

To:	Graeme Knox	At:	Lendlease
From:	Brendyn Rheinberger	At:	SLR Consulting Australia Pty Ltd
Date:	30 June 2022	Ref:	620.11743-M01-v1.0-20220630.docx
Subject:	Yarrabilba Masterplan Community MIBA North Precinct 5A Application Traffic Engineering Statement		

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1 Introduction

SLR Consulting Australia Pty Ltd (SLR) has been commissioned by Lendlease Communities (Lendlease) to provide traffic engineering and transport planning advice for the Yarrabilba master planned development area. The Yarrabilba master planned development is located within the extents of the Yarrabilba Priority Development Area (PDA), which is situated approximately 20km south of Logan Central and Springwood. When fully developed, it is anticipated that the ultimate Yarrabilba development will yield approximately 17,000 residential dwellings, and approximately 45,000 residents.

The traffic and transport aspects of the overall Yarrabilba master plan have been extensively documented within several reports which are referenced in Section 1.1. This memorandum specifically addresses the traffic and transport aspects of Precinct 5A (which is a sub-precinct of Precinct 5), also referred to as MIBA North. The proposed layout plan for the Precinct 5A application is included at Appendix A.

1.1 Previous Reporting

The traffic and transport aspects of the entire Yarrabilba master plan development (and other relevant precincts) have been previously addressed within a number of documents including the following:

- *Yarrabilba Master Plan Micro-simulation Modelling- Revised Land Use and Road Network* (Cardno, May 2015).
- *Yarrabilba Movement Infrastructure Master Plan* (Cardno, October 2015) – endorsed by EDQ on 11 November 2015, and on 3 July 2019.
- *Yarrabilba Master Plan Development – Movement Infrastructure Master Plan* (SLR, April 2017).
- *Traffic Impact Assessment – Yarrabilba Master Plan Development Precinct 5* (now labelled as Precinct 4) (SLR, September 2017).
- *Yarrabilba Master Plan Community Precinct 4C North – Traffic Engineering Statement* (SLR, June 2021).

**PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL**

Approval no: DEV2022/1306
Date: 3 February 2023



For clarity, it is acknowledged that:

- The October 2015 IMP (Cardno) has been endorsed by EDQ but uses traffic modelling information that is superseded (but still largely relevant).
- The April 2017 IMP (SLR) has not been endorsed by EDQ.
- Updated traffic modelling was undertaken in 2018 and the volumes from this are most representative of current Yarrabilba planning and have been used for all traffic design and assessment since 2018.
- The Precinct 5A assessment herein uses volumes from the traffic model update in 2018.

Where relevant, some elements of these reports have been used to inform the traffic assessment herein. In particular, it is intended that the traffic and transport aspects of Precinct 5A are generally consistent with the Movement Infrastructure Master Plan (endorsed in 2019), as well as the most recent master planning and traffic modelling.

1.2 Traffic Model Update

The overall Yarrabilba road network and demographics have been revised (2018) since that which was included in the initial traffic model (2015) and in the endorsed Movement IMP (2019). Whilst the demographics have been updated in various precincts, the demographics for the total Yarrabilba PDA are largely unchanged.

The Precinct 5A assessment herein has been based upon the most recent traffic model volumes and demographics (2018). This is discussed in Section 4 herein.

Whilst the 2018 traffic model has not been documented, the traffic volume results from such modelling have been considered and incorporated herein. Such results include updated forecasts of traffic volumes and updated intersection capacity analysis. The latter includes key intersections providing access to Precinct 5A.

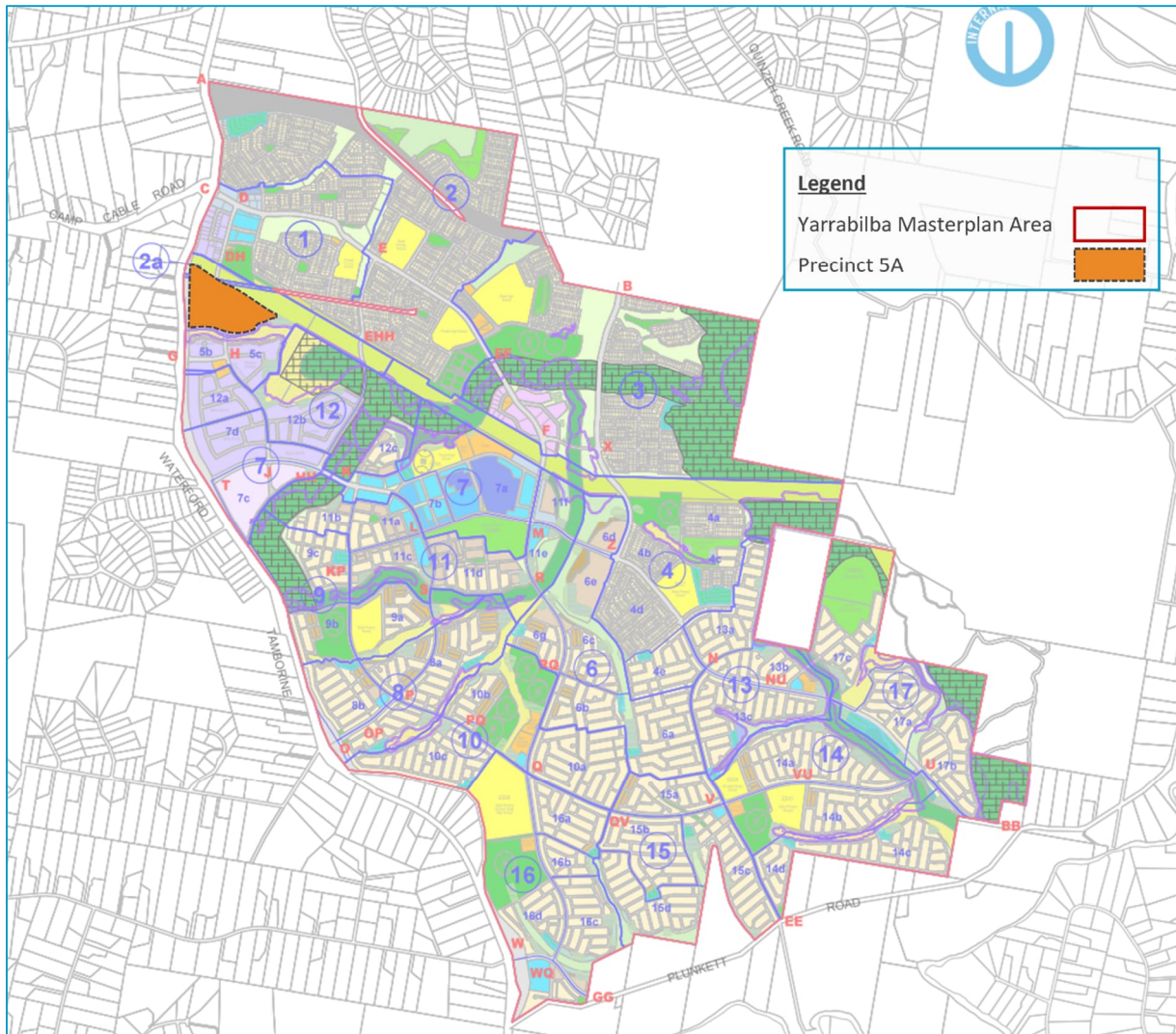
2 Proposed Development

The proposed Precinct 5A development is the northernmost parcel within the broader Precinct 5 area. It is located immediately south of the existing electricity easement and immediately east of Waterford-Tamborine Road. In the interim, primary vehicular access for this precinct will be via the north-south link Wongawallan Drive which connects to Yarrabilba Drive to the north. In the ultimate, primary access will occur via a new road connection and intersection on Waterford-Tamborine Road (to the south of Precinct 5A). This is shown on Figure 2.

The proposed yield of Precinct 5A represents 50 mixed industry and business allotments (MIBA). The location is illustrated on Figure 1 in context of the precinct staging and overall Yarrabilba Development Area.

As part of future (southern) stages of Precinct 5, an east-west connection from Waterford-Tamborine Road to Wongawallan Drive (currently labelled as 'MIBA Connection') is proposed (see Figure 2). The Waterford-Tamborine Road / MIBA Connection Road intersection is situated in between the Waterford-Tamborine Road / Yarrabilba Drive intersection and the Waterford-Tamborine Road / Dollarbird Drive intersection on the current Master Plan.

Figure 1 Precinct 5A Site Context



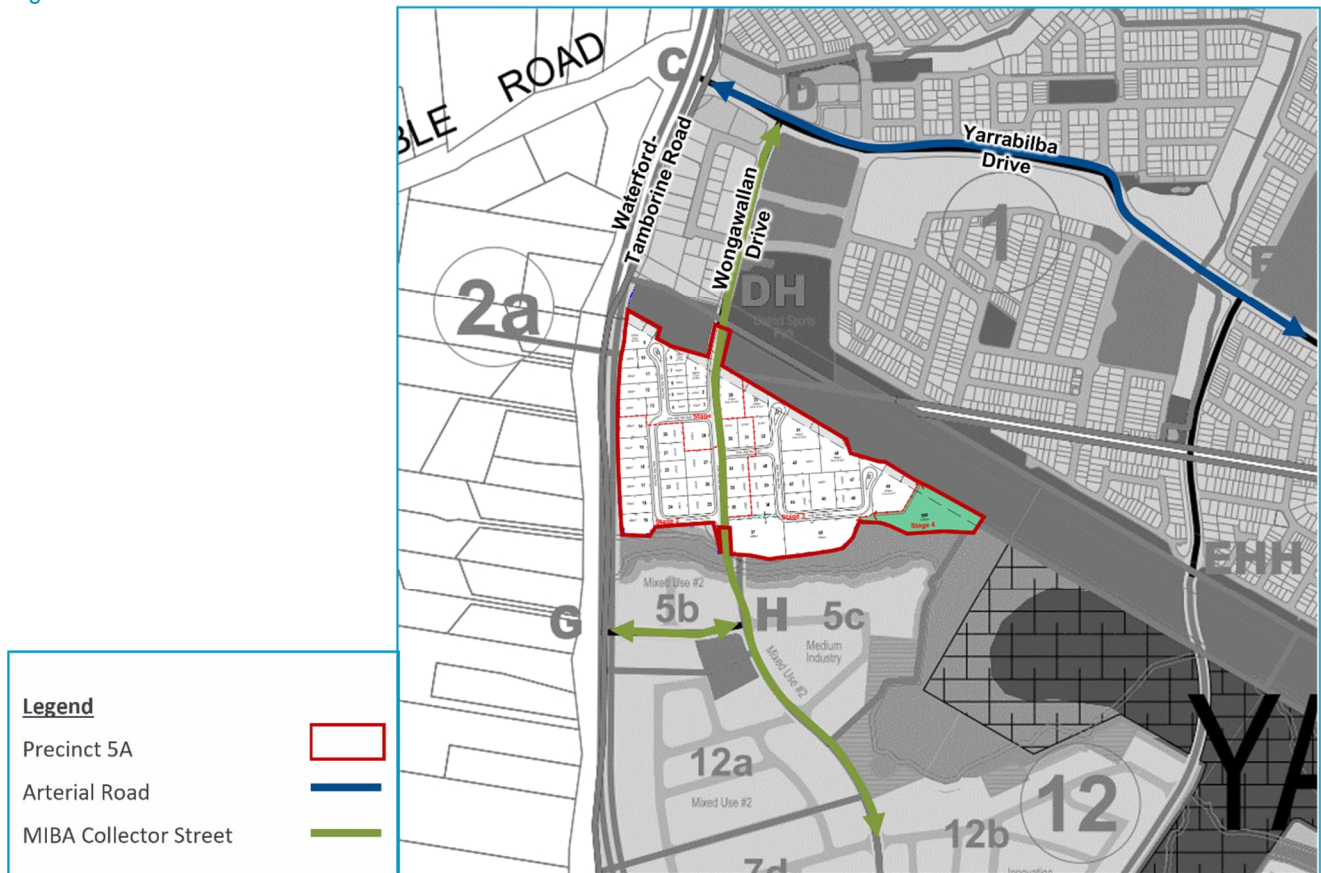
The proposed development plan for Precinct 5A has been prepared by Lendlease and incorporates input from the wider design team (including advice on traffic and transport design matters provided by SLR). The plan will be submitted as part of the planning documents for the application and has been used as the basis of the traffic assessment herein.

Based on the plan provided by Lendlease and as detailed within the POD, Precinct 5A is proposed to include the following key land uses and yields:

- 50 Mixed Industry and Business Allotments (MIBA); and
- Balance areas for open space parkland.

The lot layout and road network are illustrated on Figure 2, with the full-scale plan provided at Appendix A.

Figure 2 Precinct 5A POD



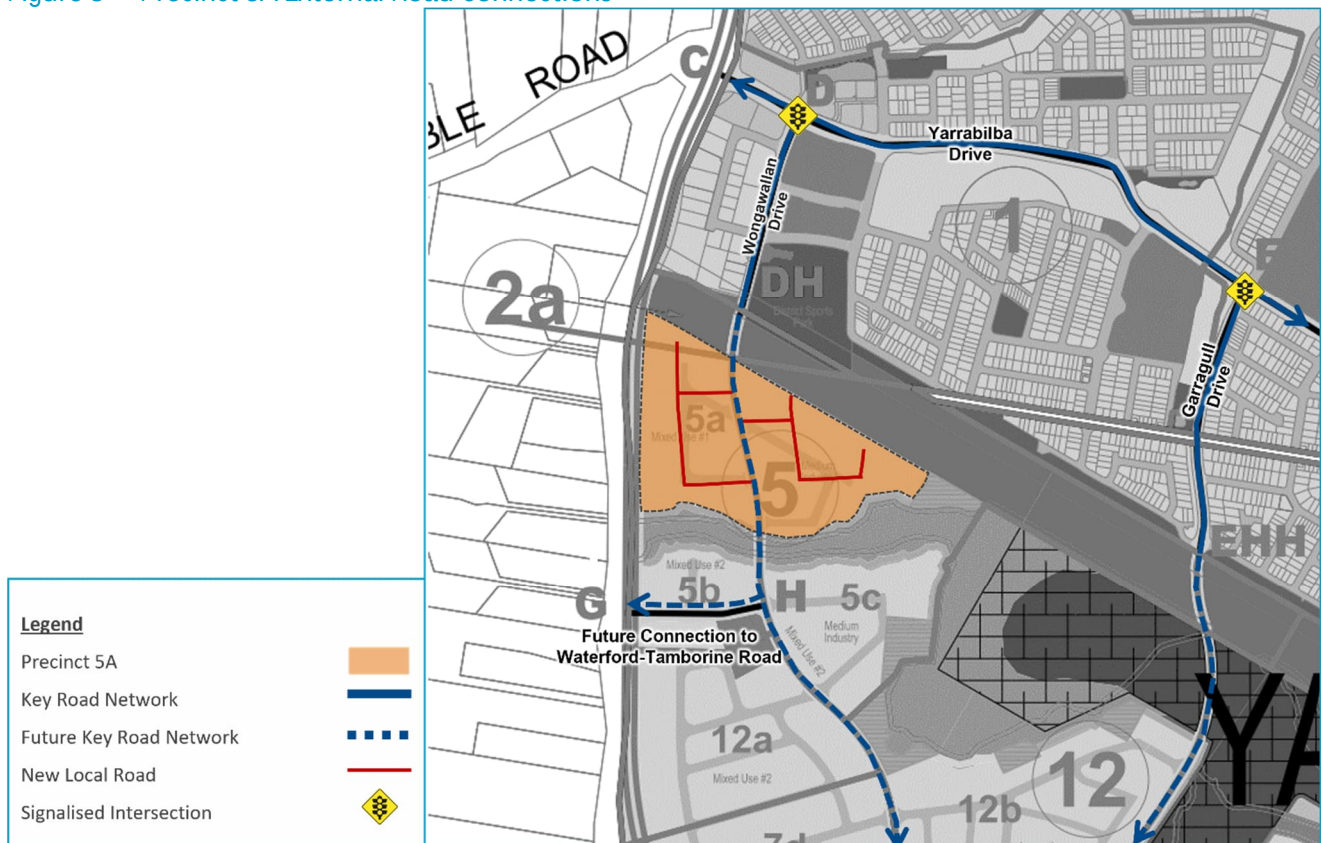
It is recognised that in the interim, Precinct 5A will only have vehicular access via Yarrabilba Drive and Wongawallan Drive. In the ultimate, a future MIBA Connection Road will provide a direct connection into the overall MIBA precinct via Waterford-Tamborine Road.

3 Design Review

Precinct 5A does not include any major road connections which differ from what was identified in the EDQ-endorsed Movement Infrastructure Master Plan (endorsed by EDQ on 3 July 2019), nor does it propose any changes to these roads. As such, the design review undertaken as a part of this traffic assessment focuses on the geometric suitability of the lower order roads and connections specific to the Precinct 5A network.

For completeness the location of Precinct 5A has been illustrated on Figure 3 with respect to the surrounding road alignments, intersection locations and control types.

Figure 3 Precinct 5A External Road Connections



3.1 Road Network

The internal roads proposed as part of the Precinct 5A development are expected to comprise of a network of MIBA Collector (main north-south street) and MIBA Access streets. The cross sections for these internal roads will be consistent with those designed/constructed previously in Yarrabilba and detailed within the endorsed Movement Infrastructure Master Plan.

It is important to recognise that the 'Future Connection to Waterford-Tamborine Road' proposed to the south of Precinct 5A (see Figure 3) is not part of the EDQ-endorsed MIMP (2019) but that connection has been accepted by TMR since 2017.

3.2 Active Transport Provisions

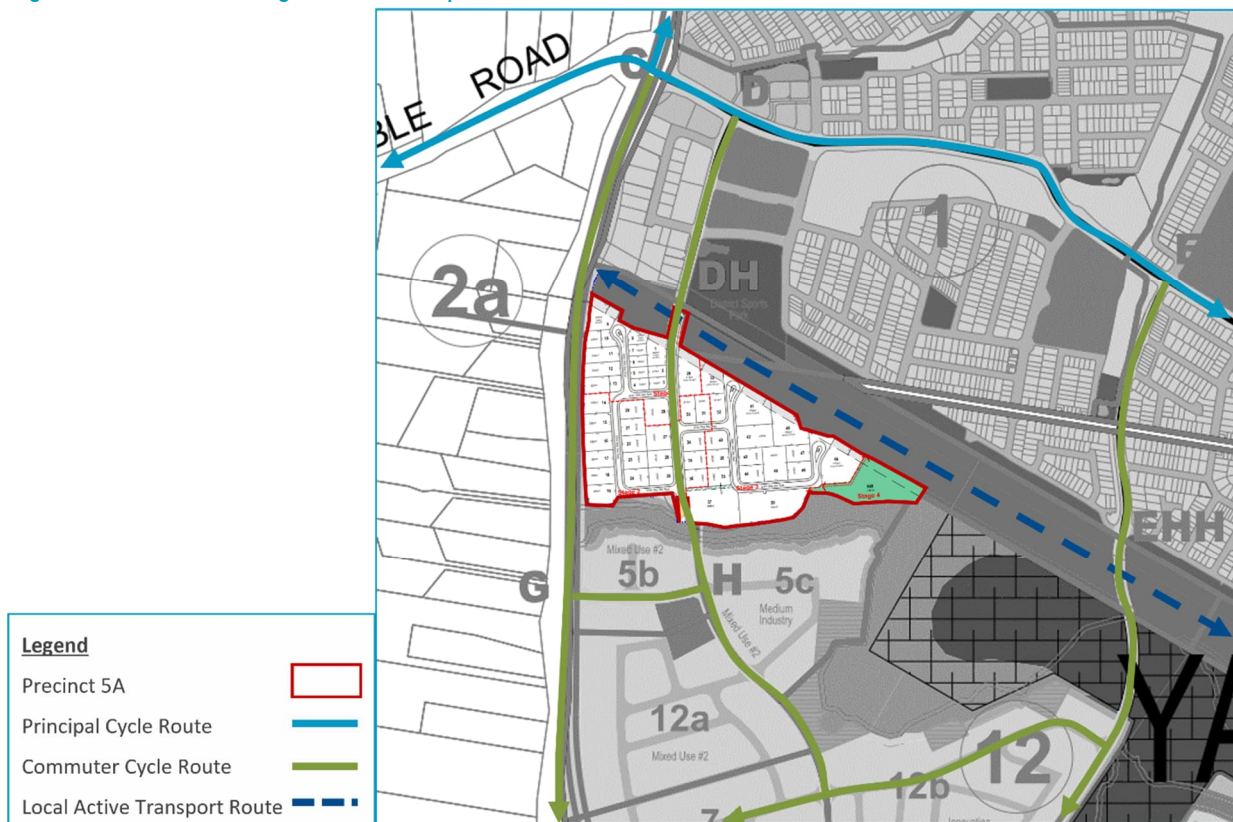
The key elements of the walk and cycle network proposed in Precinct 5A are consistent with the connections and design elements discussed within the EDQ-endorsed Movement Infrastructure Master Plan.

Whilst this latest application does not propose any changes to active transport connections already provided within proximity of the Precinct boundary, key elements of the active transport network relative to Precinct 5A have been reproduced below for ease of reference, ensuring the consistency with the Movement Infrastructure Master Plan:

- Principal Cycle Route – On-road cycle lanes and off-road shared paths are constructed along both sides of Yarrabilba Drive, as consistent with the Movement IMP.
- Commuter Cycle Route – On-road cycle lanes are constructed along both sides of Wongawallan Drive, which will continue as this road is further constructed to the south.
- Commuter Cycle Route – On-road cycle lanes are constructed along both sides of Garragull Drive, which will continue as this road is further constructed to the south.
- Commuter Cycle Route – On-road cycle lanes will be constructed along both sides of the east-west MIBA Collector Street.
- Local Active Transport Route – Off-road shared pathway network is constructed adjacent to (northern side of) the east-west powerline easement.

The indicative alignments of these routes as identified in the EDQ-endorsed Movement Infrastructure Master Plan are illustrated on Figure 4 in the context of Precinct 5A.

Figure 4 Surrounding Active Transport Routes



3.3 Public Transport Provisions

In accordance with the provisions outlined in the Movement IMP, the Yarrabilba Master Plan Area aims to provide public transport connections within a 400m walking distance of residents within precinct developments. As such, a catchment assessment has been completed on the broader planned network to ensure appropriate accessibility is achieved.

Figure 5 highlights the indicative bus routes as well as indicative bus stops (existing and planned) surrounding the Precinct 5A development. This identifies that the majority (approximately 85%) of the development areas in Precinct 5A will be within 400m of a potential bus stop.

Figure 5 Public Transport Accessibility



It is recognised that bus services may not be implemented by TransLink on the identified routes (this is to be determined by TransLink), however the relevant roads will be (or have been) designed to enable such bus routes to occur. Existing bus stops which formed part of previous applications have been approved and constructed in accordance with TransLink's Public Transport Infrastructure Manual (PTIM).

On this basis, the indicative public transport stops proposed to be constructed within Precinct 5 will adequately service the catchment and satisfy the requirements of the Movement Infrastructure Master Plan.

4 Traffic Generation Considerations

Since the traffic modelling exercise completed in 2015, the internal road network and land use zoning has been continually revised by Lendlease as construction has progressed and development master planning has been revised to reflect market conditions. As such, new traffic modelling was conducted in 2018 to facilitate a more accurate assessment of the development as it is currently proposed or in place, the results of which have been utilised herein.

This 2018 traffic model update was done using the most recent demographic (land use, yield and location) and geographic (road alignment) information provided by Lendlease at the time. This consisted of indicative land use zoning, proposed internal road network (including geometry and hierarchy). The movement network, in particular the road network, has been informed by the anticipated traffic demands using the outputs of the traffic modelling.

In particular, the development yield now proposed for the Precinct 5A area (and hence its traffic generation) is generally consistent with the assumptions adopted in this most recent modelling. The latter modelling has been used to inform the design of the intersections, including those along Wongawallan Drive. For that reason, and given the small size of Precinct 5A, no further traffic analysis is necessary.

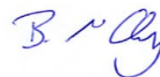
5 Summary

The following summarises the key conclusions in respect of the traffic and transport aspects of Precinct 5A, in particular consideration of the approved Yarrabilba Movement Infrastructure Master Plan (IMP):

- Road Hierarchy – The roads proposed within Precinct 5A are consistent with and do not affect the alignment or provision of key roads as identified within the Movement IMP.
- Cross Sections – The cross section for the internal roads is generally consistent with that identified in the Movement IMP, and is appropriate for the intended function and anticipated traffic volumes.
- Active Transport – The active transport provisions are consistent with the Movement IMP and are appropriate to satisfy the needs of Precinct 5A in conjunction with the surrounding development of Yarrabilba.
- Public Transport – The layout and design of the surrounding network includes an appropriate provision for public transport (bus services) and potential bus stops. This is consistent with the Movement IMP.
- Traffic Considerations – The design and configuration of the key road network has been informed by the anticipated traffic demands using the outputs of the most recent traffic modelling performed in 2018.



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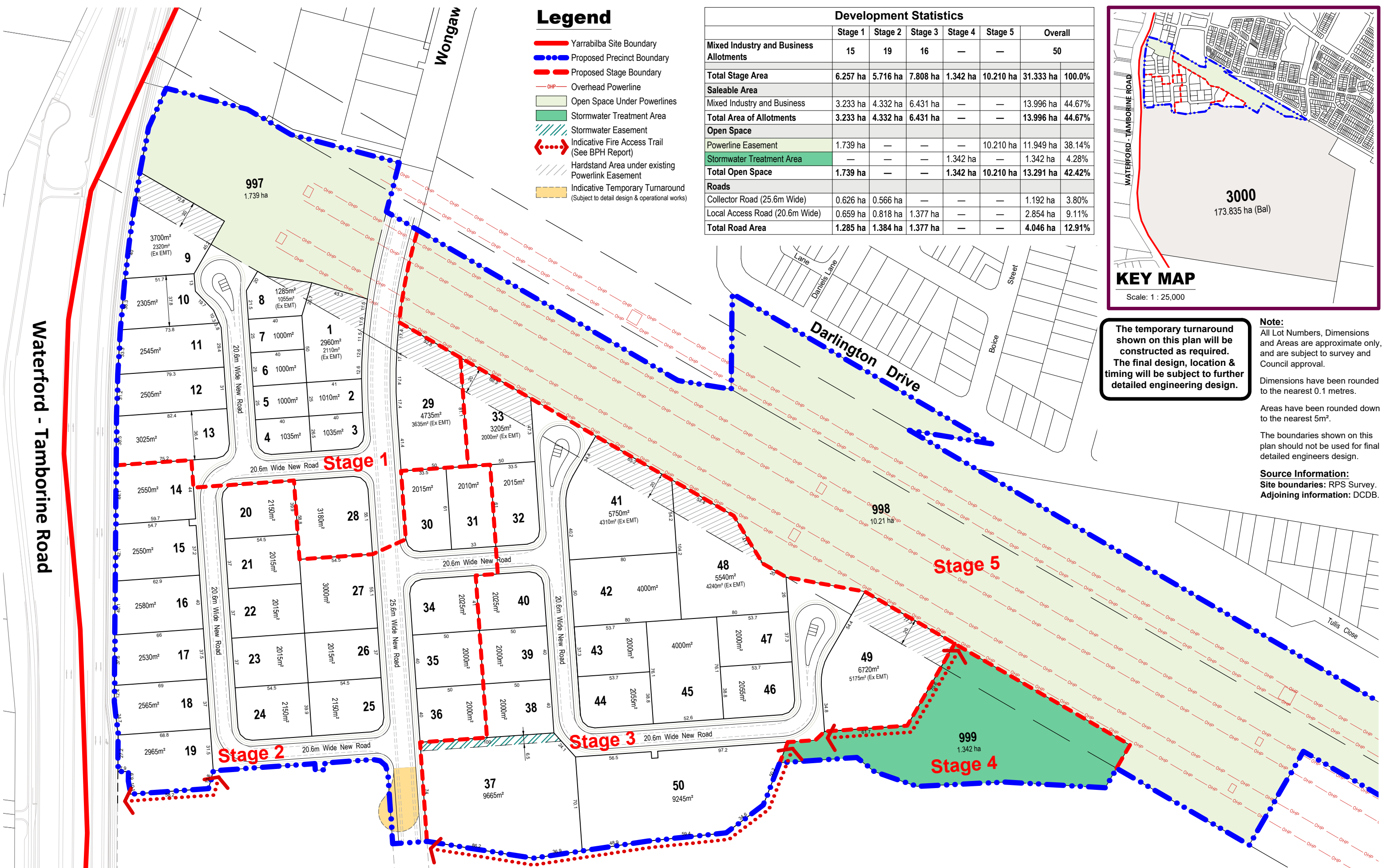


BRETT McCLURG
Technical Director – Transport Advisory
RPEQ #7628

Checked/
Authorised by: BM

APPENDIX A

Sub-Precinct Layout Plan

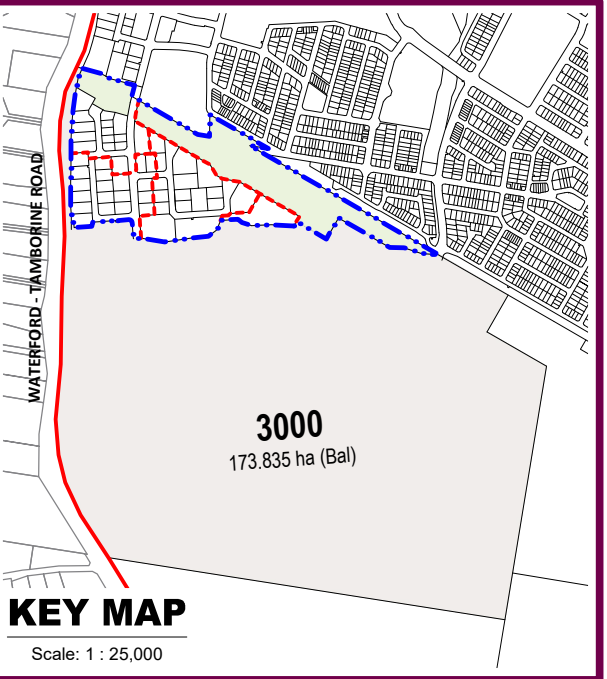


Legend

- Yarrabilba Site Boundary
- Proposed Precinct Boundary
- Proposed Stage Boundary
- OHP Overhead Powerline
- Open Space Under Powerlines
- Stormwater Treatment Area
- Stormwater Easement
- Indicative Fire Access Trail (See BPH Report)
- Hardstand Area under existing Powerlink Easement
- Indicative Temporary Turnaround (Subject to detail design & operational works)

Development Statistics

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Overall
Mixed Industry and Business Allotments	15	19	16	—	—	50
Total Stage Area	6.257 ha	5.716 ha	7.808 ha	1.342 ha	10.210 ha	31.333 ha 100.0%
Saleable Area						
Mixed Industry and Business	3.233 ha	4.332 ha	6.431 ha	—	—	13.996 ha 44.67%
Total Area of Allotments	3.233 ha	4.332 ha	6.431 ha	—	—	13.996 ha 44.67%
Open Space						
Powerline Easement	1.739 ha	—	—	—	10.210 ha	11.949 ha 38.14%
Stormwater Treatment Area	—	—	—	1.342 ha	—	1.342 ha 4.28%
Total Open Space	1.739 ha	—	—	1.342 ha	10.210 ha	13.291 ha 42.42%
Roads						
Collector Road (25.6m Wide)	0.626 ha	0.566 ha	—	—	—	1.192 ha 3.80%
Local Access Road (20.6m Wide)	0.659 ha	0.818 ha	1.377 ha	—	—	2.854 ha 9.11%
Total Road Area	1.285 ha	1.384 ha	1.377 ha	—	—	4.046 ha 12.91%



The temporary turnaround shown on this plan will be constructed as required. The final design, location & timing will be subject to further detailed engineering design.

Note:
All Lot Numbers, Dimensions and Areas are approximate only, and are subject to survey and Council approval.

Dimensions have been rounded to the nearest 0.1 metres.

Areas have been rounded down to the nearest 5m².

The boundaries shown on this plan should not be used for final detailed engineers design.

Source Information:
Site boundaries: RPS Survey.
Adjoining information: DCDB.

PLAN REF: 124141 – 48
Rev No: F
DATE: 28 June 2022
CLIENT: LendLease
DRAWN BY: NV / JC
CHECKED BY: WNW



0 20 40 60 80 100 120 140 1 : 2,500 @ A3

**YARRABILBA MIBA
PRECINCT 5A
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