AURA Residential Subdivision DA1

Transport Impact Assessment

Prepared for: DB20 Pty Limited

Ref: 300303372 | Date: 6 June 2025

Revision

Revision	Date	Comment	Prepared By	Approved By
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For and on behalf of

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Acknowledgment of Country

In the spirit of reconciliation, Stantec acknowledges the Traditional Custodians of country throughout Australia and their connections to land, sea and community. We pay our respect to their Elders past and present and extend that respect to all Aboriginal and Torres Strait Islander peoples.

Limitations

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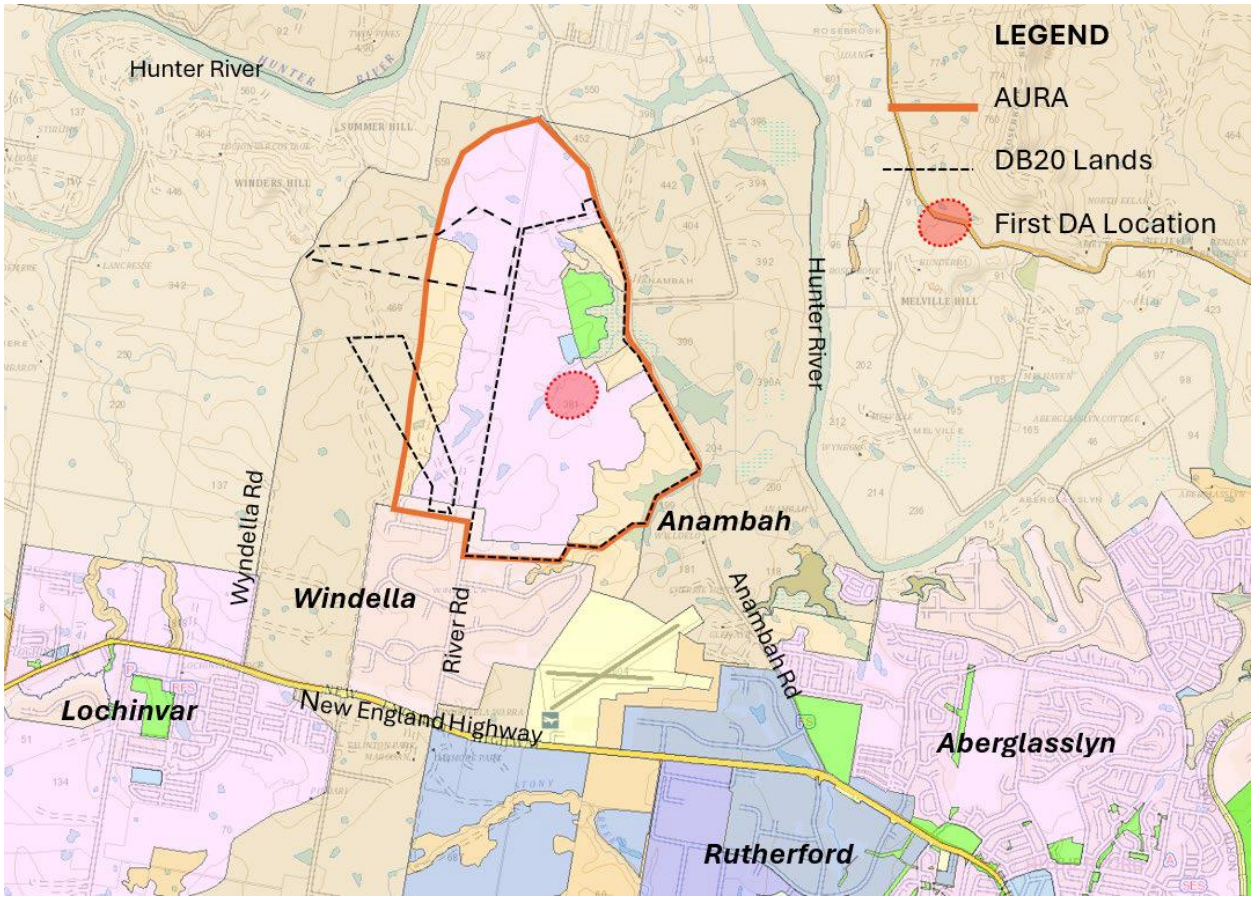
1. Introduction

1.1 Background

Stantec has provided traffic and transport advice for the proposed Anambah Urban Release Area (AURA) (refer Figure 1) which may contain approximately 4,000 dwellings within Anambah, NSW. Within AURA, DB20 Pty Limited landholdings may contain approximately 2,800 dwellings across rural and environmental living lots, standard (low density) residential lots, small lots and medium density residential accommodation, as well as a neighbourhood centre and potentially school lands, supported by open space and recreation. Anambah Road runs to the east past AURA. River Road extends to and through AURA from the south but is unconstructed within AURA itself. Historically, the connection to River Road has been limited to be for temporary emergency access purposes only.

Ultimately, AURA has been planned to connect to the west towards Wyndella Road and to the east at two locations. Two primary north/south road links (in the east past a neighbourhood centre / sports fields, and centrally along River Road and then in a north-western loop) have been planned, supported by a series of east/west road links. Traffic is anticipated to distribute through that road network, informing a resilient and permeable road hierarchy network. Detailed pre-application consultation with Council has identified key roads within or adjoining DB20 Pty Limited landholdings that will carry larger traffic volumes and require a selection of typical and unique road cross sections and key intersection treatments. Pre-application consultation has also considered an overall bus route and an active movement network including provision for cyclists.

Figure 1: Regional context of Anambah Urban Release Area (AURA)



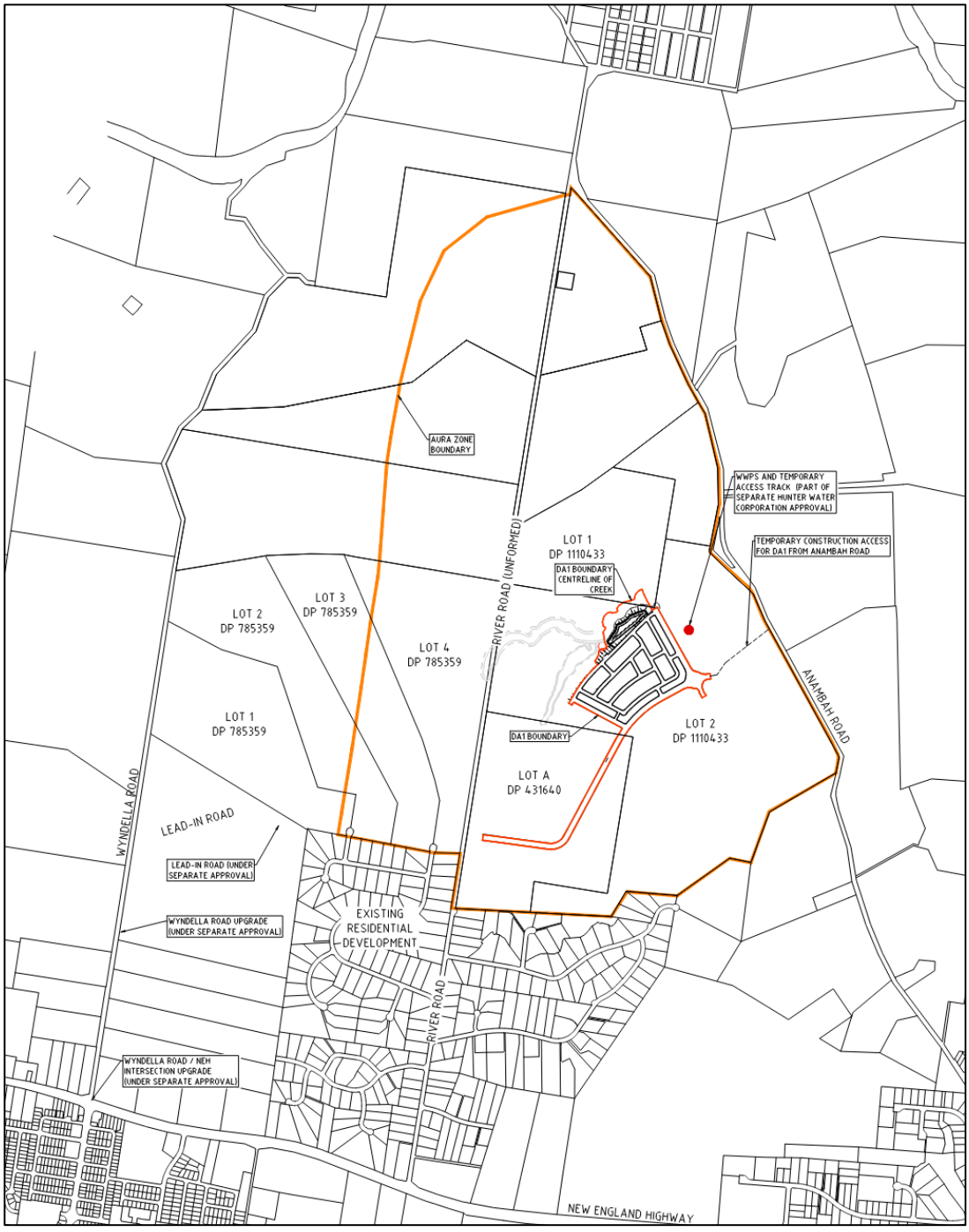
AURA is required to connect to Wyndella Road (to the west of AURA) after 1,200 lots under Clause 7.8(3) of the Maitland Local Environmental Plan 2011. Wyndella Road, currently a single lane rural road, connects to the New England Highway via an existing signalised intersection. The Lochinvar Urban Release Area (LURA) requires further upgrades to that intersection beyond the current formation, as well as upgrades to part of Wyndella Road.

Given the AURA connection requirement, a assessments were undertaken by Stantec for DB20 Pty Limited as inputs into assessing the capacity and inform the design of an intersection upgrade of Wyndella Road, and New England Highway to accommodate traffic from AURA, alongside the traffic (and upgrades) associated with the Lochinvar Urban Release Area (LURA).

A development application is to be lodged with Maitland City Council for the development of a portion of AURA., consisting of 175 lots (173 residential lots and 2 super lots) and the construction of a new public road network, hereinafter referred to as “AURA DA1”. The DA relies upon connecting to a new public road west to Wyndella Road and intersection works, which are subject to separate and concurrent proposals by the applicant. The DA includes part of the primary road hierarchy and active movement network to support AURA.

Stantec was commissioned by DB20 Pty Limited to undertake a transport impact assessment for the proposed development. The location and extent of AURA DA1 in the context of AURA is illustrated in Figure 2 (and further described in Section 3.0)

Figure 2: AURA DA1 Development Proposal



Source: AURA DA1 Overall Plan prepared by GCA Engineering Solutions

1.2 Purpose of this Report

This report sets out an assessment of the anticipated transport implications of the proposed development, including consideration of the following:

- the established traffic generation characteristics of the overall AURA development
- the traffic generating characteristics of AURA DA1
- suitability of the proposed access arrangements for the site
- the transport impact of the development proposal on the surrounding road network.

1.3 References

In preparing this report, reference has been made to the following:

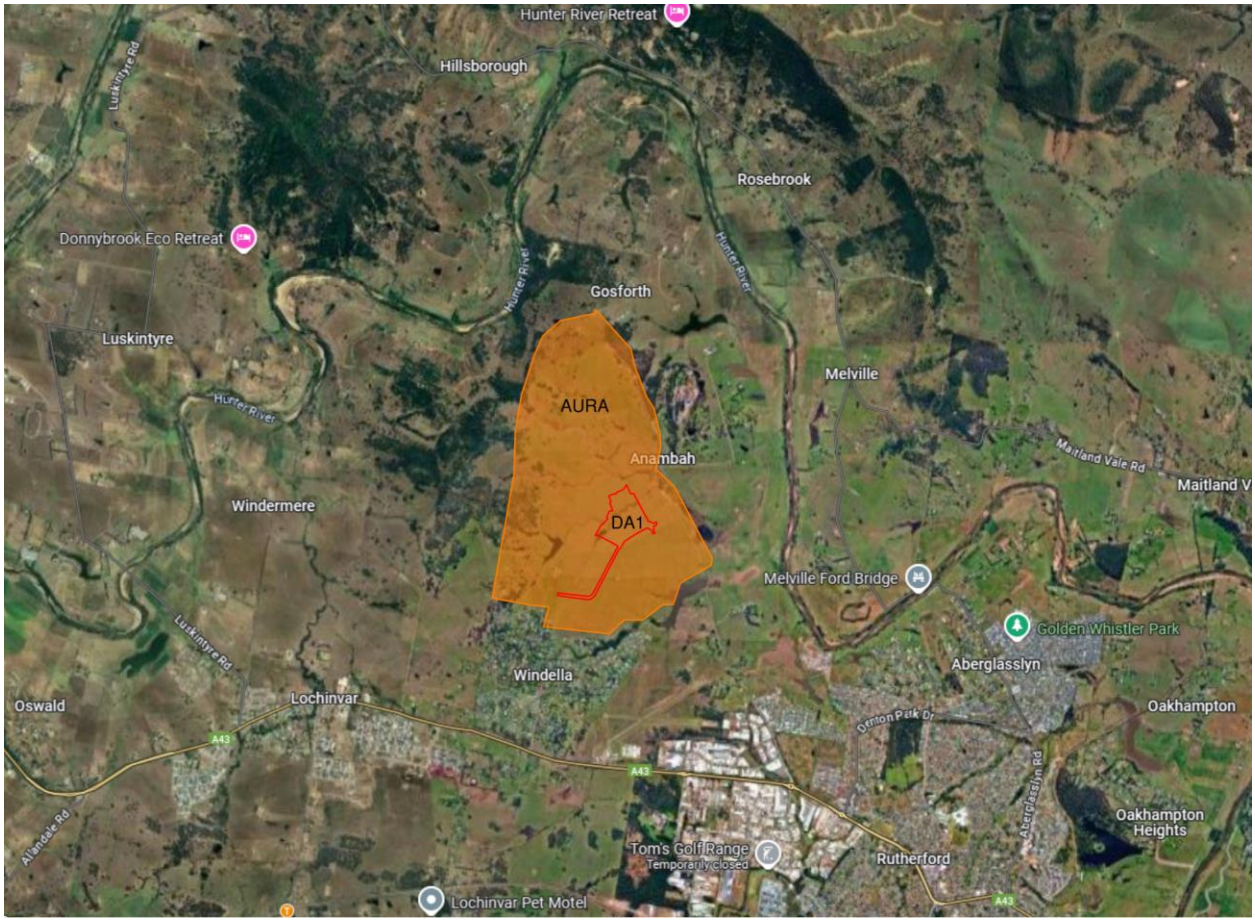
- a desktop study of the site and its surrounds
- Maitland City Council Development Control Plan (DCP)
- plans for the proposed development prepared by GCA Engineering Solutions drawings:
  - E01 Revision 5, dated 3 June 2025
  - LD1070 Package Revision 2, dated 30 May 2025
- previous traffic assessments completed and pre-lodgement consultation with Council
- other documents and data as referenced in this report.

2. Existing Conditions

The DA sits within the southern area of AURA, in in Anambah, NSW within the LGA of Maitland City Council. AURA is approximately 490 hectares (ha) and has a variety of land use classifications including, environmental living, public recreation, local centre and general residential as set out in the Maitland City Council Local Environmental Plan (refer to Figure 4). The area subject to the DA sits south of a degraded watercourse and lot titles that has road frontage (and access) to Anambah Road and the unformed River Road reserve. The land is currently used for agricultural purposes, pending its progressive development.

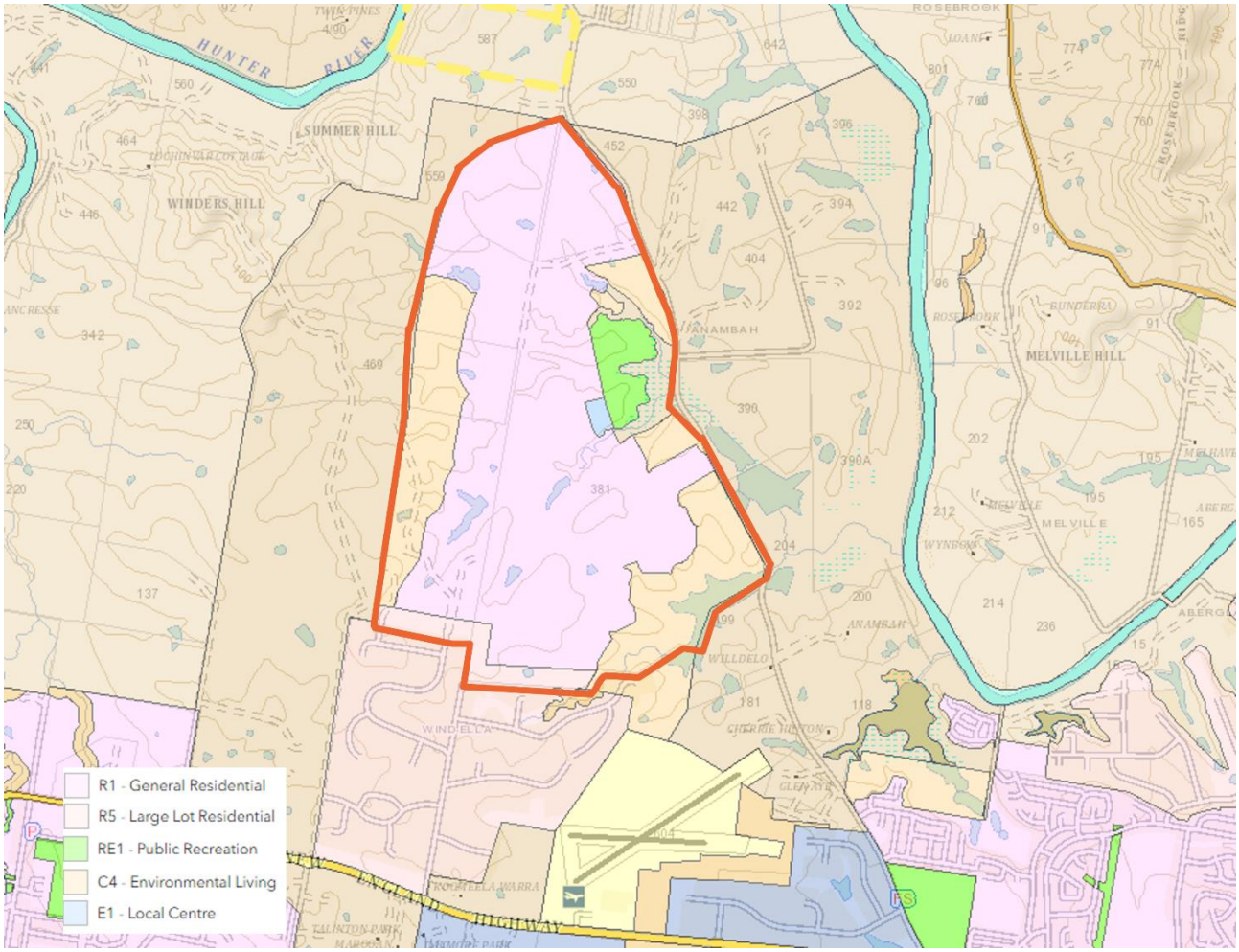
The DA site is bounded by undeveloped AURA lands and then rural lands outside AURA, with existing large lot residential lots to the south. The location of the AURA, the DA site and its surrounding environs including land use is shown in Figure 3 and Figure 4.

Figure 3: Subject Site and its environs



Basemap source: Google maps

Figure 4: Land Use Map



Source (NSW Planning Portal Spatial Viewer) accessed May 2025

2.1 Surrounding Road Network

2.1.1 Adjoining Roads

Anambah Road

Anambah Road is classified as a local road aligned in a north south direction. In the vicinity of the site, it accommodates a single travel lane in each direction and has a posted speed limit of 100 kilometres per hour. The carriageway is approximately 7.2 meters wide. Anambah Road in proximity to the site is shown in Figure 5.

Figure 5: Anambah Road

Wyndella Road

Wyndella Road is classified as a local road aligned in a north south direction and sits further west of AURA and the site. It accommodates a single travel lane, which is used for both directions of travel. The carriageway is approximately 3 meters wide and currently services a number of private properties. The current assumed speed limit is 50 kilometres per hour. Wyndella Road is largely unsealed and is shown in Figure 6.

Figure 6: Wyndella Road

River Road

River Road is classified as a local road aligned in a north south direction. In the vicinity of the site, it accommodates a single travel lane in each direction and has a posted speed limit of 50 kilometres per hour. The carriageway is approximately 6.6 meters wide and ends in a cul-de-sac head. River Road south of the cul-de-sac, in proximity to the site, is shown in Figure 7. North of the current formed carriageway, the River Road road reserve has no formed construction.

Figure 7: River Road

New England Highway

The New England Highway is an arterial road classified as a state road aligned in an east west direction. This road is located south of the site and connects to Anambah Rd, River Rd and Wyndella Rd. To the east and west of the site, the New England Highway accommodates a single travel lane in each direction, with a posted speed limit of 80 kilometres per hour (and varied along its length between Anambah Road in the east and Wyndella Road and Lochinvar in the west). The New England Highway provides key connections to the Hunter Expressway and Pacific Highway/M1.

The road in proximity to the site is shown in Figure 8.

Figure 8: New England Highway

2.2 Public Transport

2.2.1 Train Services

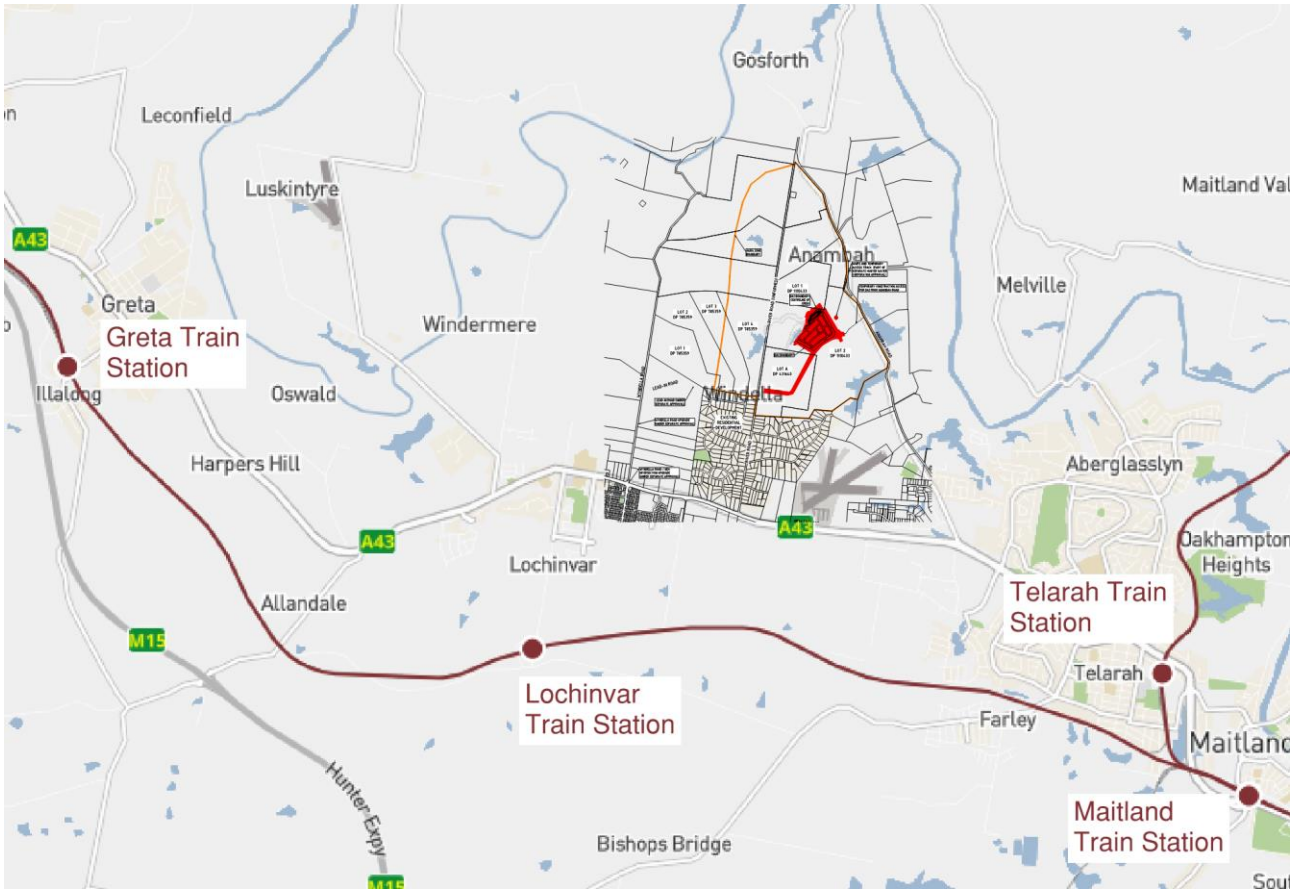
The closest train station to the site is the Lochinvar train station that is serviced by the Hunter Line. However, this is approximately 6 kilometres away from AURA DA1.

There are three other train stations, namely, the Maitland and Telarah train stations to the east of the site and Greta train station to the west of the site. These train stations are greater than 5 kilometres from the proposed subdivision and are accessible via the New England Highway. The train services available in the vicinity of the site is summarised in

Table 1: Train Services within the Vicinity of the Site

Station	Line	Route Description	Frequency During Peak
Lochinvar	Hunter Line	Newcastle to or from Scone or Dungog	Infrequent – once every hour
Telarah	Hunter Line	Newcastle to or from Scone or Dungog	Every 30 minutes
Greta	Hunter Line	Newcastle to or from Scone or Dungog	Infrequent – once every hour
Maitland Interchange	Hunter Line	Newcastle to or from Scone or Dungog	Every 10 minutes

Figure 9: Train Stations within the Vicinity of the Site



2.2.2 Bus Services

There are several bus services that operate within the vicinity of the site, largely along the New England Highway and partially along Anambah Road. Currently no existing bus stops on these routes would be able to service AURA due to the significant distance from the site.

A review of the bus services available in the vicinity of the site is summarised in Table 2 and displayed in Figure 10.

Table 2: Bus Services within the Vicinity of the Site

Bus Route	Route Description	Frequency On/Off Peak
178	Rutherford to Anambah Rd via Rutherford Industrial Estate (Loop Service)	Frequency varied
179	North Rothbury to Green Hills Shopping Centre via Maitland	Frequency varied
180	Singleton Heights to Green Hills Shopping Centre via Maitland	4 services per day
180X	Singleton Station to Maitland Station (Express Service)	2 services per day

Source (Transport NSW Routes and Timetables)

Figure 10: Bus Routes within the Vicinity of the Site

Source (Transport NSW) accessed May 2025

2.3 Crash History

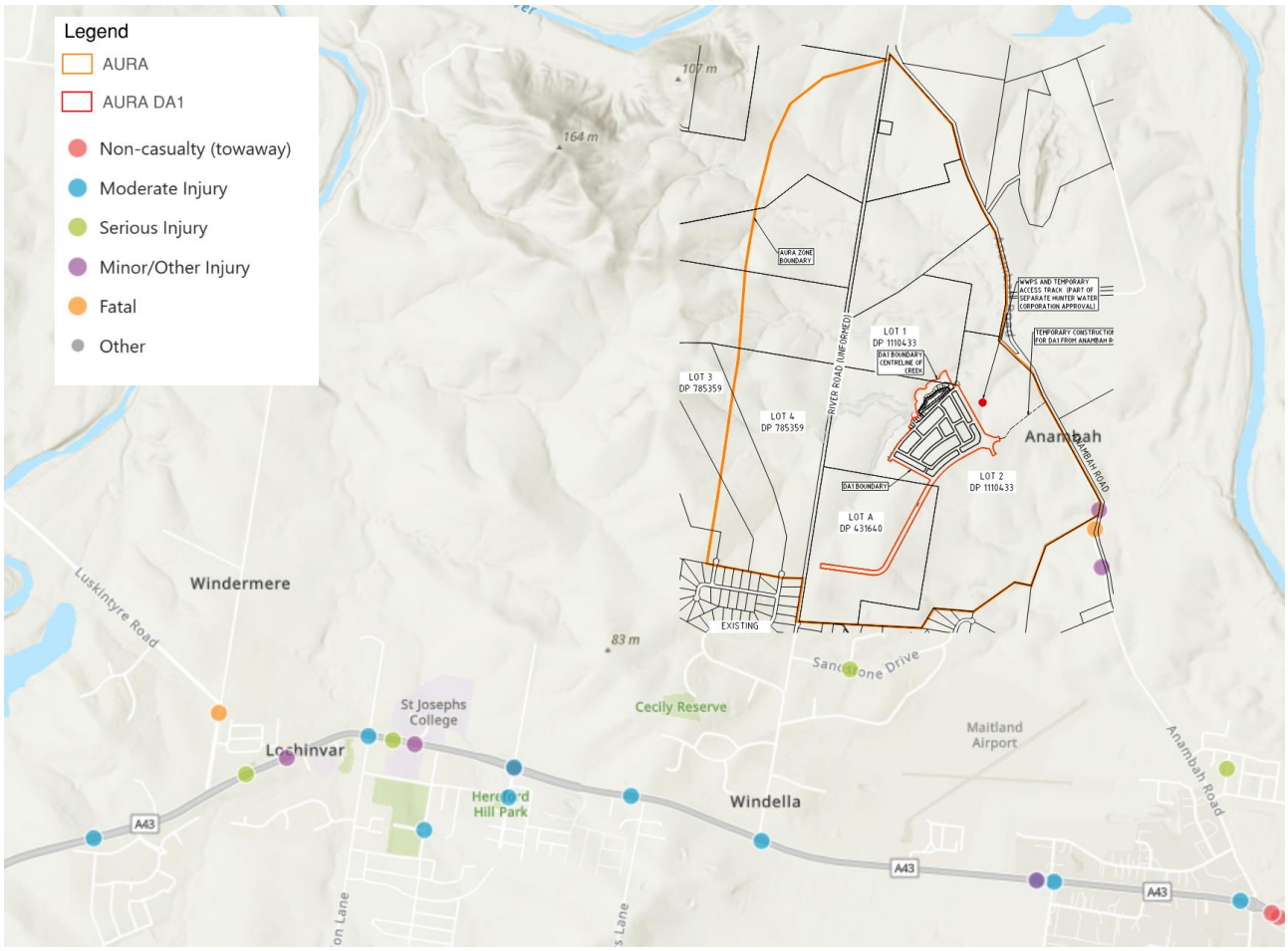
An analysis of the most recent five-year period of available crash data (2019-2023) has been undertaken based on crash data provided by Transport for NSW for the roads and intersections surrounding the site. Crashes are most predominate on the New England Highway, with majority of these incidents being moderate head on crashes occurring during daylight. At the intersection of Wyndella Road and the New England Highway there was one moderate right through crash in daylight, there were also two moderate crashes at the roundabout at the Mirage Road and New England Highway Intersection. Given the low number of crashes at these locations over the analysed period, there is no significant indication of crash trends in the southern vicinity of the site.

There was one recorded fatality along Anambah Road in 2020, occurring in darkness around a bend where the vehicle came off the carriageway hitting an object, two other minor incidents were recorded in close proximity to the site of the fatality with both vehicles going off the carriageway. The recorded crashes along Anambah Road exhibit a similar pattern in the type of crash, this is an important factor to consider during the subdivision development.

The progressive development of AURA and the proposed residential subdivision will cause vehicle numbers to increase over time if safety measures and infrastructure upgrades are not implemented.

The locations and severity of the crashes for the five-year period are shown in Figure 11.

Figure 11: Crash Locations Surrounding the Site



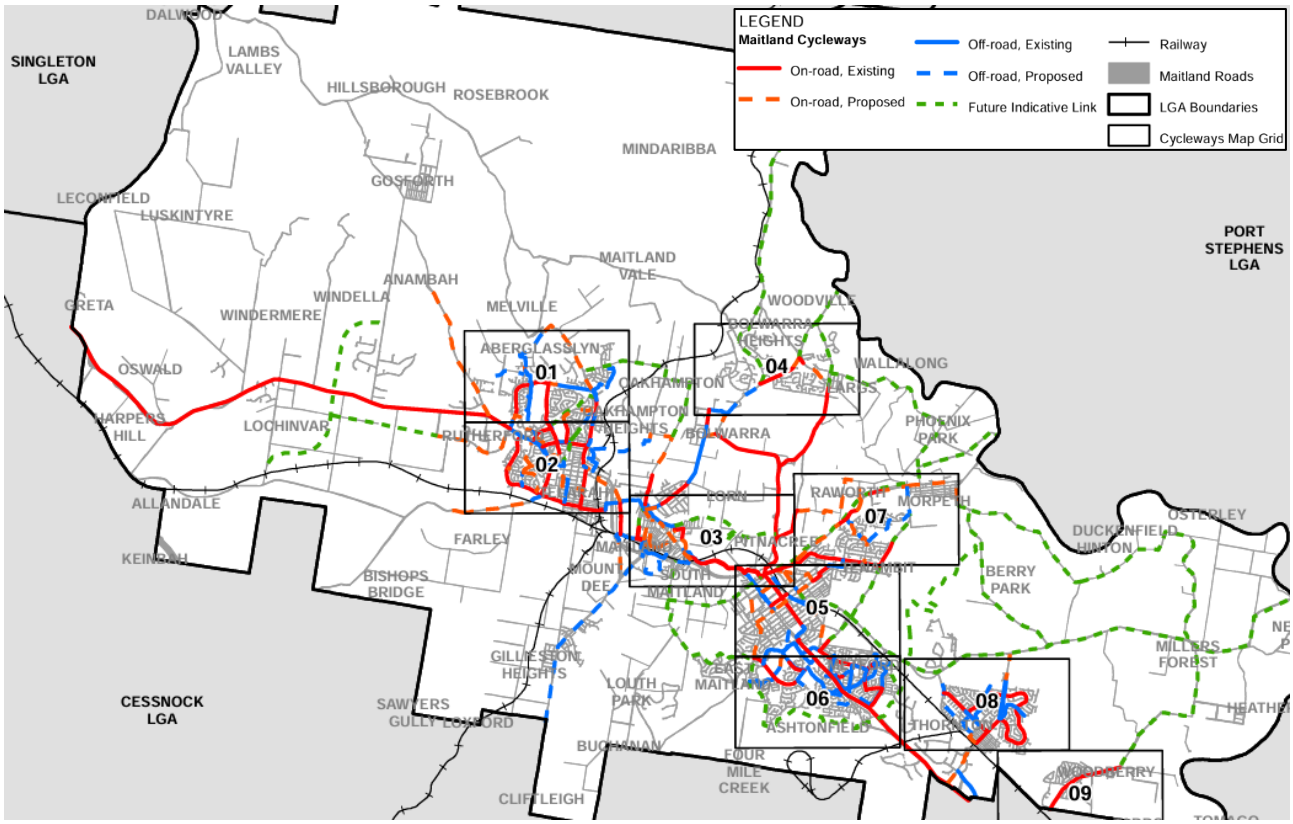
Source (TfNSW, LGA view - crashes map | Transport for NSW) accessed May 2025

2.4 Active Transport

There are currently limited available active transport networks within the vicinity of AURA. For instance, there are no dedicated cycleways near the site and cyclists generally rely on road shoulders.

However, in reference to the Maitland Bicycle Plan and Strategy 2014, New England Highway is presented as an on-street bicycle-friendly route. Anambah Road is a proposed on-street bicycle route, and local road future bicycle links are proposed within the Wyndella, Anambah, and Lochinvar areas. The Maitland City Council Cycleway Routes Index Map is presented in Figure 12.

Figure 12: Maitland City Council Cycleway Routes Index Map (Source: Maitland Bicycle Plan and Strategy 2014)

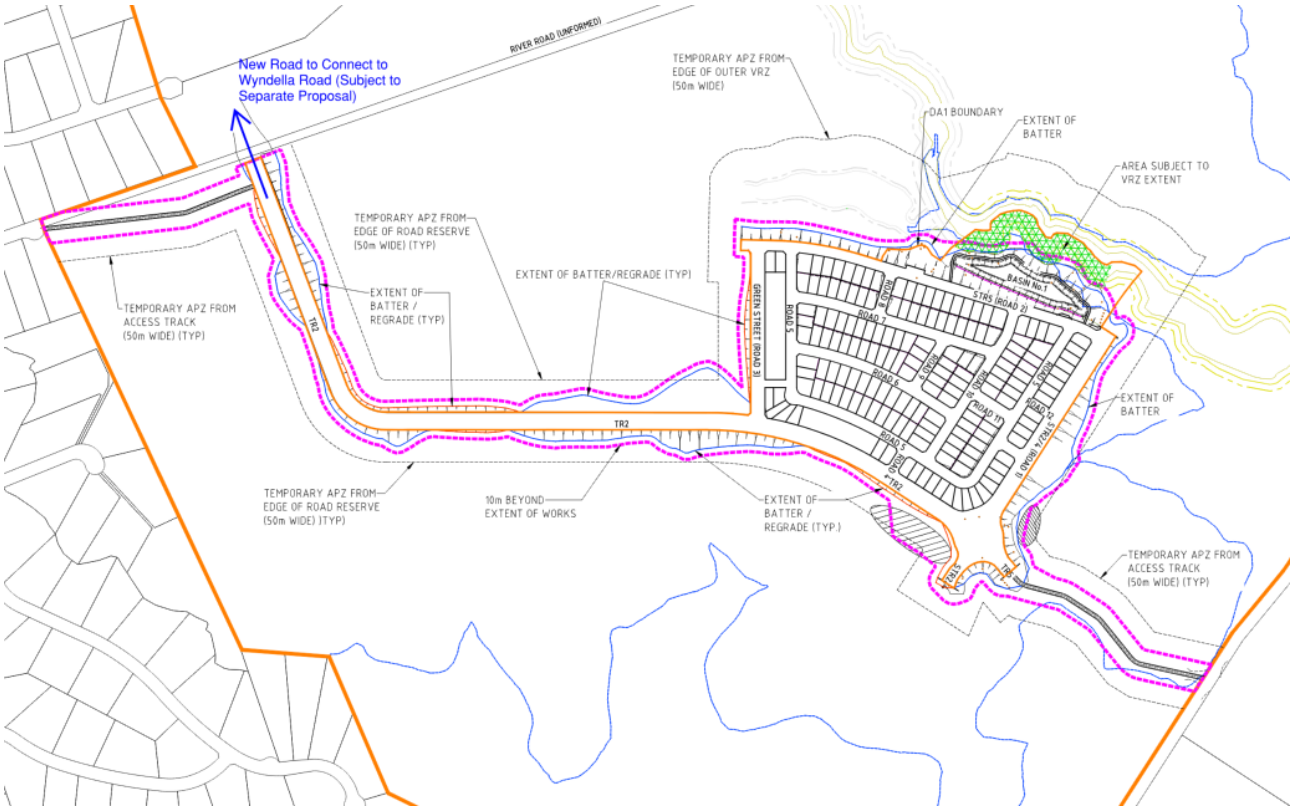


3. Development Proposal

3.1 Overview

It is proposed to subdivide residential zoned land in the south of AURA for residential development. The proposal consists of an extension to the lead in road from the west with the creation (over four stages) of 173 residential lots and 2 development lots (for future re-subdivision) along with a new public road and active movement network along with associated works including bulk earthworks, stormwater management, vegetation riparian zones, bushfire management, landscaping, pathways, utilities and other typical subdivision works.. The subject development application includes proposed new roads, including the section of lead in road as shown in Figure 13.

Figure 13: Site plan and Development Application 1 Area



Source (Anambah - DA1 Extent of Works Plan, E01 Revision 5, GCA Engineering Solutions)

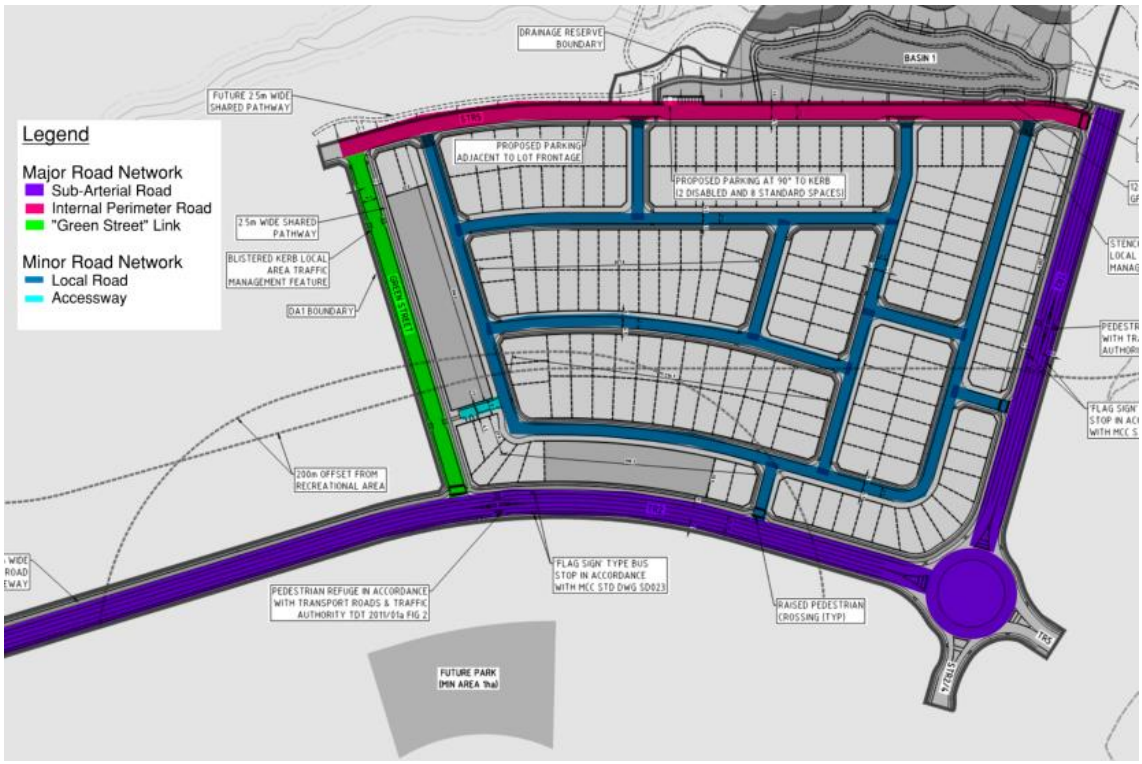
3.2 Proposed Site Access

The DA includes a section of new road as shown in Figure 13. The DA relies on connecting to a new public road west to Wyndella Road and intersection works to the intersection at the New England Highway (separate and concurrent proposals by the applicant). Temporary construction access to the site will be provided via Anambah Road, and two temporary secondary accesses (gated to public road boundary) are proposed (to River Road and to Anambah Road). The internal road network has been assessed in reference to the Maitland City Council Manual of Engineering Standards.

3.2.1 Proposed Road Network

The proposed internal road network in the residential subdivision illustrating the road hierarchy is shown in Figure 14.

Figure 14: Proposed Internal Road Network



Source: Architectural drawing LD1011 R9, GCA Engineering Solutions

Major Road Network

The section of lead in road and the new road that forms the southern and eastern roads (and that intersect as a roundabout) forms a section of sub-arterial road to service AURA and with a function for traffic in excess of the DA proposal, consistent with the planned overall road hierarchy, bus route and active movement network Consistent with pre-application consultation, the urban sub-arterial road is a unique typical cross section that includes a 13-metre-wide carriageway inclusive of 3.5m travel lane and 3.0m parking lane on each direction. No access to the residential lots is permitted on the northern side and western side of this road. A widened verge on the side without vehicular access includes a widened landscape allocation, a 3m dual directional cycleway and 1.5m footpath.

A dual circulating lane roundabout with an approximate diameter of 34m is proposed at the intersection where the sub arterial road changes direction from east-west to north south, consistent with preliminary traffic analysis for AURA and consultation with Council. While this scale of roundabout is not required for AURA DA1, this has been designed to provide a future sub arterial road connection to the east, as well as further development to south, which will form part of the future development applications.

The western road (''Green Street") in the DA is a unique typical cross section to provide a link between future lineal riparian network to the north and future public open space lands to the south that includes an 11-metre-wide carriageway that does not allow access to residential lots on both sides. A widened eastern verge is provided to accommodate 2.5m wide shared path and landscape allocation.

The northern road in the DA is a local perimeter road that includes an 11-metre-wide carriageway and reduced verge on northern side adjoining proposed drainage reserve and future lineal riparian network. A bank of indented parking bays is provided in a local section of this road.

Minor Road Network

The rest of the roads with the local network provides an 8-metre carriageway with roll kerbs on either side of the street and a 1.5-metre concrete footpath on one side. These local roads service the local subdivision and provide vehicular access to the residential dwellings, consistent with the Maitland City Council Manual of Engineering Standards (MCC MOES). A small section of accessway with a carriageway width of 6.0 metres is also provided arising from pre-application consultation with Maitland City Council.

Other Key Features

Other key features of the internal road network include the following:

- Opportunities for bus stops and pedestrian refuge locations are provided along the sub-arterial road
- There are a limited number of local road intersections with the the dual direction verge cycleway and where proposed, includes raised crossing thresholds
- Kerb extension blisters and thresholds as local area traffic management (LATM) measures are provided along the Green Street and at intersections to the perimeter road
- Local road intersections are offsets to avoid four-way intersections
- Street block lengths are generally less than 250 metres, providing connectivity and permeability
- To promoting active travel, an interconnected and permeable pedestrian and shared path network is provided as part of the proposed road network, supported by the dual directional cycleway in the sub-arterial road
- Shared path sections are proposed north of the perimeter road, and a section of 3m wide cyclist only is introduced as part of an ultimate offroad cyclist network identified during pre-application consultation. These sections will be extended through progressive development to form an overall network.

Typical Cross Sections

The typical cross sections of the road network described above are presented in the following figures.

Figure 15: Proposed Typical Cross Section of the Sub Arterial Road (Source: GCA Engineering Solutions, Note: NOT TO SCALE in this Report)

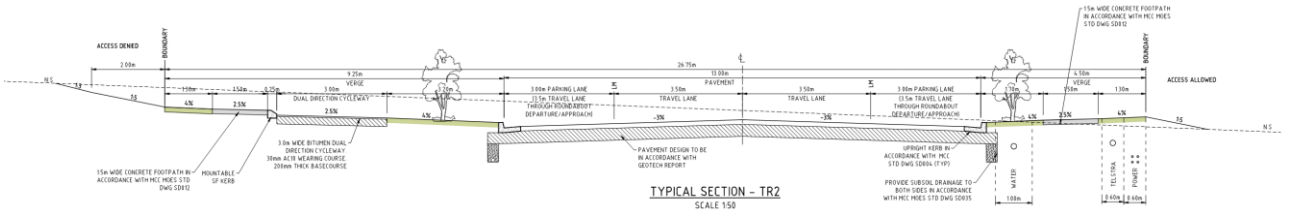


Figure 16: Proposed Typical Cross Section of the Perimeter Road (Source: GCA Engineering Solutions, Note: NOT TO SCALE in this Report)

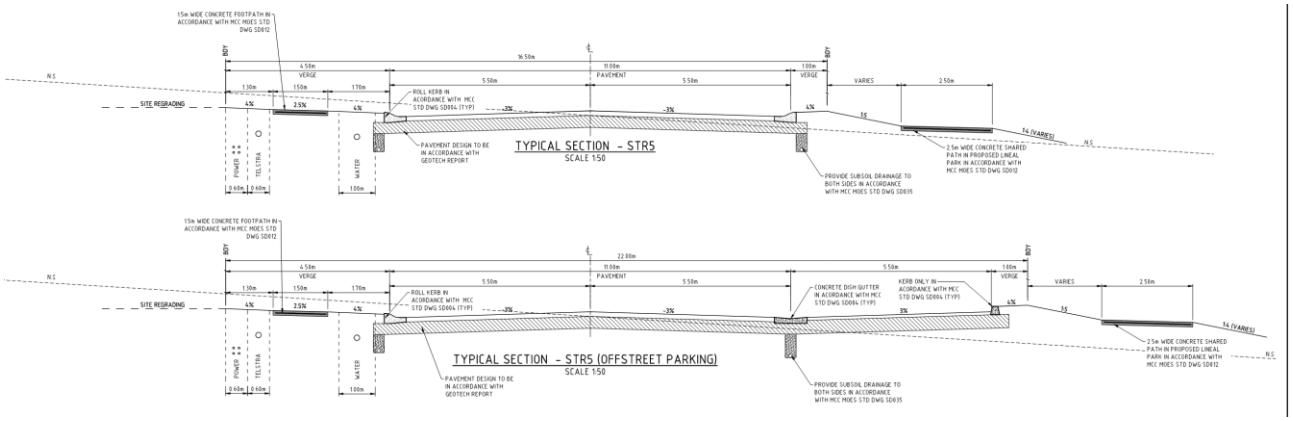


Figure 17: Proposed Typical Cross Section of Green Street (Source: GCA Engineering Solutions, Note: NOT TO SCALE in this Report)

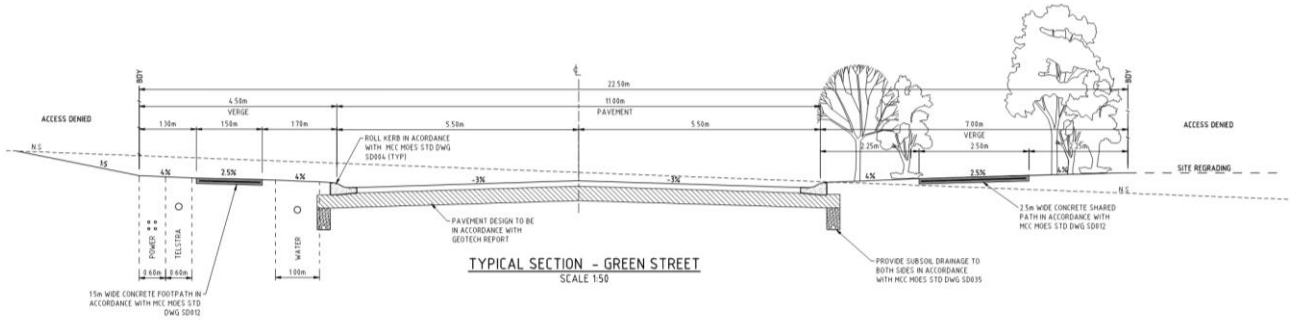


Figure 18: Proposed Typical Cross Section of the Local Roads (Source: GCA Engineering Solutions, Note: NOT TO SCALE in this Report)

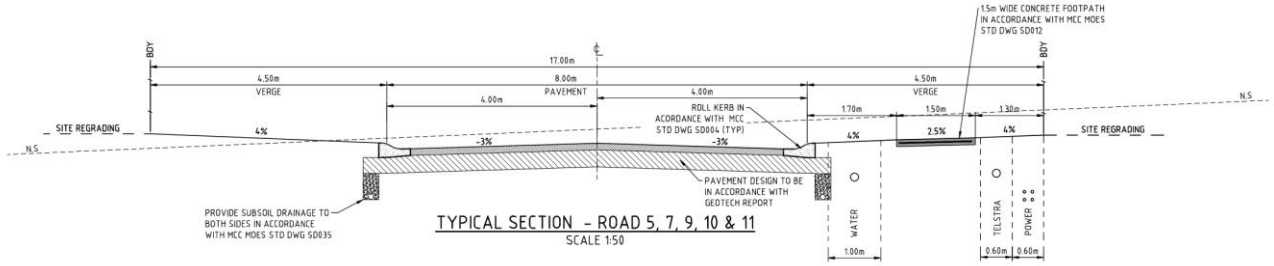
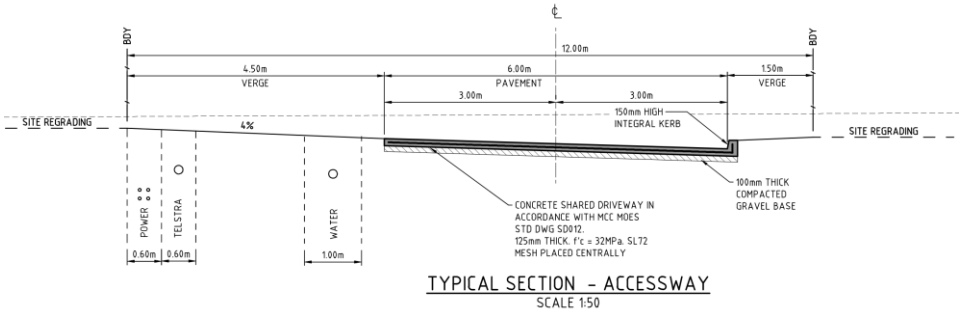


Figure 19: Proposed Typical Cross Section of the Accessway (Source: GCA Engineering Solutions, Note: NOT TO SCALE in this Report)



4. Traffic Impact Assessment

4.1 Traffic Generation and Impact

Stantec has previously provided traffic and transport related advice for the AURA project as part of external intersection traffic analysis, which included identifying the existing travel behaviour of the region based on Journey to Work (JTW) data to inform trip distributions and to determine appropriate traffic generation rates. The rates has been established to be the following:

Peak Hour Traffic Generation Rate 0.85 vehicular trips per dwelling

Daily Trip Generation Rate 9.0 vehicular trips per dwelling

The 0.85 and 9.0 vehicular trip per dwelling trip generation rates have been referenced in this assessment to understand the worst-case scenario impact of the proposed development on the internal road networks, which is considered to be a highly conservative assessment.

Based on the above trip generation rates, the vehicular trips estimated for AURA DA1 are summarised in Table 3. It should be noted that this forms a conservative estimate as this analysis does not take into consideration any trip reductions for internal trips or other linked trip purposes. For the current development application two development lots (super lots) are included, these are intended for future re-subdivision, architectural drawing E01 R3 prepared by GCA Engineering Solutions provides an indicative yield for the development lots. This indicative yield has been used for the trip generation for DA1.

Table 3: Estimated Vehicular Volumes

Lot Type	Yield	AM/PM Peak (0.85 vehicular trips per dwelling)	Daily Trips (9.0 vehicular trips per dwelling)
Standard Residential	173	147	1557
Super Lot (assumed yield)	26	22	234
Total	**175**	**169**	**1791**

It is noted that the anticipated traffic to be generated by AURA DA1 sits well within the previous modelling scenarios as part of the overall AURA development, which has been since supported and approved by the relevant authorities. As such, further traffic modelling and assessments are not considered to be necessary for AURA DA1.

4.2 Other Considerations

The proposed subdivision layout has provided consideration for road hierarchy, defining road types and functions laid out to service the subdivision and consistent with Council's Manual of Engineering Standards in relation to the road network design. The proposed arrangements also consider public transport integration as well as promoting active transport options such walking and cycling.

A temporary construction access from Anambah Road is proposed for the purposes of developing and constructing the subdivision. Temporary access design and assessment of sight lines would be included in a future Construction Traffic Management Plan (expected to be a condition of consent) and associated traffic guidance scheme(s), noting that there are limited issues and constraints with the proposed temporary construction access and that any impacts are anticipated to be readily managed and mitigated.

It is also noted that for the purpose of bushfire protection, a gated temporary access to Anambah Road and River Road are proposed, noting that the bushfire risk is considerably low therefore the use of this temporary gate access is anticipated to be highly unlikely and limited.

5. Conclusion

Based on the analysis and discussions presented within this report, the following conclusions are made:

- The subject of this assessment is referred to as AURA DA1, which involves the development of 173 residential lots and 2 super lots (for future re-subdivsion) and forms part of a larger urban release area that will be progressive developed, referred to as Anambah Urban Release Area (AURA).
- The internal road network for the proposed subdivision has been designed in accordance with the Maitland City Council Manual of Engineering Standards or otherwise as agreed during pre-application consultation, adopting the hierarchy and function of each road type, laid out to accommodate vehicular traffic within the subdivision efficiently.
- Other features within the road network include future provision for bus stop locations, active transport network, shared path, etc.
- The development proposal is anticipated to generate a total of 169 vehicle trips in the AM and PM peak hours and daily trips of 1,791, conservatively.
- The vehicular traffic estimated to be generated by the proposed AURA DA1 is well within the capacity of the proposed mitigation measures and intersection treatment on Wyndella Road and New England Highway and can be accommodated without the need for further assessment or analysis The new public road through to Wyndella Road and the intersection treatments (separate proposals by the applicant) is to be available at the time any residential lot is created.
- A temporary construction access point is proposed from Anambah Road to facilitate the development of the subdivision, as well as temporary gated access on Anambah Road and River Road for the purpose of bushfire protection.
- The proposed AURA DA1 development is therefore not anticipated to provide adverse impacts to the road network and is supported from a transport assessment perspective.

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