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Transport Planning, Traffic Impact Assessments, Road Safety Audits, Expert Witness

31st August 2018

Reference: 18386.01FC

Addisons Lawyers
Level 12, 60 Carrington Street
Sydney NSW 2000
Attention: Penny Murray

PEER REVIEW OF EMM TRAFFIC STUDY AND DA DOCUMENTS OF THE MIXED USE DEVELOPMENT AT 24 - 36 LANGSTON PLACE, EPPING

Dear Penny,

Reference is made to your request to provide a Peer Review of **EMM** Traffic Study and DA Documents for the proposed Mixed Use Development at 24 - 36 Langston Place, Epping.

M^CLaren Traffic Engineering (MTE) has undertaken a review of the **EMM** "*Epping Town Centre Traffic Study*" dated 10th May 2018, referred to as the **EMM** Report in relation to 24-36 Langston Place, Epping and a review of the DA documents provided to **MTE** on the 8th of June, including *The Transport Planning Partnership (TTPP)* "*Traffic and Parking Report*" dated 7th of September 2017.

This peer review focuses on the analysis of the proposed development within **EMM's** Report in comparison to the prepared DA documents in relation to traffic and allowable Gross Floor Area (GFA) under City of Parramatta Council planning controls (previously Hornsby Shire Council) for the proposed mixed-use development at 24-36 Langston Place, Epping.

1 Scale of Mixed-Use Development

The detailed scale of the proposed development as amended, relevant to this peer review is outlined below:

- Commercial - 559m² GFA;
- Retail – 256m² GFA;
- 101 Residential units with 7945m² GFA as per the following:
 - 40 x one-bedroom apartments;
 - 55 x two-bedroom apartments; and
 - 6 x three-bedroom apartments.

- Total GFA – 8,760m²

The site area for the proposed development is 1,460m², with an allowable FSR of 6:1, resulting in an allowable GFA of 8,760m².

2 TTPP Report

The **TTPP** Report assesses the proposed development with a scale of 102 units, 250m² retail area and 550m² commercial area, which is similar to the current scheme. The following outcome of the **TTPP** Report with respect the traffic generation are outlined below:

- Commercial:
 - 1.6 trips per 100m² – AM;
 - 1.2 trips per 100m² – PM.
- Residential:
 - 0.19 trips per unit – AM;
 - 0.15 trips per unit – PM;
 - 0.25 trips per unit – Weekend.
- Retail:
 - 2.3 trips per 100m² – AM;
 - 4.6 trips per 100m² – PM;
 - 10.7 trips per 100m² – Weekend.

The above traffic generation rates have been taken from the updated RMS Technical Direction TDT 2013/04a (residential and commercial) and the RMS “*Guide to Traffic Generating Developments 2002*” (retail). **MTE** generally agrees with the above traffic generation rates based upon the reasoning provided within **TTPP’s** report as outlined below.

TTPP Report states that the retail traffic generation rates are conservative as they have adopted the shopping centre rates and that, the site would benefit from walk-in patrons and customers living and working nearby. **MTE** generally accepts this argument.

TTPP has not undertaken an assessment of the existing commercial / retail uses on-site in comparison to the proposed. It is a likely outcome that the proposed development may generate less commercial / retail traffic when compared to the existing, resulting in reduced trips within the local road network.

In view of the above, **MTE** agrees with the traffic generation rates for the proposed development. Existing commercial / retail traffic generation rates based upon the existing scale should be assessed to further determine the increase or decrease in vehicle trips within the road network as the proposed development may provide a net decrease of vehicle trips within the local road network.

3 **EMM Report**

3.1 **General Findings**

The **EMM** Report investigated the capacity of Epping Road infrastructure under three scenarios, being existing 2017 conditions, future 2026 growth (+5000 additional dwellings) and future 2036 growth (10,000 additional dwellings). The **EMM** Report assumes no additional commercial or retail floor space within Epping Town Centre within their future assessment for 2026 and 2036, although anticipated additional town centre development scenarios will be used to include higher levels of commercial and retail development scenarios which is subject to further investigation.

It is relevant to note the Hornsby Shire Council previous land zone map of Epping Town Centre (Hornsby Shire Council LEP 2013, drawing Zone 11 dated 11th October 2013 to 13 March 2014) compared to the current land zone map (Hornsby Shire Council LEP 2013, drawing Zone 11 dated 29th September 2017) as depicted in **Annexure B**. The current land zoning map has decreased its zoning for B2 – Local centre and replaced it with high density residential zoning. The **EMM** report does not state if the reduced commercial / retail land zoning has been considered within the calibrated 2017 base year mode, which would likely have an impact upon the overall results of the assessment.

The results of the report indicate that three or four of the six key intersections on the four major traffic routes (Beecroft Road, Blaxland Road, Carlingford Road and Epping Road) are all operating at over saturated traffic conditions (Level of Service F) during the existing 2017 morning and afternoon peak hour periods. The future conditions (2026 and 2036) only worsen the congestion even with the identified RMS and Council road improvements resulting in five or six assessed intersections operating at Level of Service F.

The **EMM** Report have outlined some potential for additional local road network improvements for the future accessibility to the major road network for the local traffic. The **EMM** report further states that until these further investigations are complete, further land rezoning on the key sites within and adjoining the Epping town centre should not be approved until adequate future road network capacity can be identified to accommodate the additional generated traffic demand from these sites.

MTE considers that this recommendation is unreasonable for development sites that generate similar levels of traffic under the current controls.

The mixed-use development of 24 – 36 Langston Place, Epping has been assessed within the **EMM** Report with 104 units (this was pre the amendment) as shown in **Annexure A** for reference. This is consistent and slightly below the current DA application for 101 units (less 3 units).

3.2 **Traffic Generation**

The traffic generation rates outlined within the **EMM** report are based upon the proximity of potential developments to Epping Train Station. The report details the following traffic generation rates for each zone.

- Zone 1:
 - 0-200m walking distance from the train station;
 - High Density Residential:

- 0.19 vehicles per hour per dwelling – AM;
- 0.15 vehicles per hour per dwelling – PM.
- Zone 2:
 - 200 – 400m walking distance:
 - 0.23 vehicles per hour per dwelling.
- Zone 3:
 - 400-800m walking distance;
 - 0.29 vehicles per hour per dwelling.
- Zone 4:
 - 800m + walking distance;
 - Medium Density Residential:
 - 0.48 vehicles per hour per dwelling.

MTE does not endorse the traffic generation rates provided above. Based upon the current LEP planning controls, reproduced in **Annexure B** for reference. There are existing land uses zoned R4 - High density residential that are up to 800m away from Epping Train Station. These developments would still generate traffic generation rates as per zone 1 within the **EMM** report. In **MTE's** view the traffic generation rates are over estimates of the likely impact from development within Epping.

A detailed analysis of the SIDRA results has not been undertaken for the **EMM** report as the SIDRA files have not been provided to **MTE**. It is recommended that on-site observations be undertaken for the 2017 SIDRA results, as it is hard to believe that it would take on average 72 minutes for vehicles to turn right at the intersection of Carlingford Road / Ray Street / Rawson Street and that the degree of saturation is 5.7 under the existing scenario. Further, the intersection of Epping Road / Pembroke Street should be reviewed as right turns from Epping Road into Pembroke Street are provided with a dedicated right turn movement. The average delay of 18 minutes for this right turn movement is substantial and does not seem practical or realistic.

The **EMM** report states on page 26 that the “RMS have generally endorsed the base year 2017 network model methodology and assumptions, **although the final level of calibration of the detailed core area Dynameq traffic model results do not meet the full RMS microsimulation calibration standard for the core areas of network models,** but they do meet the RMS calibration standard for the overall network area.” (underline and bold text added).

This is a significant shortfall in the microscopic level of detail for the core area of the Epping Town Centre, which undermines the credibility of EMM's conducted SIDRA assessment. Inadequate calibration at the microscopic / Town Centre precinct level can lead to significant errors in the model results with respect to vehicle delays and queue lengths attributed to particular traffic flow movements, as outlined above with reference to the 72 minutes and 18 minutes delays extracted from **EMM's** reported SIDRA outputs.

The weight given to the EMM report findings must surely be questionable in light of these outputs and the lack of RMS endorsement at the microscopic / Town Centre precinct level.

It is expected but not known if the following has been considered within the SIDRA modelling:

- History files obtained from the RMS for signalised intersections to determine the appropriate cycle times (optimal cycle times) for each intersection;
- Practical cycle times for independent signalised intersections (unlinked signals) should not be used. Rather optimal cycle should be adopted;
- Traffic control signal plans for each signalised intersection, reviewed in conjunction with the RMS signalised history files to determine the phases used during the peak commuter periods;
- Signalised intersections within close proximity to each other should be modelled with linked phases and the appropriate offset timing implemented within the SIDRA modelling. It is expected but not known if these have been provided to **EMM** by the RMS for the purposes of the SIDRA modelling;
- Calibration of the SIDRA model outputs (& iteration of input changes if necessary) with respect to “*in the field*” observed vehicle queue lengths, vehicle delays and progression of vehicle clusters along the main road corridors.
- Consideration should be made to undertaking the model in a microsimulation model such as Aimsun.

4 Development Suitability

In reviewing the **EMM** report and **TTPP** report specifically for the proposed development at 24-36 Langston Place, Epping the assumptions regarding traffic generation are generally consistent between the two reports for the proposed development of 24-36 Langston Place, Epping. While **TTPP** provides traffic generation rates for the commercial and retail portion of the development, this would be similar in scale to the existing use of the site. The **EMM** report discounts any increase to commercial or retail floor space / developments within the town centre over the existing area within Epping Town Centre. This results in a similar outcome with regards to traffic generation for the commercial portion of the proposed development at 24-36 Langston Place, Epping. If a detailed assessment was undertaken for the existing use, the traffic generation for the future development may be lower compared to the existing, resulting in an overestimate within the **EMM** report.

The only assessable difference in traffic generation of the current scale to the **EMM** report would be the residential portion of the development. EMM assess the site with 104 units, while the proposed development is for 101 units. The difference in this would result in a decrease of 1 vehicle trip in the AM and PM peak commuter period for the current proposal, which would not have any adverse impact upon the local road network in terms of intersection performance.

The proposed development at 24-36 Langston Place, Epping is zoned B2 – Local Centre, with a permissible FSR of 6:1, resulting in an allowable GFA of 8,760m². The proposed scale of the development is proposing a GFA of 8,760m², complying with the current planning controls.

In view of the foregoing the proposed development complies with the current planning controls, resulting in no increase in traffic generation or additional impact upon the surrounding road network above the existing allowable land zoning and allowable GFA.

Please contact the undersigned should you require further information or assistance.

Yours faithfully
McLaren Traffic Engineering



Craig McLaren

Director

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ANNEXURE A: EMM REPORT EXTRACTS (Sheet 1 of 2)

Item 13.8 - Attachment 5

ATTACHMENT 5 - ETCTS Appendices



Attachment 5

Page 973

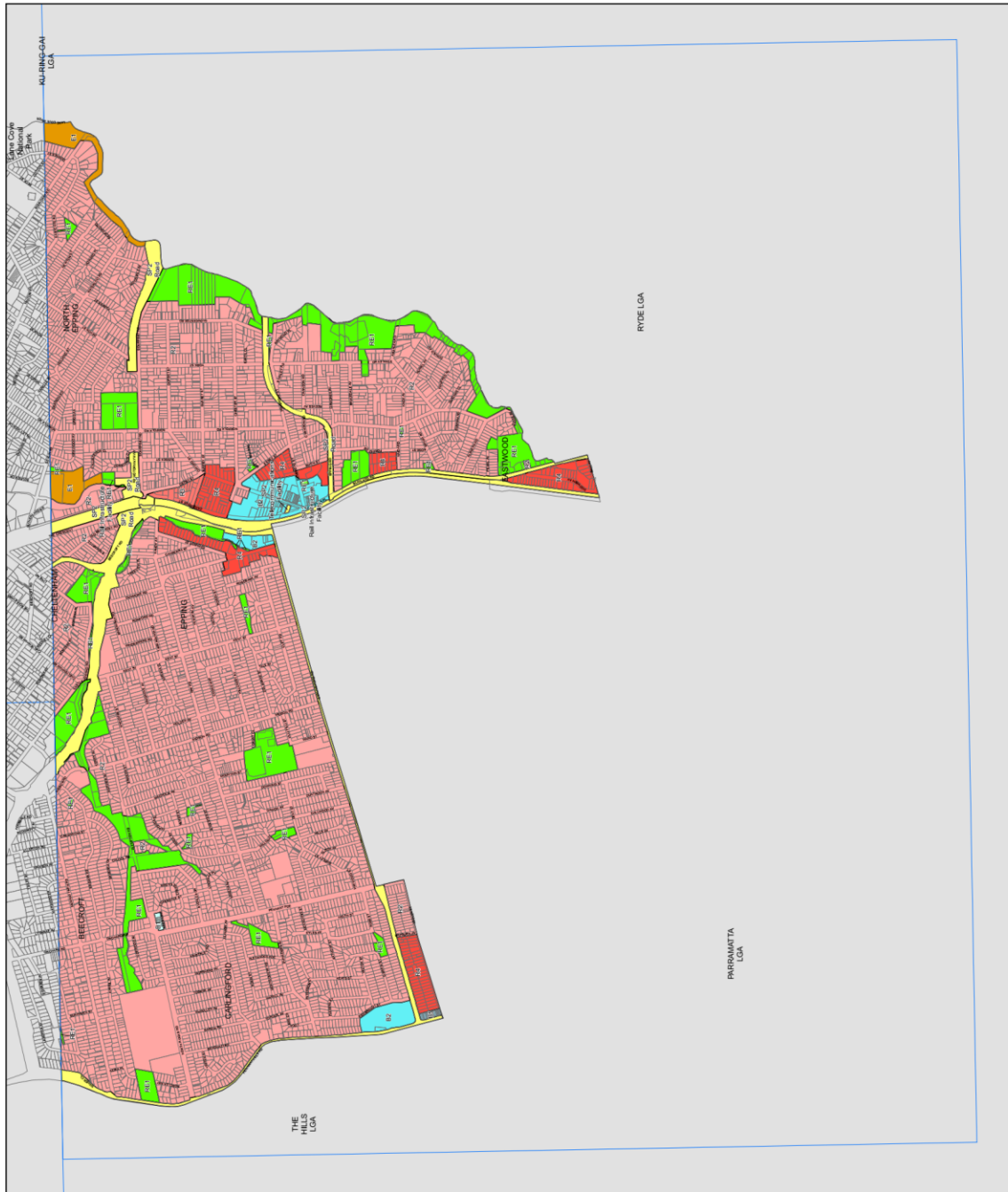
24 – 36 Langston Place, Epping labelled as site 44.

ANNEXURE B: EMM REPORT EXTRACTS (Sheet 2 of 2)

1406	24	49501	4	12
				458 Total Units
	19	53001	2	119
	35			501
	48			222
	33	53002	2	54
	46			295
	43	50005	2	83
	40	53003	1	254
	42	51001	1	464
	44			104
	5	53022	2	30
	6			90
	37			64
	45	49503	2	200
	47			179
				2659 Total Units

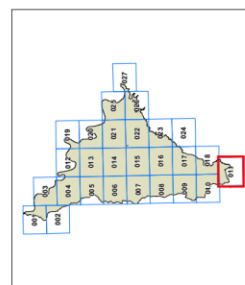
Site 44 has a scale of 104 units within the EMM Report

ANNEXURE B: COUNCIL LEP ZONING (Sheet 1 of 3)



Land Zoning Map - Sheet LZN_011

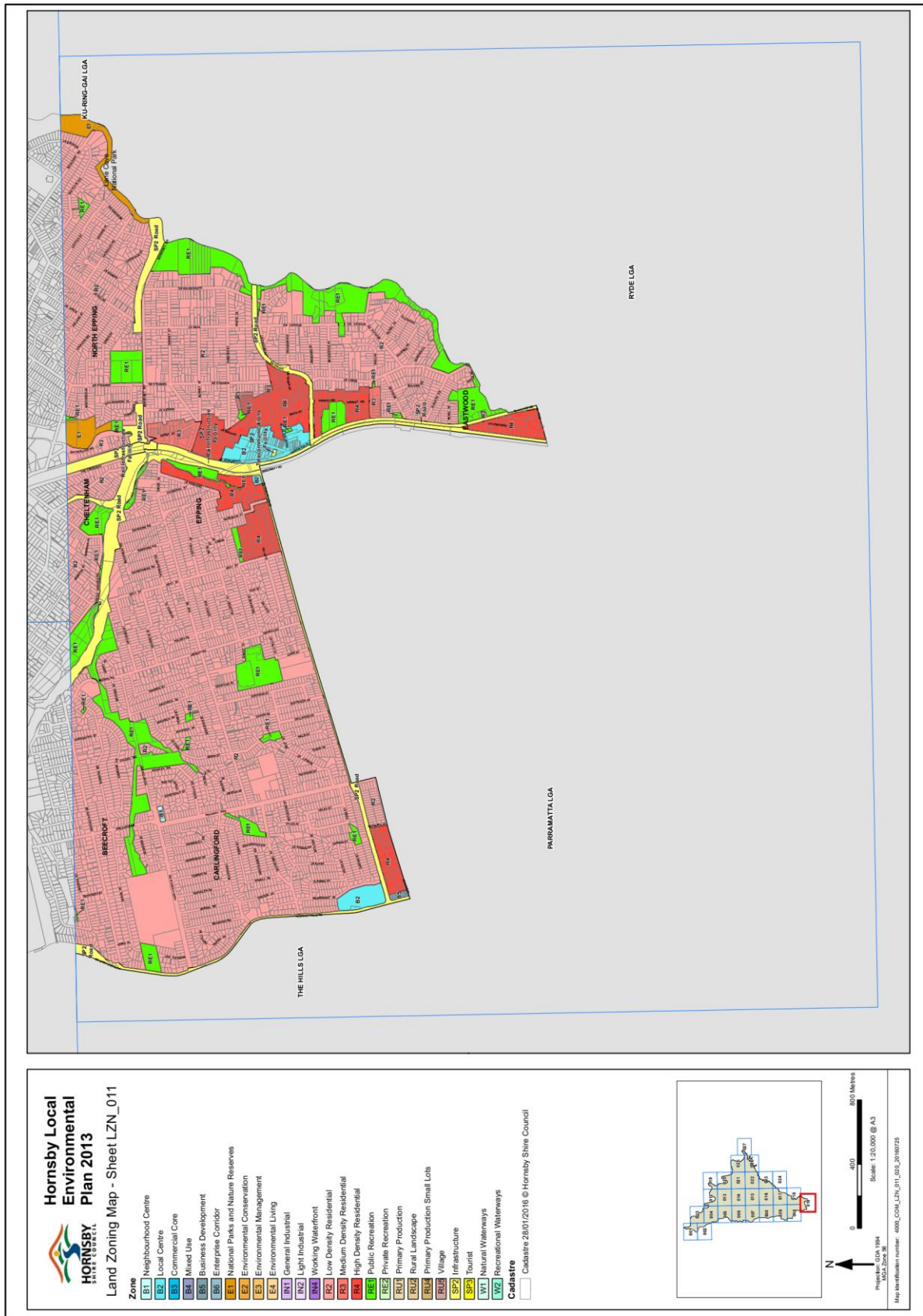
- Zone**
- B1** Neighbourhood Centre
 - B2** Local Centre
 - B3** Commercial Core
 - B4** Mixed Use
 - B5** Business Development
 - B6** Enterprise Corridor
 - B7** National Parks and Nature Reserves
 - B8** Environmental Conservation
 - B9** Environmental Management
 - B10** Environmental Living
 - B11** General Industrial
 - B12** Light Industrial
 - B13** Working Waterfront
 - B14** Low Density Residential
 - B15** Medium Density Residential
 - B16** High Density Residential
 - B17** Public Recreation
 - B18** Private Recreation
 - B19** Primary Production
 - B20** Rural Landscape
 - B21** Primary Production Small Lots
 - B22** Village
 - B23** Infrastructure
 - B24** Tourist
 - B25** Natural Waterways
 - B26** Recreational Waterways
- Cadastral**
- ☐ Cadastral 15/11/2012 © Hornsby Shire Council



0 200 400 Metres
Scale: 1:20,000 @ A3
Projection: GDA 1984
Map identifier number: 408_CON_LZN_011_002_20130603

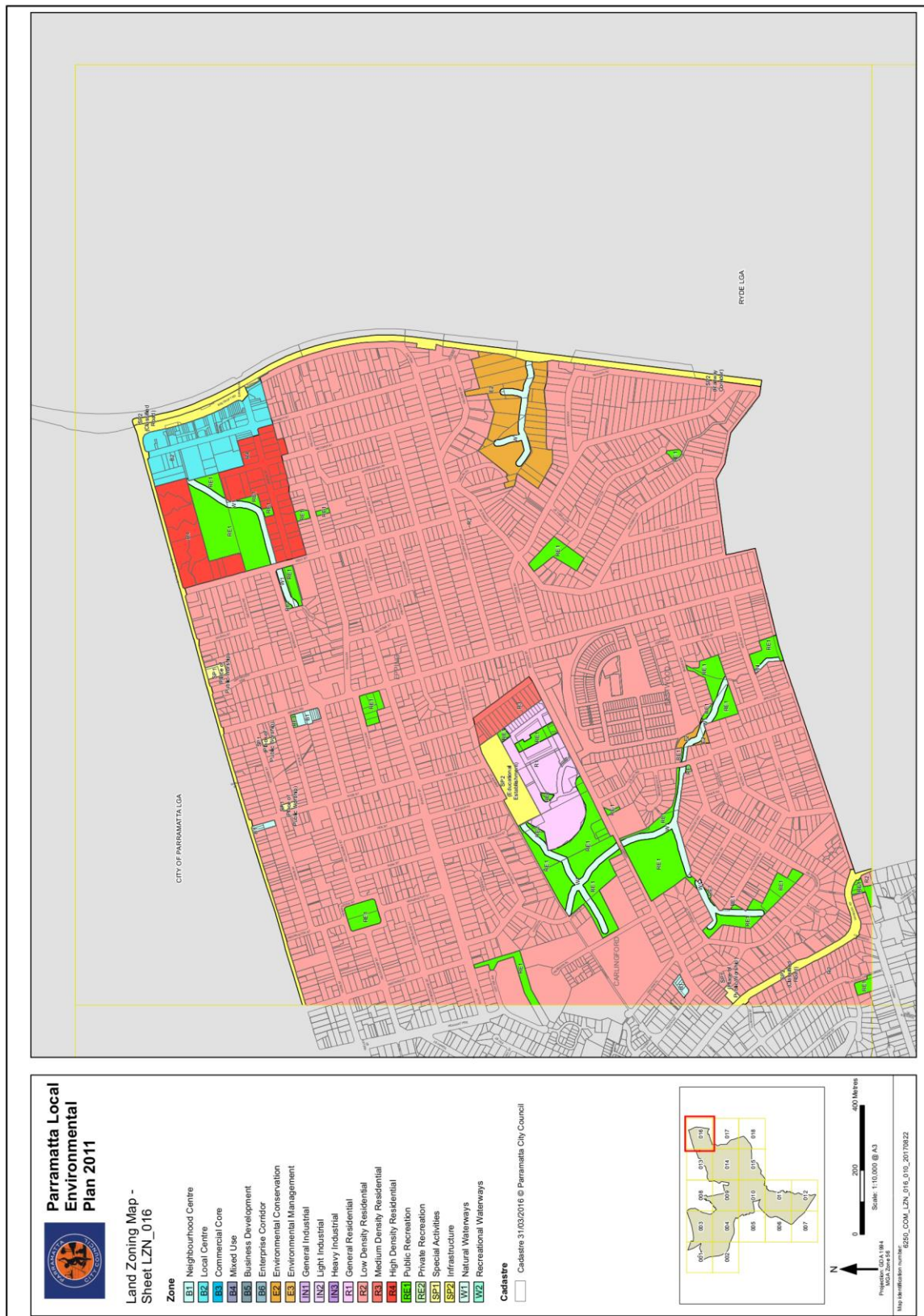
Hornsby Shire Council LEP 2013, drawing 11 dated 11th October 2013 to 13th March 2014

ANNEXURE B: COUNCIL LEP ZONING (Sheet 2 of 3)



Hornsby Shire Council LEP 2013, drawing 11 dated 29th September (current land zone map)

ANNEXURE B: COUNCIL LEP ZONING (Sheet 3 of 3)



City of Parramatta LEP 2011 (Current land zone map)