

To: Graeme Knox
From: Brendyn Rheinberger
Date: 29 March 2022
Subject: Yarrabilba Masterplan Community
Precinct 4E Application
Traffic Engineering Statement

At: Lendlease
At: SLR Consulting Australia Pty Ltd
Ref: 620.11743-M01-v1.1 Traffic 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 4E (which is a sub-precinct of Precinct 4). The proposed layout plan for the Precinct 4E application is included at Appendix A.

Note that the wider Precinct 4 was previously labelled as Precinct 5 in earlier reports, in particular the September 2017 report referenced below.

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* (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: DEV2022/1280
Date: 6 October 2022



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- The October 2015 IMP (Cardno) has been endorsed by EDQ but uses traffic modelling information that is superseded (but still largely relevant).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.

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 4E are generally consistent with the Movement Infrastructure Master Plan (endorsed in 2019) and the TIA prepared for Precinct 5 prepared in September 2017 (now called Precinct 4). The Precinct 4E assessment will use volumes from the traffic model update in 2018.

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 (2015). Whilst the demographics have been updated in various precincts, the demographics for the total Yarrabilba PDA are largely unchanged.

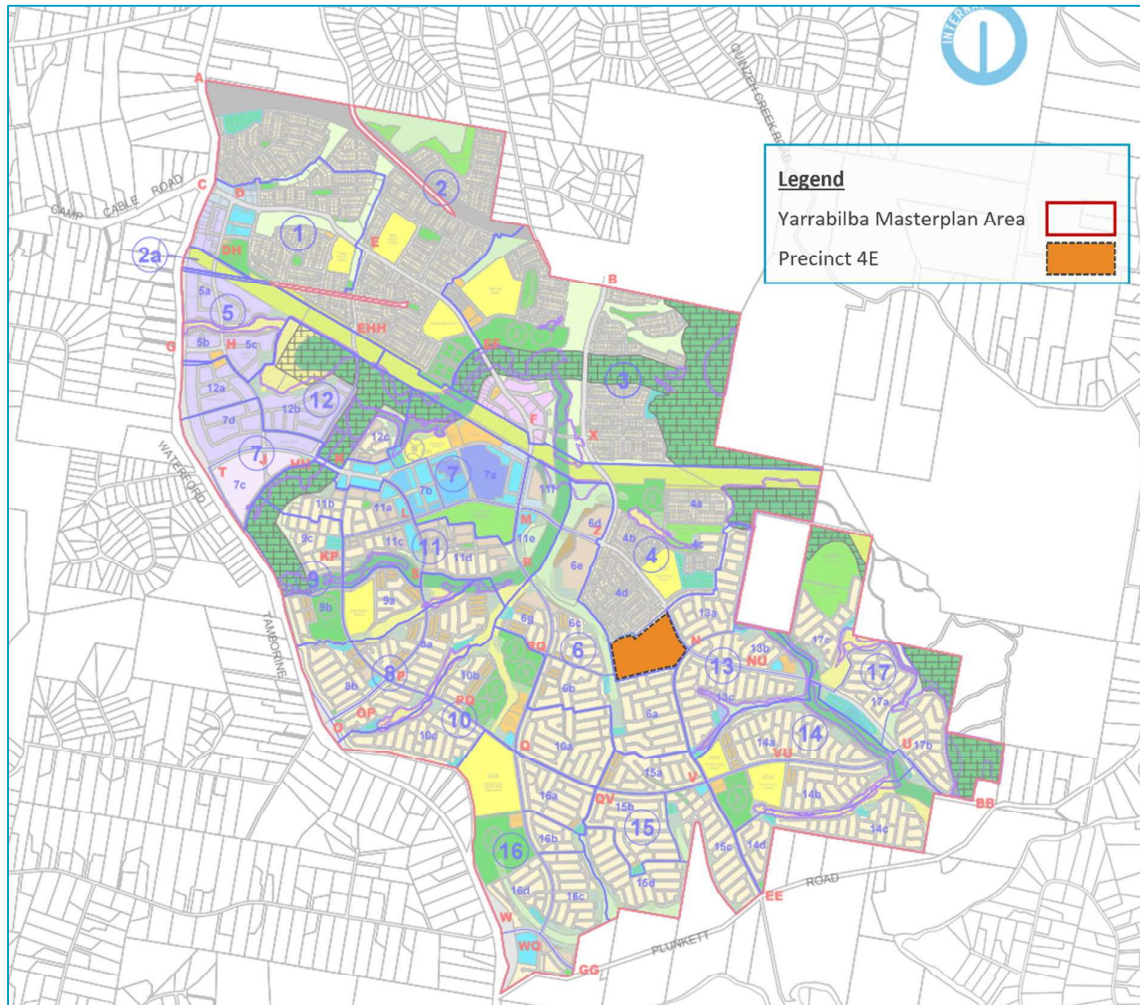
The Precinct 4E assessment herein has been based upon the most recent traffic model volumes and demographics (2018). This is discussed in Section 4 herein.

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 4E.

2 Proposed Development

The proposed Precinct 4E development is the southernmost parcel within the broader Precinct 4 area. It is located directly west of the proposed north-south road that will provide connection to/from Plunkett Road (when constructed). The proposed yield represents 230 residential lots and is illustrated on Figure 1 in context of the precinct staging and overall Yarrabilba Development Area.

Figure 1 Precinct 4E Site Context



The design and traffic analysis of the wider Precinct 4 development (referred to as Precinct 5 at the time) has been assessed previously in *Traffic Impact Assessment – Yarrabilba Master Plan Development Precinct 5* (SLR, September 2017). It is worth noting that while a number of sub-precincts within the old Precinct 5 area have not yet undergone detailed planning or design, conservative assumptions were made for the internal lot yields for the purposes of this reporting.

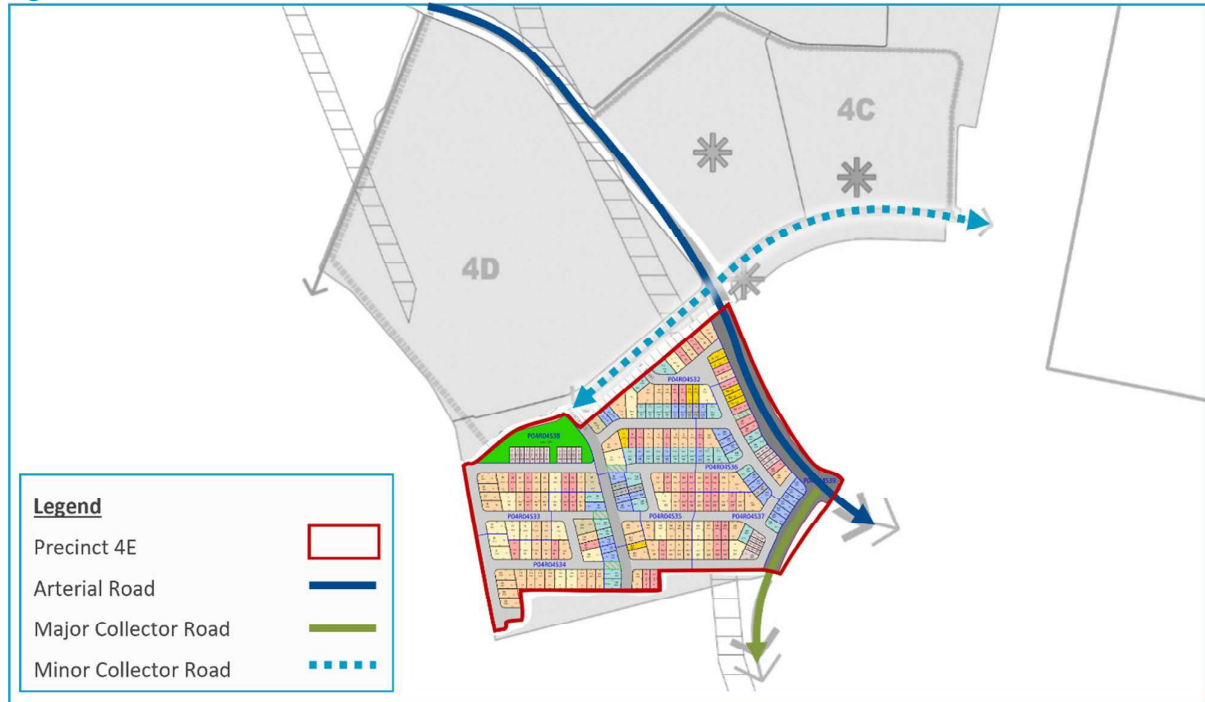
The proposed development plan for Precinct 4E has been prepared by Lendlease and incorporates input from the wider design team (including advice on traffic and transport design matters provided by SLR). The plan will be submitted as part of the planning documents for the application and has been used as the basis of the traffic assessment herein.

Based on plan provided by Lendlease and as detailed within the POD, Precinct 4E is proposed to include the following key land uses and yields:

- 230 residential lots; and
- 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 4E POD



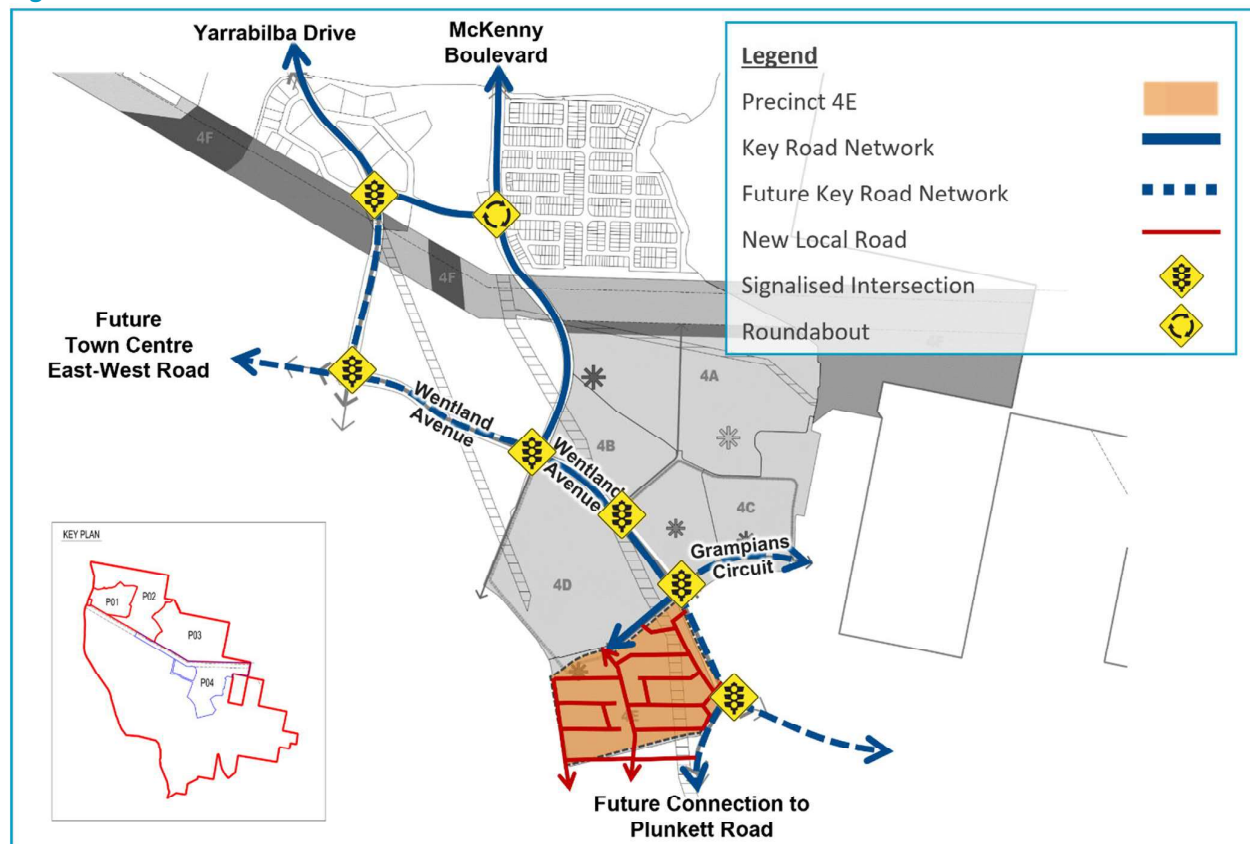
It is recognised that in the interim, Precinct 4E will have vehicle access only via Precinct 4D and the signalised intersection on Wentland Avenue / Grampians Circuit (at immediate northern corner of Precinct 4E). In the ultimate, future roads will connect from the southern side of Precinct 4E, allowing vehicle access to/from the north-south road that will provide a connection to Plunkett Road.

3 Design Review

Precinct 4E does not include any major road connections which differ to what was identified in the Movement Infrastructure Master Plan (SLR, April 2017) and the Precinct 5 Traffic Impact Assessment (SLR, September 2017) 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 4E network.

For completeness the location of Precinct 4E has been illustrated on Figure 3 with respect to the wider road alignments, intersection locations and control types.

Figure 3 Precinct 4E External Road Connections



3.1 Road Network

The internal roads proposed as part of the Precinct 4E development are expected to comprise of a network of local streets and local access streets. The cross sections for these internal roads have not yet been defined, however will be consistent with those designed/constructed previously in Yarrabilba and detailed within the endorsed Movement Infrastructure Master Plan (endorsed by EDQ on 3 July 2019).

3.2 Active Transport Provisions

The key elements of the walk and cycle network proposed in Precinct 4E are consistent with the connections and design elements discussed within the Movement Infrastructure Master Plan and detailed in previous Precinct 5 (now Precinct 4) reporting.

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 4E have been reproduced below for ease of reference, ensuring the consistency with the Movement Infrastructure Master Plan (SLR, April 2017):

- Principal Cycle Road – On-road cycle lanes are constructed along both sides of Yarrabilba Drive, as consistent with the Movement IMP.
- Commuter Cycle Route – A dedicated off-road shared pedestrian / cycle path (3.0m wide) is constructed on the eastern verge of Yarrabilba Drive, the northern verge of Fauna Way and the eastern side of McKenny Boulevard.
- Commuter Cycle Route – A dedicated off-road shared pedestrian / cycle path (or similar) is proposed on the eastern/northern side of Wentland Avenue and on the north-south road connection to Plunkett Road.
- Local Active Transport Routes – Shared pedestrian/cycle paths (2.5m wide) to provide connections between residential precincts throughout the Yarrabilba Master Plan Area.

The indicative alignments of these routes as identified in the Movement Infrastructure Master Plan (SLR, April 2017) are illustrated on Figure 4 in the context of Precinct 4E.

Figure 4 Surrounding Active Transport Routes

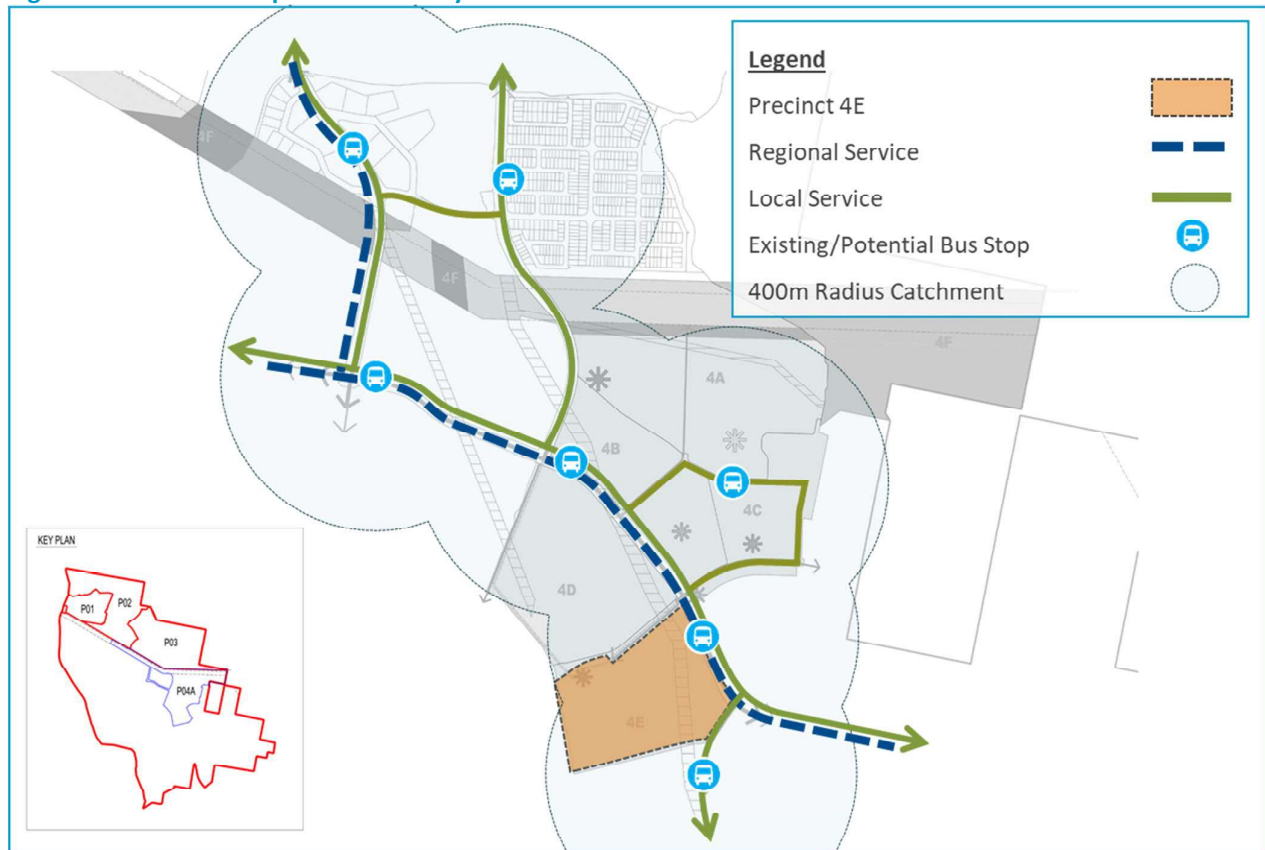


3.3 Public Transport Provisions

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. Whilst Precinct 4E does not include any bus stops or potential routes within the ROL boundary, 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 4E development. This identifies that all lots in Precinct 4E will be within 400m of a proposed 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 negotiated by contract with the bus operator, Lendlease and TransLink), however the relevant roads 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 public transport stops proposed to be constructed within the wider Precinct 4 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 yield now proposed for the Precinct 4E area 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 Wentland Avenue. For that reason, and given the small size of Precinct 4E, no further traffic analysis is necessary.

5 Summary

The following summarises the key conclusions in respect of the traffic and transport aspects of Precinct 4E, in particular consideration of the approved Yarrabilba Movement Infrastructure Master Plan (IMP):

- Road Hierarchy – The roads proposed within Precinct 4E 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 consistent with the road hierarchy 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 4E in conjunction with the surrounding development of Yarrabilba.
- Public Transport – The layout and design of the surrounding network includes the appropriate provision for public transport (bus services) and potential bus stops along approved commuter routes. 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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APPENDIX A

Sub-Precinct Layout Plan



- PRECINCT FOUR - APPLICATION FOUR BOUNDARY
- STAGE BOUNDARY
- OPEN SPACE
- LOCAL STAGE ROAD
- PATHWAY CONNECTION
- VILLAGE ROAD
- MAJOR ROAD

LAND USE	AREA (ha)
Residential	10.23 ha
Open Space	0.64 ha
Road - Major Road	1.66 ha
Road - Collector Road	0.52 ha
Road - Local Street	4.11 ha
TOTAL	17.16 ha

MINIMUM RESIDENTIAL DENSITY - 15.50 ha
230 dw
14.8 dw/ha
MAXIMUM RESIDENTIAL DENSITY - 15.50 ha
236 dw
15.2 dw/ha

LOT YIELD BY LOT TYPE					
LOT TYPE	No.	No. %	AREA	AREA %	MINIMUM
T1	13	5.65%	9093.38m ²	8.89%	640.00m ²
T3	9	3.91%	6231.83m ²	6.09%	600.00m ²
C2	46	20.00%	22802.54m ²	22.29%	420.00m ²
C3	25	10.87%	14195.11m ²	13.88%	512.00m ²
PV	41	17.83%	16453.65m ²	16.09%	375.00m ²
V	9	3.91%	3079.21m ²	3.01%	312.00m ²
TCY2	17	7.39%	6884.88m ²	6.73%	350.00m ²
TCY3	11	4.76%	5236.91m ²	5.12%	400.00m ²
TPV	28	12.17%	9638.56m ²	9.42%	312.50m ²
TV	6	2.61%	1564.26m ²	1.53%	260.00m ²
TCF	22	9.57%	5032.15m ²	4.92%	189.00m ²
MFS	3	1.30%	2079.49m ²	2.03%	524.73m ²
TOTALS	230	100%	102291.75m ²	100%	189.00m ²

NOTE:
MINIMUM DWELLINGS is based on the development of one dwelling on each single family and multi-family strata (MFS) lot.
MAXIMUM DWELLINGS is based on the development of one dwelling on each single family lot, and three dwellings on each multi family strata (MFS).

DENSITY calculations include the area of residential lots, local roads and credited park. The boundaries, roads and pathways shown hereon are subject to detailed engineering design, final survey and approval of subsequent development applications by the relevant authorities.

PRECINCT FOUR - APPLICATION FOUR RECONFIGURATION OF A LOT

NOTE: This plan is indicative only, and specific uses, road alignment, boundaries, setbacks, and building layout shown may vary due to detailed design consideration. ©2022 Lendlease Communities (Australia). All rights reserved. Except as permitted by Lendlease, no part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the permission of Lendlease.

