

LOXFORD PROJECT
MANAGEMENT PTY LTD

TRAFFIC REPORT FOR
PROPOSED RESIDENTIAL
SUBDIVISION

464 CESSNOCK ROAD
GILLIESTON HEIGHTS

FEBRUARY 2022

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TABLE OF CONTENTS

1. INTRODUCTION	1
2. TRAFFIC IMPLICATIONS.....	2

1. INTRODUCTION

- 1.1 Colston Budd Rogers and Kafes Pty Ltd has been commissioned by Loxford Project Management Pty Ltd to prepare a traffic report for the proposed residential subdivision at 464 Cessnock Road, Gillieston Heights. The site is located on the western side of Cessnock Road as shown in Figure 1.
- 1.2 The proposed subdivision forms part of an area that will be shortly rezoned for residential development as shown in the site context plan prepared by ADW Johnson (Figure 2). TfNSW has undertaken an assessment of the traffic effects of future development in the area through the Main Road 195 Corridor Study (MRI95 Study). This has identified appropriate road works and contributions to road upgrades for future development along the corridor. For the subject site, the MRI95 Study has identified a new traffic signal controlled intersection on Cessnock Road to provide access to the northern residential precinct.
- 1.3 As the broader traffic effects on the regional road network have been assessed through the MRI95 study, the local traffic effects of the proposed residential subdivision are assessed in Chapter 2.
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2. TRAFFIC IMPLICATIONS

2.1 The traffic implications of the proposed residential subdivision are set out through the following sections:

- site location;
- proposed development;
- parking provision;
- subdivision roads;
- public and active transport;
- traffic effects; and
- summary.

Site Location

2.2 The proposed residential subdivision is located at 464 Cessnock Road, Gillieston Heights, as shown in Figure 1. The site is currently undeveloped rural land. Cessnock Road runs in north south direction along the eastern boundary of the site. It connects Maitland in the north with Kurri Kurri in the south. The South Maitland Rail Corridor is located to the west of the site. To the north and north east of the site is the existing Gillieston Heights residential precinct. The land to the east and south is undeveloped rural land that has been identified for future residential development.

Proposed Development

- 2.3 The proposed residential subdivision is for 342 residential lots with associated subdivision roads as shown in Figure 2. Access will be provided to via a new traffic signal controlled intersection on Cessnock Road (primary access) and via Auburn Street to the existing Gillieston Heights residential area (secondary access). The design of the subdivision road network allows for connections to future residential development to the south west.

Parking Provision

- 2.4 Section C15 of Maitland DCP 2011 sets out the following parking requirements for residential development:
- one space for each one or two bedroom dwelling;
 - two spaces for each dwelling containing more than two bedrooms;
 - one visitor space for the first three dwellings and one space per five dwellings thereafter; and
 - a minimum of one off street parking space to be provided in each dwelling as a covered space in the form of a either a garage or car port.
- 2.5 Parking for each dwelling will be provided in accordance with the DCP requirements. Visitor parking will be provided on street. Local roads (with 8.0m wide carriageways) and Distributor Roads (with an 11.0 metre wide carriageway) provide on street parking. 12 indented parking bays will be provided on the eastern side of Road MC03, adjacent to the park.
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Subdivision Roads

- 2.6 The subdivision plan shows a sub-arterial road (Road MC01) travelling west from the intersection with Cessnock Road. The intersection of Road MC01 and Cessnock Road will be traffic signal controlled with TfNSW identifying a concept design of the intersection in the MRI95 Corridor Study. Some 200 metres west of Cessnock Road, Road MC01 intersects with the Auburn Street extension at a roundabout controlled intersection.
- 2.7 Between the roundabout and Cessnock Road, Road MC01 provides two traffic lanes in each direction (2 x 8.7 metre wide carriageways) with an additional third lane on the approach to Cessnock Road. West of the roundabout it provides one traffic and one parking lane in each direction (with a 15.4 metre wide carriageway). The Auburn Street extension provides one traffic lane in each direction within an eleven metre wide carriageway (same as the existing Auburn Street). North and south of Road MC01 is a network of local roads that provide access to individual lots. These roads provide one traffic lane in each direction within carriageways varying from eight to eleven metres wide. Internal intersections are priority controlled.
- 2.8 The above road widths are consistent with Section DC.6 of DCP 2011. This suggests the following:
- local roads (up to 200 lots) – eight metre wide carriageway;
 - distributor roads (200 to 800 lots) – 11 metre wide carriageway; and
 - sub-arterial roads (> 800 lots) – 13 metre wide carriageway.
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Public and Active Transport

- 2.9 Road MC01 will be a future bus route connecting the proposed and future residential development with Cessnock Road. Dwellings within the proposed residential subdivision are located within a 400 metre radius of bus stops located on Road MC01.
- 2.10 Active transport routes are shown on Figure 3 (Mobility Plan prepared by ADW Johnson). These include:
- 2.5 metre wide shared cycle/pedestrian paths along Auburn Street, Road MC01, Road MC05, Road MC08 and Road MC14; and
 - 1.7 metre wide on road cycleway either side of Road MC01.

Traffic Effects

- 2.11 TfNSW has provided 2036 weekday morning (AM) and afternoon (PM) peak hour traffic flows on Road MC01 west of Cessnock Road for full development of the area. These have been extracted from the MRI95 Corridor Study and are summarised below:
- weekday morning (AM) peak hour – 584 and 205 vehicles per hour in the eastbound and westbound directions respectively; and
 - weekday afternoon (PM) peak hour – 199 and 642 vehicles per hour in the eastbound and westbound directions respectively.
- 2.12 Based on the subdivision layout, this traffic would split at the roundabout, with some 25% to/from the north (Auburn Street), some 20% to/from the south
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(Road MC04) and the balance to/from the west (Road MC01). This would result in the following traffic flows:

- Auburn Street – some 195 to 210 vehicles per hour (two way) in the weekday AM and PM peak hours;
- Road MC04 - some 160 to 170 vehicles per hour (two way) in the weekday AM and PM peak hours; and
- Road MC01 (west of Auburn Street) - some 435 to 460 vehicles per hour (two way) in the weekday AM and PM peak hours.

2.13 Traffic generated by the proposed subdivision represents a component of the total traffic by generated by future residential development west of Cessnock Road. For residential subdivisions, TfNSW Guidelines suggest the following generation rates:

- 0.78 vehicles per hour per dwelling (two way) in the weekday morning peak hour; and
- 0.71 vehicles per hour per dwelling (two way) in the weekday afternoon peak hour.

2.14 Applying these rates, the proposed residential subdivision (342 lots) would generate some 267 vehicles per hour (two way) in the weekday morning peak hour and some 243 vehicles per hour (two way) in the weekday afternoon peak hour. These flows represent some 30% of traffic estimated by TfNSW for full development.

2.15 An assessment of the subdivision road network has been undertaken based on the full development traffic flows provided by TfNSW and is set out below.

2.16 Section 4 of the TfNSW Guide to Traffic Generating Developments provides level of service criteria for mid-block capacity for urban roads and environmental capacity for local roads. The criteria relevant to the proposed residential subdivision are summarised below:

- roads with one lane in each direction:
 - traffic flows less than 200 vehicles per hour in one direction would operate at a good level of service (LOS A);
 - traffic flows between 200 and 380 vehicles per hour in one direction would operate at a good/acceptable level of service (LOS B); and
 - traffic flows between 380 and 600 vehicles per hour in one direction would operate at a satisfactory level of service (LOS C)
- roads with two lanes in each direction:
 - traffic flows less than 900 vehicles per hour in one direction would operate at a good level of service (LOS A); and
- the maximum environmental capacity of a local road is 300 vehicles per hour (two way).

2.17 Applying these criteria to the subdivision roads results in:

- Road MC01 (between Auburn Street and Cessnock Road) operating at a good level of service in both directions (LOS A) in the AM and PM peak hours;
 - Road MC01 (west of Auburn Street) operating at a satisfactory level of service (LOS B/C) in the AM and PM peak hours;
 - traffic flows on Auburn Street and the local road network are below the maximum environmental goal for a local road in the AM and PM peak hours.
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2.18 An assessment of the roundabout controlled intersection of Road MC01 with Auburn Street (as a single lane roundabout) has been undertaken using SIDRA. SIDRA analyses intersections controlled by traffic signals, roundabouts and signs and provides a number of performance measures.

2.19 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

2.20 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.

2.21 The SIDRA analysis found that the roundabout controlled intersection of Road MC01/Auburn Street/Road MC04 would operate with average delays of less than 15 seconds per vehicle in the weekday AM and PM peak hours. This represents level of service A/B, a good level of service.

2.22 With regards to the intersection of Road MC01/Cessnock Road, TfNSW identified a concept design of the traffic signal controlled intersection in the MRI95 Corridor Study. McCloy Group, on behalf of Loxford Project Management Pty Ltd, have been working with TfNSW to finalise the design of the intersection and have provided the following update:

The design review process commenced in early November last year and we have now met with TfNSW on 3 occasions to progress the intersection design from the strategic design outlined in the MRI95 corridor study. There are currently only 2 outstanding items to close out the strategic design process, which we expect to address and finalise by early March. Following satisfactory completion of the strategic design we will then move immediately onto the concept design phase for the intersection. It is our intention to work through the intersection design process with TfNSW in parallel with Council's assessment of our 350 lot DA.

Summary

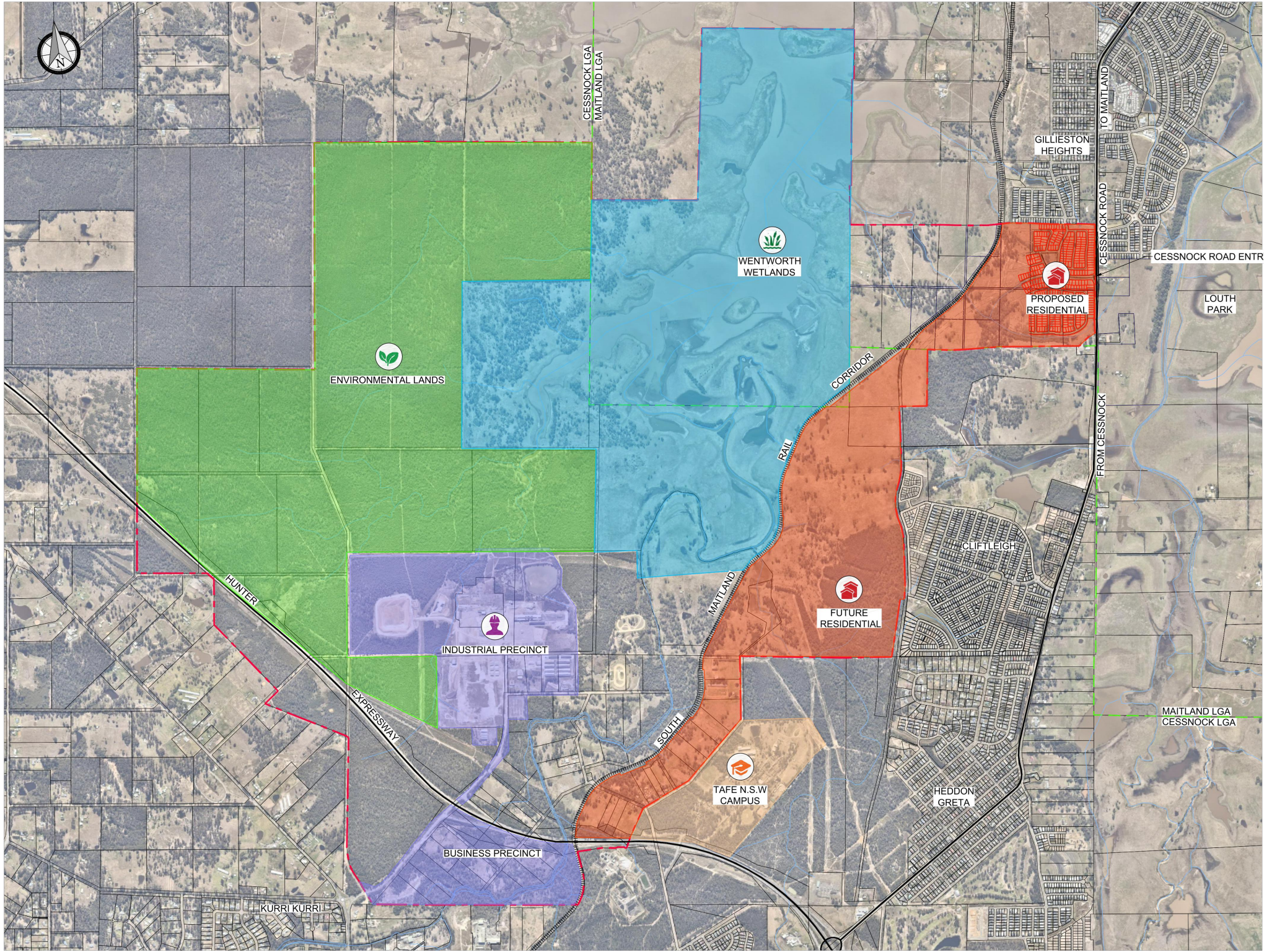
2.23 In summary, the main points relating to the traffic and parking implications of the proposed residential subdivision are as follows:

- i) the proposed residential subdivision comprises 342 lots and subdivision roads;
- ii) access to the residential subdivision will be via Cessnock Road (primary access) and Auburn Street (secondary access);
- iii) parking will be provided in accordance with the requirements of DCP 2011;
- iv) subdivision road widths are in accordance with the requirements of DCP 2011;
- v) public and active transport links are provided within the subdivision;
- vi) the broader traffic effects on the regional road network have been assessed through the MRI95 study;
- vii) Road MC01 would operate at a satisfactory or better level of service;
- viii) traffic flows on local roads would be less than the environmental goal for local roads;
- ix) the roundabout controlled intersection of Road MC01/Auburn Street would operate at a good level of service in the weekday AM and PM peak hours;
- x) McCloy Group, on behalf of Loxford Project Management Pty Ltd, are working with TfNSW to finalise the design of the intersection of MC01/Cessnock Road.



Location Plan

240289(1)-DA-002



LEGEND

- REGROWTH KURRI KURRI BOUNDARY SITE
- SUBJECT DEVELOPMENT LOTS
- PROPOSED LOT BOUNDARY
- EXISTING LOT BOUNDARY
- LGA BOUNDARY
- WATER COURSE
- RAIL LINE
- MAIN ROAD
- PROPOSED & FUTURE RESIDENTIAL
- INDUSTRIAL / BUSINESS PRECINCT
- TAFE N.S.W. CAMPUS
- ENVIRONMENTAL LANDS
- ENVIRONMENTAL LANDS



working beyond expectations

DETAIL PLAN
SCALE 1:12500

SHEET PLAN-(2) OF 15

ver.	date	comment	drawn	pm	level information	scale (A1 original size)	notes
A	20.01.22	INITIAL ISSUE	IB	RK	DATUM: N/A CONTOUR INTERVAL: N/A	1:12,500	

- project management
- civil engineering
- infrastructure
- superintendency
- social impact
- town planning
- surveying
- development feasibility
- visualisation
- urban design

drawing title:
SITE CONTEXT PLAN

location: 464 CESSNOCK ROAD, GILLIESTON HEIGHTS

council: MAITLAND

dwg ref: 240289(1)-DA-002

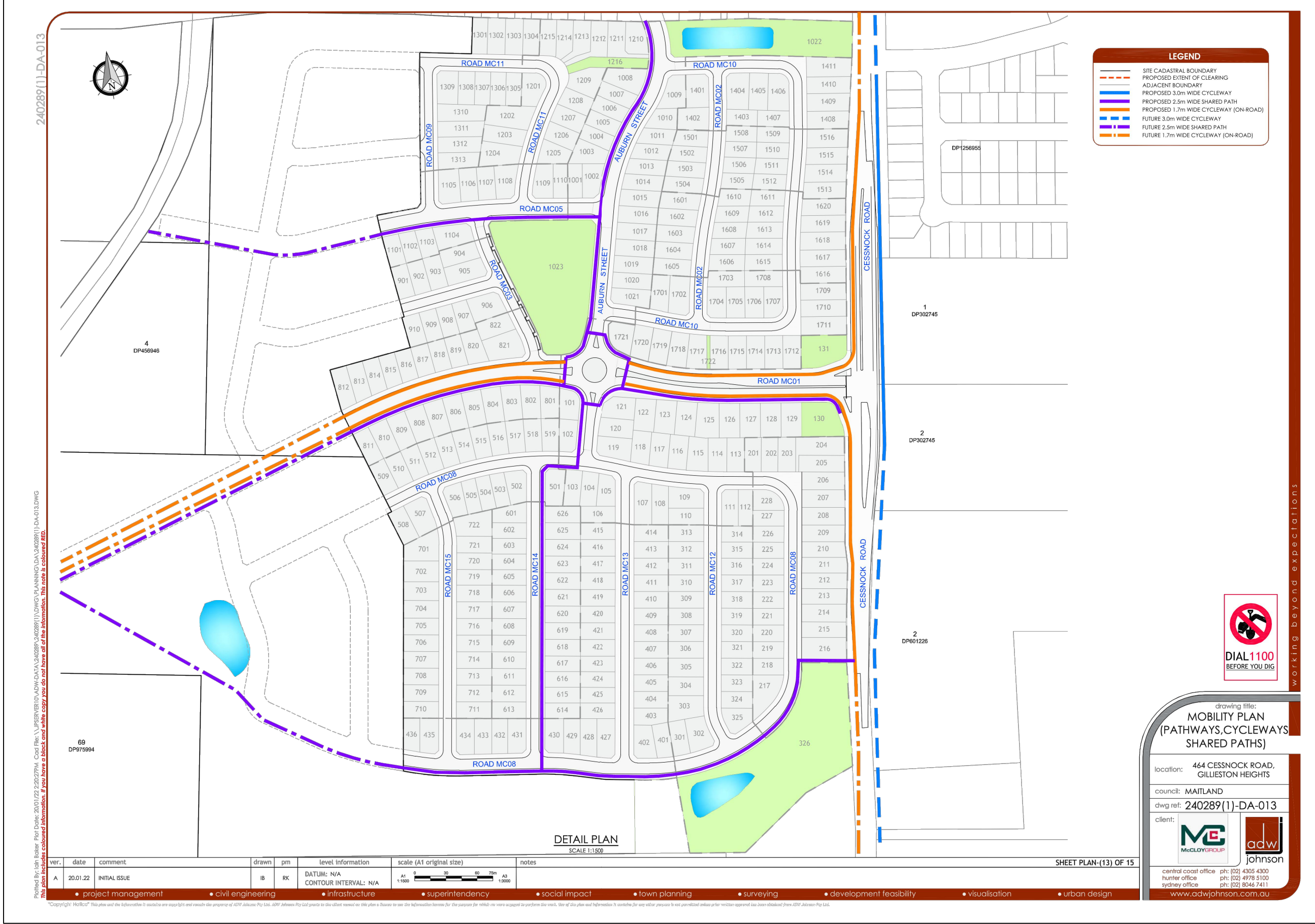
client:

McClough Group

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Figure 2



240289(1)-DA-013

Plot Date: 20/01/22 2:20:27PM. C:\Users\jrb\OneDrive\Documents\240289(1)-DA-013.DWG
 This plan includes coloured information. If you have a black and white copy, you can have a black and white copy of the information. This note is coloured red.

ver.	date	comment	drawn	pm	level information	scale (A1 original size)	notes
A	20.01.22	INITIAL ISSUE	IB	RK	DATUM: N/A CONTOUR INTERVAL: N/A	A1 1:1500	

- project management
- civil engineering
- infrastructure
- superintendency
- social impact
- town planning
- surveying
- development feasibility
- visualisation
- urban design

Figure 3