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17 July 2020

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Attention: George Popovich

Dear George,

CALDERWOOD MOD 4 APPLICATION RESPONSE TO TFNSW JUNE 2020 COMMENTS

Cardno was engaged by Lendlease Communities (Calderwood) Pty Limited (Lendlease) to undertake a traffic and transport study to address the Secretary's Environmental Assessment Requirements (SEARs) and to support a proposed increased yield from approximately 4,800 dwellings to approximately 6,000 dwellings in the area known as the Calderwood Urban Development Project (CUDP).

The CUDP site is located within the Calderwood Valley in the Illawarra region. It is approximately 700 hectares in area with approximately 107 hectares of land in the Wollongong LGA and the remainder located within the Shellharbour LGA. Lendlease is the developer of the majority of the CUDP, controlling approximately 609 ha of the overall site. The indicative subdivision plan for the CUDP site is shown in **Figure 1-1**. The CUDP traffic and transport study was finalised and issued on 30 May 2019.

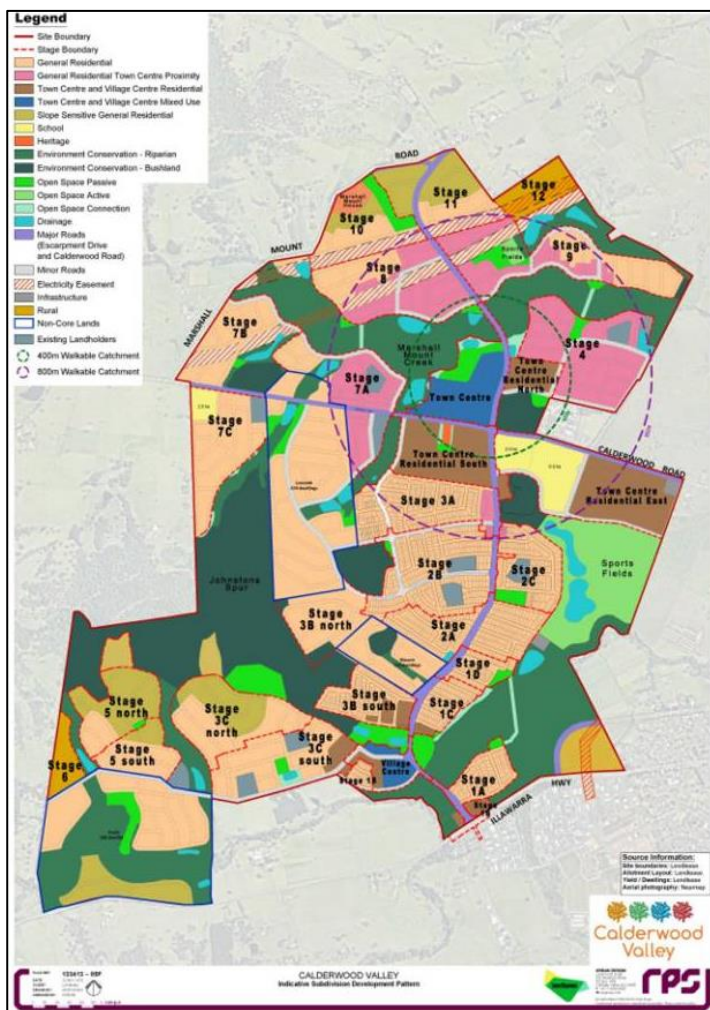


Figure 1-1 Indicative Subdivision Plan

Source: Lendlease (2019)

Following submission of the Modification Application #4 for the proposed 6,000 dwellings within CUDP, Lendlease and Cardno liaised with Transport for NSW (TfNSW) on matters associated with the additional traffic generation and impact as well as the funding mechanisms desired by TfNSW. The consultation summary is as below:

- > 11 July 2019 – TfNSW issue a letter requesting additional traffic modelling to support the proposed intersection layouts as well as concept design plans for each intersection upgrade;
- > 15 August 2019 – Meeting held between TfNSW, Lendlease and Cardno to discuss the TfNSW 11 July 2019 letter;
- > 17 September 2019 – Cardno issue a letter addressing TfNSW 11 July 2019 submission;
- > 15 October 2019 – TfNSW issue a letter requesting additional traffic modelling to support the phasing arrangement at Illawarra Highway / Broughton Avenue intersection, and updates to the design plans for the Broughton Avenue intersection as well as the Calderwood Road / Tripoli Way intersection. The funding mechanism for the upgrades is also reiterated within this letter;
- > 26 November 2019 – Cardno issue a letter addressing the TfNSW 15 October 2019 submission
- > 19 December 2019 – TfNSW issue a letter requesting further changes to the signal phasing at Illawarra Highway / Broughton Avenue and clarity on the concept design plans.
- > 4 March 2020 – Meeting held between TfNSW, Lendlease and Cardno to discuss the TfNSW 19 December 2019 letter and outcomes of previous letters and meetings.
- > 17 March 2020 – Cardno issue a letter addressing the requested changes to the intersection phasing contained in TfNSW 19 December 2019 letter.
- > 18 June 2020 – TfNSW issue a letter advising it doesn't support the Modification Application with concern raised over the funding and delivery of the intersection upgrades and requirement to provide additional lanes on the Princes Motorway.

This letter is provided to address the most recent TfNSW correspondence (18 June 2020). The structure of the responses are provided in line with the itemised issues contained within TfNSW letter. It is important to outline that the introduction of the TfNSW 18 June 2020 letter incorrectly states that “a four lane Tripoli Way road connection between the Illawarra Highway (Terry Street) in the east and intersection of the Illawarra Highway / Broughton Avenue in the west.” The Tripoli Way road extension four lane arrangement is only from Terry Street to Calderwood Road before reducing to a two lane arrangement from Calderwood Road to Broughton Avenue.

TfNSW Comment

TfNSW believes some of the arrangements being proposed/relied upon to deliver necessary road infrastructure upgrades are not adequate and has concerns the upgrades will not be delivered in a timely manner. If not provided in a timely manner, TfNSW believes the traffic associated with this modification would create congestion and potential road safety issues. Detailed comments are provided in Attachment 2.

Response

Delivery of road infrastructure, external to the CUDP land, is a matter for TfNSW and Council. Lendlease can consider provision of works-in-kind consistent with the requirements in the State Voluntary Planning Agreement (VPA), however is subject to the overall commitments being requested of Lendlease (e.g. open space, Calderwood Road upgrade, educational land and other credits).

TfNSW Comment

This modification will bring forward the need for broader upgrades on the State road network, such as additional lanes on Princes Motorway and, similarly to development at West Dapto and the Approved Concept Plan for Calderwood, TfNSW believes appropriate contributions need to be made for State infrastructure. TfNSW is not clear how the existing State VPA is proposed to be updated and as such cannot determine whether the proposed arrangements would be acceptable to offset the impact of traffic from this modification on the State road network. TfNSW requests clarification on the content of the developer's proposed letter of offer.

Response

There has been no previous correspondence provided by TfNSW that raises issues over the Princes Motorway with regard to the proposed 6,000 dwellings. TfNSW comment does not provide sufficient detail for Lendlease and Cardno to adequately address and is unclear what and where additional lanes are required. It is noted that the major project investment and ongoing works associated with the Albion Park Rail Bypass (APRB) is to alleviate future congestion and facilitate growth within the Illawarra Region. It is unclear how the addition of 1,200 dwellings and associated traffic generation above the previous TMAP approval, when dispersed across the road network, results in the need for a significant upgrade of the Princes Motorway.

Importantly, the traffic modelling undertaken to test the proposed modification using the agreed land use and infrastructure assumptions and the most up to date TRACKS models available for the Illawarra region confirmed acceptable traffic operation across the network.

TfNSW Comment

TfNSW notes the proposed modification relies on Tripoli Way link being in place between the Illawarra Highway (Terry Street) in the east and intersection of the Illawarra Highway/Broughton Avenue in the west. While TfNSW understands the developer is providing funding to Shellharbour City Council for the Tripoli Way link to be delivered as part of the Approved Concept Plan, TfNSW is concerned that the link may not be provided in time to accommodate the additional traffic generated by this modification. This would result in significant congestion on the Illawarra Highway and is likely to create road safety issues.

Response

It is unclear on what basis TfNSW ascertain that the link may not be provided in time. Shellharbour City Council are responsible for delivery of the Tripoli Way extension, and has the upgrade on public exhibition. The forecast opening year is 2027 which is generally consistent with the original CUDP TMAP. Lendlease has no control on Shellharbour City Council's project however the public exhibition and design development all demonstrate that the upgrade is progressing towards an opening year which is some 6-7 years away.

TfNSW Comment

TfNSW notes Section 4.2.3.1 of the updated Traffic and Transport Report identifies an additional two upgrades required to cater for increased traffic generated by the proposed modification as shown in Attachment 1. TfNSW has been liaising with the developer regarding these layouts. TfNSW has also undertaken some sensitivity modelling to consider the potential network flows should Tripoli Way become the major east-west link. Based on this, TfNSW provides the following comments with respect to the layouts shown in Attachment 1

Response

TfNSW comment outlines that sensitivity modelling has been undertaken (assumedly by TfNSW) and has been relied upon to provide comments. Lendlease and Cardno are not privy to this sensitivity testing or the assumptions being used and therefore cannot qualify if the outcomes are appropriate or realistic.

Cardno has undertaken an in depth modelling process utilising the Albion Park Rail Bypass (APRB) Aimsun model and its parent model, the Wollongong Shellharbour (WOLSH) Tracks model. For the area associated with CUDP, these models have been modified to reflect the proposed Mod 4 staging plan however maintains consistent assumptions with regard to mode share and route choice as per the modelling undertaken for the APRB major project and other developments within the region. The outcomes of the modelling documented in the updated Traffic and Transport Report confirm that the road network was shown to operate satisfactorily (assuming the proposed upgrades to the Brighton Ave / Illawarra Highway and Calderwood Road / Tripoli Way intersections).

The supposed sensitivity modelling undertaken by TfNSW has not been provided and therefore Lendlease and Cardno cannot comment on its relevance.

TfNSW Comment

Intersection of Tripoli Way and Calderwood Road

TfNSW notes the layout does not fit within existing property boundaries.

Response

It is understood that the proposed lane arrangement at Tripoli Way / Calderwood Road is consistent with the design plans for the Tripoli Way extension project being prepared by Shellharbour City Council. There may be some differences in provision of shoulders / parking lanes and other non-travel lanes, however fundamentally the design will not (and should not) differ to that being proposed by Council.

Any impact to adjacent property owners and requiring acquisition falls under the authority of the roads authority (in this location, Council) under the Roads Act. Given the design shown in the modification application is no different to the fundamentals of Council's design, acquisition implications is a matter for Council.

TfNSW Comment

Intersection of Illawarra Highway, Tripoli Way and Broughton Avenue

The sensitivity modelling indicates the ultimate arrangements need to be split approach for Tripoli Way/Broughton Avenue with a dual right turn from Tripoli Way onto the Illawarra Highway. As such, any interim arrangements needs to cater for a future dual right turn (i.e. the turning paths for the right turn from Tripoli Way on to the Illawarra Highway need to cater for a future dual right turn).

Response

Notwithstanding previous comments on the relevance of the TfNSW sensitivity testing, the concept design prepared by Cardno shows four lane cross section on approach to the Illawarra Highway / Broughton Avenue intersection (i.e. two lanes increasing to four to accommodate turning lanes). Only one northbound lane would be required and therefore we believe there is generally sufficient space to accommodate a dual right turn if required. However, the provision and funding of this future proofing arrangement should not be the responsibility of Lendlease to deliver given it is reliant on the outcomes of the sensitivity test, which may be heavily influenced by regional traffic movements rather than the traffic associated with the modification application.

TfNSW Comment

The sensitivity modelling indicates the right turn from the Illawarra Highway into Tripoli Way will need to be banned for the intersection to operate an acceptable level of service. Based on the future network options available to motorists, TfNSW believes there would be limited demand for this movement. Based on this, TfNSW believes the right turn needs to be removed from any interim signalised treatment (should one be provided).

Response

Notwithstanding previous comments on the relevance of the TfNSW sensitivity testing, we agree the right turn from Illawarra Highway into Tripoli Way may have little demand in context of the overall traffic volume through the intersection. In any case, banning turning movements can be resolved at the detailed design stage when the intersection is required to be upgraded. The intersection footprint shown in the concept plans would only reduce if the right turn lane was removed and therefore resulting in a better outcome (in terms of intersection size).

TfNSW Comment

Improvements are required for sight distance on the Tripoli Way approach to the signals.

Response

It is unclear what improvements are being sought. Cardno has already supplied TfNSW with the sight line check that achieves the minimum requirement established by Austroads and TfNSW supplements.

TfNSW Comment

The layout encroaches on property boundaries in the south west corner.

Response

The potential property boundary encroachment is understood to happen within Council land and does not affect residential properties. Nevertheless, Cardno has prepared revised drawings which show an alternate alignment to avoid encroaching into property boundaries on the southern side of Illawarra Highway.

The alignment is further north than previously shown, into Lendlease owned land. The purpose of these concept designs is to demonstrate a workable solution and should not be held to providing detailed design requirements for the concept plan. Particularly as the identified upgrade may be required in some 10 years.

TfNSW Comment

The Illawarra Highway on the eastern approach comes close to Tallowa Street. Noting the grades, TfNSW believes this has potential to create stability, safety and potential head light glare.

Response

The level difference between Illawarra Highway and Tallowa Street already exists, and therefore the potential safety and headlight glare issue is likely already occurring with minimal impact.

Nevertheless, the updated design plans which shifts the road alignment further north should adequately address TfNSW comment as it creates greater offset to Tallowa Street and allows for other design solutions to mitigate any concern stability, safety and the potential headlight glare.

Yours sincerely,

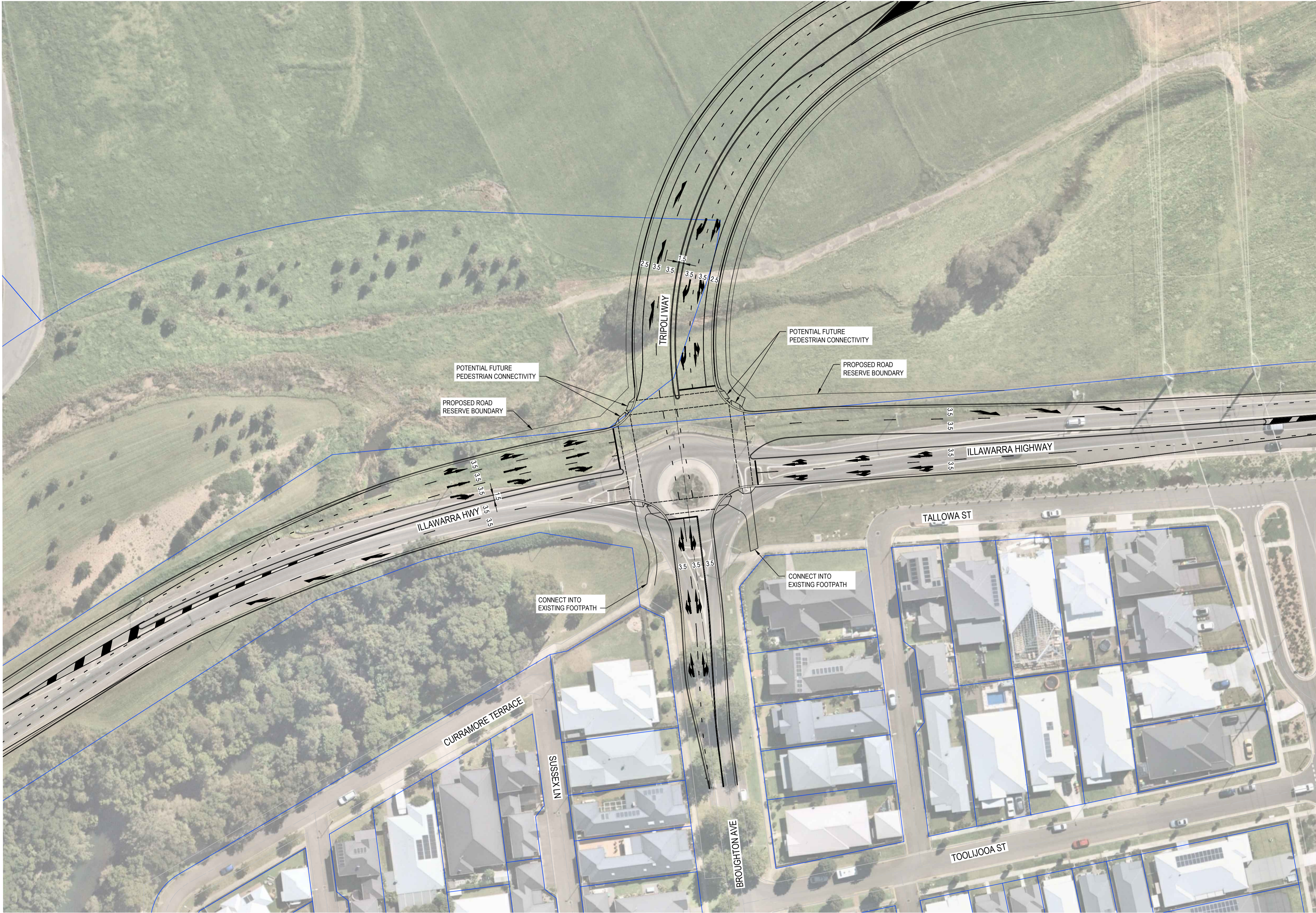


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APPENDIX

A

REVISED ILLAWARRA HWY / BROUGHTON
AVENUE DESIGN



TRIPOLI WAY / ILLAWARRA HIGHWAY CONCEPT LAYOUT
SCALE 1:500

NOTE:
1. IMAGERY SOURCED FROM NEARMAP MARCH, 2019

LEGEND
— EXISTING PROPERTY BOUNDARY



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Checked
Designed MPR
Verified PM
Approved

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Date 30/06/2020
Date 30/06/2020

Client **LENDELEASE**
Project CALDERWOOD ROAD / TRIPOLI WAY INTERSECTION
CONCEPT DESIGN
ROAD CONCEPT
Title TRIPOLI WAY / ILLAWARRA HIGHWAY INTERSECTION
CONCEPT LAYOUT PLAN

Status **PRELIMINARY**
NOT TO BE USED FOR CONSTRUCTION PURPOSES
DATING AHD
Scale 1:500
Size A1
Drawing Number 82015040-54-SK075
Revision 1