

LOXFORD PROJECT
MANAGEMENT PTY LTD

TRAFFIC REPORT FOR
PROPOSED PRECINCT 1B
RESIDENTIAL SUBDIVISION

464 CESSNOCK ROAD
GILLIESTON HEIGHTS

JULY 2022

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I. INTRODUCTION

- I.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 Precinct IB residential subdivision at 464 Cessnock Road, Gillieston Heights. The site is located on the western side of Cessnock Road as shown in Figure 1.
- I.2 The proposed subdivision forms part of an area that has recently been rezoned for residential development as shown in the site context plan prepared by ADW Johnson (Figure 2). A DA for the adjacent Precinct IA residential subdivision, which is located to the east of Precinct IB, is currently being assessed by Maitland City Council. CBRK prepared the traffic report for Precinct IA (Traffic Report for Proposed Residential Subdivision, 464 Cessnock Road, Gillieston Heights – February 2022).
- I.3 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.
- I.4 The Precinct IA DA was referred to TfNSW with a response provided in its letter dated 20 April 2022. A copy of the TfNSW letter is provided in Attachment A. In summary TfNSW advises Council that a VPA has been submitted by the developer to the Department of Planning which includes:
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- monetary contributions in line with the rate in the Lower Hunter Draft SIC;
- land dedication for the future road widening of Main Road 195; and
- works in kind for the:
 - intersection with Cessnock Road - to facilitate the ultimate development; and
 - internal collector road (Road MC01).

1.5 TfNSW also advises that:

- it is satisfied that the traffic impact assessment and associated traffic modelling which supports the design of the intersection of the Cessnock Road and the collector road (Road MC01), facilitates access to the proposed residential subdivision;
- the intersection on Cessnock Road and dedication of land be completed prior to the issue of the first subdivision certificate; and
- the design and construction of the intersection be at no cost to TfNSW;

1.6 Finally, the letter includes advice to Council with regards to matters it should consider in assessing the DA (such as traffic management during construction, stormwater, road noise impacts, environmental impacts, internal arrangements and that a WAD will be required).

1.7 As the broader traffic effects on the regional road network have been assessed through the MR195 study, the local traffic effects of the proposed Precinct 1B residential subdivision are assessed in Chapter 2.

2. TRAFFIC IMPLICATIONS

2.1 The traffic implications of the proposed Precinct IB 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 Precinct IB 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 to the east 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 south is undeveloped rural land that has been identified for future residential development. Precinct IA is located to the east of the site.

Proposed Development

- 2.3 The proposed residential subdivision is for 224 residential lots with associated subdivision roads as shown in Figure 2. Access will be provided to Precinct IA via the extension of the Precinct IA road network (sub-arterial road - Road MC01, and local roads MC05, MC08 and MC11. Road MC01 provides access to Cessnock Road via the new traffic signal controlled intersection. 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.
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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.
- 2.7 Through Precinct 1B, Road MC01 provides one traffic and one parking lane in each direction (with a 15.4 metre wide carriageway). 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.

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.
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- 2.10 Active transport routes are shown on Figure 3 (Mobility Plan prepared by ADW Johnson). These include:
- 1.7 metre wide on road cycleway either side of Road MC01;
 - 2.5 metre wide shared cycle/pedestrian paths along, Road MC01, Road MC05, Road MC08, Road MC11 and Road MC (unnamed - adjacent to the rail corridor)
- 2.11 The above cycleways/pedestrian paths would connect to the cycleways/pedestrian paths provided in Precinct 1A.

Traffic Effects

- 2.12 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.
- 2.13 Based on the subdivision layout, this traffic would split at the roundabout within Precinct 1A, with some 25% to/from the north (Auburn Street), some 20% to/from the south (Road MC04) and the balance to/from the west (Road MC01). This would result in the following traffic flows:
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- 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.

2.14 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.

2.15 Applying these rates, the proposed residential subdivision (224 lots) would generate some 175 vehicles per hour (two way) in the weekday morning peak hour and some 159 vehicles per hour (two way) in the weekday afternoon peak hour. These flows represent some 20% of traffic estimated by TfNSW for full development. When combined with Precinct 1A, traffic flows represent some 50% of traffic estimated by TfNSW for full development.

2.16 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.

2.17 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).

2.18 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 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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2.19 As part of the Precinct IA traffic report, an assessment of the roundabout controlled intersection of Road MC01 with Auburn Street (as a single lane roundabout) was undertaken using SIDRA based on full development of the area. SIDRA analyses intersections controlled by traffic signals, roundabouts and signs and provides a number of performance measures.

2.20 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

2.21 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.

2.22 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.

2.23 With regards to the intersection of Road MC01/Cessnock Road, TfNSW in its response to the Precinct IA DA has advised that:

- it is satisfied that the traffic impact assessment and associated traffic modelling which supports the design of the intersection of the Cessnock Road and the collector road (Road MC01), facilitates access to the proposed residential subdivision;
- the intersection on Cessnock Road and dedication of land be completed prior to the issue of the first subdivision certificate; and
- the design and construction of the intersection be at no cost to TfNSW;

Summary

2.24 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 224 lots and subdivision roads;
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- ii) access will be provided to Precinct IB via the extension of the Precinct IA road network (sub-arterial road - MC01, and local roads MC05, MC08 and MC11). Road MC01 provides access to Cessnock Road via the new traffic signal controlled intersection;
- 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; and
- ix) TfNSW has advised it is satisfied that the traffic impact assessment and associated traffic modelling which supports the design of the intersection of the Cessnock Road and Road MC01, facilitates access to the proposed residential subdivision .



Location Plan



Figure 2

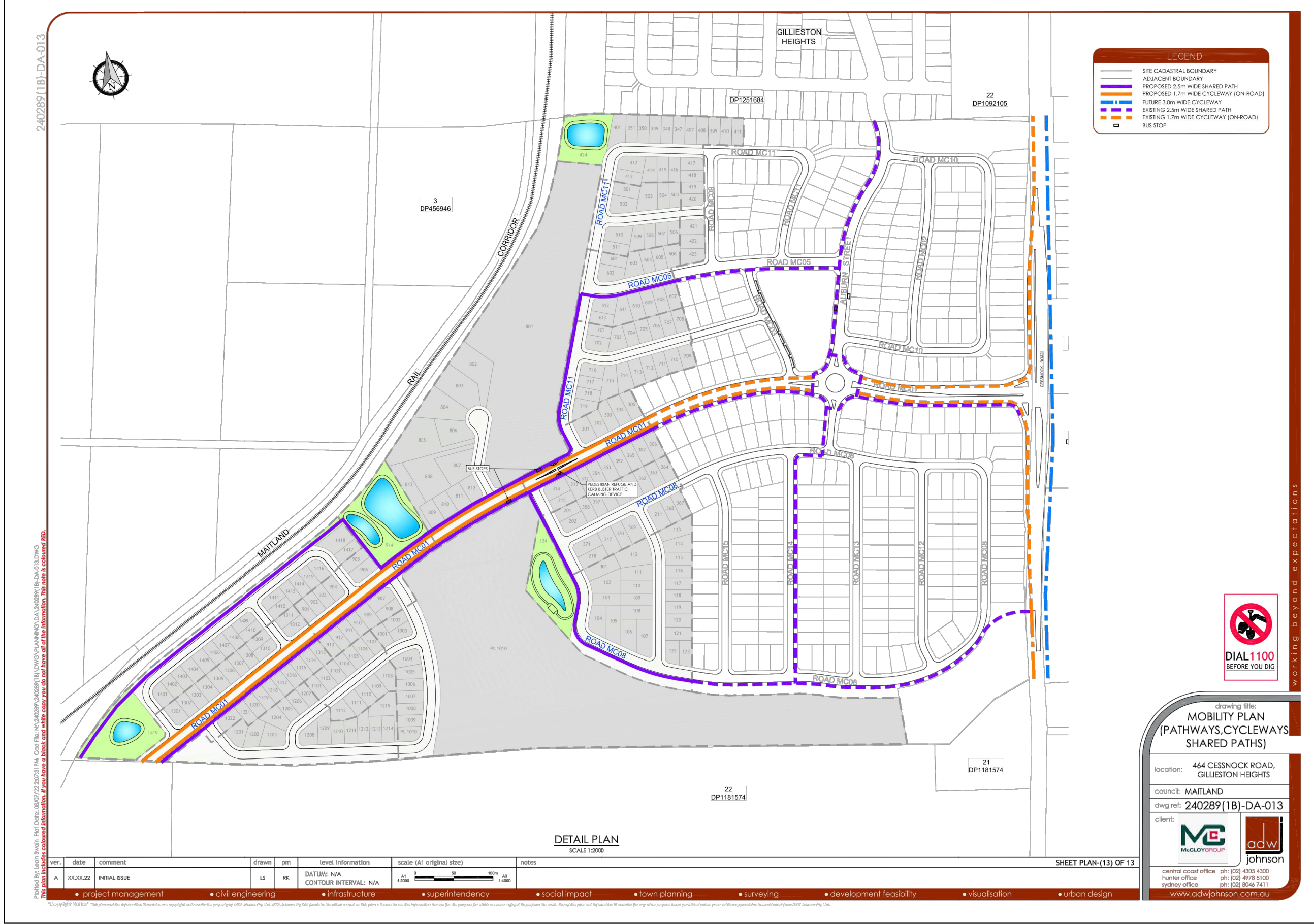


Figure 3