

Proposed Rezoning Application for Residential Sub Division Tranche 41 Pondicherry Precinct

Rezoning Traffic and Access Assessment Report

Prepared for: Greenfields Developments Pty Ltd

April 2020

Report No: PT19087r01_Final _V3

TABLE OF CONTENTS

1. Introduction	3
2. Existing Development / Conditions	4
2.1 Site Location.....	4
2.2 Existing Site Traffic Generation	5
2.3 Classification Criteria	5
2.4 Existing Road Network.....	6
2.5 Existing Traffic Flows.....	6
3. Background Report Review	7
3.1 The Northern Road Upgrade – Sinclair Knight Merz 2012	7
3.2 Lowes Creek Maryland (LCM) Precinct Traffic Report – GHD 2018.....	10
3.3 Background Traffic Report Summary	12
3.4 South West Rail Link Extension	12
4. The Proposed Development.....	14
5. Potential Traffic Impacts	15
6. Network Design Compliance.....	16
6.1 Road Network	16
7. Conclusions	17
8. Appendix A – Plans of Proposed Scheme	18

List of Figures

Figure 1 - Site Location

Figure 2 – Constructed Future Signalised Intersection Linking Tranche 41 to The Northern Road

Figure 3 – Western Sydney Infrastructure Plan Proposals

Figure 4 – The Northern Road Upgrade - SKM 2012 Report Study Area

Figure 5 – SKM 2012 Traffic Report Recommended Future Road Network - The Northern Road Upgrade Connections

Figure 6 – Lowes Creek Marylands Precinct Location

Figure 7 – Lowes Creek Marylands Precinct Boundaries

Figure 8 – Proposed South West Rail Line Extension Corridor

List of Tables

1. Introduction

This report has been prepared on behalf of Greenfields Developments Pty Ltd to present findings of a traffic and access assessment of the proposed rezoning to provide a residential sub division at the site known as Tranche 41, Pondicherry.

The study has assessed existing traffic conditions, access arrangements, future traffic conditions and review of proposed road network.

The remainder of the report is set out as follows:

- Section 2 describes the existing traffic and parking conditions;
- Section 3 provides a summary of historical traffic investigations in the immediate area;
- Section 4 summarises the proposed development;
- Section 5 reviews the potential traffic impacts of the proposal;
- Section 6 reviews the design for compliance with relevant policies / standards; and
- Section 7 presents the conclusions

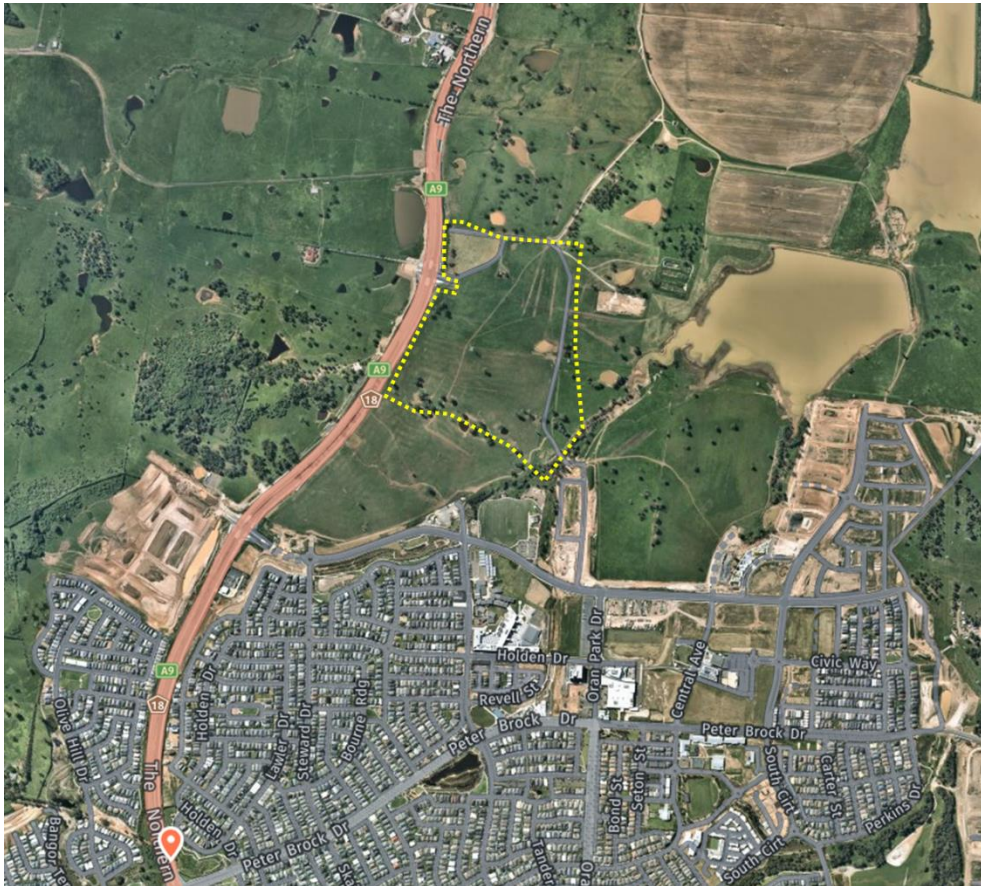
2. Existing Development / Conditions

The following presents a summary of existing site and traffic conditions.

2.1 Site Location

The proposed site known as Tranche 41 is located to the east of The Northern Road immediately north of the northern boundary of the Oran Park Precinct development area. The location of the development site is shown in **Figure 1**.

Figure 1 - Site Location



Source: Nearmap

The site is bounded by The Northern Road in the west, a creek to the south, the potential future rail corridor to the east and an adjacent site boundary to the north.

The site is currently a greenfield site and includes a recently constructed future signalised intersection with The Northern Road. The as constructed future intersection is shown below:

Figure 2 – Constructed Future Signalised Intersection Linking Tranche 41 to The Northern Road



2.2 Existing Site Traffic Generation

The site is currently a greenfield site and would not generate any traffic except for a small number of vehicles accessing rural dwellings on or near the subject site

2.3 Classification Criteria

It is usual to classify roads according to a road hierarchy in order to determine their functional role within the road network. Changes to traffic flows on the roads can then be assessed within the context of the road hierarchy. Roads are classified according to the role they fulfil and the volume of traffic they should appropriately carry. The RTA has set down the following guidelines for the functional classification of roads.

- Arterial Road – typically a main road carrying over 15,000 vehicles per day and fulfilling a role as a major inter-regional link (over 1,500 vehicles per hour)
- Sub-arterial Road – defined as secondary inter-regional links, typically carrying volumes between 5,000 and 20,000 vehicles per day (500 to 2,000 vehicles per hour)

- Collector Road – provides a link between local roads and regional roads, typically carrying between 2,000 and 10,000 vehicles per day (250 to 1,000 vehicles per hour). At volumes greater than 5,000 vehicles per day, residential amenity begins to decline noticeably.
- Local Road – provides access to individual allotments, carrying low volumes, typically less than 2,000 vehicles per day (250 vehicles per hour).

2.4 Existing Road Network

The Northern Road– is the main north-south arterial road through the area and is currently subject to a significant corridor expansion to provide additional capacity. As stated above a future signalised intersection has been constructed directly adjacent to Tranche 41 which will service future development areas to the east and west of The Northern Road, including Tranche 41. Across the frontage of the site, The Northern Road includes single travel lane in each direction whilst the southbound carriageway is under construction. In the future, a minimum of two (2) travel lanes in each direction will be provided. The road includes a posted speed limit of 80km/hr outside of existing construction areas.

2.5 Existing Traffic Flows

Given the significant volume of historical traffic reports undertaken in the immediate area and along The Northern Road corridor, no specific intersection / mid-block counts were undertaken to inform this report.

The assessment of future traffic impacts is presented in [Section 5](#) of this report below.

3. Background Report Review

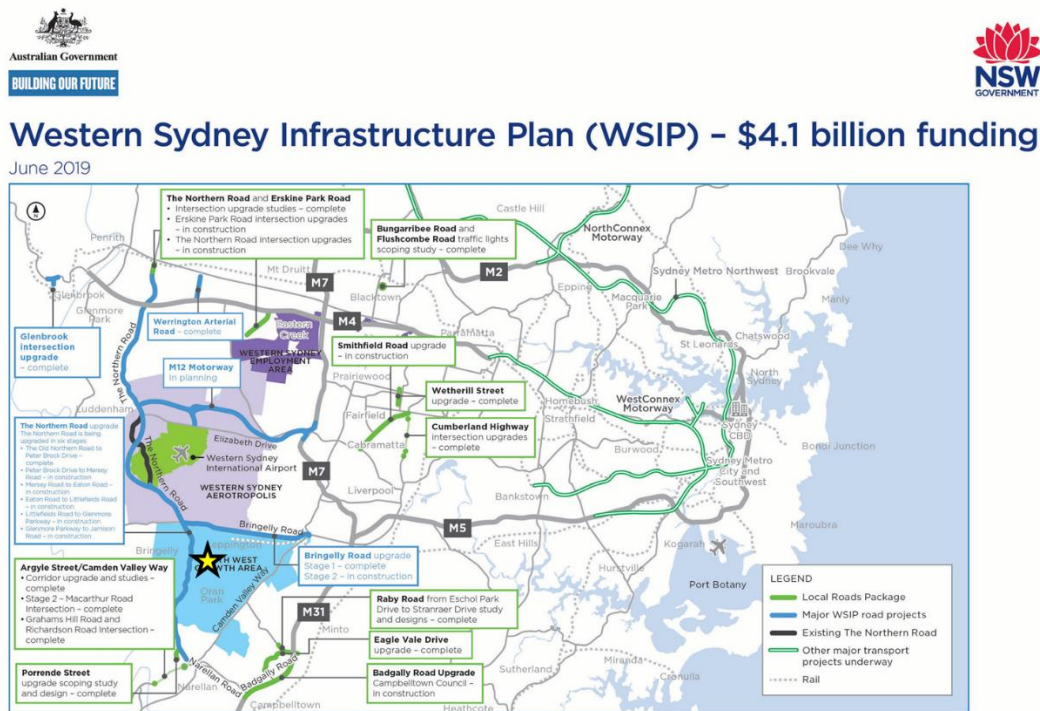
The following presents a summary of the traffic analysis reports which have included an assessment of existing / future conditions within the Oran Park Precinct and along The Northern Road corridor.

3.1 The Northern Road Upgrade – Sinclair Knight Merz 2012

The Northern Road between Old Northern Road and Glenmore Park is currently subject to a significant improvement program as part of the Western Sydney Infrastructure Plan which includes \$4.1 billion in road network improvements. The need for additional capacity for The Northern Road between the Old Northern Road Narellan and Mersey Road, Bringelly (past the subject site) has been fully assessed in the traffic report prepared by Sinclair Knight Merz (SKM) in 2012.

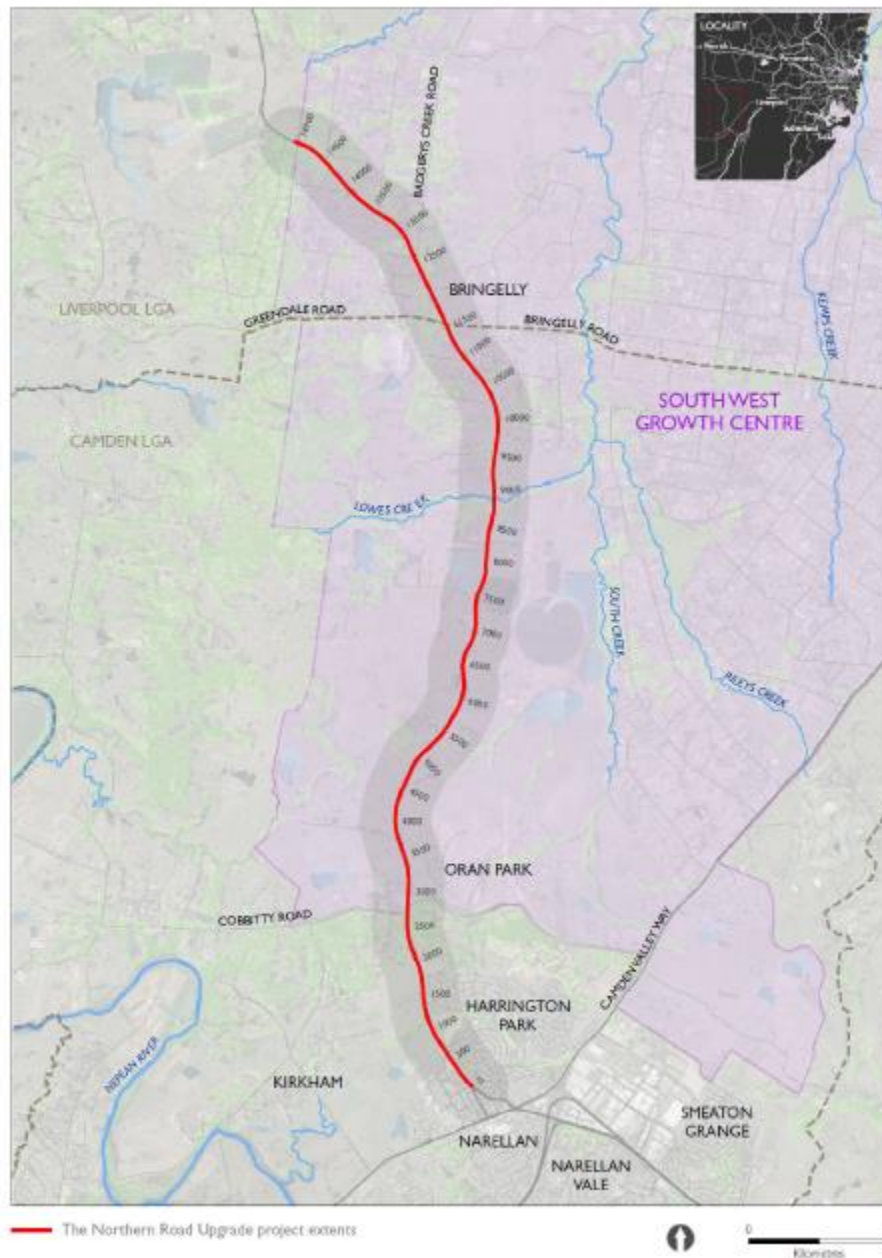
The location of the development site within this plan is shown below in **Figure 3**.

Figure 3 – Western Sydney Infrastructure Plan Proposals



The study area subject to the SKM report is presented below in **Figure 6**.

Figure 4 – The Northern Road Upgrade - SKM 2012 Report Study Area



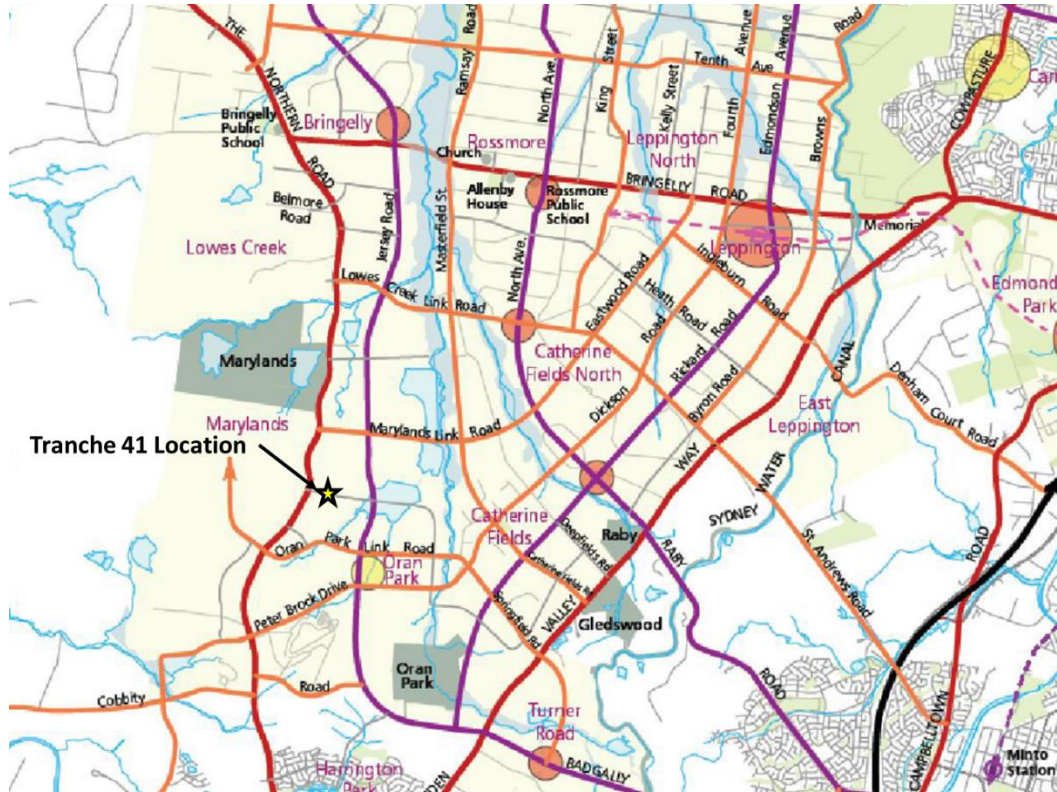
At the time of preparing this report, works on The Northern Road upgrade is nearing completion at Robinson Road, some 5km north of the proposed development site at Tranche 41 Pondicherry.

A summary of both the approach and findings of the traffic report prepared by SKM are presented below:

- Sinclair Knight Merz (SKM) was appointed by the New South Wales Roads and Maritime Services (RMS) to undertake a Concept Design and a Review of Environmental Factors (REF) for MR154 The Northern Road upgrade.

- The project comprises 15km of The Northern Road, from The Old Northern Road to Mersey Road, upgrading it from an existing two lane rural undivided road to a four lane urban divided road.
- The upgrade will allow for an ultimate six lane configuration, with the future widening to occur in the median area. The upgrade will include intersection controls and facilities for buses, pedestrians and cyclists.
- SKM developed a consistent set of traffic demand forecasts for the entire project reflective of the RMS EMME model and adopted classified intersection counts and automatic traffic counts of surveyed traffic data.
- SKM also developed forecast traffic flows in future years 2016, 2026 and 2036 by using the transportation-planning software package "SATURN".
- To estimate the future year OD matrices (i.e. for 2016, 2026 and 2036), the trips difference between the RMS's 2011 base OD trips and corresponding trips in the future years were calculated. These additional trips were applied to the SKM's 2011 base model OD trips, in order to generate the corresponding future year OD trips.
- By the year 2026, a four (4) lane configuration was adopted with a six (6) lane configuration adopted for the design year 2036.
- SKM accounted for all future population growth along the corridor for the full length of the study area including the area known as Tranche 41.
- The SKM traffic report included a future road network of which the **Marylands Link Road 1** was identified to pass directly through Tranche 41 Pondicherry as shown below in **Figure 5**.

Figure 5 – SKM 2012 Traffic Report Recommended Future Road Network - The Northern Road Upgrade Connections



- After assuming redevelopment of all lands along The Northern Road corridor, the SKM report found that in 2036, all proposed intersections along the corridor would operate at Level of Service D or better during both the AM and PM weekday periods. This included the intersection of Marylands Link Road 1 and The Northern Road.
- The 2012 SKM report which underpins the scale of the The Northern Road corridor upgrade program found the following 2036 intersection operating conditions assuming all known development adjacent to the corridor including the subject rezoning site:

■ **Table 5-15: Intersection Performance – 2036 AM**

*Intersections	Degree of Saturation (DoS)	Average Delay (sec)	Level of Service (LoS)	Queue Length (m) <Worst Approach>
(S) Fairwater Drive	0.73	37.3	C	>200 <The Northern Rd - North>
(S) Hillside Drive	0.74	36.7	C	>200 <The Northern Rd - North>
(S) Cobbitty Road West	0.57	19.9	B	121.7 <The Northern Rd - South>
(P)** Cobbitty Road East	0.82	55.4	D	101.4 <Cobbitty Road East>
(S) Oran Park Link Road 1	0.86	50.6	D	>200 <The Northern Rd - North>
(S) Oran Park Link Road 2	0.85	55.1	D	>200 <The Northern Rd - North>
(P)** Oran Park Link Road 3	0.35	30.8	C	minimal queuing
(S) Marylands Link Road 1	0.77	42.7	D	>200 <The Northern Rd - North>

■ **Table 5-16: Intersection Performance – 2036 PM**

*Intersections	Degree of Saturation (DoS)	Average Delay (sec)	Level of Service (LoS)	Queue Length (m) <Worst Approach>
(S) Fairwater Drive	0.83	44.9	D	>200 <The Northern Rd - South>
(S) Hillside Drive	0.77	39.0	C	>200 <The Northern Rd - South>
(S) Cobbitty Road West	0.75	23.1	B	>200 <The Northern Rd - South>
(P)** Cobbitty Road East	0.76	36.0	C	109.5 <Cobbitty Road East>
(S) Oran Park Link Road 1	0.85	55.1	D	>200 <The Northern Rd - South>
(S) Oran Park Link Road 2	0.83	52.8	D	>200 <The Northern Rd - South>
(P)** Oran Park Link Road 3	0.37	32.6	C	minimal queuing
(S) Marylands Link Road 1	0.83	43.6	D	>200 <The Northern Rd - North>

- As confirmed above, the Marylands Link Road 1 connection with the The Northern Road which passes through the site known as Tranche 41 subject to this rezoning application would have a satisfactory AM / PM peak intersection operating conditions in 2036 accounting for full development of all known developments including Tranche 41.

3.2 Lowes Creek Maryland (LCM) Precinct Traffic Report – GHD 2018

GHD was commissioned by Macarthur Developments Pty Ltd on behalf of the Department of Planning and Environment (DPE) to undertake a Traffic and Transport Assessment for the Lowes Creek Maryland (LCM) Precinct.

The LCM Precinct is located in the South West Growth Area (SWGA) consisting of 10,188 hectares of semi-rural land in the Liverpool, Camden and Campbelltown Local Government Areas. The location of the Lowes Creek Maryland precinct in the context of surrounding development precincts within the South West Growth Centre is shown below.

Figure 6 – Lowes Creek Marylands Precinct Location

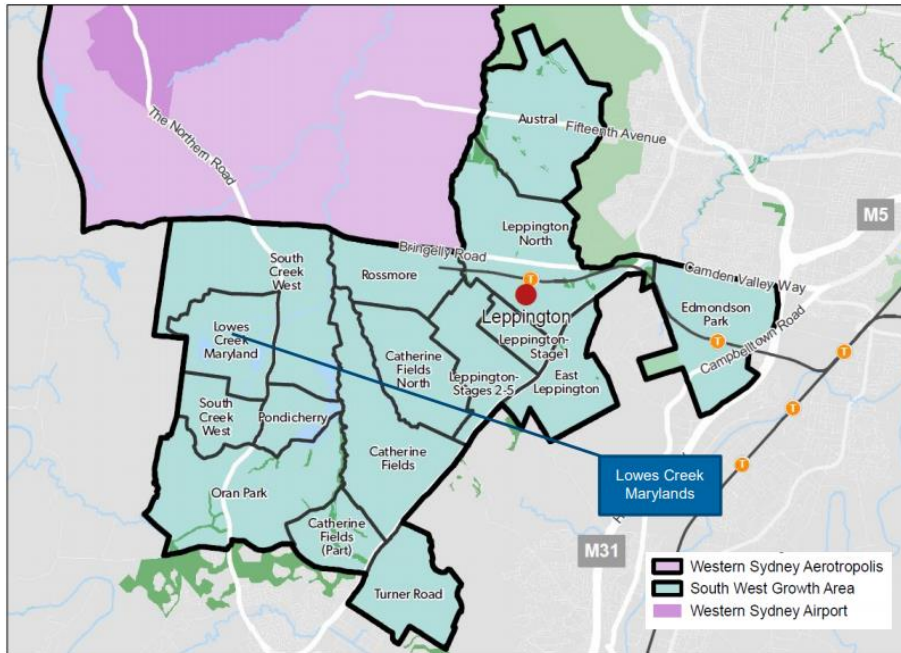
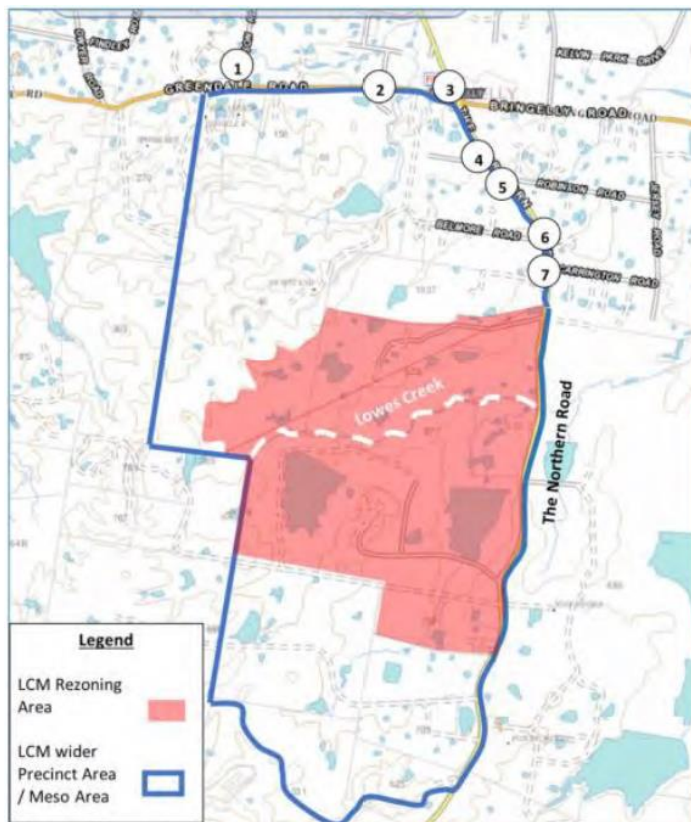


Figure 7 – Lowes Creek Marylands Precinct Boundaries



The GHD traffic report underpinned the planning for a Voluntary Planning Agreement between the proponent, Macarthur Developments, and the Minister for Planning and Environment. The VPA required the following:

1. Preparation of a context plan for the broader LCM and South Creek West land release area.
2. Preparation of an Indicative Layout Plan for LCM Precinct to deliver housing and service infrastructure necessary to accelerate the Precinct.

The GHD traffic report did not include any modelling forecasting of the The Northern Road to the north of the Lowes Creek Maryland Precinct boundary of which would affect the findings of the 2012 SKM report for the The Northern Road Corridor Upgrade works.

3.3 Background Traffic Report Summary

Having regard to the information presented above, the following is noted on the matter of traffic investigations undertaken to date:

- The 2012 SKM report for the The Northern Road corridor upgrade utilised the latest RMS modelling for the surrounding area and developed future forecasts in consultation with the RMS to the year 2036.
- The future forecasts developed in the SKM report *fully* accounted for *all* known land development in the surrounding area including land not zoned for redevelopment at the time but was identified in the South West Growth Corridor areas.
- The proposed development which would be achieved in the Tranche 41 rezoning proposal and the potential traffic impacts of this proposal has been fully accounted for in the planning of the The Northern Road corridor upgrade and road requirements for the Marylands Link Road 1 which passes through the Tranche 41 site.
- The newly constructed intersection within The Northern Road adjacent to Tranche 41 (connection with Marylands Link Road 1) would operate at a satisfactory level of service in 2036 with all planned development (including Tranche 41) in place.

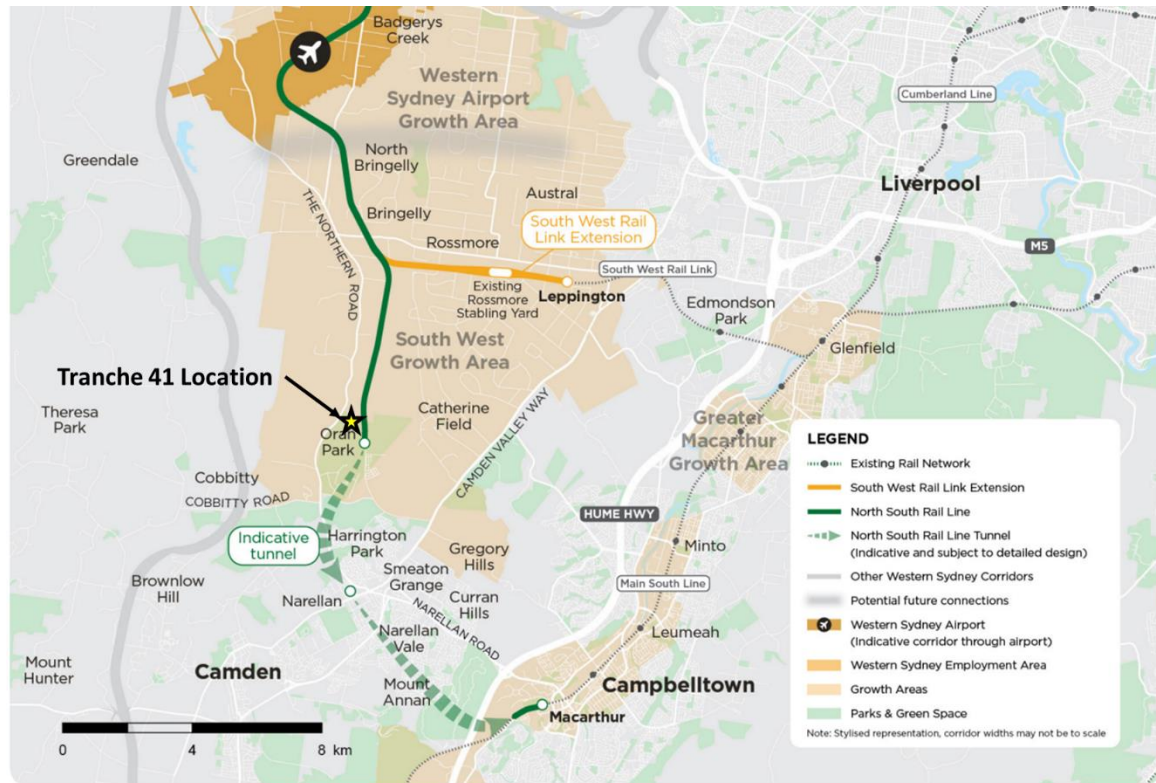
Overall, the traffic impacts of this rezoning proposal for Tranche 41 and redevelopment of surrounding lands has been fully accounted for in the The Northern Road corridor upgrade currently under construction.

3.4 South West Rail Link Extension

Transport for NSW recently consulted on recommended corridors of land for the South West Rail Link Extension for future passenger rail lines. The consultation period finished on 1 June 2018. At the time of preparing this report, the proposed project was still under review which included an assessment of the submissions received from the consultation period.

The location of the Tranche 41 rezoning proposal and the rail corridor extension is shown below:

Figure 8 – Proposed South West Rail Line Extension Corridor



Tranche 41 would be located approximately **1.6km** walking distance to the identified location of the Oran Park Town Centre Rail Station on the north – eastern corner of the intersection of Oran Park Drive / Peter Brock Drive. Residential allotments in Tranche 41 would back on to the rail corridor.

4. The Proposed Development

The key components of the proposed development are summarised below

- Rezoning of the area known as Tranche 41 located to the north and south of Marylands Link Road 1 to provide residential housing.
- The rezoning would deliver approximately **480** residential lots consisting of standard residential lots (300m² – 600m² in area) and a small component of medium density lots (150m² – 300m² in area).
- Construction of internal road network to service residential subdivision and provide access to Marylands Link Road 1.
- The internal road network would include the following:
 - Access Streets – 10.0m wide road reserve
 - Local Streets – 16.7m wide road reserve
- Construction of Marylands Link Road 1 between The Northern Road and eastern boundary of the site with a road reserve of 34.7m in width.
- Roundabout access connection to Marylands Link Road 1 for the northern and southern development parcels.
- Extension of South Circuit from Dick Johnson Drive north to Marylands Link Road 1 forming eastern boundary road for the southern development area. The extension would be undertaken in a boulevard type of arrangement with a road reserve width of 23.9m. On approach to the roundabout with Marylands Link Road 1, the road reserve would be 19.7m.
- Provision of on road and off road (shared path on one side) cycle facilities along Marylands Link Road 1 for the full length of its construction.
- Provision of an off-road cycle pathway (shared pathway) along one side of the extension of South Circuit from Dick Johnson Drive to Marylands Link Road 1.
- A road network which facilitates future access by bus services as they evolve over time linking to existing services within the Oran Park Precinct.

Plans of a potential development scheme which would be achieved in the rezoning can be found in **Appendix A** of this report.

5. Potential Traffic Impacts

No formal traffic forecast mid-block or intersection modelling assessment was undertaken as part of this report nor was it considered necessary to enable an informed decision on the viability of the road network to accommodate the traffic impacts of this proposal.

As confirmed in the background report review undertaken in the preparation of this report and as summarised in **Section 3.3** of this report, the traffic impacts of the rezoning of Tranche 41 has been fully accounted for in the The Northern Road Corridor Upgrade works to the year 2036.

The intersection of The Northern Road / Marylands Link Road 1 which would provide a direct connection to The Northern Road for this development and beyond has been designed to operate at a satisfactory level of service in the future (2036) in both the AM and PM peak periods following full development of all known lands to the year 2036.

Overall, the traffic impacts of the proposal are considered accounted for in current road network planning and are considered satisfactory.

6. Network Design Compliance

6.1 Road Network

As stated above, the proposed rezoning to deliver residential housing would include an internal road network and a roundabout connection for the northern and southern areas of Tranche 41 to Marylands Link Road 1.

The proposed arrangements of the road network which would be delivered as part of the redevelopment of Tranche 41 is presented below.

Typical Road Cross Sections

	Verge	Carriageway	Verge	Total
Local Road	3.5	9.7	3.5	16.7
Local Road (Sharepath)	5	9.7	3.5	18.2
Collector	5	11.2	3.5	19.7
Collector Boulevard	5	5.6 / 4.2 Median / 5.6	3.5	23.9
Sub-Arterial Road	6.9	2.2 On-Road Cycle Lane / 6.45 Carriageway / 4.2 Median / 6.45 Carriageway / 2.2 On-Road Cycle Lane	6.3	34.7

Verges reduced to 1.0m adjoining Open Space or Riparian Corridors.

The proposed road reserves which would be delivered as part of the Tranche 41 development would comply or exceed the minimum requirements of the Camden Council DCP for Growth Centres. Thus, the resulting road arrangements are considered satisfactory.

7. Conclusions

This report has reviewed the potential traffic impacts of the proposed rezoning of the site known as Tranche 41, Pondicherry. The findings of this assessment are presented below:

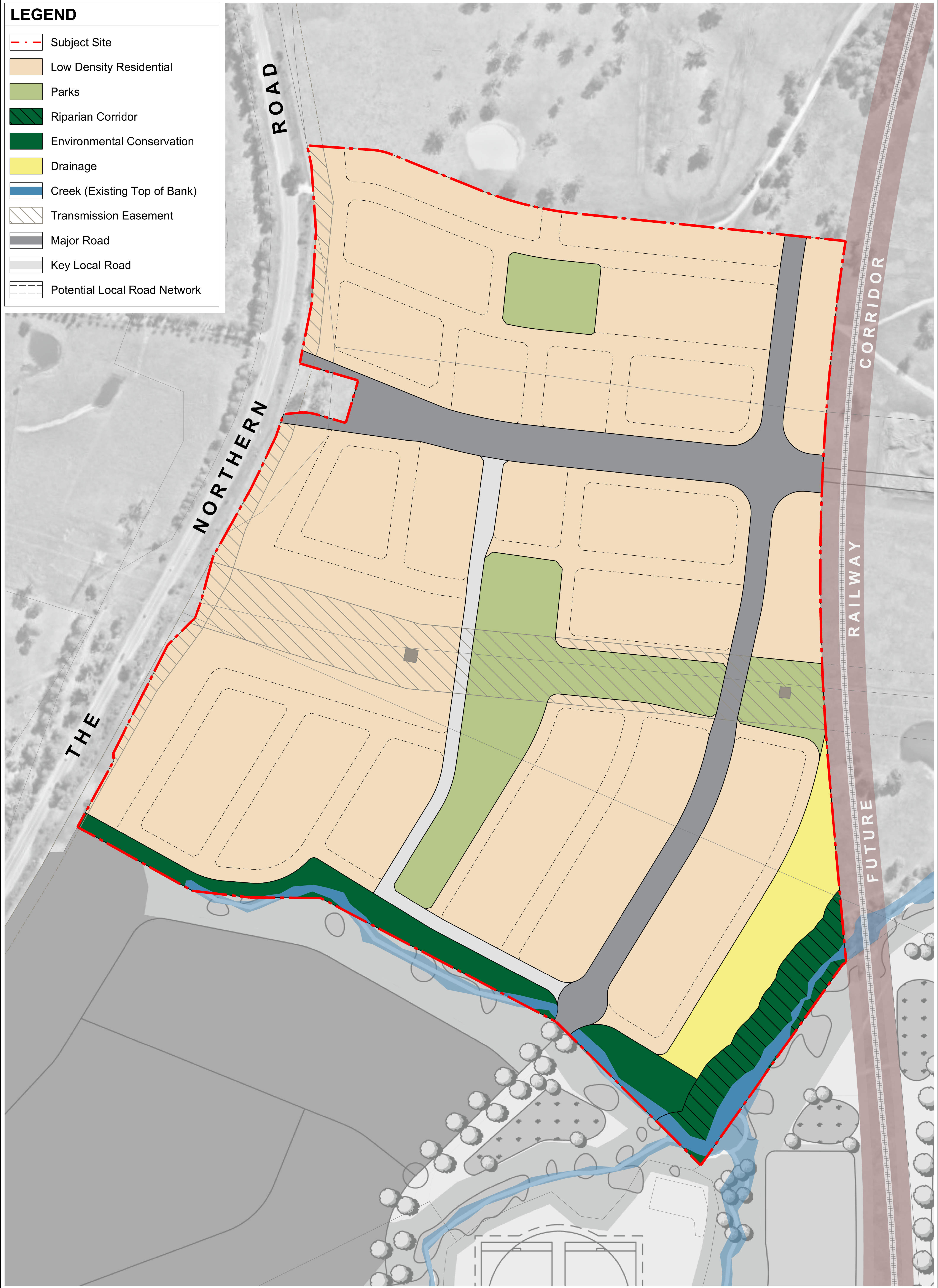
1. The traffic impacts of the rezoning of Tranche 41 have been fully assessed in the modelling for The Northern Road Corridor upgrade project.
2. The intersection of The Northern Road / Marylands Link Road 1 (passing through the site) would operate at a satisfactory level of service in the year 2036 at full development of surrounding lands and during both the AM and PM peak periods.
3. Planning for road networks in the immediate area have fully accounted for the traffic generated by a rezoned Tranche 41 to provide housing.
4. The site would be located within some 1.6km travel distance to the proposed Oran Park Town Centre railway station as part of the South West Rail Link Extension project.
5. All roads serving the proposed sub division would comply with the minimum requirements of the Camden Council DCP for growth centres.
6. The proposed rezoning would not require any additional road / intersection upgrades to accommodate the traffic generated by the proposal.

Overall the traffic impacts of the proposal are considered acceptable.

8. Appendix A – Plans of Proposed Scheme

LEGEND

- Subject Site
- Low Density Residential
- Parks
- Riparian Corridor
- Environmental Conservation
- Drainage
- Creek (Existing Top of Bank)
- Transmission Easement
- Major Road
- Key Local Road
- Potential Local Road Network



Pondicherry (Part) Precinct - Indicative Layout Plan
PONDICHERRY



15 0 30 60 90 120 150 metres

Ref: GRDPO-2-003-1 Date: 17/09/2020 Revision: E Scale: 1:1,500@A1

Note: All areas and dimensions subject to detailed survey

(02) 9290 3636
admin@designandplanning.com.au
www.designandplanning.com.au
PO Box 1778 SYDNEY NSW 2001
Suite 401 / 171 Clarence Street SYDNEY NSW 2000
design+
PLANNING