

**TRAFFIC AND PARKING IMPACT ASSESSMENT OF
PROPOSED RESIDENTIAL SUBDIVISION
AT 20 HERITAGE DRIVE, CHISHOLM**



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

Development Type: Proposed Residential Subdivision

Site Address: 20 Heritage Drive, Chisholm

Prepared for: Revelop

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1 INTRODUCTION

McLaren Traffic Engineering was commissioned by *Revelop* to provide a Traffic and Parking Impact Assessment of the Proposed Residential Subdivision at 20 Heritage Drive, Chisholm as depicted in **Annexure A**.

1.1 Description and Scale of Development

The proposed residential subdivision consists of the creation of 13 lots, for future residential development. Lots 1 to 12 will provide for low density residential development, whilst lot 13 will provide for medium density residential development. The indicative scale of the proposed subdivision is outlined below:

- Seven (7) x terrace houses;
- Ten (10) x semi-detached units;
- 41 x medium density units.

All vehicle access to Lots 1 to 12 will be via a proposed internal local road from the New Link Road, whilst vehicle access to the Lot 13 is proposed via the New Link Road.

1.2 State Environmental Planning Policy (Infrastructure) 2007

The proposed development does not qualify as a traffic generating development with relevant size and/or capacity under *Clause 104* of the *SEPP (Infrastructure) 2007*. Accordingly, formal referral to Transport for New South Wales (TfNSW) is unnecessary and the application can be assessed by Maitland Council officers accordingly.

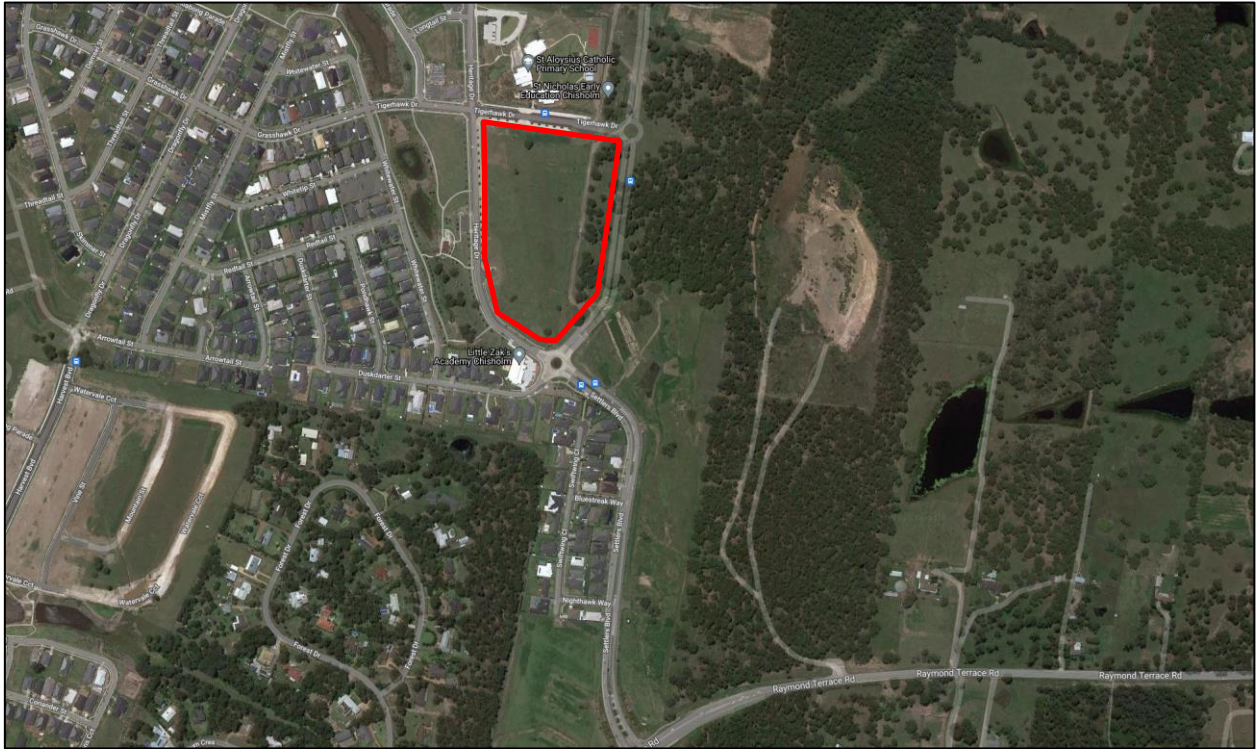
1.3 Site Description

The subject development involves development on part of the currently vacant lot which is currently zoned *B1: Neighbourhood Centre* and *R1: General Residential* under the *Maitland Local Environmental Plan 2011*. The site is surrounded by existing roads on all frontages, with Heritage Drive to the west, Tigerhawk Drive to the north and Settlers Boulevard to the west.

The site is generally surrounded by residential subdivision developments to the west and south with St Aloysius Catholic Primary School located directly to the north of the site and vacant land and bushland to the west. Raymond Terrace Road, facilitating traffic flow eastbound and westbound is located approximately 620m to the south of the site.

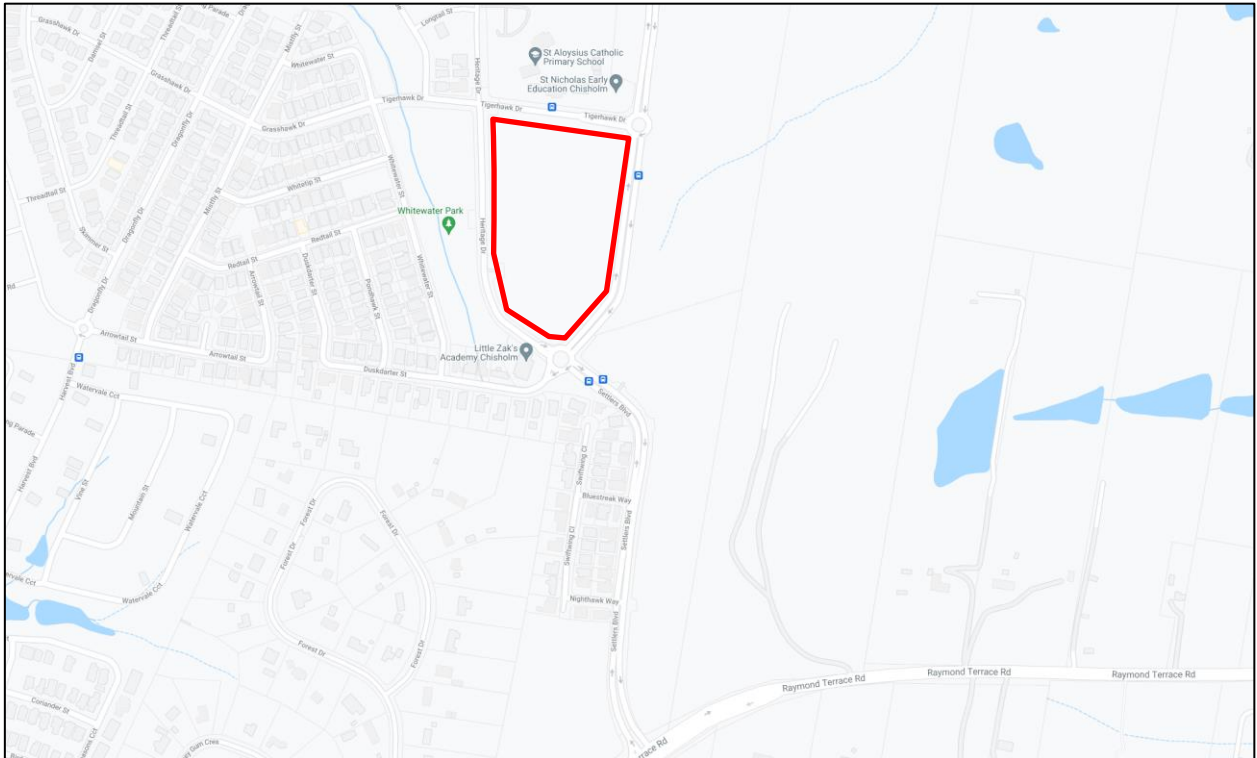
1.4 Site Context

The location of the site is shown on an aerial photo and a street map in **Figure 1** and **Figure 2** respectively.



— Site Location

FIGURE 1: SITE CONTEXT – AERIAL PHOTO



— Site Location

FIGURE 2: SITE CONTEXT – STREET MAP

2 EXISTING TRAFFIC AND PARKING CONDITIONS

2.1 Road Hierarchy

The road network servicing the site has characteristics as described in the following subsections.

2.1.1 Heritage Drive

- Unclassified LOCAL Road;
- Approximately 12m wide two-way carriageway (one lane in each direction) and a line-marked kerbside parking lane on both sides of the road;
- Signposted 50km/h speed limit;
- Unrestricted kerbside parking permitted along both sides of the road within a line-marked kerbside parking lane;
- Provision of a shared path within the verge on both sides of the road.

2.1.2 Settlers Boulevard

- Unclassified LOCAL Road;
- Approximately 19m wide two-way carriageway (one lane in each direction), a line-marked bicycle lane and a line-marked kerbside parking lane on both sides of the road, divided by a central landscaped median of approximately 3m width;
- Signposted 50km/h speed limit, with 40km/h school zone restrictions;
- Unrestricted kerbside parking permitted along both sides of the road within a line-marked kerbside parking lane.
- Provision of a shared path within the verge on both sides of the road.

2.1.3 Tigerhawk Drive

- Unclassified LOCAL Road;
- Approximately 16m wide two-way carriageway (one lane in each direction), a line-marked bicycle lane and a line-marked kerbside parking lane on both sides of the road;
- Signposted 50km/h speed limit, with 40km/h school zone restrictions;
- Unrestricted kerbside parking permitted along both sides of the road within a line-marked kerbside parking lane.

2.1.4 Raymond Terrace Road

- TfNSW Classified STATE ARTERIAL Road (No. 104);
- Approximately 10m to 27m wide two-way carriageway within near vicinity of the site facilitating one (1) to two (2) lanes in each direction;
 - Carriageway typically accommodates one (1) lane in each direction;

- Widens to two (2) lanes plus auxiliary turn lanes in each direction within close proximity to Settlers Boulevard.
- Signposted 80km/h speed limit;
- Line-marked bicycle lane on both sides of the road within close proximity to Settlers Boulevard;
- No provision of kerbside parking facilities on either side of the road.

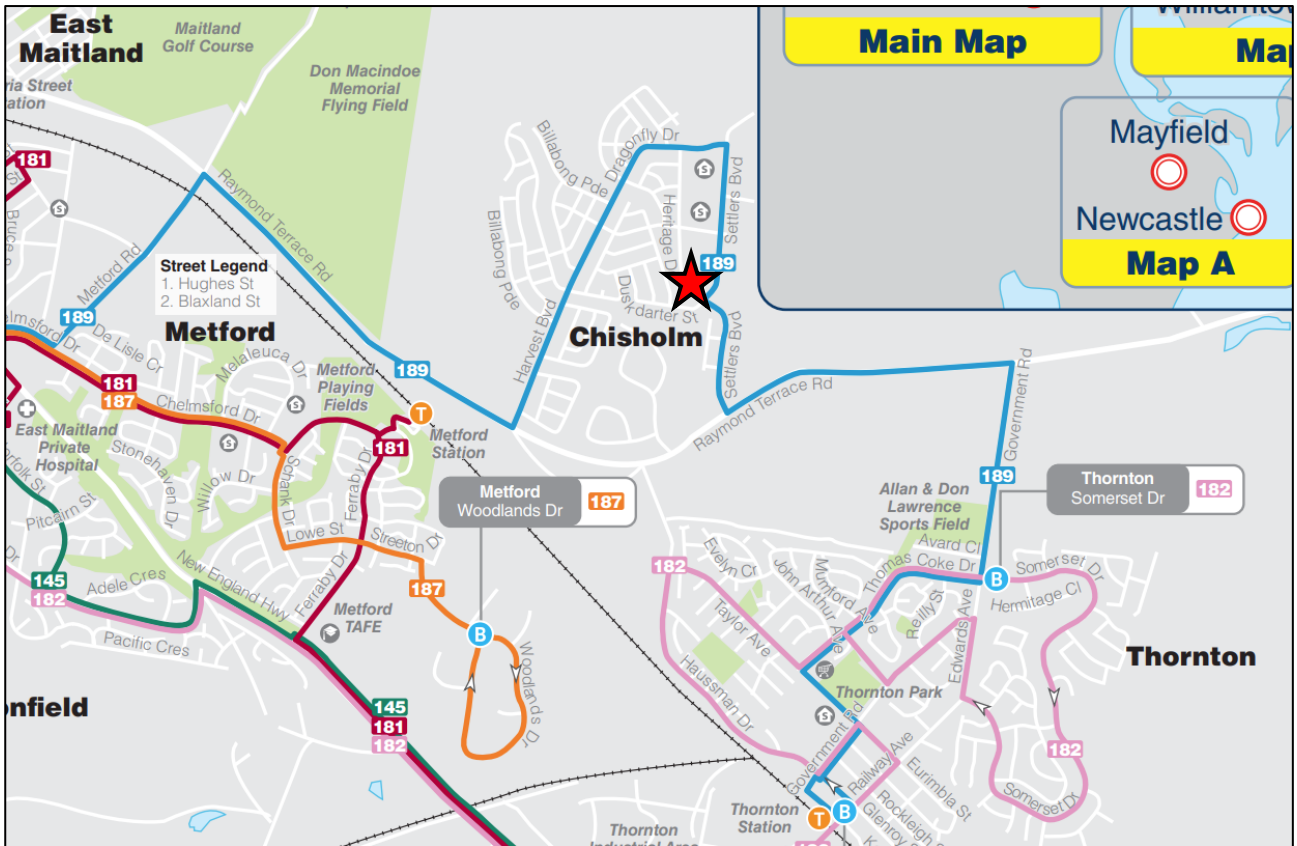
2.2 Existing Traffic Management

- Roundabout controlled intersection of Heritage Drive / Settlers Boulevard / Duskdater Street;
- Roundabout controlled intersection of Settlers Boulevard / Tigerhawk Drive;
- Give-way sign controlled intersection of Heritage Drive / Tigerhawk Drive;
- Signal controlled intersection of Settlers Boulevard / Raymond Terrace Drive;
- Existing junction of Heritage Drive / Proposed Access Lane (to be constructed);
- Existing junction of Settlers Drive / Greenling Drive (to be constructed);
- Indented blistered pedestrian crossing on Tigerhawk Drive along the northern boundary of the site.

2.3 Public Transport

The subject site has access to a number of existing bus stops including one (1) on Tigerhawk Drive along the northern boundary of the site, two (2) on Settlers Boulevard (ID: 232282 and ID: 232225) along the eastern boundary of the site and two (2) on Settlers Boulevard (ID: 2322215 and ID: 2322118) located approximately 100m to the south of the site. All of the aforementioned bus stops service existing route 189 (Stockland Green Hills to Thornton via Chisholm) provided by Hunter Valley Buses.

There are no train stations within an accessible distance from the subject site. The location of the site subject to the surrounding public transport network is shown in **Figure 3**.



 Site Location

FIGURE 3: PUBLIC TRANSPORT NETWORK MAP

2.4 Future Road and Infrastructure Upgrades

The subject site is located within the Thornton North Urban Release area and is subject to ongoing change within the subdivision as a result of the creation of additional housing and local infrastructure.

Section 7 of the Maitland Council Development Control Plan (MDCP) Part F – Urban Release Areas outlines that the Thornton North Urban Release area comprises a total area of 900 hectares of land with an approximate residential yield of 5,000 lots. The extent of the Thornton North Urban Release area is shown in **Figure 4** below, extracted from *MDCP Part F*.

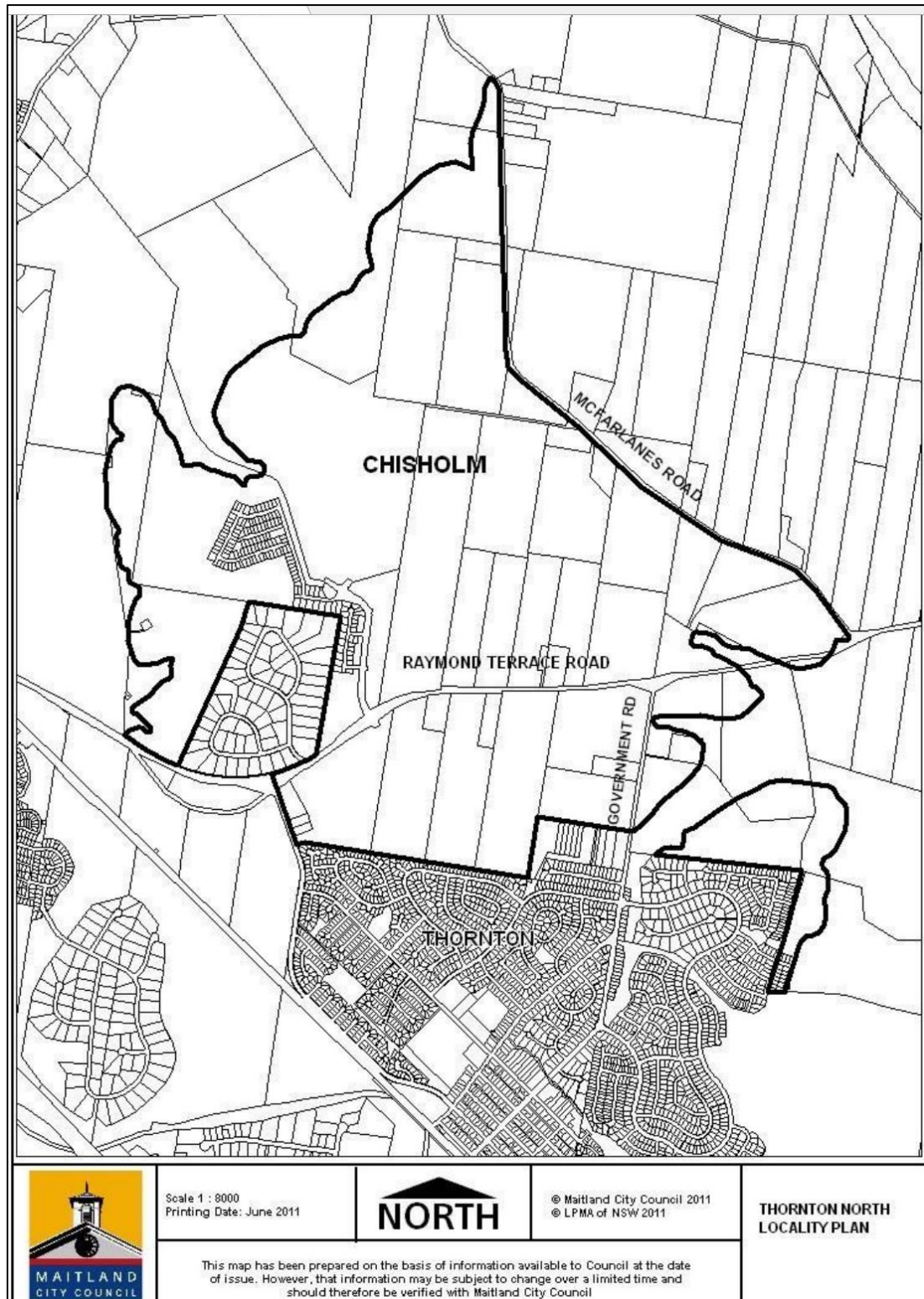


FIGURE 4: THORNTON NORTH LOCALITY PLAN – FIGURE 28 OF MDCP PART F

To support the growth within the Thornton North Urban Release Area the *Thornton North Section 94 Contributions Plan 2008* was developed, which outlines the following infrastructure upgrades as shown in **Figure 5**.

Thornton North Road & Traffic Facilities						
Facilities		Location	Description	Est. Capital Cost	Est. Land Cost	Total Cost
Road Upgrades	TN36	Raymond Terrace Road	Harvest Boulevard to Haussman Drive	\$5,992,357	\$767,604	\$6,759,961
	TN37		Haussman Drive to Settlers Boulevard	\$10,896,727	\$303,002	\$11,199,729
	TN38		Settlers Boulevard to Government Road	\$6,969,829	\$1,212,007	\$8,181,836
	TN39		Government Road to McFarlanes Road	\$6,984,612	\$686,804	\$7,671,416
	TN40	Haussman Drive	Raymond Terrace Road to Railway Avenue	\$14,503,670	\$3,313,871	\$17,817,541
	TN41	Thornton Road	Railway Avenue to Glenwood Drive	\$7,151,104	\$59,828	\$7,210,932
	TN42	McFarlanes Road	Raymond Terrace Road to TN49	\$6,349,640	\$579,568	\$6,929,208
	TN43	Government Road	Raymond Terrace Road to Somerset Drive	\$1,674,814	\$246,651	\$1,921,465
Intersections	TN44	Raymond Terrace Road / Harvest Boulevard		\$1,216,758	\$0	\$1,216,758
	TN45	Raymond Terrace Road / Haussman Drive		\$2,020,919	\$0	\$2,020,919
	TN46	Raymond Terrace Road / Settlers Boulevard		\$1,246,019	\$0	\$1,246,019
	TN47	Raymond Terrace Road / Government Road		\$2,140,733	\$0	\$2,140,733
	TN48	Raymond Terrace Road / McFarlanes Road		\$1,432,678	\$0	\$1,432,678
	TN49	McFarlanes Road / Settlers Boulevard		\$1,179,791	\$0	\$1,179,791
	TN50	Haussman Drive / Taylor Avenue		\$1,981,514	\$4,944	\$1,986,458
	TN51	Railway Avenue / Glenroy Street		\$3,794,138	\$2,197,475	\$5,991,613
	TN52	Huntingdale Drive / Thornton Drive		\$1,137,841	\$0	\$1,137,841
	TN53	Thornton Road / Glenwood Drive		\$3,678,586	\$498,199	\$4,176,785
	TN54	Government Road / Thorncliffe Avenue / Darlaston Avenue		\$641,324	\$0	\$641,324
	TN55	Government Road / Hillgate Drive		\$641,324	\$0	\$641,324
New Roads	TN56	Settlers Boulevard (additional 4.0m wide median)		\$1,354,847	\$754,000	\$2,108,847
	TN57	Fringe Road (additional 6.0m reserve, 1.5m for shared way and 2.5m parking lane)		\$2,583,849	\$120,000	\$2,703,849
TOTAL				\$85,573,074	\$10,743,953	\$96,317,027

FIGURE 5: THORNTON NORTH SECTION 94 CONTRIBUTIONS PLAN – ROAD INFRASTRUCTURE

The planned road infrastructure shown above, was supported by the *Thornton North Master Plan Traffic Impact Assessment Volume 3* prepared by *Parsons Brinckerhoff* dated August 2003 (**PB Report**). From Council's website, a number of road infrastructure upgrades have been completed as shown in **Figure 6** below.

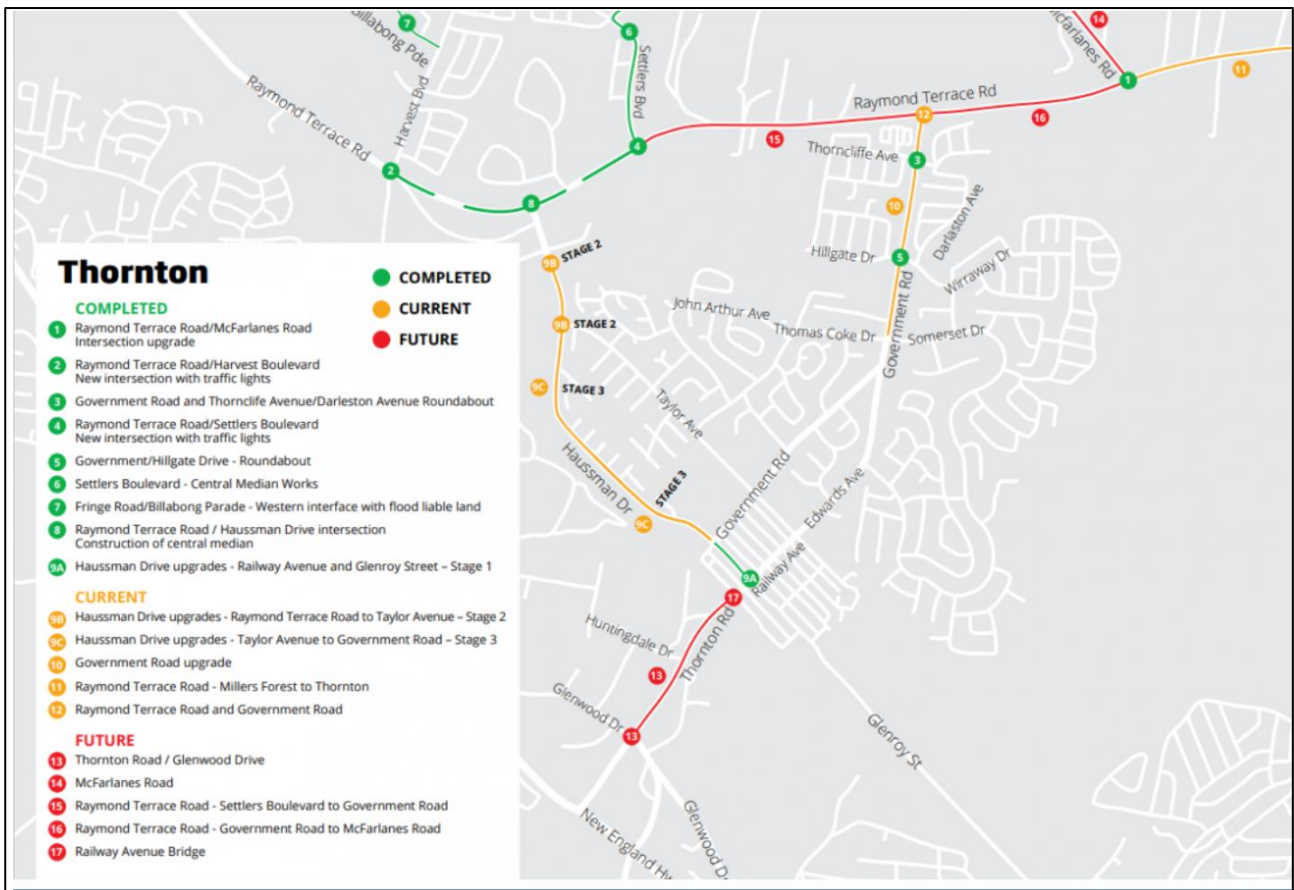


FIGURE 6: THORNTON ROAD NETWORK UPGRADE PROGRESS – MAITLAND COUNCIL

Critical intersections of Settlers Boulevard / Raymond Terrance Road and Raymond Terrace Road / Harvest Boulevard have been fully constructed to support the growth within the area which includes the subject development.

2.5 Thornton North Urban Road Hierarchy

The general road hierarchy for the Thornton North Urban Release area is shown in **Figure 7** below which shows that the subject development will have access directly do Raymond Terrace Road via Settlers Boulevard and Harvest Boulevard.

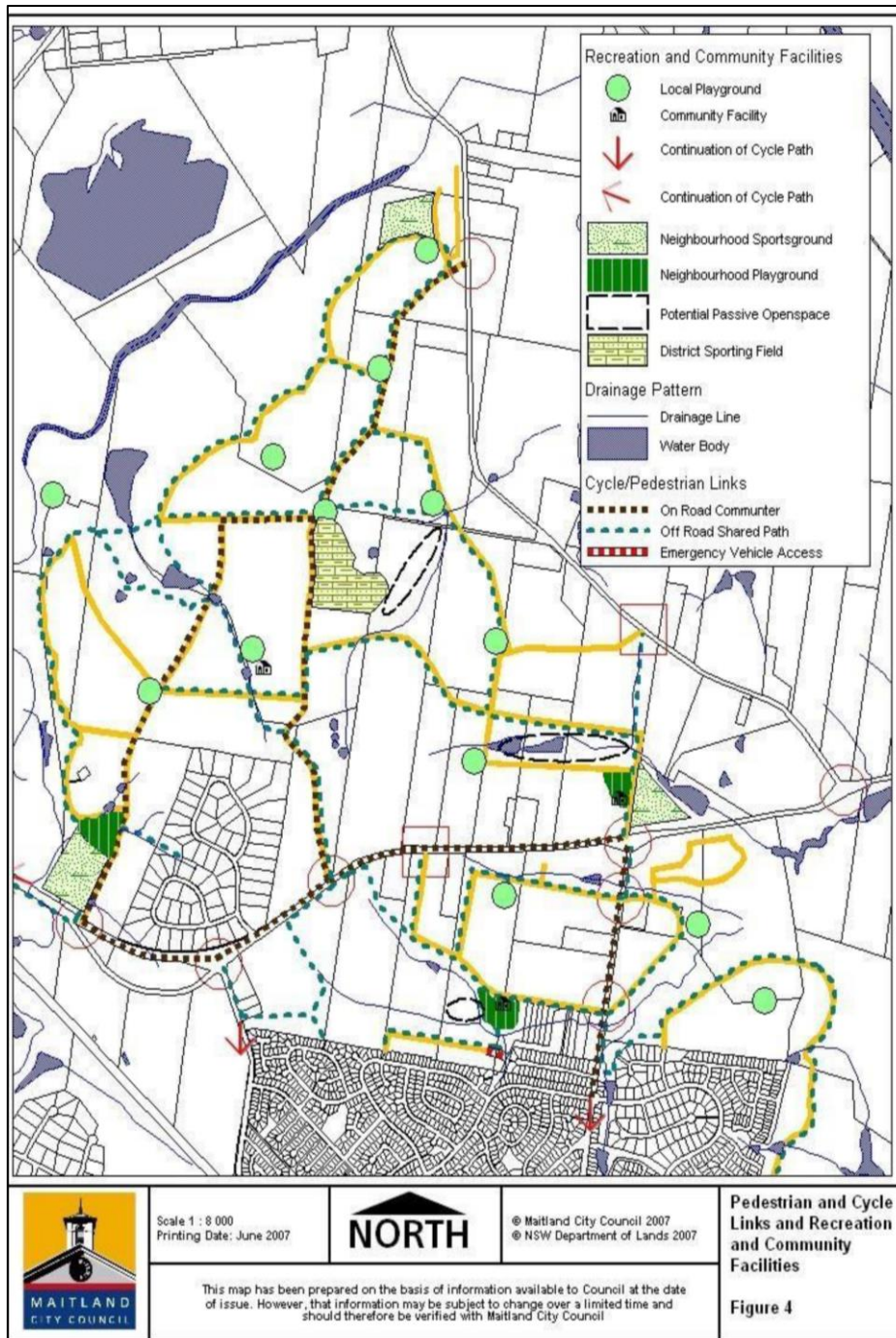


FIGURE 7: ROAD HIERARCHY, PEDESTRIAN AND CYCLE LINKS – COUNCIL DCP

3 SUBDIVISION DESIGN & COMPLIANCE

3.1 Road Design

Reference is made to *Maitland City Council Engineering Standards – Road Design* and *Maitland Council Development Control Plan 2011 Part C – Design Guideline* which provides the following design requirements for subdivisions as shown in **Figure 8 & Figure 9**.

Road Type	Max. No. Lots	Reserve Width (m)	Carriageway or kerb –kerb (m)
Access Place	10	17	8
Local - Minor	20	17	8
Local - Secondary	50	17	8
Local - Primary	100	17	8
Collector	200	17	8
Distributor - Secondary	400	20	11
Distributor - Primary	800	22	11
Arterial or Sub-Arterial	> 800	24	13
Rural Residential (1c)	per above	20	7.5
Rural Residential (1d)	per above	20	per categories above
Rural – Minor	50	20	8
Industrial	10	20	11
Industrial	> 10	22	13

FIGURE 8: MAITLAND COUNCIL DCP PART C

ROAD TYPE	MAX NO. LOTS	RESERVE WIDTH (m) ^a	CARRIAGEWAY / KERB-KERB (m) ^b	ON-ROAD BICYCLE FACILITY	FOOTWAY VERGE (m) ^c	KERB ^d	FOOTPATH (1.5m WIDE) ^e	DESIGN ESA ^f
Local - Place ¹	10	17	8	Mixed	4.5	Rolled	As Required	1 x10 ⁵
Local - Access ¹	20	17	8	Mixed	4.5	Rolled	One side	1 x10 ⁵
Local - Secondary ¹	50	17	8	Mixed	4.5	Rolled	One side	2 x10 ⁵
Local - Primary ¹	100	17	8	Mixed	4.5	Rolled	One side	5 x10 ⁵
Collector - Secondary ¹	200	17	8	Mixed (Parking)	4.5	Upright	One side	1 x10 ⁶
Collector - Primary ^{iv}	300	20	11	Mixed (Parking) ^p	4.5	Upright	One side	1.5 x10 ⁶
Distributor - Secondary ^v	400	23	14	Mixed (Parking) ^p	4.5	Upright	Both sides	2 x10 ⁶
Distributor - Primary ^{m v}	500	24	15 ^q	1.5m Lane	4.5	Upright	Both sides	5 x10 ⁶
Sub-Arterial ⁿ	3500	24.4	15.4 ^r	1.7m Lane ^s	4.5	Upright	Both sides	1 x10 ^{7 min}
Industrial - Secondary	10 ^s	22	13	Mixed	4.5	Upright	As Required	5 x10 ⁶
Industrial - Primary	> 10	22	13	Mixed	4.5	Upright	As Required	1x10 ⁷
School Bus/Public Route ^o			9min / 12min					2/5 x10 ^{6 min}
Business / School Precinct			15.4	1.7m Lane	5.5 min ^h	Upright		1 x10 ^{7 min}

FIGURE 9: MAITLAND CITY COUNCIL ENGINEERING STANDARDS – ROAD DESIGN

As shown above, residential subdivision local roads require a road reserve of 17m for roads serving 20 lots, which consists of 8m wide carriageway and 4.5m wide road verges. The proposed plans detail a road reserve of 8m and road verges of 4.5m in width, complying with Council's requirements.

The New Link Road providing access between Settlers Boulevard and Heritage Drive is not outlined within Council's Road hierarchy, but would operate similar to a low scale industrial road as a result of the proposed loading dock for the shopping centre. As such, the minimum design for an industrial road is a 20m to 22m road reserve.

Council's pre-DA comments for the subject development dated 12 August 2021 provided a recommendation to match the existing stub road near Heritage Drive, being a 4.5m wide verge, 12m wide carriageway and a 5.5m verge, resulting in a road reserve of 22m.

The proposed plans detail the New Link Road with a 22.4m wide road reserve, designed in accordance with Council's pre-DA comments.

4 PARKING ASSESSMENT

4.1 Council Parking Requirement

Reference is made to the *Maitland Development Control Plan 2011 – Part C – Design Guidelines* which designates the following parking rates applicable to the proposed development:

Dwelling Houses

Minimum 1 space per dwelling

Multi dwelling housing / Dual Occupancy

1 space for each one or two bedroom dwelling or

2 spaces for each dwelling containing more than two bedrooms

Plus visitor space for the first three dwellings and 1 space for every five thereafter or part thereof

It is expected that each lot will provide car parking in accordance with the relevant development control plan requirement extracted above. The individual lots are to cater for the parking requirement fully on-site, with each lot to be assessed under a separate development application.

4.2 Servicing & Loading

It is expected that waste collection for the proposed low to medium residential developments will be undertaken from the internal local road of the New Link Road, typical of residential developments.

4.3 Car Park Design & Compliance

The design of the car parking layouts for each lot will be assessed against the design requirements as outlined within *AS2890.1:2004*. This will be undertaken and assessed during the preparation of development application for each individual lot.

It is relevant to note that each of the driveway locations have been shown to be located in a compliant location and are provided with adequate sight lines for a design speed of 50km/h. It is recommended that street planting within the public domain be designed to ensure sight lines are not obstructed for driveways from all lots.

5 TRAFFIC ASSESSMENT

The impact of the expected traffic generation levels associated with the subject proposal is discussed in the following sub-sections.

5.1 **Traffic Generation**

Traffic generation rates for the relevant land uses are provided in the *RTA Guide to Traffic Generating Developments (2002)* as adopted by Transport for New South Wales (TfNSW) and recent supplements and are as follows:

RMS Guide

3.3.1 Dwelling houses.

Weekday peak hour vehicle trips = 0.85 per dwelling

3.3.2 Medium Density Residential Flat Building

Larger units and town houses

Weekday peak hour vehicle trips – 0.5 – 0.65 per dwelling

TDT 2013/04a

Low density residential dwellings

Daily vehicle trips = 10.7 per dwelling in Sydney, 7.4 per dwelling in regional areas

Weekday average evening peak hour vehicle trips = 0.99 per dwelling in Sydney (maximum 1.39), 0.78 per dwelling in regional areas (maximum 0.90).

The *TDT2013/04a* provides traffic generation rates specifically relating to regional areas and as such, this rate has been applied to the proposal for all dwellings and units. The resulting traffic generation is summarised in **Table 1**.

TABLE 1: ESTIMATED TRAFFIC GENERATION

Use	Scale	Generation Rate	Trips	Peak Hour Split ⁽¹⁾	
				AM	PM
Residential Dwellings	58	0.78 peak hour trips per dwelling	45 vehicles per hour	9 in 36 out	36 in 9 out

Note: (1) Assumes 20% inbound & 80% outbound during AM peak: Vice versa for PM.

As shown, the expected traffic generation associated with the proposed subdivision is in the order of **45** vehicle trips during the AM and PM peak hour periods, equating to approximately one (1) vehicle trip every 1.3-minutes.

As noted in **Section 2.4**, the traffic impact assessment of the development has already been assessed within the *Thornton North Master Plan Traffic Impact Assessment Volume 3* prepared by *Parsons Brinckerhoff* dated August 2003.

The traffic generation levels associated with the proposed subdivision have been factored into the planned road infrastructure as the proposed use is consistent with the master plan. As such, it is expected that the future road network will have sufficient capacity to serve the proposed subdivision.

6 CONCLUSION

In view of the foregoing, the subject proposed residential subdivision at 20 Heritage Drive, Chisholm (as depicted in **Annexure A**) is fully supportable in terms of its traffic and parking impacts.

The proposed subdivision layout is consistent with *Maitland City Council Engineering Standards – Road Design* and *Maitland Council Development Control Plan 2011 Part C – Design Guideline* and provides appropriate road widths for vehicular access.

The traffic generated by the subject subdivision of **45** peak hour vehicle trips is consistent with the surrounding growth centre masterplan, with new roads and upgrades to roads and intersections expected to be able to accommodate the increased traffic loading as a result of the growth precinct. As such, the proposal is not expected to have any detrimental or adverse impacts to the surrounding road network.

The design of the car parking layouts for each lot will be assessed against the design requirements as outlined within *AS2890.1:2004*. This will be undertaken and assessed during the preparation of development applications for each individual lot, which will also require parking to be provided in accordance with Council requirements.

In view of the foregoing, the proposed 13 lot residential subdivision is fully supported in terms of its traffic and parking impacts with due regard to traffic flow efficiency and road safety.



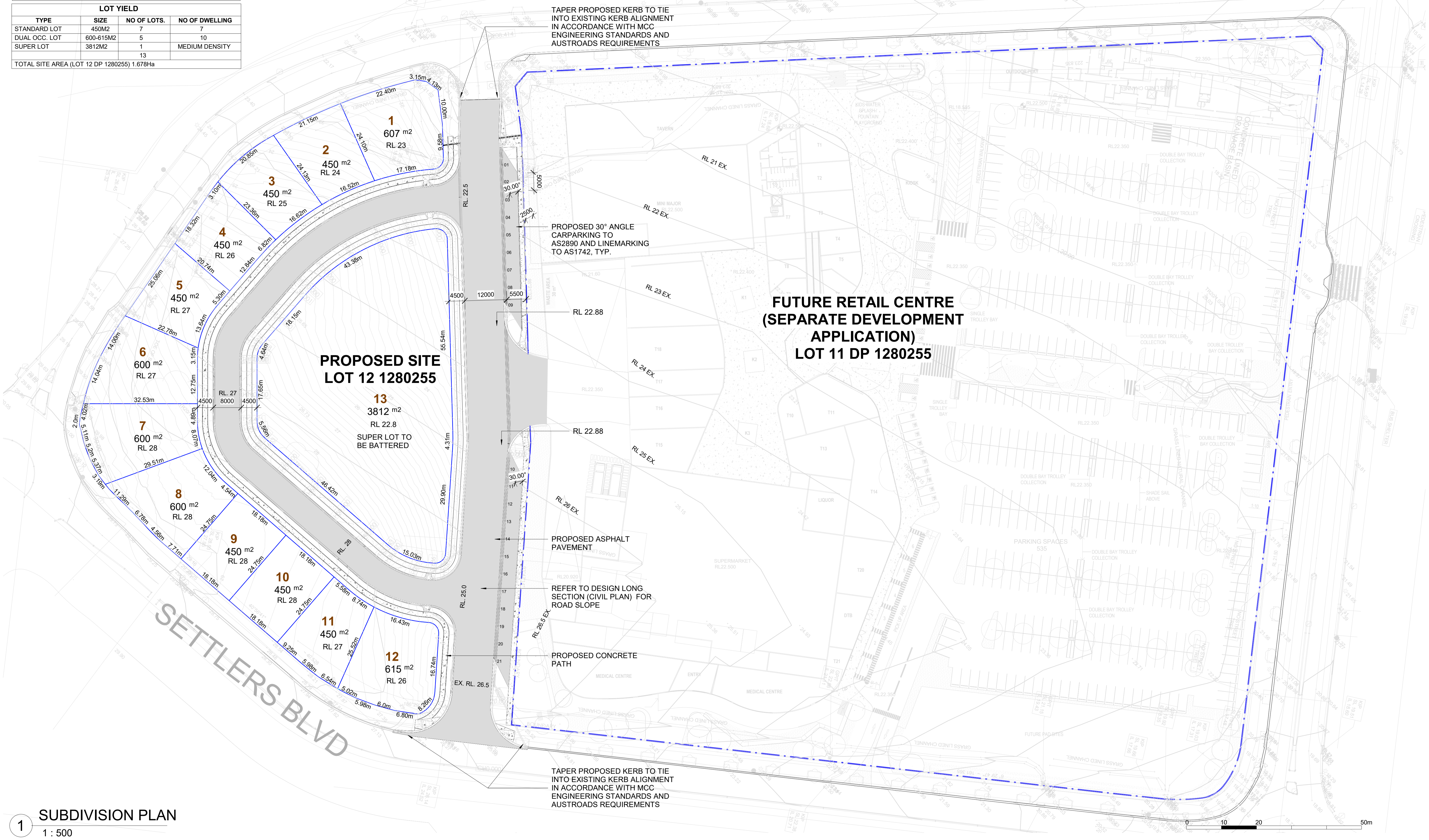
**ANNEXURE A: PROPOSED PLANS
(2 SHEETS)**

DEVELOPMENT APPLICATION

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ALL DIMENSIONS ARE TO BE CONFIRMED PRIOR REGISTRATION OF SUBDIVISION.

LOT YIELD			
TYPE	SIZE	NO OF LOTS.	NO OF DWELLING
STANDARD LOT	450M2	7	7
DUAL OCC. LOT	600-615M2	5	10
SUPER LOT	3812M2	1	MEDIUM DENSITY
TOTAL SITE AREA (LOT 12 DP 1280255) 1.678Ha			



1 SUBDIVISION PLAN
1 : 500



CHISHOLM SUBDIVISION
HERITAGE DRIVE
CHISHOLM, NSW 2322, AUSTRALIA

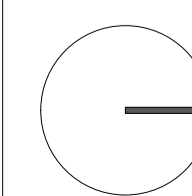
ISSUE	DATE	DESCRIPTION
A	24.01.22	DA ISSUE

SUBDIVISION PLAN

A101

DA - A

1:500 @ A1
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LEGEND

- BUILDING FOOTPRINT - MEDIUM DENSITY UNITS
- BUILDING FOOTPRINT - SEMI DETACHED UNITS
- BUILDING FOOTPRINT - TERRACE HOUSES
- INDICATIVE GARAGE LOCATION
- INDICATIVE DRIVEWAY LOCATION
- INDICATIVE WALKWAY & ENTRY
- INDICATIVE PRIVATE OPEN SPACE



1 BUILDING ENVELOPE PLAN
1 : 500

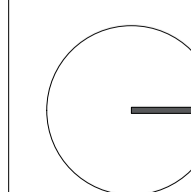


CHISHOLM SUBDIVISION
HERITAGE DRIVE
CHISHOLM, NSW 2322 , AUSTRALIA

ISSUE	DATE	DESCRIPTION
A	24.01.22	DA ISSUE

BUILDING ENVELOPE PLAN

A102 DA - A
1:500 @ A1
@ A3



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