events Noise Management Plan would be required to allow these events to be held.

2 EXISTING AMBIENT NOISE LEVELS

To establish existing noise levels in the area surrounding the development, unattended noise monitoring was conducted between 6 and 15 December 2013. The noise monitoring location is shown in Figure 2-1.

Figure 2-1 Noise Monitoring Location

The noise monitoring equipment used for these measurements consisted of an environmental noise logger set to A-weighted, fast response. This equipment is capable of remotely monitoring and storing noise level descriptors for later detailed analysis. The equipment calibration was checked before and after the survey and no significant drift was noted.

From the background noise levels (L_{A90}) the Rating Background Levels (RBLs) were determined using the methodology recommended in the NSW *Industrial Noise Policy*.

The existing ambient noise levels are presented in Table 2-1. Daily plots of the noise logger data are presented in Appendix A.

Table 2-1 Existing Ambient Noise Levels

Time Period	Noise Levels (dBA)	
	L_{Aeq}	RBL
Day (7.00am – 6.00pm)	54	36
Evening (6.00pm – 10.00pm)	54	33
Night (10.00pm – 7.00am)	50	29*

* The INP recommends that if the calculated RBL is less than 30 dBA, then it is set to 30 dBA.

3 NOISE CRITERIA

This section of the report discusses noise criteria appropriate for the assessment of noise emissions from the development.

3.1 Operational Noise Criteria

3.1.1 Noise Criteria for Harness Racing and Other Events

To assist local government to assess potential noise issues relating to developments, the NSW EPA has prepared the *Noise Guide for Local Government* (NGLG). The NGLG suggest that councils develop an intrusive noise criterion that limits the permissible level of noise from commercial or industrial premises to no more than the background noise level plus 5 dBA when measured over a 15 minute period ($L_{Aeq,\ 15min}$).

The background noise level is the Rating Background noise Level (RBL) during the relevant time period as presented in the previous section of this report. Table 3-1 presents the intrusive noise criteria for this project.

Table 3-1 Project Specific Intrusive Noise Criteria – All Residential Receivers

Time Period	RBL	Intrusiveness Criterion ($L_{Aeq,\ 15min}$)
Day (7.00am – 6.00pm)	36	41
Evening (6.00pm – 10.00pm)	33	38
Night (10.00pm – 7.00am)	30	35

The intrusive noise criterion has been developed to protect the acoustic amenity of residential receivers from noise emissions from activities which have the potential to operate on a continual basis and may be operating for the purposes of individual, rather than community benefit. For a development which is not expected to operate every day, and which has the potential to benefit the community, there is a case for the relaxation of noise goals.

WMPL recommends that an Events Noise Management Plan (ENMP) is developed to minimise any noise impacts on nearby residents while permitting the WWHRC to conduct occasional major events. The NGLG provides guidance, including a number of case studies, on a number of ways to develop an ENMP for a development of this kind. It should be noted that a critical factor in the success of an ENMP is that it is developed through consultation between WWHRC, Wagga Wagga City Council (WWCC) and the community, especially those residents who live near the development.

3.1.2 Noise Criteria for Activities Related to the Operation of Licenced Premises

The NSW Office of Liquor, Gaming and Racing (OLGR) noise condition states that:

> *"The L_{A10} noise level emitted from the licensed premises shall not exceed the background noise level in any Octave Band Centre Frequency (31.5Hz-8kHz inclusive) by more than 5dB between 7.00am and 12.00 midnight at the boundary of any affected residence.*
>
> *The L_{A10} noise level emitted from the licensed premises shall not exceed the background noise level in any Octave Band Centre Frequency (31.5Hz-8kHz inclusive) between 12.00 midnight and 7.00am at the boundary of any affected residence.*
>
> *Notwithstanding compliance with the above, the noise from the licensed premises shall not be audible within any habitable room in any residential premises between the hours of 12.00 midnight and 7.00am.*

Background noise levels in octave bands previously measured by WMPL have been adopted for the development of assessment criteria for this project. The octave band levels have been corrected to align with the measured A-weighted RBLs. The octave band background noise levels are presented in Table 3-2.

Table 3-2 Background Noise Levels in Octave Bands

Time Period	RBL	Octave Band Background Level								
		31.5	63	125	250	500	1k	2k	4k	8k
Day (7.00am – 6.00pm)	36	40	45	41	38	34	27	27	17	16
Evening (6.00pm – 10.00pm)	33	37	42	38	35	31	24	24	14	13
Night (10.00pm – 7.00am)	30	34	39	35	32	28	21	21	11	10

As per the operating hours presented in Section 1.4.1 activities on the site are not proposed to occur past 12.00 midnight or before 7.00am. Therefore, in accordance with the OLGR noise condition, noise emissions associated with the operation of licenced areas of the development should comply with the criteria presented in Table 3-3.

Table 3-3 Licenced Premises Noise Criteria – All Residential Receivers

Time Period	Octave Band LA10 Criteria								
	31.5	63	125	250	500	1k	2k	4k	8k
Day (7.00am – 6.00pm)	45	50	46	43	39	32	32	22	21
Evening (6.00pm – 10.00pm)	42	47	43	40	36	29	29	19	18
Early Night (10.00pm – midnight)	39	44	40	37	33	26	26	16	15

3.1.3 Sleep Disturbance

Noise sources that operate over short durations at night have the potential to cause sleep disturbance despite complying with criteria based upon LAeq and LA10 noise descriptors. For this reason, the NGLG suggests that a screening test be applied such that if the LA1, 1min or LAmax noise levels do not exceed the background noise level by more than 15 dBA, then it is unlikely that the development has the potential to cause sleep disturbance.

The EPA's Application Notes state:

"Research on sleep disturbance is reviewed in the NSW Road Noise Policy. This review concluded that the range of results is sufficiently diverse that it was not reasonable to issue new noise criteria for sleep disturbance.

From the research, the EPA recognised that the current sleep disturbance criterion of an $L_{A1,(1\ min)}$ not exceeding the $L_{A90,(15\ min)}$ by more than 15 dB(A) is not ideal. Nevertheless, as there is insufficient evidence to determine what should replace it, the EPA will continue to use it as a guide to identify the likelihood of sleep disturbance. This means that where the criterion is met, sleep disturbance is not likely, but where it is not met, a more detailed analysis is required."

Based on the measured night time RBLs, sleep disturbance criteria have been established and are summarised in Table 3-4.

Table 3-4 Project-Specific Sleep Disturbance Criteria

Time Period	RBL	Sleep Disturbance Noise Criteria, L_{Amax} (dBA)
Night (10.00pm – 7.00am)	30	45

Additionally the NSW Road Noise Policy states that from the research on sleep disturbance to date it can be concluded that:

- Maximum internal noise levels below 50-55dBA are unlikely to cause awakening reactions; and
- One or two noise events per night, with maximum internal noise levels of 65-70dBA, are not likely to affect health and wellbeing significantly.

Assuming that the typical noise reduction through a bedroom facade with normally open windows is 10dBA, then an external noise level of 60-65dBA is unlikely to cause sleep disturbance. As such it should be noted that the Project-specific sleep disturbance criterion is considerably lower than 60-65dBA.

3.2 Traffic Noise Criteria

The *NSW Road Noise Policy* (RNP) provides guidance on assessing road traffic noise impacts from traffic generating developments. The RNP road traffic noise assessment criteria for residential land uses are presented in Table 3-5.

In addition to the criteria in Table 3-5, the RNP advises that in cases where existing levels of road traffic noise exceed the applicable criteria, and that a development has the potential to increase road traffic noise levels; a an increase of up to 2 dBA represents a minor impact that is considered barely perceptible to the average person.

The most affected residents for road traffic noise increases resulting from this development are those on Hampden Avenue north of Cooramin Street and those on Horseshoe Road between Hampden Avenue and The Olympic Highway. Hampden Avenue and Horseshoe Road are classified as 'sub-arterial' roads by the RNP as they form a link between the Wagga Wagga CBD and the Olympic Highway.

Table 3-5 Road Traffic Noise Criteria

Road Category	Type of project/land use	Assessment Criteria - dBA	
		Day (7am – 10pm)	Night (10pm – 7am)
Freeway/ arterial/ sub-arterial roads	Existing residences affected by noise from **new** freeway/arterial/sub-arterial road corridors	$L_{Aeq,\ 15\ hour}$ 55 (external)	$L_{Aeq,\ 9\ hour}$ 50 (external)
	Existing residences affected by noise from **redevelopment** of existing freeway/arterial/sub-arterial roads	$L_{Aeq,\ 15\ hour}$ 60 (external)	$L_{Aeq,\ 9\ hour}$ 55 (external)
	Existing residences affected by **additional traffic** on existing freeway/arterial/sub-arterial roads generated by land use developments		
Local roads	Existing residences affected by noise from **new** local road corridors	$L_{Aeq,\ 1\ hour}$ 55 (external)	$L_{Aeq,\ 1\ hour}$ 50 (external)
	Existing residences affected by noise from **redevelopment** of existing local roads		
	Existing residences affected by **additional traffic** on existing local roads generated by land use developments		

Note: Land use developers must meet internal noise goals in the Infrastructure SEPP (Department of Planning NSW 2007) for sensitive developments near busy roads.

3.3 Construction Noise Criteria

The NSW EPA's *Interim Construction Noise Guidelines (ICNG)* recommends noise management levels (NML) to reduce the likelihood of noise impacts arising from construction activities.

The ICNG NML for residential receivers are shown in Table 3-6.

Table 3-6 ICNG Noise Management Levels for Residential Receivers

Time of Day	Management Level $L_{Aeq,15min}$	How to Apply
Recommended Standard Hours: Monday to Friday 7am to 6pm Saturday 8am to 1pm No work on Sundays or Public Holidays	Noise affected RBL + 10 dBA	The noise affected level represents the point above which there may be some community reaction to noise. • Where the predicted or measured $L_{Aeq,15min}$ is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. • The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
	Highly noise affected 75 dBA	The highly noise affected level represents the point above which there may be strong community reaction to noise. • Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account: • times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid-morning or mid-afternoon for works near residences; • if the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
Outside recommended standard hours	Noise affected RBL + 5 dB	• A strong justification would typically be required for works outside the recommended standard hours. • The proponent should apply all feasible and reasonable work practices to meet the noise affected level. • Where all feasible and reasonable practices have been applied and noise is more than 5dB(A) above the noise affected level, the proponent should negotiate with the community. • For guidance on negotiating agreements see section 7.2.2.

It is expected that all construction activities will be conducted within standard construction hours. Based on the RBLs in Table 2-1, the construction noise management levels for this project are presented in Table 3-7.

Table 3-7 Project Specific Construction NML

Receiver	Acceptable $L_{Aeq,15min}$ Noise Level (Standard daytime construction hours)
R1 – R5	46

4 OPERATIONAL NOISE ASSESSMENT

4.1 Noise Modelling Methodology and Assumptions

Operational noise emissions from the site were modelled using the "CadnaA" acoustic noise prediction software. Factors that were addressed in the noise modelling are:

- Noise source levels and locations;
- Shielding from structures;
- Noise attenuation due to geometric spreading;
- Ground absorption; and,
- Atmospheric absorption.

Based on observations of the existing WWHRC site, the dominant noise source associated with the operation of this facility during a typical race meeting is the noise from patrons and the Public Address (PA) system during races. In addition to the racing activities, the use of the car-parks is considered the next most significant source of nose.

Since peak noise levels generated by racing activities and use of the car-parks are not expected to occur concurrently, these noise sources have been assessed in isolation of each other.

4.2 Assessment of Noise from Typical Race Meetings

During a visit to the existing WWHRC track during a typical race meeting, it was noted that the noise from the PA system was dominant over that of the patrons during races, and the typical duration of elevated noise levels associated with races was less than five minutes. Therefore, the assessment of noise emissions during typical race meetings will focus on the PA system.

Continuous sound power levels of PA speakers at the existing WWHRC site were measured and found to be 97 dBA for each speaker. Since the longest race call is expected to be less than five minutes, the SWL of each speaker has been reduced by 5 dBA to account for them not being active for an entire 15 minute assessment period. It has been assumed that 10 PA speakers will be placed around the podium, mounting, pavilion and viewing areas.

The predicted noise levels at nearby receivers due to race activities are presented in Table 4-1.

Table 4-1 Predicted Receiver Noise Levels During Typical Race Meetings

Receiver	Predicted Level ($L_{Aeq, 15min}$)	Criteria			Exceedance
		Day 7am-6pm	Evening 6pm-10pm	Night 10pm-7am	
R1	37	41	38	35	2
R2	36	41	38	35	1
R3	36	41	38	35	1
R4	34	41	38	35	-
R5	32	41	38	35	-

Review of Table 4-1 shows that the predicted noise levels at nearby receivers during typical race events exceed the night time criteria at R1 by 2 dBA and at R2 and R3 by 1 dBA. A 2 dBA

exceedance is considered minor and would be barely perceptible by the average person, whereas a 1 dBA exceedance is considered negligible and would not be noticeable by the average person.

Noise levels at receivers due to the operation of the PA can be mitigated by good PA system design. Since PA speakers are highly directional, they should be located in such a way that they point away from receivers. The site layout is well suited to this design concept as there are no sensitive receives to the south or west of the site. Therefore, the PA speakers should be located to the north and east of the spectator areas and point to the south and west.

It should be noted that the predicted noise levels in Table 4-1 represent the worst case noise levels expected at nearby receivers during typical race meetings. WMPL's experience of harness racing facilities of this size is that noise levels in between races are significantly lower than those during the running of races. This difference could be as much as 20 dBA; in which case, activities on the site would be inaudible at nearby receivers.

4.3 Assessment of Noise from Major Race Meetings

Since measurements of the PA system at the existing WWHRC were conducted during a typical race meeting, it is difficult to predict noise levels at receivers during major race meetings. Noise levels at receivers during these events are still expected to be dominated by the PA system, which would likely need to be operated at a greater amplification level due to the likely increase in crowd noise.

Since the major race meetings have approximately 10 times the number of spectators, it is reasonable to expect that the worst case $L_{Aeq,\ 15min}$ noise levels at nearby receivers could be as much as 10 – 15 dBA higher than those during a typical race meeting. For the purposes of assessing the worst case impacts, it has been assumed that noise levels at receivers during major race meetings is 15 dBA higher than those during a typical race meeting. The worst case predicted levels during major race meetings are presented in Table 4-2

Table 4-2 Predicted Receiver Noise Levels During Major Race Meetings

Receiver	Predicted Level ($L_{Aeq,\ 15min}$)	Criteria			Exceedance
		Day 7am-6pm	Evening 6pm-10pm	Night 10pm-7am	
R1	52	41	38	35	17
R2	51	41	38	35	16
R3	51	41	38	35	16
R4	49	41	38	35	14
R5	47	41	38	35	12

Review of Table 4-2 show that worst case $L_{Aeq,\ 15min}$ noise levels at nearby receivers during major racing events could be as high as 52 dBA, exceeding the night time criterion by as much as 17 dBA. This is considered a significant exceedance and if this were to occur on a continual and regular basis, would have the potential to cause a noise impact.

However as previously discussed, it is considered that occasional major events could be held at the proposed site through an effective ENMP.

Similar to the case of typical race meetings, the predicted noise levels in Table 4-2 represent the worst case noise levels at receivers which are expected to occur only during races. In between races, the noise levels at receivers will be significantly lower. With approximately 2000 spectators, the difference between typical and maximum $L_{Aeq, 15min}$ noise levels would not be as pronounced due to greater noise emissions from the crowd. However, the difference could still be as high as 10 dBA.

4.4 Assessment of Noise from Licenced Areas

Patron noise from licensed areas should be assessed against the OLGR criteria established in Section 3.1.2. Noise levels at receivers due to patrons in licenced areas will be greatest when a significant number of patrons are in outdoor licenced areas.

To assess the likelihood of noise impacts due to patron activity in outdoor licenced areas, noise levels have been predicted at nearby receivers due to 50 people talking in raised voices and compared to the OLGR criteria applicable to the period 10.00pm til midnight. Fifty people talking in raised voices is considered appropriate for this assessment as the typical crown for a race meeting is 150 people and it is expected that everyone is talking at the same time. The L_{A10} sound power level at each octave band centre frequency of one person talking in a raised voice is presented in Table 4-3.

Table 4-3 Sound Power Level of Speech in Raised Voice

Source	dBA	Octave Band Sound Power Level – dBA (L_{A10})								
		31.5	63	125	250	500	1k	2k	4k	8k
One person talking in raised voice	79	60	60	60	70	74	76	70	64	60

The $L_{A10, 15min}$ noise levels and exceedances at nearby receivers due to 50 people talking in raised voices in the outdoor licenced areas of the site are presented at each octave band centre frequency in Table 4-4 and Table 4-5 respectively.

Table 4-4 Predicted Receiver Noise Levels due to Outdoor Licenced Areas

Receiver	Octave Band Noise Level – dBA ($L_{A10, 15min}$)								
	31.5	63	125	250	500	1k	2k	4k	8k
R1	19	19	9	10	18	27	20	5	0
R2	19	19	8	9	17	27	19	3	0
R3	19	19	10	10	18	27	20	6	0
R4	13	13	9	9	17	23	14	0	0
R5	11	10	8	9	17	22	13	0	0

Table 4-5 Predicted Exceedances due to Outdoor Licenced Areas after 10pm

Receiver	Octave Band Exceedances - dBA ($L_{A10, 15min}$)								
	31.5	63	125	250	500	1k	2k	4k	8k
R1	-	-	-	-	-	1	-	-	-
R2	-	-	-	-	-	-	-	-	-
R3	-	-	-	-	-	1	-	-	-
R4	-	-	-	-	-	-	-	-	-
R5	-	-	-	-	-	-	-	-	-

Review of Table 4-5 indicates that 1 dBA exceedances occur in the 1kHz octave band at R1 and R3 between 10.00pm and midnight due to patrons in outdoor licenced areas. A 1 dB exceedance is considered negligible. Therefore, the use of outdoor licences areas is predicted to comply with OLGR noise criteria during typical race meetings and small functions.

In a similar fashion to $L_{Aeq, 15min}$ operational noise levels at nearby receivers during major events, the $L_{A10, 15min}$ noise levels would also be expected to increase by a significant amount. There is a likelihood that this increase could be in the range of 10 – 15 dB, resulting in exceedances of the OLGR criteria by as much as 16 dB at 1kHz.

Noise emissions from patrons in licenced areas should also be considered in developing an ENMP for the site.

4.5 Assessment of Noise from Car-parks

Based on information in the traffic report for this development, the peak car-park activity in any 15-minute period is expected to be 33 vehicle movements. It has been assumed that 22 of these vehicles will belong to racegoers and will be parked in the public parking area. It is assumed that nine cars towing floats and two semi-trailers will also enter the truck/trailer parking during this period. The predicted noise levels at nearby receivers due to peak car-park activity is presented in Table 4-6

Table 4-6 Predicted Receiver Noise Levels due to Car-park Activities

Receiver	Predicted Level ($L_{Aeq, 15min}$)	Criteria			Exceedance
		Day 7am-6pm	Evening 6pm-10pm	Night 10pm-7am	
R1	26	41	38	35	-
R2	29	41	38	35	-
R3	36	41	38	35	1
R4	35	41	38	35	-
R5	34	41	38	35	-

Review of Table 4-6 shows that the predicted noise levels at nearby receivers during peak car-park activities exceed the night time criterion at R3 by 1 dBA. This exceedance is considered negligible.

4.6 Assessment of Sleep Disturbance

The activity considered to have the greatest potential to cause sleep disturbance is truck movements in the car-park. At the conclusion of night races, there is potential for horse transport trucks to be loaded and depart from the site. The highest L_{Amax} noise levels associated with truck activities on the site are generated by air brakes. The L_{Amax} sound power level of truck air brakes can be as high as 120 dBA.

Maximum noise levels at nearby receivers due to truck air brakes have been predicted and are presented in Table 4-7.

Table 4-7 Predicted Maximum Noise Levels at Nearby Receivers

Receiver	Predicted Level (L_{Amax})	Criteria	Exceedance
		Night 10pm-7am	
R1	48	45	3
R2	53	45	8
R3	60	45	15
R4	58	45	13
R5	57	45	12

Review of Table 4-7 shows that the predicted L_{Amax} noise levels at nearby receivers exceed the established screening sleep disturbance criterion. However these levels are below the level of 60-65dBA which the NSW EPA would suggest is unlikely to cause sleep disturbance.

It should be noted that the predicted noise levels due to air brakes in Table 4-7 are based on a truck being operated at the eastern edge of the car-park. This is a worst case scenario. It is recommended that trucks are encouraged to park in the western most spaces in the truck/trailer parking area.

5 TRAFFIC NOISE ASSESSMENT

This section presents an assessment of potential traffic noise impacts from the development.

5.1 Existing Levels of Traffic Noise

Attended measurements of existing traffic noise levels were conducted on 6 December 2013. Measurements were conducted over 15 minute periods along Hampden Avenue and Horseshoe Road at locations approximately 15 metres and 9 metres from the edge of the road at the respective locations.

It should be noted that traffic noise levels along Horseshoe Road are also influenced by traffic travelling along the Olympic Highway. The setback from the Olympic Highway at the Horseshoe Road measurement location was approximately 90 metres.

The measured levels of traffic noise and the observed traffic volumes and mix (i.e. percent heavy vehicles) are presented in Table 5-1.

Table 5-1 Existing Traffic Noise Levels at Measurement Locations

Road	Measurement Setback [m]	Volume	Mix	L_{Aeq} Traffic Noise Level
Hampden Avenue	15	42	7	61
Horseshoe Road	9	22	5	61

To provide an estimate of the existing levels of traffic noise at receivers along Hampden Avenue and Horseshoe Road using noise descriptors consistent with the applicable RNP criteria, the measured noise levels have been adjusted to account for day and night time traffic volumes and the typical setback distances to the most affected residences. Façade corrections have also been applied in accordance with the RNP.

Annual Average Daily Traffic (AADT) volumes along Hampden Avenue, Horseshoe Road and the Olympic Highway have been estimated based off peak hourly traffic volumes taken from the traffic study completed for the development. The AADT volume estimates are based on a conservative assumption that peak hourly traffic volumes are approximately equal to 10% of the AADT volume. Further, day and night time traffic volumes are estimated based on a conservative assumption that day time traffic volumes account for 85% of the AADT volume. The estimated existing façade traffic noise levels at residential receivers are presented in Table 5-2.

Table 5-2 Existing Traffic Noise Levels at Residential Facades

Road	Minimum Receiver Setback [m]	AADT Volume	L_{Aeq} Traffic Noise Level	
			Day	Night
Hampden Avenue	25	2650	61	56
Horseshoe Road	18	1300	60	55

Review of the traffic noise levels in Table 5-2 show that the existing levels of traffic noise at the most affected receivers at or slightly above the applicable RNP criteria.

Notwithstanding the criterion the RNP also states where the criterion is exceeded an increase of 2dB represents a minor impact that is considered barely perceptible to the average person.

5.2 Predicted Traffic Noise Levels due to Development

The traffic study for the development states that approximately 60% of all vehicles accessing the site will do so via Hamden Avenue, north of Cooramin Street. Almost all of these vehicles will travel along Horseshoe Road to the Olympic Highway.

To predict and assess traffic noise levels due to the development, estimates must be made of incremental traffic volumes during the day (7.00am – 10.00pm) and night (10.00pm – 7.00am) periods. Therefore, it is assumed that the worst case traffic generation during the daytime period would correspond to all car-parking facilities being filled to capacity and emptied over the day. It is assumed that the worst case traffic generation during the night time period would correspond to all car-parking facilities being emptied during the night time period.

Based on a proposal for 210 parking spaces, the worst case predicted traffic noise levels at the most affected receivers along Hampden Avenue and Horseshoe Road, due to the development are presented in Table 5-3.

Table 5-3 Predicted Traffic Noise Levels with Development

Road	Predicted $L_{Aeq, period}$ Traffic Noise Levels					
	Without Development		With Development		Difference	
	Day	Night	Day	Night	Day	Night
Hampden Avenue	60.9	55.6	61.5	56.2	0.6	0.6
Horseshoe Road	57.8	52.5	58.5	53.1	0.7	0.7

Review of the traffic noise levels in Table 5-3 show that the development is predicted to increase traffic noise levels at nearby receivers by less than 1 dBA. This increase is not considered perceptible to the average person.

Accordingly, no mitigation or further assessment of traffic noise levels is warranted.

6 CONSTRUCTION NOISE ASSESSMENT

6.1 Typical Construction Equipment

Typical equipment expected to be used during the construction of the new harness racing facility have been identified and are presented in Table 6-1. The typical sound power level of each item based on previous measurements conducted by WMPL for similar equipment are also presented in Table 6-1.

It is important to note that a correction has been applied to the cumulative L_{Aeq} sound power level of all listed plant for each scenario since all pieces of equipment are not necessarily at their loudest simultaneously. Also, the sound power levels listed in Table 6-1 represent plant revving as opposed to idling.

Table 6-1 Typical Construction Plant Sound Power Levels

Plant	L_{Aeq} SWL (dBA)
Truck	105
Concrete Truck	109
3-6t Excavator	105
Mobile Crane	105
Grinder	100
Hand tools	99
Saw	100
Diesel Generator	88
Compressor	90
Welding	90

Noise modelling has assumed that for the typical worst cast operation, the cumulative L_{Aeq} sound power level of construction plant would be up to 106dBA.

6.2 Predicted Construction Noise Levels at Nearby Receivers

Construction activities associated with the establishment of the new track and buildings have been modelled to predict worst case construction noise levels at nearby receivers. Table 6-2 presents the predicted construction noise levels at nearby receivers.

Review of Table 6-2 shows that worst case construction noise levels are predicted to exceed the NMLs at R1 and R2 by 3 dBA and 2 dBA. Accordingly, all reasonable and feasible noise mitigation measures should be adopted for construction activities occurring in close proximity to these receptors.

The predicted construction noise levels in Table 6-2 are presented as a range for each receiver to reflect the fact that construction activities will be conducted at various locations on the site, thereby resulting in a wide range of construction noise levels at each receiver.

Table 6-2 Predicted Construction Noise Levels at Nearby Receivers

Receiver	Predicted Level	NML	Exceedance
R1	38-49	46	3
R2	35-46	46	-
R3	34-48	46	2
R4	33-45	46	-
R5	33-44	46	-

7 CONCLUSION

The WWHRC is proposing to establish a new harness racing facility on currently vacant rural land on Hampden Avenue, approximately 6 km north of the Wagga Wagga CBD.

WMPL have been commissioned to conduct a noise impact assessment for the proposed development. The assessment has been conducted in general accordance with relevant NSW Government guidelines and investigates noise associated with the construction and operation of the proposed harness racing facility.

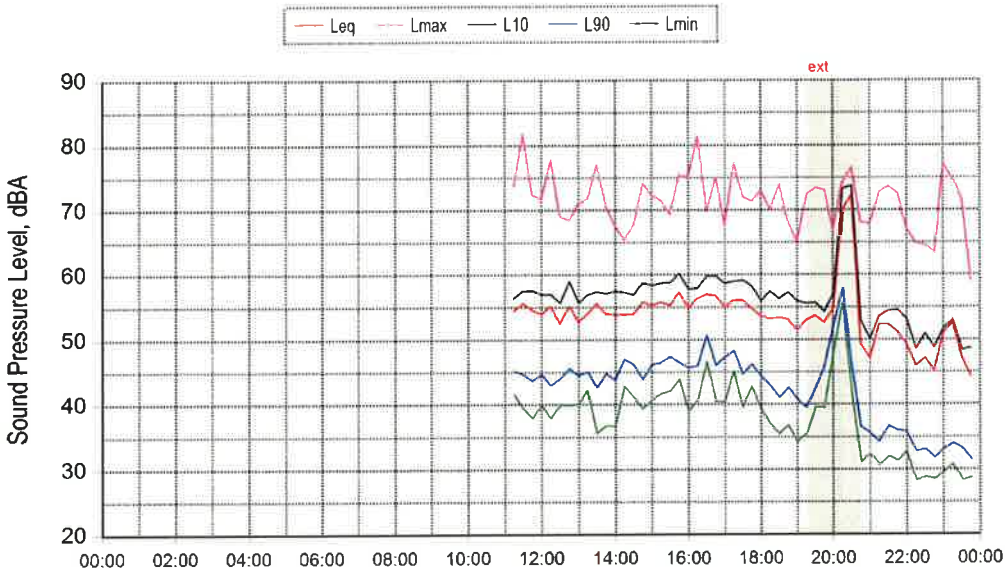
The following recommendations have been provided to protect the acoustic amenity of nearby residents and allow the full potential of the site to be realised by the WWHRC and the local community:

- The PA system is designed to minimise noise 'spill' outside the site by:
    - Using directional speakers that are pointed away from the direction of nearby receivers; and
    - Favouring a greater number of lower powered speakers than fewer high powered speakers.
- A detailed Events Noise Management Plan is developed through consultation with local council and the community to effectively manage elevated noise levels at receivers during major events;

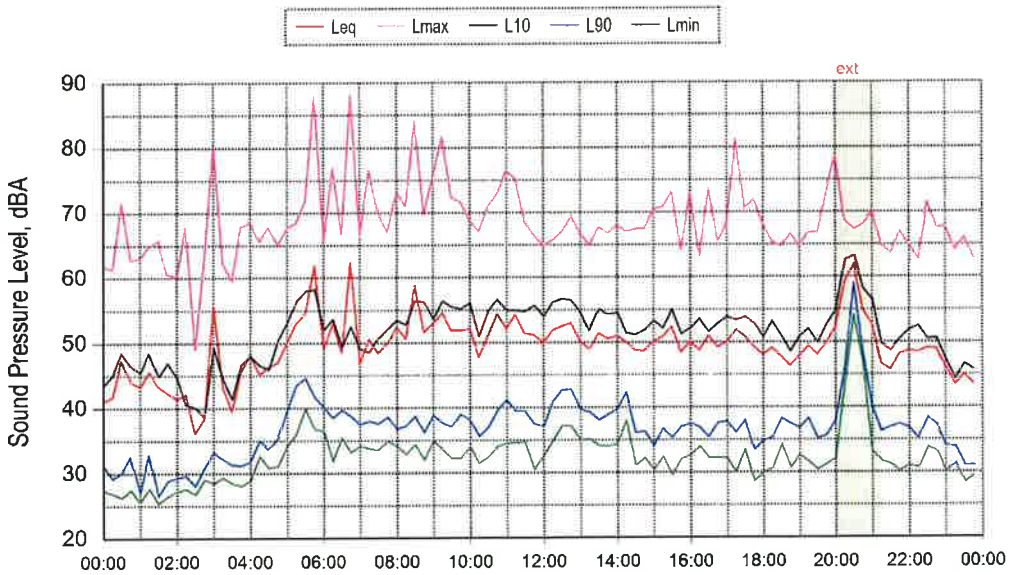
APPENDIX A

NOISE MEASUREMENT RESULTS

Friday 6 December 2013



Saturday 7 December 2013



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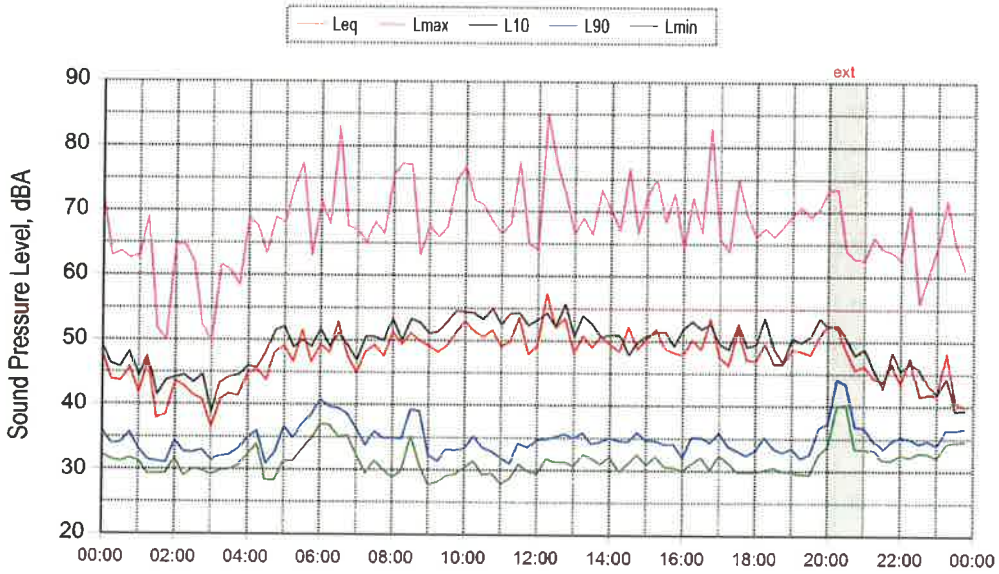

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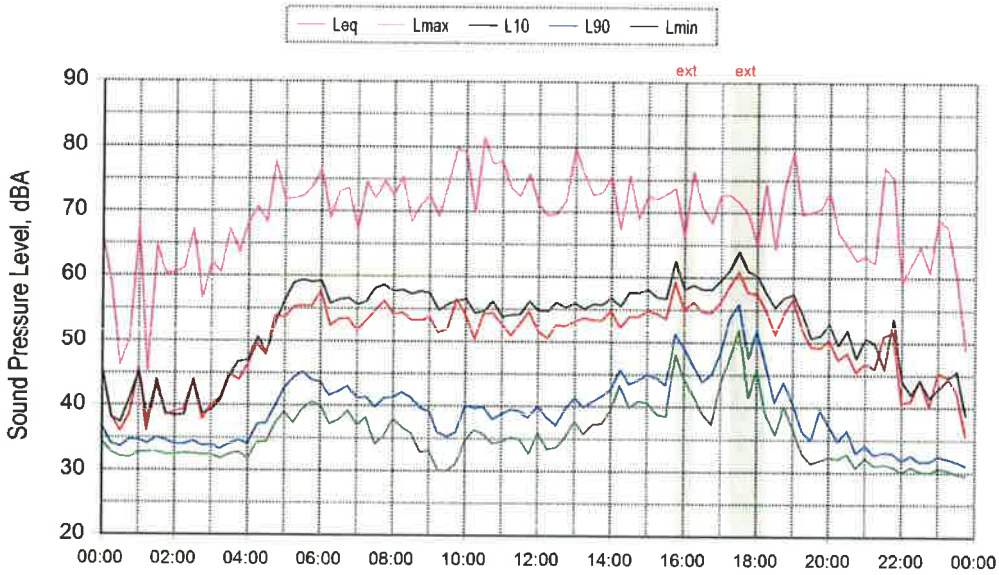

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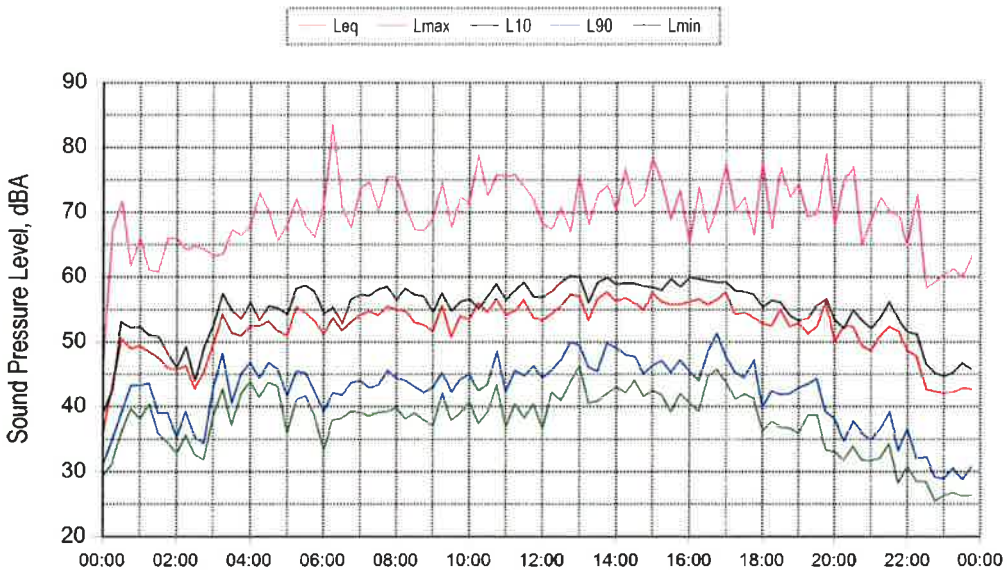

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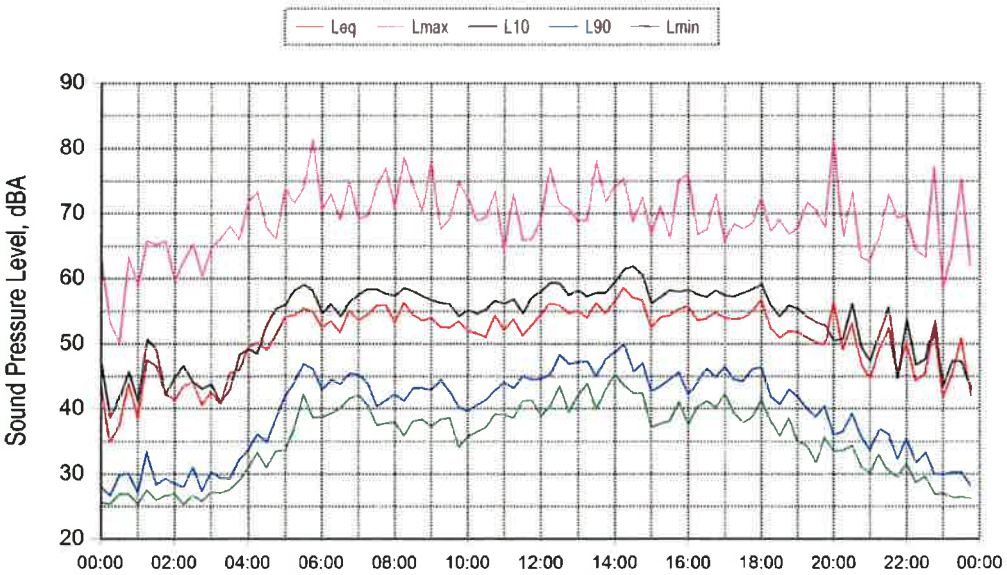

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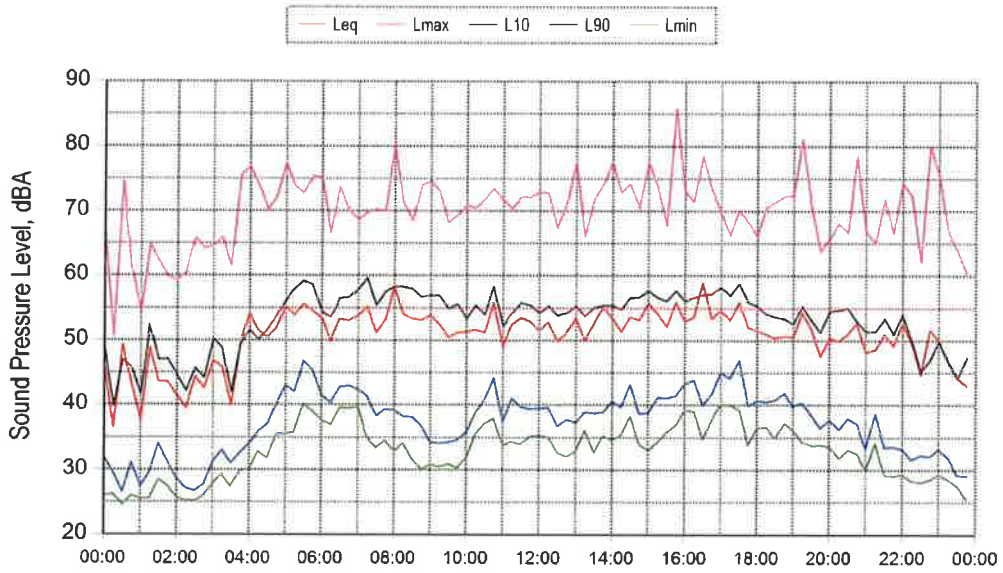

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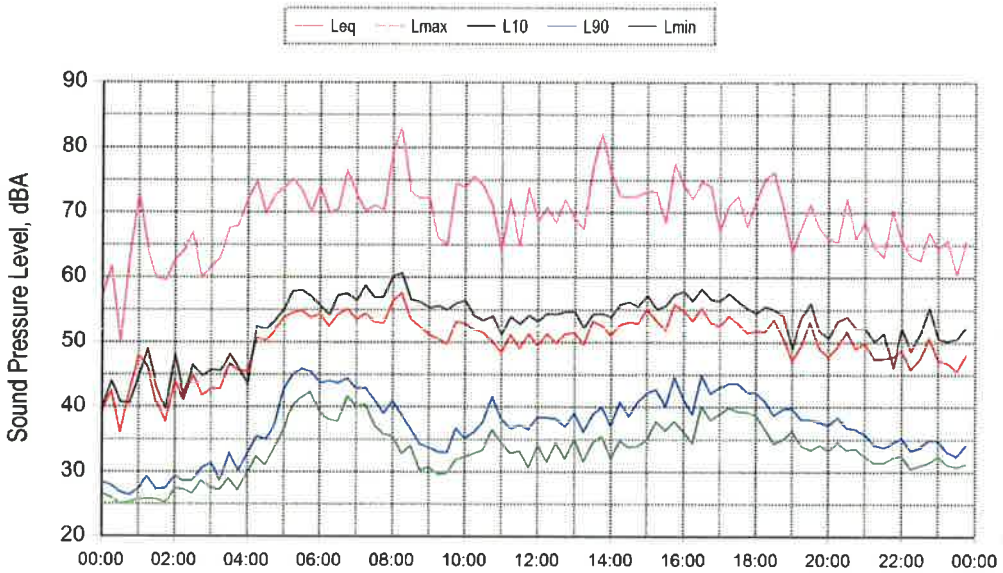

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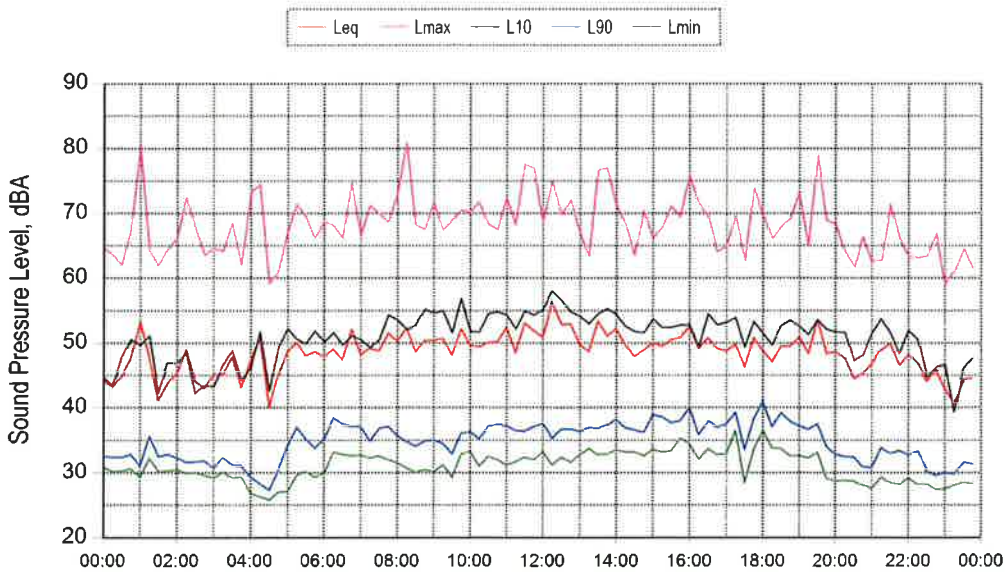

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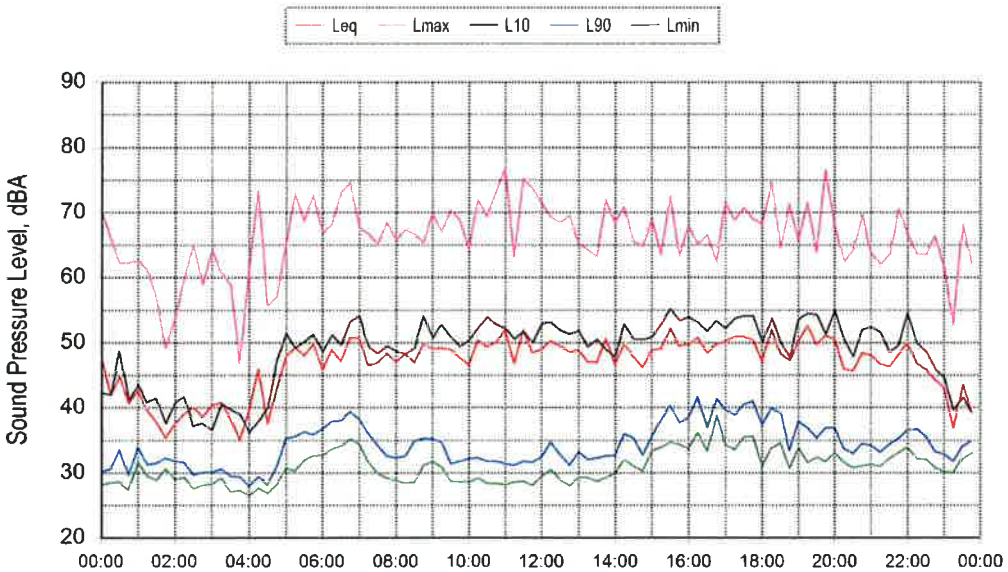


Addendum to Noise Impact Assessment

2014STH020 (DA14/0448)

Harness Racing Facility

Wagga Wagga

WILKINSON MURRAY

2 September 2015

WM Project Number: 13330
Our Ref: 13330_Ltr_020915_NH

Peter Basha
Peter Basha Planning & Development
PO Box 1827
ORANGE NSW 2800

Dear Peter

Re: Wagga Wagga Harness Racing Club - JRPP Submissions

Thank you for providing us with the submissions from the Joint Regional Planning Panel (JRPP) regarding the proposed Wagga Wagga Harness Racing Club development at Cooramin Street, Cartwrights Hill.

We have reviewed the submissions, relating to the noise impact assessment, and our responses are presented in Table 1.

I trust this information is sufficient. Please contact us if you have any further queries.

Yours faithfully
WILKINSON MURRAY

Nic Hall
Manager (Newcastle)

Table 1 Responses to Submissions

Submission	Response	References
The September 2014 noise assessment report cited the methodology used in the NSW Industrial Noise Policy. Is that reasonable, given that the development is not for an industrial facility, but a recreation or sporting facility? For example, the policy cannot be applied to motor sport facilities (see Section 1.3 of the Policy). If it is, will the Proponent be content to apply the rest of the Policy, including that noise at any site boundary is not to exceed 70 dBA?	The operational noise assessment presented in the Noise Impact Assessment (NIA) was carried out in general accordance with the *Noise Guide for Local Government* (NGLG). Other aspects of the NIA, such as the assessment of sleep disturbance, traffic noise and construction noise were carried out in accordance with other relevant NSW Government guidelines such as the *NSW Road Noise Policy* (RNP) and the *Interim Construction Noise Guideline* (ICNG). The single reference to the *NSW Industrial Noise Policy* (INP) in the NIA is in regards to the establishment of background noise levels. As per the NGLG, the INP describes the processing for establishing background noise levels using long term monitoring.	NIA – Chapter 2 NGLG – Chapter 2.3.2 INP – Chapter 3
Representativeness of background noise monitoring. It is noted that a single background noise monitoring site was used near the north eastern boundary of the proposed site. That location was affected by existing traffic noise from the Olympic Highway. Is that reasonable for residences further south, such as R4 and R5? Are they similarly affected?	The location selected for background noise monitoring (R2) was considered to exhibit similar ambient noise levels at receivers R3, R4 and R5. R2 is located closer to the Olympic Highway than R3, R4 and R5, however due to the local topography, the noise monitoring location at R2 featured some shielding from traffic noise generated along the Olympic Highway.	
The study notes that a new facility has been built at Bathurst that would be comparable to the proposal at Wagga Wagga. Given this, what noise measurements have been taken at Bathurst that would validate the assumptions made at Wagga Wagga?	The NIA does not make reference to a facility at Bathurst.	
There is a lack of specific information about licenced premises and other events. The application refers to a number of non-racing events such as car exhibitions, receptions, etc. No assessment is offered about the nature and frequency of these events, nor their noise implications.	It is understood that consent is no longer being sought for a wide variety of events. Approval for such 'special' events would be sought on an as-needed basis. It has been recommended that an Events Noise Management Plan (ENMP) is prepared for this development and it would be useful for the ENMP to provide a framework for assessing potential impacts from new event types.	
Certain criteria from the Office of Liquor, Gaming and Racing are quoted for licenced premises. It is unclear whether these criteria were intended to apply to licenced premises in rural zoned land and this needs to be examined.	The Office of Liquor, Gaming and Racing (OLGR) noise condition makes no reference to land use/zoning. The OLGR noise condition is considered to be stringent, particularly in the case where existing background noise levels are low, such as rural areas.	NGLG – Chapter 1.4.1
The noise assessment is applied to five existing residences (R1 to R5 inclusive), implying that they are the only ones potentially affected. It appears from aerial photographs that there may be more dwellings to the east and possibly north of the proposal. A list of affected properties must be comprehensively identified and assessed?	Any implication that receivers R1 to R5 are the only potentially affected receivers is unintentional. Receivers R1 to R5 are identified in the NIA as the most affected receivers. For typical race meetings, the NIA indicates compliance with noise criteria at the most affected receivers (R1 to R5) and the identification of additional sensitive receivers is not warranted. However, the EMP should include identification of all potentially affected receivers during special events with elevated noise levels.	NIA – Chapter 1.3

Traffic noise assessments for peak and other events. There is no assessment of traffic noise from peak and other events. Instead, the assessment focuses on a typical meeting. What are the acoustic impacts of these other activities?	The road traffic noise assessment in the NIA was conducted in general accordance with the RNP. The RNP is intended for developments with the potential to generate additional traffic on local roads on a permanent basis, and does not provide specific guidance on assessing sporadic increases in traffic noise. Nevertheless, the traffic noise assessment in the NIA was based on the assumption that the car-park would fill to capacity and then empty over the day during a typical event. Considering attendance numbers at typical race meetings, this assumption is most likely conservative. During a peak event, it is likely that additional traffic would be generated, and that traffic noise levels would increase by approximately 1dB over those presented in the NIA for a typical meeting, and would not likely be noticeable.	
The car park noise assessment was based on 33 vehicle movements as measured from an existing facility. Is this reasonable if the existing site is parking constrained and an improved facility could be expected to attract more patrons? Assessment that takes into account greater vehicle movements should be considered.	The assessment of noise emissions from the car-park was not based on an existing facility. It was based on the details of the proposed development.	NIA – Chapter 4.5
The acoustic assessment used a number of assumptions such as a peak event would be 10 to 15 dBA louder than a normal meeting, that ten PA speakers would be used, that a maximum of 50 people would use outdoor licenced areas, etc. Has each of these been validated by the proponent?	When preparing the NIA, a scenario was developed to best represent the likely noise emissions from a peak event. This scenario was developed with the proponent.	
The noise assessment does not apply any penalties for impulsive noise. At least in the case of air brakes from heavy vehicles, there should be a penalty of at least 5dBA. Could this please be considered? Also, tonal/impulsive noise from PA systems might also invoke a penalty.	The operational noise assessment includes the assessment of $L_{Aeq,\ 15min}$ noise levels against intrusive criteria and the assessment of L_{Amax} noise levels against sleep disturbance criteria during the night time. 'Modifying factors' are used in the assessment of $L_{Aeq,\ 15min}$ noise levels. They are assessed at receivers, and applied over a 15 minute period. No modifying factors were considered applicable to any noise sources in the assessment against the intrusive ($L_{Aeq,\ 15min}$) criteria, including music and PA systems. Noise from air brakes has the potential to cause sleep disturbance impacts due to high L_{Amax} noise, however air brakes do not typically influence $L_{Aeq,\ 15min}$ noise levels due to their short duration. L_{Amax} noise levels from truck air brakes are included in the sleep disturbance assessment in the NIA.	NIA – Chapter 4
Attended noise measurements were apparently taken along Hampden Avenue and Horseshoe Road (See section 5.1). These locations must be clearly identified on plan.	Please see Figure 1 on the last page of this document.	
Section 6.1 indicated that an unspecified correction had been applied to cumulative construction equipment to arrive at a SPL of 106dBA. A concrete truck alone was quoted at 109dBA. If they discharged repeatedly into a concrete pump, the higher level would be feasible. Has this been considered?	The correction was time based, and applied to account for the variation in noise levels from construction plant as they change from idling to revving over a typical 15 minute period. It should be noted that the construction noise assessment in the NIA is based on the anticipated typical construction activities, which could potentially be different. The key outcome of the construction noise assessment is that construction noise management levels (NML) are likely to be exceeded, and that a Construction Noise Management Plan (CNMP) should be developed by the contractor. If the development is approved, the conditions should include a requirement to prepare a CNMP which should consider the actual construction activities to occur on the site, and their potential impacts.	NIA – Chapter 6

Noise impacts from the importation of fill. It is not clear how much fill is to be imported and how this could affect traffic and construction noise. Could this be addressed?	At the time of preparing the NIA, fill importation details were unavailable, and the construction noise assessment considered a typical scenario in the south eastern corner of the site where the buildings where to be established. If the development is approved, it is recommended that potential construction noise impacts associated with fill importation are considered in the CNMP, when the requirements and methodologies are known.	NIA – Chapter 6
The industrial noise policy and other assessment guidelines point to the need to address adverse meteorological conditions, including thermal inversions and wind enhancement. These do not appear to have been taken into account in the assessment.	The assessment of operational noise in the NIA was conducted in accordance with the NGLG, which does not require assessment of meteorological enhancements. Nevertheless, temperature inversions are likely to occur in the area surrounding the proposed development during the night time in winter. However, it would be considered unlikely for significant noise emissions from the site to coincide with temperature inversions.	NIA – Chapter 4
It is noted that peak events could generate between ten times and thirteen times more attendances than normal events. An Event Noise Management Plan is seen as the solution to peak noise from such events. There is no indication of what such a management plan would contain and how it would result in less impacts on surrounding residences.	As per the NIA, the NGLG provides guidance on developing an ENMP and provides examples. It should be noted that the ENMP may not significantly reduce noise levels at receivers. The ENMP should identify reasonable and feasible measures to reduce noise levels, however these may be limited. The key objective of the ENMP is reaching an understanding between all stakeholders, namely Council, the proponent, nearby residents and the wider community, to allow for elevated noise levels during special events, noting that these events have the potential to provide some form of community benefit.	NIA Chapter 3.1.1 NGLG Chapter 3.6

Figure 1 Attended Noise Measurement Locations

Lighting Details

2014STH020 (DA14/0448)

Harness Racing Facility

Wagga Wagga

Pole / Fixture Summary

P□□ □D	P□□ □□□□□□	□□□□□r□ □ □□	L□□ □ T□□□	□r□□□
A1	18.3	5	1500W MZ	A
A2	18.3	8	1500W MZ	A
A3	21.3	8	1500W MZ	A
A4	21.3	10	1500W MZ	A
A5	24.4	12	1500W MZ	A
		2	1500W MZ	C
A6	24.4	12	1500W MZ	A
		2	1500W MZ	C
A7	24.4	10	1500W MZ	A
A8	24.4	10	1500W MZ	A
A9	21.3	6	1500W MZ	A
B1	21.3	5	1500W MZ	A
B2	21.3	8	1500W MZ	A
B3	21.3	8	1500W MZ	A
B4	21.3	8	1500W MZ	A
B5	21.3	8	1500W MZ	A
B6	21.3	8	1500W MZ	A
B7	21.3	8	1500W MZ	A
B8	21.3	8	1500W MZ	A
B9	21.3	8	1500W MZ	A
B10	21.3	8	1500W MZ	A
B11	21.3	8	1500W MZ	A
B12	21.3	8	1500W MZ	A
B13	21.3	8	1500W MZ	A
B14	21.3	8	1500W MZ	A
B15	21.3	8	1500W MZ	A
B16	21.3	8	1500W MZ	A
B17	21.3	8	1500W MZ	A
B18	21.3	8	1500W MZ	A
B19	21.3	5	1500W MZ	A
PFR	11.0	6	2000W INC	B
29			***237***	

MY PROJECT

Name: **Wagga Harness Racing Club**
Location: Wagga Wagga,NSW

ENGINEERED DESIGN

By: **Sunnie**
File # / Date: 157632B2 20-Oct-15

Calculation Grid Summary

Grid Name	Calculation Metric	Illumination				Uniformity		Groups	# of Luminaires
		Type	Ave	Min	Max	Min/Max	Min/Ave		
Parade Ring	Horizontal	Constant	397	231	536	0.43	0.58	A,C	231
Photo-Finish	Photo-Finish	Constant	3997	3520	4408	0.80	0.88	A,B	233
Spill - Hampden Ave.	True Max Vert Illuminance	Constant	3,91	1.03	6.14	0.17	0.26	A,B,C	237
Spill - North	True Max Vert Illuminance	Constant	4.55	2.93	5.99	0.49	0.64	A,B,C	237
Track- 500lx horiz	Horizontal Illuminance	Constant	503	314	750	0.42	0.62	A	227
Track- 500lx vert	Main Camera	Constant	589	440	910	0.48	0.75	A	227

Group Summary

Group	Description	Load	# of Luminaires
A	Track	355,03 kW	227
B	Photo-Finish	12.0 kW	6
C	Parade Ring	6.26 kW	4

MY PROJECT

Name: **Wagga Harness Racing Club**
Location: Wagga Wagga,NSW

ENGINEERED DESIGN

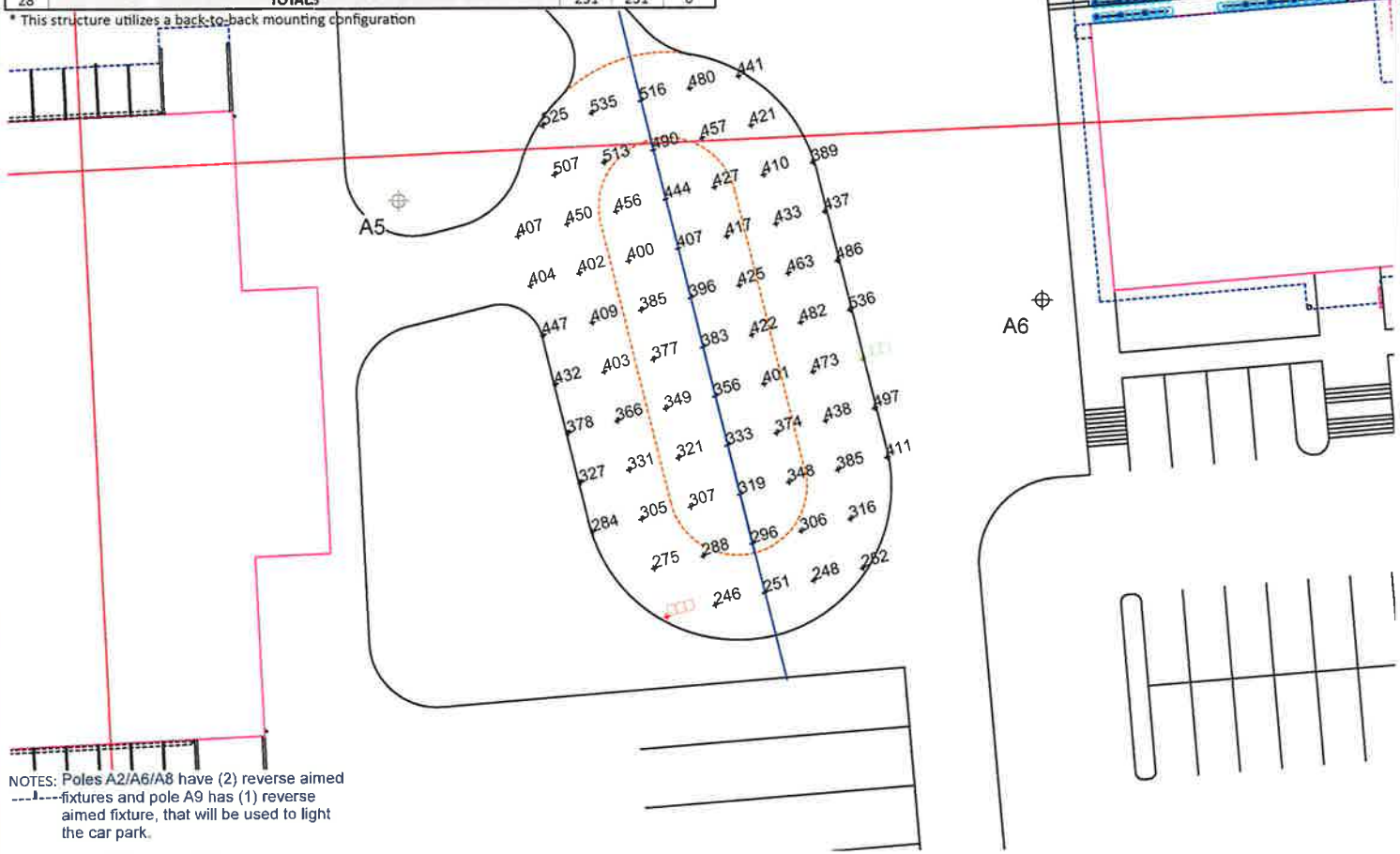
By: **Sunnie**
File # / Date: 157632B2 20-Oct-15

PROJECT SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A1	18.28m	-	18.28m	1500W MZ	5	5	0
1	A2	18.28m	-	18.28m	1500W MZ	6/2*	8	0
1	A3	21.33m	-	21.33m	1500W MZ	8	8	0
1	A4	21.33m	-	21.33m	1500W MZ	10	10	0
1	A5	24.38m	-	12m	1500W MZ	2	2	0
				24.38m	1500W MZ	12	12	0
1	A6	24.38m	-	12m	1500W MZ	2	2	0
				24.38m	1500W MZ	10/2*	12	0
1	A7	24.38m	-	24.38m	1500W MZ	10	10	0
1	A8	24.38m	-	24.38m	1500W MZ	8/2*	10	0
1	A9	21.33m	-	21.33m	1500W MZ	5/1*	6	0
1	B1	21.33m	-1.5m	19.83m	1500W MZ	5	5	0
17	B2-B18	21.33m	-1.5m	19.83m	1500W MZ	8	8	0
1	B19	21.33m	-1.5m	19.83m	1500W MZ	5	5	0
28	TOTALS					231	231	0

* This structure utilizes a back-to-back mounting configuration



NOTES: Poles A2/A6/A8 have (2) reverse aimed fixtures and pole A9 has (1) reverse aimed fixture, that will be used to light the car park.

SCALE 1 : 400

0 10m 20m

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

MY PROJECT

Name: Wagga Harness Racing Club
Location: Wagga Wagga,NSW

GRID SUMMARY

Name: Parade Ring
Size: 29.9m x 44.5m
Spacing: 3.0m x 3.0m
Height: 0.0m above grade

CONSTANT ILLUMINATION

SUMMARY	HORIZONTAL LUX
	Entire Grid
Scan Average:	**396.56**
Maximum:	536.26
Minimum:	231.42
Min / Avg:	0.58
Min / Max:	**0.43**
UG (adjacent pts):	1.25
CU:	0.01
CV:	0.20
Application Efficacy:	--
No. of Points:	69

LUMINAIRE INFORMATION	
Luminaire Type:	Green Generation
Design Usage Hours:	5,000 hours
Design Lumens:	134,000
Avg Lamp Tilt Factor:	1.000
No. of Luminaires:	231
Avg KW:	361.28 (392.7 max)

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA LM-5-04 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

ENGINEERED DESIGN

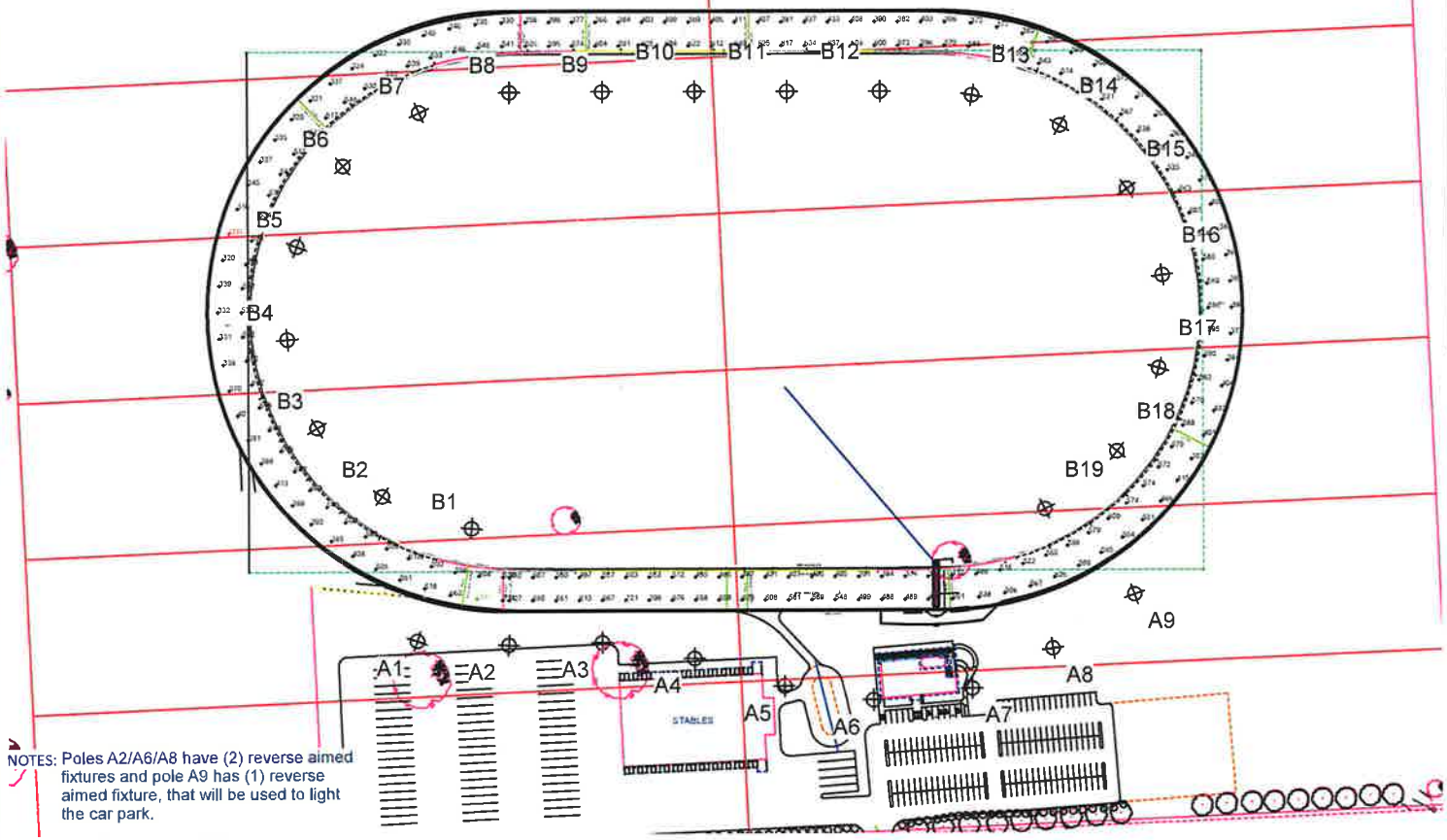
By: Sunnie
File # / Date: 157632B2 20-Oct-15

ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A1	18.28m	-	18.28m	1500W MZ	5	5	0
1	A2	18.28m	-	18.28m	1500W MZ	6/2*	8	0
1	A3	21.33m	-	21.33m	1500W MZ	8	8	0
1	A4	21.33m	-	21.33m	1500W MZ	10	10	0
1	A5	24.38m	-	12m	1500W MZ	2	0	2
				24.38m	1500W MZ	12	12	0
1	A6	24.38m	-	12m	1500W MZ	2	0	2
				24.38m	1500W MZ	10/2*	12	0
1	A7	24.38m	-	24.38m	1500W MZ	10	10	0
1	A8	24.38m	-	24.38m	1500W MZ	8/2*	10	0
1	A9	21.33m	-	21.33m	1500W MZ	5/1*	6	0
1	B1	21.33m	-1.5m	19.83m	1500W MZ	5	5	0
17	B2-B18	21.33m	-1.5m	19.83m	1500W MZ	8	8	0
1	B19	21.33m	-1.5m	19.83m	1500W MZ	5	5	0
28	TOTALS					231	227	4

* This structure utilizes a back-to-back mounting configuration



NOTES: Poles A2/A6/A8 have (2) reverse aimed fixtures and pole A9 has (1) reverse aimed fixture, that will be used to light the car park.

SCALE 1 : 3000

0 30m 60m

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

MY PROJECT

Name: Wagga Harness Racing Club
Location: Wagga Wagga,NSW

GRID SUMMARY

Name: Track- 500lx horiz
Spacing: 10.0m x 10.0m
Height: 1.0m above grade

CONSTANT ILLUMINATION

SUMMARY	HORIZONTAL LUX
	Entire Grid
Scan Average:	**502.93**
Maximum:	749.51
Minimum:	313.91
Min / Avg:	0.62
Min / Max:	**0.42**
UG (adjacent pts):	0.00
No. of Points:	214

LUMINAIRE INFORMATION	
Luminaire Type:	Green Generation
Design Usage Hours:	5,000 hours
Design Lumens:	134,000
Avg Lamp Tilt Factor:	1.000
No. of Luminaires:	227
Avg KW:	355.03 (385.9 max)

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA LM-5-04 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

ENGINEERED DESIGN

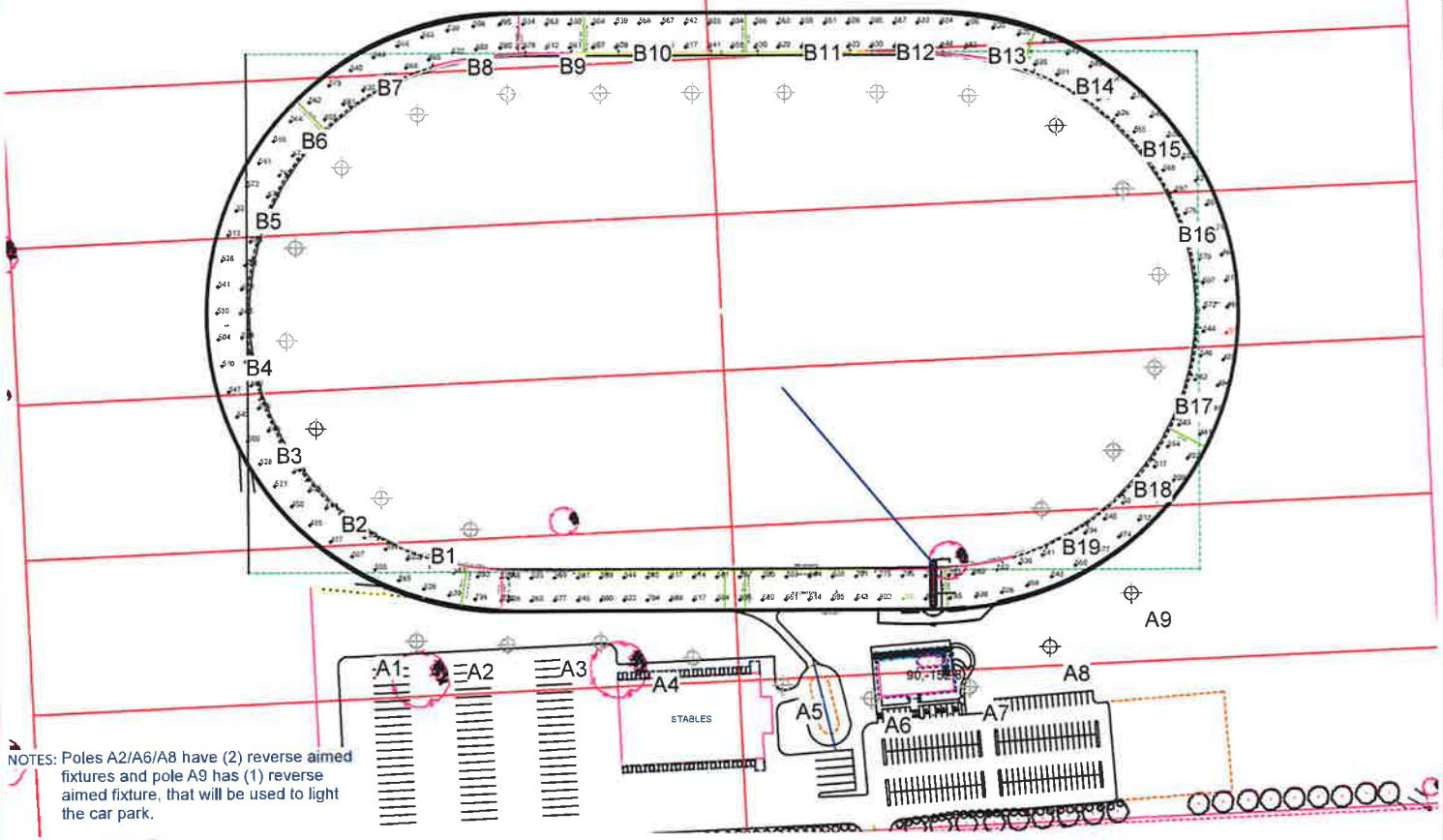
By: Sunnie
File # / Date: 157632B2 20-Oct-15

ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A1	18.28m	-	18.28m	1500W MZ	5	5	0
1	A2	18.28m	-	18.28m	1500W MZ	6/2*	8	0
1	A3	21.33m	-	21.33m	1500W MZ	8	8	0
1	A4	21.33m	-	21.33m	1500W MZ	10	10	0
1	A5	24.38m	-	12m	1500W MZ	2	0	2
				24.38m	1500W MZ	12	12	0
1	A6	24.38m	-	12m	1500W MZ	2	0	2
				24.38m	1500W MZ	10/2*	12	0
1	A7	24.38m	-	24.38m	1500W MZ	10	10	0
1	A8	24.38m	-	24.38m	1500W MZ	8/2*	10	0
1	A9	21.33m	-	21.33m	1500W MZ	5/1*	6	0
1	B1	21.33m	-1.5m	19.83m	1500W MZ	5	5	0
17	B2-B18	21.33m	-1.5m	19.83m	1500W MZ	8	8	0
1	B19	21.33m	-1.5m	19.83m	1500W MZ	5	5	0
28	TOTALS					231	227	4

* This structure utilizes a back-to-back mounting configuration



NOTES: Poles A2/A6/A8 have (2) reverse aimed fixtures and pole A9 has (1) reverse aimed fixture, that will be used to light the car park.

SCALE 1: 3000

0 30m 60m

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

musco Lighting

MY PROJECT

Name: Wagga Harness Racing Club
Location: Wagga Wagga,NSW

GRID SUMMARY

Name: Track- 500lx vert
Size: Irregular
Spacing: 10.0m x 10.0m
Height: 1.5m above grade

CONSTANT ILLUMINATION

SUMMARY — TV LUX: Main Camera

	Entire Grid
Scan Average:	**588.89**
Maximum:	910.43
Minimum:	440.47
Min / Avg:	0.75
Min / Max:	**0.48**
UG (adjacent pts):	0.00
No. of Points:	214

LUMINAIRE INFORMATION

Luminaire Type:	Green Generation
Design Usage Hours:	5,000 hours
Design Lumens:	134,000
Avg Lamp Tilt Factor:	1.000
No. of Luminaires:	227
Avg KW:	355.03 (385.9 max)

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA LM-5-04 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

ENGINEERED DESIGN

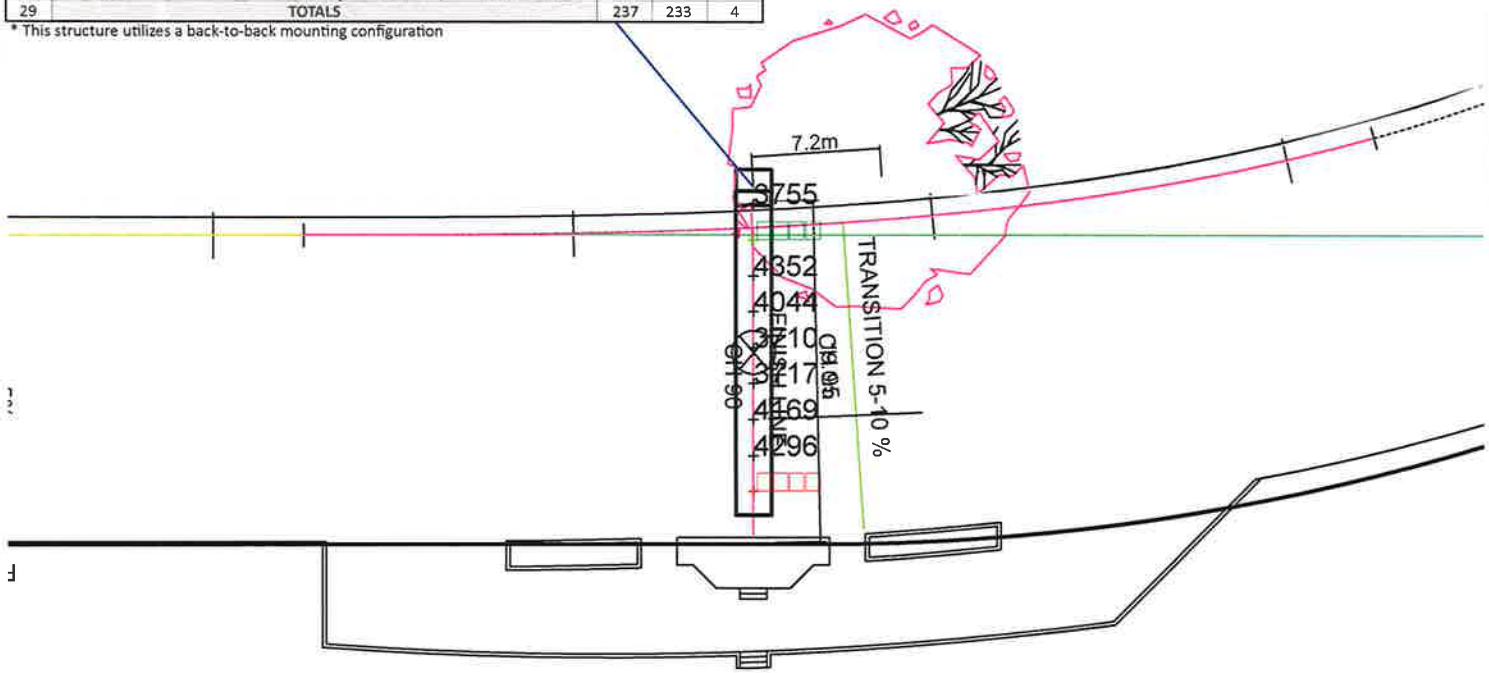
By: Sunnie
File # / Date: 157632B2 20-Oct-15

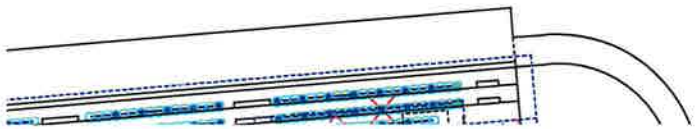
ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A1	18.28m	-	18.28m	1500W MZ	5	5	0
1	A2	18.28m	-	18.28m	1500W MZ	6/2*	8	0
1	A3	21.33m	-	21.33m	1500W MZ	8	8	0
1	A4	21.33m	-	21.33m	1500W MZ	10	10	0
1	A5	24.38m	-	12m	1500W MZ	2	0	2
				24.38m	1500W MZ	12	12	0
1	A6	24.38m	-	12m	1500W MZ	2	0	2
				24.38m	1500W MZ	10/2*	12	0
1	A7	24.38m	-	24.38m	1500W MZ	10	10	0
1	A8	24.38m	-	24.38m	1500W MZ	8/2*	10	0
1	A9	21.33m	-	21.33m	1500W MZ	5/1*	6	0
1	B1	21.33m	-1.5m	19.83m	1500W MZ	5	5	0
17	B2-B18	21.33m	-1.5m	19.83m	1500W MZ	8	8	0
1	B19	21.33m	-1.5m	19.83m	1500W MZ	5	5	0
1	PFR	11m	-	11m	2000W INC	6	6	0
29		TOTALS				237	233	4

* This structure utilizes a back-to-back mounting configuration





NOTES: Poles A2/A6/A8 have (2) reverse aimed fixtures and pole A9 has (1) reverse aimed fixture, that will be used to light the car park.

SCALE 1 : 400

0 10m 20m

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

MY PROJECT

Name: Wagga Harness Racing Club
Location: Wagga Wagga,NSW

GRID SUMMARY

Name: Photo-Finish
Size: 2.0m x 18.0m
Spacing: 2.0m x 2.0m
Height: 1.5m above grade

CONSTANT ILLUMINATION

SUMMARY	TV LUX: Photo-Finish
	Entire Grid
Scan Average:	**3996.71**
Maximum:	4407.82
Minimum:	3519.64
Min / Avg:	0.88
Min / Max:	**0.80**
UG (adjacent pts):	1.22
No. of Points:	9
LUMINAIRE INFORMATION	
Luminaire Type:	Green Generation / SC-1 2000W Tungsten Halogen
Design Usage Hours:	5,000 hours
Design Lumens:	134,000 / 56,000
Avg Lamp Tilt Factor:	1.000
No. of Luminaires:	233
Avg KW:	367.03 (397.9 max)

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA LM-5-04 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

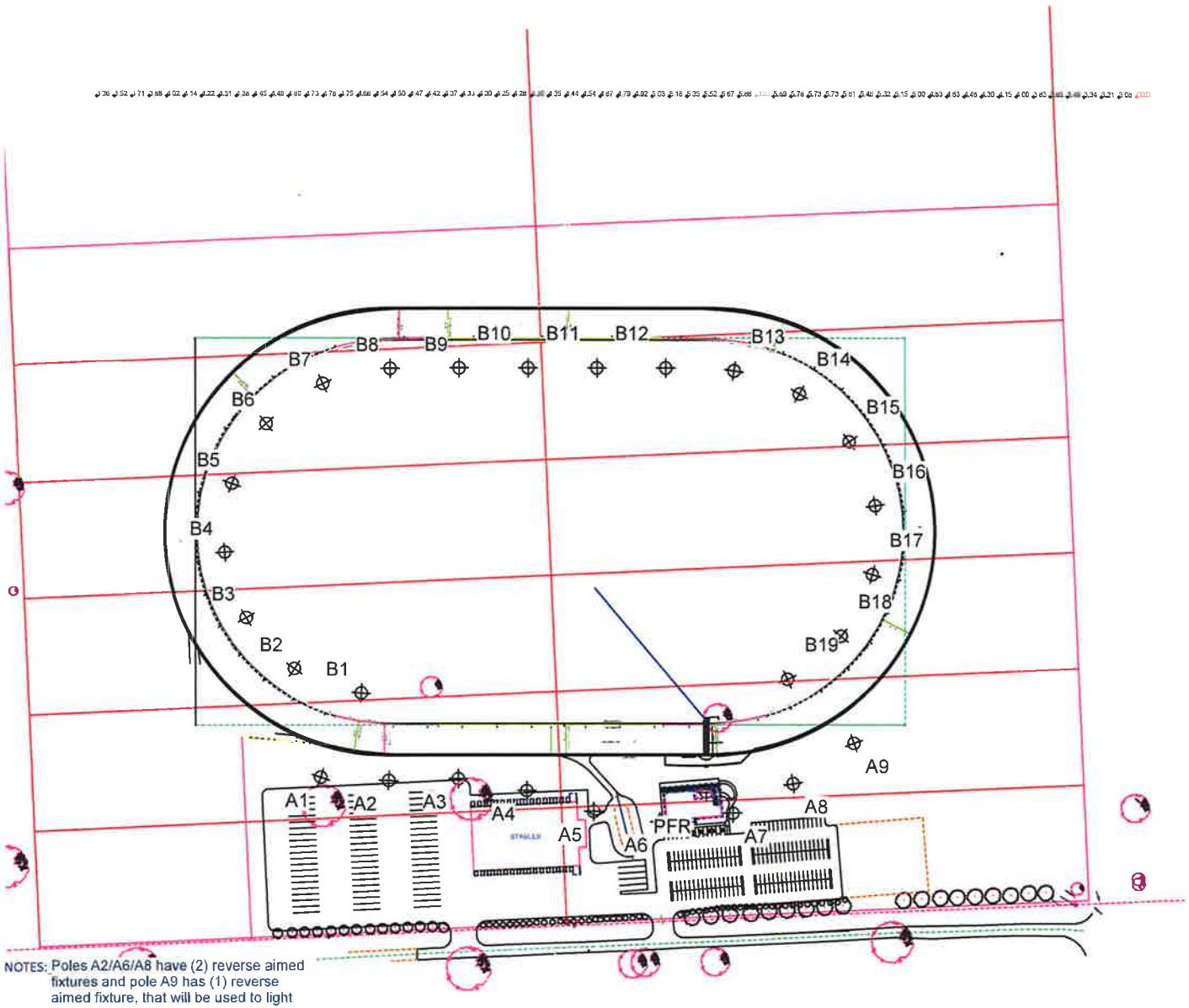
Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

ENGINEERED DESIGN

By: Sunnie
File # / Date: 157632B2 20-Oct-15

ILLUMINATION SUMMARY



NOTES: Poles A2/A6/A8 have (2) reverse aimed fixtures and pole A9 has (1) reverse aimed fixture, that will be used to light the car park.

SCALE 1 : 3500

0 35m 70m

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

MUSCO Lighting

MY PROJECT

Name: Wagga Harness Racing Club
Location: Wagga Wagga,NSW

GRID SUMMARY

Name: Spill - North
Spacing: 10.0m
Height: 1.5m above grade

CONSTANT ILLUMINATION

SUMMARY	MAX VERTICAL LUX
	Entire Grid
Scan Average:	**4.5516**
Maximum:	5.9870
Minimum:	2.9321
No. of Points:	61

LUMINAIRE INFORMATION

Luminaire Type:	Green Generation / SC-1 2000W Tungsten Halogen
Design Usage Hours:	5,000 hours
Design Lumens:	134,000 / 56,000
Avg Lamp Tilt Factor:	1.000
No. of Luminaires:	237
Avg KW:	373.28 (404.7 max)

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA LM-5-04 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

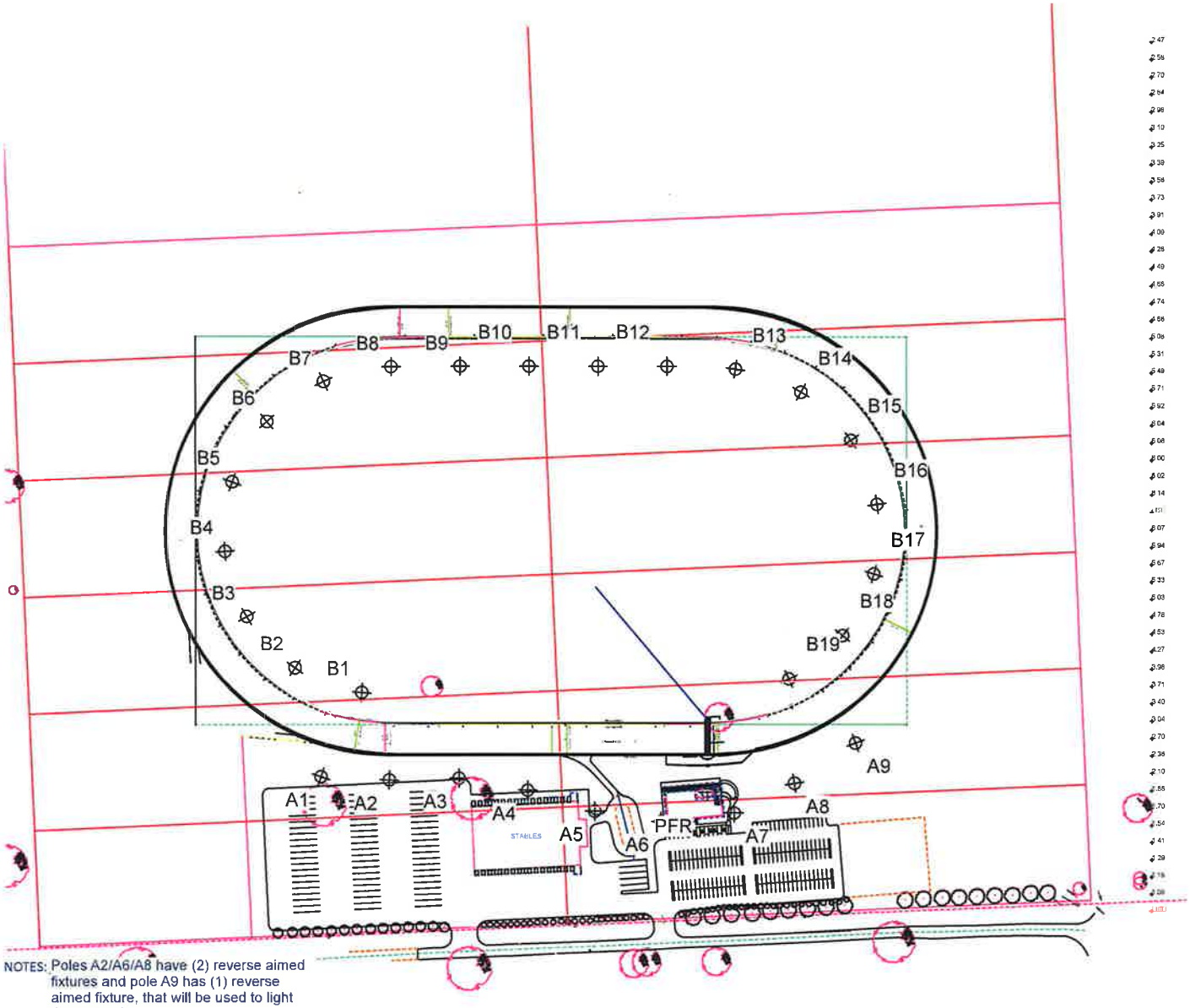
Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

ENGINEERED DESIGN

By: Sunnie
File # / Date: 157632B2 20-Oct-15

ILLUMINATION SUMMARY



NOTES: Poles A2/A6/A8 have (2) reverse aimed fixtures and pole A9 has (1) reverse aimed fixture, that will be used to light the car park.

SCALE 1 : 3500

0 35m 70m

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

MUSCO Lighting

MY PROJECT

Name: **Wagga Harness Racing Club**
Location: Wagga Wagga,NSW

GRID SUMMARY

Name: **Spill - Hampden Ave.**
Spacing: 10.0m
Height: 1.5m above grade

CONSTANT ILLUMINATION

SUMMARY	MAX VERTICAL LUX
	Entire Grid
Scan Average:	**3.9137**
Maximum:	6.1416
Minimum:	1.0262
No. of Points:	51
LUMINAIRE INFORMATION	
Luminaire Type:	Green Generation / SC-1 2000W Tungsten Halogen
Design Usage Hours:	5,000 hours
Design Lumens:	134,000 / 56,000
Avg Lamp Tilt Factor:	1.000
No. of Luminaires:	237
Avg KW:	373.28 (404.7 max)

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA LM-5-04 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

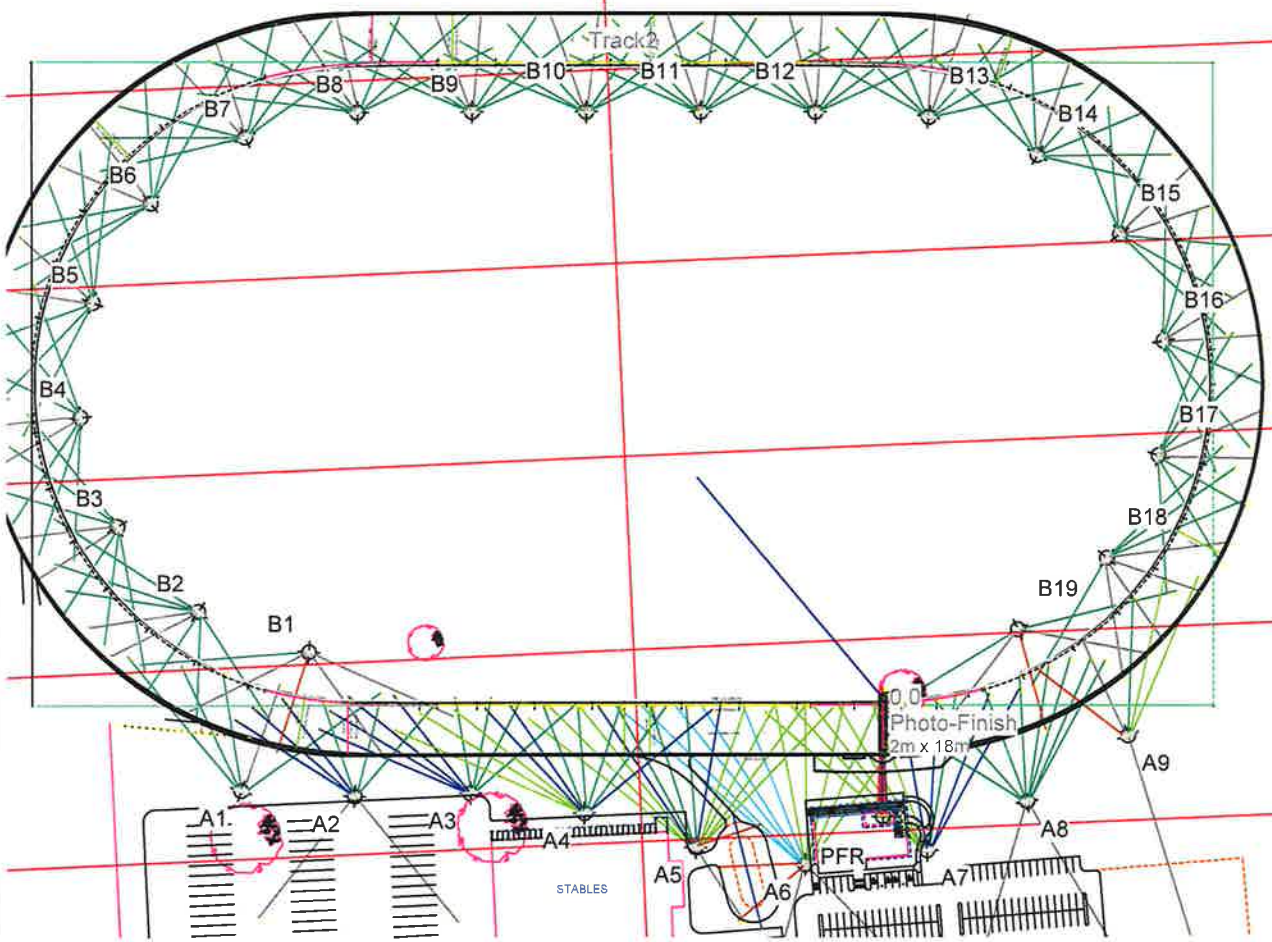
Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

ENGINEERED DESIGN

By: **Sunnie**
File # / Date: 157632B2 20-Oct-15

ILLUMINATION SUMMARY

NOTES: Poles A2/A6/A8 have (2) reverse aimed fixtures and pole A9 has (1) reverse aimed fixture, that will be used to light the car park.



SCALE 1 : 2500

0 25m 50m

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

MY PROJECT

Name: Wagga Harness Racing Club
Location: Wagga Wagga,NSW

EQUIPMENT LAYOUT

INCLUDES:
- 0,0
- Photo-Finish
- Track2

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires		
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE
1	A1	18.28m	-	18.28m	1500W MZ	5
1	A2	18.28m	-	18.28m	1500W MZ	6/2*
1	A3	21.33m	-	21.33m	1500W MZ	8
1	A4	21.33m	-	21.33m	1500W MZ	10
1	A5	24.38m	-	12m	1500W MZ	2
				24.38m	1500W MZ	12
1	A6	24.38m	-	12m	1500W MZ	2
				24.38m	1500W MZ	10/2*
1	A7	24.38m	-	24.38m	1500W MZ	10
1	A8	24.38m	-	24.38m	1500W MZ	8/2*
1	A9	21.33m	-	21.33m	1500W MZ	5/1*
1	B1	21.33m	-1.5m	19.83m	1500W MZ	5
17	B2-B18	21.33m	-1.5m	19.83m	1500W MZ	8
1	B19	21.33m	-1.5m	19.83m	1500W MZ	5
1	PFR	11m	-	11m	2000W INC	6
29	TOTALS					237

* This structure utilizes a back-to-back mounting configuration

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)					
Single Phase Voltage	220 (50)	230 (50)	240 (50)	380 (50)	400 (50)	415 (50)
1500 watt MZ	8.3	7.7	7.5	4.7	4.4	4.2
2000 watt INC	-	-	-	-	-	-

ENGINEERED DESIGN

By: Sunnie
File # / Date: 157632B2 20-Oct-15

EQUIPMENT LAYOUT

Statement of Environmental Effects

2014STH020 (DA14/0448)

Harness Racing Facility

Wagga Wagga

PETER BASHA

PLANNING & DEVELOPMENT

STATEMENT OF ENVIRONMENTAL EFFECTS

Revised Submission Incorporating Responses to the Matters Raised by the Southern Joint Regional Planning Panel

Development Application
Proposed Wagga Wagga Harness Racing Club Facility
Lots 1 to 6 and Lots 19 to 24 in DP 2655
Cooramin Street and Hampden Avenue
Cartwrights Hill, Wagga Wagga

Harness Racing
NEW SOUTH WALES

Prepared for
Harness Racing NSW
September 2015

Ref: DA2PJB13064

343 Summer St, PO Box 1827, Orange NSW 2800
telephone 02 6361 2955 • facsimile 02 6360 4700 • mobile 0409 821 016 • email peter@bashaplanning.com.au • abn: 91 558 813 035

TABLE OF CONTENTS

Section 1.0

THE APPLICATION

1.1 PREAMBLE

DA 14/0448 (the DA) seeks approval to establish a new harness racing facility for Wagga Wagga Harness Racing Club at Cartwrights Hill, Wagga Wagga.

The DA was presented to the Southern Joint Regional Planning Panel (JRPP) meeting held on 9 April 2015 with a recommendation for approval. However, the DA was not determined and the JRPP requested the submission of additional information to address various matters.

The matters raised by the JRPP are expressed in Council's letter to the applicants dated 27 April 2015 (refer *Annexure J* of this report) and are broadly summarised as follows:

- That consideration be given to revising the layout of the facility in particular to relocate the stables and truck parking and manoeuvring areas to the south western corner to minimise traffic noise and visual impacts. The applicant has acceded to this request. The development plans have been amended accordingly (refer *Annexure B*).

- The applicant is to provide a comprehensive flood assessment of the impact of the proposed development on the flood regime of the locality addressing cumulative effects of flooding and the relevant requirements of the NSW Flood Plain Development Manual. In accordance with this request a new flood assessment has been prepared and is included in this report at *Annexure F*.

- The applicant is to provide an assessment of the impacts of traffic and parking including assumptions of patronage for all likely events with proposed mitigation measures. In accordance with this request an addendum to the original Traffic and Parking Report has been prepared and is included in this report at *Annexure D*.

- The applicant is to provide an assessment of the impacts of noise from major activities, construction transport and resulting impacts on surrounding residents. In accordance with this request an addendum to the original Noise Impact Assessment has been prepared and is included in this report at *Annexure E*.

- The applicant is required to provide details of the extent and nature of additional fill to be imported to the site for the purpose of the construction of the facility. In accordance with this request revised engineering design plans have been prepared (refer *Annexure C*) and further explanation is provided within this report.

1.2 SCOPE AND PURPOSE OF THIS REPORT

This document is intended to replace the original Statement of Environmental Effects and supporting information for this project.

This document:

- Describes the proposed development
- Describes the subject land
- Provides an assessment of the development pursuant to the relevant matters in Section 79C of the Environmental Planning & Assessment Act.
- Addresses the specific matters raised by the Southern JRPP at its meeting of 9 April 2015.
- Concludes that there are no aspects of the proposal that would prevent approval of the application.

The submission includes the following supporting documentation:

Annexure A – Land Plans by Peter Basha Planning & Development

Figure 1	Location
Figure 2	Existing boundaries and site detail
Figure 3	Proposed site plan
Figure 4	Surrounding development

Annexure B – Building Design Plans by McKinnon Design

Drawing DA1	Existing site plan
Drawing DA2	Proposed site plan
Drawing DA3	Proposed part site plan
Drawing DA4	Proposed part site plan
Drawing DA5	Club building floor plans
Drawing DA6	Club building elevations
Drawing DA7	Club building sections
Drawing DA8	Stables floor plan
Drawing DA9	Stables elevations
Drawing DA10	Stables sections

Annexure C – Engineering Plans by Heath Consulting Engineers

Sheet 1	Cover sheet
Sheet 2	Overall site layout
Sheet 3	Notes and typical details

Sheet 4	Bulk earthworks plan
Sheet 5	Site sections A, B and C
Sheet 6	Typical track cross sections
Sheet 7	Cooramin Street upgrade plan & long section ch.0.00–340.00
Sheet 8	Cooramin Street upgrade plan & long section ch.340.00–440.00
Sheet 9	Cooramin Street upgrade cross sections ch.0.00–200.00
Sheet 10	Cooramin Street upgrade cross sections ch.220.00–420.00
Sheet 11	Cooramin Street & Hampden Avenue intersection plan
Sheet 12	Truck/trailer parking area finished levels
Sheet 13	Car parking area finished levels
Sheet 14	Overflow car parking area finished levels
Sheet 15	Stormwater management plan
Sheet 16	Sewer drainage and water reticulation layout

Annexure D – Traffic and Parking Assessment by Colston Budd Hunt & Kafes

Traffic and Parking Assessment (February 2014)

Letter dated 14 September 2015 in response to matters raised by JRPP

Annexure E – Noise Impact Assessment by Wilkinson Murray

Noise Impact Assessment (September 2014)

Letters dated 2 September 2015 and 9 September 2015 in response to matters raised by JRPP

Annexure F

Flood Impact Assessment by WMA Water dated 7 September 2015

Annexure G

Geotechnical Investigation by Aitken Rowe

Annexure H

Lighting Assessment Report by Musco Lighting Australia

Annexure I

Aboriginal Heritage Information Management System (AHIMS) Search Results

Annexure J

Letter by City of Wagga Wagga Council dated 27 April 2015 – Request for additional information based on matters raised at the Southern JRPP meeting of 9 April 2015

1.3 APPLICANT

Harness Racing NSW
PO Box 1034
BANKSTOWN NSW 1885

Please direct all correspondence for DA to:
Peter Basha Planning & Development
PO Box 1827
ORANGE NSW 2800

1.4 OWNERSHIP

The Council of the City of Wagga Wagga
PO Box 20
WAGGA WAGGA NSW 2650

1.5 OUTLINE OF THE PROPOSAL

The proposal remains essentially the same as originally proposed expect for the following changes:

- The site layout has been amended by relocating the truck/trailer parking area and the stable as requested by the JRPP.
- The stables building has been modified.

The proposal involves construction or provision of the following:

- New harness racing track and support structures including track lighting, stewards towers and podium.
- Clubhouse including:
  - Lounge, function and meeting rooms and tote
  - Kitchen and bar facilities and associated cool room and dry store
  - Administration area comprising offices and reception
  - Male and female toilets
  - External grandstand style seating and elevated viewing platform
  - Broadcast box on first floor

- Stables complex comprising:
  - 91 internal stalls and 60 external stalls
  - Wash bays, swab bays, and vet room
  - Male and female toilets and change rooms
  - Office, stewards room and owners/trainers room
- External support areas including parade ring, marquee area, and machinery area.
- Sealed driveway and parking areas including:
  - 157 car parking spaces
  - 62 truck/trailer parking spaces
- An unsealed overflow parking area for approximately 72 cars to cater for peak events.

The proposed development represents an investment of some $6.5 million in the local economy. It will provide a modern complex with grandstand and support facilities. As such it has the potential to increase the number of race meetings that are conducted at Wagga Wagga and thus enable more options for industry participants to earn additional income.

The new complex will represent a valuable community resource that by its very nature, may serve as a venue for other events. Subject to further approvals, the new complex offers the Club the potential to generate other forms of economic activity/enterprises, including, markets, car shows, social events and functions and other equine events on the infield such as gymkhanas, stock horse events and the like.

The proposed development represents Integrated Development due to the following:

- The proposed development represents *flood work* which according to the Dictionary in the Water Management Act 2000 means "a work that is situated within a flood plain....that is of such a size or configuration that, regardless of the purpose for which it is constructed or used.....is likely to have an effect on the distribution or flow of floodwater in times of flood."
- Such work is subject to a flood work approval pursuant to Section 90(4) of the Water Management Act 2000.

The development has a Capital Investment Value of greater than $5 million and is identified as Council related development pursuant to Schedule 4A of the Environmental Planning and Assessment Act, 1979.

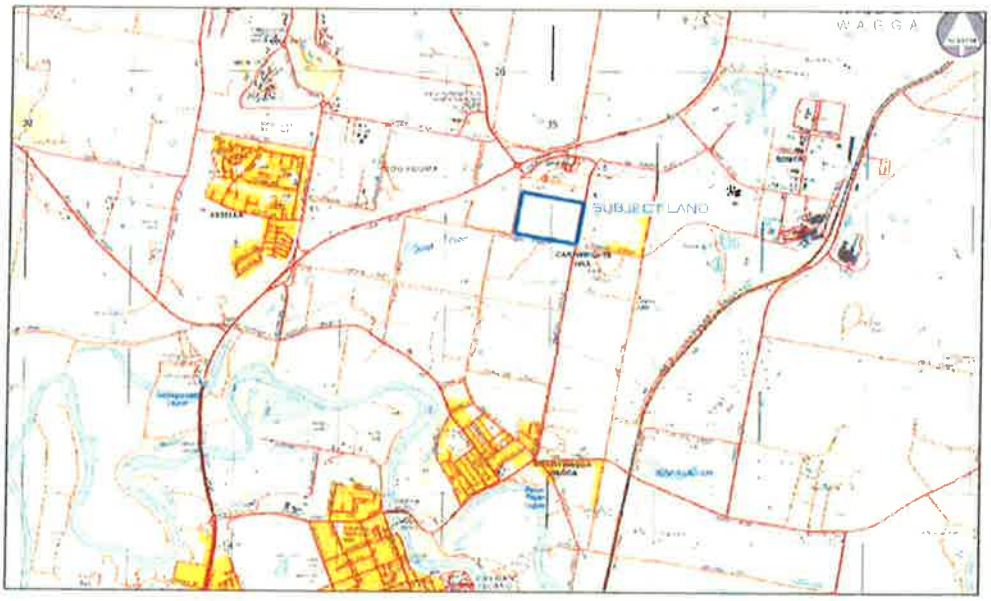
The proposal will be assessed by Wagga Wagga City Council and then presented to the Southern Region Joint Regional Planning Panel for determination.

Section 2.0

EXISTING CIRCUMSTANCES

2.1 LOCATION, TITLE AND ZONING

The subject land is located on the north western corner of the intersection of Hampden Avenue and Cooramin Street at Cartwrights Hill, approximately 4 to 5 kilometres to the north of the Wagga Wagga town centre.



The Real Property description of the subject land is Lots 1 to 6 and Lots 19 to 24 in DP 2655, all in the Parish of North Wagga Wagga and County of Clarendon.

The majority of the subject land is zoned RU1 Primary Production under Wagga Wagga Local Environmental Plan 2010. At the time DA 14/0448 was lodged, the north eastern corner was formerly unzoned and identified as a Deferred Matter. The north eastern corner is now zoned R5 Large Lot Residential under the LEP. The delineation is depicted in Figure 2.

2.2 SITE DESCRIPTION

2.2.1 Configuration

The subject land is a vacant rural holding with a total area of approximately 24.37 hectares. It is rectangular with a frontage of some 402 metres to Hampden Avenue which forms the eastern boundary; and a frontage of 605.9 metres to Cooramin Street which forms the southern boundary.

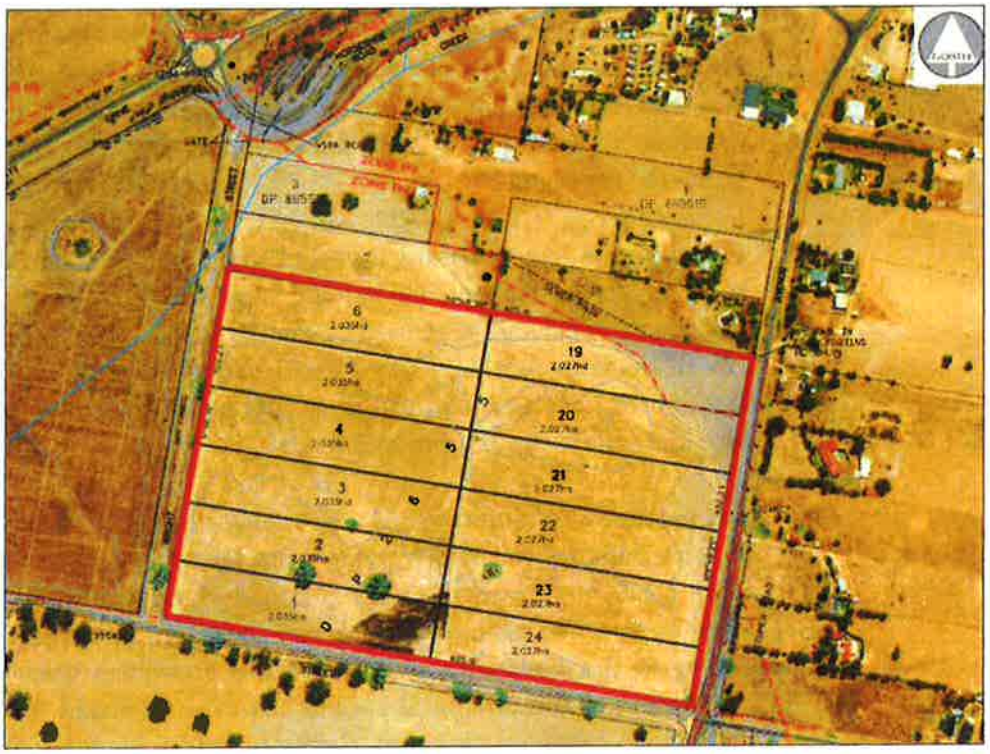
2.2.2 Topography

The topography of the site is very gentle. The land falls gradually from north to south and the cross fall is in the order of 1 metre. The cross fall east to west is barely detectable but the fall is generally towards the west.

The north eastern section of the site is steeper and rises markedly. The RL at the north eastern corner is approximately 6.5 metres higher than the average RL across the remainder of the subject land.

2.2.3 Vegetation

The subject land has undergone a high degree of disturbance in terms of natural vegetation and is now cleared grazing country. The land is virtually devoid of native timber, expect for 3 or 4 trees that remain in the southern section.



2.2.4 Drainage

The subject land is not affected by any defined watercourses. The nearest is Dukes Creek, a non perennial watercourse that flows in a south westerly direction across the adjoining land to the west.

Within the site, rapid drainage is associated with the steeper sideslope area in the north eastern corner. Otherwise moderate to slow drainage occurs on the gently sloping areas that dominate the site.

The subject land is located within the North Wagga Wagga flood plain. Flooding in this area is dominated by riverine flooding from the Murrumbidgee River. The proposed development is subject to flooding in a 10% AEP event.

A flood impact assessment in respect of the proposed development has been undertaken by WMA Water (refer *Annexure F*).

2.2.5 Soils

The soils of the site were investigated by geotechnical consultants, Aitken Rowe to assess the type and condition of the underlying material and make recommendations in respect to geotechnical design parameters for the proposed development. (The geotechnical report forms *Annexure G*).

According to the report:

- The area of Cartwrights Hill is underlain by the Quaternary floodplain sediments comprising unconsolidated clay, silt, sand and gravel along drainage lines which in turn is underlain by Silurian Syn-Kinematic Granites in accordance with 1:250,000 Scale "Geological Map Series SJ/55-15" for Wagga Wagga.

- The borehole investigations revealed that the site is generally underlain by natural topsoil material at varying depths to 0.1m; which overly natural low plasticity clayey silt at varying depths to 0.25m; which is underlain by low to medium plasticity silty clay at varying depths to 0.6m; and then medium to high and high plasticity silty clays extending to the borehole termination depths of 1.5m to 3m.

- The moisture condition of the underlying natural material was noted to be varied across the site, varying from less than plastic limit to greater than plastic limit within the investigated depth at the time of the investigation. No groundwater or seepage was encountered during the drilling in the boreholes drilled and the boreholes were found dry on completion of the drilling. It should however be noted that variations to the water table level could fluctuate with changes to the season, temperature and rainfall.

- The underlying natural material was found to be generally firm to stiff consistency in the upper profile and then increases to stiff to very stiff and very stiff consistency with depth within the investigated depth at the time of the investigation.

2.3 ROADS AND ACCESS

Cooramin Street extends along the southern boundary of the subject land. It is a two lane two-way unsealed road which provides access to rural properties. It connects to Hampden Avenue at the south eastern corner of the subject land at a four way priority controlled intersection.

Hampden Avenue extends along the eastern boundary of the subject land. It is a two lane two-way rural road with sealed shoulders and an 80 kilometre per hour speed limit. North of Cooramin Street it provides a 60 kilometre per hour speed limit. It provides access to rural properties.

North of the site, Hampden Avenue intersects Horseshoe Road at an unsignalised t-intersection. There are give way controls on the Horseshoe Road approach to the intersection. Horseshoe Road is a two lane two-way road with a 60 kilometre per hour speed limit. It provides access to tourist accommodation and rural properties.

West of Hampden Avenue, Horseshoe Road connects to the Olympic Highway at a roundabout. Coolamon Road provides a fourth (western) approach to the roundabout. The Olympic Highway provides one traffic lane in each direction with sealed shoulders. It connects to Junee and Temora to the north.

South of the site, Hampden Avenue intersects with Mill Street at an unsignalised t-intersection controlled by give way signs, with Hampden Avenue having priority. There is a right turn bay in Hampden Avenue and separate left and right turn lanes in Mill Street at the intersection. Mill Street provides a connection to Oura, Wantabadgery and Gundagai. It provides a 60 kilometre per hour speed limit with one traffic lane in each direction. There is a connection to Marah Street which forms a fourth (western) approach to the intersection.

2.4 SERVICES

In terms of services:

- Council's sewer reticulation extends diagonally across the north eastern corner of the subject land.
- Council's town water reticulation exists at the south eastern corner near the Cooramin Street and Hampden Avenue intersection.
- There is no formal stormwater drainage system that services the area. Generally, stormwater is either captured on site for water supply purposes, or returned to the rural catchment via natural channels, roadside drainage lines and culverts.

- A high voltage electricity main line is within the Cooramin Street road reserve and extends along the southern boundary of the subject land. The 11kV backbone supply is present in Cooramin Street, east of Hampden Avenue and extends to the south eastern corner of the subject land.

- Telecommunication mains extend along the eastern boundary of the subject land within the Hampden Avenue road reserve.

2.5 SURROUNDING DEVELOPMENT PATTERN

The surrounding development pattern comprises:

- Rural small holdings and associated dwellings on the land to the north.

- Rural small holdings and associated dwellings on the land to the east on the opposite side of Hampden Avenue. An isolated residential neighbourhood is further to the east in the vicinity of East Street.

- Vacant rural land to the south on the opposite side of Cooramin Street.

- Vacant rural land to the west (which is intended to be held in the same ownership as the subject land).

2.6 SUMMARY OF CONSTRAINTS AND OPPORTUNITIES

The constraints and opportunities pertaining to the proposed development are summarised as follows:

- Despite the very gentle terrain across the subject land, a reasonable amount of earthworks will be required to establish the development due to the flood prone nature of the land. As a result of the Flood Impact Assessments conducted by WMA Water, the Harness Racing NSW Board and Wagga Wagga City Council have agreed that the racetrack and stables should be built at the 10% AEP design flood level (1 in 10 year) as a minimum; whilst the clubhouse building shall have floor levels at the 2% AEP design flood level (1 in 50 year) as a minimum. In effect:

  - The finished track level will be approximately up to 2.56m above natural ground level (refer Section C, Sheet 5 in the engineering drawings by Heath Consulting Engineers).

  - The pad level for the clubhouse building would be in the order of 4.1m above natural ground level (see Section A Sheet 5 in the engineering drawings by Heath Consulting Engineers).

  - The pad level for the stables building would be in the order of 1.9m above natural ground level (see Section B, Sheet 5 in the engineering drawings by Heath Consulting Engineers).

  - A borrow pit is to be established within the internal circumference of the proposed track to provide the required material to achieve the required pavement sub-grade levels (see Sections A, B and C, Sheet 5 in the engineering drawings by Heath Consulting Engineers.

- The adequacy of the material within the site of the proposed borrow pit has been assessed as suitable fill material in the geotechnical investigation by Aitken Rowe, subject to the implementation of the various recommendations for each component of the development. Select fill materials will be required to be imported from off-site to achieve the required pavement design recommendations.

- The development is not unreasonably constrained in terms of servicing. In this regard:

  - Town water is available at the south eastern corner of the subject land.

  - Backbone electricity is available at the south eastern corner of the subject land.

  - Connection to the existing sewer main will require a pump station and rising main.

  - The redesign has now incorporated an on-site detention (OSD)/infiltration basin to assist with the control of stormwater runoff from the hardstand areas. This OSD/infiltration basin has the potential

to harvest stormwater runoff for storage and future reuse for track watering. It also has the potential to reduce demand on the town water supply.

- The road network does not unreasonably constrain the development. In this regard:

  - Cooramin Street will require upgrading and sealing to provide the main access to the development and accommodate all development traffic.

  - The Cooramin Street leg of the intersection with Hampden Avenue will require upgrading and sealing to accommodate the swept path of vehicles that are likely to be associated with the development.

  - The proposed access points offer safe driver sightlines along Cooramin Street.

- The development will require the removal of the 4 native trees within the site.

- The potential for the development to impact upon the nearest dwellings to the north and east of the subject land requires consideration, particularly in regard to noise, lighting and visual amenity.

THE PROPOSED DEVELOPMENT

3.1 OVERVIEW

This development application seeks approval to develop the subject land for the purposes of a new club facility for Wagga Wagga Harness Racing Club.

The proposal involves construction or provision of the following:

- New harness racing track
- Clubhouse
- Stables complex
- Off-street parking areas for cars, and trucks/trailers

The proposed development represents an investment of some $6.5 million in the local economy. It will provide a modern complex with grandstand and support facilities. Subject to separate approval, it has the potential to be used for other events and activities that may be of benefit to the community.

3.2 HARNESS RACING TRACK

The proposed harness racing track is depicted in the plans by McKinnon Design (Drawings DA2 and DA3) and detailed in the plans by Heath Consulting Engineers. It is proposed to be developed as follows:

- The track will have a length of more than 1,071 metres. The turns are to be superelevated to a grade of 10%. The straights are to be superelevated to 5%.
- The track surface will be set above the 10% AEP design flood level (i.e. 1:10 year flood level). In effect, the finished track level will be approximately up to 2.56m above natural ground level (refer Section C, Sheet 5 in the engineering drawings by Heath Consulting Engineers).
- The track will be built up from material won on site via a borrow pit (in the centre of the proposed track). The surface will be finished with a specified granular material suitable for harness racing which is to be imported from outside sources.

- Track lighting, stewards towers and the podium will be provided in the required locations.

- The track will be bounded by the required running rail fencing.

3.3 CLUBHOUSE

The proposed clubhouse is depicted in the plans by McKinnon Design (refer Drawings DA5, DA6 and DA7). The building is a one and two storey structure.

The ground floor includes:

- Lounge, function and meeting rooms and tote
- Kitchen and bar facilities and associated cool room and dry store
- Administration area comprising offices and reception
- Male and female toilets
- External grandstand style seating for 141 people
- Viewing platform

The first floor comprises the broadcast box which includes:

- Race callers room
- Camera platform
- Judges and stewards rooms

The building footprint is approximately 34 metres long x 15.8 metres wide. The building is designed with a skillion roof line. The peak roof height for the ground floor section is approximately 4.8 metres. The peak roof height for the first floor section is approximately 7.3 metres.

The external finishes comprise corrugated colorbond wall and roof sheeting; painted concrete tilt panel walls to dado height; and clear anodised aluminium door and window frames.

This building is to be set above the 2% AEP design flood level (i.e. 1:50 year flood level). In effect, the pad level for the building would be in the order of 4.1m above natural ground (refer Section C, Sheet 5 in the engineering drawings by Heath Consulting Engineers). This is approximately 1m higher than is required, so as to facilitate unobstructed viewing for people sitting in the grandstand seating area.

3.4 STABLES COMPLEX

The proposed stables complex is depicted in the plans by McKinnon Design (refer Drawings DA8 and DA9). It is a single storey structure with a ridge height of approximately 6.1 metres. The building footprint is some 65.85 metres long x 44.7 metres wide (inclusive of the awnings along the northern and southern elevations).

The building comprises:

- 91 internal stalls
- 60 external stalls
- Wash bays, swab bays, and vet room
- Male and female toilets and change rooms
- Office, stewards room and owners/trainers room

The external finishes comprise colorbond roof and wall sheeting; concrete tilt panel walls to 1200mm high (and full wall height in some sections); aluminium door and window frames; and louvred aluminium wall vents.

This building is to be set above the 10% AEP design flood level (i.e. 1:10 year flood level). In effect, the pad level for the building would be in the order of 1.9m above natural ground (refer Section B, Sheet 5 in the engineering drawings by Heath Consulting Engineers).

3.5 EXTERNAL SUPPORT AREAS AND SITE WORKS

As depicted in the site plan by McKinnon Design (Drawings DA2, DA3 and DA4) the external support areas include:

- Parade ring
- Machinery area
- Bitumen sealed car park for 157 cars
- Bitumen sealed parking area for 62 trucks/trailers
- Unsealed overflow parking area for some 72 cars (for peak events only)

Rural style perimeter fencing will be maintained. Rural style fencing will also be established within the site where appropriate to delineate public and non-public areas.

Landscaping of the site is proposed. The landscape masterplan that was prepared by Mark D McCrone (Landscape Architect) for the original submission will be updated to accord with the latest revised site layout.

3.6 ROAD AND ACCESS

Cooramin Street will provide direct access to the development. This road will be upgraded to provide a 7 metre wide seal on a 9 metre wide formation to allow one traffic lane in each direction (refer Sheets 7 and 8 by Heath Consulting Engineers).

The western side of the intersection of Cooramin Street and Hampden Avenue will be upgraded/sealed to accommodate the turn path of a semi trailer making a left turn from Hampden Avenue and a left turn from Cooramin Street (refer Sheet 11 by Heath Consulting Engineers).

Access to the site is proposed at two locations as depicted in the site plan by McKinnon Design (refer Drawings DA3 and DA4). The intention is to separate general public traffic from operational traffic. In this regard:

- The easternmost access is proposed as the main public entrance, leading directly to the public car park and clubhouse.
- The westernmost access would service the stables and truck/trailer parking area.

3.7 EARTHWORKS

The proposed earthworks are depicted in the plans by Heath Consulting Engineers.

Sheet 4 of the Heath plans provides a bulk earthworks plan and volume estimates. In summary:

- It is proposed to establish a borrow pit at the centre of the proposed track. Subject to detailed design, the borrow pit and OSD basin is required to provide approximately 109,630m^3 of material to enable the development to be established above the required flood levels.
- The formation of the vehicle and track areas will require the importation of approximately 8,240m^3 of base and sub-base gravel.
- The track surface will require the importation of approximately 8,370m^3 of the specific track pavement material.

Sheet 5 of the plans by Heath Consulting Engineers show:

- The finished track level will be approximately up to 2.56m above existing ground level (refer Section C).
- The pad level for the clubhouse building would be in the order of 4.1m above existing ground level (refer Section A).
- The pad level for the stables building would be in the order of 1.9m above existing ground level (refer Section B).
- Vehicle areas will be shaped to provide stormwater runoff and satisfactory transition to building levels.
- The borrow pit at the centre of the track will be excavated to a depth of approximately 2.93 metres below existing ground level. It will be reshaped by gently grading the surface from the inside edge of the track towards the centre, where stormwater will be collected in pits and pipes and allowed to infiltrate into the subsurface. The finished levels across the centre are intended to be gentle enough to maintain the utility of the area.

3.8 REMOVAL OF TREES

With reference to Drawing DA4 by McKinnon Design, consent is sought to remove:

- Two native trees that coincide with the proposed track and its centre.
- The native tree that coincides with the stables building.
- The native tree that coincides with the trailer/truck parking area.

3.9 SIGNAGE

It is proposed to affix a flush wall sign on the southern elevation of the first floor of the club building depicting the name of the club, *Wagga Harness Racing Club* (refer McKinnon Design Drawing DA6).

3.10 PROVISION OF SERVICES

With reference to the plans by Heath Consulting Engineers, the development is proposed to be serviced as follows:

- Sewer generated by the development will be collected in a packaged sewage pump station and then pumped via rising main to the existing sewer main within the north eastern corner of the site. Connection to the existing main will be via a new manhole. The pump station and rising main will be privately maintained (refer Sheet 16).

- Town water will be extended from the existing town water main in Hampden Avenue to the first entrance to the on Cooramin Street for connection to the proposed development (refer Sheet 16).

- With reference to Sheet 15, stormwater drainage will be managed as follows:

  - The revised site layout incorporates an OSD/infiltration basin to assist with the control of stormwater runoff from the hardstand areas. This OSD/infiltration basin has the potential to harvest stormwater runoff for storage and future reuse for track watering.

  - All roof water to be captured and stored in a rainwater tank for re-use on site.

  - Parking areas to be drained by stormwater pits and pipes where sufficient cover can be obtained. The outlets are to be directed to table drains along Cooramin Street. This table drain will be directed to the proposed OSD/infiltration basin within the site.

  - The track is to drain to the centre with surface water allowed to infiltrate.

  - For flood events greater than the 10% AEP, flood water that overtops the track can drain out via a proposed 300mm diameter pipe culvert once flood waters recede so as to leave the track free of water. Any water remaining in the centre can infiltrate and be pumped out via the proposed pump-out pit and culvert with a portable diesel pump.

- Electricity and telecommunications will be extended to the development in accordance with the requirements of the relevant supply authority.

3.11 ACTIVITIES/OPERATION

The application is for a harness racing track together with club building, parade ring, and stables. The club building will include a lounge, function area/meeting room, bar and servery, viewing platform, concourse with seating.

TOWN PLANNING CONSIDERATIONS

In determining the application, Council must take into consideration the relevant matters under section 79C(1) of the Environmental Planning and Assessment Act, 1979. These are assessed below.

4.1 PROVISIONS OF ENVIRONMENTAL PLANNING INSTRUMENTS

4.1.1 Wagga Wagga Local Environmental Plan 2010

The land is subject to the provisions of Wagga Wagga Local Environmental Plan 2010 (the LEP). The relevant provisions are considered below.

Zoning

The majority of the subject land is zoned RU1 Primary Production under Wagga Wagga Local Environmental Plan 2010. At the time the DA was first submitted, the north eastern corner of the land was unzoned and identified as a Deferred Matter under the LEP. Since lodgement of the DA, this north eastern area has now been zoned R5 Large Lot Residential.

It should be noted that the proposed development is confined entirely within the land zoned RU1. The area that is zoned R5 is outside the extent of the development and would essentially remain unaffected (expect for the establishment of screen landscaping along the Hampden Avenue frontage of the site.

According to the Land Use Table in Part 2 of the LEP, the objectives of the RU1 Zone are:

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- To encourage diversity in primary industry enterprises and systems appropriate for the area.
- To minimise the fragmentation and alienation of resource lands.
- To minimise conflict between land uses within this zone and land uses within adjoining zones.
- To foster strong, sustainable rural community lifestyles.
- To maintain the rural landscape character of the land.
- To allow tourist and visitor accommodation only where it is in association with agricultural activities.

In consideration of the zone objectives:

- The proposal is not adverse to the first stated objective. It will consume land that is currently used for agricultural purposes. However the value of the subject land as an agricultural resource is somewhat diminished by its modest size and its urban/rural fringe location which comprises numerous rural small holdings and associated dwellings. The proposed development represents a permitted use in the RU1 zone. The proposed development will not impact upon the agricultural production potential of adjacent rural zoned land.

- The proposal is not adverse to the second stated objective. It is a use that is appropriately located in a rural area and increases the diversity of enterprises and systems in this area.

- The proposal is not adverse to the third stated objective. As stated above, the value of the subject land as an agricultural resource is already compromised by the existing pattern of development. The proposed development does not further alienate or fragment the subject land.

- The DA provides supporting information to satisfy the fourth stated objective. Potential land use conflicts, especially pertaining to noise, lighting, traffic, and visual amenity have been considered and addressed.

- The proposal is not adverse to the fifth stated objective which seeks to foster strong, sustainable rural community lifestyles.

- The proposal is not adverse to the sixth stated objective which seeks to maintain the rural landscape character of the land. The proposed development is appropriately located in a rural area. The subject land is accommodating in the sense that the rural landscape in this particular area is characterised by the urban/rural fringe location comprising a mix of buildings, development and land uses.

- The proposal is not adverse to the seventh stated objective. Whilst the proposal itself does not provide tourist and visitor accommodation, it has the potential to attract visitors to the area and thus generate a benefit to tourist and visitor accommodation operators. It should be noted that that there is a caravan park to the north of the site in Horseshoe Road as well as a hotel/motel to the north east of the site in Hampden Avenue.

Permissibility

According to the Land Use Table in Part 2 of the LEP, the development is permissible with consent as a *recreation facility (major)* which means "a building or place used for large-scale sporting or recreation activities that are attended by large numbers of people whether regularly or periodically, and includes theme parks, sports stadiums, showgrounds, racecourses and motor racing tracks."

Clause 1.2 Aims of Plan

The particular aims of the LEP are as follows:

a) to optimise the management and use of resources and ensure that choices and opportunities in relation to those resources remain for future generations,

b) to promote development that is consistent with the principles of ecologically sustainable development and the management of climate change,

c) to promote the sustainability of the natural attributes of Wagga Wagga, avoid or minimise impacts on environmental values and protect environmentally sensitive areas,

d) to co-ordinate development with the provision of public infrastructure and services.

Based on the information provided in this report, there are no aspects of the proposed development that would be contrary to the aims of the LEP.

Clause 5.9 Preservation of trees or vegetation

Clause 5.9 of the LEP applies as it is proposed to remove four native trees within the subject land. The objective of this clause is to preserve the amenity of the area, including biodiversity values, through the preservation of trees and other vegetation.

This clause applies to species or kinds of trees or other vegetation that are prescribed for the purposes of this clause by a development control plan made by the Council.

According to this clause a person must not ringbark, cut down, top, lop, remove, injure or wilfully destroy any tree or other vegetation to which any such development control plan applies without the authority conferred by:

a) development consent, or

b) a permit granted by the Council

Clause 5.10 Heritage Conservation

The subject land is not within a heritage conservation area and is not identified as a heritage item.

There is a property to the south east, known as "Wattle Vale" which is identified in Schedule 5 of the LEP as a heritage item of Local significance. As such Clause 5.10 of the LEP applies. The objectives of this clause are as follows:

a) to conserve the environmental heritage of Wagga Wagga,

b) to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,

c) to conserve archaeological sites,

d) to conserve Aboriginal objects and Aboriginal places of heritage significance.

Clause 5.10(4) requires Council to consider the effect of the proposed modification on the heritage significance of the identified heritage item.

It is submitted that the proposed development will not adversely affect the significance of the heritage item. The visual relationship between "Wattle Vale" and the proposed development is diminished largely due to the physical separation of approximately 600 metres and existing vegetation. It is unlikely that the proposed dwelling would impede important views to or from "Wattle Vale".

Clause 7.1A Earthworks

Clause 7.1A is applicable to the proposed development.

The objectives of this clause are:

a) to ensure that earthworks for which development consent is required will not have a detrimental impact on environmental functions and processes, neighbouring uses, cultural or heritage items or features of the surrounding land,

b) to allow earthworks of a minor nature without requiring separate development consent.

Prior to granting consent for earthworks, subclause (3) states that the consent authority must consider the following matters:

a) The likely disruption of, or any detrimental effect on, existing drainage patterns and soil stability in the locality,

b) The effect of the proposed development on the likely future use or redevelopment of the land,

c) The quality of the fill or the soil to be excavated, or both,

d) The effect of the proposed development on the existing and likely amenity of adjoining properties,

e) The source of any fill material and the destination of any excavated material,

f) The likelihood of disturbing relics,

g) The proximity to and potential for adverse impacts on any watercourse, drinking water catchment or environmentally sensitive area.

In consideration of the above matters:

- In regard to matter (a):
  - The proposed earthworks do not affect any defined water course or overland flow path.
  - The proposed earthworks are in a flood plain. Previous Flood Impact Assessments have been undertaken and submitted to Council. In response to the issues raised by the Southern JRPP, an updated assessment has now been prepared by WMA Water based on the revised development design and utilising the WMA Water 2014b hydraulic model. This latest assessment is included in *Annexure F* of this SoEE. In general, the assessment found that the proposed development would be satisfactory.
  - The soils of the site were investigated by geotechnical consultants, Aitken Rowe to assess the type and condition of the underlying material (refer *Annexure G*). The report makes recommendations in respect to geotechnical design parameters for the proposed development.
  - An erosion and sediment control plan is to be prepared and implemented.
- In regard to matter (b), the earthworks facilitate an appropriate use of flood prone land,
- In regard to matter (c) the soils of the site were investigated by geotechnical consultants, Aitken Rowe to assess the type and condition of the underlying material (refer *Annexure G*). The report makes recommendations in respect to geotechnical design parameters for the proposed development.

- In regard to matter (d) the proposed earthworks associated with the development are unlikely to impact upon the amenity of adjoining properties. The earthworks are located well within the boundaries of the subject land and will not impact upon neighbouring land. A construction management plan will be prepared to minimise the potential for raised dust during the construction period.

- In regard to matter (e):

  - The proposal does not involve the export of fill material from the site.

  - The majority of fill material required for the development will be won on site. However, select fill material, gravel road base, and track surface material will be imported from off-site. The imported materials will be obtained via approved sources.

- In regard to matter (f) the Aboriginal Heritage Information Management System (AHIMS) search results (in *Annexure I*) indicate that no Aboriginal sites are recorded in or near the above location; and that no Aboriginal places have been declared in or near the above location

- In regard to matter (g):

  - The site is not affected by any defined watercourse. The nearest is Dukes Creek which traverses the adjoining land to the west and is located downstream on a very gentle grade at least 100 metres away from the edge of the proposed works.

  - The subject land is not identified as being within a defined drinking water catchment.

  - The subject land is not identified as an environmentally sensitive area.

Clause 7.2 Flood planning

The subject land is flood prone. Clause 7.2 of the LEP applies and provides as follows:

1) The objectives of this clause are as follows:

   a) to minimise the flood risk to life and property associated with the use of land,

   b) to allow development on land that is compatible with the land's flood hazard, taking into account projected changes as a result of climate change,

   c) to avoid significant adverse impacts on flood behaviour and the environment.

2) This clause applies to:

   a) land that is shown as "Flood planning area" on the Flood Planning Map, and

   b) other land at or below the flood planning level.

3) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development:

   a) is compatible with the flood hazard of the land, and

   b) will not significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties, and

   c) incorporates appropriate measures to manage risk to life from flood, and

   d) will not significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses, and

   e) is not likely to result in unsustainable social and economic costs to the community as a consequence of flooding.

Flood matters are addressed at *Section 4.5.5* of this report.

Clause 7.5 Riparian lands and waterways

According to the Water Resource Map, Dukes Creek which flows through the adjoining property to the west is identified as a Waterway. Due to its proximity, the proposal is subject to Clause 7.5, which provides as follows:

1) The objectives of this clause are to protect or improve:

   a) water quality within waterways, and

   b) stability of the bed and banks of waterways, and

   c) aquatic and riparian habitats, and

   d) ecological processes within waterways and riparian areas, and

   e) threatened aquatic species, communities, populations and their habitats, and

f) scenic and cultural heritage values of waterways and riparian areas, and

g) catchment protection to prevent increased sediment loads and stream bank erosion from entering lakes, rivers and waterways.

2) This clause applies to all of the following:

a) land identified as "Water" on the Water Resource Map

b) land identified as "Waterway" on that map,

c) all land that is within 40 metres of the bank or shore (measured horizontally from the top of the bank or shore) of each waterway on land identified as "Waterway" on that map.

3) Development consent must not be granted to development on land to which this clause applies unless the consent authority has considered the following matters:

a) any potential adverse impact on any of the following:

i) water quality within the waterway,

ii) aquatic and riparian habitats and ecosystems,

iii) stability of the bed, shore and banks of the waterway,

iv) the free passage of fish and other aquatic organisms within or along the waterway,

v) habitat of any threatened species, population or ecological community,

b) whether or not it is likely that the development will increase water extraction from the waterway for domestic or stock use and the potential impact of any extraction on the waterway,

c) proposed measures to ameliorate any potential adverse impact.

4) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development is consistent with the objectives of this clause and:

a) the development is designed, sited and managed to avoid any potential adverse environmental impact, or

b) if a potential adverse impact cannot be avoided, the development:

i) is designed and sited so as to have minimum adverse impact, and

ii) incorporates effective measures so as to have minimal adverse impact, and

iii) mitigates any adverse impact through the restoration of any existing disturbed area on the land.

Water quality matters are addressed in *Section 4.5.8* of this report.

4.1.2 State Environmental Planning Policy (Infrastructure) 2007

The proposed development is defined as traffic generating development pursuant to Clause 104 and Column 2 of the Table to Schedule 3 of SEPP (Infrastructure) 2007.

Before the DA can be determined, Clause 104(3) requires the consent authority to:

a) give written notice of the application to the RTA within 7 days after the application is made, and

b) take into consideration:

(i) any submission that the RTA provides in response to that notice within 21 days after the notice was given (unless, before the 21 days have passed, the RTA advises that it will not be making a submission), and

(ii) the accessibility of the site concerned, including:

(A) the efficiency of movement of people and freight to and from the site and the extent of multi-purpose trips, and

(B) the potential to minimise the need for travel by car and to maximise movement of freight in containers or bulk freight by rail, and

(iii) any potential traffic safety, road congestion or parking implications of the development.

The relevant matters are addressed in the Traffic Assessment (*Annexure D*) and in *Section 4.5.1* of this report.

4.1.3 State Environmental Planning Policy (Rural Lands) 2008

The aims of the Rural Lands SEPP are as follows:

a) to facilitate the orderly and economic use and development of rural lands for rural and related purposes,

b) to identify the Rural Planning Principles and the Rural Subdivision Principles so as to assist in the proper management, development and protection of rural lands for the purpose of promoting the social, economic and environmental welfare of the State,

c) to implement measures designed to reduce land use conflicts,

d) to identify State significant agricultural land for the purpose of ensuring the ongoing viability of agriculture on that land, having regard to social, economic and environmental considerations,

e) to amend provisions of other environmental planning instruments relating to concessional lots in rural subdivisions.

The potential impact of the development upon rural land is considered later in this report at *Section 4.5.6.*

4.1.4 State Environmental Planning Policy No. 64 – Advertising and Signage

Schedule 1 of SEPP No. 64 requires the following criteria to be considered in regard to the proposed advertising signage:

Character of the Area

The character of the area is rural. Advertising and signage is not prolific and relates mainly to:

- Enterprises being undertaken on individual properties;
- Tourist directional signage;
- Traffic signage.

The majority of signs are free standing and are of varying size. Signage is not illuminated and it is not dominated by corporate images or logos.

In this context and despite being larger than other signage in the area, the proposed signage is reasonably consistent with the character of outdoor advertising in this area as follows:

- It relates to an enterprise being undertaken with the subject land;
- It is non-corporate in its presentation; and
- It is not illuminated.

Special Areas

The subject land is not within a special area.

Views and Vistas

In accordance with the SEPP No. 64 guidelines, the proposed signage is considered acceptable because it is affixed to a wall of the building below the roof line. As such it would not obscure or compromise important views, or affect the skyline, or interfere with the viewing rights of other advertisers.

Streetscape, Setting or Landscape

The signage displays attractive and restrained and thus would not unreasonably affect the visual interest of the setting and landscape. Being affixed to the building, it is to some extent characteristic of traditional rural signage. Further, it does not have a corporate appearance and it is well setback from the roadway.

Site and Building

The signage is integrated into an elevation of the building and does not affect the building silhouette. The sign relates satisfactorily to the scale, form and proportion of the building.

Associated devices and logos with advertisements and advertising structures

The signage does not include any safety devices, platforms, lighting devices or logos that form an integral part of the signage or structure on which it is to be displayed.

Illumination

The proposed signage will not be backlit.

Safety

The signage will not obscure sightlines from public areas and thus, will not reduce the safety for any public road, pedestrians or cyclists.

4.2 PROVISIONS OF DRAFT ENVIROMENTAL PLANNING INSTRUMENTS

There are no known draft regional, state or local planning instruments that are likely to affect the subject land or development.

4.3 PROVISIONS OF DEVELOPMENT CONTROL PLANS

The development is subject to the provisions of *Wagga Wagga Development Control Plan 2010*. The relevant sections are considered below.

4.3.1 Section 2 – Controls that Apply to all Development

Clause 2.1 – Site Analysis Plan

A site analysis plan has been provided.

Clause 2.2 – Vehicle access and movements

The DCP sets the following objectives for vehicle access and movements:

- Ensure the safety and efficiency of urban and rural roads.
- Limit new access points to arterial roads or ensure alternative access is utilised where practical.

Having regard to the DCP Controls:

- Access to the development will be provided via a secondary or non arterial road.
- A Traffic Impact Study has been prepared.
- The site is designed so that all vehicles enter and exit the site in a forward direction at all times.
- The site and development design provides adequate areas for on site loading and unloading.
- The access driveways will be provided in accordance with the relevant Australian Standard.
- The proposed access points are provided with generous driver sightlines along Cooramin Street.

Clause 2.3 – Off-street parking

The DCP sets the following objectives for off-street parking:

- Ensure adequate provision is made for safe and efficient movement of vehicles and pedestrians.
- Ensure the provision of safe and efficient parking for all modes of transport to meet anticipated demands.
- Minimise disruptions to existing levels of service and safety as a result of insufficient parking being provided on site.
- Soften the impacts of larger car parking areas through the use of landscaping.
- Provide both shade and solar access to car park users by means of purpose designed tree planting.

Having regard to the DCP Controls and parking rates:

- The DCP does not specify a parking rate for this particular type of development.
- The parking assessment provided in the Traffic Report and addendum by Colston Budd Hunt & Kafes (refer *Annexure D*) concludes that the development will have adequate parking.
- The parking will be provided in accordance with the relevant Australian Standard.
- Landscaping is proposed within and around the car park.

Clause 2.4 – Landscaping

The DCP sets the following objectives for landscaping:

- Promote designed landscapes as part of a fully integrated approach to site development within residential, industrial and commercial areas.
- Retain and protect existing vegetation, particularly large and medium trees, and conserve significant natural features of the site.
- Encourage landscape that responds to existing site conditions, local character and creates and enhances living and working environments whilst discouraging the opportunities for crime and vandalism.

- Ensure the landscape adequately complements the proposed built forms and minimises the impacts of scale, mass and bulk of the development on the existing area and surrounding streetscapes, view sheds and neighbourhood amenity.

- Promote the use of indigenous and other low maintenance plant material suitable to the climatic extremes of the local area, particularly the use of plant material with low water requirements.

- Encourage landscape that can be effectively maintained to a high standard for the life of the development.

- Enhance and define entry areas and to frame views from and into the development via the use of landscaping.

Having regard to the DCP Controls, the proposed landscaping areas will include plantings that are:

- Native species with low water demand;

- Suitable to the local area;

- Of suitable height and foliage to offer screening at an intermediate level; and

- Of suitable height and foliage to soften and screen the height of the proposed buildings.

Clause 2.5 – Signage

The DCP sets the following objectives for signage:

- Complement the SEPP 64 and provide more detailed controls that reflect the environmental conditions and character of the local government are of Wagga Wagga.

- Support a consistent approach for signs and advertising across the local government are of Wagga Wagga.

- Allow reasonable opportunities for signs and advertising associated with business and tourism developments.

- Ensure signs do not detract from the urban or rural landscape.

- Minimise visual clutter from the proliferation of signs and advertising and from poor rationalisation of signs.

- Clarify where signs will not be supported or encouraged.

Pursuant to the SEPP 64 Assessment provided at *Section 4.1.4* of this report, the proposed signage is considered satisfactory in relation to the relevant DCP controls.

Clause 2.6 – Safety and security

The DCP sets the following objectives for safety and security:

- Incorporate crime prevention strategies in new developments.
- Encourage active, pedestrian oriented environments where developments are designed to integrate into the public domain.
- Maximise opportunities for natural surveillance of public spaces and building or site entrances.

Having regard to the DCP Controls, the NSW Department of Planning publication, *Crime Prevention and the Assessment of Development Applications* (2001) is considered at *Section 4.5.12* of this report.

Clause 2.7 – Changing the landform – cut and fill

The DCP sets the following objectives for safety and security:

- Encourage site responsive development and protect the amenity of adjoining land.
- Avoid excessive earthworks and minimise changes to the natural landform.
- Encourage site layout and building design that is appropriate to the site conditions, including use of split levels, pier foundation or suspended floor house designs.
- Avoid adverse impacts on salinity by minimising the potential for surface water to enter the groundwater in recharge areas.
- Avoid inappropriate fill being introduced to sites.
- Ensure adequate provision for drainage in relation to cut and fill practices.

Having regard to the DCP Controls, the development will involve cut and fill earthworks that will exceed the 1.5 metre height and depth limits encouraged by the DCP. It is requested that Council accept a variation of this requirement on the basis of the following:

- The excavation (cut) works are required so as to win enough material to have the track and building pads above the required flood levels. To import the material from off-site would represent a significant cost imposition upon the development.

- The fill works are required so as to achieve the nominated flood levels for the track and buildings.

- The works will be shaped so as to avoid steep banks and batters.

- The borrow pit will be reshaped to create a usable area at the centre of the track.

- The works are sufficiently removed from boundaries so as to not impact upon the amenity of neighbours.

- Appropriate erosion and sediment controls will be implemented.

Clause 2.8 – Erosion and sediment control principles

The DCP sets the following objectives for erosion and sediment control:

- Protect the environment against soil erosion and loss of soil from construction sites.

- Prevent the degradation of drainage systems, waterways and aquatic environments from deposition of soil and foreign material from construction sites.

- Prevent flood damage of individual properties caused by sediment reducing the flow capacity of the stormwater drainage system.

- Promote the implementation of erosion and sediment control measures by persons undertaking construction and earthworks activities to prevent the loss of soil from the site.

Having regard to the DCP Controls, an erosion and sediment control plan will be prepared prior to any construction works.

4.3.2 Section 5 – Natural Resource and Landscape Management

Clause 5.1 – Development on ridges and prominent hills

The DCP sets the following objectives for development on ridges and prominent hills:

- Maintain and enhance the visual and landscape setting of the entire local government area of Wagga Wagga.

- Avoid buildings, driveways and other construction on visually prominent high ground.

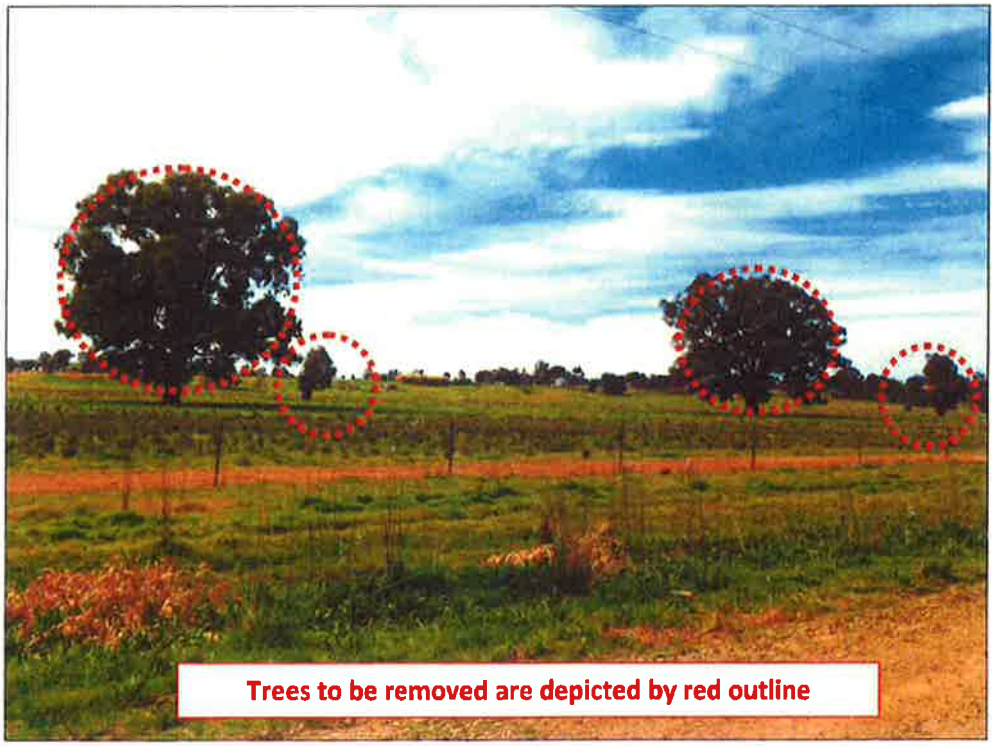
- Encourage split level or other appropriate construction on higher and sloping ground.

- Protect groundwater recharge areas.

The visual impact of the proposed development is considered at *Section 4.5.3* of this report and has regard to the relevant DCP controls.

Clause 5.2 – Preservation of trees

With reference to Table 5.2.1 of the DCP, the removal of the identified trees requires the consent of Council pursuant to Clause 5.9 of the LEP.



In regard to the matters for consideration that pertain to the RU1 zone:

- The trees do not pose any obvious potential risk or danger. They simply require removal because they coincide with the proposed track and earthwork adjacent to the track.

- The trees stand as lone trees on relatively flat terrain. Their removal would not compromise soil stability in this location or contribute to land degradation.

- The site is virtually devoid of native trees. Whilst the subject trees offer some scenic and environmental amenity, the two smaller trees are considered to be relatively poor specimens (refer photograph below). It is acknowledged that the larger trees are significant but the redesign in conjunction with the required design levels necessitates their removal. It is submitted that the proposed landscaping for the development will compensate for the loss of these trees.

- The trees stand as lone trees and do not appear to offer any obvious habitat value.

- The trees are unlikely to cause potential damage. However, their removal is required so as to accommodate critical elements of the development.

4.3.3 Section 8 – Rural Development

Clause 8.1 – Development in rural areas

The DCP sets the following objectives for development in rural areas:

- Ensure that rural developments are compatible with site context.

- Minimise potential for conflicts between traditional and productive agricultural uses and non-agricultural uses.

- Ensure that adequate buffers are provided so that dwellings do not interfere with the right to farm adjoining or adjacent land

- Ensure safe and adequate servicing and access arrangements.

Having regard to the DCP Controls, this report provides information that addresses the interface issues relating to the proposed development and surrounding land uses.

4.4 MATTERS PRESCRIBED BY THE REGULATIONS

The Environmental Planning and Assessment Regulation 2000 prescribes certain matters that must be considered by Council in determining a development application.

There are no relevant prescribed matters that are applicable to this application.

4.5 THE LIKELY IMPACTS OF THE DEVELOPMENT

The potential impacts of the development are considered below.

4.5.1 Traffic Impact

A Traffic and Parking Report was prepared by Colston Budd Hunt & Kafes Pty Ltd to examine the traffic implications of the proposal (refer *Annexure D*). The report provided an assessment of the originally submitted proposal in terms of:

- Parking provision
- Access arrangements
- Internal layout and servicing
- Traffic effects.

In response to the matters raised by the JRPP, an addendum to the original Traffic and Parking Report has been prepared and is also included in *Annexure D*.

In the course of this additional traffic assessment, it was found that the attendance figures for race meetings were overstated in the original DA submission. The figures in the original DA submission were provided by the Club as estimates only. However, following a review of actual attendance based on gate takings for meetings in 2014 and 2015, the attendance figures (particularly for peak events) proved to be much lower than the figures provided in the original DA submission. This has positive implications in terms of parking and traffic effect.

The following information summarises the findings of the traffic and parking assessments.

Parking Provision

The original Traffic and Parking Report provided an analysis as to how the proposed off-street car parking spaces would satisfy the parking needs of the development. It was concluded that the proposed parking provision of 150 car spaces and 60 spaces for trucks/trailers/floats would cater for the parking demand on race days.

It was our further submission that overflow parking would be readily available within the site to cater for the larger events (which only occur approximately twice a year).

In its consideration of the DA, the JRPP raised the following concerns that are relevant in terms of parking provision:

1. **There is no data given on anticipated vehicle occupancy rates. Is this data available from the survey of the existing facility?**

2. **How much parking is available at the existing Wagga facility and is it limited by current site constraints? Much of the data is taken from events at the Wagga facility and therefore specific information would assist in determining how comparable the facilities are.**

3. **Little real information is provided about parking arrangements for peak events. It is suggested that a peak event would involve about 2,000 patrons, while a normal event would be 150 to 200 people. If a vehicle occupancy rate of 1.5 persons per vehicle were suggested, this would create a parking demand of perhaps 133 spaces, consistent with the 150 spaces proposed. Applying the same criteria to peak events would see a demand of 1,330 spaces, a shortfall of about 1,180 spaces. Where would these overflow vehicles be parked and what access arrangements would be put in place?**

4. **The traffic and parking assessment hinged on a single meeting at the existing facility on Sunday 12th January. What was the attendance on that day and how typical was it of normal operations?**

Colston Budd Hunt & Kafes provide the following response to the above matters:

2. *We have previously prepared a report which was submitted with the application for the proposed development. The above matters raised by the JRPP largely relate to likely attendance at the proposed facility and whether the survey results in our previous report are representative of future operations.*

3. *The Wagga Harness Racing Club has provided the following attendance figures for race meetings in 2014 and 2015 based on gate takings:*

   - *13 December 2014: some 160 people;*
   - *24 February 2015: some 254 people;*
   - *7 March 2015: some 446 people;*
   - *2 May 2015: some 180 people; and*
   - *23 May 2015: some 150 people.*

4. *The above race days were generally Saturdays, with one Tuesday. The highest attendance, on 7 March 2015, was for the club's biggest meeting in 2015. The club has advised that at other meets, for example, on Fridays, attendances are lower and admission fees are not charged. The above figures are therefore attendances for generally busier race meetings.*

5. *The above attendance figures include the club's estimate of some 80 to 100 people associated with horses plus some 20 race day staff and club officials.*

6. *As noted in our previous report, people attending a race meeting arrive prior to their races and are able to leave once their commitments are completed. Therefore, the above attendance numbers represent the total number of people over the day, not the peak number on site at one time, which is lower.*

7. *As also noted in our previous report, our traffic and parking surveys were undertaken on 12 January 2014. The peak number of vehicles counted parked on the existing site at Turvey Park was 133 vehicles, at 4:00 pm.*

8. *We also undertook counts of the number of people on the site over the survey day. The peak number of people counted on the site, which was also at 4:00pm, was 174 people.*

9. *Therefore, regarding point 1 above raised by the JRPP, the effective car occupancy on the survey day was some 1.3 people per vehicle. In relation to point 4 above, based our count of 174 people at the peak time, the survey days was one of the busier days of the year.*

10. *As well as counting the number of vehicles parked on the site, our surveys recorded the number of vehicles parked on surrounding streets over the day. These streets included Docker Street, Bourke Street, Urana Street, College Avenue and Lusher Avenue, which are adjacent and close to the site. They would be the streets used by vehicles associated with the facility and not parked on the site.*

11. *The survey area in the above streets provides parking for more than 500 cars. Over the day, there was little demand for on-street parking, which range between some 14 and 24 cars (three to five per cent of the available supply).*

12. *Over the day, there was little or no correlation between the increase in on-site parking and any change in parking conditions on surrounding streets. Therefore, regarding point 2 above, on the survey day, there was little or no on-street parking by vehicles associated with the facility.*

13. *Regarding point 3, the club has advised that the estimate of some 2,000 people is not correct. A review of the historical gate takings indicated that attendance figures are significantly lower.*

14. *Experience indicates that as attendances at sporting fixtures increases, average car occupancy also increases. This can be due to a range of factors including the availability of parking, and the fact that busier days may attract more members of one family or group who travel together, compared to a quieter day where only enthusiasts in that family or group attend.*

15. *Amended plans have been prepared for the development. These show parking for some 291 vehicles, including:*

    - *157 vehicles in the main car park;*
    - *62 vehicles for trucks/trailers/horse floats; and*
    - *Some 72 vehicles in an overflow parking area adjacent to the main car park.*

16. *Based on:*

    - *the busiest attendance day of 2015 (attended by some 450 people as noted above);*
    - *some 80 per cent of people being on site at the one time; and*
    - *a car occupancy of 1.5 people per vehicle;*

    the parking demand would be some 240 vehicles. The proposed provision of some 260 spaces would therefore cater for these demands.

17. *Additionally, on busy days, the club will implement a plan to manage parking on the site. The plan will be prepared prior to operation of the facility and would include the following principles:*

    - *Encourage car-pooling for people travelling to the event;*
    - *Provision of a charter bus service to transport people to and from designated points in Wagga; and*
    - *On-site marshalls to direct people to available parking.*

Access, Servicing and Internal Layout

The original Traffic and Parking Report considered the development to be satisfactory in terms of access, servicing and internal layout due to the following:

- Vehicular access to the site is proposed to be provided from Cooramin Street. Two driveways are proposed: one to the truck/trailer/horse float parking areas and one to the general car parking area. An internal connection will be provided between the two parking areas.

- The driveways will cater for two-way traffic and will be provided in accordance with the Australian Standard for Parking Facilities (Part 1: Off-street car parking and Part 2: Off-street commercial vehicle facilities), AS 2890.1:2004 and AS 2890.2 – 2002 to cater for the size and type of vehicles proposed. Vehicles will be able to enter and exit the site in a forward direction.

- The larger vehicle parking area will provide for vehicles ranging in size up to small semi trailers. Spaces will be 15 metres long and 3.5 metres wide. These spaces will cater for cars/trailers, rigid trucks and small semi trailers.

- Within the general car park, parking spaces will be 2.5 metres wide by 5.4 metres long, with two-way circulation aisles a minimum of 6.5 metres wide. These dimensions are considered appropriate, being in accordance with AS 2890.1:2004.

There are no aspects about the revised design to suggest that the above findings would no longer apply.

Traffic Effects

Under the original Traffic and Parking Report:

- Traffic counts were undertaken at the existing facility on a race day and indicated a peak hour traffic generation of some 130 vehicles per hour two-way (some 100 in and 30 out). This generation occurred earlier during the event when people were arriving. People were observed to leave the event once their commitments were completed (e.g. following the completion of a race). The traffic counts recorded lower generations later in the day.

- Traffic generation was assessed at 130 vehicles per hour two-way. The additional traffic has been assigned to the road network. Traffic increases in Cooramin Street, from where access is proposed, would be some 130 vehicles per hour two-way at peak times. Increases on Olympic Highway, Coolamon Road, Horseshoe Road, Hampden Avenue and Mill Street would be lower at some 10 to 75 vehicles per hour two-way.

- The intersections were analysed using the SIDRA program with the additional development traffic added to existing traffic flows. The SIDRA analysis found that:

  - The intersection of Olympic Highway with Horseshoe Road and Coolamon Road would continue to operate with average delays of less than 20 seconds per vehicle during the afternoon period. This represents level of service B, a good level of service.

  - The unsignalised intersections of Hampden Avenue with Horseshoe Road, Cooramin Street and Mill Street/Marah Street would continue to operate with average delays for all movements of less than 15 seconds per vehicle during the afternoon period. This represents levels of service A/B, a good level of service.

On this basis, Colston Budd Hunt & Kafes concluded that the road network will be able to cater for the additional traffic from the development.

However, in its consideration of the DA, the JRPP raised the following concerns that are relevant in terms of traffic effects:

> **5. Like noise impacts, what traffic numbers have been generated at the new Bathurst facility if it is to be similar to the one proposed at Wagga Wagga?**
>
> **6. No assessment is provided of construction traffic impacts.**

Colston Budd Hunt & Kafes provide the following response to the above matters:

18. Regarding point 5, it is considered that it is most appropriate to compare the proposed development to the existing facility. This is consistent with RMS guidelines, which indicate that that estimates of traffic generation should be based on surveys of similar developments.

19. We have therefore based our assessment on the existing facility, which is being relocated. A comparison with another facility at Bathurst, which is several hundred kilometres away, is considered to be less representative.

20. However, a review of attendances at the facility in Bathurst following the opening meeting on 19 October 2014 shows the following:

- *average attendance of some 256 people;*
- *85th percentile attendance of some 292 people; and*
- *93rd percentile attendance of some 469 people.*

21. *The above busy days at Bathurst therefore attracted similar attendances to that found at busy days at Wagga.*

22. *In relation to point 6 (construction traffic impacts), a detailed construction management plan will be prepared prior to construction certificate, once a builder has been appointed and detailed construction methodology and staging is known. This will include available parking areas and traffic management arrangements for the various stages of construction. An appropriate condition of consent could be included requiring preparation of this plan prior to construction certificate.*

23. *It is not expected that construction traffic activities will generate significant traffic volumes on the surrounding road network. The greatest activity would occur during site works and transporting construction material to the site, including bitumen to seal the hard stand areas.*

24. *It is expected that there would be some 30 to 40 vehicles per day visiting the site during these periods of construction. These are low volumes which would be equivalent to some five to 10 vehicles per hour at busy times. These traffic flows would not be noticeable on the surrounding road network.*

25. *Appropriate area will be available on the site for parking of construction employee vehicles. There are not expected to be a significant number of construction employees (up to some 20) throughout the period of construction.*

26. *The construction traffic management plan will include the following principles:*

    - *maintain traffic access in Hampden Avenue and Cooramin Street;*
    - *manage and control construction traffic movements on the adjacent road network and vehicle movement to and from the construction site;*
    - *maintain traffic capacity at intersections and mid-block near the site;*
    - *maintain access to properties located in the vicinity of the site at all times during the construction process;*
    - *erect construction fencing/scaffolding where required around construction activities;*
    - *maintain safety for site visitors and construction workers;*
    - *restrict construction vehicles to designated routes through the area;*

- *construction vehicle access to be provided at designated points from Cooramin Street; and*

- *construction activity to be carried out in accordance with the approved hours of work.*

4.5.2 Noise Impacts

Due to the proximity of the site to existing residential development, a Noise Impact Assessment (refer *Annexure E*) was prepared by Wilkinson Murray (WM) to accompany the original DA submission. The findings of the original assessment are summarised below.

Original Noise Impact Assessment

- The original assessment was conducted in accordance with the following NSW EPA guidelines:

  - Noise Guide for Local Government (EPA, 2013)

  - NSW Industrial Noise Policy (EPA, 2000)

  - NSW Road Noise Policy (DECCW, 2011)

  - Interim Construction Noise Guideline (DECC, 2009)

  It should be noted that the NSW Industrial Noise Policy (INP) does not specifically apply to the development. The Noise Impact Assessment was primarily conducted in accordance with the Noise Guidelines for Local Government (NGLG). The INP is only referenced because the NGLG advises that the methodology for establishing background noise levels is found in the INP.

- The assessment identified the following properties as the most affected receivers.

  - R1 404 Hampc en Avenue

  - R2 390 Hampden Avenue

  - R3 371 Hampden Avenue

  - R4 369 Hampden Avenue

  - R5 355 Hampden Avenue

Noise monitoring was undertaken near the north eastern corner of the site. The identified receivers and noise monitoring location are depicted below.

- The assessment of noise from typical race meetings is summarised as follows:

  - Based on a typical race meeting, it was noted that the noise from the PA system was dominant over that of the patrons during races, and the typical duration of elevated noise levels associated with races was less than five minutes. Therefore, the assessment of noise emissions during typical race meetings is focussed on the PA system.

  - The predicted noise levels at nearby receivers during typical race events exceed the night time criteria at R1 by 2 dBA and at R2 and R3 by 1 dBA. A 2 dBA exceedance is considered minor and would be barely perceptible by the average person, whereas a 1 dBA exceedance is considered negligible and would not be noticeable by the average person.

  - Noise levels at receivers due to the operation of the PA can be mitigated by good PA system design. Since PA speakers are highly directional, they should be located in such a way that they point away from receivers. The site layout is well suited to this design concept as there are no sensitive receives to the south or west of the site. Therefore, the PA speakers should be located to the north and east of the spectator areas and point to the south and west.

- It should be noted that the predicted noise levels represent the worst case noise levels expected at nearby receivers during typical race meetings. WMPL's experience of harness racing facilities of this size is that noise levels in between races are significantly lower than those during the running of races. This difference could be as much as 20 dBA; in which case, activities on the site would be inaudible at nearby receivers.

- The assessment of noise from major race meetings is summarised as follows:

  - Since measurements of the PA system at the existing Wagga Wagga Harness Racing Club (WWHRC) were conducted during a typical race meeting, it is difficult to predict noise levels at receivers during major race meetings. Noise levels at receivers during these events are still expected to be dominated by the PA system, which would likely need to be operated at a greater amplification level due to the likely increase in crowd noise.

  - Since the major race meetings have approximately 10 times the number of spectators, it is reasonable to expect that the worst case LAeq, 15min noise levels at nearby receivers could be as much as 10 – 15 dBA higher than those during a typical race meeting. For the purposes of assessing the worst case impacts, it has been assumed that noise levels at receivers during major race meetings is 15 dBA higher than those during a typical race meeting.

  - The worst case LAeq, 15min noise levels at nearby receivers during major racing events could be as high as 52 dBA, exceeding the night time criterion by as much as 17 dBA. This is considered a significant exceedance and if this were to occur on a continual and regular basis, would have the potential to cause a noise impact.

  - However, it is considered that occasional major events could be held at the proposed site through an effective Events Noise Management Plan. WMPL recommends that an ENMP is developed to minimise any noise impacts on nearby residents while permitting the WWHRC to conduct occasional major events.

  - As is the case with typical race meetings, the predicted noise levels represent the worst case noise levels at receivers which are expected to occur only during races. In between races, the noise levels at receivers will be significantly lower. With approximately 2000 spectators, the difference between typical and maximum LAeq, 15min noise levels would not be as pronounced due to greater noise emissions from the crowd. However, the difference could still be as high as 10 dBA.

- The assessment of noise from licenced areas is summarised as follows:
  - Patron noise from licensed areas is assessed against NSW Office of Liquor Gaming and Racing (OLGR) criteria.
  - Noise levels at receivers due to patrons in licenced areas will be greatest when a significant number of patrons are in outdoor licenced areas.
  - It is predicted that 1 dBA exceedances would occur at R1 and R3 between 10.00pm and midnight due to patrons in outdoor licenced areas. A 1dB exceedance is considered negligible. Therefore, the use of outdoor licences areas is predicted to comply with OLGR noise criteria during typical race meetings and small functions.
  - Operational noise levels at nearby receivers during major events are expected to increase by a significant amount. There is a likelihood that this increase could be in the range of 10 – 15 dB, resulting in exceedances of the OLGR criteria. For major events, noise emissions from patrons in licenced areas should also be considered in developing an ENMP for the site.
- The assessment of noise from car parks is summarised as follows:
  - Based on information in the traffic report, the peak car-park activity in any 15-minute period is expected to be 33 vehicle movements. It has been assumed that 22 of these vehicles will belong to racegoers and will be parked in the public parking area. It is assumed that nine cars towing floats and two semi-trailers will also enter the truck/trailer parking during this period.
  - The predicted noise levels at nearby receivers due to peak car-park activity exceed the night time criterion at R3 by 1 dBA. This exceedance is considered negligible.
- The assessment of sleep disturbance is summarised as follows:
  - The activity considered to have the greatest potential to cause sleep disturbance is truck movements in the car-park. At the conclusion of night races, there is potential for horse transport trucks to be loaded and depart from the site. The highest noise levels associated with truck activities on the site are generated by air brakes.
  - The predicted noise levels at nearby receivers exceed the established screening sleep disturbance criterion. However these levels are below the level of 60-65dBA which the NSW EPA would suggest is unlikely to cause sleep disturbance.

- It should be noted that the predicted noise levels due to air brakes are based on a truck being operated at the eastern edge of the car-park. This is a worst case scenario. It is recommended that trucks are encouraged to park in the western most spaces in the truck/trailer parking area.

- The traffic noise assessment is summarised as follows:

  - The traffic study for the development states that approximately 60% of all vehicles accessing the site will do so via Hamden Avenue, north of Cooramin Street. Almost all of these vehicles will travel along Horseshoe Road to the Olympic Highway.

  - To predict and assess traffic noise levels due to the development, estimates must be made of incremental traffic volumes during the day (7.00am – 10.00pm) and night (10.00pm – 7.00am) periods. Therefore, it is assumed that the worst case traffic generation during the daytime period would correspond to all car-parking facilities being filled to capacity and emptied over the day. It is assumed that the worst case traffic generation during the night time period would correspond to all car-parking facilities being emptied during the night time period.

  - Based on a proposal for 210 parking spaces, the worst case traffic noise levels were predicted for the most affected receivers along Hampden Avenue and Horseshoe Road.

  - The predicted increase in traffic noise levels at nearby receivers is less than 1 dBA. This increase is not considered perceptible to the average person. Accordingly, no mitigation or further assessment of traffic noise levels is warranted.

- The construction noise assessment is summarised as follows:

  - Construction activities associated with the establishment of the new track and buildings have been modelled to predict worst case construction noise levels at nearby receivers.

  - The worst case construction noise levels are predicted to exceed the noise management levels recommended in NSW EPA's *Interim Construction Noise Guidelines* at R1 and R2 by 3 dBA and 2 dBA.

  - Accordingly, all reasonable and feasible noise mitigation measures should be adopted for construction activities occurring in close proximity to these receptors.

- By way of conclusion, the noise impact assessment made the following recommendations to protect the acoustic amenity of nearby residents and allow the full potential of the site to be realised by the WWHRC and the local community:

  - The PA system is designed to minimise noise 'spill' outside the site by using directional speakers that are pointed away from the direction of nearby receivers; and favouring a greater number of lower powered speakers than fewer high powered speakers.

  - A detailed Events Noise Management Plan is developed through consultation with local council and the community to effectively manage elevated noise levels at receivers during major events.

Response to Matters Raised by JRPP

In its consideration of the DA, the JRPP raised various matters in regard to noise impact. In response to these matters, an addendum to the original Noise Impact Assessment has been prepared by WM (refer *Annexure E*) and is reproduced below.

In response to the JRPP request to revise the site layout, WM offer the following comments:

The original layout of the car-park featured parking spaces for trucks, trailers and horse floats in the eastern section of the car-park; and parking spaces for cars in the western section of the car-park. The JRPP has suggested that this arrangement be reversed.

We have reviewed the suggested amendment to the car-park layout, and recommend its implementation. The nearest residential receivers to the car-park are located to the east, along Hampden Avenue. Since trucks are the dominant noise source within the car-park, moving the parking spaces for trucks further away from sensitive receivers is recommended.

It should be noted that noise emissions from the car-park in its original layout are predicted to comply with relevant noise criteria. Nevertheless, the amendment proposed by the JRPP further reduces the likelihood of noise impacts associated with car-park activities, and is therefore recommended.

In regard to the list of matters raised by the JRPP, WM offer the following responses:

Matter 1 - The September 2014 noise assessment report cited the methodology used in the NSW Industrial Noise Policy. Is that reasonable, given that the development is not for an industrial facility, but a recreation or sporting facility? For example, the policy cannot be applied to motor sport facilities (see Section 1.3 of the Policy). If it is, will the Proponent be content to apply the rest of the Policy, including that noise at any site boundary is not to exceed 70 dBA?

In response to this matter, WM advise as follows:

The operational noise assessment presented in the Noise Impact Assessment (NIA) was carried out in general accordance with the Noise Guide for Local Government (NGLG). Other aspects of the NIA, such as the assessment of sleep disturbance, traffic noise and construction noise were carried out in accordance with other relevant NSW Government guidelines such as the NSW Road Noise Policy (RNP) and the Interim Construction Noise Guideline (ICNG). The single reference to the NSW Industrial Noise Policy (INP) in the NIA is in regards to the establishment of background noise levels. As per the NGLG, the INP describes the processing for establishing background noise levels using long term monitoring.

Matter 2 - Representativeness of background noise monitoring. It is noted that a single background noise monitoring site was used near the north eastern boundary of the proposed site. That location was affected by existing traffic noise from the Olympic Highway. Is that reasonable for residences further south, such as R4 and R5? Are they similarly affected?

In response to this matter, WM advise as follows:

The location selected for background noise monitoring (R2) was considered to exhibit similar ambient noise levels at receivers R3, R4 and R5. R2 is located closer to the Olympic Highway than R3, R4 and R5, however due to the local topography, the noise monitoring location at R2 featured some shielding from traffic noise generated along the Olympic Highway.

Matter 3 - The study notes that a new facility has been built at Bathurst that would be comparable to the proposal at Wagga Wagga. Given this, what noise measurements have been taken at Bathurst that would validate the assumptions made at Wagga Wagga?

In response to this matter, WM advise as follows:

The NIA does not make reference to a facility at Bathurst.

Matter 4 - There is a lack of specific information about licenced premises and other events. The application refers to a number of non-racing events such as car exhibitions, receptions, etc. No assessment is offered about the nature and frequency of these events, nor their noise implications.

In response to this matter, WM advise as follows:

It is understood that consent is no longer being sought for a wide variety of events. Approval for such 'special' events would be sought on an as-needed basis. It has been recommended that an Events Noise Management Plan (ENMP) is prepared for this development and it would be useful for the ENMP to provide a framework for assessing potential impacts from new event types.

Matter 5 - Certain criteria from the Office of Liquor, Gaming and Racing are quoted for licenced premises. It is unclear whether these criteria were intended to apply to licenced premises in rural zoned land and this needs to be examined.

In response to this matter, WM advise as follows:

The Office of Liquor, Gaming and Racing (OLGR) noise condition makes no reference to land use/zoning. The OLGR noise condition is considered to be stringent, particularly in the case where existing background noise levels are low, such as rural areas.

Matter 6 - The noise assessment is applied to five existing residences (R1 to R5 inclusive), implying that they are the only ones potentially affected. It appears from aerial photographs that there may be more dwellings to the east and possibly north of the proposal. A list of affected properties must be comprehensively identified and assessed?

In response to this matter, WM advise as follows:

Any implication that receivers R1 to R5 are the only potentially affected receivers is unintentional. Receivers R1 to R5 are identified in the NIA as the most affected receivers. For typical race meetings, the NIA indicates compliance with noise criteria at the most affected receivers (R1 to R5) and the identification of additional sensitive receivers is not warranted. However, the EMP should include identification of all potentially affected receivers during special events with elevated noise levels.

Matter 7 - Traffic noise assessments for peak and other events. There is no assessment of traffic noise from peak and other events. Instead, the assessment focuses on a typical meeting. What are the acoustic impacts of these other activities?

In response to this matter, WM advise as follows:

The road traffic noise assessment in the NIA was conducted in general accordance with the RNP. The RNP is intended for developments with the potential to generate additional traffic on local roads on a permanent basis, and does not provide specific guidance on assessing sporadic increases in traffic noise. Nevertheless, the traffic noise assessment in the NIA was based on the assumption that the car-park would fill to capacity and then empty over the day during a typical event. Considering attendance numbers at typical race meetings, this assumption is most likely conservative. During a peak event, it is likely that additional traffic would be generated, and that traffic noise levels would increase by approximately 1dB over those presented in the NIA for a typical meeting, and would not likely be noticeable.

Matter 8 - The car park noise assessment was based on 33 vehicle movements as measured from an existing facility. Is this reasonable if the existing site is parking constrained and an improved facility could be expected to attract more patrons? Assessment that takes into account greater vehicle movements should be considered.

In response to this matter, WM advise as follows:

The assessment of noise emissions from the car-park was not based on an existing facility. It was based on the details of the proposed development.

Matter 9 - The acoustic assessment used a number of assumptions such as a peak event would be 10 to 15 dBA louder than a normal meeting, that ten PA speakers would be used, that a maximum of 50 people would use outdoor licenced areas, etc. Has each of these been validated by the proponent?

In response to this matter, WM advise as follows:

When preparing the NIA, a scenario was developed to best represent the likely noise emissions from a peak event. This scenario was developed with the proponent.

Matter 10 - The noise assessment does not apply any penalties for impulsive noise. At least in the case of air brakes from heavy vehicles, there should be a penalty of at least 5dBA. Could this please be considered? Also, tonal/impulsive noise from PA systems might also invoke a penalty.

In response to this matter, WM advise as follows:

The operational noise assessment includes the assessment of $L_{Aeq,\ 15min}$ noise levels against intrusive criteria and the assessment of L_{Amax} noise levels against sleep disturbance criteria during the night time. 'Modifying factors' are used in the assessment of $L_{Aeq,\ 15min}$ noise levels. They are assessed at receivers, and applied over a 15 minute period. No modifying factors were considered applicable to any noise sources in the assessment against the intrusive ($L_{Aeq,\ 15min}$) criteria, including music and PA systems. Noise from air brakes has the potential to cause sleep disturbance impacts due to high L_{Amax} noise, however air brakes do not typically influence $L_{Aeq,\ 15min}$ noise levels due to their short duration. L_{Amax} noise levels from truck air brakes are included in the sleep disturbance assessment in the NIA.

Matter 11 - Attended noise measurements were apparently taken along Hampden Avenue and Horseshoe Road (See section 5.1). These locations must be clearly identified on plan.

In response to this matter, WM provide the following Figure which depicts Attended Noise Measurement Locations:

Matter 12 - Section 6.1 indicated that an unspecified correction had been applied to cumulative construction equipment to arrive at a SPL of 106dBA. A concrete truck alone was quoted at 109dBA. If they discharged repeatedly into a concrete pump, the higher level would be feasible. Has this been considered?

In response to this matter, WM advise as follows:

The correction was time based, and applied to account for the variation in noise levels from construction plant as they change from idling to revving over a typical 15 minute period. It should be noted that the construction noise assessment in the NIA is based on the anticipated typical construction activities, which could potentially be different. The key outcome of the construction noise assessment is that construction noise management levels (NML) are likely to be exceeded, and that a Construction Noise Management Plan (CNMP) should be developed by the contractor. If the development is approved, the conditions should include a requirement to prepare a CNMP which should consider the actual construction activities to occur on the site, and their potential impacts.

Matter 13 - Noise impacts from the importation of fill. It is not clear how much fill is to be imported and how this could affect traffic and construction noise. Could this be addressed?

In response to this matter, WM advise as follows:

At the time of preparing the NIA, fill importation details were unavailable, and the construction noise assessment considered a typical scenario in the south eastern corner of the site where the buildings where to be established. If the development is approved, it is recommended that potential construction noise impacts associated with fill importation are considered in the CNMP, when the requirements and methodologies are known.

Matter 14 - The industrial noise policy and other assessment guidelines point to the need to address adverse meteorological conditions, including thermal inversions and wind enhancement. These do not appear to have been taken into account in the assessment.

In response to this matter, WM advise as follows:

The assessment of operational noise in the NIA was conducted in accordance with the NGLG, which does not require assessment of meteorological enhancements. Nevertheless, temperature inversions are likely to occur in the

area surrounding the proposed development during the night time in winter. However, it would be considered unlikely for significant noise emissions from the site to coincide with temperature inversions.

Matter 15 - It is noted that peak events could generate between ten times and thirteen times more attendances than normal events. An Event Noise Management Plan is seen as the solution to peak noise from such events. There is no indication of what such a management plan would contain and how it would result in less impacts on surrounding residences.

In response to this matter, WM advise as follows:

As per the NIA, the NGLG provides guidance on developing an ENMP and provides examples. It should be noted that the ENMP may not significantly reduce noise levels at receivers. The ENMP should identify reasonable and feasible measures to reduce noise levels, however these may be limited. The key objective of the ENMP is reaching an understanding between all stakeholders, namely Council, the proponent, nearby residents and the wider community, to allow for elevated noise levels during special events, noting that these events have the potential to provide some form of community benefit.

Further to the above statement, WM also advise that the ENMP would actually include measurement of actual noise levels at sensitive receivers from peak events. Given that the attendance numbers at peak events are now expected to be considerably less than original figures; it is reasonable to suggest that the predictions in the original NIA should be regarded as conservative.

4.5.3 Visual Impact

The potential for this proposal to cause adverse visual impacts relates to the bulk and scale of the proposed buildings and structures in the context of a rural setting. Potential visual impacts are proposed to be addressed as follows:

- The predominant building finishes (corrugated colorbond wall and roof sheeting) are characteristic of finishes found in rural areas. All building finishes are to comprise subdued tones and be non-reflective so as to assist with visual integration.

- The development is set well below the local highpoints and ridgelines, thus limiting the potential for it to be observed or appear prominent in long views.

- The proposed building form and profile is not uncharacteristic or rural architecture

- The proposed buildings are well setback from the site boundaries and thus enable ample space for landscaping and softening.

- Landscaping is to be established and should include:

  - Native trees that achieve a mature height commensurate with the typical height of buildings within the development.

  - Plantings that offer screening and softening at an intermediate level,

  - Plantings that soften the car parking areas.

  The proposed landscaping is intended to improve views to the site and enhance amenity within the site.

- The earthwork batters around the track will be grassed so as to integrate with the landform.

4.5.4 Lighting

To ensure that lighting from the development does not cause adverse impacts upon neighbours, a track lighting assessment has been prepared (refer *Annexure H*).

The lighting is designed to provide constant level of lighting for the track. Lighting is also proposed for the car park areas.

According to the assessment, spill readings have been provided on both the Hampden Avenue and to the north of the track where residential properties are located. The resulting spill at the respective property lines is a maximum vertical of 5.9 lux which is below the requirement of 10 lux as per Australian Standard AS 4282 - 1997.

The access locations along Cooramin Street are orientated to the south and will not cause headlight flash to residential properties.

The proposed landscaping be established along the eastern side of the site will assist to minimise the potential for residents in Hampden Avenue to be disturbed by headlights associated with vehicles moving over the car parking areas within the site.

4.5.5 Flooding

Previous Flood Impact Assessments have been undertaken and submitted to Council in respect of the proposed development.

In response to the issues raised by the JRPP, an updated assessment has now been prepared by WMA Water based on the revised development design and utilising the WMA Water 2014b hydraulic model. This latest assessment is included in *Annexure F* of this SoEE.

The assessment generally found that:

The proposed works are relatively minor in the context of the floodplain, with levels being well below 1% AEP flood levels and minimal fill being involved. Results of the modelling work indicate that the impact of the proposed racetrack works on flood levels is negligible for events less than 1% AEP and zero for the 1% AEP event. The lack of impact relates to the fact that the proposed works are, as noted before, relatively minor.

For convenience, the findings of the assessment are reproduced below:

Results

Results are presented in Figures 5 to 20 (of the assessment). *In a 10% AEP flood event the proposed racetrack and infrastructure cause a maximum peak flood level increase of 0.02 m in open areas at properties adjacent to the racetrack precinct (Figure 6). In 5% and 2% AEP flood events the maximum increase in peak flood level is 0.01 m at adjacent properties (Figures 9 and 12) which is negligible. Again, it is only observed in open land. In the 1% AEP design event no peak flood level increase is seen outside the proposed racetrack precinct (Figure 15).*

Impact on Peak Flood Velocity

Current peak flood velocities in the vicinity of the racetrack precinct range from 0.3 m/s in a 10% AEP event to 0.6 m/s in a 1% AEP event.

In the 10% AEP flood event minimal change in peak flood velocity is observed outside the racetrack precinct (Figure 7). Isolated changes can be observed between -0.25 to 0.25 m/s. In the 5%, 2% and 1% AEP events an increase in peak flood velocity of up to 0.25 m/s can be seen in open areas at properties north of the racetrack (Figures 10, 13 and 16). This increase in peak flood velocity is unlikely to cause any impact on soil conditions at those properties.

Impact on Provisional Hydraulic Hazard

For the range of design events investigated current provisional hydraulic hazard at the racetrack precinct and adjacent properties is identified as High Hazard. Figures 17 through to 20 show the change in provisional hydraulic hazard after proposed racetrack works. Modelling results indicate change in provisional hydraulic hazard from High to Low only at the racetrack perimeter as a result of change in flood depth. This change occurs in all design events except for the 1% AEP.

As seen in Figures 17 through to 20 the proposed racetrack works will not affect existing provisional flood hazard in the floodplain.

Flood Warning Time

Murrumbidgee River flooding at Wagga Wagga primarily originates in the upper areas of the Murrumbidgee River catchment with releases from Burrinjuck and Blowering dams. Rainfall downstream of Burrinjuck Dam generally provides a relatively modest contribution to flow. The Erringoarrah stream gauge is the next gauge upstream of Hampden Bridge. It provides Wagga Wagga with sufficient warning time during flood events for evacuation purposes. The last flood in 2012, which was estimated to be a 3% AEP event, took approximately 21 hours to travel from Erringoarrah to Wagga Wagga. Note that flood travel time is indirectly correlated to flood size (i.e. the larger the flood, the shorter the time it takes the flood wave to arrive).

For design events, current travel time of flooding from Oura to North Wagga are as following:

- *10% AEP: 22 h*
- *5% AEP: 18 h*
- *2% AEP: 14 h*
- *1% AEP: 12 h*

Modelling results indicate the construction of the racetrack will not affect flood warning time.

Rate of Rise

The rate of rise describes the average increase in river level, in meters per hour, at a given location. Current rate of rise values within the racetrack precinct are presented below:

- *10% AEP: 0.16 m/h*
- *5% AEP: 0.18 m/h*
- *2% AEP: 0.19 m/h*
- *1% AEP: 0.20 m/h*

Modelling results indicate that construction of the racetrack will not affect rate of rise of floodwaters.

4.5.6 Agriculture

The proposal will not unreasonably impact upon the present and potential use of the subject or surrounding land for the purposes of agriculture. In this regard:

- The value of the subject land as an agricultural resource is somewhat diminished by its modest size. If the land was held with a much larger rural property its agricultural value would be greater. However, it is to be held as a separate property. As such, its value as an agricultural resource is somewhat limited. The relatively modest size of the subject land constrains the economic viability of most non-intensive agricultural enterprises

- The value of the subject land as an agricultural resource is constrained by its urban/rural fringe location. There are several rural small holdings and associated dwellings that more or less bound the property to the east and north. As such there is already an interface issue between the identified land uses that limits the potential to conduct large-scale or more intensive agriculture in this area.

4.5.7 Privacy

Potential impacts on privacy relate mainly to the dwellings to the east and north of the site and may be addressed as follows:

- The main public areas are orientated towards the track and the centre of the site.

- The proposed landscaping will improve privacy in relation to development to the north and east.

4.5.8 Water Quality

According to the LEP:

- The subject land is not within an area of groundwater vulnerability.

- The nearest Waterway is Dukes Creek which is located within the adjoining land to the west. The proposed works are located more than 100 metres away from this water course.

The potential for adverse impacts on water quality would relate mainly to the following:

Erosion and sedimentation as a result of construction works

The following measures would mitigate potential impacts:

- An erosion and sediment control plan should be prepared prior to any earthworks or development. The plan is to cover all aspects of erosion and sediment control during the construction and post-construction phases of the development.

- Erosion and sediment control devices should be placed during the construction phase. Retention of existing vegetation around disturbed areas where practical would reduce mass movement of sediment.

- Immediately after construction works have been completed the exposed areas should be re-sown with appropriate grass species. The erosion and sediment control devices installed at the construction phase should remain in place until revegetation of the exposed areas has occurred.

Increased impervious areas and runoff

The following measures would mitigate potential impacts:

- The stormwater drainage system for the car park areas is intended to return flows to the rural catchment in a non erosive manner via the OSD/infiltration basin.

- The building roofs will be directed to a rainwater tank for re-use on site. The overflow fr0m this tank will be directed to the OSD/infiltration basin.

Stable wastewater

Stable wastewater is proposed to be directed through pits to screen out solids and straw before being discharged to the sewer system.

4.5.9 Waste Management

The proposed development will generate certain building wastes. Management of construction wastes will be subject to a construction management plan.

The management of waste when the development is operational will include:

- Garbage enclosures.

- Recycling of other suitable wastes.

- Stable waste is considered to be a useful by-product as a soil conditioner, fertiliser, or garden mulch. It can be used on site or collected by others for use off site.

4.5.10 Air Quality

The potential for impacts upon air quality relate to raised dust as a result of works during the construction phase. In this regard it is recommended that the following measures be implemented:

- Water cart to be readily available to suppress raised dust particularly during dry and windy periods.

- Exposed areas to be minimised and revegetated or stabilised as soon as practicable.

- During high wind periods, construction is to be delayed or postponed.

It is suggested that these safeguards be incorporated as part of the erosion and sediment control plan.

The vehicle areas will be sealed so as to minimise the potential for raised dust.

4.5.11 Effect on Threatened Species, Populations, or Ecological Communities, or Their Habitats

It is necessary to consider Section 5A of the Act regarding the potential for the development to affect threatened species, populations, or ecological communities or their habitats. The proposal is satisfactory in this regard due to the following:

- The subject land is predominantly cleared with only 4 remnant trees as depicted on the attached aerial plan. Understorey shrub species have been removed or eliminated. Pasture is the dominant vegetative cover. The vegetation over the subject land is characteristic of other rural properties that have been extensively cleared in this locality.

- While an ecological assessment has not been undertaken, the potential for the site to attract less common native species is considered minimal. The habitat potential of the site is considered to be low and the site does not have realistic potential to re-establish easily into providing habitats of value.

Based on the above information, the proposal is unlikely to have a significant effect upon threatened species, populations, ecological communities or their habitats.

4.5.12 Crime Prevention

It is recognised that effective design can assist to reduce crime opportunities.

Effective design and planning can assist to reduce crime opportunities. According to the NSW Department of Planning publication, Crime Prevention and the Assessment of Development Applications (2001) crime prevention through environmental design (CPTED) seeks to influence the design of buildings and places by:

- Increasing the perception of risk to criminals by increasing the possibility of detection, challenge and capture

- Increasing the effort required to commit crime by increasing the time, energy or resources which need to be expended

- Reducing the potential rewards of crime by minimising, removing or concealing 'crime benefits'

- Removing conditions that create confusion about required norms of behaviour.

CPTED involves the following principles:

- Surveillance

- Access control

- Territorial reinforcement

- Space management

In consideration of the above principles the following information is submitted for Council's assessment.

Surveillance

The guidelines state that good surveillance means that people can see what others are doing. People feel safe in public areas when they can easily see and interact with others. Would be offenders are often deterred from committing crime in areas with high levels of surveillance. From a design perspective, 'deterrence' can be achieved by:

- Clear sightlines between public and private places

- Effective lighting of public places

- Landscaping that makes places attractive, but does not provide offenders with a place to hide or entrap victims

The proposed development is considered satisfactory in this regard due to the following:

- The site is reasonably visible from Hampden Avenue and Cooramin Street.

- The site layout and building design offers effective surveillance opportunities.

- Clear sightlines between the buildings, public areas and car parks will be provided.

- The car park and building entrances and curtilage will be illuminated.

- The landscape widths are not expansive and plantings will be selected to minimise the potential for concealment.

Access Control

The guidelines state that physical and symbolic barriers can be used to attract, channel or restrict the movement of people. They minimise opportunities for crime and increase the effort required to commit crime.

Effective access control would be achieved as follows:

- The site will be fenced along its boundaries and internal fencing will provide further barriers to restrict public access.

- The main public entry points to the site and buildings are clearly depicted.

- Gates, secure locking and alarms will be installed.

Territorial Reinforcement and Space Management

The guidelines state that community ownership of public space sends positive signals. People often feel comfortable in, and are more likely to visit, places which feel owned and cared for. Well used places also reduce opportunities for crime and increase risk to criminals.

Linked to the principle of territorial reinforcement, space management ensures that space is appropriately utilised and well cared for. Space management strategies include activity coordination; site cleanliness; rapid repair of vandalism and graffiti; the replacement of burned out pedestrian and car park lighting; and the removal or refurbishment of decayed physical elements.

The site and premises will be managed so as to contribute to the notion of territorial reinforcement. In this regard:

- The public access areas are well defined. The design generally encourages the public to the frontages and entrances of the buildings.

- The site and building will be illuminated.

- Maintenance and up-keep of the buildings and external areas will be on-going.

4.5.13 Social and Economic Impacts

Generally

The harness racing sector makes a positive contribution to the economy of Wagga Wagga and the wider district.

Regional centres generally have a relatively narrow range of attractions. The operations of the Wagga Wagga Harness Racing Club contribute to the variety of entertainment and recreational events available locally.

Harness racing provides recreation activities for local and non-local residents, contributing to the entertainment and lifestyle amenity of the local community.

The presence of a strong harness racing club in Wagga Wagga serves to increase awareness amongst the wider community who have an interest in harness racing but who live outside the immediate area.

It is also possible that, without the presence of a strong harness racing club, some of those involved in the industry and contribute to the local economy through other employment and enterprises, might relocate to another location.

Current Activity

Based on information provided by Wagga Harness Racing Club (the Club):

- The Club conducts some 35 meetings per year and generates an annual TAB turnover of approximately $12 million.
- On average each meeting involves approximately 150 – 250 people including spectators and participants.
- The Club conducts major drawcard events including the Carnival of Cups which is the largest and is held in March. This event attracts in the order of 450 people and offers $70,000 prize money for participants.
- The conduct of events involves full time and part time employment, including:
  - Chief Executive
  - Track curator
  - Starter
  - Mobile driver

- 2 clerks of the course
- 2 NSW ambulance service
- Swab steward
- Veterinarian
- 2 stewards
- 2 track attendants
- 2 race callers (One for Sky Channel and one for on course)
- Judge
- Photo finish operator

- There are a number of trainers in the Wagga Wagga region who use the facility. The present track is used by several trainers on a regular basis. At the new facility, the expectation is for this number to increase when on-course stabling is constructed.

- There are a number of trainers outside the Wagga Wagga region that use the facility. There are between 3 and 4 trainers who use the track on a non regular basis and the Club also conducts Monday night trials and trials after meetings where several different trainers from within and beyond the region use the track.

- The main sources of income for the Club are as follows:
  - TAB
  - Gate admissions
  - Bar takings
  - Sponsorship
  - Funding from Harness Racing NSW
  - Quarter Product Fees
  - Sky Channel

- The main areas of expenditure for the Club are as follows:
  - Prize money
  - Conduct of meetings including staff, ambulance fees and vet fees
  - Workers insurance (drivers) and general insurance
- Other businesses in Wagga that benefit from the activities and operation of the Club include:
  - Vets
  - Equine supplies
  - Feed and supplement merchants
  - Hotels, motels and other forms of tourist accommodation
  - Restaurants, cafes and the like
  - Sponsors of the Club including local electricians, plumbers, sign writers, media companies for advertising

Potential opportunities as a result of the new facility

- The new complex represents an investment of some $6.5 million in the local economy. It will be a modern complex with a state of the art grandstand and support facilities. As such it has the potential to increase the number of race meetings that are conducted at Wagga and thus enable more options for industry participants to earn additional income.
- The number of trainers involved with the Club is expected to increase in the new facility when on-course stabling is constructed.
- The new complex will represent a valuable community resource that by its very nature, may serve as a venue for other events. Subject to separate approval(s) the new complex may enable the Club to generate other forms of economic activity/enterprises that that don't occur now, including:
  - Markets
  - Car shows
  - Social events and functions
  - Cycling races
  - Other equine events on the infield such as gymkhanas, stock horse events and the like.

- The new complex has the potential to generate partnerships with other organisations in Wagga. It is understood that Charles Sturt University has expressed an interest to become associated with the new track for its equine students. The complex may offer benefits to the students due to its convenient location and the opportunity to provide hands-on exposure to harness racing/horses.

- The Club presently offers a mini-trotters program for children who race their ponies and Shetlands. The new complex has the potential to build upon/increase this family interest.

Summary of potential social and economic impact

Based on the above information it is reasonable to suggest that a significant net community benefit will flow to the Wagga Wagga region as a result of the following positive social and economic impacts:

- Increased expenditure in Wagga due to operational spending associated with the facility.

- Increased expenditure in Wagga due to spending by harness racing and other event patrons.

- Increased expenditure in Wagga due to construction spending.

- Additional employment that will result from the project, both during the construction period and, more importantly, once the complex is operational.

- Additional social and recreational opportunities.

4.6 THE SUITABILITY OF THE SITE FOR THE DEVELOPMENT

4.6.1 Physical Attributes

Based on the information provided in this report, it is submitted that the site is suitable for the development and the development responds to the site constraints identified in *Section 2*.

4.6.2 Availability of Utility Services

There appears to be no significant constraint to the delivery of utility services to the development.

4.7 ANY SUBMISSIONS MADE IN ACCORDANCE WITH THIS ACT OR THE REGULATIONS

Pursuant to Section 1.10 of Wagga Wagga DCP 2010, Council is required to advertise the development application.

Should the public make submissions, the proponent will submit additional information to address any concerns and further support this development application

4.8 THE PUBLIC INTEREST

It is expected that the proposal will be in the public interest due to the following:

- Social and economic effect
- Development within a flood plain
- Amenity issues

Section 5.0

CONCLUSION

The proposed development could be approved on the basis of the following:

- The proposal is permissible development in the RU1 Zone and meets the relevant provisions of Wagga Wagga LEP 2010.

- The proposal is acceptable in terms of the relevant provisions of *Wagga Wagga Development Control Plan 2010.*

- Pursuant to Section 79C of the Environmental Planning & Assessment Act, 1979, the potential environmental impacts of the development are assessed as reasonable and able to be addressed through appropriate design and relevant conditions of consent;

- There do not appear to be any issues that would warrant refusal of the development application.

Yours faithfully
Peter Basha Planning & Development

Per:
PETER BASHA

Annexure A

Plans by Peter Basha Planning & Development

Annexure B

Building Design Plans by McKinnon Design

Annexure C

Civil Engineering Plans by Heath Consulting Engineers

Annexure D

Traffic and Parking Report (February 2014) and Addendum Letter (14 September 2015) by Colston Budd Hunt & Kafes

Annexure E

Noise Impact Assessment (September 2014) and Addendum Letters (2 September and 9 September 2015) by Wilkinson Murray

Annexure F

Flood Impact Assessment by WMA Water (7 September 2015)

Annexure G

Geotechnical Investigation by Aitken Rowe

Annexure H

Lighting Assessment Report by Musco Lighting Australia

Annexure I

Aboriginal Heritage Information Management System (AHIMS) Search

Annexure J

Letter by City of Wagga Wagga Council (27 April 2015)
Request for additional information based on matters raised at the Southern JRPP meeting of 9 April 2015

RMS Submission

2014STH020 (DA14/0448)

Harness Racing Facility

Wagga Wagga

Transport
Roads & Maritime
Services

17 October 2014

CR2014/004896
SF2014/074172
MM

The General Manager
Wagga Wagga City Council
P.O. Box 20
WAGGA WAGGA NSW 2650

Attention: Robyn Bradley

DA14/0448 – PROPOSED RECREATIONAL FACILITY – HARNESS RACING, LOTS 1 – 6 & LOTS 19 – 24 DP2655, COORAMIN STREET CARTWRIGHTS HILL.

I refer to your correspondence regarding the subject Application which was referred to the Roads and Maritime Services for assessment and comment.

It is understood that the proposal is for the construction of a harness racing facility with clubhouse, stable complex and ancillary works on the subject site. The proposal is supported by a Statement of Environmental Effects prepared for Harness Racing NSW dated September 2014 prepare by Peter Basha Planning & Development.

The subject site has frontage to Hampden Avenue within an 80 km/h speed zone and to Cooramin Street within the default speed zone. The submitted plans indicate that all access to the proposed development from the public road network is to be via 2 gateways to Cooramin Street. The proposed development provides for carparking within the subject site. To minimise the potential for vehicle parking along Hampden Avenue or Cooramin Street no pedestrian gates are permitted along the frontage of the development site and the adjoining road reserves.

The internal carpark and circulation roadways are to be designed and constructed in accordance with appropriate Australian Standards to provide for ease of access and parking for larger vehicles such as public transport, service and competitors vehicles (eg semi-trailers,car and horse float, delivery vehicles).

The development proposal will generate significant traffic through the intersection of Hampden Avenue and Cooramin Street for access to the site at event times. The intersection is located in an 80 km/h speed zone. Currently there is evidence of vehicles tracking onto the gravel shoulder at the intersection in order to turn left from Hampden Avenue. This development is likely to generate both left and right turning traffic into Cooramin Street. Given the scale of the development and the potential traffic generation during events it would be appropriate to provide for the upgrade of the intersection of Hampden Avenue and Cooramin Street to provide for a turning lanes separate to the through lanes on Hampden Avenue.

It is noted from the submitted Statement of Environmental Effects that the facility is to be used for night time events however limited detail is provided in relation to the proposed lighting of the trotting Track and its impact on the surrounding road network and potential distraction to motorists on the surrounding road network particularly the Olympic Highway within a 100 km/h speed zone.

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The proposed lighting is to be designed, treated and oriented so as to minimise glare impacting on and distraction to motorists on the Olympic Highway. The method and intensity of any illumination of the venue shall not be directed or transmitted in such concentration or intensity as to cause distraction or glare to motorists on the adjoining road network particularly the Olympic Highway.

Roads and Maritime requires the provision of landscaping along the western boundary and north western corner of the development site to minimise distraction of the motorist along the Olympic Highway and on Horseshoe Road near its intersection with the Olympic Highway and to minimise distraction due to lighting of the venue. It is noted that no signage that would be visible from the Olympic Highway is proposed as part of this proposal.

The proposed development may represent a need to review the current speed zone in surrounding streets particularly Cooramin Street in accordance with the current speed zone guidelines. Any changes deemed necessary to the speed limit and accompanying signage shall be at full cost to the developer.

To promote road safety and the efficient operation of the road system it is appropriate to consider vehicular and pedestrian access arrangements for the proposed development including the surrounding road network providing access to the site and the standard and location of driveways and the internal vehicular circulation arrangements and parking for the development.

Roads and Maritime Services has assessed the Development Application based on the documentation provided and would raise no objection to the development proposal subject to the Consent Authority ensuring that the development is undertaken in accordance with the information submitted as amended by the inclusion of the following as conditions of consent (if approved);

1. All access between the subject site and the public road network shall be via Cooramin Street and then to Hampden Avenue. Access from the subject site directly to the Olympic Highway or to Horseshoe Road via Wilson Street is denied.

2. The proposed lighting is to be designed, treated and oriented so as to minimise glare impacting on motorists on the Olympic Highway. The method and intensity of any illumination of the venue shall not be directed or transmitted in such concentration or intensity as to cause distraction or glare to motorists on the adjoining road network particularly the Olympic Highway.

3. A landscaped buffer (at least 15m wide planted with a variety of species endemic to the area and growing to a mature height ranging up at least 25m) shall be established and maintained within the subject property along its western boundary and north western corner to a standard to screen the proposed facility from the Olympic Highway to minimise distraction of the travelling public.

4. No signage is permitted to be placed within subject site or adjoining properties that would be seen from the road reserve of the Olympic Highway. Signage is not permitted to be erected without the approval of the Council and Roads and Maritime Services.

5. A request to review the current speed limit within Cooramin Street is to be submitted to Roads and Maritime Services prior to the issue of the Construction Certificate for any infrastructure or road works. Any works/signage required as a result of this review of the speed limit shall be at full cost to the development and be implemented prior to release of the survey certificate.

6. A construction management plan to address construction activity access and parking is to be prepared to ensure that suitable provision is available on site for all vehicles associated with the construction of the development to alleviate any need to park within, or load/unload from, the surrounding public road network. No such vehicles are to access the site from the Olympic Highway via Wilson Street. Appropriate signage and fencing is to be installed and maintained to effect this requirement.

7. Any works associated with the proposed development shall be at no cost to Roads and Maritime Services.

Please be advised that under the provisions of the Environmental Planning & Assessment Act it is the responsibility of the Consent Authority to assess the environmental implications, and notify potentially affected persons, of any development including conditions.

Any enquiries regarding this correspondence may be referred to the Manager, Land Use for Roads and Maritime Services (South West Region), Maurice Morgan, phone (02) 69371611.

Please forward a copy of the Notice of Determination for this Development Application to the Roads and Maritime Services at the same time as advising the applicant.

Yours faithfully

Per:
Mr Lindsay Tanner
Regional Manager
South West Region