



PLANNING AND DEVELOPMENT COMMITTEE

AGENDA

7 MARCH 2023

Notice is hereby given, in accordance with the provisions of the Local Government Act 1993 that a **PLANNING AND DEVELOPMENT COMMITTEE MEETING of ORANGE CITY COUNCIL** will be held in the **COUNCIL CHAMBER, CIVIC CENTRE, BYNG STREET, ORANGE** on **Tuesday, 7 March 2023**.

David Waddell

CHIEF EXECUTIVE OFFICER

For apologies please contact Administration on 6393 8106.

AGENDA

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1 INTRODUCTION

1.1 DECLARATION OF PECUNIARY INTERESTS, SIGNIFICANT NON-PECUNIARY INTERESTS AND LESS THAN SIGNIFICANT NON-PECUNIARY INTERESTS

The provisions of Chapter 14 of the Local Government Act, 1993 (the Act) regulate the way in which Councillors and designated staff of Council conduct themselves to ensure that there is no conflict between their private interests and their public role.

The Act prescribes that where a member of Council (or a Committee of Council) has a direct or indirect financial (pecuniary) interest in a matter to be considered at a meeting of the Council (or Committee), that interest must be disclosed as soon as practicable after the start of the meeting and the reasons given for declaring such interest.

As members are aware, the provisions of the Local Government Act restrict any member who has declared a pecuniary interest in any matter from participating in the discussion or voting on that matter, and requires that member to vacate the Chamber.

Council's Code of Conduct provides that if members have a non-pecuniary conflict of interest, the nature of the conflict must be disclosed. The Code of Conduct also provides for a number of ways in which a member may manage non pecuniary conflicts of interest.

RECOMMENDATION

It is recommended that Committee Members now disclose any conflicts of interest in matters under consideration by the Planning and Development Committee at this meeting.

2 GENERAL REPORTS

2.1 ITEMS APPROVED UNDER THE DELEGATED AUTHORITY OF COUNCIL

RECORD NUMBER: 2023/79

AUTHOR: Paul Johnston, Manager Development Assessments

EXECUTIVE SUMMARY

Following is a list of more significant development applications approved by the Chief Executive Officer under the delegated authority of Council. Not included in this list are residential scale development applications that have also been determined by staff under the delegated authority of Council (see last paragraph of this report for those figures).

LINK TO DELIVERY/OPERATIONAL PLAN

The recommendation in this report relates to the Delivery/Operational Plan Strategy “7.1. Engage with the community to develop plans for growth and development that value the local environment”.

FINANCIAL IMPLICATIONS

Nil

POLICY AND GOVERNANCE IMPLICATIONS

Nil

RECOMMENDATION

That Council resolves to acknowledge the information provided in the report by the Manager Development Assessments on Items Approved Under the Delegated Authority of Council.

FURTHER CONSIDERATIONS

Consideration has been given to the recommendation’s impact on Council’s service delivery; image and reputation; political; environmental; health and safety; employees; stakeholders and project management; and no further implications or risks have been identified.

Reference:	DA 127/2022(1)	Determination Date:	13 February 2023
PR Number	PR29161		
Applicant/s:	Willowdene Constructions Pty Ltd		
Owner/s:	Mr GJ and Mrs KL Stevenson		
Location:	Lot 301 DP 1280002 - 145 Diamond Drive, Orange		
Proposal:	Dual occupancy (detached) and subdivision (two lot residential - Torrens title)		
Value:	\$600,000		

2.1 Items Approved Under the Delegated Authority of Council

Reference: DA 129/2022(1) **Determination Date:** 10 February 2023
PR Number PR12823
Applicant/s: Mr JA Cantrill
Owner/s: Mr JA and Mrs DM Cantrill
Location: Lot 170 DP 595892 - 145-147 Woodward Street, Orange
Proposal: Mixed use development (business premises (new); neighbourhood shop (alterations and additions); takeaway food and drink premises (alterations) dwelling (alterations and additions); secondary dwelling (new); carport (new); ancillary alterations to existing development (commercial shopfront façade upgrades, fencing; clothes drying area, accessibility upgrades, sanitary facilities, reconfiguration/upgrade of internal car park and demolition (sheds))
Value: \$385,000

Reference: DA 297/2022(1) **Determination Date:** 27 January 2023
PR Number PR2156
Applicant/s: Mr JA and Mrs J Crombie
Owner/s: Mr JA and Mrs JK Crombie
Location: Lot 5 DP 6173 - 140 Cadia Road, Springside
Proposal: Dual occupancy (one additional rural dwelling) and shed
Value: \$840,000

Reference: DA 299/2022(1) **Determination Date:** 10 February 2023
PR Number PR29162
Applicant/s: Contemporary Homes Pty Ltd
Owner/s: Ms JN Smith
Location: Lot 302 DP 1280002 - 147 Diamond Drive, Orange
Proposal: Subdivision (two lot residential), dwellings (two) and secondary dwelling
Value: \$965,790

Reference: DA 332/2022(1) **Determination Date:** 16 February 2023
PR Number PR29454
Applicant/s: Mr T Bassmann
Owner/s: Mr MJ Pearce
Location: Lot 34 DP 1264769 - 8 Kanzi Close, Orange
Proposal: Dwelling (two storey), attached garage, swimming pool (inground) and pool cabana
Value: \$1,459,399

2.1 Items Approved Under the Delegated Authority of Council

Reference: DA 359/2022(1) **Determination Date:** 10 February 2023
PR Number PR5575
Applicant/s: Jennifer and Brian Greenfield
Owner/s: Mr BJ and Mrs JA Greenfield
Location: Lot 134 DP 810681 - 17 James Ryan Avenue, Orange
Proposal: Subdivision (three lot Torrens title) and demolition (detached garage)
Value: N/A

Reference: DA 384/2022(1) **Determination Date:** 10 February 2023
PR Number PR28781
Applicant/s: Ms A Moorey, James Sheahan Catholic High School
Owner/s: The Trustees of the Roman Catholic Church for the Diocese of Bathurst
Location: Lot 1 DP 1268025 - 49 Anson Street, Orange
Proposal: School (alterations and additions - walkway covers x two)
Value: \$112,000

Reference: DA 13/2023(1) **Determination Date:** 27 January 2023
PR Number PR26766
Applicant/s: IHGROUP Pty Ltd
Owner/s: Tot Nominees Pty Ltd
Location: Lot 2 DP 1202010 - 64 Valencia Drive, Orange
Proposal: Business identification signage (three wall signs and one pylon sign)
Value: \$10,000

TOTAL NET* VALUE OF DEVELOPMENTS APPROVED BY THE CEO UNDER DELEGATED AUTHORITY IN THIS PERIOD:	\$4,372,189.00
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** **Net** value relates to the value of modifications. If modifications are the same value as the original DA, then nil is added. If there is a plus/minus difference, this difference is added or taken out.*

Additionally, since the February 2023 meeting report period (25 January to 21 February 2023), another 21 development applications were determined under delegated authority by other Council staff with a combined value of \$5,043,671.

Between July 2022 and January 2023, 263 development applications have been approved by Council with a total value of \$108,000,000.

2.2 DEVELOPMENT APPLICATION - DA 293/2022(1) - EX-SERVICES COUNTRY CLUB - LOT 205 FOREST ROAD

RECORD NUMBER: 2023/33
AUTHOR: Ben Hicks, Senior Planner

EXECUTIVE SUMMARY

Application lodged	31 August 2022
Applicant/s	Orange Ex-Services Club Limited
Owner/s	Orange Ex-Services Club Country Club
Land description	Lot 205 DP 42900 - Forest Road, Orange
Proposed land use	Recreation Facility (outdoor) (alterations and additions)
Value of proposed development	\$412,500

Consent is sought for additions to the Orange Ex-Services Club (OESC) Country Club site, located in the Bloomfield Public Health Campus at 1584 Forest Road, Orange.

The proposal involves an additional bowling green, a children's playground, floodlighting, and upgrading of the car park.

The development application comprises Nominated Integrated Development. Bloomfield Hospital (and including the subject land) is listed on the State Heritage Register, with Heritage NSW providing their Terms of Approval.

Objections have been received with regard to noise and light spill impacting adjoining land. Through the implementation of conditions, a satisfactory outcome can be achieved which minimises impacts to the locality.

The application has been tabled to the Planning Development Committee for determination at the request of Councillors, pursuant to Clause 4.10(15) Delegations of Orange City Council's *Declaration of Planning and Development Assessment Procedures and Protocols (Vers 5, 2019)*.

As outlined in this report, the proposal will satisfy the planning controls that apply to the subject land and particular landuse. Approval of the application is recommended.



Figure 1 - site context and locality map

DECISION FRAMEWORK

Development in Orange is governed by two key documents: Orange Local Environment Plan 2011 and Orange Development Control Plan 2004. In addition, the Infill Guidelines are used to guide development, particularly in the heritage conservation areas and around heritage items.

Orange Local Environment Plan 2011 - the provisions of the LEP must be considered by the Council in determining the application. LEPs govern the types of development that are permissible or prohibited in different parts of the City and also provide some assessment criteria in specific circumstances. Uses are either permissible or not. The objectives of each zoning and indeed the aims of the LEP itself are also to be considered and can be used to guide decision making around appropriateness of development.

Orange Development Control Plan 2004 - the DCP provides guidelines for development. In general, it is a performance-based document rather than prescriptive in nature. For each planning element there are often guidelines used. These guidelines indicate ways of achieving the planning outcomes. It is thus recognised that there may also be other solutions of merit. All design solutions are considered on merit by planning and building staff. Applications should clearly demonstrate how the planning outcomes are being met where alternative design solutions are proposed. The DCP enables developers and architects to use design to achieve the planning outcomes in alternative ways.

DIRECTOR'S COMMENTS

The application seeks approval for the construction of a new bowling green to the west of the existing green at the Ex-Services Country Club at Bloomfield. Whilst the new bowling green would be in a similar position to a previous green, this application is assessed as a new application. The application proposes the installation of the six light poles to illuminate both the bowling green, along with upgrading of the carparking areas including resurfacing, line marking, and lighting and the installation of a small children's playground.

Particular attention with the assessment of this application has been undertaken having regard to the neighbouring sensitive users, including the neighbouring Western Care Lodge. During the public exhibition period Council received three submissions (these include submissions from Western Care Lodge). The key issues raised relate to noise and light spill impacting adjoining land and the potential impact on residents of the Lodge who are undergoing cancer treatment.

The applicant has responded to concerns raised in the submission and offered to restrict hours of operation/use of the bowling greens (to 9pm), the location and intensity of lights (lighting levels will restrict use to local games, not competition games), and also restricting the use of the carpark (lights will not remain on late at night - they are just for the Club patrons, not the broader medical precinct). The playground is only small, but its use will be restricted (to 8pm) to ensure impacts upon neighbours are not significant. Conditions of consent that reflect the agreed changes by the Ex-Services Club have been applied. It is considered that this is a reasonable response to the legitimate concerns raised by the neighbours. The assessment report concludes that the development as amended by the proposed consent document, will not cause unreasonable impact on the adjacent Western Care Lodge. It is recommended that Council supports the recommended Notice of Determination.

LINK TO DELIVERY/OPERATIONAL PLAN

The recommendation in this report relates to the Delivery/Operational Plan Strategy “10.1. Engage with the community to ensure plans for growth and development are respectful of our heritage”.

FINANCIAL IMPLICATIONS

Nil

POLICY AND GOVERNANCE IMPLICATIONS

Nil

RECOMMENDATION

That Council consents to development application DA 293/2022(1) for *Recreation Facility (outdoor) (alterations and additions)* at Lot 205 DP 42900 - Forest Road, Orange pursuant to the conditions of consent in the attached Notice of Determination.

FURTHER CONSIDERATIONS

Consideration has been given to the recommendation’s impact on Council’s service delivery; image and reputation; political; environmental; health and safety; employees; stakeholders and project management; and no further implications or risks have been identified.

THE APPLICATION/PROPOSAL

The application submitted by the applicant seeks approval for the provision of an additional bowling green to the west of the existing green (replacing the green that was previously removed circa 2011). The application is also seeking the installation of the six light poles to illuminate both the bowling greens, upgrading of the carparking areas including resurfacing, line marking, and lighting and the installation of a children’s playground. Detailed description of the works and supporting diagrams are provided below:

Bowling green

The proposed bowling green will comprise an area 1,296m² (36m x 36m). It is understood that this is the same size of the eastern green. The new bowling green will be constructed of a sand base synthetic surface. It should be noted that the new bowling green will be positioned on the site more or less in the same location of the previous green.

2.2 Development Application - DA 293/2022(1) - Ex-Services Country Club - Lot 205 Forest Road

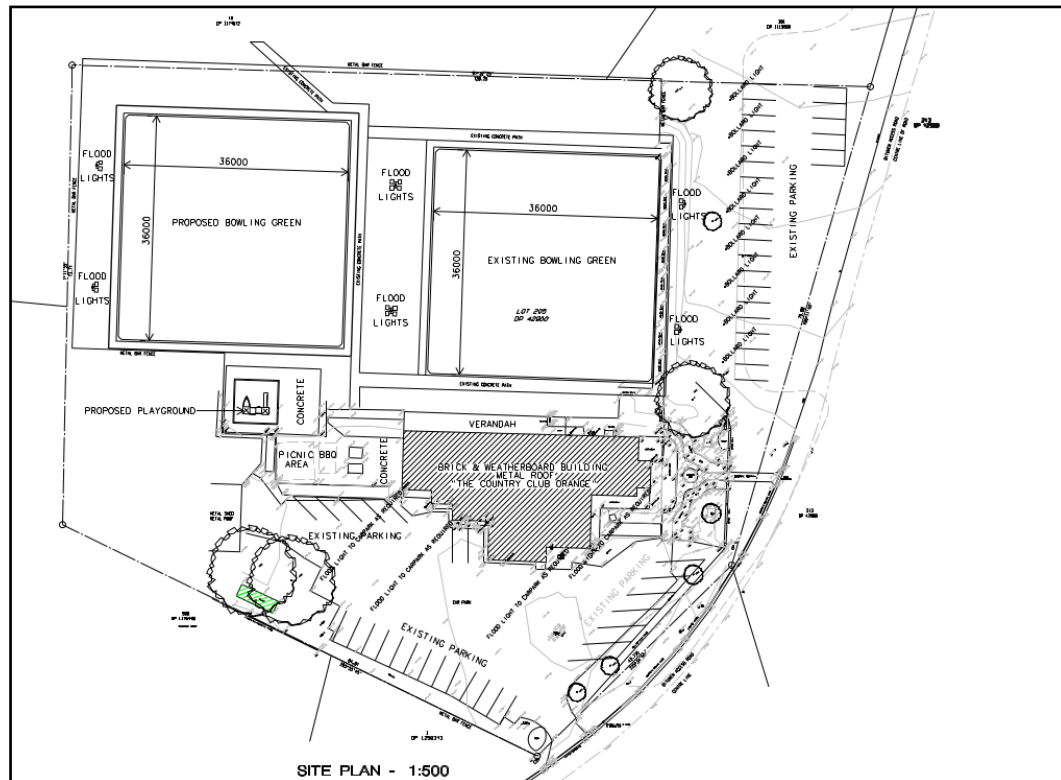


Figure 2 - proposed site design/layout

Bowling green and car park lighting

The proposal involves the installation of six x 12m high light poles with floodlights attached. Two poles will be located on the carpark side of the eastern green, two poles with lights mounted back-to-back will be positioned in between the two greens and remaining two poles will be located on the western side of the proposed western green.

A row of bollard lighting is proposed between the eastern green and the adjoining parking area to provide additional safety and security for patrons at night.

Illumination of the rear main car park is also proposed with flood lights affixed to the rear of the clubhouse building.



Figure 3 - photomontage of proposed light poles when viewed from eastern carpark



Figure 4 - photomontage of proposed light poles when viewed from western side of bowling green noting existing light poles in the background at Bloomfield Oval

Outdoor play equipment

A small modular playground is proposed to be installed on the existing slab west of the clubhouse. Softfall will be provided as part of its installation.



Figure 3 - proposed playground

Carpark upgrades

The two existing carparking areas are proposed to be resurfaced and lined marked so as to provide a more efficient parking layout. All driveway and parking areas will be required are to be sealed with bitumen, hot mix or concrete and are to be designed for all expected loading conditions in accordance with Council's development code.

ENVIRONMENTAL PLANNING ASSESSMENT**Section 1.7 - Application of Part 7 of the *Biodiversity Conservation Act 2016* and Part 7A of the *Fisheries Management Act 1994***

Pursuant to Section 1.7:

This Act has effect subject to the provisions of Part 7 of the [Biodiversity Conservation Act 2016](#) and Part 7A of the [Fisheries Management Act 1994](#) that relate to the operation of this Act in connection with the terrestrial and aquatic environment.

In consideration of this section, the development is not likely to impact terrestrial and aquatic environments. In this regard:

- The subject and adjoining lands are not identified as biodiversity sensitive on the Orange LEP 2011 [Terrestrial Biodiversity Map](#).
- The proposal does not involve removal of native vegetation. Clearing thresholds prescribed by regulation are not relevant to the application.
- The proposal is not likely to have a significant effect on threatened species, nor impact endangered ecological communities:
 - the development site is a highly modified urban environment
 - the proposal does not involve clearing of native or exotic vegetation
 - the proposed works will not impact on nearby sensitive waterways
 - the site does not contain mapped biodiversity land at Local or State level

2.2 Development Application - DA 293/2022(1) - Ex-Services Country Club - Lot 205 Forest Road

- the development does not involve removal of natural or built features that would provide habitat for native fauna.
- The land is not categorised as having outstanding biodiversity value.

Based on the foregoing consideration, a Biodiversity Assessment Report is not required, and the proposal suitably satisfies the relevant matters at Section 1.7.

PROVISIONS OF ANY ENVIRONMENTAL PLANNING INSTRUMENT s4.15(1)(a)(i)

Orange Local Environmental Plan 2011

Clause 1.2 - Aims of Plan

The broad aims of the LEP are set out under Subclause 2. Those relevant to the application are as follows:

- (a) *to encourage development which complements and enhances the unique character of Orange as a major regional centre boasting a diverse economy and offering an attractive regional lifestyle,*
- (b) *to provide for a range of development opportunities that contribute to the social, economic and environmental resources of Orange in a way that allows present and future generations to meet their needs by implementing the principles for ecologically sustainable development,*
- (f) *to recognise and manage valued environmental heritage, landscape and scenic features of Orange.*

The application is considered to be consistent with the aims of the plan, as outlined in this report.

Clause 1.6 - Consent Authority

This clause establishes that, subject to the Act, Council is the consent authority for applications made under the LEP.

Clause 1.7 - Mapping

The subject site is identified on the LEP maps in the following manner:

Land Zoning Map:	Land zoned RE1 Public Recreation
Lot Size Map:	No Minimum Lot Size
Heritage Map:	Not a local heritage item (State Heritage item)
Height of Buildings Map:	No building height limit
Floor Space Ratio Map:	No floor space limit
Terrestrial Biodiversity Map:	No biodiversity sensitivity on the site
Groundwater Vulnerability Map:	Groundwater vulnerable
Drinking Water Catchment Map:	Within the drinking water catchment
Watercourse Map:	Not within or affecting a defined watercourse
Urban Release Area Map:	Not within an urban release area
Obstacle Limitation Surface Map:	No restriction on building siting or construction
Additional Permitted Uses Map:	No additional permitted use applies
Flood Planning Map:	Not within a flood planning area

Those matters that are of relevance are addressed in detail in the body of this report.

Clause 1.9A - Suspension of Covenants, Agreements, and Instruments

Clause 1.9A is applicable and states in part:

- (1) *For the purpose of enabling development on land in any zone to be carried out in accordance with this Plan or with a consent granted under the Act, any agreement, covenant or other similar instrument that restricts the carrying out of that development does not apply to the extent necessary to serve that purpose.*

In consideration of this clause, Council staff are not aware of the title of the subject property being affected by a relevant agreement, covenant, etc. The site benefits from right-of-way for vehicular access.

Clause 2.1 - Land Use Zones

The subject land is zoned RE1 Public Recreation.

The proposed development is defined as a 'recreation facility (outdoor)'.

The proposal is permitted with consent in the RE1 zone.

Clause 2.3 - Zone Objectives and Land Use Table

The objectives of the RE1 Public Recreation Zone are:

- *To enable land to be used for public open space or recreational purposes.*
- *To provide a range of recreational settings and activities and compatible land uses.*
- *To protect and enhance the natural environment for recreational purposes.*
- *To ensure development is ordered in such a way as to maximise public transport patronage and encourage walking and cycling in close proximity to settlement.*
- *To ensure development along the Southern Link Road has alternative access.*

The proposal will satisfy the relevant RE1 zone objectives. The existing recreational use of the land will be maintained. The proposed works will not adversely impact on the natural environment. Existing traffic arrangements will not be altered.

Clause 5.10 - Heritage Conservation

Land adjoining the development site contains a State listed heritage item:

Bloomfield Hospital Nymagee Lodge, including landscape features, entry gateway, Elm Avenue, and grounds (Item 21).

The subject land, however, is excluded from the heritage listing pursuant to Schedule 5 and the Heritage Map. Notwithstanding, consideration needs to be given to any potential impact the development may have on the adjoining heritage setting. It is considered that the proposal is unlikely to have an adverse impact due to the following:

- a) the proposed development involves reinstating a previously removed element of the Country Club
- b) the installation of the six light poles to illuminate the bowling greens and parking areas is not incongruous in the context and setting

- c) the material used for the bowling green light poles will comprise galvanised metal so as to be visually recessive in landscape. Further, given the height of the lighting structures they are unlikely to interrupt the visual quality of the area.

7.1 - Earthworks

The earthworks proposed in the application are limited to the excavation of approximately 400m³ for the construction of the bowling green.

The disruption to the drainage of the site will not detrimentally affect adjoining properties or receiving waterways. The earthworks will be appropriately supported onsite and the change in ground level will not affect the amenity of adjoining properties.

The earthworks will not materially affect the potential future use or redevelopment of the site. The site is not known to be contaminated, and excavated materials will be disposed of to an appropriate destination, as advised in the SoEE.

The site is not known to contain any Aboriginal, European, or Archaeological relics; however, a condition has been imposed regarding unexpected finds.

The site is in proximity to a drinking water catchment, and therefore a condition is imposed to require a sediment control plan to ensure that loose dirt and sediment does not escape the site boundaries.

Clause 7.6 - Groundwater Vulnerability

In consideration of Clause 7.6, there are no aspects of the proposed development that will impact on groundwater and related ecosystems.

Clause 7.7 - Drinking Water Catchment

A small portion of the subject land is identified as “Drinking Water” on the Drinking Water Catchment Map. In consideration of Clause 7.7, there are no aspects of the proposed development that will impact on drinking water storage. Recreational facilities and ancillary carparking is a longstanding use of the land. The proposal will not substantially increase impervious surfaces.

Clause 7.11 - Essential Services

In consideration of this clause, all utility services are available to the land and adequate for the proposal.

STATE ENVIRONMENTAL PLANNING POLICIES

State Environmental Planning Policy (Resilience and Hazards) 2021

In consideration of this clause, the subject land has longstanding recreational use and is unlikely to be contaminated. Contamination investigation is not warranted for the reinstatement of a bowling green and resurfacing of the carpark. The contamination status of adjoining land will have nil impact on the proposed development.

INTEGRATED DEVELOPMENT

The subject land is listed as a State Heritage Item on the State Heritage Register. Works to a State Heritage Item generally require development consent under the EPAA 1979 and heritage approval pursuant to the Heritage Act 1977.

As such, development relating to State Heritage Items typically comprises integrated development under Section 4.46 of the EPAA 1979.

Pursuant to Section 57(1) of the Heritage Act 1977, approval is required to alter the fabric of a State listed item. As such, concurrence was sought from Heritage NSW, who granted their General Terms of Approval on 26 October 2022, with conditions relating to unexpected finds, aboriginal objects, compliance, and the need for a Section 60 application. These conditions have been imposed upon the consent.

PROVISIONS OF ANY DEVELOPMENT CONTROL PLAN s4.15(1)(a)(iii)**Development Control Plan 2004****Part 11 - Use of Public Open Space Land**

The land is privately owned and not subject to a plan of management. The proposal will not be contrary to any matter in Part 11.

Part 15 - Carparking

The DCP does not prescribe a carparking requirement for a bowling green.

Notwithstanding, the proposed development is considered satisfactory with regard to parking, due to the following:

- The development seeks to reinstate the former bowling green, established sometime before the 1960s, and removed approximately 2011.
- The development does not result in an increase in demand for onsite parking given the historic credits associated with the site.
- The current parking area will be resurfaced and line-marked, in compliance with Council's current standard, and will provide a long-overdue efficiency to carparking upon the site.

INFILL GUIDELINES

The proposed development is not contrary to Council's Infill Policy.

PROVISIONS PRESCRIBED BY THE REGULATIONS s4.15(1)(a)(iv)

The proposed development will not be contrary to any matter prescribed by Regulation.

THE LIKELY IMPACTS OF THE DEVELOPMENT s4.15(1)(b)**Context and Setting**

The subject land is a landlocked parcel within the Bloomfield public health campus. The land is contained within an historical recreational precinct within the site, nearby to cricket oval, swimming pool and (now closed) golf course, and adjoins health facilities such as hospitals and temporary lodgings. The development will facilitate the reinvigoration of the Country Club and continue the historic use of the site. The development will not be incongruous with the context and setting of the locality.

Lighting and Glare Impacts

The development involves the installation of six new light towers at a height of 12m to provide illumination of the proposed and existing bowling green facilities for evening time use. It is also proposed to install lighting to the adjoining parking areas to provide additional safety and security for patrons at night. The lighting design will comprise a mix of flood and bollard lighting.

It is normal for there to be some degree of light impact from a development of this nature given it is impossible to contain all light within the boundaries of the property on which the lighting system is installed in an outdoor setting - this occurs either through direct emission or reflection. Deciding when this light spill becomes intrusive to others is also challenging since it is influenced by both physical and psychological factors.

Further, just because light is visible does not necessarily mean it is obtrusive or disruptive to the surrounding environment. Factors such as intensity, direction, timing, colour, and the surrounding environment all contribute to the perceived obtrusiveness of outdoor lighting, and it is important to consider all of these elements in order to minimise the impact on the surrounding area. This is where the Australian Standard AS4282:2019: *Control of the Obtrusive effects of outdoor lighting* comes into effect.

The standard covers lighting design, installation, and operation practices that help control the amount and direction of light emitted. The standard considers factors such as light distribution, intensity, colour, and timing, as well as the potential impact on the surrounding environment. By following the guidelines outlined in AS 4282:2019, outdoor lighting can be designed, installed, and operated in a way that reduces the obtrusive effects on the surrounding area and its occupants.

There are many successful examples of the application of this standard within the City and elsewhere with regards to sport facility lighting including scenarios where sports lighting is installed near sensitive receivers such as residential development, health care facilities etc.

The applicant has advised that the lighting design for the bowling greens will include luminaires that will have an asymmetric type of light distribution meaning that the light is directed only towards the task reducing the light spill into the surroundings. This is known as a 'Type C' or 'environmental' floodlight - refer to Figure 4.

This type of lighting results in minimal disturbance to the environment as the light is cut off effectively, as demonstrated in Figure 5. This is consistent with the requirements of the Australian standard. Even though Figure 5 shows a major sports lighting installation with much stronger light than what is planned/needed at the Ex-Services Bowling Club, similar results with reduced light spill can still be achieved by using lights with special light distribution and aiming them correctly so the front glasses are horizontal, as proposed by the applicant.

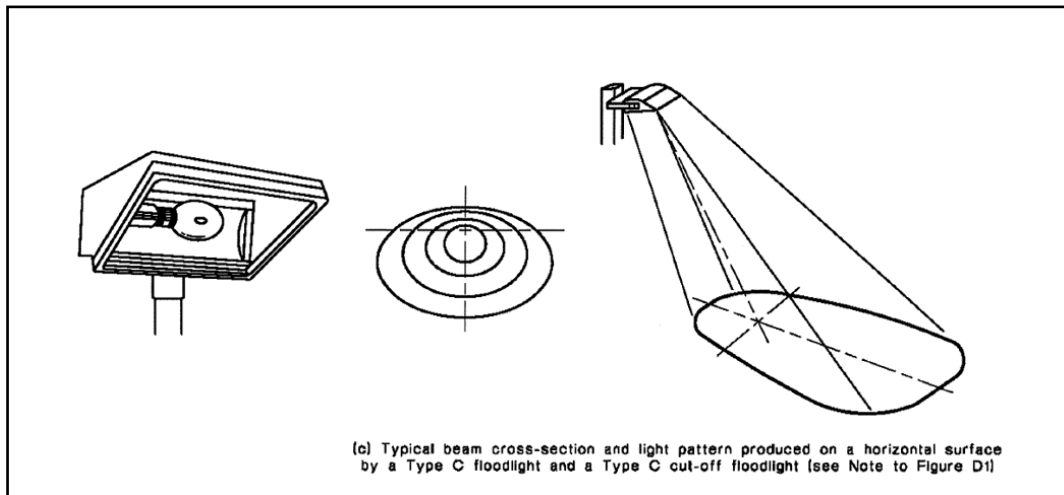


Figure 4 - Typical 'Type C' flood light and distribution



Figure 5 - Belconnen Soccer Club Source: Dr Tim Shotbolt (light and the biosphere)

In a more applicable scenario, Figure 6 shows lighting installed at Wakool Bowls Club in southern New South Wales c2021. This figure shows the standard lighting format for a bowling green - four corner poles at 12m high. Information obtained from Legacy Lighting (Bowls Australia lighting partner) provides that for lawn bowls, the current lighting levels are 100 lux for local games and 200 lux for competitions which is specified in the Australian Standard AS 2560.2.8 *Guide to sports lighting - bowling greens*.

2.2 Development Application - DA 293/2022(1) - Ex-Services Country Club - Lot 205 Forest Road

It is understood that the main factors in deciding the lux level are how fast the ball is moving and how big the ball is, and it is for this reason the recommended lux levels for say hockey or tennis are much higher than those for lawn bowls - this is evident when comparing the intensity of the light beam shown in Figures 5 and 6. It should be noted that the lux levels shown in Figure 6 stands at 275 lux which is more than 175 lux than the recommend levels for local games and to that which will be utilised in the proposed development. Notwithstanding, the higher lux as shown in Figure 6 still has minimal light spill beyond the boundary of the green. The light spill that does occur is primarily due the arrangement/format for the lighting i.e., four corner poles.



Figure 6 - Wakool Bowls Club Source: Bowls Australia

The lighting arrangement proposed for the Ex-Services Bowling Club greens will be slightly different to that shown in Figure 6. The lighting arrangement proposed will comprise two light poles down each side of the green. Legacy Lighting advise that this is an accepted format and a preferable option where sensitive receivers are very close by as it provides greater degree of control of light spillage and glare. By way of example, Legacy Lighting have provided the following simple drawing and simulated files from AGi32, the design software, as to why this is the case. The lights used are identical, at the same height and tilted to the same amount.

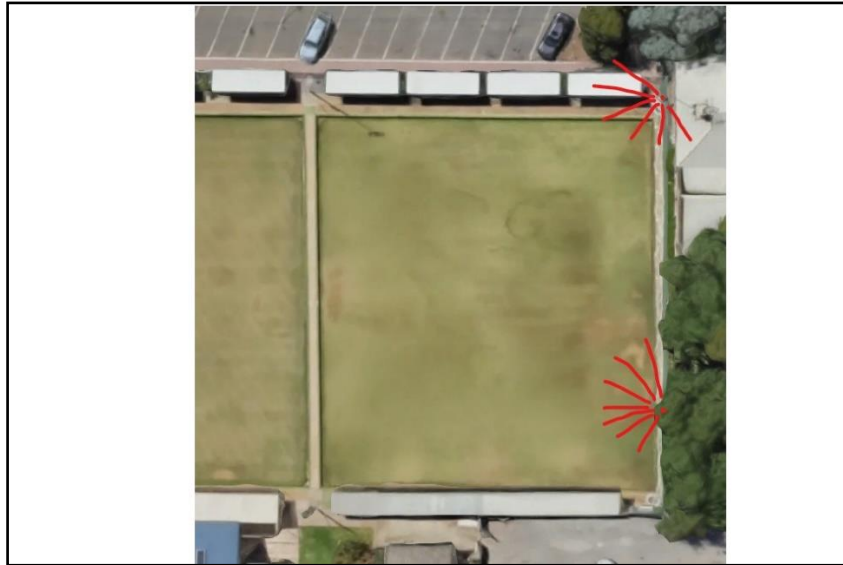


Figure 7 - simple diagram showing indicative direction of light - corner pole vs side pole Source: Legacy Lighting

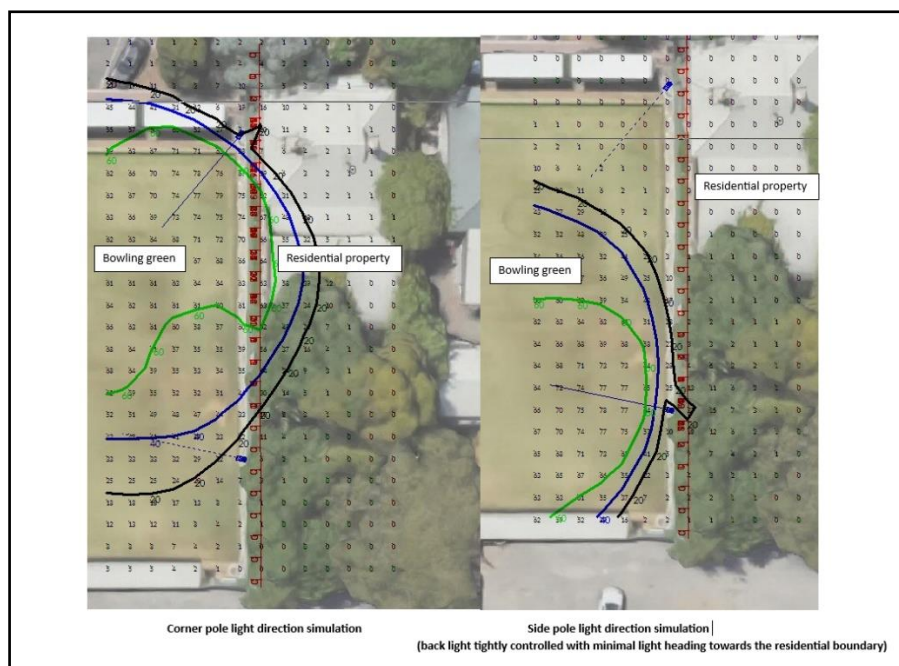


Figure 8 - simulated diagrams using AGi32 corner pole vs side pole Source: Legacy Lighting

This format generally needs a light pole height of 8m to work effectively; however, the applicant has proposed 12m high poles. The greater mounting height has greater light spill and glare control as specified in Table 3.1 of AS 4282 (Figure 9) which is also depicted diagrammatically in Figure 10. The standard provides that a lower mounting height would mean that flood lights need to be aimed in directions closer to the horizontal with unwanted light being projected some distance from the installation and greater possibility of bright parts of the flood lights also being visible from a considerable distance away. In this respect, the proposed design in terms of mounting height is considered appropriate for the environment and nearby sensitive receivers.

2.2 Development Application - DA 293/2022(1) - Ex-Services Country Club - Lot 205 Forest Road

TABLE 3.1 POSSIBLE EFFECTS ON SPILL LIGHT FROM CHANGES TO THE INSTALLATION PARAMETERS*					
1 Parameter	2 Dimension	3 Advantages	4 Disadvantages	5 Influence on design	6 Comments
1 Mounting height	Greater ↑	—Less spill light —Simplified shielding —Less glare from luminaires (see comment in Column 6)	—More conspicuous by day	—Narrower beams —Tighter beam control —More downward aiming	—Higher mounting implies more conspicuity but allows better control of spill light —Mounting height may be determined by lighting requirements, e.g. in relevant Standards, or vertical illuminance component required for the application
	↓ Smaller	—Less conspicuous by day	—More spill light —More difficult to shield —More glare from luminaires (see comment in Column 6)	—Smaller lamps —Wider beams —More upward aiming	—The listed advantages and disadvantages are reversed for Type C cut-off floodlights that incorporate a pre-set aiming angle, i.e. with no means of adjusting the beam

Figure 9 - light spillage effects (mounting height) Source: AS 4282

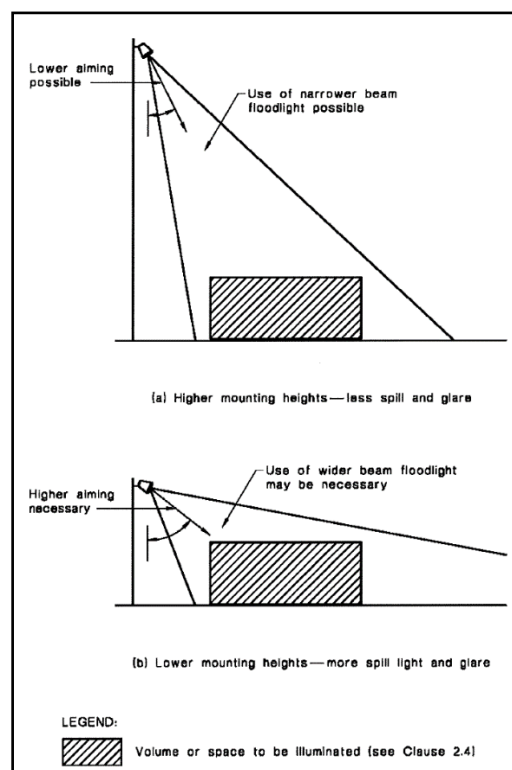


Figure 10 - effect of mounting height on containment of direct light Source: AS 4282

Aside from the crucial design parameters of lighting devices such as placement, shielding, floodlight classification (i.e., Type C), and height, it is also important to consider reducing the reflectance characteristics of the playing surface. The choice of material for the playing surface, such as natural grass or synthetic turf, can affect the amount of light spill and glare. Natural grass tends to distribute light in a more dispersed manner, whereas synthetic turf tends to reflect light in a more concentrated, specular manner, leading to increased glare and light spill. Since the applicant has proposed using synthetic turf for the new western green, it may slightly increase the levels of light spill and glare in the area especially if the surface is light in colour.

However, implementing the appropriate design parameters discussed earlier can help mitigate the impact of light spill and glare from the synthetic playing surface. Ensuring that the artificial green is a darker matte colour will also assist in significantly reducing the reflectivity of the surface. Further, the use of this type of surface may also mean that the lux level of the lighting devices are reduced below 100 lux to account for the reflectivity properties of the surface.

It is recommended that this type of detail is finalised by the applicant and submitted to Council for approval prior to the issue of any Construction Certificate to ensure that the impact of the proposed synthetic surface on light spill and glare is properly addressed in the detailed design phase of the project. This will ensure that the lighting design meets the relevant regulatory requirements and standards and minimises any potential impacts on the surrounding environment and community.

Moreover, the usage of the bowling green lighting will be limited to 9pm, as agreed by the proponent. This restriction is intended to reduce the potential impact on the surrounding area and ensure that the lighting does not cause discomfort or disruption to nearby residents.

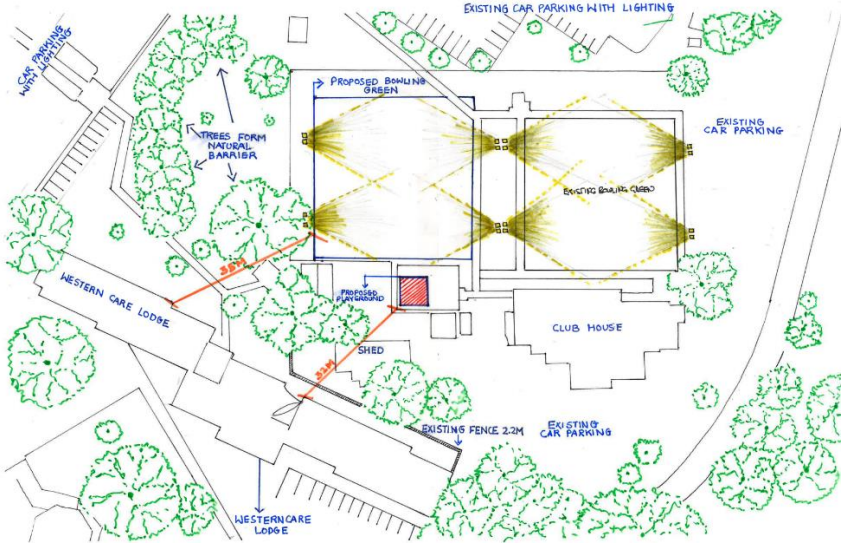

In terms of car park lighting, it is proposed to install eight bollard lights to the eastern carpark and up to four flood lights to the southern car park. It is not expected that the bollard lighting in the eastern car park will have a significant impact on its surroundings due to their low height and orientation. Flood lighting to the southern car park will need to be installed in a manner that avoids directing light onto the adjacent property - the offset between the club house (where lights will be installed) and the Western Care Lodge will assist in this regard.

Further, it is recommended that conditions specify that the southern car park lighting is to have a vertical aiming angle i.e., light shining below the horizontal plane of the light fitting as well as a requirement to have a high-pressure sodium bulb type in the light fittings. High sodium bulbs are preferred in outdoor lighting applications because they produce a warm, yellow-orange light that is often described as "street-lighting colour". This type of light helps to reduce the amount of blue light in the environment, which is associated with circadian rhythm disruption. Additionally, high sodium bulbs are energy-efficient, long-lasting, and produce less glare compared to other types of lighting. Compliance with the above will ensure minimal impacts on adjoining sensitive receivers.

Lastly, It is important to consider the influence of the surrounding development/environment when evaluating the potential impact of outdoor lighting. This includes considering the presence of physical features such as buildings, trees, fencing etc that may be effective in restricting light spill beyond the boundaries of the development as well as the presence or absence of other lighting in the immediate area. The effect of the proposed lighting will be lessened where the area is reasonably well lit e.g., road and car park lighting or lighting from adjacent development. In consideration of these matters, a site analysis has been undertaken by Council assessment staff which considers these matters:

2.2 Development Application - DA 293/2022(1) - Ex-Services Country Club - Lot 205 Forest Road

Site analysis

Site features/environment	Observations/Evaluation
	<p>The site analysis diagram shows a reasonable amount of vegetation between the proposed development and adjoining sensitive receiver being the Western Care Lodge. Measurements indicate that there is at least 30m from where activities will occur at the Ex-Services Bowling Club and the lodge. The presence of intervening elements such as fencing, trees and built structures (sheds etc) will serve to mitigate the effects of the development.</p>
	<p>Looking west over proposed new bowling green towards Western Care Lodge and hospital car parking area. Note large mature trees within the background screening the WCL and parking areas. Trees and shrubs are expected to limit any light spill by physically blocking the light and absorbing some of it. The dense foliage of the trees can scatter light in multiple directions and reduce the amount of direct light that reaches surrounding areas. This helps to reduce the brightness of the light and minimise its impact on the environment, including adjacent Western Care Lodge. The proposed mounting height of the lighting devices are also commensurate to the height of the mature trees (refer to Figure 3).</p>

2.2 Development Application - DA 293/2022(1) - Ex-Services Country Club - Lot 205 Forest Road



Looking north-east towards the proposed new bowling green from the western end of the Western Care Lodge. The trees and shrubs provide physical barriers that will restrict the spread of any light and glare. This helps to reduce the impact of the proposed development and maintain the visual amenity of the surrounding area for guests at the lodge.



Carpark adjacent to the Western Care Lodge. The presence of existing lighting in the area from the parking area and hospital building will reduce the impact of the proposed development as it provides a baseline level of illumination in the area. It should be noted that another hospital car park is located directly north of the bowling club and is also externally lit. When the surrounding area is already well lit, the addition of more lighting is less likely to result in increased levels of light spill or glare. This is because the existing light sources help to distribute light more evenly and reduce the contrast between lit and unlit areas. Additionally, the presence of other lighting sources are expected to help to reduce the perception of brightness and the impact of the proposed lighting on the surrounding environment. In this respect, the impact of the proposed lighting is likely to be limited and well-contained within the boundaries of the development.



Looking west across existing green. Substantial distance from sensitive receivers.



Looking south toward proposed playground location (concrete slab)



Intervening elements between the proposed playground and Western Care Lodge including outbuilding shed, shipping container, approximately 2.2m high boundary fence, significant tree canopy and hedging.

In summary, the proposed development has taken into account important design parameters for the proposed lighting devices such as placement, shielding, floodlight classification, and height. The choice of synthetic turf for the playing surface may increase levels of light spill and glare, but implementing appropriate design parameters and choosing a darker green colour in matte can help mitigate these impacts. The lux level of the lighting devices will need to account for the reflectivity characteristic of the playing surface as a condition of consent. The usage of the lighting will also be limited to no later than 9pm to prevent excessive brightness and disturbance to nearby residents.

Flood lighting to the southern car park will be placed to avoid shining onto the adjacent property and will be required to have appropriate light fittings and bulbs. All of these measures ensure that the lighting design meets regulatory requirements and minimises impacts on the surrounding environment and community.

The attached recommended Notice of Determination includes conditions to address the above matters.

Noise impacts

The proposed development is unlikely to cause significant noise disruptions. A qualitative assessment was conducted by the Council's Senior Environmental Health Advisor, which considered the current noise levels, potential noise from the development, and information from similar facilities in the city. The development will occur on land designated for recreation, and while some additional noise may result from increased activity, such as spectators, participants, and children playing, this is typical for this type of proposal and location and is expected to be minimal.

The direction of play for the lawn bowls i.e., north-south, positions spectators and participants away from the western boundary, reducing the potential for noise impacts on the neighbouring sensitive receiver. A 35m offset/setback between the lodge and western green, and a 9pm curfew, also assist in minimising any adverse noise impacts.

In terms of the play equipment, it is positioned 32m from the Western Care Lodge with vegetation, structures and a 2.2m high timber fence in between (refer to site analysis above), which effectively shields the noise generated from the playground from reaching the Western Care Lodge.

This distance and the intervening elements minimise the potential for noise disturbance to adjacent receptors. Additionally, the applicant has agreed to implement an 8pm curfew for the playground area as an additional mitigation measure.

Visual and Privacy Impacts

The proposed development is not expected to result in any major visual or privacy impacts in the area. The presence of bowling greens and light poles are commonly accepted in recreational settings, and the design and location of the proposed development i.e. 30m separation, existing vegetation and direction of game play is such that it will minimise any potential privacy concerns. The proposed 9pm curfew for the use of floodlit bowling greens will further ensure that the activity does not affect the privacy of surrounding properties.

Heritage Impacts

As outlined in the foregoing sections of this report, the proposed development will not adversely impact on the significance of the state listed heritage item. A condition is included in relation to management of unexpected historical finds during construction works. The proponent will be required to obtain approval from NSW Heritage prior to any works commencing.

Traffic Matters

The proposal will have nil impact on existing vehicle arrangements for the Country Club bowling green or health campus generally (site accesses, internal roadways, parking areas, carparking requirements, traffic volumes).

The resurfacing and line marking of the two existing onsite parking areas will provide a more efficient parking layout.

Amenity Impacts

The proposal represents a continuation of the historic recreational landuse. As detailed below under 'Submissions', the proposed development is not considered to cause a detrimental impact to the amenity of the site or surrounds.

Environmental Impacts

The subject site does not have particular environmental values. The proposal does not involve vegetation removal. Earthworks will be undertaken and conditional sediment controls will be installed. Appropriate drainage infrastructure will be installed, with nil impacts to downstream water quality.

THE SUITABILITY OF THE SITE s4.15(1)(c)

The subject site will be suitable for the proposed development due to the following:

- The development is permitted in the zone and consistent with the zone objectives.
- The development is consistent with the Conservation Management Plan applying to the Bloomfield Hospital site.
- The particular precinct heritage values will not be impacted.
- The site has longstanding use for recreational purposes.
- Utility services are available.
- Site access and onsite vehicle areas are suitable.
- The land is not subject to known technological or natural hazards.

ANY SUBMISSIONS MADE IN ACCORDANCE WITH THE ACT s4.15(1)(d)

The proposed development is defined as "advertised development" under the provisions of the Environmental Planning and Assessment Act 1979. The application was advertised for the prescribed period of 28 days for Nominated Integrated development (heritage listing) and at the end of that period, three submissions were received. A summary of the submissions and issues raised followed by Council assessment response is provided below:

Submission 1: The Department of Planning and Environment - Crown Lands requested that the development 'must not rely on Crown Land for utilities or access. Also, that carpark upgrades are not to encroach on Crown Land without authority'.

Assessment Response: Conditions to this effect have been imposed upon the consent.

Submission 2: This submission argues that the information submitted with the application is inadequate and outdated, making it difficult to fully evaluate the effects on the neighbouring Western Care Lodge. The submission expresses concerns about the impacts of the flood lighting on the bowling green and car park and recommends avoiding flood lighting on the westernmost reinstated bowling green and directing the lighting for the southern car park towards the club house. Finally, the submission highlights potential noise impacts from the children's play area and parking area and suggests restricting the hours and use of signage would be suitable mitigation measures.

Assessment Response: The assessment/consent authority is required by legislation to determine if adequate information has been provided for an assessment. It is determined that sufficient information is available for an adequate assessment of the proposed development and its potential impacts. Council's assessment report focuses on the impact of the development on surrounding sensitive receivers, specifically the Western Care Lodge being the nearest sensitive receiver.

The conclusion is that the development, including the reinstatement of the western bowling green, provision of flood lighting for the greens and car park, and the addition of a children's play area, will not cause unreasonable impact on the adjacent Western Care Lodge. The design of the bowling green lighting, including the adoption of a side pole arrangement, use of Type C classification flood lights, and a suitable mounting height, all are designed with the environment and sensitive receivers in mind. This is supported by simulations of a similar facility/circumstance demonstrating that lighting will be limited and well-contained within the boundaries of the development.

The report also considers the reflectivity of the playing surface and recommends conditions to address it, as well as the influence of the surrounding environment on the development, including separation distance, intervening elements, and the existing lighting level in the area. The 30m+ separation distance, vegetation, fencing, buildings, and existing lighting in the area all play a role in reducing the impact of the flood lighting on the Western Care Lodge. This separation distance significantly lowers the impact of the light, while vegetation, fencing, and buildings serve as physical barriers blocking or diffusing the light and or noise.

The existing lighting level in the area also affects the impact of the flood lighting by altering the overall brightness of the area.

In addition, the proposed 8pm curfew for the children's play area and 9pm curfew for the lighting of the greens as offered by the applicant will further mitigate potential adverse impacts on the Western Care Lodge. Conditions specify positioning, direction, and bulb type for the lighting to the southern car park which will ensure minimal impact on adjacent properties.

Submission 3: Cancer Care Western NSW (CCW) submitted a response regarding the proposed development at Ex-Services Bowling Club. They appreciate the benefits of the country club but are concerned about potential negative impacts on patients' health and wellbeing. The submission highlights concerns about the impact of floodlighting and car park lighting, potential noise from the kids' playground, and a lack of consideration for the impact on the comfort and well-being of cancer patients at the Western Care Lodge. The submission also notes that the environment has changed significantly since the former green was in use, and requests that the impacts of the proposed lighting be modelled and assessed for their impact on neighbouring properties.

Assessment Response: The impact of the proposed development on the adjacent Western Care Lodge has been thoroughly evaluated. The results indicate that any impacts will be minimal due to the reasonable distance between the Lodge and the source of impact, appropriate design parameters either proposed or recommended as a condition, and the presence of intervening elements such as trees, fencing, and other structures that mitigate the effects.

The assessment considered Cancer Care Western NSW's (CCW) concerns raised in their submission and analysed the impact of the proposed floodlighting and car park lighting. Mitigation measures, such as hooding and proper direction of the lights, were taken into consideration to reduce any potential impacts on the Western Care Lodge and its patients. The assessment also evaluated the potential noise from the children's play area and proposed conditions to manage it. The high-level assessment found that the development will not cause unreasonable impact on the surrounding sensitive receivers, including the Western Care Lodge.

Submission 3a: CCW submitted a response to the proposed mitigation measures for the development at the Ex-Services Bowling Club that were offered by the applicant. Although they acknowledge that the measures will ease concerns to some extent, they are still concerned about the impact of floodlighting on unwell guests at the Western Care Lodge. CCW believes that the floodlighting will change the use of the bowling greens from daytime sports to night-time social activities, extending to the boundary closest to the Lodge and potentially affecting the privacy of guests undergoing cancer treatment. CCW has requested either the installation of floodlighting on the eastern green only or consideration for an acoustic fence.

Assessment Response: The proposed measures and conditions in the assessment report are considered sufficient to mitigate any potential adverse impacts on the Western Care Lodge and its guests. The report includes an evaluation of the impact of the floodlighting and car park lighting, as well as potential noise from the children's play area, and it has been determined that the proposed measures will ensure that these impacts will be minimal.

While Cancer Care Western NSW (CCW) have raised concerns about the impact of the floodlighting and the need for acoustic fencing, Council staff do not consider it necessary to install floodlighting on the eastern green only or to provide an acoustic fence. The assessment report provides a high-level approach to evaluating the potential impacts of the proposed development, and Council staff are confident that the proposed measures and conditions will ensure that the development will not have unreasonable impacts on the surrounding sensitive receivers.

PUBLIC INTEREST s4.15(1)(e)

The proposal is considered to be in the public interest because it is determined that the proposal's potential impacts are relatively localised and contained to the site and do not conflict with any relevant standards, policy statements, planning studies, guidelines, etc. that have been considered in the assessment. This conclusion is based on the thorough evaluation of the proposal's potential impacts and the determination that these impacts are limited and can be effectively controlled through the conditions of consent.

INTERNAL REFERRAL ADVICE


The requirements of the Building Surveyor, Assistant Development Engineer and Environmental Health Officer are included in the attached Notice of Determination.

SUMMARY

The site does not contain any constraints that are prohibitive in terms of the proposed development. The site is well placed within an area of existing recreation uses. The proposed development is permissible with the consent of Council. The applicant has adequately demonstrated that the proposed development complies with the relevant aims, objectives, and provisions of the relevant environmental planning instruments. A Section 4.15 assessment by Council technical staff of the development indicates that the development is acceptable in this instance. Conditions relating to the design and placement/direction of lighting coupled with curfews on the use of outdoor lighting and playground are expected to avoid any adverse impacts on adjoining landuses.

ATTACHMENTS

- 1 Notice of Approval, D23/11269 [↗](#)
- 2 Plans, D23/3795 [↗](#)
- 3 Submissions (redacted), D23/3811 [↗](#)

	ORANGE CITY COUNCIL Development Application No DA 293/2022(1) NA23/15 Container PR4112
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NOTICE OF DETERMINATION OF A DEVELOPMENT APPLICATION

issued under the *Environmental Planning and Assessment Act 1979*
Section 4.18

Development Application

Applicant Name: Orange Ex-Services Club Limited
Applicant Address: C/- Andrew Crump Town Planning Pty Ltd
54 Silverdown Way
ORANGE NSW 2800
Owner's Name: Orange Ex-Services Club Country Club
Land to Be Developed: Lot 205 DP 42900 - Forest Road, Orange
Proposed Development: Recreation Facility (outdoor) (alterations and additions)

Building Code of Australia building classification:

To be determined by the PCA

Determination made under Section 4.16

Made On: 7 March 2023
Determination: **CONSENT GRANTED SUBJECT TO CONDITIONS DESCRIBED BELOW:**

Consent to Operate From: 8 March 2023
Consent to Lapse On: 8 March 2028

Terms of Approval

The reasons for the imposition of conditions are:

- (1) To ensure a quality urban design for the development which complements the surrounding environment.
- (2) To maintain neighbourhood amenity and character.
- (3) To ensure compliance with relevant statutory requirements.
- (4) To provide adequate public health and safety measures.
- (5) To ensure the utility services are available to the site and adequate for the development.
- (6) To prevent the proposed development having a detrimental effect on adjoining land uses.
- (7) To minimise the impact of development on the environment.

Conditions

- (1) The development must be carried out in accordance with:
 - (a) **Plans numbered McKinnon Design 22064 drawings 01 and 02, Outdoor play equipment (3 sheets)**
 - (b) Statements of environmental effects or other similar associated documents that form part of the approval
- as amended in accordance with any conditions of this consent.**

NOTICE OF DETERMINATION OF DEVELOPMENT APPLICATION NO DA 293/2022(1)

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Conditions (cont)**PREScribed CONDITIONS**

- (2) All building work must be carried out in accordance with the provisions of the Building Code of Australia.

PRIOR TO CONSTRUCTION CERTIFICATE

- (3) The level of light intensity for the proposed flood lighting at the new western bowling green shall comprise no more than 100 lux. The lux level is to account for the reflectivity characteristics of the playing surface. Details of compliance shall be submitted to and approved by Council's Manager Development Assessment prior to the issue of any Construction Certificate.
- (4) The playing surface of the proposed new western bowling green shall comprise a dark green colour in matte or an alternative where compliance with the Australian Standard AS4282:2019: *Control of the Obtrusive effects of outdoor lighting* can be demonstrated. Details are to be submitted to and approved by Council's Manager Development Assessment prior to the issue of any construction certificate.
- (5) All external lighting within the rear (southern) carpark area behind the existing Country Club shall be directed away from the adjoining property being Lot 500 DP1175440 (Western Care Lodge). All lighting is to have a vertical aiming angle (no light is permitted to shine above the horizontal plane of the light fitting), and a high-pressure sodium light bulb is to be fitted to each light fitting. Details of compliance shall be submitted to and approved by Council's Manager Development Assessment prior to the issue of any Construction Certificate.

PRIOR TO WORKS COMMENCING

- (6) A Construction Certificate application is required to be submitted to, and issued by Council/Accredited Certifier prior to any excavation or building works being carried out onsite.

DURING CONSTRUCTION/SITEWORKS

- (7) If Aboriginal objects, relics, or other historical items or the like are located during development works, all works in the area of the identified object, relic or item shall cease, and the NSW Office of Environment and Heritage (OEH), and representatives from the Orange Local Aboriginal Land Council shall be notified. Where required, further archaeological investigation shall be undertaken. Development works in the area of the find(s) may recommence if and when outlined by the management strategy, developed in consultation with and approved by the OEH.
- (8) All construction/demolition work on the site is to be carried out between the hours of 7.00am and 6.00pm Monday to Friday inclusive, and 8.00am to 1.00pm on Saturdays. No construction/demolition work is permitted to be carried out on Sundays or Public Holidays. Written approval must be obtained from the Chief Executive Officer of Orange City Council to vary these hours.
- (9) All materials on site or being delivered to the site are to be contained within the site. The requirements of the *Protection of the Environment Operations Act 1997* are to be complied with when placing/stockpiling loose material or when disposing of waste products or during any other activities likely to pollute drains or watercourses.
- (10) Any adjustments to existing utility services that are made necessary by this development proceeding are to be at the full cost of the developer.
- (11) All driveway and parking areas are to be sealed with bitumen, hot mix or concrete and are to be designed for all expected loading conditions. The carpark shall be line marked in accordance with AS 2890.1 (off-street car parking).

NOTICE OF DETERMINATION OF DEVELOPMENT APPLICATION NO DA 293/2022(1)

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Conditions (cont)**During construction/siteworks (cont)**

- (12) All outdoor lighting must be installed in accordance with the Australian Standard AS4282:2019: *Control of the Obtrusive effects of outdoor lighting*.
- (13) The development must not rely on Crown Land for utilities or access. Carpark upgrades are not to encroach on Crown Land without authority.

PRIOR TO THE ISSUE OF AN OCCUPATION CERTIFICATE

- (14) No person is to use or occupy the building or addition that is the subject of this approval without the prior issuing of an Occupation Certificate.
- (15) Prior to the issue of an Occupation Certificate, commissioning of all lighting installations approved under this consent is to be undertaken by a suitably qualified lighting consultant. The commissioning of the lighting installations must verify compliance with AS4282:2019: *Control of the Obtrusive effects of outdoor lighting* and the conditions contained with this consent. The proponent must furnish a copy of the commissioning report to Council with the application for an Occupation Certificate.

MATTERS FOR THE ONGOING PERFORMANCE AND OPERATION OF THE DEVELOPMENT

- (16) All flood lighting and use of the bowling greens shall cease by 9pm every night. The children's playground shall be closed from 8pm every night, with fencing erected to ensure access is restricted after 8pm.
- (17) The level of light intensity for the flood lighting at the new western bowling green shall comprise no more than 100 lux at any time.
- (18) All of the foregoing conditions are to be at the full cost of the developer and to the requirements and standards of the Orange City Council Development and Subdivision Code, unless specifically stated otherwise. All work required by the foregoing conditions is to be completed prior to the issuing of an Occupation Certificate, unless stated otherwise.

HERITAGE NSW GENERAL TERMS OF APPROVAL**APPROVED DEVELOPMENT**

1. All work shall comply with the information contained within:
- a) Drawings, prepared by McKinnon Design as listed below:

Dwg No	Dwg Title	Date	Rev
Project Name: Proposed Bowling Green			
01	Site Plan 1:500	August 2022	
02	Site Plan 1:250	August 2022	

- b) Statement of Heritage Impact (SOHI) - Recreation Facility (Outdoor) OESC Country Club Forest Road, prepared by Andrew Crump Town Planning, dated 24 August 2022.
- c) Statement of Environmental Effects - Recreation Facility (Outdoor) OESC Country Club Forest Road, prepared by Andrew Crump Town Planning, dated 24 August 2022.

Heritage NSW general terms of approval (continued) over page

NOTICE OF DETERMINATION OF DEVELOPMENT APPLICATION NO DA 293/2022(1)

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Conditions (cont)**Heritage NSW general terms of approval (cont)**

EXCEPT AS AMENDED by the conditions of this approval:

UNEXPECTED FINDS

2. The Applicant must ensure that if substantial intact archaeological deposits and/or State significant relics or any other buried fabric are discovered, work must cease in the affected area(s) and the Heritage Council of NSW must be notified. Additional assessment and approval may be required prior to works continuing in the affected area(s) based on the nature of the discovery.

Reason All significant fabric within a State Heritage Register curtilage should be managed according to its significance. This is a standard condition to identify to the applicant how to proceed if historical archaeological relics, or other unexpected, buried discoveries such as works are identified during the approved project.

ABORIGINAL OBJECTS

- 3 Should any Aboriginal objects be uncovered by the work which is not covered by a valid Aboriginal Heritage Impact Permit, excavation or disturbance of the area is to stop immediately and Heritage NSW is to be informed in accordance with the *National Parks and Wildlife Act 1974*. Works affecting Aboriginal objects on the site must not continue until Heritage NSW has been informed and the appropriate approvals are in place. Aboriginal objects must be managed in accordance with the *National Parks and Wildlife Act 1974*.

Reason This is a standard condition to identify to the applicant how to proceed if Aboriginal objects are unexpectedly identified during works.

COMPLIANCE

4. If requested, the applicant and any nominated heritage consultant may be required to participate in audits of Heritage Council of NSW approvals to confirm compliance with conditions of consent.

Reason To ensure that the proposed works are completed as approved.

SECTION 60 APPLICATION

5. An application under Section 60 of the *Heritage Act 1977* must be submitted to, and approved by, the Heritage Council of NSW (or delegate), prior to work commencing.

Reason To meet legislative requirements.

Other Approvals

- (1) *Local Government Act 1993* approvals granted under Section 68.

Nil

- (2) General terms of other approvals integrated as part of this consent.

Nil

Right of Appeal

If you are dissatisfied with this decision, Section 8.7 of the *Environmental Planning and Assessment Act 1979* gives you the right to appeal to the Land and Environment Court. Pursuant to Section 8.10, an applicant may only appeal within 6 months after the date the decision is notified.

NOTICE OF DETERMINATION OF DEVELOPMENT APPLICATION NO DA 293/2022(1)

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Disability Discrimination Act 1992:

This application has been assessed in accordance with the *Environmental Planning and Assessment Act 1979*. No guarantee is given that the proposal complies with the *Disability Discrimination Act 1992*.

The applicant/owner is responsible to ensure compliance with this and other anti-discrimination legislation.

The *Disability Discrimination Act* covers disabilities not catered for in the minimum standards called up in the Building Code of Australia which references AS1428.1 - "Design for Access and Mobility". AS1428 Parts 2, 3 and 4 provides the most comprehensive technical guidance under the *Disability Discrimination Act* currently available in Australia.

Disclaimer - S88B of the Conveyancing Act 1919 - Restrictions on the Use of Land:

The applicant should note that there could be covenants in favour of persons other than Council restricting what may be built or done upon the subject land. The applicant is advised to check the position before commencing any work.

Signed:

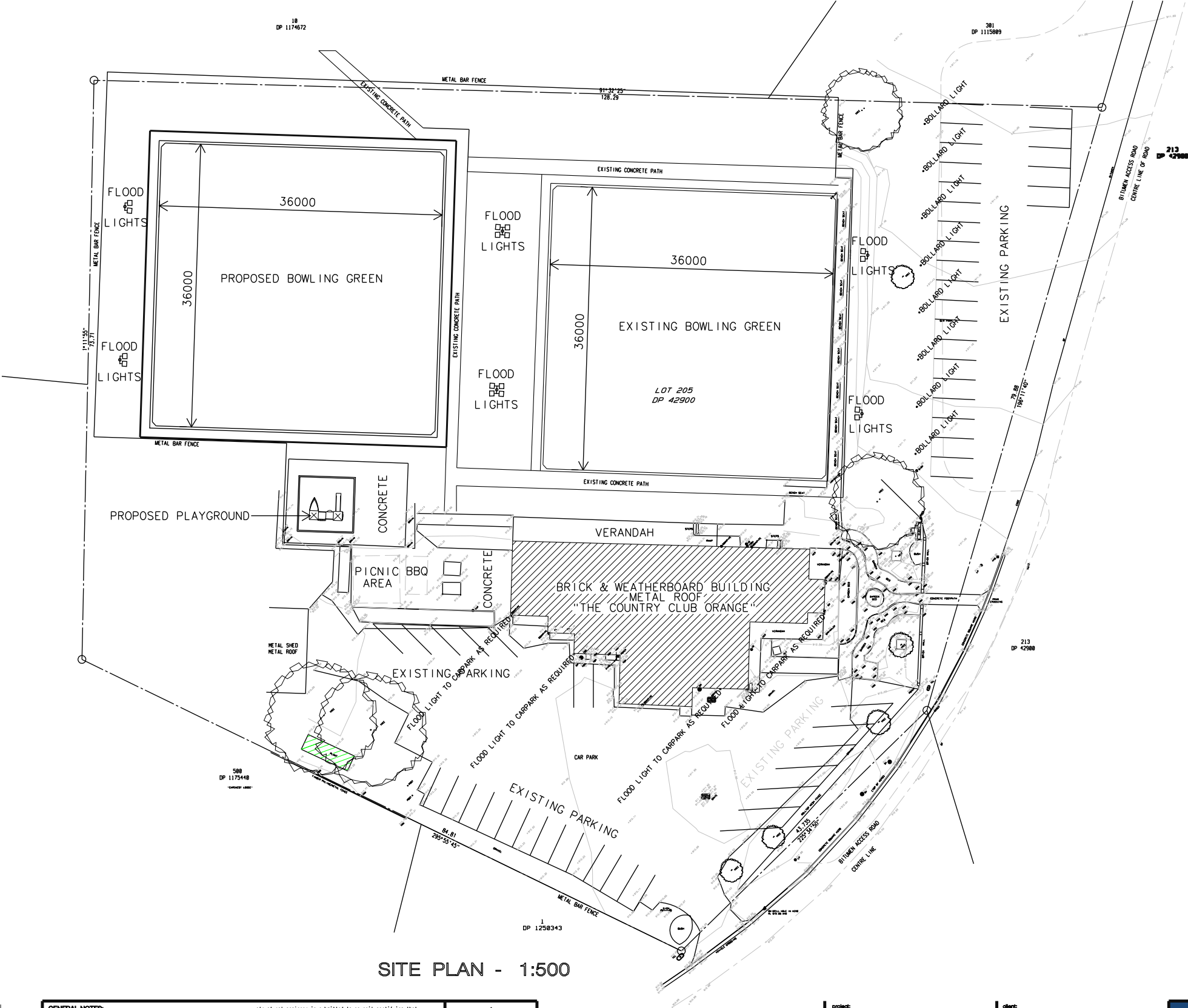
On behalf of the consent authority **ORANGE CITY COUNCIL**

Signature:**Name:**

PAUL JOHNSTON - MANAGER DEVELOPMENT ASSESSMENTS

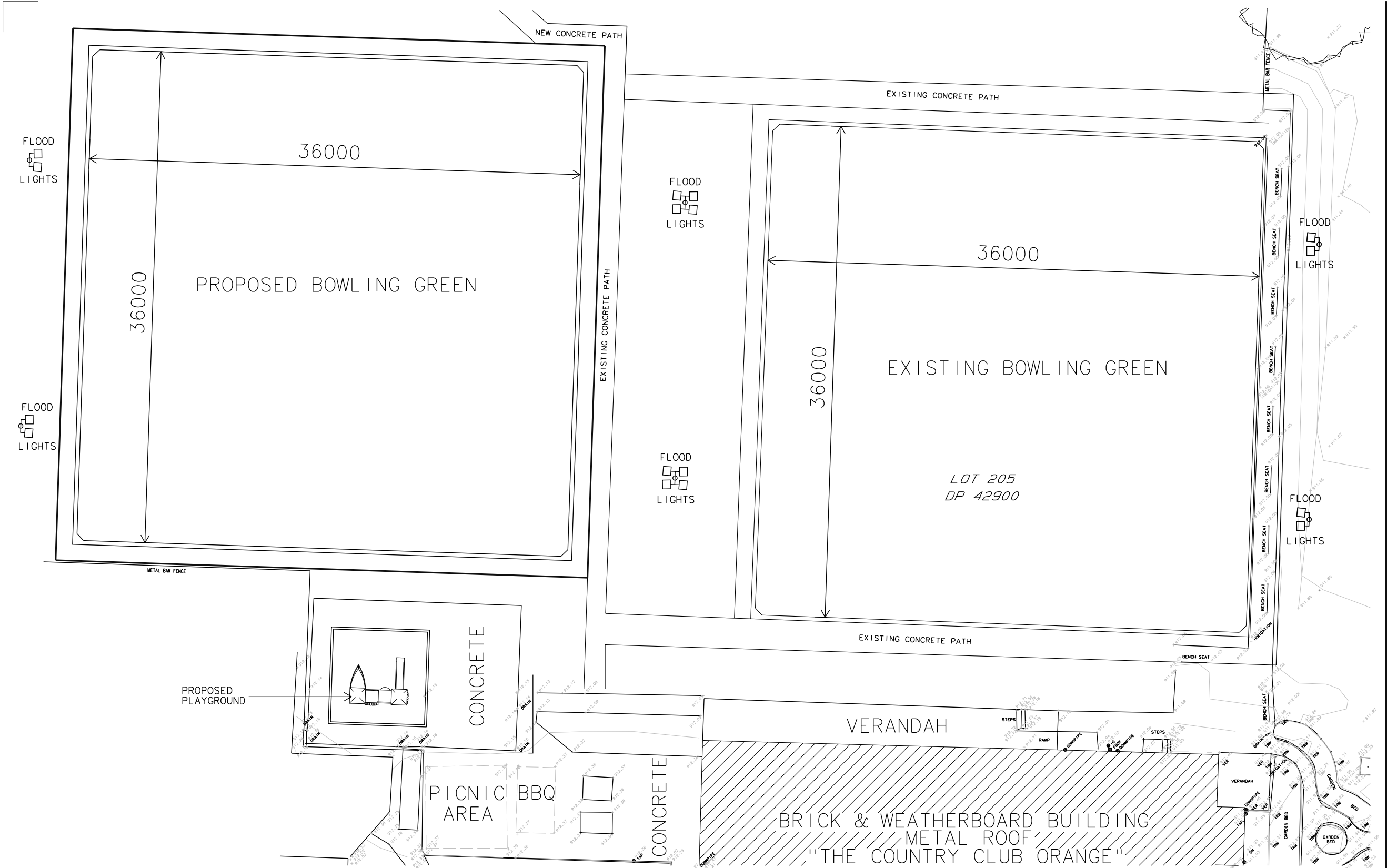
Date:

8 March 2023



SITE PLAN - 1:500

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DO NOT SCALE

GENERAL NOTES:

1 - All dimension shown in millimeters unless noted otherwise.
2 - DO NOT SCALE from drawing. If in doubt, ask.
3 - All dimension and levels are to be confirmed on site prior to construction.
4 - Concrete slab & footings to be designed in accordance with AUSTRALIAN STANDARD 2870 - 1995.
5 - All structural elements to be designed by a practicing structural engineer.
6 - All timber used in the building shall be strictly in accordance with the provisions of AUSTRALIAN STANDARD 1684-1992, NATIONAL TIMBER FRAMING CODE, unless a certificate from a practicing structural engineer is submitted to council certifying that the building has been designed to withstand the most adverse combination of loads to which it will be subjected.
7 - Construction of any stairways and balustrades shall comply with the requirements of the BUILDING CODE OF AUSTRALIA.
8 - All plumbing and drainage work is to comply with the requirements of AUSTRALIAN STANDARD 3500-NATIONAL PLUMBING AND DRAINAGE CODE and the NEW SOUTH WALES CODE OF PRACTICE PLUMBING AND DRAINAGE.
9 - Protection of the building from attack by termites is to be carried out in accordance with the provisions of the BUILDING CODE OF AUSTRALIA and or AUSTRALIAN STANDARD 3660.1-1995 PROTECTION OF BUILDINGS FROM SUBTERRANEAN TERMITES.

1:250

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A3

project: PROPOSED BOWLING GREEN LOT 205 (D.P. 42900) ORANGE, N.S.W.

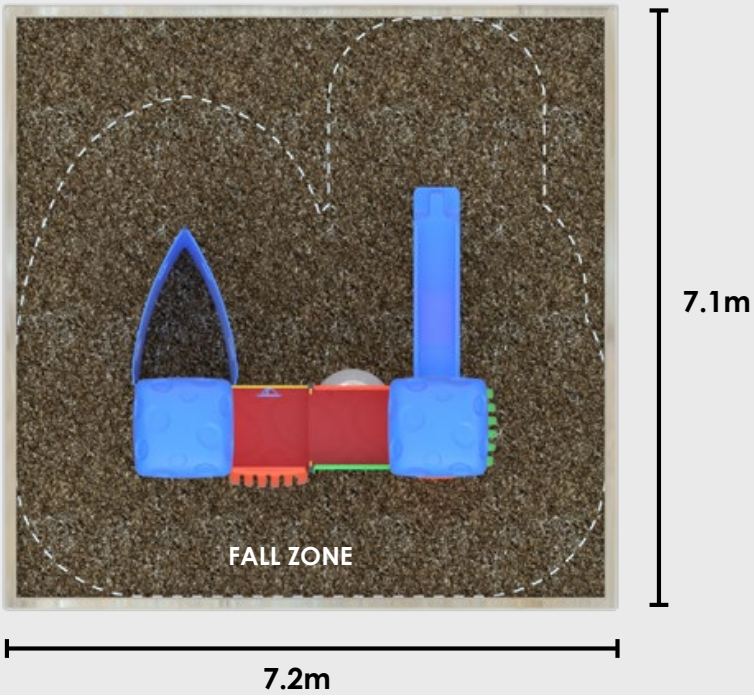
client: ANDREW CRUMP TOWN PLANNING/ OESC COUNTRY CLUB

site: SITE PLAN

scale: AS NOTED
drawn: H. A. McK
date: AUG 2022
job no: 22064
chg no: 02
issue:

102 KITE STREET, PO BOX 1026 ORANGE NSW 2800
E info@mckinnondesign.com.au
MCKINNON DESIGN
CORNWOOD PTY LTD
ABN 24 074 429 795

UNIT 937.007



PLAN



ELEVATION

Fall Height Rating 1.2m
Safety Surface Area 48.3m²
Timber Edging Qty. 28.6m

Playground Units





Submission 1

CM9 Ref: DOC22/199325

The General Manager
Orange City Council
PO Box 35
ORANGE NSW 2800

Email: council@orange.nsw.gov.au

Dear Sir/Madam

Proposed Development: DA 293/2022(1) – additional bowling green, children's playground, floodlighting, and carpark upgrading works.

Applicant: Orange Ex Services Club Limited

Location: Lot 205 DP 42900 – Lot 205 Forest Road, Orange

I refer to Council's letter dated 9 September 2022 requesting comments for the above development proposal.

The Department of Planning & Environment - Crown Lands (the department), as adjoining landowner has reviewed the development application in accordance with the principles of Crown land management (s.1.4 *Crown Lands Management Act 2016*) and offers no objections to the proposed development provided it is made clear that the applicant must not rely on Crown Land for utilities or access. Also, that carpark upgrades are not to encroach on Crown Land without authority.

Should the development be modified in any manner that impacts the adjoining Crown land, e.g. by amendment to the development proposal or draft conditions of consent, the department requests an opportunity to further review the application prior to determination.

Should you require any further information, please do not hesitate to contact _____ at the
Orange Crown Lands Office by phone on _____ or email _____

Yours sincerely

Senior Natural Resource Management Officer
Department of Planning & Environment - Crown Lands

Date: 26 September 2022

**Holman Home Design** Pty Ltdfor the design of home renovations, additions,
new homes and attic conversions

ABN 46 323 178 858

Web: holmanhomedesign.com.au

Submission 2

10 October 2022

The General Manager
Orange City Council
135 Byng Street
ORANGE NSW 2800

Dear Sir/Madam,

RE: Development Application for Orange Ex-Services Country Club
DA 293/2022(1) Lot 205 Forest Road, Orange
Recreational facility (outdoor) (alterations and additions)

I have offered to review the above application for the neighbouring Western Care Lodge from the perspective of a design professional.

I have noted a few key points which I believe are relevant for consideration in order for a clear and reasonable assessment of the submitted application to be undertaken.

Please find my comments, observations, and respectful suggestions on the following pages.

Yours sincerely

Director/Building Designer

RE: Development Application for Orange Ex-Services Country Club
DA 293/2022(1) Lot 205 Forest Road, Orange
Recreational facility (outdoor) (alterations and additions)

In relation to documents submitted to council for the above Development Application:

1. Orange City Council's document checklist for Site Analysis plans which are submitted for Development Application assessment are required to address the following:
 - *Plan at 1:100, or 1:200 for larger sites.*
 - *Site dimensions and site area; north point; location of existing vegetation; location of other buildings and structures; any heritage features (if applicable); location of fences and boundaries; drainage and effluent disposal (for rural areas); any overshadowing of the site by adjoining*
 - *development; location, height and use of neighbouring buildings; street frontage features such as street trees, poles, etc.*
 - *Details of buffer distances as specified in the Orange Development Control Plan 2010. • Areas of public and private open space. • Sources of nuisance, e.g. railway noise. • Notable views and potential overlooking.*

It is noted that the required details stated in dot point 3 have not been provided in this submission, as neighbouring buildings are not shown on the plans submitted.

2. Orange City Council's document checklist for Site Plans which are submitted for Development Application assessment are required to address the following:
 - *Plan at 1:100, or 1:200 for larger sites.*
 - *Lot and DP, site address, boundary dimensions, orientation of boundaries, site area, contour levels to AHD, existing vegetation and trees (indicate removal/retention), north point drawn to true north.*
 - *Outline of existing building/development on site, shown dotted.*
 - *Location of proposed new building/development.*
 - *Existing and/or new vehicular access to be shown*
 - *Location of all building/development on directly adjoining sites, including location of any windows contained within adjoining buildings.*
 - *Details of existing and proposed fencing.*
 - *BASIX commitments eg. rainwater tank. •*
 - *Distance from external walls and outermost part of proposed building to all boundaries.*
 - *Summary table calculations of site area, floor area, landscaped area etc*

It is noted the required details in dot point 6 have not been included on the survey, architectural plans or lighting plans submitted for this DA.

3. With regard to the information presented in the Statement of Environmental Effects document submitted with this Development Application:

- It is noted that aerial photograph (S.E.E fig 8 p18) and NSW Biodiversity Values Map (S.E.E p12) provided in the submitted document are out-of-date and neglect to include the newer western wing of the Western Care Lodge directly adjoining the subject site. (See images below)



Above: excerpt figure 8 from the Statement of Environmental Effects

Below: excerpt courtesy of Google maps (note the western wing of the Western Care Lodge completed in 2014 is highlighted by the blue arrow)



- Floodlighting is proposed by the applicant for the existing bowling green at the eastern side of the subject site as well as the planned reinstated bowling green on the western side. This is likely to produce a not insignificant amount of light spillage and glare. Yet no assessment appears to have been provided within the submitted Statement of Environmental Effects regarding the potential impact on the adjoining Western Care Lodge.
- Floodlighting is also proposed by the applicant for the rear carpark on the subject site. As the floodlighting is intended to be “affixed to the rear of the clubhouse building” it would be directed towards the Western Care Lodge building. Yet the potential impact from light spillage and glare has not been addressed in the submitted Statement of Environmental Effects.

4. Further observations of impact on neighbouring properties:

The proposed reinstatement of the second westerly bowling green may not appear to be impactful to the surrounding area, particularly through daylight hours, however, the installation of floodlighting is likely to adversely impact the amenity of the cancer patients residing in the neighbouring Western Care Lodge during their time of treatment.



Above: Photo taken from the location of the proposed reinstated bowling green towards the western end of the Western Care Lodge (visible just beyond the fenceline).

The proximity to the Western Care Lodge is relevant when assessing the DA yet the distance between the proposed re-instated bowling green light towers and the Lodge building has not been included in the DA documentation.

Further, the towers for the proposed bowling green floodlights are shown to be 12 metres high on the design plans submitted. It is very likely that at this height light spillage will occur, and that the central floodlights which face west will impact the Lodge next door and create significant glare towards the windows of the accommodation rooms.

It is also worth noting that the architectural drawings detail floodlighting on both bowling greens yet the submitted lighting design plans only show the floodlight design applying to the easternmost existing bowling green.

In summary, it is suggested that an amendment be made to the Development Application in order to help reduce the impact on the neighbouring property. This should include the following:

- Floodlighting only be installed for the eastern existing bowling green located directly north of the clubhouse (for evening use) but not installed on the westernmost reinstated bowling green.
- The floodlighting for the carpark be installed on posts which face towards the clubhouse building with the floodlights directed away from the neighbouring buildings.
- Restricted hours of use for the children's play area (including signage) as part of the conditions of consent.
- Noise restriction signage within the carpark area as part of the conditions of consent.

Submission 3 (1 of 2)



Cancer Care Western NSW Inc

WESTERN CARE LODGE

P.O. Box 2800
ORANGE NSW 2800

Website: www.ccwest.org.au
Email:
ABN: 88 995 371 685
CFN: 20279

12 October 2022

The General Manager
Orange City Council
135 Byng Street
ORANGE NSW 2800

Dear Sir

**DA 293/2022(1) – Lot 205 Forest Road, Orange
(Orange Ex-Services Country Club)
Recreation facility (outdoor) (alterations and additions)**

I am writing on behalf of the Board of Cancer Care Western NSW Inc., the operator of Western Care Lodge, which adjoins the proposed development at Bloomfield.

Western Care Lodge was built in 2011 to provide self-care accommodation for patients undergoing cancer treatment at Orange Health Service. The Lodge comprises 22 rooms, each opening out onto a private deck, outdoor courtyards, dining, kitchen, lounge, laundry, and library facilities. It is set in a garden, only a short walk to and from treatment facilities at the Central West Cancer Centre at Orange Health Service. It successfully aims to be a "home away from home" for cancer patients undergoing often long and stressful treatment.

Cancer Care Western NSW Inc. appreciates that the Ex-Services Country Club provides an accessible venue that Lodge guests can enjoy. However, the Club also has close neighbours providing residential accommodation to sick people undergoing treatment. The DA does not recognise or address this. Some aspects of the proposed development could have significant negative impacts on patients' health and well-being.

We strongly encourage Council to investigate the potential impacts detailed in the attached comments and to require changes to mitigate the impacts.

Yours faithfully

(Chair)

per:

Chairperson John Carpenter Vice Chairperson Stuart Porges Fundraising Chairperson Jan Savage

DA 293/2022(1) – Lot 205 Forest Road, Orange (Orange Ex-Services Country Club)

Recreation facility (outdoor) (alterations and additions)

Statement of Environmental Impacts

COMMENTS from Cancer Care Western NSW Inc.

1.1 Overview

“The development involves the following:

- Reinstatement of the second bowling green that was removed in the c.2011.*
- Provide floodlighting to the two greens via the installation of six 12m high light poles.*
- Provide bollard lighting to the northern carpark area.*
- Provide flood lighting of the main carpark area.*
- Resurface and line mark the two existing on-site parking areas.*
- Install a kid’s playground on an existing slab to the south of the proposed bowling green.”*

Comment: The environment has changed significantly since the former green was in use, notably by the opening of the Orange Health Service in 2011 and the building and occupation on Western Care Lodge, immediately adjacent to the Country Club, in 2011.

2.5 Surrounding Development

Comment: The eastern wing of cancer patients’ rooms at Western Care Lodge is located immediately adjacent to the south-western boundary of the Country Club as illustrated in Fig 8.

3.1.2 Floodlighting / Bollard Lighting

“The proposal involves the installation of 6 x 12m high light poles with floodlights attached.”

“Illumination of the rear main car park is also proposed with flood lights affixed to the rear of the clubhouse building.”

Comment: Floodlighting is a new development. Unless carefully hooded and directed, the floodlights have the potential to illuminate guest rooms in both wings.

The western wing of the Western Care Lodge (opened in 2014 and not shown on the DA Proposal) could be highly impacted by the high flood-lighting proposed for the bowling greens, especially the proposed new western green.

The impact of the proposed lighting on the Lodge's west wing may be reduced by facing all floodlights on the new green towards the east or by lighting only the eastern green.

The impact of proposed car park lighting on eastern wing could be mitigated by installing the lights on poles facing back towards the club house rather than its being affixed to the building and pointing towards Western Care Lodge.

In any event the impacts of proposed lighting should be modelled and assessed for impacts on neighbouring properties including Western Care Lodge.

3.1.4 Kids playground

Comment: This is also a new development with potential for noise impacts on Lodge guests, who typically sleep during the days, as well as at nights, given their treatments and recovery needs.

4.11.4 Noise Impacts

"The proposed development represents a continuance of the historic land use. As such, there will be no unreasonable noise impacts associated with the proposed development."

Comment: The environment has changed significantly since the former green was removed in 2011, notably by the development of the Hospital and the building and occupation of Western Care Lodge immediately adjacent to the Country Club in 2011 and western extension in 2014 and Ronald McDonald House in 2015.

The Statement gives no consideration to the impacts of the development on the comfort and well-being of cancer patients staying at WCL.

4.11.5 Traffic, Parking and Access

"The development represents a return to the historic and longstanding arrangement of two bowling greens within the site. As such, the development will not result in an increase in traffic volumes or parking demand within the Bloomfield Campus."

Based on the foregoing, it can be demonstrated that the development will not give rise to any unacceptable Traffic, Parking or Access impacts.”

Comment: The marginal impacts of this expansion and development must be considered in light of the significant increases in traffic associated with recent developments in the vicinity.

General comments

The “historic and longstanding arrangement” may have been applicable until 2011 but its then acceptability has been superseded by the significant development in the vicinity of the Country Club that has occurred since 2011.

The DA notes that Western Care Lodge and Ronald McDonald House are nearby but ignores the potential for impacts on the patients accommodated there, from the flood-lighting and playground, which were not part of the previous arrangement.

The Country Club plans to now operate at night when light and noise from increased patronage could have potentially serious impacts on the recovery of cancer patients staying at Western Care Lodge, unless these are properly assessed and mitigated accordingly.

END

12 October 2022

Amendment enquiry to
Submission 3



Cancer Care Western NSW Inc WESTERN CARE LODGE

P.O. Box 2800
ORANGE NSW 2800

Website: www.ccwest.org.au

ABN: 88 995 371 685
CFN: 20279

31 October 2022

The General Manager
Orange City Council
135 Byng Street
ORANGE NSW 2800

Dear Sir

**DA 293/2022(1) – Lot 205 Forest Road, Orange
(Orange Ex-Services Country Club)
Recreation facility (outdoor) (alterations and additions)**

I am writing on behalf of the Board of Cancer Care Western NSW Inc., the operator of Western Care Lodge, which adjoins the above proposed development at Bloomfield.

Our submission dated 12 October 2022, requested that Council investigate the potential impacts on the Western Care Lodge and consider changes to mitigate these impacts.

Further to our submission, I am enquiring about what amendments will be sought by Council to mitigate the impacts which we have detailed.

Cancer Care Western NSW Inc. appreciates that the Ex-Services Country Club provides an accessible venue that Lodge guests can enjoy. However, the Club also has close neighbours providing residential accommodation to sick people undergoing treatment. The DA does not recognise or address this. Some aspects of the proposed development could have significant negative impacts on patients' health and well-being.

Could Council please advise what amendments are being sought by Council for DA 293/2022(1) to mitigate impacts on the Western Care Lodge and its guests.

Yours faithfully

Chairperson John Carpenter Vice Chairperson Stuart Porges Fundraising Chairperson Jan Savage

Submission 3 (2 of 2)



Cancer Care Western NSW Inc

WESTERN CARE LODGE

P.O. Box 2800
ORANGE NSW 2800

Website: www.ccwest.org.au

ABN: 88 995 371 685
CFN: 20279

21 December 2022

Rishelle Kent
Senior Planner
Orange City Council
PO Box 35
ORANGE NSW 2800

By email:

Dear Rishelle,

**RE: DEVELOPMENT APPLICATION DA293/2022(1) – RECREATION FACILITY (OUTDOOR)
Orange Ex-Services Club - Lot 205 FOREST ROAD, ORANGE**

I refer to your email dated 15 December 2022, in respect of the response letter from Andrew Crump Town Planning, on behalf of Orange Ex-Services Club (OESC), regarding suggested mitigation measures to alleviate the concerns of the adjoining Cancer Care Western Lodge. (your ref: ADC_200922_res_submissions)

OESC's suggested conditions of consent relating to the direction of the external lighting in the rear carpark, and restricted play time in the children's playground, will ease the concerns of the neighbouring Lodge to some degree.

However, the issue remains that planned floodlighting on the bowling greens, particularly the proposed reinstated green, will have significant adverse impact on unwell guests residing in the western wing of the Lodge.

As the OESC is a licensed club, with alcohol being consumed both inside and outside the clubhouse, the proposed floodlighting will alter the current use of the bowling greens from daytime sporting interests to night-time social and entertainment activities.

Installation of floodlights will encourage these activities to extend to the westernmost boundary fence closest to the Lodge and the suggested 9pm curfew will do little to protect privacy of guests. This is neither reasonable nor acceptable for patients undergoing cancer treatment.

Chairperson John Carpenter Vice Chairperson Stuart Porges Fundraising Chairperson Jan Savage



Cancer Care Western NSW Inc

WESTERN CARE LODGE

P.O. Box 2800
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ABN: 88 995 371 685
CFN: 20279

To lessen the adverse impact on the Lodge, it is respectfully requested that the floodlighting be installed on the existing easternmost green but not on the western reinstated green.

This would provide the OESC with the sought-after evening activities, upon the green directly contiguous with the clubhouse, whilst respecting the privacy of neighbouring guests. Please see Figure 1. as an attachment.

If OESC is not required to mitigate noise beyond what has been offered in its response letter from Andrew Crump Town Planning, consideration should be given to requiring an acoustic fence along the northern boundary of the Lodge grounds (replacing the existing fence) and along the eastern boundary of the Lodge adjacent to the proposed reinstated bowling green.

Yours faithfully,

Director

Chairperson John Carpenter Vice Chairperson Stuart Porges Fundraising Chairperson Jan Savage



Cancer Care Western NSW Inc WESTERN CARE LODGE

P.O. Box 2800
ORANGE NSW 2800

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ABN: 88 995 371 685
CFN: 20279



Figure 1. View towards Lodge from area to be reinstated as a bowling green.

2.3 ORANGE LOCAL ENVIRONMENTAL PLAN - AMENDMENT 33 - ROSEDALE GARDENS

RECORD NUMBER: 2023/42

AUTHOR: Craig Mortell, Senior Planner

EXECUTIVE SUMMARY

Rosedale Gardens was originally rezoned under LEP Amendment 13 for 450 residential lots between 4,000m² and 8,000m² in size. Further market research by the landowner resulted in a revised concept to create 700 lots ranging from 2,000m² to 3,900m².

At the PDC meeting of 2 November 2021 Council considered a draft planning proposal, now known as Amendment 33, seeking to increase the lot yield from 450 lots to 700 lots, with a reduction in lot size to 2,000m² associated with a clause to cap the number of lots at 700. The use of a clause to cap the number of lots is intended to allow higher flexibility in the DCP and DA design process while still ensuring that significant open space can be delivered, and riparian corridors and ecologically sensitive lands protected.

The exhibited version of Amendment 33 sought to replace the current zone pattern with a single R5 zone, on the basis that after the estate is developed open space and ecological lands would then be rezoned to reflect their status. However, following agency consultation and public exhibition Amendment 33 will now retain the main area of RE1 Public Recreation as well as the SP2 Infrastructure zone as it relates to the Transgrid transmission Line. These changes are considered minor and are in direct response to agency concerns. Since the changes do not increase the development potential they are not considered to warrant re-exhibition.

Importantly, Amendment 33 maintains the requirement from Amendment 13 for a site specific development control plan (DCP). The Rosedale Gardens DCP will be required to address relevant matters from Section 6.3 of the LEP as well as any other matters required by Council. The DCP will need to be prepared, exhibited and adopted before any DA for subdivision can be considered. This allows Amendment 33 to focus on the primary issues of minimum lot sizes, overall yield and appropriate land uses.

LINK TO DELIVERY/OPERATIONAL PLAN

The recommendation in this report relates to the Delivery/Operational Plan Strategy “7.1. Engage with the community to develop plans for growth and development that value the local environment”.

FINANCIAL IMPLICATIONS

Nil

POLICY AND GOVERNANCE IMPLICATIONS

Nil

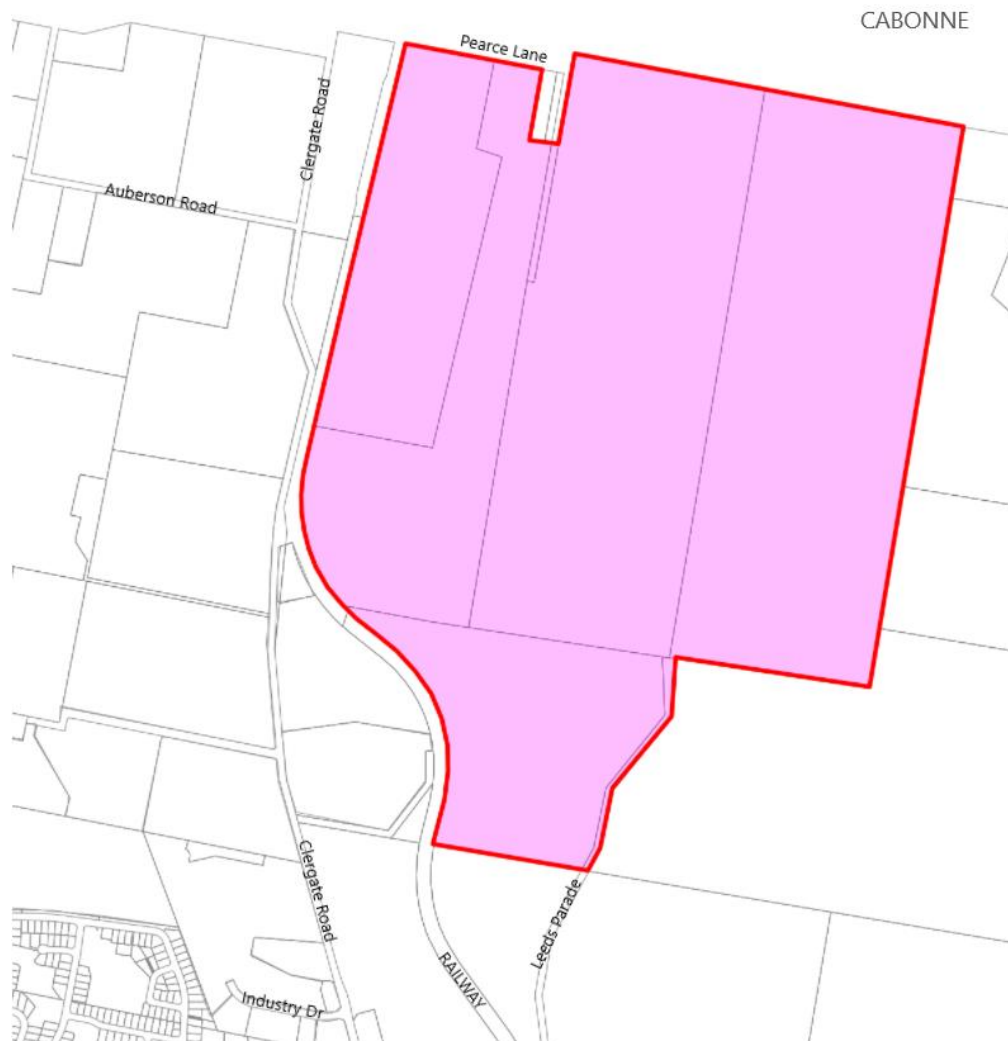
RECOMMENDATION

That Council note the submissions from government agencies and Cabonne Shire Council and resolve to support the planning proposal being finalised by the Department of Planning and Environment subject to:

- 1 The site remaining within an Urban Release Area designation that requires a site-specific development control plan be prepared and adopted prior to any development applications.
- 2 A site-specific development control plan being drafted and adopted to include;
 - a. detailed provisions that respond to the matters contained in Section 6.3 of the Orange Local Environmental Plan 2011
 - b. that a concept subdivision layout be included that identifies and protects Critically Endangered Ecological Communities (CEEC) present on the site
 - c. landscape buffers and building setbacks to the northern and eastern boundaries of the estate to protect neighbouring agricultural activities
 - d. controls to address biosecurity issues to protect neighbouring agricultural activities
 - e. building setbacks to the western boundary of the estate to ensure rail corridor vibrations do not impact upon dwellings and associated outbuildings
 - f. design of a public open space in consultation with Council's Technical Services division to incorporate any retention or detention basins as may be required
 - g. clear controls to minimise the extent of earthworks, maximum cut/fill controls and building envelopes on lots with steep slopes that demonstrate appropriate setbacks from boundaries to preserve privacy and maintain the natural landscape features of the site
 - h. that all other DCP requirements arising from Amendment 13 of Orange LEP 2011 be maintained, unless superseded by the above.
- 2 Staff enter negotiations with the proponent for a Voluntary Planning Agreement, to accompany the site specific DCP, to address:
 - a. dedication and embellishment of public open space areas
 - b. protection and management of ecological lands, and
 - c. road and intersection upgrades arising from the development.
- 3 The Terrestrial Biodiversity map of the Orange LEP 2011 be updated in relation to this site to incorporate the data outlined in figure 5 (page 8) of the updated planning proposal.
- 4 The current SP2 zone, in place to protect the Transgrid Transmission Line, is to remain with no alteration to its current boundaries.
- 5 The rezoning be conditional upon a local clause that caps the number of residential lots at 700, lots for other purposes such as public open space to be excluded from this clause.
- 6 That Council require the preparation of a site-specific development control plan to include direct consultation with the Biodiversity Conservation and Science Directorate to ensure that their concerns in relation to Critically Endangered Ecological Communities on the site are appropriately addressed.

FURTHER CONSIDERATIONS

Consideration has been given to the recommendation's impact on Council's service delivery; image and reputation; political; environmental; health and safety; employees; stakeholders and project management; and no further implications or risks have been identified.

SUPPORTING INFORMATION**Subject site****Background**

463 Leeds Parade and 440 Clergate Road, referred to as Rosedale Gardens, were originally rezoned under OLEP Amendment 13 to allow for 450 residential lots ranging from predominantly 4,000m² up to 8,000m² in steeper terrain.

Following a review of the residential market the landowner lodged a further planning proposal, now known as amendment 33, that sought to increase the yield to 700 lots to be achieved by a combination of zone adjustments and reducing the minimum lot size to 2,000m² with a clause capping the overall yield.

With an overall site area of 293ha the proposal retains a commitment to provide 28.2ha of open space and riparian corridors that would be dedicated to Council.

2.3 Orange Local Environmental Plan - Amendment 33 - Rosedale Gardens

Approximately 62.3ha would be required for the road network leaving approximately 202ha of land for development. With a cap of 700 lots and a minimum lot size of 2,000m² this would require a minimum of 140ha (assuming all lots were exactly 2,000m²). This means that there is up to 62ha of land available to respond to additional site constraints and still achieve the intended 700 lot yield.

This flexibility has emerged as an important part of the proposal as it will enable the estate to respond to the concerns of government agencies, particularly the Biodiversity, Conservation and Science Directorate (BCS) who have identified a Critically Endangered Ecological Community (CEEC) is present on the land and will need to be protected. It is fair to say that BCS are anxious to ensure that the eventual development of the land does not further impact upon the CEEC and that their support for the proposal is highly contingent upon this aspect.

This approach is intended to provide a degree of flexibility in the final layout at the subdivision stage. It is expected that once the subdivision has been completed open space and ecologically important land will be dedicated to Council and may then be subsequently rezoned to open space or a conservation zone under a future housekeeping amendment.

At the PDC meeting of 2 November 2021 Council resolved to support the Planning Proposal subject to

- the site retaining the Urban Release Area (URA) designation. This maintains the trigger for requiring a site specific development control plan and associated contributions plan over the land prior to any subdivision DA
- confirmation for the approach of capping the number of lots at 700 via a local clause and
- that the steepest portions of the site be excluded from the exempt and complying development codes SEPP.

Gateway Determination was received on 23 December 2021, this withheld delegations for formal plan making powers, meaning that finalisation of the plan will be undertaken by DPE. The reason stated was due to *“the updates to the planning proposal and consultation with agencies that are required before key provisions of the proposal (eg. zones) can be supported”*. Essentially, because the gateway sought certain changes the department wanted to ensure they had the opportunity to confirm the changes would satisfy the concerns of each agency. Regardless of this, before the plan can be formally “made” a Council resolution on the matter is still required. In effect this means that both Council and the Department need to sign off on the proposal.

Beyond this the conditions of the gateway determination have been addressed/fulfilled as follows:

Condition 1 required the proposal to be updated to:

- (a) Address steep terrain through appropriate local development controls.
- (b) Provide additional justification for the proposed removal of the SP2 Infrastructure, RE1 Public Recreation and C4 Environmental Living zones, and to demonstrate consistency with:
 - i. Section 9.1 Directions 2.1 Environmental Protection Zones and 6.2 Reserving Land for Public Purposes.
 - ii. Directions 13, 14 and 15 of the Central West Orana Regional Plan 2036.

2.3 Orange Local Environmental Plan - Amendment 33 - Rosedale Gardens

- (c) Include discussion of section 9.1 Direction 2.6 Remediation of Contaminated Land to demonstrate the Planning Proposal Authority is satisfied the land can be adequately remediated and be made suitable for all future land uses; and
- (d) Update discussion on the proposed lot averaging clause to include Council's overall objectives for the site and to support their consideration at the development assessment stage.

Condition 2 required consultation with a range of public agencies for 21 days.

This has been completed, refer to agency responses below.

Condition 3 required the proposal to be revised to address agency feedback and forwarded to DPE for review and approval before progressing to community consultation.

This was completed and DPE provided authorisation to proceed to public exhibition.

Condition 4 required public exhibition for 28 days.

This has been completed refer to public exhibition comments below.

Condition 5 confirmed that a public hearing would not be required. (note. public hearings are only required where a proposal is reclassifying community land).

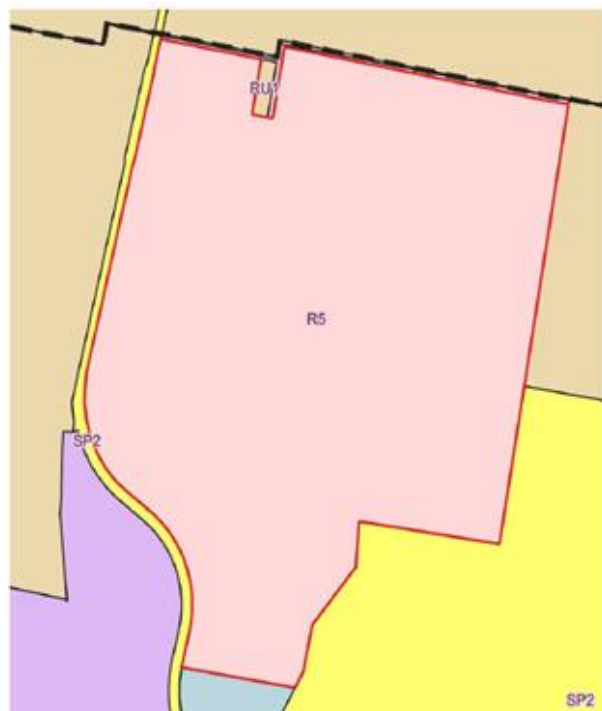
Condition 6 established the timeframe for completion of the proposal.

This has been extended and will require the Department of Planning and Environment to formally make the plan and update the LEP and associated maps.

Zone changes



Current Zone Pattern (Amendment 13)

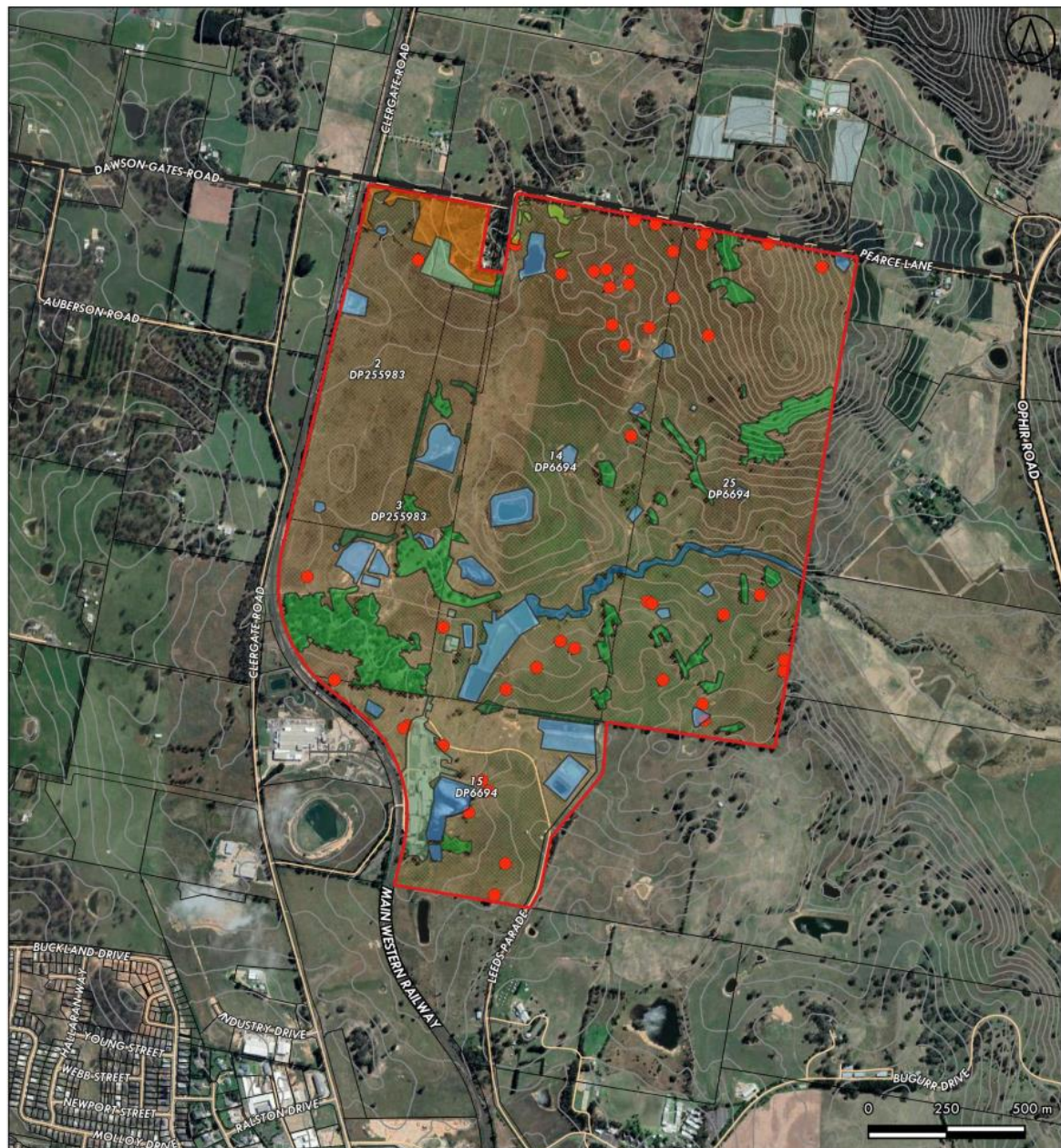


Exhibited Zone Pattern

Subsequent to the exhibition the proposal has been revised to now retain the SP2 zone which applies to the corridor of land on which the Transgrid Transmission Line exists.

Terrestrial Biodiversity changes

Figure 5 – Ground-truthed biodiversity mapping



LEGEND

	Subject Site		Exotic Grassland - 240.1ha
	LGA Boundary		Exotic Vegetation - 4.95ha
	Cadastre		Native Grassland - 0.63ha
	Road		Native Plantings - 3.09ha
	Contours (5m Interval)		Native Woodland - 20.38ha
	Buildings - 4.4ha		Riparian - 2.51ha
	Dams - 16.25ha		Native Regrowth - 1.26ha
	Paddock Trees - 49 isolated (Eucalypts)		



ROSEDALE GARDENS ESTATE PTY LTD

Proposed Rural Residential Subdivision

Source: © State Government of NSW, Department of Customer Service, Spatial Services 2021

EPSC-28355 Prepared by: AJD Date: 22/07/2021 File: 221025_03.qxd

Lot Size Changes

The change to a single minimum lot size for the entire site is not intended to remove the principle of using larger lots on steep land. The previous distinction between lot size boundaries was linked to the previous concept plan which hindered the ability to design changes during the DCP/DA process. It is anticipated that steeper land will demonstrate that lots are suitably sized to avoid excessive earthworks, minimise the risk of landslip and appropriately manage stormwater disposal. Once the estate is developed Council will have the ability to adopt larger lot sizes if required.

Agency consultation

Council undertook public agency consultation between 4 April 2022 to 2 May 2022. Submissions from Cabonne Shire Council, Biodiversity Conservation and Science Directorate (BCS), NSW EPA and Transport for NSW were received. Receipt of consultation material was acknowledged by Rural Fire Service on 21 April but no submission was made.

Agency Response - Cabonne Shire Council

Cabonne Council expressed concern that the proposal was silent on potential impact to adjacent farmland with their LGA. Cabonne have requested consideration of such impacts and the State government's right to farm policies and the aims and objectives of the RU1 zone of the Cabonne LEP 2012. This may include biosecurity measures and buffer distance or planning controls to address the potential conflict with neighbouring farmland.

Comment:

The concerns are supported and appropriate measures and controls should be included in the site specific DCP masterplan.

Agency Response - Biodiversity Conservation and Science

Considered that the proposal was not consistent with the directions and actions of the Central West and Orana Regional Plan as they relate to biodiversity.

Specifically:

Direction 13 - Protect and manage environmental assets

Action 13.1 protect high environmental assets through local environmental plans

Action 13.2 minimise potential impacts arising from development in areas of high environmental value, and consider offsets or other mitigation mechanisms for unavoidable impacts.

This view, that the proposal is inconsistent with the regional plan, arises from the proposal relying upon use of the Biodiversity Offset Scheme (BOS), however, use of the BOS is supposed to be reserved for situations where avoidance of impact on High Environmental Values (HEV) is not possible. The BCS response considers that avoidance has either not occurred or not been given sufficient priority. BCS view that HEV areas should be protected with appropriate zoning in the first instance.

This concern is reiterated when BCS consider the proposal alongside the *Orange Local Strategic Planning Statement 2020* (LSPS) as Planning Priority 13, Action 3 requires greenfield subdivisions to protect and enhance waterways and riparian corridors, whereas the proposal seeks to remove the RE1 and C4 zonings in areas where riparian corridors are present.

BCS were also critical of the proposal stating that “conclusions of the likelihood of occurrence for predicted threatened species is not adequately justified” particularly that Table 5 of Appendix D of the proposal is not consistent with the conclusions of the supporting Ecology Report (prepared by FloraSearch).

The site contains *White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions* (Box Gum Woodland). Box Gum Woodland is listed as a Critically Endangered Ecological Community (CEEC) under the *Biodiversity Conservation Act* and therefore is listed as an entity for Serious and Irreversible Impacts (SII). Where a proposal is determined likely to have a serious and irreversible impact on biodiversity values the planning authority must not grant approval.

BCS recommended further mapping of HEV areas on the site and protection through appropriate planning mechanisms (zones, lot sizes and preclude subdivision). The absence threatened species on the site should be further justified or Council should acknowledge the likelihood of threatened species being present and potential impact from future development. Mapping and identification of HEV and SII entities on the subject site up front could simplify future development assessment.

Comment:

Between Amendment 13 being completed and the current Amendment 33 being prepared the status of Box Gum woodland has been elevated from an Ecologically Endangered Community (EEC) to a Critically Endangered Ecological Community (CEEC). This change means the CEEC now triggers greater level of protection than it had previously. However, if the planning proposal were not to proceed the land would remain zoned for residential development under the pattern established by Amendment 13.

Accordingly lengthy discussions have been held between the proponent, Council staff and BCS. Ultimately BCS have acknowledged that the approach of Amendment 33 is to allow flexibility in the design process and that this will include responding to the occurrence of the CEEC on the site. As such BCS support for the proposal can be regarded as highly conditional and requiring that the DCP preparation shall fully protect the main pocket of CEEC located in the southwest of the site and further seek to protect as much of the CEEC beyond this location as possible. Additionally, landscaping plans and street planting within the estate should seek to include species compatible with the CEEC, particularly in locations close to existing CEEC pockets. Placement of public open space shall also seek to align with these features.

Agency Response – NSW EPA

The EPA recommends that Council ensure an adequate buffer distance between the IN1, RU1 and the proposed R5 land. The buffer should consider potential noise, water and air quality impacts on the community from industrial activities such as those regulated by the EPA under Schedule 1 of the Protection of the Environment Operations Act (POEO Act).

With respect to potential contamination the EPA suggests that Council ensures that all site remediation work is completed in a planned and proper manner. This includes the removal of all asbestos waste by a trained and licenced professional to ensure further site contamination is not caused. After the destruction and removal of all abattoir infrastructure, including any underground storage units Council should ensure a full site investigation is completed to fully assess any potential ground and water pollution.

Comment:

The estate is separated from IN1 land to the southwest by the rail corridor. Vibrations from the rail corridor have already been identified as requiring mitigation. It is expected that all lots on the western edge of the estate will require building envelopes that observe a minimum setback from the rail corridor (the exact distance to be confirmed during preparation of the development control plan for the estate). Similar buffer requirements to RU1 land in Cabonne north of the estate as well as within the Orange LGA to the east and west are anticipated in the DCP requirements.

Water and air quality impacts will be managed through a combination of DCP provisions and allocation of public open space areas, particularly along riparian corridors and existing Box Gum Woodland CEEC areas.

Identification and remediation of contaminated land, primarily from the former abattoir building and associated holding dams will be addressed through a combination of DCP provisions and as part of any demolition DA for the abattoir structures. For example the DCP will need to include a staging plan and Council may require investigation, remediation and validation to be completed in order to 'unlock' any given stage.

Agency Response - Transport for NSW (TfNSW)

TfNSW has reviewed the Traffic Impact Assessment (TIA) and notes the Level of Service (LoS) for right turn movements at Clergate Road onto the Northern Distributor Road will degrade to a LoS F under projected future traffic conditions, with queueing anticipated. Appropriate control measures for this intersection, including signalisation of the intersection of Clergate Road and Northern Distributor Road needs to be considered.

Concerns are raised about the future safe operation of the level crossings as a result of the increase in traffic from the future development.

Comment:

On 7 October 2022 the Department of Planning advised Council that the proposal was now considered to have satisfied the requirements of Condition 1 and was able to proceed to public exhibition.

Public exhibition

Council undertook public exhibition from 15 October 2022 to 14 November 2022. A submission from BCS was received during this period. No other agency or public submissions were received.

Biodiversity Conservation and Science Submission

Post exhibition discussions between Council, the proponent and BCS were conducted resulting in a highly conditional level of support (as described in the previous agency consultation section) for the proposal being required. In particular BCS shall be consulted during the preparation of the site-specific DCP.

As detailed earlier the overall site area is 293ha, the road network is anticipated to require approximately 62.3ha, and 700 lots at 2,000m² would take up a further 140ha. This leaves approximately 90.7ha available for either increasing lot sizes or as additional open space to protect the CEEC.

The proponent has freely acknowledged that the flexibility being sought by the proposal to achieve 700 lots shall not be at the expense of the need to protect viable CEEC on the site. Ultimately the figure of 700 lots is considered - by Council, BCS and the proponent - as a maximum not a requirement. Should the protection of CEEC require the overall yield to be reduced that will be the priority. This approach is considered to incentivise the developer to explore as many design variations as needed to deliver a quality outcome that protects ecological values on the site.

Electricity Transmission Line

The proposal initially sought to relocate and underground the transmission line, subject to reaching agreement with Transgrid. At the time of writing the proponent has not been able to secure support for this change. As such if the proposal is to proceed the SP2 zone will be retained and the transmission line remaining overhead in its current location. The required DCP masterplan will adapt the concept layout to reflect this requirement keeping all residential lots clear of the SP2 zone.

Conclusion

After a very lengthy process the planning proposal has been revised and updated to reflect the concerns and issues raised, primarily through agency consultation, and is now considered to be in a form that can allow the rezoning under the Orange LEP to be concluded. This will include the creation of a local clause to cap the estate at 700 lots in total.

The next phase, once the Department of Planning and Environment has gazetted the rezoning, will be the preparation of the site-specific development control plan. This requirement was first established under Amendment 13.

2.3 Orange Local Environmental Plan - Amendment 33 - Rosedale Gardens

Once the DCP has been drafted and reviewed by staff it will be brought to Council for consideration before proceeding to public exhibition. Consultation with affected agencies, particularly BCS is anticipated to be part of that process. An actual development application for subdivision would be dependent upon adoption of the DCP.

ATTACHMENTS

- 1 Planning Proposal - Rosedale Gardens, D23/9348 [↓](#)
- 2 Planning Proposal - Appendix A - Cover Letter, D23/9352 [↓](#)
- 3 Planning Proposal - Appendix B - Concept Layout, D23/9353 [↓](#)
- 4 Planning Proposal - Appendix C - Traffic Impact Assessment, D23/9354 [↓](#)
- 5 Planning Proposal - Appendix E - Gateway Determination, D23/9355 [↓](#)



ROSEDALE GARDENS ESTATE PTY LTD

Amendment to the Orange Local Environmental Plan 2011

PLANNING PROPOSAL

Report No: 22025/PP

Rev: 001I

10 February 2023

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Subdivision_13388\Out\Reports\221025_PP_001I.docx

DOCUMENT AUTHORISATION			
Revision	Revision Date	Report Details	
A	21/08/21	Draft for client review	
B	03/09/21	Updated draft for client review	
C	07/09/21	For issue	
D	21/09/21	Updated figures	
E	16/02/22	Updated posted Gateway	
F	22/03/22	Updated for issue	
G	28/06/22	Updated post regulatory consultation phase	
H	12/09/22	Updated to address DPE comments	
I	10/02/23	Updated post public exhibition	
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1. BACKGROUND

1.1 Introduction

Premise Australia Pty Ltd has been commissioned by Rosedale Gardens Estate Pty Ltd to prepare a planning proposal to amend the *Orange Local Environmental Plan 2011* (OLEP) in respect of land at 463 Leeds Parade and 440 Clergate Road, Orange.

The proposal entails the rezoning of the site to allow for a greater area of R5 Large Lot Residential zoned land and a reduction of the minimum lot size from a combination of 4,000 square metres (m²) and 8,000 m² to 2,000 m², together with the introduction of specific additional permitted use and environmental protection mapping and clauses to introduce a density limit. It is intended that the future subdivision of the land does not exceed 700 lots.

The proposal has been developed in response to changes in the residential development market that have emerged since the original rezoning of the site was agreed, including increased demand for housing lots in the City of Orange (particularly in light of the emerging COVID pandemic and the associated spike in regional housing demand), market testing which reflects demand for smaller housing lots in large lot residential areas, and the repeal of the Native Vegetation Act and introduction of the *Biodiversity Conservation Act 2016*.

The Planning Proposal was endorsed by Orange City Council at their meeting of 16 November 2021 and forwarded to the Department Planning and Environment (DPE) for Gateway consideration. Gateway approval was issued on the 23 December 2021. The Gateway approval is provided as **Appendix E** of this Planning Proposal. Condition 1 of the Gateway approval required changes to the Planning Proposal prior to the commencement of consultation. Condition 1 reads:

1. The planning proposal is to be updated prior to agency consultation to:

(a) Address steep terrain through appropriate local development controls.

(b) Provide additional justification for the proposed removal of the SP2 Infrastructure, RE1 Public Recreation and C4 Environmental Living zones, and to demonstrate consistency with:

i. Section 9.1 Directions 2.1 Environmental Protection Zones and 6.2 Reserving Land for Public Purposes.

ii. Directions 13, 14 and 15 of the Central West Orana Regional Plan 2036.

(c) Include discussion of section 9.1 Direction 2.6 Remediation of Contaminated Land to demonstrate the Planning Proposal Authority is satisfied the land can be adequately remediated and be made suitable for all future land uses; and

(d) Update discussion on the proposed lot averaging clause to include Council's overall objectives for the site and to support their consideration at the development assessment stage.

This Planning Proposal has been updated to address the requirements of condition 1 of the Gateway approval.

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Condition 2 of the Gateway approval required consultation with regulatory agencies and the update of the planning proposal to address the responses received during this consultation phase, prior to acceptance by DPE and the carrying out of community consultation.

Consultation with regulatory agencies is discussed in detail in **Section 4.5** and changes have been made in a number of sections to address the comments from agencies.

Specific changes are noted as follows:

- **Table 5** has been added to provide a tabular response to matters raised by agencies;
- **Figure 4** has been added to demonstrate land mapped with high environmental value (mapped sensitive terrestrial biodiversity as per the LEP);
- **Figure 5** has been added showing the outcome of a site visit and ground truthing by Premise ecologists;
- **Figure 14** has been added to show all slope areas over 20% and additional commentary has been added at **Section 3.1.2** to confirm the approach to managing sloping land;
- **Section 4.5** has been updated to provide details of the outcomes of meetings held with DPE Biodiversity, Conservation and Science and Heritage NSW. Additional principles to be adopted in the preparation of a site specific DCP have been included in **Section 3.1.5** and **Table 5**;
- **Appendix F** has been added with details of additional contamination investigations and additional commentary with respect to this matter is provided on **Page 34**;
- **Appendix G** has been added to include responses from regulatory agencies received through the initial consultation phase; and
- **Appendix H** has been added as an update to the Aboriginal Heritage due diligence report.

Following the agency consultation phase, the planning proposal was placed on public exhibition for a period of 28 days from 15 October 2022 until the 14 November 2022. During the 28 day period, one submission was received, being a submission from the DPE Biodiversity Conservation Division (BCD), dated 3 November 2022. No public submissions were received and no submissions that could be characterised as an objection were received. A further late submission was received from Transgrid, received on the 6 February 2022 – refer **Appendix G**. This outlined the expectation that future design would account for easement requirements.

Via their submission, BCD made a number of recommendations to be addressed. The Applicant, together with Council and DPE planning officers, met with BCD on the 22 December 2022 to discuss the BCD submission and identify the extent of additional information required.

Through review of the BCD submission, the Applicant made the commitment to amend the planning proposal to retain the portion of RE1 zoned land in the south-western extent of the site. Mapping in this planning proposal has been updated to address this (refer **Figure 9** and **Figure 10**).

Also, as a result of discussions between the applicant and Council, the SP2 zoning in the eastern extent of the site is to be retained.

1.2 Scope of the report

This planning proposal has been prepared in accordance with the NSW Department of Planning's advisory documents '*A Guide to Preparing Local Environmental Plans*' and '*A Guide to Preparing Planning Proposals*'. The latter document requires the planning proposal to be provided in five (5) parts, those being:

- Part 1 – A statement of the objectives or intended outcomes of the proposed LEP;
- Part 2 – An explanation of the provisions that are to be included in the proposed LEP;

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- Part 3 – The justification for those objectives, outcomes, and provisions and the process for their implementation;
- Part 4 – Mapping; and
- Part 5 – Details of the consultation that is (or has) to be undertaken on the Planning Proposal.

It is noted that updated mapping would be supplied under separate cover.

1.3 Structure of the report

This planning proposal is provided in the following structure;

- **Section 2** provides an overview of the subject site; the development intent; and development constraints;
- **Section 3** provides a statement of the objective and explanation of provisions of the planning proposal;
- **Section 4** provides justification regarding the need for the planning proposal; outlines its relationship to strategic planning strategies; and overviews the environmental, economic, and social impacts of the proposal;
- **Section 5** details how consultation is (or has) to be undertaken with respect to the planning proposal.

2. OVERVIEW

2.1 The Site

The site is 440 Clergate Road and 463 Leeds Parade, Orange, NSW (

Figure 1). The relevant Lot and Deposited Plan numbers are:

- | | |
|------------------|-----------------|
| • Lot 2 DP255983 | • Lot 25 DP6694 |
| • Lot 3 DP255983 | • Lot 15 DP6694 |
| • Lot 14 DP6694 | |

The subject site has an area of approximately 290 hectares and is depicted in

Figure 1.

The subject site lies approximately 6 km north of the Orange Central Business District in the Orange Local Government Area. The site is an irregular shape with frontage to Pearces Lane on the northern boundary and the main western railway line to the western boundary. To the south is B7 zoned land, southeast is Charles Sturt University Campus and to the east is existing rural land.

The subject site is largely vacant, rural land with scattered vegetation and dams previously used for agricultural purposes and irrigation of wastewater associated with the former Wooltop processing plant, located on the western side of the Main Western Railway line. The southern part of the site contains an existing abattoir, unused since approximately 2001, which has an approved development application for demolition of these buildings.

The project area is undulating to hilly terrain and is currently used for livestock grazing, which is likely to have been the dominant land use over most of the area since it was settled in the 1800s. The western part of the project area is relatively flat and was formerly developed as an orchard. The highest point in the project area is 936 m AHD on the northern boundary, falling to 830 m AHD on the eastern boundary where Mendhams Creek drains the property and flows in an easterly direction towards Summer Hill Creek.

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The project area is mostly cleared, modified pasture with some remnant native isolated paddock trees and woodland areas.

2.2 Background and Site History

The subject site was the subject of an amendment to the *Orange Local Environmental Plan 2011* (LEP), gazetted in 2020, which rezoned the land from a mix of RU1 – Primary Production and IN1 – General Industrial to a mix of zoning including R5 – Large Lot Residential, E/C4 – Environmental Living, RE1 – Public Recreation and SP2 – Infrastructure (**Figure 2**). A concept plan for development of the land for large lot residential purposes conceptually identified a lot yield of approximately 450 x 4,000 and 8,000 square metre lots. This anticipated yield was reflected in the gazetted minimum lot size applying to the land (**Figure 3**).

The rationale for adopting the E/C4 zone in the southern and eastern extents of the site, by preference to the R5 zone, was to provide some additional protections for scattered areas of native vegetation. The E/C4 zoning, whilst enabling generally the same range of development types to occur as within the R5 zone, more strongly emphasised the protections for vegetation. Significantly, since that rezoning was gazetted, the *Biodiversity Conservation Act 2016* has been introduced, which significantly changed the regulatory framework with respect to the management of native vegetation.

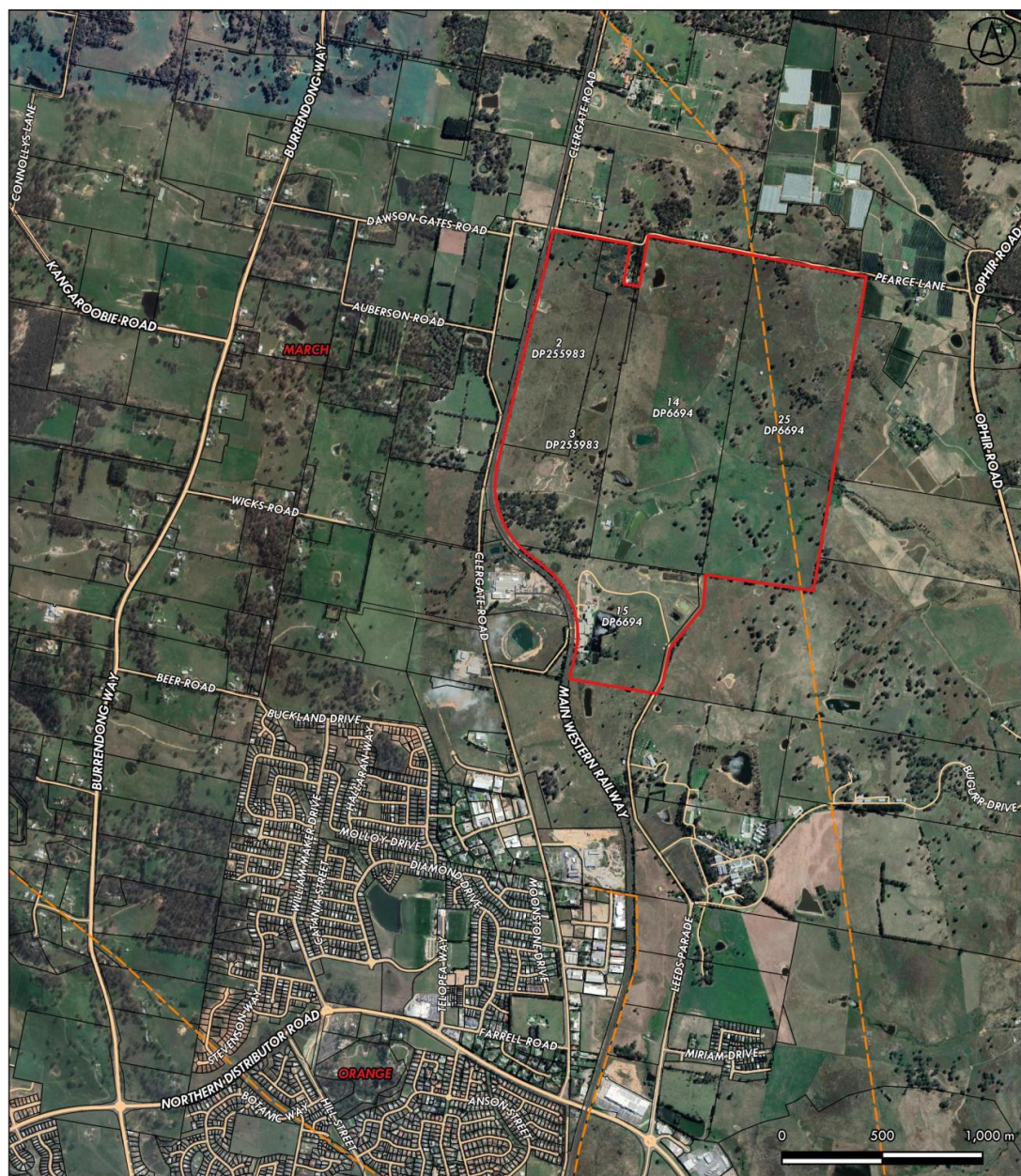
Additionally, Council has reviewed and updated sensitive land mapping to ensure that native vegetation is addressed through mapping and specific clause consideration (LEP clauses 7.4 [terrestrial biodiversity] and 7.5[riparian land and watercourses]). Premise has also completed ground-truthing of the site in accordance with the BC Act Biodiversity Assessment Method (BAM).

As such, it is considered, rather than the need to adopt a range of zones across the site, that a consistent level of protection can be achieved via the existing LEP clauses. This simplifies the approach to planning without reducing the level of protection applying to the land.

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Figure 1 – The Site



LEGEND

- Subject Site
- Cadastre
- Road
- 132kV Transmission Line



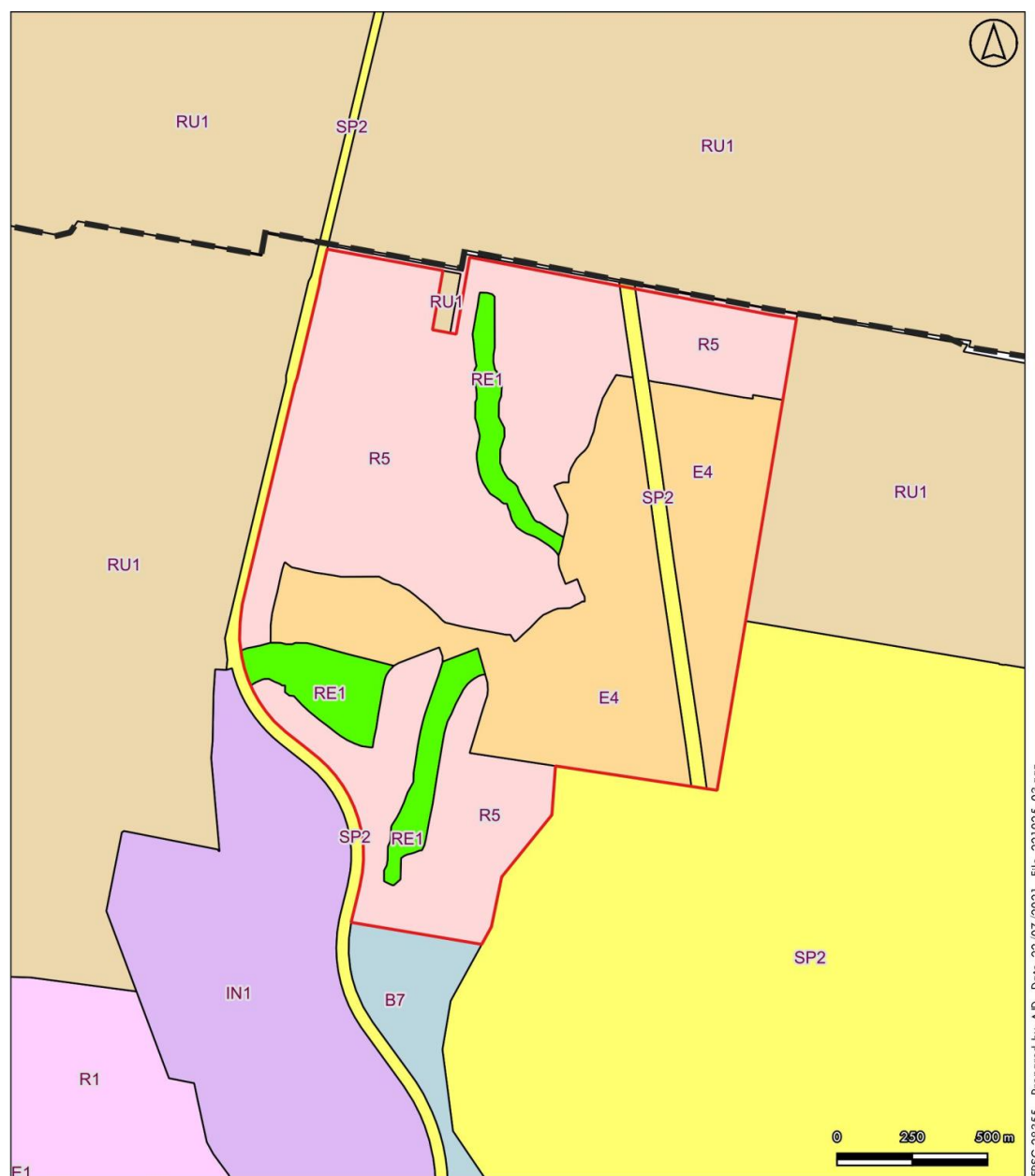
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Proposed Rural Residential Subdivision

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Figure 2 – Current Land Zoning Map



LEGEND

Subject Site	R1 General Residential
LGA Boundary	R5 Large Lot Residential
Land Zoning	RE1 Public Recreation
B7 Business Park	RU1 Primary Production
E4 Environmental Living	SP2 Infrastructure
IN1 General Industrial	



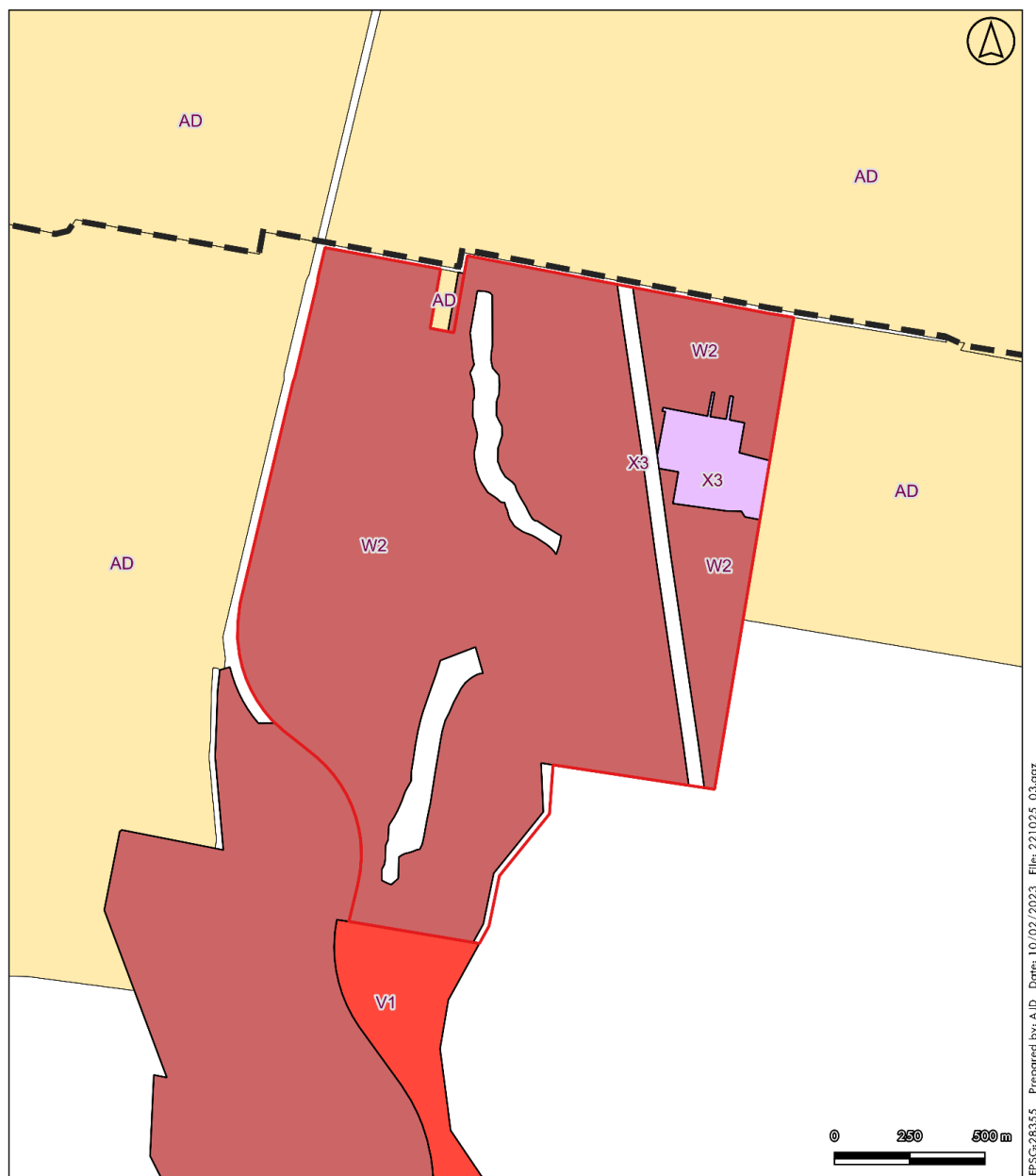
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Figure 3 – Current Lot Size Map



LEGEND

	Subject Site		
	LGA Boundary		
	V1	2000m2	
	W2	4000m2	
	X3	8000m2	
	AD	100ha	



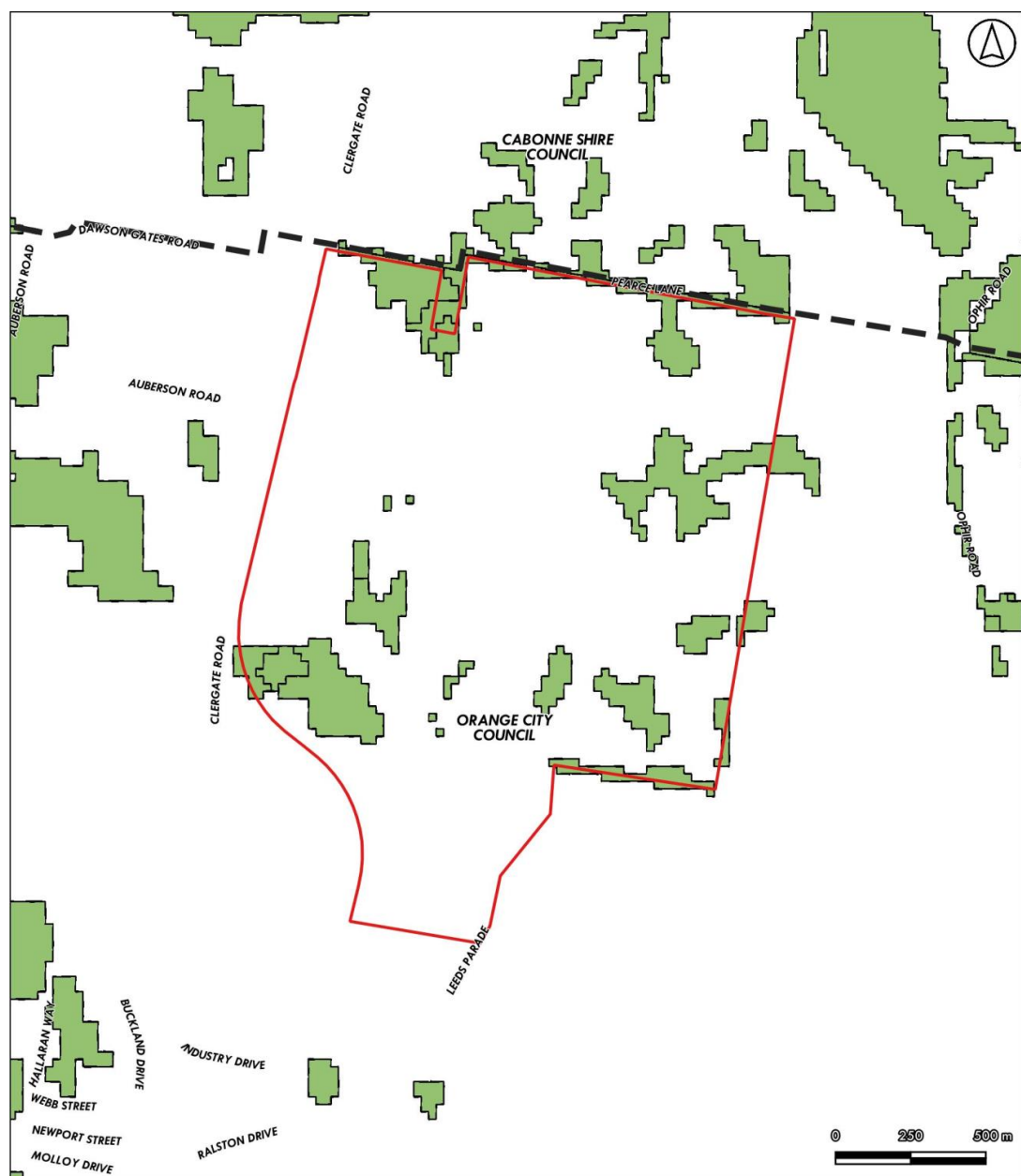
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Figure 4 – Current high environmental value/sensitive biodiversity map



LEGEND

Subject Site LGA Boundary Sensitive Terrestrial Biodiversity



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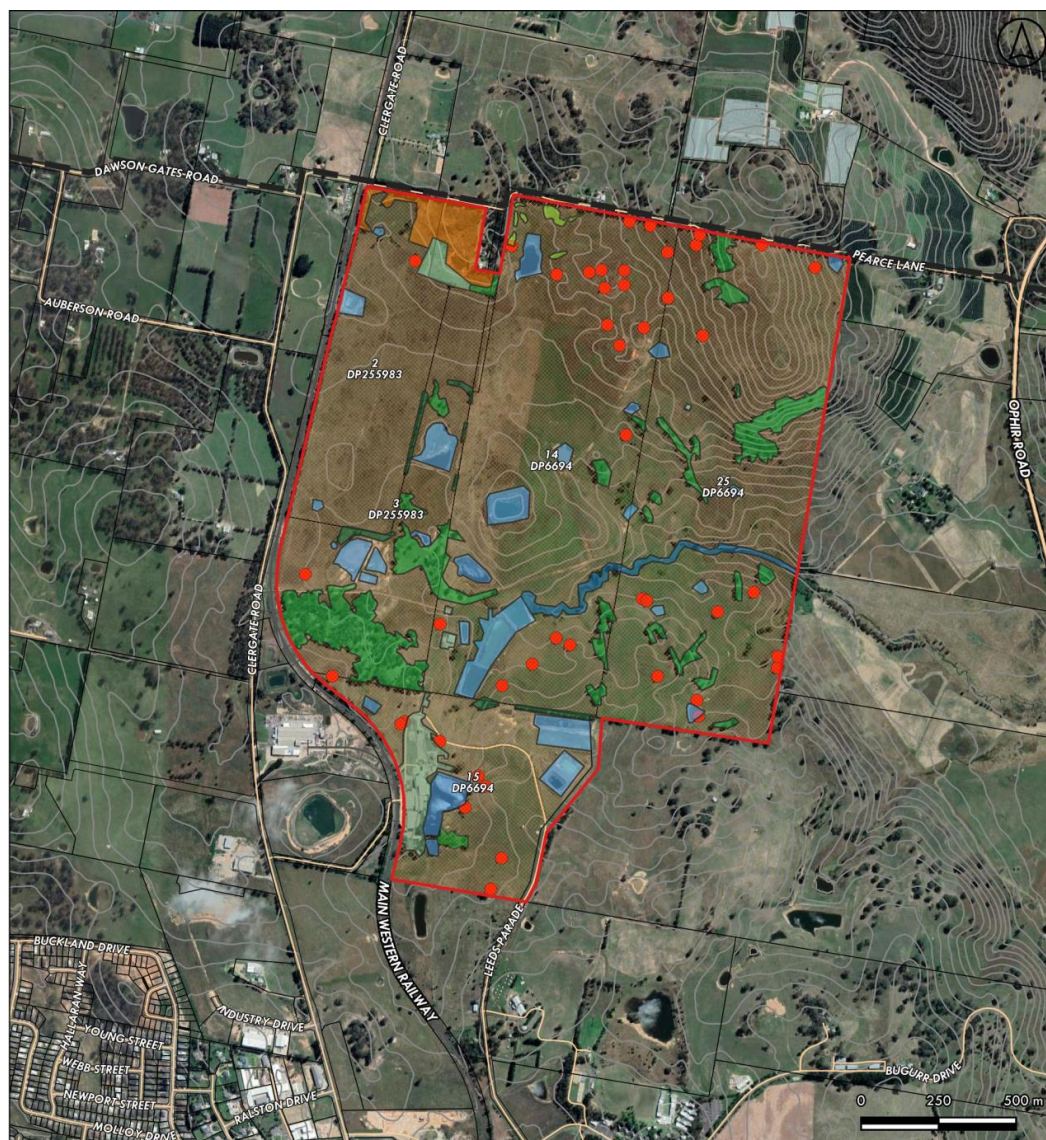
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Figure 5 – Ground-truthed biodiversity mapping



LEGEND

- | | |
|------------------------|---|
| Subject Site | Exotic Grassland - 240.11ha |
| LGA Boundary | Exotic Vegetation - 4.95ha |
| Cadastre | Native Grassland - 0.63ha |
| Road | Native Plantings - 3.09ha |
| Contours (5m Interval) | Native Woodland - 20.38ha |
| Map Units | Riparian - 2.51ha |
| Buildings - 4.4ha | Native Regrowth - 1.26ha |
| Dams - 16.25ha | Paddock Trees - 49 isolated (Eucalypts) |



ROSEDALE GARDENS ESTATE PTY LTD
Proposed Rural Residential Subdivision

Source: © State Government of NSW, Department of Customer Service, Spatial Services 2021

BPSG-28355 Prepared by: AID Date: 22/07/2021 File: 221025_03.jpg

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2.3 Vision/Conceptual layout

A conceptual site masterplan for the estate is provided at **Figure 6** and **Appendix B**.

This masterplan is conceptual to demonstrate one way in which the estate could be developed, noting that refinement will be needed with respect to biodiversity and heritage impact avoidance, through the application of the BAM at DCP and DA preparation stages.

The vision for the development is to transform this significant 290 hectare rural holding from orchard, irrigation and farming/grazing acreage with rich volcanic soils into a high value, highly sort after rural lifestyle suburb with newly created housing lots having access to substantial water features and catchment areas (both direct and indirect) and panoramic district views up to 940 meters in elevation.

The intent of this application is to amend the present zoning and minimum lot size applying to the site, which currently has the potential to deliver approximately 450 lots of approximately 4,000 m², to enable the development of a maximum of 700 lots, ranging in size between 2,000 m² to 4,000 m² (an average of approximately 2,900m² is expected based on the land area available). Proposed lots would have a consistent minimum lot size across the site of 2,000 m² and the ability of lot sizes to address differences in slope across the land. A very small number of lots are likely to be below 2,000 m² and above 4,000 m² to respond to site specific limits with respect to road and water placement and existing topography, however these would be limited in number. Lots below 2,000 m² would be addressed at DA stage via a clause 4.6 variation and would be expected to represent less than 2 percent of lots.

This application seeks to provide for a housing estate of high quality with access to more water features, more choice and variety of lot sizes and more affordability as required in the present market. The vision is for the estate to be set amongst extensive man-made water features sensitive to sound semi-urban design principles, with generous street thoroughfares lined with deciduous trees providing for vehicular, pedestrian and bicycle access through the estate.

The following characteristics are sought to be achieved:

- Extensive water features to encourage abundant bird life to call this estate their home including local species of landed birds, waterfowl, ducks and swans and local fauna, as well as providing a natural habitat for a variety of aquatic life. It is envisaged that children will be able to fish in the waterways and that black swans will be drawn to the water catchments each winter, looking for suitable nesting places and being encouraged to return and stay with islands to be provided in the larger waterways for safe nesting – being reminiscent of the black swans that used to reside in Orange's Cook Park in the 1960-1970's;
- It is envisaged that approx. 250-300 housing lots will enjoy direct frontage to water features or overlook adjacent water features. The majority of these lots are expected to have direct access to water features with their rear boundaries extending down to the top water levels (TWL), enabling homes and outdoor living areas to overlook landscaped rear gardens which extend down to the TWL. Other lots will have street frontages with water features on the other side of the street, affording visual connection to these water catchments from the front yards and street fronting windows of these lots;
- Lot layouts to support predominantly north facing homes to be built on low energy designed lots with solar access in winter months with the extensive plantings of deciduous trees throughout the estate;
- Street corridors to be lined with avenues of large deciduous trees to emulate the ambiance, character and feel of the best suburban streets of Orange;

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- Water features planted out with a complimentary mix of deciduous and endemic native flowering species to attract birdlife and support native fauna species and compliment the range of street plantings to be provided;
- The primary water features that run alongside major streets are to:
 - include walking/bike paths that are publicly accessible and provide good permeability for pedestrians through the estate;
 - provide for public access to larger water features;
 - are planted out with deciduous and native species and are dedicated to and maintained by Council;
 - have water feature widths appropriate for such uses.
- The secondary water features are to be narrower in width and are to be limited to the TWL of the water feature. It is envisaged that the TWL of these water features will form the rear boundaries of a large number of housing lots, with these adjoining housing lot areas to be landscaped and maintained by the homeowners;
- Whilst not directly comparable, the development of this estate will seek to emulate the high quality coastal channel developments with water access being a primary feature for a significant number of lots. The point of difference being that this estate is set in a high quality rural environment with extensive plantings of deciduous tree lined streets, vegetated riparian areas with homes and landscaped gardens overlooking and having direct access to water features;
- Adoption of water sensitive design principles appropriate for this rural lifestyle subdivision;
- There will need to be controls provided within the site specific Development Control Plan and property restrictions to guide the delivery of key elements such as the use of appropriate rural style fencing materials and designs. The proposed minimum lot size of 2,000 m² will enable Council to prevent any future subdivision of the home lots in this estate;
- In further keeping with and maintaining the rural integrity of this estate, street kerb and guttering will only be provided where necessary for storm water control with table drains preferred;
- With rear home lot boundaries extending to the TWL of all secondary water features and pedestrian and cycle paths provided alongside the primary water features, the concept masterplan for the site aims to balance the provision of residential privacy and security whilst providing for public amenity and access, as well as suitable authority accessibility through the estate;
- In areas of natural flow, water will be controlled via well engineered and landscaped waterways designed to control all flows and provide a high quality environment for residents and the public (refer cross sections at **Figure 7** with cross section locations depicted on **Figure 6**);
- Whilst the vision is about high quality, great amenity and pushing conventional boundaries to new benchmarks, it must be commercially achievable, appealing to a broad target market and capable of being supported and approved by relevant authorities;
- The concept masterplan at **Figure 6** (and **Appendix B**) provides an indicative arrangement of the proposed future subdivision, including a proposed road and open space hierarchy. The concept masterplan will be refined and developed through detailed engineering design, stormwater analysis and biodiversity assessment;
- The concept masterplan provides for three site access points, being the current connection to Leeds Parade in the south, via a proposed upgraded level crossing linking to Clergate Road in the west and via a new direct access to Pearce's Lane in the north. A traffic study has been prepared for this application (Refer **Appendix C**) and is supportive of the proposed access points and the indicative road network shown on the masterplan;

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- The concept masterplan assumes that the high voltage overhead electricity transmission line is to be relocated to within the proposed road network and placed underground, subject to agreement with Transgrid and at the full cost of the developer. As agreement has not yet been reached with Transgrid to achieve this result, the current SP2 zoning has been retained, and will be amended or removed at an appropriate future date to coincide with the physical relocation of the transmission line;
- The concept masterplan provides for the retention of a large portion of the mapped vegetation community in the southwest of the site which will be enhanced through augmentation of the waterway and the development of a riparian management and vegetation plan. This retained area will preserve a significant portion of the site's natural habitat whilst adding to the natural amenity of the broader subdivision. As a result of discussions with NSW DPE BCD, the existing RE1 zoning is to be retained in this south-western area.
- Subject to final design and construction, RE1 zoning would be implemented across all open space areas of the site at a later time, likely via a future Council 'housekeeping' LEP amendment.
- Subject to the outcome of the final Biodiversity Development Assessment Report, the LEP sensitive terrestrial biodiversity map will be amended, likely via a future Council 'housekeeping' LEP amendment.
- Subject to negotiations with Transgrid, the SP2 zoning will be amended or removed to reflect the final location/configuration of the high voltage electricity transmission lines traversing the site, likely via a future Council 'housekeeping' LEP amendment.

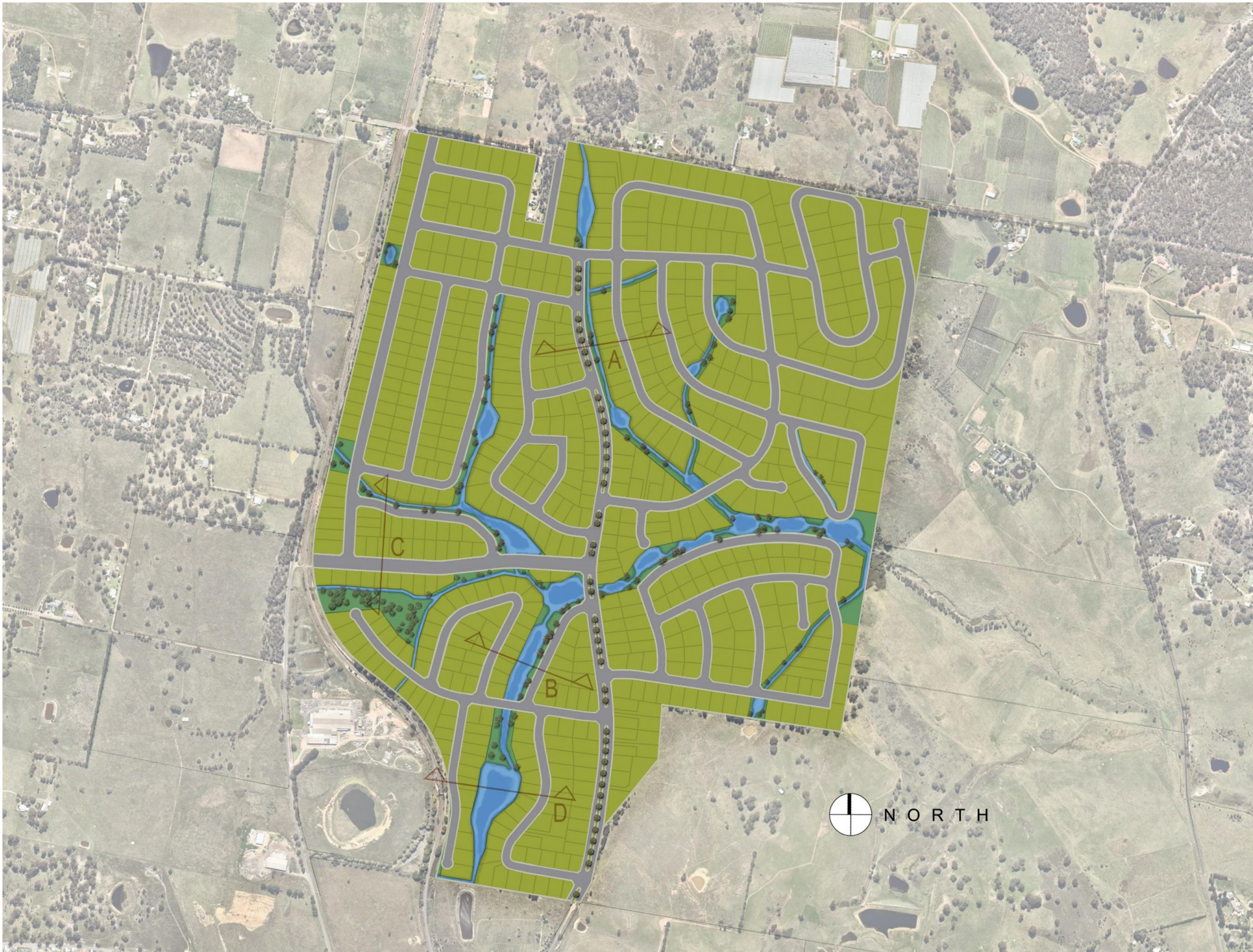
"Rosedale Gardens" is proposed as the future name for this 290 hectare estate. "Rosedale" being the historic name of the thousands of acres this property was once part of. "Gardens" signifies the rich red basalt soils, former orchards and high carrying capacity farming and grazing lands equally capable of growing beautiful avenues of deciduous trees, prolific plantings of deciduous and smaller flowering native species trees and home gardens throughout the estate.

For the city of Orange, known as the Colour City, the visual impact, especially in autumn time of this 290 hectare (3 km²) high quality estate, planted out to generous numbers of deciduous and flowering trees set alongside extensive water features, will be truly amazing as the years progress and will further promote Orange's appeal and standing as a key NSW regional centre.

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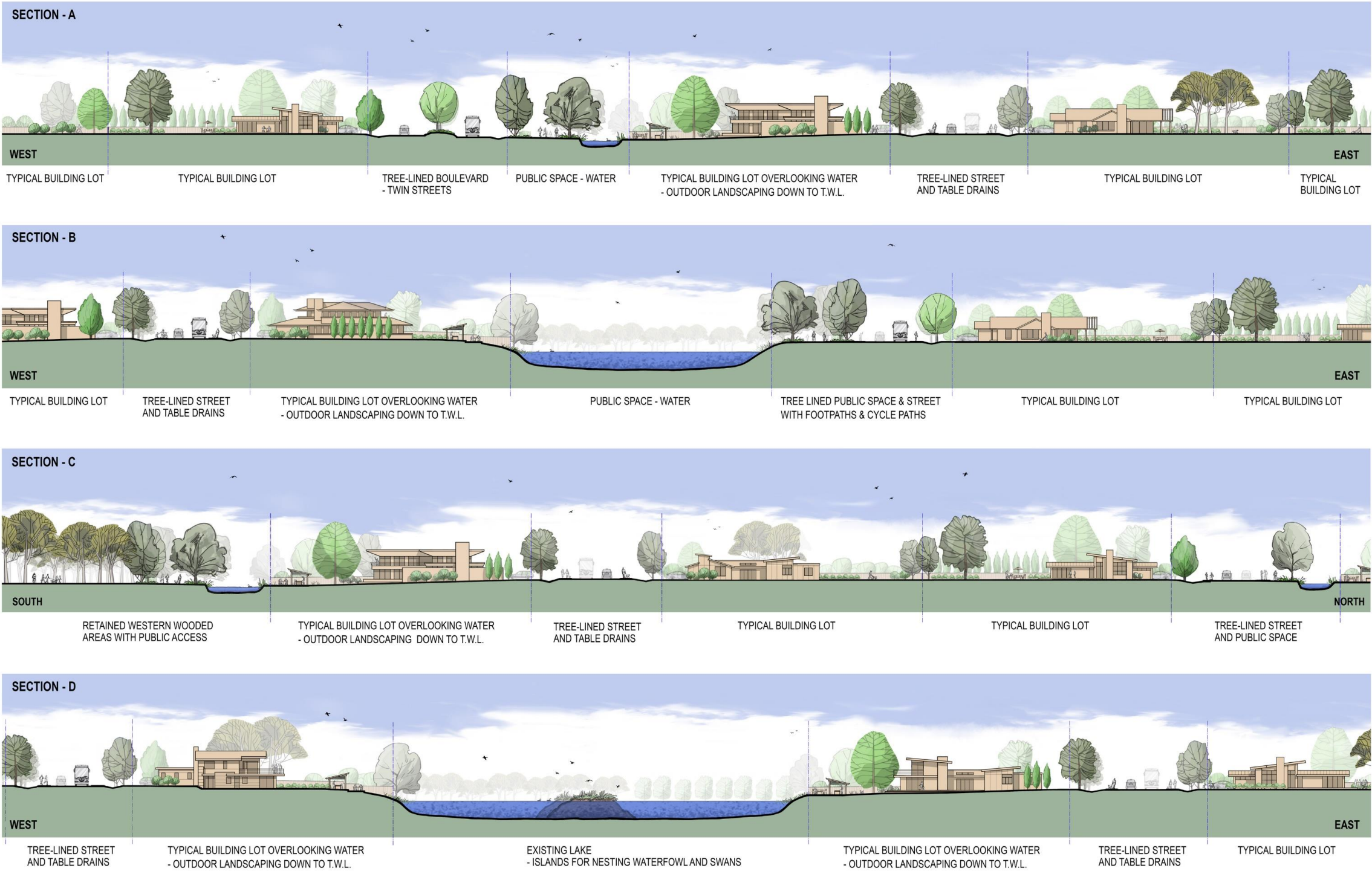
Figure 6 – Concept site layout



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Figure 7 – Example site cross sections



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Figure 8 – Example water feature images



Water Sensitive Urban Design

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3. INTENT AND PROVISIONS

3.1 Objective

Following further market analysis, it is now proposed to rezone the majority of the land R5 – Large Lot Residential with a conceptual yield of approximately 700 large lot residential allotments, with areas ranging from 2,000 m² to 4,000 m². The approximately 9 hectare area of RE1 zoning in the south-western corner will be retained, together with the current SP2 zoning in the site.

Based on investigations completed to date, and additional future investigations to be completed at DCP preparation stage, protecting areas of potential sensitivity at the site (including but not limited to infrastructure alignments, slope, heritage and biodiversity) would be a key component in driving site design.

3.1.1 LOT DENSITY LIMIT

A clause is proposed to be inserted to provide a maximum density limit for the estate of 700 dwellings lots. This would be achieved via insertion of a specific LEP clause, similar to clause 7.10 of the *Cessnock Local Environmental Plan 2011*.

The proposed clause would be structured similar to the below:

(1) The clause applies to 440 Clergate Road and 463 Leeds Parade, Orange, being Lots 2 & 3 DP255983 and Lots 14, 15 and 25 DP6694, as shown edged shaded pink on the Additional Permitted Uses Map.

(2) Development consent must not be granted to any development on the land to which this clause applies if the granting of that consent would result in the total number of residential allotments on that land exceeding 700.

(3) This clause does not prescribe a development standard that may be varied under this Plan.

3.1.2 SLOPE

With respect to the protection of sloping areas, a clause would be inserted into the LEP to require development on sloping land (being land with a contiguous slope of greater than 20%) to undergo a range of considerations at development assessment stage. The proposed clause would be structured similarly to clause 6.4 of the *Blue Mountains Local Environmental Plan 2015*. The clause will apply to land with a contiguous slope of greater than 20% and that is shown on the "Protected area—Slope constraint area" on the Natural Resources—Land Map. It is noted, via **Figure 14**, that there are some non-contiguous areas of slope exceeding 20%, however it is not proposed to cover these via this clause due to their generally small size and disconnected nature, and noting that bulk earthworks proposed at subdivision stage is likely to remove some of these areas (such as those mapped areas associated with on-site dams). It is proposed to apply the clause to those areas identified in **Figure 12**.

It is expected that draft wording would be agreed with Council, DPE and parliamentary counsel prior to gazettal. The objectives of the clause are expected to be generally consistent with the following:

(a) to control the development of land that has contiguous areas of slope greater than 20%,

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(b) to ensure that development on land that has contiguous areas of slope greater than 20% is designed and sited to minimise vegetation clearing and soil disturbance,

(c) to encourage the retention, restoration and maintenance of disturbed native vegetation on steep land.

In relation to this matter a range of options have been considered for consideration via the proposed clause. The clause should be sufficiently flexible to:

- encourage innovative design that responds to the slope of the land,
- makes best use of available views and vista's,
- minimises the impact of development on adjacent land (with respect to viewsheds, overlooking, overshadowing, privacy),
- deliver the protection of extant vegetation;
- ensure that proposed bulk earthworks are proportionate to the location and do not lead to adverse offsite impacts;
- result in the adoption of water sensitive design principles, to ensure that development would not have an adverse impact on the rate, volume or quality of water running off the land;
- deliver a level of amenity to residents offered by constructing on land to which this clause applies, such as district views, natural light, ventilation and drainage and terraced gardens; and
- are appropriate to the geotechnical investigations completed in relation to each site.

The introduction of an appropriate clause of this nature ensures that complying development cannot be carried out on land with slope exceeding 20% by way of clause 1.19(1)(e)(v) of *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* (the Codes SEPP), which prevents complying development on land identified by an environmental planning instrument as being "within a protected area". Any proposed development within land to which the clause applies will therefore require consent by way of a development application submitted to Orange City Council and would include consideration of the applicable DCP provisions applying to slope.

A site specific DCP would incorporate specific provisions relating to slope management to ensure that the principles enshrined in the LEP clause are expanded upon and provide mechanisms for site appropriate design.

Given that any future subdivision DA may not proceed until the DCP has been agreed and adopted, agencies and Council can have confidence that these issues will be fully developed and resolved prior to approval being granted for subdivision.

3.1.3 ABORIGINAL HERITAGE

During the regulatory consultation phase, Heritage NSW provided advice that additional investigations should occur to inform the planning proposal. Through engagement with Heritage NSW draft measures were discussed to satisfy Heritage NSW that impacts to Aboriginal heritage could be appropriately managed at the DCP and DA design stage.

It was noted through this engagement that the site has been previously rezoned from a mixture of RU1 and IN1 to the current R5/C4/RE1 arrangement on the basis of the current level of assessment. An update to the original due diligence assessment has been completed, and this concludes that there has been no material change in the site characteristics or regulatory framework that would justify further assessment at this time. It was further noted that, due to the large size of the site and the proposed density limit LEP clause, sufficient

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capacity exists within the site to achieve both the density limit proposed and ensure that, if required, sufficient land is available for protection/conservation of any detected sensitive sites. The basis for this approach is that:

- As proposed by the applicant via the planning proposal, the limit of 700 lots is to be enshrined in a specific LEP clause that will ensure that the maximum lot yield of the scheme does not exceed this number. In the context of the proposed minimum lot size of 2,000m², and the areas conceptually be set aside for open space and roads, the following is noted:
 - The site has an area of approximately 293 hectares;
 - 700 lots at an MLS of 2,000m² would require a minimum area of 140 ha;
 - Areas set aside for roads and open space (via the concept plan) are, respectively, 62.3 ha and 28.2 ha;
 - Being reasonable and assuming that lots within areas of steeper slope or containing native vegetation may be larger, it is assumed that 30% of lots are in fact a minimum of 3,900m² (strategically ensuring these are less than 4,000m² so that further subdivision is not possible). This would result in approximately 490 x 2000m² lots and 210 x 3900m² lots. This increases the conceptual minimum development area from 140 ha to 180 ha.
 - 293 ha less areas for roads and open space (62.3+28.2) leaves 202.5 ha for development.

Therefore, considering the difference between the area needed to deliver a mix of 2000 and 3900 m² lots, around 20 hectares of land could, if needed, be set aside for protection purposes. This is a significant area and more than sufficient to ensure that any conflict between the targeted lot yield and ensuring adequate protection of sensitive landforms or sites is possible.

This process would be managed in conjunction with the DCP preparation phase via the carrying out of an Aboriginal Cultural Heritage Assessment (ACHA), including engagement with interested Aboriginal representatives and sub-surface testing.

Heritage NSW have agreed with this approach – as reflected by their correspondence provided at **Appendix G**.

3.1.4 ELECTRICITY TRANSMISSION LINE

As noted, the site is traversed by high voltage electricity transmission lines (ETLs). The preference of the proponent is to realign the ETL to correspond to the proposed road network and place the ETL underground. The proponent will work with Transgrid to ensure the full cost of this is borne by the project.

However, as agreement has not yet been reached with Transgrid on this point, the current SP2 zoning is retained. Efforts will continue to negotiate with Transgrid in conjunction with future detailed design to agree the realignment and/or undergrounding of the ETL, and once agreed, a future proposal would be put forward to remove or relocate this SP2 zoning (subject to final design).

It is noted that Transgrid did not respond to Council's request for comment during the regulatory consultation phase but did provide a late response to the public exhibition phase – refer **Appendix G**. The submission was largely related with ensuring the future consistency of subdivision design with Transgrid's easement guidelines, to which the proponent has no objection. The proponent will continue to work with Transgrid to progress this matter.

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3.1.5 BIODIVERSITY

As a result of discussions with OCC and BCD, a number of updates to this planning proposal have been completed, including providing current high environmental land/sensitive terrestrial biodiversity mapping (at **Figure 4**), site biodiversity ground truth mapping by Premise ecologists (at **Figure 5**) and the provisions of tiered considerations for inclusion in the site specific DCP.

In addition, it has been agreed with BCD, and this planning proposal updated to reflect, to retain the RE1 zoning in the south-western portion of the site in relation to the PCT 1330 woodland area.

Tiered considerations are discussed in cell 12 of **Table 5** and below. These considerations for inclusion in the DCP include but are not limited to the following:

1. Areas containing mapped sensitive biodiversity would incorporate lots of a larger size to accommodate protected vegetation;
2. Lots within mapped sensitive biodiversity areas would incorporate building envelopes to ensure development protects and retains significant native vegetation; and
3. Riparian areas would be landscaped with a variety of species to provide compensation for tree removal where it cannot be avoided due to the siting of infrastructure.

As discussed in **Section 3.1.3**, there is adequate room available within the large site to accommodate the proposed 700 residential lots, sufficient open space/recreation areas, areas of roads, together with (if required) areas that could be set aside for protection if investigations identify a need (approximately 20 hectares). It remains the proponents intention, post detailed design, to seek a future LEP amendment to instate RE1 zoning over all designed/approved open space areas. It is expected this could be managed via a future Council 'housekeeping' amendment.

3.1.6 TRAFFIC AND ACCESS

It is noted that Transport for NSW (TfNSW) provided a response during the agency consultation period, together with a late submission to the public exhibition of the project. Matters raised by TfNSW during the agency consultation period are discussed in detail in **Section 4.5.5** and **Table 5**.

Matters raised by TfNSW are related to a range of matters including:

- Safety and access with respect to the two impacted rail crossings;
- The potential risk associated with contamination on the land adjacent to the rail corridor;
- The operation of the intersection of Leeds Parade and the Northern Distributor Road;
- Additional traffic on Clergate Road and the need for future upgrades to the Clergate Road/ Northern Distributor Road intersection, including funding mechanisms;
- Noise, vibration and air quality impacts to future residential properties in close proximity to the rail corridor;
- Stormwater management; and
- Future public transport provision.

Matters raised via the response to the public exhibition period are largely consistent with the matters raised and addressed in **Section 4.5.5** and **Table 5** and have therefore not been re-addressed. It is noted that TfNSW confirmed no objection to the project via their public exhibition submission but have requested the range of matters to be considered by OCC in finalisation of the amendment.

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3.2 Explanation of provisions

The planning proposal affects the following mapping of the *Orange Local Environmental Plan 2011* (OLEP):

- Land Zoning Map Sheets LZN_006 and LZN_007C;
- Lot Size Map Sheets LSZ_006 and LSZ_007C;
- Introduces new Additional Permitted Use maps APU_006 and APU_007C; and
- Introduces new Protected Area – Slope Constraint Area Maps.

The planning proposal seeks to rezone the subject land to R5 Large Lot Residential and amend the applicable minimum lot size to 2000m². RE1 zoning in the south-western extent and the SP2 zoning is retained.

The current arrangement of LEP Map Sheets LZN_006 and LZN_007C is as per **Figure 2** and would be indicatively amended as per **Figure 9**.

The current arrangement of LEP Map Sheets LSZ_006 and LSZ_007C is as per **Figure 3** and would be indicatively amended as per **Figure 10**.

The proposed new Additional Permitted Use Maps would be as per **Figure 11**.

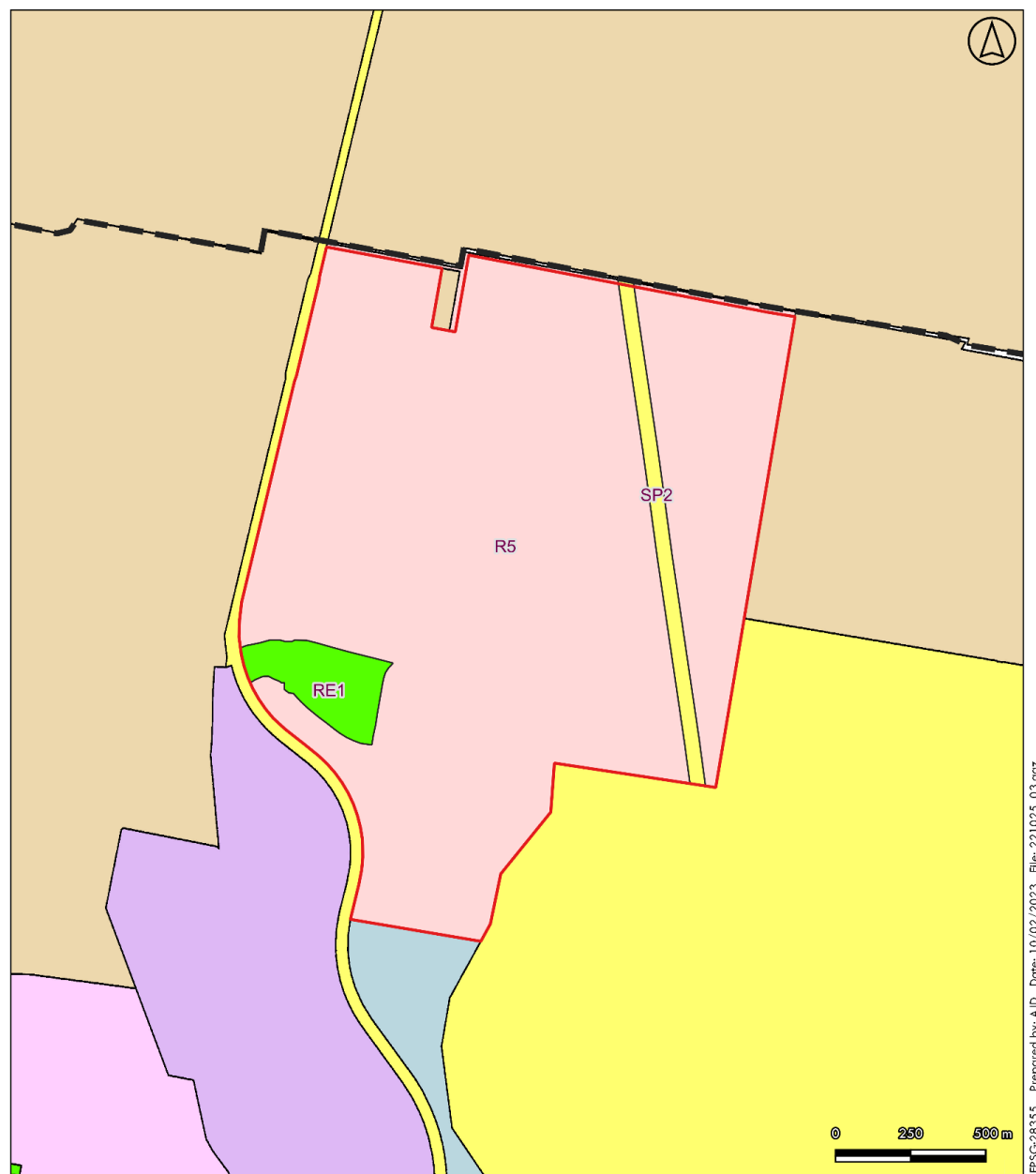
The new Protected Area – Slope Constraint Area Map would be as per **Figure 12**.

A proposed protected area slope clause would be provided, applying to lots affected by the Protected Area – Slope Constraint Area Map.

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Figure 9 – LEP Map Sheet LZN_006 and LZN_007C as proposed



LEGEND

Subject Site	R1 General Residential
LGA Boundary	R5 Large Lot Residential
Land Zoning	RU1 Primary Production
B7 Business Park	SP2 Infrastructure
E4 Environmental Living	RE1 Public Recreation
IN1 General Industrial	



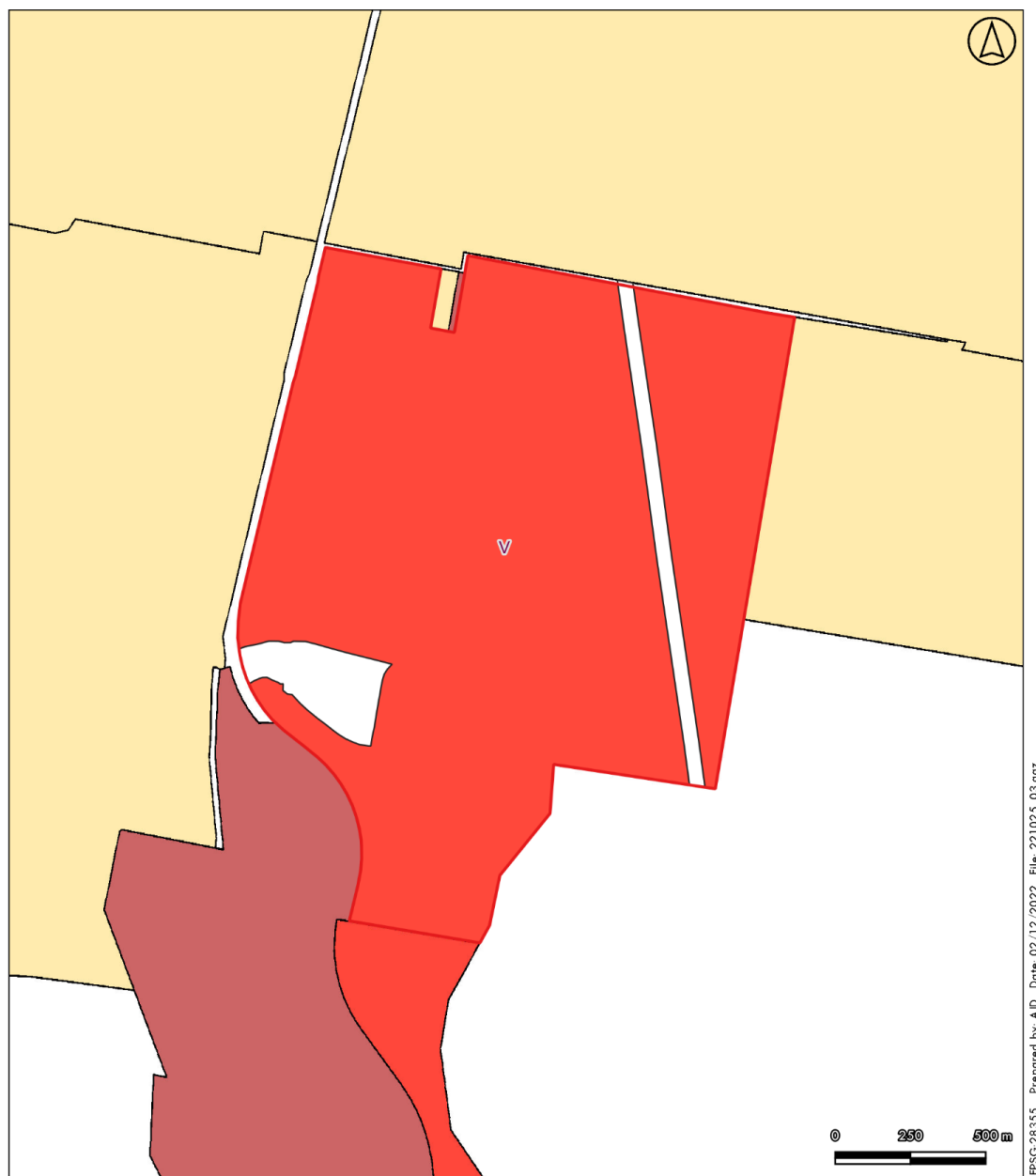
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Proposed Rural Residential Subdivision

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Figure 10 – LEP Map Sheet LSZ_006 and LSZ_007C as proposed



LEGEND

	Subject Site		
	LGA Boundary		
	V	2000m2	
	V1	2000m2	
	W2	3000m2	
	AD	100ha	



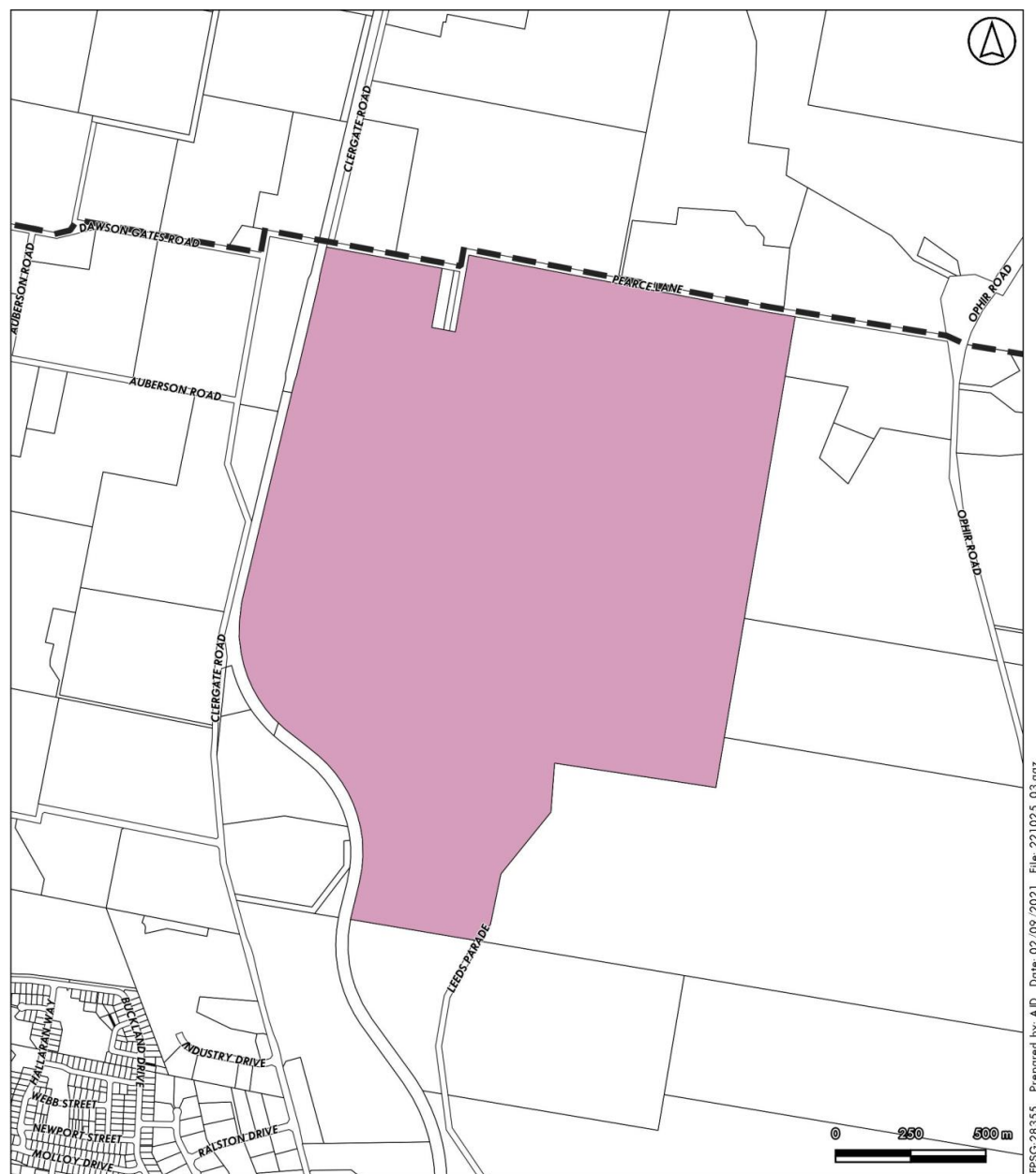
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Figure 11 – Proposed Additional Permitted Use Mapping



LEGEND

- Subject Site
- LGA Boundary
- Additional Permitted Use



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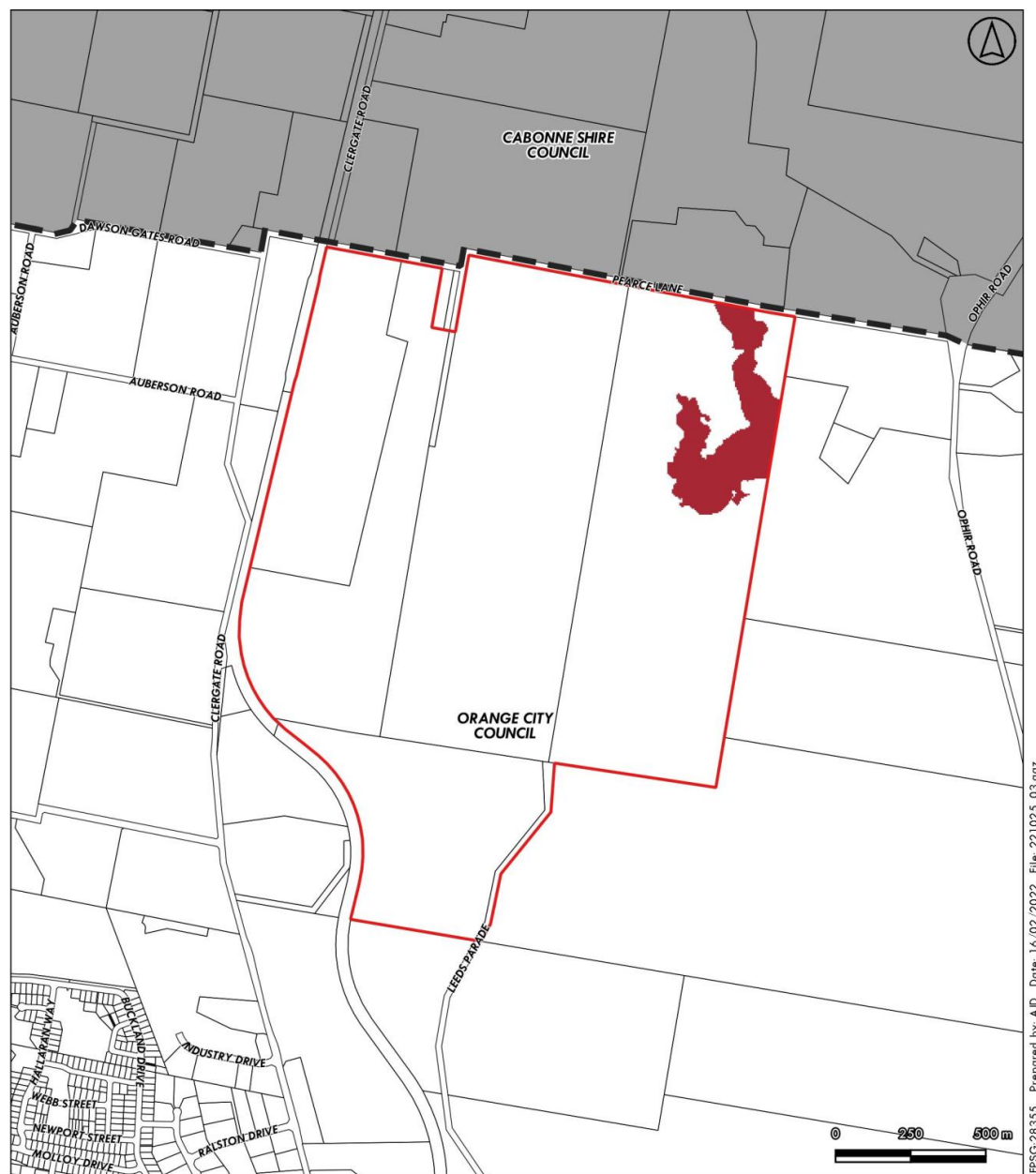
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Figure 12 – Proposed Protected Area – Slope Constraint Area Mapping



LEGEND

- Subject Site
- LGA Boundary
- Cadastre
- Slope Constraint Area (>20%)



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4. JUSTIFICATION

4.1 Introduction

The overarching principles that guide the preparation of planning proposals are:

- The level of justification should be proportionate to the impact the planning proposal would have;
- It is not necessary to address a question if it is not considered relevant to the planning proposal; and
- The level of justification should be sufficient to allow a Gateway determination to be made with confidence that the LEP can be finalised within the timeframe proposed.

The following justification addresses each relevant question applicable to the planning proposal to ensure confidence can be given to the Gateway determination.

4.2 Need for the planning proposal

Is the planning proposal a result of any strategic study or report?

A planning proposal is required as an amendment to the OLEP is proposed. The objective is to rezone the site to R5 Large Lot Residential, remove the E/C4 zone and remove the majority of the RE1 zone. The portion of existing RE1 zoned land in the south-west of the site is retained. The current SP2 zoning is also retained.

The Orange *Local Strategic Planning Statement* (LSPS) outlines 19 Planning Priorities to provide a focus on achieving the aims and objectives of the Central West and Orana Regional Plan and the strategic direction expressed in Orange City Council Community Strategic Plan 2018-2028.

The proposal seeks to achieve Direction 25 of the LSPS to 'increase housing diversity and choice'. The proposal seeks to provide a practical and suitable lot size, which is consistent with other sites areas on the periphery of Orange, such as the Connemara and Dean Drive area in the west of the city.

The proposal is not inconsistent with the LSPS. This is discussed in further detail with respect to the specific priorities of the LSPS in **Table 2**.

The OCS Local Housing Strategy (LHS) (adopted June 2022) identifies the need for delivery of 5,000 new homes in the Orange LGA within the next 20 years. This proposal increases the yield of the development scheme and assists to achieve the goal of the draft LHS.

Is the planning proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

The proposed approach is considered the best means of achieving the project objective.

The Site was previously rezoned from RU1 – Primary Production and IN1 – General Industrial to a mix of zoning including R5 – Large Lot Residential, E/C4 – Environmental Living, RE1 – Public Recreation and SP2 – Infrastructure. It is considered the proposed further amendment to rezone the site and amending the minimum lot size will result in the best use of the Site, including the orderly and economic use of land (consistent with object 1.3(c) of the EP&A Act).

As rezoning the majority of land to R5, and amending the minimum lot size, would achieve the project objective without any unintended consequences, it is considered the most appropriate approach.

The 2,000 m² minimum lot size is proposed to provide a consistent baseline for lot sizes on the site that is consistent with other large lot residential subdivision developments in the city of Orange, responds more appropriately to current levels of market demand and represents the economic and orderly delivery of land.

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The majority of the site is unconstrained and capable of accommodating lots of 2,000 m² and greater. It is not intended to exceed 4,000 m² lots in the scheme to avoid the potential for further subdivision of land within the scheme. The vision of the development, as outlined in **Section 2.3**, reflects the intent of the applicant to provide a high quality development that is limited in scale to no more than 700 lots and that provides appropriate flexibility in design to ensure that areas of sensitivity (biodiversity, heritage, infrastructure, slope and other) are protected. This limit will be achieved both by the amendment of the LEP to provide a specific density limiting clause that would apply to the land, but also through the application of restrictions to user that would prohibit the further subdivision of the land and via the provisions of the site specific DCP. It is not proposed to remove the current Urban Release Area provisions, meaning that the subdivision of the land cannot proceed until a DCP has been prepared, exhibited and adopted.

As per the analysis provided at **Figure 13**, the vast majority of the site has slopes of less than 15%, which are well suited to provide developable dwelling lots that make excellent use of the views and vistas to the south and south-west towards Mount Canobolas.

It is acknowledged that steeper areas of the site will be more difficult to develop with lots at or near the minimum lot size, and it is envisaged that lots in this area (particularly in the NE of the site) will be typically larger in size (up to approximately 4,000 m²) to ensure that dwellings can be safely developed without the need for significant amounts of cut and fill. Certain lots in the very steep portions of the site may exceed 4,000 m² however these lots would be protected from further subdivision by site specific restrictions so as to user to ensure further subdivision cannot occur. This is further protected by the overarching LEP clause providing a maximum lot yield limit.

These site specific provisions would be managed through a combination of the introduction of an LEP clause to address requirements for protected area – slope constraint area (in this instance, land with a contiguous slope greater than 20%) and site specific Development Control Plan (DCP) provisions. The DCP is to be developed before the subdivision of the site would occur in line with the current urban release area designation and would be informed by specific studies including stormwater, biodiversity, Aboriginal heritage and servicing.

To ensure the applicability of these local controls for sloping lots, land where slopes contiguously exceed 20% have been mapped as Protected Areas (refer **Figure 12**). This will have the effect of turning off the provisions of the Codes SEPP and ensure that any development of these lots occurs via the development application pathway, including consideration of the proposed LEP Protected Area – Slope Constraint Area clause, and the site specific DCP clauses. The principles to be reflected in the recommended LEP clause are provided in **Section 3.1** and an example of the objectives for sloping land to be included in the DCP are provided as follows:

- *To ensure that buildings are sited to fit harmoniously with the existing topography and to minimise visual impacts upon natural settings.*
- *To ensure that the siting of buildings considers significant site constraints such as slope, and minimises site disturbance.*
- *To ensure that the siting of buildings minimises overshadowing of adjoining buildings and that adverse impacts to the solar access to living areas and private open space of adjoining buildings are minimised.*

Example of the types of controls that could be included in the DCP are summarised as follows:

- *Development siting and design to respond to slope constraints with respect to:*
 - *Prominence of ridgelines*
 - *Topography*
 - *Views, vistas and outlooks*

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- *Waterways*
- *Vegetation*
- *Buildings to be designed and sited to minimise adverse physical and visual impacts to the site and adjacent land;*
- *Floor construction will be appropriate for the slope and engineering requirements of the development.*
- *Excavation or fill is reasonable having regard to the site constraints and retaining walls that are external to proposed buildings are minimised. Split-level designs may be regarded as preferable to excessive excavation or excessive fill and should be regarded as a normal design response on steep slopes.*
- *Any approval to fill land must be considered in the context of the separation distance to property boundaries to ensure that habitable room windows or primary private open space on adjacent land is not subject to an unreasonable reduction in privacy. Clauses modelled on those contained within the existing Orange DCP with respect to separation distances between elevated windows/areas and adjacent sensitive features may be appropriate.*
- *Where possible buildings are to be sited and designed to keep site disturbance to a minimum. This includes consideration of changes in natural ground level, removal of natural topographical features and vegetation and disruption of natural water run-off.*
- *Roads and paths to follow the landform where possible.*

The applicant proposes the shaping of the land in a legible and coherent fashion at subdivision DA stage to ensure that buildable blocks are provided, to avoid the need for future purchasers to conduct extensive cut and fill. This process is expected to remove some of the smaller areas of land with slopes greater than 20%, hence these have not been included in the LEP sloping land mapping.

Within the NE sector of the site, via the concept plan, roads have been generally orientated parallel to contours to enable the long axis of lots to be across the contours. This will allow for dwelling development that adopts the landform, in accordance with the above principles, and makes best use of the spectacular views.

Initial discussions with Council strategic planning staff highlighted some concern with the number of cul-de-sac roads in the original concept design, with the view that this could lead to a lack of integration. Further refinement of the road hierarchy master plan has occurred to maximise connectivity of roads, with cul-de-sacs minimised.

Consultation has commenced with Transgrid to deliver the realignment of the 132 kVA overhead powerline that currently bisects the site in a north-south direction. It is intended that this would be put underground and re-orientated along proposed internal roads. Liaison with Transgrid continues in this regard, and the full cost of these works would be met by the applicant, with no costs to the community. As agreement on this matter has not yet been reached with Transgrid, the current SP2 zoning is retained in this planning proposal. Future investigations will continue to re-align and/or underground the ETL and once resolved, would be the subject of a future amendment to remove/relocate the SP2 zoning. Design of the future subdivision is to seek to comply with the provision of Transgrids easement guidelines.

The mapped PCT 1330 vegetation community in the south-west of the site would be predominantly retained and enhanced through retention of the current RE1 zoning in this area, augmentation of the waterway and the development of a riparian management and vegetation plan. The specific areas for protection would be identified through preparation of a BDAR at DCP and DA preparation stage.

All waterways within the site would be enhanced through considerate plantings and judicious land shaping to return the landscape to its pre-European form and provide extensive areas of standing water. Open space

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areas would be developed with publicly accessible walking and cycle paths, with the potential to be linked to existing paths within the broader community.

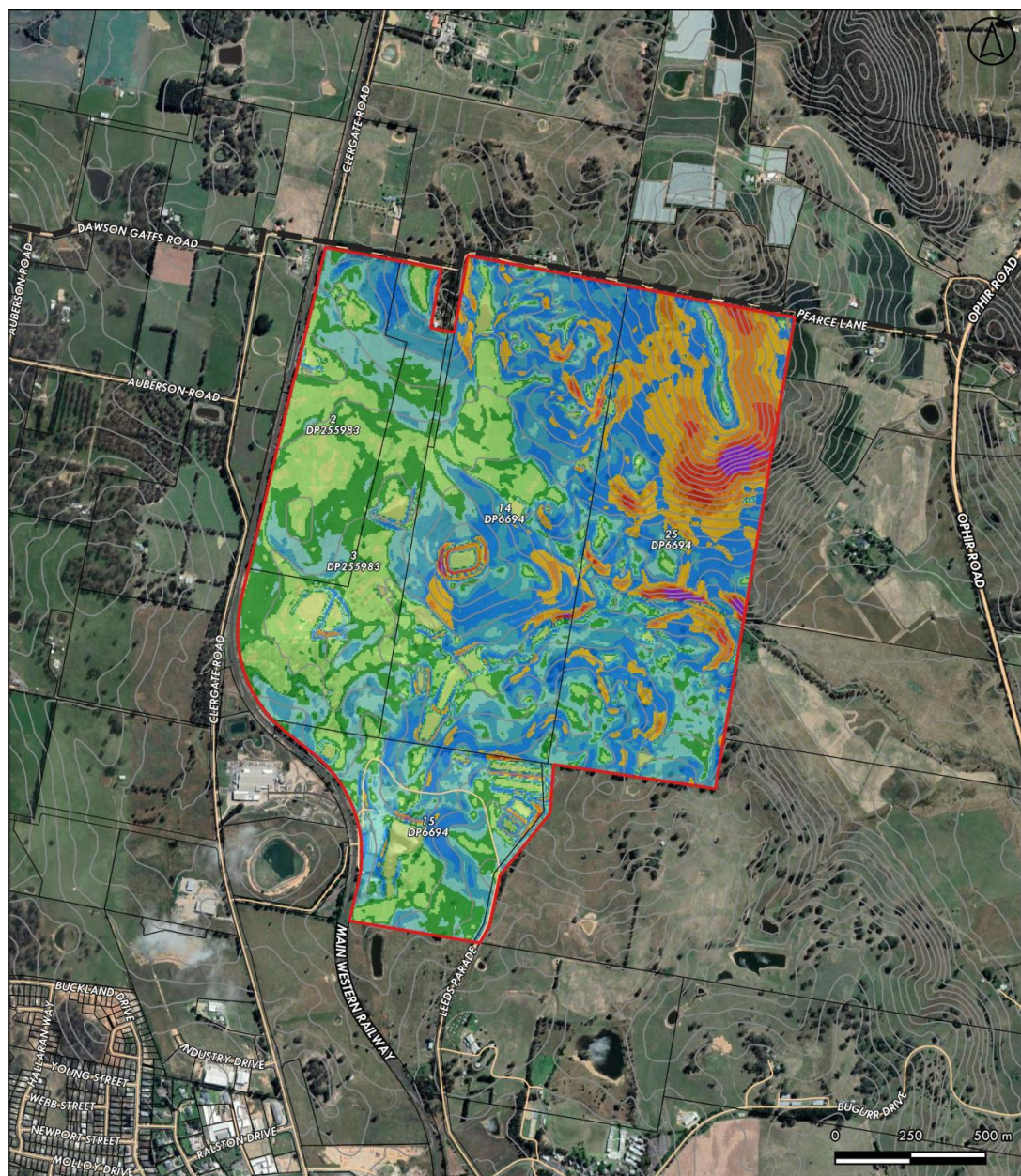
Harvesting of water for potable purposes would be developed in conjunction with Orange City Council to augment the Council water supply and offset the additional demand generated by the development of the land.

Understanding of cultural values would be advanced through preparation of a site specific Aboriginal Cultural Heritage Assessment (ACHA) in consultation with Registered Aboriginal Parties (RAPs) at DCP and DA preparation stage. Any areas of sensitivity within the site would be protected as required in consultation with Heritage NSW and RAPs. Given the large size of the site (290ha), the proposed minimum lot size (2,000m²), the maximum lot yield limit (700) and the significant areas of proposed open space (around 25 hectares), there is sufficient capacity within the site to achieve the project objectives, including ensuring the protection and conservation of areas any Aboriginal heritage value areas, should they be identified.

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Figure 13 – Slope analysis



LEGEND

	Subject Site		10-15%
	LGA Boundary		15-20%
	Cadastre		20-25%
	Road		25-30%
	Contours (5m Interval)		>30%
			<1%
			1-3%
			3-5%
			5-7%
			7-10%



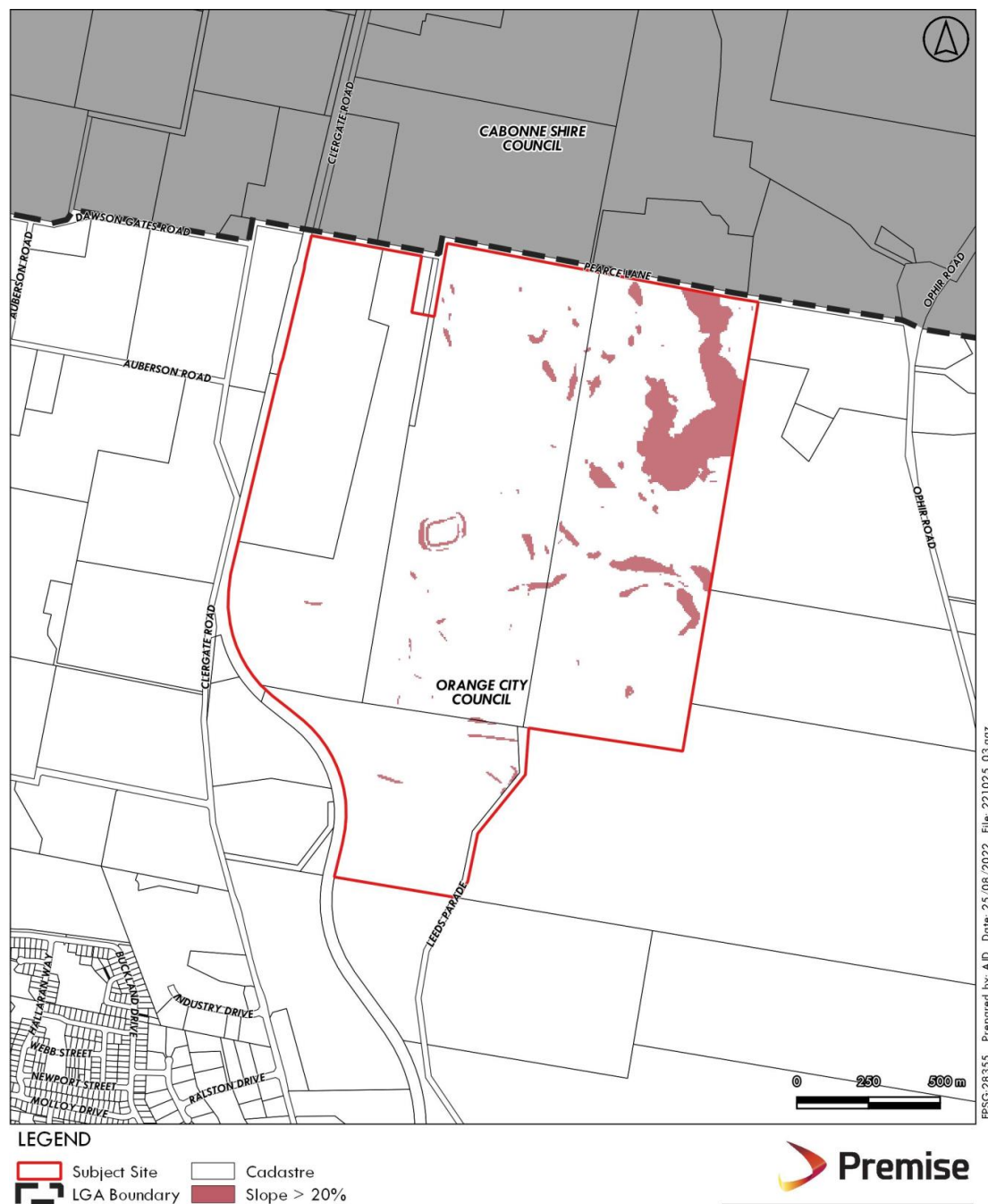
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Proposed Rural Residential Subdivision

Source: © State Government of NSW, Department of Customer Service, Spatial Services 2021
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Figure 14 – Slope across the site above 20%



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Proposed Rural Residential Subdivision

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4.3 Relationship to strategic planning framework

Is the planning proposal consistent with the objectives and actions of the applicable regional or sub-regional strategy?

The *Central West and Orana Regional Plan 2036* is the NSW Government's strategy for guiding land use planning decisions for the Central West and Orana Region for the next 20 years. At its heart is a core vision for the region supported by four supporting goals:

- The most diverse regional economy in NSW
- A stronger, healthier environment and diverse heritage
- Quality freight, transport and infrastructure networks
- Dynamic, vibrant and healthy communities.

The proposal is considered to be generally consistent with the objectives and actions of the Plan as discussed in **Table 1**.

Table 1 – Consideration of Regional Plan Goals and Directions

Goals/Directions	Assessment response
Goal 1: The most diverse regional economy in NSW	The planning proposal enables development that supports the region by providing residential dwelling blocks, to support the project growth of the city over the next 20 years. As per OCS Draft LHS, an additional 5,000 homes are projected to be required over the next 20 years. The project is consistent with this goal.
Goal 2: A stronger, healthier environment and diverse heritage	The project is not inconsistent with this goal. Any future development application would be prepared to ensure the heritage values of the site are appropriately considered. As discussed with Heritage NSW (Appendix G), and as outlined in the review at Appendix H , values associated with Aboriginal heritage would be sensitively addressed through detailed design to ensure no significant impacts, and subject to full approval and consultation as obligated via the relevant legislation and guidelines.
Direction 13: Protect and manage environmental assets	The planning proposal enables development that will protect and manage environmental assets through demolition of the existing industrial use, rehabilitation of any contaminated lands, retention and protection of natural watercourses and rehabilitation of riparian corridors (approximately 25 hectares is proposed in the Concept Site Layout), introduction of a minimum lot size which provides ample room within future lots for the retention of significant environmental features and introduction of provisions which prevent development from occurring on sloping land under complying development pathways.
Direction 14: Manage and conserve water resources for the environment	Water resources form a crucial component of the vision for the site, including retention and protection of natural watercourses and rehabilitation of associated riparian corridors. The re-establishment of riparian corridors attracts native fauna, allows for the provision of walking and cycling tracks within natural environments, improves quality of stormwater runoff and enables the resumption of natural processes whereby stormwater flows are slowed through the landscape.

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Goals/Directions	Assessment response
Direction 15: Increase resilience to natural hazards and climate change	The planning proposal enables development which will increase resilience to natural hazards and climate change through retention and protection of natural watercourses and rehabilitation of riparian corridors. Riparian vegetation slow stormwater flows through the landscape, enabling greater stormwater infiltration and attracting native fauna. Riparian corridors are also proven to reduce local temperatures, thereby mitigating the urban heat island effect across the development area as well as offering a place where residents can escape to find respite in summer months.
Direction 18: Respect and protect Aboriginal cultural heritage assets	The initial planning proposal prepared in relation to the land was supported by an Aboriginal heritage assessment, which provided recommendations around the required level of assessment to support any future development application. This planning proposal does not derogate from the conclusions of that study or change the nature of those conclusions. The necessary investigations would be completed in the preparation of development documentation and a review of Aboriginal heritage matters is provided in Appendix H . The impact to known Aboriginal sites is consistent with the current zoning and can follow appropriate pathways to protect heritage assets. Consultation with Heritage NSW has confirmed that the carrying out of further detailed investigation can be deferred to DCP preparation stage – refer Appendix G . The proposal is therefore consistent with direction 16.
Goal 3: Quality freight, transport and infrastructure networks	The proposal is not inconsistent with this direction.
Goal 4: Dynamic, vibrant and healthy communities	The proposal is consistent with this goal as outlined below.
Direction 23: Build the resilience of towns and villages	By providing an enhanced opportunity for the development of high quality residential land, the project supports the attractiveness of the City of Orange as a destination and lifestyle change location for potential residents.
Direction 25: Increase housing diversity and choice	The proposal provides for a range of development lots with flexible sizing to respond to market demand. Recent developments in the City of Orange have reflected the strong demand for large lot residential dwelling allotments in sizes between 2,000 and 4,000 m ² , and this is the intended market for the proposal.
Direction 28: Manage rural residential development	There is the potential for land use conflicts with surrounding land that requires careful management. This is expected to be managed through a range of measures including buffer distances, vegetation plantings and appropriate siting of houses. Details would be addressed via appropriate DCP controls and are discussed in more detail in Table 5 .
Direction 29: Deliver healthy built environments and better urban design	The proposal provides the capacity for a mix of allotment sizes, the majority with direct access to open space or with open space within a close distance. The aim to provide water and open space frontages is a unique aspect of the project and one which is likely to create a development with a strong linkage between environment and health and well-being.

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On the basis of the above, the development is considered to be consistent with the Regional Plan.

Is the planning proposal consistent with Council's local strategy or other local strategic plan?

As noted above, the proposal is consistent with Direction 25 of the LSPS which aims to provide greater housing diversity and choice. The proposal is also consistent with Orange City Council Community Strategic Plan 2018-2028. The proposal assists with the objective of the adopted Orange LHS via the delivery of up to 700 of the required 5,000 homes needed to meet projected population growth for the City of Orange for the next 20 years.

Applicable LSPS priorities relating to the proposal are priorities 2, 4, 6 and 13. These are discussed in **Table 2**.

Table 2 – Local Strategic Planning Statement

Priority	Applicable actions	Assessment response
2	Support the delivery of new homes in residential release areas, including North Orange and Shiralee, and increase the range of housing options in existing urban areas.	Prepare a revised housing strategy, informed by affordable and accessibility requirements, to replace the Orange Sustainable Settlement Strategy
		N/A - Action for Council (noting a draft strategy was placed on exhibition in February 2022). It is noted that the DPIE Gateway assessment report in relation to this planning proposal confirms that the project is consistent with the draft Orange Housing Strategy.
	Ensure a stable supply of residential land, supported by infrastructure, to provide housing opportunities for new residents.	This project is directly consistent with this action through the delivery of up to 700 large lot residential lots across a variety of sizes (between 2,000 and 4,000m ²).
	Review the subdivision code to reflect the Disability Inclusion Action Plan recommendations.	N/A - Action for Council
	Review and update development controls in relation to established areas, particularly heritage conservation areas and other neighbourhoods where the established character should be maintained or enhanced	N/A - Action for Council The project will provide a site specific DCP that will include particular controls to address site specific constraints, as discussed variously throughout this proposal.
	Review and update the Development Contributions Plans	N/A - Action for Council
4	Provide diverse housing choices and opportunities to meet changing demographics and population needs, with	Review the Orange Sustainable Settlement Strategy and replace with a Local Housing Strategy
		N/A - Action for Council (noting a draft strategy was placed on exhibition in February 2022). It is noted that the DPIE Gateway assessment report in relation to this planning proposal confirms that the project is consistent

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Priority		Applicable actions	Assessment response
	housing growth in the right locations.		with the draft Orange Housing Strategy.
		Review and update the Orange Development Control Plan with provisions tailored to the various forms of residential development.	N/A - Action for Council
6	Provide recreational opportunities to meet the needs of residents of, and visitors to, Orange.	Review and update the Orange City Council Recreation Needs Study	N/A - Action for Council
		Require residential rezoning of more than 15 lots to include space for public recreational activities commensurate with the scale of the area to be rezoned or planning agreements to embellish existing nearby public open space.	The proposal is consistent with this action. The proposal retains the RE1 zoning in the south-west of the site and introduces significant areas of open space (approximately 25 hectares as open space) within the current concept plan, generally along natural/riparian areas. As outlined elsewhere, these areas would be designed to ensure the provision of useful and usable spaces, that integrate with the broader open space network. In addition, there is capacity to provide a number of 'pocket' parks around the development to meet the direct needs of the community. A recreation needs analysis would be completed in conjunction with preparation of the DCP to ensure these appropriately designed and sited.
13	Protect, conserve and enhance Orange's urban tree canopy, landform, waterways and bushland.	Review and update the Orange Street Tree Master Plan by 2023.	N/A - Action for Council
		Review and update the Orange Development Control Plan to: <ul style="list-style-type: none"> Require greenfield subdivisions to protect and enhance waterways and riparian corridors. Require multi dwelling housing to include a minimum area of deep-root landscaping for trees, 	<ul style="list-style-type: none"> The proposal provides significant areas of open space along riparian corridors which will be protected as a component of the project. N/A – multi-dwelling housing not proposed or permitted via the R5 zoning.

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Priority	Applicable actions	Assessment response
	proportional to the scale of the development.	

The proposal relates to existing zoned land that was the subject of an addendum to the Blayney Cabonne Orange Sub Regional Industrial and Rural Land Use Strategy (BCO), providing strategic justification for the large lot residential zoning of the land. The proposal is generally consistent with that adopted strategy.

The Councils of Blayney Cabonne and Orange have collaborated with Department of Planning and Environment to prepare the Draft Blayney Cabonne Orange Subregional Rural and Industrial Lands Strategy 2019 to 2036 to replace the BCO. It has been the subject of exhibition and consultation but not yet adopted. The new Strategy was released prior to the gazettal of the amendment to the OLEP that rezoned the subject site to R5/E(C)4 and it is therefore expected this document will be updated prior to adoption. The new Strategy will focus on industrial and rural zoned land, with large lot residential land the subject of the adopted LHS.

The proposal is not inconsistent with the new Strategy.

Is the planning proposal consistent with applicable State Environmental Planning Policies?

The planning proposal is broadly compliant with all relevant State Environmental Planning Policies (SEPPs). The following specific comments are made in relation to applicable SEPPs.

State Environmental Planning Policy (Hazards and Resilience) 2021

State Environmental Planning Policy (Hazards and Resilience) 2021 (HR SEPP) aims to, among other things:

...promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment...

This policy applies to the whole of the State, including the Orange LGA. The HR SEPP defines 'contaminated land' as per the definition in Part 5 of the *Contaminated Land Management Act 1997 No 140* as:

the presence in, on or under the land of a substance a concentration above the concentration at which the substance is normally present in, on, or under (respectively) land in the same locality, being a presence that presents a risk of harm to human health or any other aspect of the environment.

A phase 1 preliminary site investigation was completed in relation to the gazetted 2020 rezoning, which concluded that the site was suitable for residential use. The increase in lot yield associated with this proposal does not affect these conclusions. In response to commentary received during the regulatory consultation phase, additional sampling and reporting has been completed to determine the extent of any potential contamination in the portion of the site adjacent to the rail corridor. This additional reporting is attached as **Appendix F** and confirms that all samples met the investigation criteria for the respective analytes.

A current review of the online resources maintained by the Environment Protection Authority with respect to contamination do not reveal any historic contaminating land uses.

Refer additional discussion in relation to Ministerial Direction 2.6.

State Environmental Planning Policy (Transport and Infrastructure) 2021

One the aims of the *State Environmental Planning Policy (Transport and Infrastructure) 2021* (TI SEPP) is to facilitate the effective delivery of infrastructure across the state by:

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- a) *improving regulatory certainty and efficiency through a consistent planning regime for infrastructure and the provision of services*
- b) *greater flexibility in the location of infrastructure and service facilities*
- c) *allowing for the efficient development, redevelopment or disposal of surplus government owned land*
- d) *identifying the environmental assessment category into which different types of infrastructure and services development fall (including identifying certain development of minimal environmental impact as exempt development)*
- e) *identifying matters to be considered in the assessment of development adjacent to particular types of infrastructure development*
- f) *providing for consultation with relevant public authorities about certain development during the assessment process or prior to development commencing.*

Given the proposal seeks to increase the number of lots being created on the site, this planning proposal is supported by a Traffic Impact Assessment (TIA) – refer **Appendix C**. The TIA concludes:

Based on the above assessment, it is concluded that:

- The development is expected to generate approximately 5,180 vehicle movements per day, and 546 and 497 vehicle movements (two-way total) in the morning and evening peak hours respectively;*
- Site traffic will have a minor impact on the surrounding road network, with modest increases to queue lengths and delays, and the traffic volumes can be accommodated on the road network in a safe and efficient manner;*
- The access locations allow traffic to be distributed on the road network and they are not expected to create any operational or safety issues at the nearby railway level crossings;*
- Car parking for the individual lots is to be provided in accordance with the DCP, with onstreet parking provided for visitors; and*
- It is recommended that future consideration be given to providing sustainable transport facilities within the site that link with existing bus routes and shared paths.*

Therefore, it is concluded that the traffic and parking aspects of the proposed development are satisfactory, and the development will have a minimal impact on the surrounding environment.

On the basis of the above, the proposal is considered to be acceptable in the context of impacts to the local transport network.

State Environmental Planning Policy (Biodiversity and Conservation) 2021

The *State Environmental Planning Policy (Biodiversity and Conservation) 2021* (BC SEPP) seeks to, among other things:

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(a) to protect the biodiversity values of trees and other vegetation in non-rural areas of the State, and

(b) to preserve the amenity of non-rural areas of the State through the preservation of trees and other vegetation.

The BC SEPP operates to ensure tree protection is provided in areas of the state where the BC Act doesn't operate (ie, such as on smaller residential lots). The BC SEPP applies where a local Council has provisions within their Development Control Plan to require the approval for the removal of the trees, as is the case in the Orange LGA.

A site specific DCP would also be prepared that would address vegetation protection.

As evidenced in **Figure 5**, the occurrence of native biodiversity across the site is generally consistent with the existing high environmental value mapping applying to the site (**Figure 4**). This land currently benefits from protections as outlined in LEP clause 7.4 and ensuring the objectives of this clause are met is a critical outcome of any DA. This protection is further reinforced by the proposed protections to be included in the site specific DCP as discussed earlier in this planning proposal – refer **Section 3.1.5**.

In this manner, consistency with the BC SEPP can be achieved.

Is the planning proposal consistent with applicable Ministerial Directions (s9.1 directions)?

Direction 2.1 – Environment Protection Zones

Direction 2.1 applies where a relevant planning authority prepares a planning proposal. The objective of the direction is to protect and conserve environmentally sensitive areas.

Where the direction applies, a relevant planning authority must ensure that:

(4) A planning proposal must include provisions that facilitate the protection and conservation of environmentally sensitive areas.

(5) A planning proposal that applies to land within an environment protection zone or land otherwise identified for environment protection purposes in a LEP must not reduce the environmental protection standards that apply to the land (including by modifying development standards that apply to the land). This requirement does not apply to a change to a development standard for minimum lot size for a dwelling in accordance with clause (5) of Direction 1.5 "Rural Lands".

Part of the land is currently zoned for E/C4 – Environmental Living, originally put in place to provide additional protections for vegetation on site. At present, the E/C4 zone reflects a consistent minimum lot size with the adjacent R5 zone and therefore dwelling/subdivision yield in relation to this portion of the site is consistent with that of the R5 land.

It is proposed to adopt a consistent R5 – Large Lot Residential zoning over the site and therefore the E/C4 zoning would be removed.

A consistent minimum lot size would be applied over the site, together with the introduction of additional permitted use clauses to limit the overall lot yield at the site to a maximum of 700 lots.

The land is subject to the provisions of the Vegetation SEPP, which provides protection for trees in non-rural areas (as discussed above) and the provisions of the BC Act, which was not in effect when the original

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planning proposal was lodged. In recognition of the changes reflected by the BC Act, it is considered that the development can be delivered in a fashion that satisfies the aims of the BC Act.

It is important to understand that the change in approach of zoning some of the land from E/C4 to R5, and the removal of some of the RE1 land, does not result in a net reduction of open space. The development still conceptually provides around 25 hectares of open space and will retain the approximately 9 ha portion of RE1 zoned land in the south-west, associated with the PCT 1330 woodland area. The proposal also introduces new protection areas designed to ensure that development on sloping land only occurs in a coordinated and considered fashion, with specific LEP and DCP provisions to be provided. The inclusion of the protected areas mapping also excludes the application of the Codes SEPP from these areas of land and avoids the risk of development proceeding as complying development that would not be subject to the proposed LEP/DCP provisions. In this way, the protections over the land are considered consistent with the outcome of the original amendment and are thus not inconsistent with the direction.

By application of the above measures, the objectives of the directions have been adequately considered and the inconsistency with the direction justified.

Direction 2.3 – Heritage conservation

The objective of Direction 2.3 is to conserve items, areas, objects and places of environmental heritage significance and indigenous heritage significance. The direction applies to all planning proposals.

Section 5 of Direction 2.3 states:

(5) A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General) that:

(a) the environmental or indigenous heritage significance of the item, area, object or place is conserved by existing or draft environmental planning instruments, legislation, or regulations that apply to the land, or

(b) the provisions of the planning proposal that are inconsistent are of minor significance.

The original planning proposal was supported by an Aboriginal heritage assessment and based on the implementation of the recommendations of that report, and the carrying out of necessary investigations at DA stage, it is considered that the applicable provisions of the NPW Act can be implemented. An update of the due diligence assessment is provided in **Appendix H**. Consultation with Heritage NSW (**Appendix G**) has confirmed that carrying out of further investigations at DCP preparation stage of the project is acceptable.

On this basis, the inconsistency with the direction is acceptable.

Direction 2.6 – Remediation of Contaminated Land

Direction 2.6 applies when a planning proposal authority prepares a planning proposal applying to land specified in paragraph (2) of Direction 2.6, being:

(a) land that is within an investigation area within the meaning of the Contaminated Land Management Act 1997,

(b) land on which development for a purpose referred to in Table 1 to the contaminated land planning guidelines is being, or is known to have been, carried out,

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(c) the extent to which it is proposed to carry out development on it for residential, educational, recreational or childcare purposes, or for the purposes of a hospital – land:

(i) in relation to which there is no knowledge (or incomplete knowledge) as to whether development for a purpose referred to in Table 1 to the contaminated land planning guidelines has been carried out, and

(ii) on which it would have been lawful to carry out such development during any period in respect of which there is no knowledge (or incomplete knowledge).

Where the direction applies:

(4) A planning proposal authority must not include in a particular zone (within the meaning of the local environmental plan) any land specified in paragraph (2) if the inclusion of the land in that zone would permit a change of use of the land, unless:

(a) the planning proposal authority has considered whether the land is contaminated, and

(b) if the land is contaminated, the planning proposal authority is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for all the purposes for which land in the zone concerned is permitted to be used, and

(c) if the land requires remediation to be made suitable for any purpose for which land in that zone is permitted to be used, the planning proposal authority is satisfied that the land will be so remediated before the land is used for that purpose.

In order to satisfy itself as to paragraph (4)(c), the planning proposal authority may need to include certain provisions in the local environmental plan.

(5) Before including any land specified in paragraph (2) in a particular zone, the planning proposal authority is to obtain and have regard to a report specifying the findings of a preliminary investigation of the land carried out in accordance with the contaminated land planning guidelines.

A phase 1 preliminary site investigation was completed in relation to the gazetted 2020 rezoning, which concluded that negligible risks to human health or the environment existed at the site. Residual contamination aspects would be more practicably addressed at construction DA stages(s) following subdivision and are not considered to be prohibitive with regard to the site being rendered suitable for the proposed land use(s). Such aspects are summarised below:

- Hydrocarbon impacted soil was identified at the following locations, which exceeded the Assessment of Site Contamination NEPM 1999 (Amended 2013)¹ 'Management Limits', which consider the formation of phase separated hydrocarbons, fire and explosion risks, damage to buried infrastructure and aesthetics.
 - Within the footprint of the machinery shed; and
 - Base of former ponds of the 'Wool Topmaking' discharge area to the south of the former orchard area

¹ National Environment Protection Council (NEPC), Amended National Environment Protection (Assessment of Site Contamination) Measure 1999 (Amended 2013)

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- Potential has been identified for asbestos containing materials (ACM) – likely present in abattoir structures, caretaker's residence, pump-house and the former dwelling in the site's north-west – to have weathered and impacted soil proximal to (and underlying) these areas. Premise notes that potential exists for impending demolition activities to similarly result in ACM-impacts to soil, and subsequent asbestos clearance and certification (as required under SafeWork NSW codes of practice) may be extended for all identified areas.
- Potential exists for transformer oils from the abattoir substation to have resulted in localised polychlorinated biphenyl (PCB) impacts to the surrounding soil. Due to the nature of residual surface and underground infrastructure in this area, assessment of soil for PCB impacts would be conducted following demolition of the substation.

The increase in lot yield associated with this proposal does not affect the overall conclusion that the site is suitable (or can be made suitable noting the above aspects being addressed) for land uses permitted under the proposed R5 zoning.

As a result of comments received from TfNSW during the regulatory consultation phase, updated sampling has been completed and the outcome is provided in **Appendix F**. This assessment confirms that all soil samples met the investigation criteria for all analytes.

It is noted that the most sensitive of land uses permitted under both the R5 and E/C4 zoning remains as residential purposes.

A phase 2 assessment and Remediation Action Plan would be prepared at DA stage to ensure that remediation occurs such that the land is suitable for the use proposed.

Direction 3.1 – Residential Zones

Direction 3.1 is applicable where:

(a) an existing or proposed residential zone (including the alteration of any existing residential zone boundary),

(b) any other zone in which significant residential development is permitted or proposed to be permitted.

The proposal seeks to increase the area of R5 zoned and remove the E/C4 zoning of a portion of the land. Adequate services and infrastructure will be in place prior to any residential development being completed. This will be ensured through future development applications which will extend existing infrastructure to the site and provide adequate services and facilities to meet the needs of a residential development of this scale.

The proposal does not reduce the permissible density of the land and seeks to provide additional developable residential lots, in line with the intent of the draft LHS Orange .

Direction 3.4 – Integrating Land Use and Public Transport

Ministerial Direction 3.4 applies where a planning proposal will create, alter or remove a zone or a provision relating to urban land, including land zoned for residential, business, industrial, village or tourist purposes.

The objective of this direction is to:

ensure that urban structures, building forms, land use locations, development designs, subdivision and street layouts achieve the following planning objectives:

improving access to housing, jobs and services by walking, cycling and public transport, and

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increasing the choice of available transport and reducing dependence on cars, and

reducing travel demand including the number of trips generated by development and the distances travelled, especially by car, and

supporting the efficient and viable operation of public transport services, and (e) providing for the efficient movement of freight.

This direction applies to this Proposal as it is creating/altering the residential zoned portion of the land. The land is currently zoned for a combination of residential and environmental living purpose, with a consistent minimum lot size across the land. The land is also in close proximity to the North Orange retail centre and the burgeoning commercial areas of North Orange, including the industrial areas within Clergate Road (which are directly accessible via the new access road) and the business zones located in Leeds Parade.

The indicative concept plan demonstrates that there is potential to provide interconnected pedestrian and cycle networks that have the capacity to be linked to the existing networks accessing the Charles Sturt University Campus and future networks throughout the North Orange residential areas. Road connections are designed to support public transport (if required). This would meet the objectives of current transport guidelines and planning policies, and therefore the proposal is not inconsistent with the direction.

Direction 4.4 – Planning for bushfire protection

This direction applies when a relevant planning authority prepares a planning proposal that will affect, or is in proximity to, land mapped as bushfire prone land.

The Site contains a small portion of land identified as being bushfire prone. This portion of the site was understood to have been mapped as bushfire prone due to the existence of a stand of pine trees in the mapped area. These pine trees were cleared by the property owner several years ago however the bushfire prone land map has not been updated. Given the threat vegetation has been removed, and the very minor extent of mapped bushfire prone land, it is not considered likely that the proposal will result in any adverse impact on future residential development of the land, particularly considering this land is already zoned R5 Large Lot Residential.

In the event the subject planning proposal is supported, any future development application will be required to be issued with a Bush Fire Safety Authority in accordance with Section 100B of the *Rural Fires Act 1997*.

It is a requirement of the Gateway approval that consultation occur with RFS. Subject to the feedback of RFS, the planning proposal may be further updated.

The proposal is considered to be consistent with Direction 4.4.

Direction 5.10 – Implementation of Regional Plans

Direction 5.10 seeks to give legal effect to the vision, land use strategy, goals, directions and actions contained in Regional Plans.

The direction applies to land to which a Regional Plan has been released by the Minister of Planning. The Central West and Orana Regional Plan has been approved and applies to the Orange LGA.

The Vision of the Regional Plan is:

A unique part of Western NSW with a diverse economy, supported by the right infrastructure, an exceptional natural environment and resilient communities.

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The Vision of the Regional Plan is delivered by four key goals and 29 specific directions. Relevant to this planning proposal are a number of goals and directions, outlined and discussed in **Table 1**.

The planning proposal is considered suitable in the context of land that has been rezoned for large residential and environmental lots. The proposal put forward seeks to build on the existing zoning of the land by achieving the goals listed above, in particular the four directions discussed under Goal 4. The planning proposal is important in assisting with the delivery of the above goals and directions. The planning proposal is considered to be consistent with the intent and vision of the Regional Plan. The planning proposal is therefore consistent with Direction 5.10.

Direction 6.1 – Approval and Referral Requirements

Ministerial Direction 6.1 – Approval and Referral Requirements applies to all planning proposals forwarded for Gateway Determination by a local authority.

To be compliant with Direction 6.1, a planning proposal must be consistent with the following provisions;

“A planning proposal must:

- (a) Minimise the inclusion of provisions that require the concurrence, consultation or referral of development applications to a Minister or public authority, and*
- (b) Not contain provisions requiring concurrence, consultation or referral of a Minister or public authority unless the relevant planning authority has obtained the approval of:*
 - (i) The appropriate Minister or public authority, and*
 - (ii) The Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General), prior to undertaking community consultation in satisfaction of section 57 of the Act, and*
- (c) Not identify development as designated development unless the relevant planning authority:*
 - (i) Can satisfy the Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General) that the class of development is likely to have a significant impact on the environment, and*
 - (ii) Has obtained the approval of the Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General) prior to undertaking community consultation in satisfaction of section 57 of the Act”.*

The proposed planning proposal does not generate the need for any explicit concurrence, consultation or referral to the Minister or public authority and is therefore consistent with Direction 6.1.

Direction 6.2 – Reserving land for public purposes

Direction 6.2 seeks:

- (a) to facilitate the provision of public services and facilities by reserving land for public purposes, and*

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(b) to facilitate the removal of reservations of land for public purposes where the land is no longer required for acquisition

It applies to all planning proposals. The applicability of the direction is discussed in **Table 3**.

Table 3 – Ministerial Direction 6.2

What a relevant planning authority must do if this direction applies	Assessment
(4) A planning proposal must not create, alter or reduce existing zonings or reservations of land for public purposes without the approval of the relevant public authority and the Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General).	Approval is sought via this planning proposal. Note that the portion of RE1 zoned land in the south-west corner of the site is now retained.
(5) When a Minister or public authority requests a relevant planning authority to reserve land for a public purpose in a planning proposal and the land would be required to be acquired under Division 3 of Part 2 of the Land Acquisition (Just Terms Compensation) Act 1991, the relevant planning authority must: (a) reserve the land in accordance with the request, and (b) include the land in a zone appropriate to its intended future use or a zone advised by the Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General), and (c) identify the relevant acquiring authority for the land.	N/A – no additional reserved land proposed.
(6) When a Minister or public authority requests a relevant planning authority to include provisions in a planning proposal relating to the use of any land reserved for a public purpose before that land is acquired, the relevant planning authority must: (a) include the requested provisions, or (b) take such other action as advised by the Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General) with respect to the use of the land before it is acquired.	N/A – no additional reserved land proposed.
(7) When a Minister or public authority requests a relevant planning authority to include provisions in a planning proposal to rezone and/or remove a reservation of any land that is reserved for public purposes because the land is no longer designated by that public authority for acquisition, the relevant planning authority must rezone and/or remove the relevant reservation in accordance with the request	The proposal to remove the reservation is proposed to provide flexibility in final zone boundaries and does not seek to reduce the net amount of recreation land proposed to be provided. The concept plan retains provision of approximately 25 hectares of open space, consistent with the original proposal, and retains the portion of RE1 zoned land in the south-west corner of the site. Subject to final design, a future re-zoning would be possible to ensure

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What a relevant planning authority must do if this direction applies	Assessment
	the protection of this land from subdivision, likely to be via a Council housekeeping LEP amendment. This is provided in the short term through the adoption of a DCP and masterplan.

Given the response to point (7) above, the Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General) can be satisfied that the final arrangement of land will contain an area of dedicated reserved open space consistent with the original arrangement and thus any inconsistency with the direction is minor and inconsequential.

Direction 6.3 – Site Specific Provisions

Ministerial Direction 6.3 – Site Specific Provisions applies to all planning proposals forwarded for Gateway Determination by a local authority.

To be compliant with Direction 6.3, a planning proposal must be consistent with the following provisions:

- (a) *A planning proposal that would amend another environmental planning instrument in order to allow a particular development proposal to be carried out must either:*
- *Allow that land use to be carried out in the zone the land is situated on, or*
 - *Rezone the site to an existing zone already applying in the environmental planning instrument that allows that land use without imposing any development standards or requirements in addition to those already contained in that zone, or*
 - *Allow that land use on the relevant land without imposing any development standards or requirements in addition to those already contained in the principal environmental planning instrument being amended.*
- (b) *A planning proposal must not contain or refer to drawings that show details of the development proposal.*

The planning proposal amends only the Orange LEP and thus does not amend another EPI. As such, the proposal is consistent with the direction.

The introduction of a specific clause to limit the maximum number of lots to be developed on the site provides Council with a mechanism to ensure that development of the land does not exceed the targeted lot yield, as identified by the proponent.

Due to the size of the lots and their value/position in the market, perceived risk around developers buying multiple adjacent lots with a view to consolidating and re-subdividing, and thus impacting on lot yield, has a very low level of risk. It is only a risk following release of early stages and only where purchasers are sold multiple adjacent lots, which is expressly not proposed by the proponent. As the sole landowner in the scheme, this intention alone will ensure that likelihood of this happening is very low.

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4.4 Environmental, social and economic impacts

Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, would be adversely affected as a result of the proposal?

A preliminary biodiversity analysis was completed in support of the original planning proposal applying to the land. That assessment was prepared to address the requirements of the (then) Native Vegetation Act 2003. The inception of the NSW *Biodiversity Conservation Act, 2016* (BC Act) means that any development application that would result in the clearing of native vegetation must consider whether the Biodiversity Offset Scheme (BOS) applies. The BOS will be triggered if:

1. Clearing exceeds the minimum clearing threshold (1 ha or more as minimum lot size is 40ha).
2. Clearing occurs on an area of outstanding biodiversity value (this is not applicable).
3. The proposal will result in a significant impact on threatened flora, fauna or ecological communities as determined by the Five Part Test of Significance.

The future subdivision of the land will trigger the BOS due to the presence of native vegetation on the site (refer **Figure 5**) and the anticipated level of clearing. Any future Development Application to subdivide the land will therefore need to be accompanied by a Biodiversity Development Assessment Report (BDAR), which will assess the potential impact on biodiversity in accordance with the Biodiversity Assessment Method (BAM) established under the BC Act. This future BDAR must describe the biodiversity values on the Study Area, identify means to avoid, minimise or mitigate biodiversity impacts, and assess the residual impact to biodiversity values using the BAM online calculator (BAM-C) to determine any offset requirements for those impacts.

An accredited assessor must implement the BAM and prepare a BDAR in accordance with part 6 of the BC Act.

A preliminary site visit to the property was completed by Premise ecologists on the 8-9 April 2021 and the results of that survey are reflected in **Figure 5**. Further vegetation surveys are required to satisfy the requirements of the BAM to adequately identify PCTs and collect quantitative data for input into the BAM Calculator to determine any offset liability.

The project area is mostly cleared, modified pasture with remnant native isolated paddock trees and some remnant woodland areas.

State Vegetation Mapping identifies the project area as containing PCT 1330, PCT 732, and PCT 277. Vegetation surveys conducted in April 2021 confirm the presence of PCT 1330, PCT 732, and PCT 277 – refer **Appendix D**.

Threatened flora, fauna and ecological communities predicted to occur or have habitat on the project site have been identified via four data sources:

- BAM online calculator – Lists predicted credit species and candidate credit species generated by the BAM-C based on IBRA subregion, PCTs present and vegetation integrity (DPIE, 2021b).
- The NSW BioNet Threatened Biodiversity Data Collection (TBDC) (DPIE, 2021d) – Provides data on vegetation types (PCTs), habitats and habitat constraints for threatened species.
- BioNet website – Searches of the NSW Atlas of Wildlife, NSW State Forests, Australian Museum and Royal Botanic Gardens Sydney databases (DPIE, 2021c). The search area comprised a 20 × 20 km square centred on the Study Area. This search returned a list of threatened species known to occur within the search area.

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- Commonwealth Department of the Environment and Energy (DEE) website – Protected Matters Search Tool (PMST) (DAWE, 2021). The search area comprised the same 20 × 20 km square as for the BioNet search. The PMST uses actual records and habitat modelling to return a list of ‘protected matters’ that are known or predicted to occur in the search area, including threatened species, migratory species, ecological communities, wetlands of international significance, and national and world heritage properties.

Database searches returned 13 threatened flora species, 40 threatened fauna species and 2 threatened ecological communities. The potential for these species and ecological communities to occur on the project area have been based on a literature review and preliminary vegetation surveys and are assessed in this report and the results summarised in the tables at **Appendix D**.

Threatened species considered unlikely to occur on the project area based on individual species requirements and habitat assessment are not assessed further in this report, unless they are Candidate Credit Species identified in BAM-C. Candidate Credit Species can only be excluded from the BAM-C if the species:

- has habitat constraints listed in the TBDC (DPIE, 2021d) and none of these constraints are present on the project area;
- Is vagrant in the area (taken as the record being well outside the species range or natural distribution);
- is unable to use the habitat constraints listed in the TBDC (DPIE, 2021d) or known microhabitats that the species requires to persist on or use because the habitat constraints are degraded to the point where the species will no longer be present; or
- targeted searches are conducted on the project area by suitably qualified people at the appropriate time of year using accepted methods to determine the presence/absence of identified threatened species

The BAM-C returned 18 Predicted Credit Species and 15 Candidate Credit Species. Eight of the fauna species are dual Predicted and Candidate Credit Species. All species returned by the BAM-C will require consideration in the assessment of any future DA applications which involve the clearing of land on the site.

Preliminary review of habitat constraints on the Study Area reveals three flora and 12 fauna species considered to have potential habitat on the site that is likely to require offsetting. Targeted flora and fauna surveys would be required to ascertain whether these species are actually present or absent on the Study Area.

A summary of appropriate timing of targeted surveys for Candidate Credit Species is provided in the tables in **Appendix D**.

Twenty nine plant populations and 21 terrestrial fauna populations are listed as endangered under NSW TSC Act, as at June 2021 (NSW Scientific Committee, 2016). None are applicable to the project area.

Native vegetation on the project area is likely to be remnant of PCT 1330, PCT 277 and PCT 732. PCT 1330 and 277 are associated with Threatened Ecological Community *White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions*. This TEC is listed as Critically Endangered on the BC Act and the EPBC Act.

There are no TECs associated with PCT 732.

Whilst further fauna and flora surveys need to be completed to finalise the biodiversity strategy for the planned subdivision (ahead of any future DA lodgement), the proposal is considered capable of complying with the provisions of the *Biodiversity Conservation Act 2016*.

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LEP clause 7.3 ensures consideration and protection of mapped high environmental value land, which is consistent with the mapped native vegetation as per **Figure 5**. Additionally, the woodland area currently zoned RE1 in the south-western extent of the site is now retained, providing greater protection over this woodland (PCT 1330) area.

The site specific DCP will contain site specific measures to ensure protection is provided to native vegetation and these will include, but are not limited to, the following:

1. Areas containing mapped sensitive biodiversity would incorporate lots of a larger size to accommodate protected vegetation; and
2. Lots within mapped sensitive biodiversity areas would incorporate building envelopes to ensure development protects and retains significant native vegetation; and
3. Riparian areas would be landscaped with endemic species to provide compensation for tree removal where it cannot be avoided due to the siting of infrastructure.

Subject to the carrying out of the BDAR, the existing LEP clauses and the proposed DCP provisions, impacts to biodiversity can be managed to ensure they are not significant. Subject to the outcome of the final Biodiversity Development Assessment Report, the LEP sensitive terrestrial biodiversity map will be amended in the future, likely via a future Council 'housekeeping' LEP amendment.

Are there any other likely environmental effects as a result of the planning proposal and how are they proposed to be managed?

Environmental impacts associated with the use of the land for residential purpose are consistent with the current zoning of the land.

Any future development of the land would be the subject of detailed design including considering known site environmental constraints and the need to provide appropriate environmental controls.

As discussed elsewhere in this proposal, the management of potential impacts associated with biodiversity, slope, Aboriginal heritage and contamination is achievable in a manner that would not result in significant residual impacts.

Has the planning proposal adequately addressed any social and economic effects?

The development is considered to result in social and economic benefits to the locality, through providing greater opportunities for residential development.

The *Draft Centres Policy 2009* (Policy) provides a number of questions that should be considered in determining whether to proceed with a rezoning; referred to as the Net Community Benefit Test. These questions together with a response are provided in **Table 4**.

The Policy identifies that if it is judged that the rezoning would produce a net community benefit, the proposal should proceed through the rezoning process. If no benefit is identified, the proposed rezoning should not proceed.

The outcome of the discussion provided in **Table 4** confirms that the rezoning would have a net community benefit and accordingly it is considered that the rezoning should proceed.

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Table 4 – Net community benefit test

Evaluation criteria	Community costs and benefits			
	Base case – current situation	Planning proposal	Qualitative Community Benefit per Criteria	Quantitative Community Benefit per Criteria
Would the LEP be compatible with agreed State and regional strategic direction for development in the area (eg land release, strategic corridors)?	A range of adopted directions and strategies apply to the site, as discussed earlier in this planning proposal.	The proposed LEP seeks to rezone part of the land from E/C4 to R5 and amend the Lot Size Map to provide for a greater number of large lots; consistent with a large portion of the site.	Provides additional residential land close to Orange and provides greater opportunities for housing diversity.	No external cost to the community. Increased investment would be a benefit.
Is the LEP located in a global/regional city, strategic centre or corridor nominated within the Metropolitan Strategy or another regional/sub-regional strategy? Is the LEP likely to create a precedent or create or change the expectations of the landowner or other landholders?	The site is within the area of the Central West and Orana Regional Plan. The proposal is not inconsistent with the vision and goals of the Regional Plan.	The proposed LEP seeks to amend the LEP to rezone a portion of the site from E/C4 to R5, and amend the Lot Size Map to provide for the development of large residential lots; consistent with the existing zoning of a large portion of the site.	The development of large residential lots on the periphery of Orange will not set an undesirable precedent.	No external cost to the community
Have the cumulative effects of other spot rezoning proposals in the locality been considered? What was the outcome of these considerations?	No other spot re-zonings are known to have occurred in the locality.	The Planning Proposal provides for the rezoning of the land to reflect the existing and future use of the land for large lot residential development.	No external cost to the community	No external cost to the community
Would the LEP facilitate a permanent employment generating activity or result in a loss of employment lands?	The land affected is currently zoned R5, E/C4, RE1 and SP2.	The proposal will provide for short and medium term employment generation.	No external cost to the community	No external cost to the community

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Evaluation criteria	Community costs and benefits			
	Base case – current situation	Planning proposal	Qualitative Community Benefit per Criteria	Quantitative Community Benefit per Criteria
Would the LEP impact upon the supply of residential land and therefore housing supply and affordability?	The Site currently contains a land zoned R5, E/C4, RE1 and SP2.	The proposal seeks to rezone the Site to R5.	The proposal will provide greater supply of land for residential development.	Greater affordability of large residential lots.
Is the existing public infrastructure (roads, rail, utilities) capable of servicing the proposed site? Is there good pedestrian and cycling access? Is public transport currently available or is there infrastructure capacity to support future public transport?	Yes	This has been demonstrated with the existing zoning of the land. The proposal seeks to expand on this.	No external cost to the community	No external cost to the community
Would the proposal result in changes to the car distances travelled by customers, employees and suppliers? If so, what are the likely impacts in terms of greenhouse gas emissions, operating costs and road safety?	The site is currently rural/agricultural land and has been rezoned for residential and environmental development.	The proposal seeks to expand on the existing zoning of the land to provide for a greater number of residential lots over the same project area.	No external cost to the community	No external cost to the community
Are there significant Government investments in infrastructure or services in the area whose patronage would be affected by the proposal? If so, what is the expected impact?	No significant assets in the region that would be affected	The LEP seeks to provide capacity for greater residential development on large lots near Orange.	No external cost to the community	No external cost to the community
Would the proposal impact on land that the Government has identified a need to protect (eg land with high biodiversity values) or have other environmental impacts? Is the land	The land is not unduly constrained.	By virtue of the current and continued use of the land for residential purposes, the general suitability of the land is confirmed.	No external cost to the community	No external cost to the community

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Evaluation criteria	Community costs and benefits			
	Base case – current situation	Planning proposal	Qualitative Community Benefit per Criteria	Quantitative Community Benefit per Criteria
constrained by environmental factors such as flooding?				
Would the LEP be compatible/ complementary with surrounding land uses? What is the impact on amenity in the location and wider community? Would the public domain improve?	The subject site is currently rural/agricultural land which has been rezoned for residential/environmental development purposes.	The LEP would allow for further residential development in the locality.	Additional residential development opportunities in the locality.	No external cost to the community
Would the proposal increase choice and competition by increasing the number of retail and commercial premises operating in the area?	No retail or commercial uses operate on the site.	No retail or commercial uses are proposed with the rezoning.	No external cost to the community	No external cost to the community
If a stand-alone proposal and not a centre, does the proposal have the potential to develop into a centre in the future?	Not relevant to this planning proposal.			No external cost to the community
What are the public interest reasons for preparing the draft plan? What are the implications of not proceeding at that time?	Residential development is only possible on a portion of the site.	Additional large residential lots would be provided in the locality	Public Interest is best served by enabling a wider range of residential development and housing opportunities thereby fostering local competition and improving vitality and viability.	Potential external cost to community if LEP does not proceed due to potential loss of economic opportunities noted above.
Net Community Benefit =			Positive	Positive

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4.5 State and Commonwealth Interests

It is not considered that the amendments proposed via this planning proposal would conflict with any State or Commonwealth interests.

After issue of the Gateway determination, and update of the planning proposal, a copy of the planning proposal was sent to the following regulatory agencies seeking comment within 21 days:

- Transport for NSW (TfNSW);
- Heritage NSW;
- Cabonne Council;
- Transgrid;
- Environment Protection Authority (EPA);
- DPE Biodiversity, Conservation and Science (BCS);
- John Holland Rail;
- DPE Water;
- Charles Sturt University (CSU);
- Natural Resource Access Regulator (NRAR); and
- Rural Fire Service (RFS)

Of the above agencies, responses were received within the 21 day period from Cabonne Council, EPA and BCS.

Responses were received from Heritage NSW and TfNSW outside of the 21 day period. TfNSW responded on behalf of the rail authority (JHR, noting the Rail Infrastructure Manager responsibilities were transferred from JHR to United Group Limited in January 2022).

Responses received are discussed in **Table 5**.

No response during the agency consultation period was received from Transgrid, John Holland Rail (noting the above), DPE Water, CSU, NRAR or RFS. During the public exhibition period, one submission was received from BCD. Late submissions were received from Transgrid and TfNSW.

Specific commentary with respect to regulatory agencies is provided under the relevant headings below.

4.5.1 TRANSGRID

Noting the discussion in **Section 3.1.4**, it is confirmed that the intended outcome of this planning proposal is to retain the existing SP2 zone, which aligns with the current high voltage ETL alignment.

It is proposed to continue to liaise with Transgrid with respect to the future realignment and/or undergrounding of this line. At that time that this is delivered, the SP2 zoning would be amended, likely via a future Council 'housekeeping' LEP amendment. Transgrid's submission, received after the closure of the public exhibition period, confirms the need to ensure the final design of the subdivision is consistent with Transgrid's easement requirements. This is understood and achievable.

4.5.2 DPE BIODIVERSITY, CONSERVATION AND SCIENCE (BCS)

A number of meetings were held between Premise and BCS to discuss the content of the initial and subsequent BCS submissions – attached at **Appendix G**. Detailed comments with respect to the advice from BCS is addressed in **Table 5, cells 10-17**.

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It was agreed that updates to the planning proposal were required to map high environmental value land (**Figure 4**) and to provide ground-truthing of this HEV land (**Figure 5**). As noted elsewhere, the ground-truthing by Premise ecologists reflects that the areas of the site mapped as HEV accord with areas of mapped high sensitivity across the site (and in the majority of instances provide sufficient buffers around these ground-truthed areas), which is in turn generally consistent with the LEP sensitive biodiversity mapping. Land affected by this sensitive biodiversity mapping is subject to LEP Clause 7.4. At DA stage, specific consideration is required to this land to ensure, in this instance, the subdivision design has afforded adequate protection of sensitive land in the context of the clause objectives.

It was also agreed that the site specific DCP should incorporate guiding provisions to ensure the protection of sensitive vegetation. These principles include (but are not limited to):

1. Areas containing mapped sensitive biodiversity would incorporate lots of a larger size to accommodate protected vegetation; and
2. Lots within mapped sensitive biodiversity areas would incorporate building envelopes to ensure development protects and retains significant native vegetation; and
3. Riparian areas would be landscaped with endemic species to provide compensation for tree removal where it cannot be avoided due to the siting of infrastructure.

The above recommended measures, to be adopted and developed through preparation of the site specific DCP prior to subdivision DA, ensure that the project can be delivered in a sustainable manner that accords with the provisions of the BC Act and the LEP, and thus do not result in significant or unreasonable impacts to biodiversity on the site.

During consultation that occurred following receipt of BCD's submission during the public exhibition period, agreement was reached between the proponent and BCD to retain the portion of RE1 zoned land in the south-west of the site. This planning proposal has been updated to reflect this change. Subject to the outcome of the final Biodiversity Development Assessment Report, the LEP sensitive terrestrial biodiversity map will be amended, likely via a future Council 'housekeeping' LEP amendment.

4.5.3 HERITAGE NSW

A meeting was also held between Heritage NSW, Premise and Orange City Council on the 18 August 2022 to discuss Heritage NSW advice within their response to regulatory consultation – attached as **Appendix G**. Detailed comments in respect of the Heritage NSW advice is provided in **Table 5, cells 19-21**.

Additional information was provided to Heritage NSW after that meeting to clarify the extent of the site to be impacted by the project and to demonstrate that, in the event areas of additional sensitivity were identified requiring protection, that this could be accommodated without prejudicing the maximum lot yield. In short:

- As proposed by the applicant via the planning proposal, the limit of 700 lots is to be enshrined in a specific LEP clause that will ensure that the maximum lot yield of the scheme does not exceed this number. In the context of the proposed minimum lot size of 2,000m², and the areas conceptually be set aside for open space and roads, we note the following:
 - The site has an area of approximately 293 hectares;
 - 700 lots at an MLS of 2,000m² would require a minimum area of 140 ha;
 - Areas set aside for roads and open space (via the concept plan) are, respectively, 62.3 ha and 28.2 ha;
 - Being reasonable and assuming that lots within areas of steeper slope or containing native vegetation may be larger, we have assumed that 30% of lots are in fact a minimum of 3,900m² (strategically ensuring these are less than 4,000m² so that further subdivision is not possible). This

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would result in approximately 490 x 2000m² lots and 210 x 3900m² lots. This increases the conceptual minimum development area from 140 ha to 180 ha;

- 293 ha less areas for roads and open space (62.3+28.2) leaves 202.5 ha for development.
- As a means of testing the above, it is common in land use planning terms to assume that around 20% of land should be excluded from conceptual lot yields to account for open space and roads. This is typically increased to 30% where the land is constrained (eg, due to slope). In this case, assuming a 30% reduction factor against the original 293 ha, leaves 205 ha for lot development, which is very close to the 202.5 ha figure flagged above. 205 ha divided by the 2000m² minimum lot size suggests the land could accommodate around 1,025 lots of 2000m². As per the above, a limit of 700 is placed on this subdivision, to ensure that lots can be larger than the minimum, or to provide for the yield target whilst still ensuring any areas of sensitivity can be accommodated.
- Therefore, considering the difference between the area needed to deliver a mix of 2000 m² and 3900m² lots, around 20 hectares of land could, if needed, be set aside for protection purposes. This is a significant area and more than sufficient to ensure that any conflict between the targeted lot yield and ensuring adequate protection of sensitive landforms or sites is possible.

Based on the above information, Heritage NSW confirmed their agreement to the further consideration of heritage matters at subdivision development application stage – refer **Appendix G**.

4.5.4 CABONNE COUNCIL

Cabonne Council provided a response within the 21 day agency consultation period and raised a number of concerns around the potential for conflicts between adjacent rural land uses and the proposed rezoned land.

A detailed response to the points raised by Cabonne Council are provided in **Table 5, cell 18**. Concerns around conflicts between land uses are proposed to be addressed by the site specific DCP, and in consultation with Cabonne Council, including but not limited to:

- Noise, lighting and spray drift from the active orchard to the north can be reduced through the physical separation of land uses via the instatement of building envelopes and the installation of a vegetated buffer that is sufficiently mature as to be effective before the development reaches these areas. The specific requirements for this buffer would be contained within the proposed Development Control Plan to be prepared in respect of the land and would be consistent with the existing provisions contained within Section 6 of the Orange Development Control Plan 2004;
- Education of the community;
- Adoption of water sensitive urban design principles; and
- Bushfire hazard can be addressed by complying with design and management practices contained in Planning for Bushfire Protection (2018).

4.5.5 TRANSPORT FOR NSW (TFNSW)

A late submission from TfNSW was received and a detailed response to the points raised is provided in **Table 5, cells 22-29**.

To address concerns around potential contamination associated with proximity to the rail corridor, further sampling has been completed and is set out in **Appendix F**. This confirms that all samples collected reflects analytes within criteria limits.

A further submission was received from TfNSW in relation to the public exhibition of the planning proposal. Matters raised included:

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- Safety and access with respect to the two impacted rail crossings;
- The potential risk associated with contamination on the land adjacent to the rail corridor;
- The operation of the intersection of Leeds Parade and the Northern Distributor Road;
- Additional traffic on Clergate Road and the need for future upgrades to the Clergate Road/ Northern Distributor Road intersection, including funding mechanisms;
- Noise, vibration and air quality impacts to future residential properties in close proximity to the rail corridor;
- Stormwater management; and
- Future public transport provision.

Matters raised via the response to the public exhibition period are largely consistent with the matters raised and addressed in **Section 4.5.5** and **Table 5** and have therefore not been re-addressed. It is noted that TfNSW confirmed no objection to the project via their public exhibition submission but have requested the range of matters to be considered by OCC in finalisation of the amendment.

4.5.6 ENVIRONMENT PROTECTION AUTHORITY

The EPA provided two responses during the consultation phase, with the majority of comments associated with the potential contamination status of the land.

A detailed response to all points raised by the EPA is provided in **Table 5, cells 1-9**.

4.5.7 JOHN HOLLAND RAIL (JHR)

No response was received from JHR.

Since the issue of the Gateway approval, United Group Limited has replaced JHR as the Rail Infrastructure Manager for the Country Regional Network. The response received from TfNSW addresses both road and rail matters and thus should be read as a response on behalf of JHR.

A further late response was received from TfNSW in response to the public exhibition phase, including in respect of the adjacent rail corridor. These matters are discussed in **Section 4.5.5**.

4.5.8 DPE WATER

No response was received from DPE Water.

4.5.9 CHARLES STURT UNIVERSITY (CSU)

No response was received from CSU.

4.5.10 NATURAL RESOURCE ACCESS REGULATOR (NRAR)

No response was received from NRAR.

4.5.11 RURAL FIRE SERVICE (RFS)

No response was received from RFS.

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Table 5 – Regulatory agency consultation summary

	Matter raised	Response
Environment Protection Authority		
1st EPA response – dated 14 April 2022		
1	Land Management - <i>The EPA recommends that Council ensure an adequate buffer distance between the (surrounding) IN1, RU1 and the proposed R5 land. The buffer should consider potential noise, water and air quality impacts on the community from industrial activities such as those regulated by the EPA under Schedule 1 of the Protection of the Environment Operations Act (POEO Act). A list of industries the EPA regulates in the Orange local government area can be obtained via the EPA's public register, which can be found at https://apps.epa.nsw.gov.au/prpoeoapp/default.aspx</i>	The need for buffers is acknowledged and understood. There is sufficient room within the site to enable these to be accommodated via design at subdivision DA stage. The requirement for this will be outlined in the project specific DCP, which is required prior to the approval of any subdivision DA. The recent adoption of the Orange Local Housing Strategy at the June 2022 Council meeting has also reinforced Council's strategic direction to develop residential housing in the northern areas of Orange and move away from industrial land uses in this area.
2	Contaminated land - <i>The EPA suggests that Council ensures that all site remediation work is completed in a planned and proper manner. This includes the removal of all asbestos waste by a trained and licenced professional to ensure further site contamination is not caused. After the destruction and removal of all abattoir infrastructure, including any underground storage units Council should ensure a full site investigation is completed to fully assess any potential ground and water pollution.</i>	Supplementary site sampling was completed on the 15 and 16 August 2022, incorporating targeted sampling to determine the extent whether the land adjacent to the railway corridor indicates any instances of contamination requiring remediation. The outcome of this sampling and analysis is provided in Appendix F . This reporting demonstrates that all soil samples met the investigation criteria for the respective analytes.
2nd EPA response – dated 6 May 2022		
3	Noise – The proposed rezoning is in the vicinity of a rail line that has the potential to produce noise from its operation over a 24-hour period. It may be necessary to undertake an acoustical assessment to assess any potential noise impacts from the operation of the rail line to help identify any reasonable and feasible mitigation measures. Such an assessment should be prepared by a suitably qualified acoustical consultant.	The need to consider noise in the relation to the rail corridor is understood and acknowledged. Conceptual lot layout provides longer lots and the capacity for building envelopes on these lots adjacent to the railway corridor so that dwellings are a minimum of 40 metres from the corridor. This approach is in line with the requirements of the <i>Development near Rail Corridors and Busy Roads - Interim Guideline</i> .

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	Matter raised	Response
4	Potential land contamination – 1. An updated preliminary site investigation is required	Any future DA will be supported by a PSI. Supplementary site sampling was completed on the 15 and 16 August 2022, incorporating targeted sampling to determine the extent whether the land adjacent to the railway corridor indicates any instances of contamination requiring remediation. The outcome of this sampling and analysis is provided in Appendix F . This reporting demonstrates that all soil samples met the investigation criteria for the respective analytes. This demonstrates that a further PSI is not required at this time and that these matters could be reasonably dealt with at DA stage.
5	Potential land contamination – 2. A targeted environment investigation is recommended for some areas	Supplementary site sampling was completed on the 15 and 16 August 2022, incorporating targeted sampling to determine the extent whether the land adjacent to the railway corridor indicates any instances of contamination requiring remediation. The outcome of this sampling and analysis is provided in Appendix F . This reporting demonstrates that all soil samples met the investigation criteria for the respective analytes.
6	Potential land contamination – 3. A site audit statement should be prepared	The proponent has no objection to preparing an SAS in conjunction with the subdivision DA. This is a matter to be dealt with at that time and does not impact this planning proposal.
7	Potential land contamination – 4. Consent conditions should ensure that contamination risk does not increase	The applicant has no objection to a consent condition of this nature in relation to the future subdivision DA. This is a matter to be dealt with at that time and does not impact this planning proposal.
8	Potential land contamination – 5. There may be a duty to notify the EPA of contamination	The applicant is aware of and understands their obligations with respect to contamination notification
9	Potential land contamination – 6. Certified consultants should be used to assess contamination	The applicant has no objection to the use of certified consultants in relation to future reporting.
Biodiversity, Conservation and Science		

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	Matter raised	Response
10	<p><i>BCS has the following primary areas of interest relating to strategic land use planning proposals:</i></p> <ol style="list-style-type: none"> <i>1. The impacts of development and settlement intensification on biodiversity</i> <i>2. Adequate investigation of the environmental constraints of affected land</i> <i>3. Avoiding intensification of land use and settlement in environmentally sensitive areas (ESAs)</i> <i>4. Ensuring that development within a floodplain is consistent with the NSW Government's Flood Prone Land Policy, the principles set out in the Floodplain Development Manual, and applicable urban and rural floodplain risk management plans.</i> <p><i>We also understand that planning proposals must comply with current statutory matters such as the</i></p> <p><i>Local Planning Directions under S9.1 of the Environmental Planning and Assessment Act 1979 (EP&A Act).</i></p>	<p>This comment fails to acknowledge that the land was historically in use for rural residential and industrial purposes, and was zoned for large lot residential and environmental living purposes via Amendment 13 to the LEP. The current proposal seeks to amend the minimum lot size to provide for additional lots within the amendment area, but does not result in greater impacts than currently allowable, noting the extent and intensity of development currently permitted under the existing zoning. The development of lots with a minimum lot size of 2,000 square metres across the site is capable of resulting in development of land for housing with established gardens, subject to compliance with the relevant statutory provisions, particularly with respect to the mapped biodiversity values and clause 7.4 (Terrestrial Biodiversity).</p> <p>A review of the concept lot layout provided within the current planning proposal by comparison to the concept layout provided in relation to amendment 13 demonstrates that the extent of roads and infrastructure associated with the development area has not substantially changed. The area of riparian corridors has also not substantially reduced. Impacts associated with the planning proposal are therefore consistent with the current zoned arrangement.</p> <p>Following direct discussions with BCS a range of agreed principles have been provided within this planning proposal that would be adopted in the preparation of a DCP – refer to the numbered points in cell 12 of this table. Additionally, amendments to the planning proposal have been agreed with the applicant, and discussed with Council and DPE, including retention of the approximately 9 ha area of RE1 zoned land in the south-western extent of the site.</p>
11	<p><i>The proposed zoning, minimum lot size and subdivision plan could be revised to improve consistency with regional and local strategies.</i></p> <p>Central West and Orana Regional Plan 2036</p>	<p>The Planning Proposal has been updated (at Figure 4) to provide details of the current sensitive terrestrial biodiversity land mapping from the LEP, which is consistent with the draft High Environmental Value (HEV) land mapping prepared by the Department of Planning and Environment.</p>

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	Matter raised	Response
	<ul style="list-style-type: none"> Planning proposals should demonstrate consistency with the strategic planning framework including the relevant Regional Plan. To achieve directions, and actions in the relevant Regional Plan for areas with High Environmental Value (HEV), Planning Proposals should identify areas of HEV at the property scale and the current land uses in such areas should not be intensified. The planning proposal is not consistent with the directions and actions of the Central West and Orana Regional Plan that relate to biodiversity. The planning proposal is not consistent with; <ul style="list-style-type: none"> Direction 13 – protect and manage environmental assets Action 13.1 – protect high environmental assets through local environmental plans Action 13.2 – minimise potential impacts arising from development in areas of high environmental value, and consider offsets or other mitigation mechanisms for unavoidable impacts 	<p>Furthermore, ground truthing of vegetation mapping has been completed by Premise and there is a large degree of consistency between the Premise plant community type mapping and the draft HEV/sensitive terrestrial biodiversity mapping – refer Figure 5.</p> <p>Consideration has been given to the need to update the sensitive terrestrial biodiversity mapping however, given the very minor differences between the mapping it is not considered warranted in this scenario. Subject to completion of a BDAR at DA stage, amendments to the LEP biodiversity map could be completed at a later date with the benefit of final BDAR data. It is pre-emptive to complete a full BDAR at this time in the absence of final detailed design.</p> <p>This existing biodiversity mapping applies to the land and provides an additional layer of protection that obligates development to consider the provisions of clause 7.4 of the LEP in the determination of any development application. These controls are adequate to provide protection to HEV land.</p> <p>At DA subdivision stage a BDAR would be provided that would follow the hierarchical assessment of avoid, minimise and offset as per the provisions of the BC Act. There is adequate capacity within the land to achieve both the maximum density yield of 700 lots and also ensuring there is sufficient land set aside for protection, in the event the BDAR process identifies sensitive land requiring protection/avoidance.</p> <p>The planning proposal is therefore consistent with the CWORP in that environmental assets benefit from existing protections and these are not reduced by the planning proposal.</p>
12	<p>Whilst the planning proposal states that 'the future subdivision of the land will trigger the BOS' and therefore any impacts will be assessed under the Biodiversity Assessment Method (BAM) and offset in accordance with the Biodiversity Conservation Act 2016 (BC Act), the planning proposal does not show that there has been any attempt to avoid areas of HEV, nor does it propose any provisions to protect these</p>	<p>Protections for HEV land is not reduced by this planning proposal on the basis that the extent of impacts are no greater. Land mapped as HEV is protected via the provisions of clause 7.4 of the LEP and no changes to this are proposed.</p> <p>Whilst lot sizes are proposed for reduction in areas of C4 zoning, this does not amount to intensification on the basis that the extent of impact is consistent with the current zoning and land use pattern. Road and infrastructure areas do not substantially increase and the extent of development is broadly similar.</p>

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	Matter raised	Response
	<i>values. Furthermore, land use intensification is proposed for the areas that are currently zoned for conservation (C4).</i>	<p>Under the current zoning, the development of lots to 4,000 square metres would result in impacts to land that are consistent with the proposed density pattern. Protections must be considered and provided at DA subdivision stage to ensure compliance with clause 7.4. The proposed development would not lead to greater impacts.</p> <p>It is also proposed to ensure that protections are incorporated into a site specific DCP to further limit the potential for impacts to biodiversity. A tiered approach to protections are proposed, consistent with the following principles:</p> <ol style="list-style-type: none"> 1. <i>Areas containing mapped sensitive biodiversity would incorporate lots of a larger size to accommodate protected vegetation</i> 2. <i>Lots within mapped sensitive biodiversity areas would incorporate building envelopes to ensure development protects and retains significant native vegetation</i> 3. <i>Riparian areas would be landscaped with a variety of species to provide compensation for tree removal where it cannot be avoided due to the siting of infrastructure.</i>
13	<p>Draft Central West and Orana Regional Plan 2041</p> <p><i>In addition to above the draft Central West and Orana Regional Plan 2041 advocates;</i></p> <ul style="list-style-type: none"> • <i>the validation of regional scale HEV mapping via site specific investigations during strategic and local planning, and development proposals</i> • <i>avoidance of areas with identified HEV and focusing development on areas with lower biodiversity values</i> <p><i>The planning proposal has not clearly identified all areas of HEV present or likely to be present on the subject site nor has there been any attempt to avoid such values.</i></p>	<p>HEV/sensitive terrestrial biodiversity mapping is provided within the updated planning proposal.</p> <p>As above, impacts to HEV land are not substantially increased by the project and protections by virtue of clause 7.4 are increased.</p>
14	<p>Orange Local Strategic Planning Statement 2020 (LSPS)</p>	<p>Riparian corridors are substantial throughout the site and are a key attribute and feature of the concept layout. These areas are to be conserved and</p>

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	<p><i>Planning priority 13 of the Orange LSPS is 'Protect, conserve and enhance Oranges urban tree canopy, landform, waterways and bushland'.</i></p> <p><i>Action 3 of the planning priority is 'require greenfield subdivisions to protect and enhance waterways and riparian corridors'.</i></p> <p><i>Page 23 of the planning proposal states, 'the mapped vegetation community in the south-west of the site would be predominantly retained and enhanced through augmentation of the waterway and the development of a riparian management and vegetation plan'. The planning proposal proposes to remove current RE1 and C4 zonings in areas where the riparian corridors are present. This is not consistent with planning priority 13 and action 3.</i></p> <p><i>Recommendations</i></p> <p><i>a) The planning proposal should further identify and map the extent of areas of HEV on the subject site with both desktop analysis and site investigations.</i></p> <p><i>b) Areas identified as HEV should be protected through planning mechanisms (e.g. C zones and minimum lot sizes to preclude subdivision).</i></p>	<p>enhanced; the project is therefore consistent with planning priority 13, action 3.</p> <p>Whilst the zoning is proposed to change, the sensitive terrestrial biodiversity mapping remains, and the protections provided by clause 7.4 are not reduced. Ground truthing by Premise confirms the validity of the current mapping and its consistent with information on the ground. This proposal has been updated to retain the area of RE1 zoned land in the south-western extent of the site (associated with PCT 1330) to ensure this sensitive area remains protected in the context of future development.</p> <p>a) HEV mapping is provided within the updated planning proposal. Ground-truthed biodiversity mapping by Premise is provided as Appendix C to this response.</p> <p>b) The existing site features substantial areas of environmental living zone (now C4) that permits subdivision down to 4,000 and 8,000 square metres. The recommendation that subdivision should not be permitted in C4 zoned areas is inconsistent with the current situation and is an unreasonable requirement. The tiered controls addressed in cell 12 of this table, along with the retention of the sensitive terrestrial biodiversity mapping and the effect of the provisions of LEP clause 7.4, ensure adequate controls exist in these areas. As noted with respect to the heritage comments, there is adequate capacity within the site to enable the delivery of the proposed 700 lots, a consistent amount of recreation space (by comparison to the current arrangement), necessary roads and provide for areas of protection if required.</p>
15	<p><i>2. Conclusions of the likelihood of occurrence for predicted threatened species is not adequately justified or consistent</i></p>	<p>The assessments of likelihood provided in the planning proposal have been completed by BAM accredited ecologists in the context of the provisions of the BC Act. The former report by FloraSearch was prepared in the context of</p>

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	Matter raised	Response
	<p><i>The planning proposal has not adequately justified conclusions that threatened species are unlikely to occur on the site. The assessment of likelihood for predicted threatened species presented in Table 5 of Appendix D of the planning proposal is not consistent with the conclusions in the Ecology Report (prepared by FloraSearch) that accompanies the planning proposal.</i></p> <p><i>Recommendation</i></p> <p><i>a) Conclusions that threatened species are unlikely to occur should be adequately justified. Otherwise Council should acknowledge that the likelihood of threatened species being present on the site has not been adequately assessed and assume that future subdivision and development of the site has the potential to impact on threatened species habitat.</i></p>	<p>the now repealed Native Vegetation Act. Variance between the two is therefore not unexpected.</p> <p>A BDAR will be prepared to support a future subdivision DA. It is pre-emptive to do so at this juncture when developed design of the subdivision has not yet been completed. The provisions of the BC Act will be addressed via the BDAR to support the DA and that is the appropriate time to do so, when there can be certainty about the design. Should amendments to the LEP biodiversity map be required, these would be completed after completion of the BDAR.</p> <p>Regulators and the community can be confident, via the measures discussed above, that impacts to threatened species will be not inconsistent with the level of impact currently permitted under existing zoning and minimum lot size, and this should be the benchmark for the analysis. The advice from BCS fails to acknowledge the extent of impact permitted by the current zoning.</p> <p>As noted elsewhere, there is sufficient capacity within the site to ensure that protection/avoidance can be provided as required whilst still delivering the 700 lot yield.</p>
16	<p><i>3. Biodiversity Offset Scheme is likely to apply to future subdivision of the site</i></p> <p><i>The BC Act and Biodiversity Conservation Regulation 2017 (BC Reg) section 7.1 apply to subdivisions. When assessing subdivisions, the consent authority must consider the clearing of native vegetation required, or likely to be required, for the purpose for which the land is to be subdivided.</i></p> <p><i>Native vegetation includes trees, understorey plants, groundcover and plants occurring in a wetland that are native to New South Wales (including planted native vegetation), not just trees.</i></p> <p><i>If the subdivision will impact native vegetation and the clearing exceeds the biodiversity offsets scheme (BOS) thresholds (Part 7, BC Reg), the BAM must be applied and a biodiversity development assessment report</i></p>	<p>It is acknowledged and clearly understood that the provisions of the BC Act apply to the site and that a BDAR is required to be prepared to support the future subdivision of the land. This situation has not changed and will apply whether or not the amendment is gazetted. Impacts to vegetation can be adequately avoided, minimised and offset through adoption of the measures outlined in the planning proposal, this response and via the continued application of clause 7.4 of the LEP.</p>

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	Matter raised	Response
	<p><i>(BDAR) prepared to assess and calculate the biodiversity offset credit requirement.</i></p> <p><i>Biodiversity offsets are calculated and secured in accordance with the BC Act for the subdivision.</i></p> <p><i>Once this is done, no further offsets are required for subsequent development of the land that is within the approved subdivision.</i></p> <p><i>The BAM requires proponents to demonstrate that biodiversity impacts have been avoided and minimised as far as possible, with residual impacts offset. Both the complexity of assessments, and the costs to the proponent associated with complying with the BOS, are lower where impacts on biodiversity are avoided and/or concentrated in areas of lower vegetation integrity.</i></p> <p><i>Based on the information provided it is likely that the impacts of the future subdivision of the subject site will trigger entry into the BOS. Entities at risk of SAI have additional assessment requirements under the BAM (see below for further information).</i></p>	
17	<p>4. Any future development is likely to impact on SAI entities.</p> <p>Based on the information provided, BCS understands that the area currently zoned as C4 contains remnant native vegetation that is likely to conform to the threatened ecological community White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions (Box Gum Woodland). Box Gum Woodland is listed as a Critically Endangered Ecological Community (CEEC) under the BC Act and therefore is listed as an entity for Serious and Irreversible Impacts (SAII). Where a proposal is determined likely to have a serious and irreversible impact on biodiversity values the planning authority must not grant approval.</p>	<p>The HEV land is mapped at Figure 4 of the updated planning proposal.</p> <p>The proposal does not result in land use intensification in HEV areas, noting that the current development scheme provides for subdivision of this land under the current zoning and minimum lot size maps. The reduction in MLS will result in additional housing, but no greater intensity of development on the basis that land developed as 4,000 and 8,000 square metre lots would be fully developed under the current scheme, within the context of the provisions of clause 7.4. This situation remains applicable, and no greater impact is anticipated.</p> <p>The tiered approach to protections outlined in cell 12 above and which would be addressed in a site specific DCP, together with the terrestrial biodiversity mapping and the provisions of clause 7.4, ensure that impacts are manageable and no greater than the current situation.</p>

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	As stated above the planning proposal should identify and map the extent of HEV within the subject site. Any future development assessment could be simplified by identifying the extent of HEV and SAI entities on the subject site up front in the strategic planning for the site. BCS does not support amendments that facilitate land use intensification in areas of HEV.	
Cabonne Council		
18	<p><i>Council requests that consideration be given in the proposed rezoning of land known as 440 Clergate Road and 463 Leeds Parade, Orange, as to potential impact upon both Cabonne Council and the State government's right to farm policies, the protection of farmland within the Cabonne LGA, and request consideration of the aims and objectives of the Cabonne LEP 2012, the objectives of the RU1 zone, and measures to including biosecurity measures, to ensure the protection of established farming north of the subject land.</i></p> <p><i>Furthermore, that consideration be given to implementation of adequate buffer distances or planning controls to address potential land use conflict between residential and rural land uses, biosecurity measures, and to protect the right to farm for established nearby farmland should the rezoning proposal proceed.</i></p>	<p>The issues raised by Cabonne Council relate to concerns about conflicts at the zone interface. This issue was comprehensively addressed in the original planning proposal that rezoned the land and measures to manage conflicts are to be addressed in a site specific DCP. This response and approach remains valid in our view. In short, the site specific DCP would incorporate a range of measures to manage the potential for conflict, including:</p> <ul style="list-style-type: none"> Noise, lighting and spray drift from the active orchard to the north can be reduced through the physical separation of land uses via the instatement of building envelopes and the installation of a vegetated buffer that is sufficiently mature as to be effective before the development reaches these areas. The specific requirements for this buffer would be contained within the proposed Development Control Plan to be prepared in respect of the land and would be consistent with the existing provisions contained within Section 6 of the Orange Development Control Plan 2004; Education of the community; Adoption of water sensitive urban design principles; and Bushfire hazard can be addressed by complying with design and management practices contained in Planning for Bushfire Protection (2018).
Late submission from Heritage NSW		
19	Archaeological test excavation is recommended within the planning proposal area. This should occur before the planning proposal is determined to provide accurate information about the extent and nature	The extent of impacts associated with the development is not substantially changed by this planning proposal, noting that the rezoning of the land from RU1 and IN1 to R5 and E/C4 was supported on the basis of the due diligence

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	Matter raised	Response
	of Aboriginal heritage sites and the potential impact of the planning proposal	<p>investigations completed. Notwithstanding, an update to the due diligence assessment is provided at Appendix H.</p> <p>The land has not changed, and the extent of impact has not significantly changed as a result of the current planning proposal. An ACHA would be prepared to support the subdivision DA and there is no justification or need for this to be completed at this time. The conclusion of the original assessment was that there were no significant barriers to proceed with development across the site as per the (then) concept plan.</p> <p>Consultation with Heritage NSW (as reflected in Appendix G) confirms that it is appropriate to defer the ACHA to DCP preparation stage. This is on the basis that:</p> <ul style="list-style-type: none"> • The maximum lot yield will not exceed 700 lots. • Out of the 293 hectare site, around 20 hectares of land could, if needed, be set aside for protection of sensitive landforms or sites. • If the detailed investigations reveal the need for a greater area of protection, the resulting outcome would be delivery of less lots than the anticipated maximum. This is a reality the applicant fully understands. • The current proposal to rezone those areas of the site not currently identified as R5, to R5, means that flexibility exists to design an appropriate subdivision layout that takes full account of identified site sensitivities, such as those that may be identified through biodiversity, archaeological, stormwater or other detailed investigations.
20	An Aboriginal Cultural Heritage Assessment should inform the planning proposal	<p>There has been no change to the planning framework such that an ACHA is required to be prepared at this time. The land has not changed and no additional AHIMS sites are noted apply to the land. An updated AHIMS search result is provided as an attachment to the due diligence review at Appendix H.</p> <p>The appropriate time to complete an ACHA is in conjunction with the design of the subdivision. As agreed with Heritage NSW, the carrying out of the ACHA will be deferred until DCP preparation stage.</p>

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	Matter raised	Response
21	<p>Local heritage items are located on land near to the site, including Rosedale Homestead, Wyelbe House and Canobolas Wool Topmaking building.</p> <p><i>We note that, as these Local heritage items are listed under your LEP, Council is the consent authority, and the assessment and consideration of any impacts on them from the planning proposal rests with Council.</i></p> <p><i>The Heritage Council, and Heritage NSW as its Delegate, do not have a role in the assessment and approval of impacts to Local heritage items. As such, we do not provide advice on planning matters which impact on Local heritage.</i></p>	<p>The three locally listed heritage properties are on land adjacent to the subject site.</p> <p>Rosedale homestead is approximately 320 metres to the east of the site boundary, Wyelbe house is approximately 350 metres to the west of the site boundary (separated by Clergate Road and the Main Western Railway line) and Canobolas Wool Topmaking is 120 metres to the south-west of the site boundary (also separated by Clergate Road and the Main Western Railway line). The likelihood of impact to these items by the planning proposal is low, noting the current zoning provides for large lot residential subdivision across the site to a minimum lot size of between 4,000-8,000 square metres. The reduction in the MLS is not considered likely to lead to any greater impacts that currently provided for.</p> <p>Consideration of heritage impacts would be provided within a subdivision DA to ensure compliance with clause 5.10 of the LEP.</p>
Late submission from Transport for NSW		
22	TfNSW does not support the planning proposal in its current form. Specific matters discussed below.	Noted, and see specific responses below.
23	<p>New Northern Access via Public Level crossing at Pearces Lane - <i>TfNSW requests additional safety assessment of the proposal against Australian Standard 1742.7 and Railway Crossing Safety Series 2011, Plan: Establishing a Railway Crossing Safety Management Plan (Roads and Traffic Authority 2011 and an ALCAM assessment on the crossing to confirm that it is safe and suitable to accommodate the expected increase in vehicle usage as a result of the development.</i></p>	<p>The existing crossing at Pearce Lane was upgraded to an active crossing in around 2010 and meets current safety standards. Based on information provided by the TfNSW ALCAMS administrator, the most recent ALCAM assessment was completed in 2018.</p> <p>An updated ALCAM assessment completed in conjunction with the detailed design of the subdivision would be completed at DA stage. As the Pearce Lane connection would not occur to a later stage in the development, it is possible to 'lock up' these later stages via DCP controls until such time as this assessment is completed and authorised. This ensures that land is not released resulting in increased traffic movements at this intersection until the assessment is completed. It is also noted that the connection to Pearce Lane is predicted to accommodate only very small volumes of traffic and is not essential to the development of the project. In the event a safety assessment</p>

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	Matter raised	Response
		demonstrated issues with this level crossing, it would not significantly impact the project to remove this connection, utilising the Leeds Parade and new crossings. A lockable connection to Pearce Lane could be preserved for the purposes of providing emergency vehicle access if needed, but is not essential for the acceptable development of the site (as reflected by the low level of usage predicted).
24	<p>New Western access and upgrade of private level crossing. TfNSW advise that the following assessments are required prior to the new crossing being approved:</p> <ul style="list-style-type: none"> • Safety assessment adopting Safe Systems Approach and form safety interfacing agreement with all stakeholders investigating all treatment options including grade separation. • ALCAM assessment and assessment against Australian Standard 1742.7 and Railway Crossing Safety Series 2011, Plan: Establishing a Railway Crossing Safety Management Plan (Roads and Traffic Authority 2011 to confirm that (in the event of an upgraded level crossing being proposed) level crossing is safe and suitable to accommodate the expected increase in vehicle usage as a result of the development, and • Subject to the result of the above assessments, liaise and renew interfacing agreement with TfNSW regard the potential upgrade to the level crossing and subsequently form a Works In Kind agreement with local road authority (i.e Orange City Council). 	<p>As noted above, the western access would not be needed until the project development staging has progressed.</p> <p>The staging would be locked via the proposed site specific DCP to ensure that the necessary assessments are completed and land is not released until such time as the necessary upgrades, to the satisfaction of TfNSW, are completed.</p>
25	<p>Private overbridge – the bridge does not form part of the application is not impacted by the planning proposals. The bridge may be required to be reviewed for future closure.</p> <p><i>Prior to lodgement of the future DA for subdivision, it is requested that the applicant consult with TfNSW and the Rail Infrastructure Manager in regard to the future use of this overbridge.</i></p>	<p>It is understood a licence previously existed to enable use of this bridge in relation to the subject land, but that this was handed in following the cessation of the use of the abattoir. As such, the proponent does not have the capacity to use the bridge (thus it is not proposed). This bridge does not form part of the planning proposal. The proponent has no objection to a future assessment of the bridge.</p>

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	Matter raised	Response
26	Contamination of rail land – All rail corridors are deemed to be contaminated unless proven otherwise by sample testing. <i>In accordance with State Environmental Planning Policy (Resilience and Hazards) 2021-Section 4.6 'Contamination and remediation to be considered in determining development application' (Previously State Environmental Planning Policy No. 55 – Remediation of Land) the consent authority (Council) must consider whether the land is contaminated.</i>	As stated in respect of the EPA submission, a detailed PSI would be completed at subdivision stage. The work completed to date (including the results of the updated sampling provided at Appendix F) confirms that the land is suitable for rezoning and development for residential purposes and that all sampled analytes are within an acceptable range by reference to the adopted criteria. At DA stage, a PSI would be completed.
27	Noise, vibration and air quality – any future development application must demonstrate compliance with the relevant SEPP and noise guideline. <i>As such, it is strongly recommended that Development for sensitive uses on the Site that is immediately adjacent to the operational rail corridor must ensure that acoustic building treatments are provided within 100m of the corridor to achieve noise requirements and compliance with the noise requirements shall only be based on shielding from fences, noise walls and intervening objects which are permanent structures, and exclude shielding from any object which forms part of a future development stage.</i>	As noted above, and in relation to the EPA correspondence, noise matters are adequately managed noting the size and orientation of lots, and through the placement of building envelopes. There is adequate room to ensure that dwellings can achieve recommended separation without the need for architectural attenuation. As noted above, the zoning on the western boundary is not proposed to change, and thus these comments are of limited relevance.
28	Stormwater management - <i>As the Land is immediately adjacent to the rail corridor, the rail corridor must not be adversely impacted by any future developments in the Land in terms of stormwater management.</i>	From analysis completed in relation to the amendment 13 planning proposal, it is evident that the land falls away from the rail corridor and that any stormwater would be directed to the east. Adverse impacts to the rail corridor as a result of stormwater are not predicted.
29	Future public transport provision - <i>Should the land be rezoned, and the project continue to the development assessment stage for subdivision, public transport service provision should be considered as part of the project scope. A future development application should consider opportunities to provide public transport through the subdivision area, providing customers with greater travel choices.</i>	As per the recommendation, this matter would be dealt with at DA stage. The proponent has no objection to this.

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5. COMMUNITY CONSULTATION

5.1 Type of community consultation required

Section 6.5.2 of 'A Guide to Preparing Local Environmental Plans' identifies two different exhibition periods for community consultation;

- Low Impact Proposals – 14 days; and
- All other planning proposals (including any proposal to reclassify land) – 28 days.

The Guide describes Low Impact Proposals as having the following attributes;

- A 'low' impact planning proposal is a planning proposal that, in the opinion of the person making the gateway determination, is;
 - Consistent with the pattern of surrounding land use zones and/or land uses;

The zoning of the land is currently for large lot residential development and environmental living purposes, with a generally consistent minimum lot size across the site. The proposal would build on the large lot residential component of the zoning of the Site by rezoning the site to allow entirely for large residential lots and providing a reduction in the minimum lot size. The proposed minimum lot size is consistent with other zoned large lot areas within the City of Orange and is therefore consistent with existing development levels within the city. The proposal does not fundamentally change the nature of the land use and therefore remains compatible with the surrounding land uses.

- Consistent with the strategic planning framework;

Responses have been provided detailing the proposal's compliance with local and regional planning strategies, SEPPs, and ministerial directions.

- Presents no issues with regard to infrastructure servicing;

All essential services will be provided to the site and these would be augmented as required by the applicant in the context of any future development of the land.

- Not a principle LEP; and

The planning proposal is not for a principle LEP.

- Does not reclassify public land.

The planning proposal does not seek to reclassify public land.

In accordance with the responses to the above points, the planning proposal is considered to be of low impact.

DPIE identified the need for consultation for a period of 28 days.

The planning proposal was exhibited for a 28 day period from the 15 October 2022 until the 14 November 2022. During this period only one submission was received (from DPE BCD) and no public submissions were received.



APPENDIX A

CORRESPONDENCE TO ORANGE CITY COUNCIL



APPENDIX B

CONCEPT MASTERPLAN



APPENDIX C

TRAFFIC STUDY



APPENDIX D

BIODIVERSITY DATA

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Table 6 – Threatened Flora Species Returned by Database and Literature Searches of the Surrounding Region

Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2,5}	Conservation Status		Likelihood to be on Study Area	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
<i>Acacia meiantha</i>		Cand	Cand	-	✓	Very High	3	E	E	Moderate	Erect shrub to 1.5 m high, grows in dry sclerophyll forests or woodland on sandy to clay soils. Flowering occurs July – October. Three disjunct populations remain in the Central Tablelands, one of which is the Mullion Ranges approximately 9 km northwest of the Study Area (DPIE, 2021d).
<i>Ammobium craspedioides</i>	Yass Daisy	-	Cand	-	✓	Moderate	2	V	V	Nil	Perennial herb typically found within Box-Gum Woodland and moist/dry forests associated with Yellow Box (<i>Eucalyptus melliodora</i>), Blakely's Red Gum (<i>Eucalyptus blakelyi</i>) and Apple Box (<i>Eucalyptus bridgesiana</i>) (DPIE, 2021d). Species known to persist in lightly grazed areas. Species unlikely to occur on Study Area due to dominance of introduced species, cropping and over-grazing.
<i>Eucalyptus aggregata</i>	Black Gum	-	Cand	✓	✓	Moderate	2	V	V	Nil	Small to medium-sized tree (18 m tall) found in the Central and

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2,5}	Conservation Status		Likelihood to be on Study Area	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
											Southern Tablelands, occurring in wetter and cooler areas at high altitudes (DPIE, 2021d). Species grows on poorly-drained alluvial soils and is associated with Ribbon Gum (<i>Eucalyptus viminalis</i>) and Swamp Gum (<i>Eucalyptus ovata</i>), as well as grasses including Tussock (<i>Poa labillardierei</i>) or Kangaroo Grass (<i>Themeda triandra</i>). Closest recorded sighting is at Summer Hill Creek (3.8 km north-east of the site) and is unlikely to occur on site due to historical clearing.
<i>Eucalyptus canobolensis</i>	Silver-leaf Candlebark	-	Cand	-	✓	Very high	3	V	E	Nil	Small tree (8-12 m) restricted exclusively to Mt Canobolas between 1000 m and 1300 m (DPIE, 2021d). Species occurs on shallow skeletal sands and is associated with sub-alpine vegetation including Ribbon Gum (<i>Eucalyptus viminalis</i>) and Broad-leaved Peppermint (<i>Eucalyptus dives</i>). Elevation across the Study Area vary between 833 m and 940 m.

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2,5}	Conservation Status		Likelihood to be on Study Area	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
<i>Eucalyptus pulverulenta</i>	Silver-leaved Mountain Gum			-	✓			V	V	Nil	Small tree (10 m tall) occurring in two distinct areas surrounding Lithgow and Bathurst, as well as the Monaro (DPIE, 2021d). Species grows on shallow soils in open forest dominated by Brittle Gum (<i>Eucalyptus mannifera</i>), Broad-leaved Peppermint (<i>Eucalyptus dives</i>) and Apple Box (<i>Eucalyptus bridgesiana</i>). Unlikely to occur on Study Area due to historical clearing and susceptibility to grazing and livestock trampling.
<i>Eucalyptus robertsonii</i> subsp. <i>hemisphaerica</i>	Robertson's Peppermint	-	Cand	-	✓	Very High	3	V	V	Nil	Tall tree occurs across the Central Tablelands between north of Orange to Burruga on light soils or granite (DPIE, 2021). Tree occurs in grassy or dry sclerophyll woodland or forest on upper slopes and rises. Associated species include Brittle Gum (<i>Eucalyptus mannifera</i>), Bundy (<i>Eucalyptus goniocalyx</i>) and Broad-leaved Peppermint (<i>Eucalyptus dives</i>). Species has been recorded in the Mullion

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2,5}	Conservation Status		Likelihood to be on Study Area	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
											Ranges (9 km north-west of Study Area) but is unlikely to occur on the Study Area due to metasediment parent rock (slate, phyllites and siltstones) (DPIE 2021b).
<i>Euphrasia arguta</i>		-	Cand	-	✓	Very High	3	CE	CE	Nil	Semi-parasitic erect herb occurring in eucalypt forest with diverse grass and shrub understorey (DPIE, 2021d). Species has been recorded along the roadside, indicating resilience to disturbance. Species has historically been recorded near Bathurst, with current distributions restricted to Nundle in the North-western Slopes and Tablelands. Species unlikely to occur on Study Area due to clearing, grazing and herbicide use.
<i>Swainsona recta</i>	Small Purple-pea	Cand	Cand	-	✓	High	2	E	E	Low	Small Purple-pea occurs mainly in the grassy understorey of Box-Gum Woodlands and open-forests in association with understorey dominants that

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2,5}	Conservation Status		Likelihood to be on Study Area	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
											include Kangaroo Grass, Poa tussocks and spear-grasses (DPIE, 2021d). There are no known records in the vicinity of the study area. However, Box Gum woodland is present on the study area.
<i>Swainsona sericea</i>	Silky Swainson-pea	Cand	Cand	✓	-	Moderate	2	V	-	Low	Erect perennial broadly distributed across Northern and Southern Tablelands, inland slopes and plains. Occurs in Snow Gum Woodland, Box Gum Woodland and Natural Temperate Grassland and can be associated with cypress-pine (<i>Callitris</i> spp.) (DPIE, 2021d). There are no known records in the vicinity of the Study Area. However, Box-Gum Woodland is present on the study area.
<i>Dichanthium setosum</i>	Bluegrass		Cand	-	✓	Moderate	2	V	V	Nil	Species occurs on the New England Tablelands, Northwest Slopes and Plains and the Central Western Slopes of NSW (DPIE, 2021d). It grows on heavy basaltic black soils and red-brown loamy

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2,5}	Conservation Status		Likelihood to be on Study Area	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
											clays and is associated with White Box (<i>Eucalyptus albens</i>), Purple Wiregrass (<i>Aristida ramosa</i>) and Kangaroo Grass (<i>Themeda triandra</i>). Species unlikely to occur on Study Area due to grazing, slashing and cropping.
<i>Lepidium hyssopifolium</i>	Aromatic Peppergrass		Cand	-	✓	High	2	E	E	Nil	Erect perennial herb distributed in small populations near Bathurst, Bungendore and Crookwell (DPIE, 2021d). Species occurs in grassy woodland and in grasslands. Unlikely to occur on Study Area due to restricted distribution and sensitivity to weed invasion, grazing and herbicides.
<i>Leucochrysum albicans subsp. tricolor</i>	Hoary Sunray		Cand	-	✓	High	2	-	E	Nil	Small herb associated with Kangaroo Grass (<i>Themeda triandra</i>) within grassland and grassy woodland. Occurs in two regions within north-eastern NSW (north of Newcastle) and south-eastern NSW (south of Canberra) (DPIE, 2021d). Unlikely to occur on Study Area due to the absence

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2,5}	Conservation Status		Likelihood to be on Study Area	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
											of dense swards of Kangaroo Grass.
<i>Thesium australe</i>	Austral Toadflax		Cand	-	✓	Moderate	1.5	V	V	Nil	Small herb occurring in scattered populations across eastern NSW in grasslands or grassy woodlands (DPIE, 2021d). Species occurs as a root parasite and is often associated with Kangaroo Grass (<i>Themeda triandra</i>). Species is sensitive to grazing and weed invasion.

¹ Biodiversity Assessment Method online Credit Calculator (DPIE, 2021a): Cand = Candidate credit species (formerly species credit species); Pred = Predicted credit species (formerly ecosystem credit species).

² Threatened Biodiversity Data Collection (DPIE, 2021d)

³ NSW Atlas of Wildlife (DPIE, 2021c)

⁴ Protected Matters Search Tool (DAWE, 2021)

⁵ Species with two likelihoods recorded are dual candidate and predicted credit species. The first likelihood refers to candidate credits and the second to predicted credits.

E = Endangered; CE = Critically Endangered; V = Vulnerable; M = Migratory.

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Table 7 – Threatened Fauna Species Returned by Database and Literature Searches of the Surrounding Region.

Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ⁵	Conservation Status		Likelihood to be on Study Area Foraging / Breeding	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
<i>Synemon plana</i>	Golden Sun Moth	-	Cand	-	✓	Very High	3	E	CE	Nil	NSW distribution occurs between Tumut, Young, Gunning and Queanbeyan, with its historical range extending to Bathurst (DPIE, 2021d). Species occur in grassy Box-Gum Woodlands and Natural Temperate Grasslands and depends on wallaby grasses (<i>Austrodanthonia</i> sp.) with bare ground between tussocks. Suitable tussocks are absent from the Study Area and species is sensitive to fertiliser, ploughing and grazing.
<i>Maccullochella macquarie nsis</i>	Trout Cod	-	-	-	✓	-	-	-	E	Nil	* Listed as Endangered on the Fisheries Management Act, 1994 which is not part of this assessment. No suitable habitat on the Study Area.
<i>Maccullochella peelii</i>	Murray Cod	-	-	-	✓	-	-	-	V	Nil	* Listed as Vulnerable on the Fisheries Management Act, 1994 which is not part of this assessment. No suitable habitat on the Study Area.
<i>Macquaria australasica</i> ⁶	Macquarie Perch	-	-	-	✓	-	-	-	E	Nil	* Listed as Endangered on the Fisheries Management Act, 1994 which is not part of this assessment. No suitable habitat on the Study Area.

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2,5}	Conservation Status		Likelihood to be on Study Area Foraging / Breeding	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
<i>Litoria booroolongensis</i>	Booroolong Frog	Cand	Cand	-	✓	High	2	E	E	Nil	Medium sized tree frog which commonly inhabits permanent streams with fringing vegetation and cobble substrate in NSW and north-eastern VIC (DPIE, 2021d). Basking occurs on exposed rocks surrounding flowing water and eggs are laid in submerged rocks. Species is unlikely to occur on Study Area due to absence of suitable rocks, vegetation and substrate. Closest recorded sightings are in the Macquarie River near Bathurst (ALA, 2021).
<i>Litoria castanea</i>	Yellow-spotted Tree Frog		Cand	-	✓	Very High	3	CE	CE	Nil	Large frog occurring in two regions: New England Tableland and Southern/Central Tablelands from Bathurst to Bombala (DPIE, 2021d). Species requires large permanent waterbodies with emerged vegetation, including bulrushes and aquatic vegetation. Dams on Study Area lack aquatic vegetation.

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ⁵	Conservation Status		Likelihood to be on Study Area Foraging / Breeding	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
<i>Aprasia parapulchella</i>	Pink-tailed Legless lizard	Cand	Cand	-	✓	Moderate	2	V	V	Nil	Species distribution includes Central and Southern Tablelands and the Southwestern Slopes. It inhabits rocks in well-drained, open woodland areas with native grasses, such as Kangaroo Grass (<i>Themeda australis</i>). Closest recorded sightings are near Canowindra and Hill End (ALA, 2021). Species is sensitive to habitat degradation through slashing, intensive grazing and weed invasion (DPIE, 2021d). Species is unlikely to occur on the Study Area due to grazing history and absence of suitable rocks.
<i>Delma impar</i>	Striped Legless Lizard	-	Cand	-	✓	Moderate	1.5	V	V	Nil	Lizard is found in grasslands of the Southern Tablelands and is associated with Box-Gum Woodland, Natural Temperate Grassland, and Kangaroo Grass (<i>Themeda triandra</i>) (DPIE, 2021d). Species has been recorded in disturbed grasslands but is unlikely to occur on the Study Area due to the absence of rocks and grazing pressures.
<i>Grantiella picta</i>	Painted Honeyeater	-	Pred	-	✓	Moderate	-	V	V	Nil	This specialist feeder occurs at low densities across central and eastern NSW, occurring at higher densities on the inland slopes of the Great Dividing

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2,5}	Conservation Status		Likelihood to be on Study Area Foraging / Breeding	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
											Range (DPIE, 2021d). Species commonly inhabits Box-Ironbark Forests and Box-Gum Woodland within Weeping Myall (<i>Acacia pendula</i>) trees. Species unlikely to occur on Study Area due to absence of mistletoe which is the core component of its diet.
<i>Anthochaera phrygia</i>	Regent Honeyeater	Pred/Cand	Pred/Cand	-	✓	Very High	3	CE	CE	Nil	Species occurs in patchy distributions across temperate woodlands and dry open forests of the inland slopes of south-east Australia. Commonly inhabits woodlands supporting high abundance and diversity of bird species and relies on Eucalypt species, such as White Box (<i>Eucalyptus albens</i>) and Yellow Box (<i>Eucalyptus melliodora</i>), as well as mistletoe for nectar (DPIE, 2021d). Nesting occurs in the fork of mature Eucalypts and Sheoaks within Box-Ironbark woodlands or riparian forests dominated by River Sheoak (<i>Casuarina cunninghamiana</i>) (DPIE, 2021d). Closest recorded sightings are near Lewis Ponds, east of the Study Area, and Mullion Creek, north of the Study Area (ALA, 2021). Species may occur in surrounding area for foraging but is

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2,5}	Conservation Status		Likelihood to be on Study Area Foraging / Breeding	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
											unlikely to nest on Study Area due to unsuitable vegetation.
<i>Botaurus poiciloptilus</i>	Australasian Bittern		Pred	-	✓	High		E	E	Nil	Large wetland species occurring within a widespread, fragmented distribution across south-eastern Australia (DPIE, 2021d). Species favours dense vegetation such as spike rushes (<i>Eleocharis</i> spp.) and bullrushes (<i>Typha</i> spp.). Study Area lacks favourable aquatic habitat and vegetation.
<i>Artamus cyanopterus</i>	Dusky Woodswallow	Pred	Pred	✓	-	Moderate	-	V	-	High	Species is widespread across NSW, inhabiting dry sclerophyll forests and woodland usually dominated by eucalypts (DPIE, 2021d). It has also been recorded on farmland near woodlands and has been recorded on the Study Area (2005), as well as near Summer Hill Creek (3.8 km north-east of the site) (DPIE, 2021c).
<i>Chthonicola sagittata</i>	Speckled Warbler	Pred	Pred	-	-	Moderate	-	V	-	Low	Lives in a wide range of Eucalyptus dominated communities that have a grassy understorey, often on rocky ridges or gullies. Habitat includes scattered native tussock grasses, a sparse shrub layer, some eucalypt regrowth and an open canopy. Requires

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2,5}	Conservation Status		Likelihood to be on Study Area Foraging / Breeding	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
											relatively undisturbed remnants for this species to persist (DPIE, 2021d) Recorded sparsely in areas surrounding the Study Area (ALA 2021). Species may utilise Study Area for foraging habitat within a larger range.
<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	Pred	Pred	✓	-	Moderate	-	V	-	Low	There are several records of this subspecies near Orange (DPIE, 2021d). It inhabits grassy woodlands with rough-barked trees at close to natural densities, sparse shrub cover and fallen timber on the ground (DPIE, 2021d).
<i>Daphoenositta chrysoptera</i>	Varied Sittella	-	Pred	✓	-	Moderate	-	V	-	Moderate	This sedentary species inhabits forests and woodland with rough-barked eucalypts and acacias (DPIE, 2021d). Species depends on complex habitat structures with bark crevices, stags, leaf litter and logs. Species has been historically recorded on the Study Area (1992).
<i>Calidris ferruginea</i>	Curlew Sandpiper	-	Pred/Cand	-	✓	Very High	3	E	CE	Nil	Small migratory shorebird occurring in littoral and estuarine habitats along the NSW coastline, and freshwater wetlands of the Murray-Darling Basin. Inland sightings are likely to occur during migration from Siberia to Australia

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2,5}	Conservation Status		Likelihood to be on Study Area Foraging / Breeding	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
											(DPIE, 2021d). Study Area lacks suitable habitat and is outside migratory range.
<i>Calyptrornis lathamii</i>	Glossy Black-Cockatoo	Cand/Pred	Cand/Pred	-	-	Moderate	2	V	-	Nil	Species is uncommon but widespread across Eastern NSW in open forest and woodlands containing Black Sheoak (<i>Allocasuarina littoralis</i>) and Forest Sheoak (<i>Allocasuarina torulosa</i>) (DPIE, 2021d). Nesting occurs in hollow-bearing Eucalypts. Closest recorded sighting is north of the Study Area at Cullya, however, species is unlikely to occur on the Study Area due to lack of suitable associated vegetation and degradation of habitat due to stock grazing and weed infestation.
<i>Falco hypoleucos</i>	Grey Falcon	-	Pred	✓	✓	High	-	E	V	Nil	Medium-sized bird sparsely distributed across central and western NSW, predominantly throughout Murray-Darling Basin. Species commonly occurs in grassland, shrubland, wooded watercourses and near wetlands, preying on birds such as pigeons and parrots (DPIE, 2021d). Study Area does not contain suitable habitat as it is geographically isolated from inland wetlands.

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2,5}	Conservation Status		Likelihood to be on Study Area Foraging / Breeding	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
<i>Glossopsitta pusilla</i>	Little Lorikeet	Pred	Pred	-	-	Moderate	-	V	-	High	Forages primarily in the canopy of open <i>Eucalyptus</i> Forest and woodland, yet also finds food in <i>Angophora</i> , <i>Melaleuca</i> and other tree species., especially in riparian areas. Occurs in isolated flowering trees in open country (DPIE, 2021d). Species is occasionally record close to Orange (ALA, 2021). It can be expected to occur on the Study Area when woodland eucalypts are in flower.
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	Pred/Cand	Pred/Cand	-	-	Moderate	2	V	-	Nil	Species is distributed along the Australian coastline and along major inland rivers within the Murray-Darling Basin (DPIE, 2021d). It favours habitats with large open water, breeding in mature tall open forest within emergent Eucalypts. Closest recorded sightings include three records west of Summer Hill, one record west of Mt Canobolas State Conservation Area and one recording in the centre of Orange. Species is unlikely to occur on the Study Area as water sources are restricted to farm dams and an unnamed tributary of Summer Hill Creek which exists in a degraded, unvegetated condition.

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		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
<i>Hirundapus caudacutus</i>	White-throated Needletail	-	Pred	-	✓	Moderate	-	-	V	Nil	Species are non-breeding migrants distributed almost exclusively aerially across eastern and northern Australia, favouring the coast (Australian Museum, 2018). Species have been observed roosting in trees. However, breeding occurs in northern Asia (Birdlife, 2021a). Unlikely to occur on the Study Area due to lack of potential roosting trees and the aerial life-style of the species.
<i>Lathamus discolor</i>	Swift Parrot	Pred/Cand	Pred/Cand	-	✓	Very High	3	E	CE	Nil	Species migrates to south-eastern Australia during autumn/winter (DPIE, 2021d). The NSW distribution is primarily on the southwest slopes and coastline. Known associated species include: Swamp Mahogany (<i>Eucalyptus robusta</i>), White Box (<i>Eucalyptus albens</i>) and Spotted Gum (<i>Corymbia maculata</i>). Closest recorded sightings occur near Bathurst and Cudal with one record Burrendong Way in Orange. The Swift Parrot is only regarded as a candidate credit species where areas of 'important' habitat have been mapped for it. The study area is not one of these areas.

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2,5}	Conservation Status		Likelihood to be on Study Area Foraging / Breeding	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
<i>Leipoa ocellata</i>	Malleefowl	-	Pred	-	✓	High	-	-	V	Nil	Large, ground-dwelling bird found in central NSW, within tall, dense mallee communities. Species has been observed in Eucalypt woodlands, such as Bimble Box Woodlands and Inland Grey Box (DPIE, 2021d). Unlikely to occur on Study Area due to lack of suitable vegetation and shrub understorey.

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2,5}	Conservation Status		Likelihood to be on Study Area Foraging / Breeding	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
<i>Melanodryas cucullata</i>	Hooded Robin	Pred	Pred	✓	-	Moderate	-	V	-	Nil	Occurs over most of NSW except some coastal areas and the arid northwest. Prefers lightly wooded country, usually open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open areas (DPIE, 2021d). Requires structurally diverse habitats featuring mature eucalypts, saplings, shrubs and a ground layer of moderately tall native grasses. This species is rarely recorded on the tablelands and upper slopes (DPIE, 2021d) and is unlikely to occur.

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2,5}	Conservation Status		Likelihood to be on Study Area Foraging / Breeding	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
<i>Numenius madagascariensis</i>	Eastern Curlew	-	Pred/Cand	-	✓	Very High	3	-	CE	Nil	Migratory shorebird which is widespread across north-east and south Australian coastlines (Birdlife, 2021b). Species rarely observed inland due to dependence on intertidal mudflats, sandflats and seagrass for diet (crabs, molluscs). Unlikely to utilise Study Area due to lack of suitable habitat and dietary requirements.
<i>Petroica boodang</i>	Scarlet Robin	Pred	Pred	✓	-	Moderate	-	V	-	Moderate	Breeds in high altitude eucalypt forest with an open understorey (Blakers et al., 1984), such as occurs on Mt Canobolas. Juveniles disperse to more open country at lower altitudes in autumn. Closest recorded sighting is 3.8 km north-east of Study Area near Summer Hill Creek. It is unlikely to breed on the study area but may utilise it as part of a wide foraging range in autumn and winter.
<i>Petroica phoenicea</i>	Flame Robin	Pred	Pred	-	-	Moderate	-	V	-	Moderate-High	Breeds in upland tall moist forests and woodlands, often on ridges. The ground layer of breeding habitat is dominated by native grasses and shrub layer may be sparse or dense. This species occasionally occurs in temperate rainforest, herbfields, heathlands

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2,5}	Conservation Status		Likelihood to be on Study Area Foraging / Breeding	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
											shrublands and sedgeland at high altitudes but prefers clearings or areas of open understoreys. In winter, this species migrates to drier more open habitats in lowlands (DPIE, 2020d). There have been numerous records of this species in the Orange area (ALA 2021).
<i>Polytelis swainsonii</i>	Superb Parrot	Pred/Cand	Pred/Cand	✓	✓	Moderate	2	V	V	High/Low	Large parrot abundantly distributed across central and eastern inland NSW, predominately east of Bathurst (DPIE, 2021d). Species migrates during winter to upper regions of Gwydir and Namoi Rivers and nests in hollows of riparian vegetation. It is found in association with Box-Cypress pine, River Red Gum Forest, Box-Gum and Boree Woodlands and may forage 10 km away from home range in grassy box woodland. Species is likely to occur on Study Area due to suitable hollows and vegetation. Species is regularly recorded in and around Orange (DPIE, 2021c).
Pomatostomus	Grey-crowned Babbler	Pred	Pred	-	-	Moderate	-	V	-	Nil	Inhabits open Box-Gum Woodlands on slopes, and Box-Cypress-pine and open Box Woodland on alluvial plains. There

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ⁵	Conservation Status		Likelihood to be on Study Area Foraging / Breeding	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
temporalis temporalis	(eastern subspecies)										are no records of this species in the surrounding the study area. Species unlikely to utilise the Study Area due to lack of suitable habitat.
<i>Rostratula australis</i>	Australian Painted Snipe	-	Pred	-	✓	High	-	E	E	Nil	Small freshwater bird distributed in south-east Australia, predominantly in the Murray-Darling Basin wetlands and swamps. Species prefers fringes of dams, swamps and wetlands with nesting occurring among tall vegetation (DPIE, 2021d). Foraging occurs on mudflats and in shallow water, feeding on worms, insects, plants and molluscs. Suitable habitat is absent from the Study Area.

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2,5}	Conservation Status		Likelihood to be on Study Area Foraging / Breeding	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
<i>Stagonopleura guttata</i>	Diamond Firetail	Pred	Pred	✓	-	Moderate	-	V	-	Moderate	Species is endemic to south-eastern Australia occurring within grassy eucalypt woodlands (Box-Gum and Snow Gum), open forest (Natural Temperate Grasslands) and riparian zones in lightly wooded agricultural areas (DPIE, 2021d). Closest recorded sighting is 3.8 km north-east of Study Area near Summer Hill Creek.
<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	Pred	Pred	-	✓	High	-	V	E	Nil	Generalist predator widely distributed across eastern Australia. However, sightings on mainland are considered rare (DPIE, 2021d). Species utilise a wide range of habitats including riparian forest, open forest and woodland. Hollows, logs, burrows and caves are commonly inhabited. The habitat on the study area and surrounds is too highly disturbed to be suitable for this species.
<i>Myotis macropus</i>	Southern Myotis	Cand	Cand	-	-	Moderate	2	V	-	Nil	Species occurs across coastal areas of eastern and southern NSW and is rarely found more than 100 km inland, except for along major rivers (DPIE, 2021d). Foraging occurs over streams and pools, while roosting occurs in riparian tree hollows, caves and man-made

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2,5}	Conservation Status		Likelihood to be on Study Area Foraging / Breeding	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
											structures such as bridges, mines and in ceilings (Australian Museum, 2021). Closest recorded sightings are south of Mt Canobolas State Conservation Area, along the Belubula River near Mandurama and along the Bell River north-east of Molong. Species unlikely to occur on Study Area due to predominant coastal distribution and lack of major waterbodies on the site.
<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	Cand	Cand	-	-	Moderate	2	V	-	Low	Tree-dwelling marsupial with a patchy distribution across coastal Australia, predominantly east of the Great Dividing Range in NSW (DPIE, 2021d). Species prefers dry sclerophyll open forest with sparse groundcover and leaf litter. Nesting occurs in tree hollows (2.5-4 cm wide).
<i>Phascolarctos cinereus</i>	Koala	Pred/Cand	Pred/Cand	✓	✓	Moderate	2	V	V	Nil	Arboreal marsupial with a fragmented distribution throughout eastern Australia. Predominately found in NSW on the central and north coasts, southern/northern tablelands, southern highlands, southern coastal forests and Blue Mountains with small populations occurring west of the Great Dividing

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2,5}	Conservation Status		Likelihood to be on Study Area Foraging / Breeding	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
											Range (DPIE, 2021d). Species inhabits eucalypt woodlands and has a widely variable home range. Species has been recorded multiple times south of Bathurst near Newbridge and Rockley and has also been recorded as roadkill in 2011 and 2014 in Orange near Cargo Road and Mitchell Highway. Species is unlikely to occur on the Study Area due to level of degradation from agriculture and very low suitable tree cover. Orange is also excluded from the list of local government areas likely to contain key Koala habitat as identified by State Environmental Planning Policy (Koala Habitat Protection) 2020.
<i>Petauroides volans</i>	Greater Glider	-	Cand	-	✓	Moderate	2	-	V	Nil	There are many records for the Greater Glider on Mt Canobolas and a few in the Mullion Ranges north of Orange (DPIE, 2021c). It is found in highest abundance in taller, montane, moist eucalypt forests with relatively old trees and abundant hollows (DPIE, 2021d). The Greater Glider favours forests with a diversity of eucalypt species. The Study Area does not support potential habitat for this species.

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2,5}	Conservation Status		Likelihood to be on Study Area Foraging / Breeding	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
<i>Petaurus norfolcensis</i>	Squirrel Glider	Cand	Cand	✓	-	Moderate	2	V	-	Low	Species is broadly distributed across eastern Australia in mature Box, Box-Ironbark woodlands and River Red Gum forest (DPIE, 2021d). Prefers shrub or Acacia dominated mid-storey with abundant hollows. Feeds on Acacia gum, eucalyptus sap, nectar, pollen and invertebrates. Closest recorded sightings are near Mt Canobolas Conservation Area (ALA, 2021).

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2,5}	Conservation Status		Likelihood to be on Study Area Foraging / Breeding	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	Pred/Cand	Pred/Cand	✓	✓	Moderate	2	V	V	Nil	Usually found within 200 km of eastern Australian coastline in subtropical and temperate rainforests, woodlands, tall sclerophyll forests, swamps, heaths (DPIE, 2021d). Species can be located outside of traditional range when there are natural resource shortages, travelling up to 50 km for foraging. Roosting camps are commonly found within 20km of regular food source in gullies, close to water with dense vegetation. Species has been recorded 10 times in and around Orange (DPIE, 2021c). Species is unlikely to occur on the Study Area due to the absence of suitable dense trees.
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	-	Cand	-	✓	Moderate	3	V	V	Nil	Small to medium sized bat found in a patchy distribution in areas with extensive cliffs and caves in the NSW Southern Highlands (DPIE, 2021d). Observed in low to mid-elevation dry open forest and woodland close to cliffs and caves. Species has been recorded at Ophir Reserve, Hill End and along the Belubula River (DPIE, 2021c). However, it

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ^{2, 5}	Conservation Status		Likelihood to be on Study Area Foraging / Breeding	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
											is unlikely to inhabit the Study Area due to lack of roosting habitat.

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Scientific Name	Common Name	Data Source				Sensitivity to Loss ²	BRW ⁵	Conservation Status		Likelihood to be on Study Area Foraging / Breeding	Assessment of Likelihood
		BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
<i>Miniopterus orianae oceanensis</i>	Large Bent-winged Bat	Pred/Cand	Pred/Cand	✓	-	Moderate	3	V	-	Low	The Large Bent-winged Bat is widespread in the Orange region (DPIE, 2021d). Roosting occurs caves and man-made structures such as mines and storm water drains. Breeding and roosting numbers can vary from 100 to 15,000 individuals. Closest recorded sightings are along the Northern Distributor near the Mitchell highway intersection and along Mitchell Highway near Ammerdown in north-west Orange. Potential roosting habitat may occur on the Study Area in the form of the abandoned abattoir.

¹ Biodiversity Assessment Method online Credit Calculator (DPIE, 2021a): Cand = Candidate credit species (formerly species credit species); Pred = Predicted credit species (formerly ecosystem credit species).

² Threatened Biodiversity Data Collection (DPIE, 2021d)

³ NSW Atlas of Wildlife (DPIE, 2021c)

⁴ Protected Matters Search Tool (DAWE, 2021)

⁵ Species with two likelihoods recorded are dual candidate and predicted credit species. The first likelihood refers to candidate credits and the second to predicted credits.

E = Endangered; CE = Critically Endangered; V = Vulnerable; M = Migratory.

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Table 8 Threatened Ecological Communities Returned by Database and Literature Searches of the Surrounding Region

Ecological Community Name	Data Source				Sensitivity to Loss ²	BRW ^{2, 5}	Conservation Status		Likelihood to be on Study Area	Assessment of Likelihood
	BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
Natural Temperate Grassland of the Southeastern Highlands			-	✓			-	CE	Low	Community occurs in the Southern Tablelands between 500m and 1200 m elevation on basalt or granite plains with poor drainage (DPIE, 2021d). It is commonly treeless and dominated by perennial tussock grasses, such as Kangaroo Grass (<i>Themeda triandra</i>), Slender Speargrass (<i>Austrostipa scabra</i>) and Wallaby Grasses (<i>Rytidosperma</i> sp.) (DEE, 2016). The community also contains a variety of forbs including Bindweed (<i>Convolvulus</i> sp.), Mat-rushes (<i>Lomandra</i> sp.) and Variable Plantain (<i>Plantago varia</i>).
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland			-	✓			CE	CE	Remnant vegetation	Open woodland community with 20-50% canopy cover, including White Box (<i>Eucalyptus albens</i>), Yellow Box (<i>Eucalyptus melliodora</i>) and Blakely's Red Gum (<i>Eucalyptus blakelyi</i>). Intact sites contain a high diversity of plant, shrub, climbing, grass and herb species. Modification of this ecological community has occurred due to

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Ecological Community Name	Data Source				Sensitivity to Loss ²	BRW ^{2, 5}	Conservation Status		Likelihood to be on Study Area	Assessment of Likelihood
	BAMC ¹	TBDC ²	BioNet ³	PMST ⁴			BC Act	EPBC Act		
										clearing and grazing (DECCW, 2010).

¹ Biodiversity Assessment Method online Credit Calculator (DPIE, 2021a); Cand = Candidate credit species (formerly species credit species); Pred = Predicted credit species (formerly ecosystem credit species).

² Threatened Biodiversity Data Collection (DPIE, 2021d)

³ NSW Atlas of Wildlife (DPIE, 2021c)

⁴ Protected Matters Search Tool (DAWE, 2021)

⁵ Species with two likelihoods recorded are dual candidate and predicted credit species. The first likelihood refers to candidate credits and the second to predicted credits.

E = Endangered; CE = Critically Endangered; V = Vulnerable; M = Migratory.

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Table 9 – Plant Species List

Status	Stratum	Scientific Name	Common Name	W4	DNG8b	P1	E10	W1
N	TG	<i>Acacia dealbata</i>	Silver Wattle	5				
HTW	-	<i>Agrostis capillaris</i>	Browntop Bent					10
N	GG	<i>Anthosachne scabra</i>	Wheatgrass, Common Wheatgrass	50	10			
N	GG	<i>Bothriochloa macra</i>	Red Grass		5			
E	-	<i>Briza maxima</i>	Quaking Grass	30				
E	-	<i>Bromus catharticus</i>	Praire Grass			300	2	
HTW	-	<i>Bromus diandrus</i>	Great Brome	10				
E		<i>Bromus hordeaceus</i>	Soft Brome		20	10	100	
N	GG	<i>Carex appressa</i>	Tall Sedge					2
HTW		<i>Carthamus lanatus</i>	Saffron Thistle	1	100			
N	SG	<i>Cassinia sifton</i>		50				
E		<i>Centaurea melitensis</i>	Maltese Cockspur			1		
HTW		<i>Chamaecytisus palmensis</i>	Tree Lucerne	10				
E		<i>Chondrilla juncea</i>	Skeleton Weed			3		
E		<i>Cirsium vulgare</i>	Spear Thistle			4	30	10
E		<i>Conyza bonariensis</i>	Flaxleaf Fleabane			10	5	
E		<i>Conyza spp.</i>			20			
N	GG	<i>Cynodon dactylon</i>	Common Couch			500	10	
E	-	<i>Dactylis glomerata</i>	Cocksfoot	50	10	100	30	300

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N	SG	<i>Daviesia latifolia</i>	Bitter-pea	2				
N	FG	<i>Dianella revoluta</i>	Blueberry Lily	10				
N	FG	<i>Dysphania pumilio</i>	Small Crumbweed				5	
N	GG	<i>Echinopogon ovatus</i>	Forest Hedgehog Grass	1				
E		<i>Echium plantagineum</i>	Patterson's Curse			50	200	
E		<i>Echium vulgare</i>	Viper's Bugloss				50	5
E		<i>Eleusine tristachya</i>	Goose Grass			20	500	50
N	TG	<i>Eucalyptus albens</i>	White Box			2		
N	TG	<i>Eucalyptus blakelyi</i>	Blakely's Red Gum			3		5
N	TG	<i>Eucalyptus dives</i>	Broad-leaved Peppermint	1				
N	TG	<i>Eucalyptus melliodora</i>	Yellow Box			2		1
N	TG	<i>Eucalyptus viminalis</i>	Ribbon Gum	3				
N	FG	<i>Euchiton sphaericus</i>	Star Cudweed			10	10	
N	SG	<i>Exocarpos cupressiformis</i>	Cherry Ballart	20				
E		<i>Galium aparine</i>	Goosegrass					50
N	FG	<i>Geranium retrorsum</i>	Cranesbill Geranium			20		
N	FG	<i>Geranium solanderi</i>	Native Geranium	20			200	100
N	OG	<i>Hardenbergia violacea</i>	False Sarsaparilla	3				
E		<i>Hirschfeldia incana</i>	Buchan Weed			20	20	
E		<i>Hordeum leporinum</i>	Barley Grass			500	100	
HTW		<i>Hypericum perforatum</i>	St. Johns Wort	10	20	1		
E		<i>Hypochaeris glabra</i>	Smooth Catsear				200	

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E		<i>Hypochaeris radicata</i>	Catsear	20	50	50		100
N	GG	<i>Juncus spp.</i>					2	1
E		<i>Lepidium africanum</i>	Common Peppercross			50		1
E		<i>Lolium rigidum</i>	Wimmera Ryegrass			100	30	
N	GG	<i>Lomandra filiformis</i>	Wattle Matt-rush	30				
N	GG	<i>Lomandra multiflora</i>	Many-flowered Mat-rush	10				
E		<i>Lysimachia arvensis</i>	Scarlet Pimpernel	3				
E		<i>Malva parviflora</i>	Small-flowered Mallow			5	1	
N	GG	<i>Microlaena stipoides</i>	Weeping Grass	500	100			100
E		<i>Modiola caroliniana</i>	Red-flowered Mallow			1		3
E		<i>Onopordum acanthium</i>	Scotch Thistle			1		3
N	FG	<i>Oxalis perennans</i>		20		200		1
N	GG	<i>Panicum effusum</i>	Hairy Panic	1	10			
E		<i>Paronychia Brasiliana</i>	Chilean Whitlow Wort, Brazilian Whitlow			3		
HTW		<i>Paspalum dilatatum</i>	Paspalum	10	10		30	
E		<i>Phalaris aquatica</i>	Phalaris	10			10	
E		<i>Plantago lanceolata</i>	Lamb's Tongues	500	50	300	300	1,000
E		<i>Polygonum aviculare</i>	Wireweed	10	5	200	3	1
N	FG	<i>Portulaca oleracea</i>	Pigweed				1	
E		<i>Prunus cerasus</i>	Sour Cherry					2
N	SG	<i>Pultenaea spinosa</i>						
E		<i>Rubus anglocandicans</i>	Blackberry	10		10		15

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N	FG	<i>Rumex brownii</i>	Swamp Dock			10	1	5
N	GG	<i>Rytidosperma caespitosum</i>	Ringed Wallaby Grass	50				
N	GG	<i>Rytidosperma racemosum</i>	Wallaby Grass	1000			20	20
N	GG	<i>Rytidosperma setaceum</i>	Small-flowered Wallaby-grass			100		
E		<i>Solanum nigrum</i>	Black-berry Nightshade					1
N	GG	<i>Themeda australis</i>		20	5000			
E		<i>Trifolium angustifolium</i>	Narrow-leaved Clover	50				
E		<i>Trifolium glomeratum</i>	Clustered Clover		5	5		
E		<i>Trifolium repens</i>	White Clover			5		
E		<i>Trifolium spp.</i>				1		
E		<i>Trifolium subterraneum</i>	Subterranean Clover	20	500	100	100	100
E		<i>Urtica urens</i>	Small Nettle					10
E		<i>Vicia sativa</i>	Common vetch					1
E		<i>Vulpia myuros</i>	Rat's Tail Fescue	1000				
E		<i>Vulpia spp.</i>	Rat's-tail Fescue		2000		100	1,000



APPENDIX E

GATEWAY APPROVAL DOCUMENTS



APPENDIX F

SUPPLEMENTARY CONTAMINATION SAMPLING REPORT



APPENDIX G

REGULATORY RESPONSES



APPENDIX H

ABORIGINAL HERITAGE DUE DILIGENCE REVIEW



Premise



premise.com.au



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Our Ref: 221025_LET_001A.docx

9 June 2021

The Chief Executive Officer
Orange City Council
PO Box 35
ORANGE NSW 2800
By email: council@orange.nsw.gov.au

Attention: Mark Hodges

Dear Mark

ROSEDALE GARDENS ESTATE PTY LTD , LAND AT LEEDS PARADE, ORANGE CONSISTING OF LOTS 14, 15 AND 25 DP6694 AND LOTS 2 AND 3 DP255983

We write further to our meeting of 23 March 2021 with Orange City Council staff and Garry Hopkins of Department Planning, Industry and Environment with respect to the above land.

As discussed at the meeting, it is the intention of Rosedale Gardens Estate Pty Ltd, as the owner of the above lands, to seek a further amendment to the Orange Local Environmental Plan 2011 (OLEP) to reduce the minimum lot size and deliver a maximum of 700 rural residential lots, with an average size of 2,000 – 4,000 square metres across the development site and a minimum size of 1,500 square metres. The density limit of 700 would be achieved via the introduction of a specific clause within the LEP.

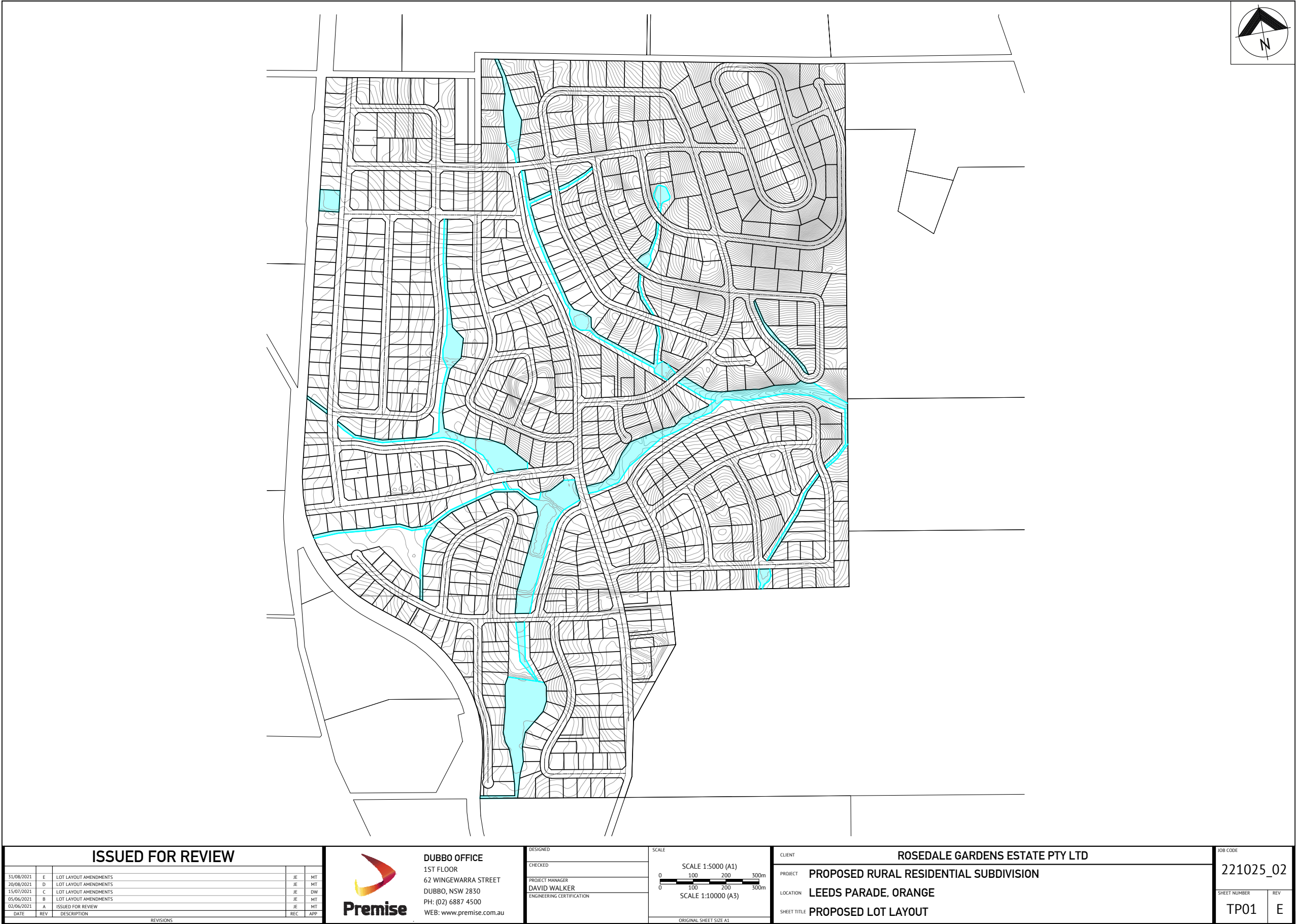
We anticipate lodgement of a planning proposal to this effect within the next 4-6 weeks from the date of this letter.

We would appreciate if Council could take consideration of the above in the development and progression of the draft Orange Local Housing Strategy. Rosedale Gardens Estate Pty Ltd looks forward to progressing with this development to assist Orange City Council in delivering its required housing delivery demand target.

We trust the content of this letter is self-explanatory but please do not hesitate to contact the undersigned in the event you require any additional information.

Yours faithfully
Premise Australia Pty Ltd

DAVID WALKER
Senior Town Planner and Discipline Lead





Planning Proposal to amend the Orange Environmental Plan 2011

Leeds Parade, Clergate

Traffic Impact Assessment

September 2021

Reference: 213 rep 210903 final

Planning Proposal to amend the Orange Environmental Plan 2011

Leeds Parade, Clergate

Traffic Impact Assessment

Prepared for: Premise Pty Ltd

Status: Final report

Date: 3 September 2021

Reference: 213 rep 210903 final

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Planning Proposal to amend the Orange Environmental Plan 2011, Leeds Parade, Clergate
Traffic Impact Assessment

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Appendix A

Orange Traffic Model Outputs

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Masterplan

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Guidelines for Assessing Intersection Performance

Appendix D

SIDRA Results

Planning Proposal to amend the Orange Environmental Plan 2011, Leeds Parade, Clergate
Traffic Impact Assessment

1. Introduction

Amber Organisation has been engaged by Premise Australia Pty Ltd to provide a preliminary traffic impact assessment associated with a proposal to amend the Orange Local Environmental Plan 2011 with respect to land formerly occupied by the Orange Abattoir at the northern end of Leeds Parade, Clergate.

A Planning Proposal has previously been submitted for the site which resulted in an amendment to the Orange Local Environmental Plan 2011 (LEP) rezoning the subject land from RU1 – Primary Production and IN1 – General Industrial to R5 – Large Lot Residential and E4 – Environmental Living. A master plan for the site was developed with a lot yield of approximately 450 lots and a minimum lot size of 4,000 square metres. The master plan also provided a draft internal road layout with access to the site proposed from Leeds Parade. It is understood the master plan was a conceptual model for delivery of the overarching development of the land and was not intended to represent the final development arrangement.

This Planning Proposal involves further amendment to the LEP which would reduce the minimum lot size and increase the yield of the land to approximately 700 lots. In addition, the proposal introduces an upgrade of a private level crossing to a public level crossing to provide access via Clergate Road in the west and introduces a third access via Pearce Lane in the north.

This report has been prepared to provide a preliminary traffic impact assessment of the proposal sufficient to support the planning proposal and provide Council, regulatory agencies and the Department of Planning, Industry and Environment the confidence that the proposal can be delivered with acceptable impacts to the local traffic environment.

2. Transport Environment

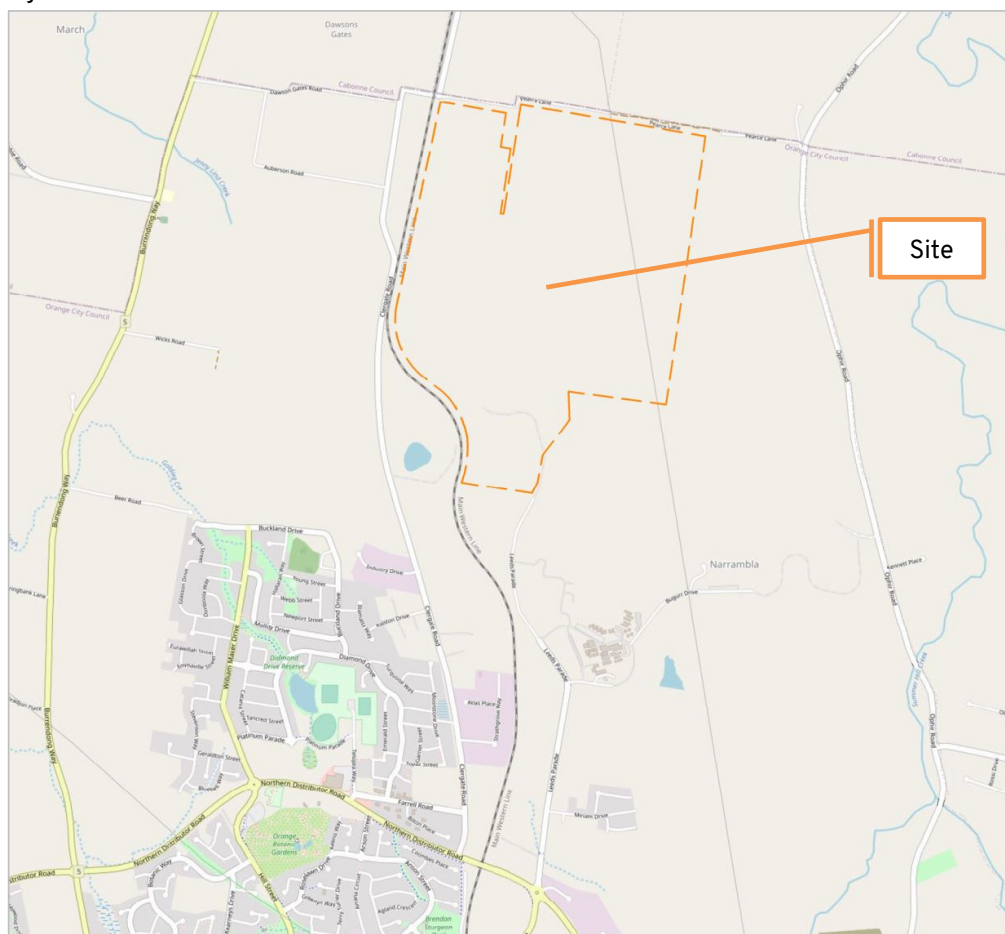
2.1 Site Location

The site is located on land formerly occupied by the Orange Abattoir at the northern end of Leeds Parade, Clergate. The subject land consists of the following five lots and has an area of approximately 290 hectares:

- Lot 15 DP6694, 390 Clergate Road, Orange
- Lot 3 DP255983, 440 Clergate Road, Orange
- Lot 2 DP255983, 440 Clergate Road, Orange
- Lot 14 DP6694, 440 Clergate Road, Orange
- Lot 25 DP6694, 440 Clergate Road, Orange

Figure 1 shows the location of the site in relation to the surrounding transport network.

Figure 1: Site Location

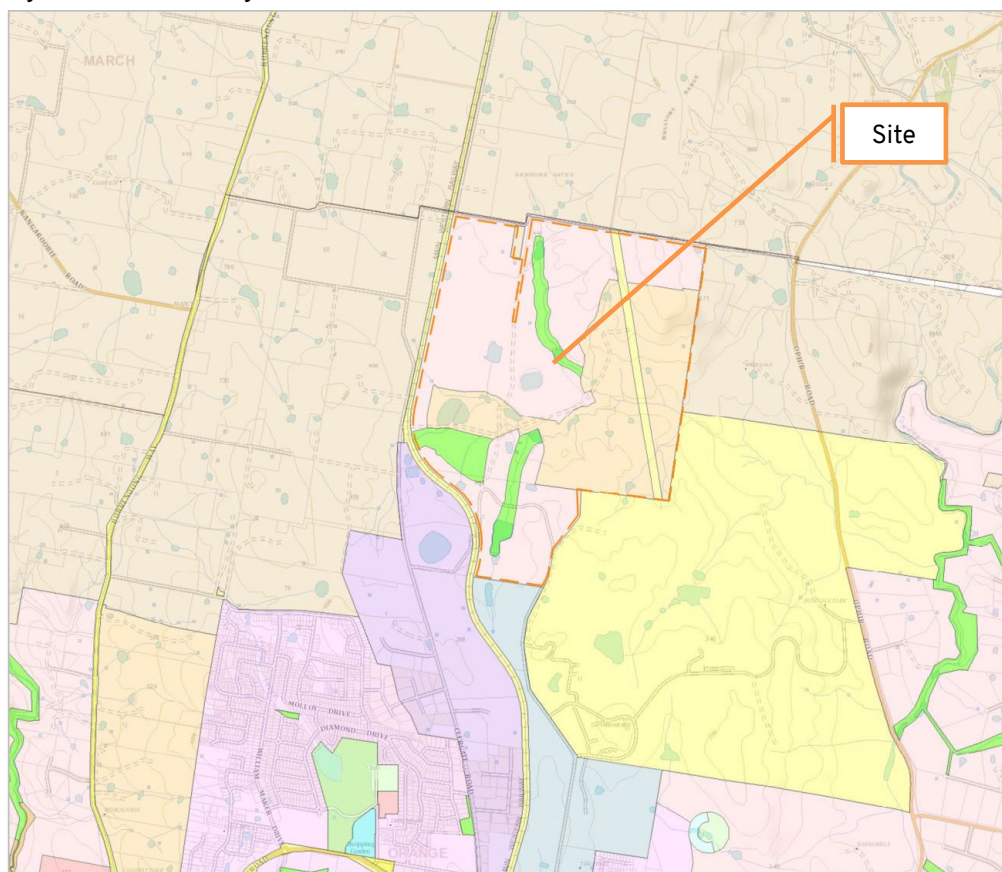


Source: OpenStreetMap

Planning Proposal to amend the Orange Environmental Plan 2011, Leeds Parade, Clergate
Traffic Impact Assessment

The site is currently zoned R5 – Large Lot Residential and E4 – Environmental Living following the adoption of the amendment to the LEP as part of the previous Planning Proposal. The land use zoning for the site and the surrounding area is illustrated within Figure 2.

Figure 2: Land Use Zoning



Source: NSW Government ePlanning Spatial Viewer

The surrounding land use is primarily agricultural with the following key activities provided within the surrounding area:

- The site is located approximately 5 kilometres north of the Orange CBD and 1.8 kilometres from the North Orange Shopping Centre;
- The Charles Sturt University, Orange Campus, is located approximately 1.1 kilometres southeast of the site; and
- Clergate Public School is located 2.9 kilometres north of the site.

The site is bounded to the north by Pearce Lane, to the west by the Main Western Railway Line and to the south and east by private land.

Figure 3 shows an aerial photograph view of the site and the surrounding area. The figure shows that the site is currently occupied by agricultural land and includes the Orange Abattoir.

Planning Proposal to amend the Orange Environmental Plan 2011, Leeds Parade, Clergate
Traffic Impact Assessment

Figure 3: Aerial Photograph



Source: SixMaps

Primary access to the site is from Leeds Parade which connects with Northern Distributor Road to the south. Leeds Parade transitions into a sealed driveway at the site which formerly provided heavy vehicle access to the abattoir buildings.

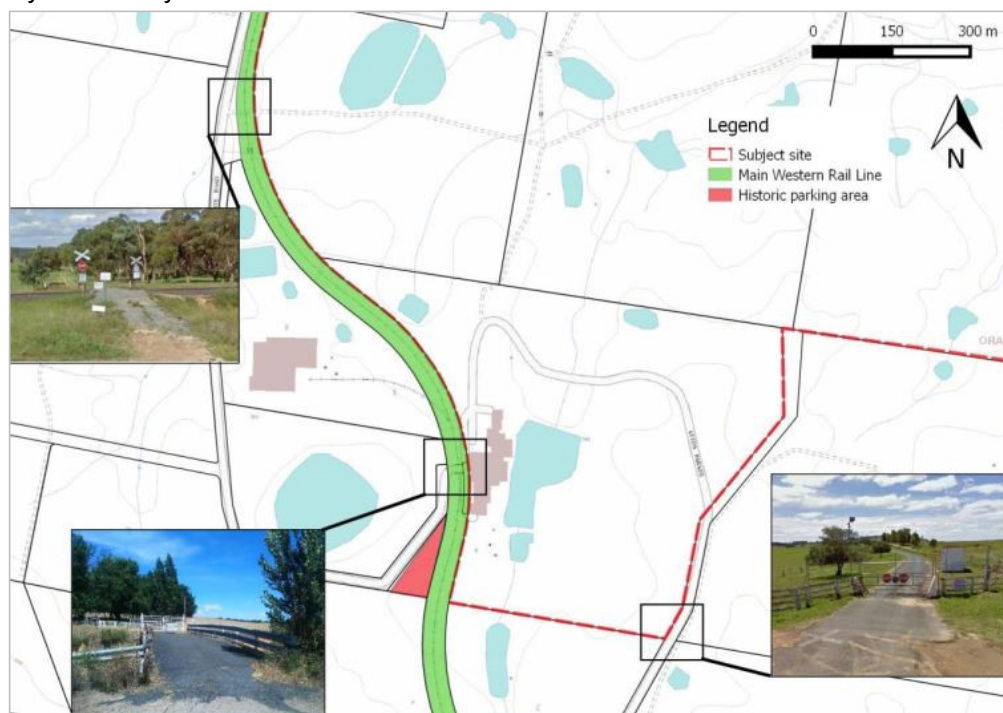
Historically abattoir staff are understood to have accessed the abattoir via a single lane bridge over the Main Western Railway Line, which staff used to walk over after parking on land on the western side of the railway line. The bridge is accessed from private land owned by the Applicant.

The site also currently benefits from a single lane railway crossing from Clergate Road and a number of gateway accesses to Pearce Lane in the north.

Figure 4 shows the south-western corner of the site and the three current accesses into the property in this area.

Planning Proposal to amend the Orange Environmental Plan 2011, Leeds Parade, Clergate
Traffic Impact Assessment

Figure 4: Existing Site Accesses in the Southern Portion of the Site



Source: Premise

2.2 Road Network

The primary access to the site is proposed via Leeds Parade which connects with Northern Distributor Road allowing excellent links to the Orange CBD via Leeds Parade. Northern Distributor Road also provides access to the North Orange Shopping Centre, and links with the State road network to provide access to nearby towns. Additional connections to the road network are also proposed via Clergate Road and Pearce Lane.

Leeds Parade is classified as a municipal collector road under the care and management of Orange City Council. It runs in a north-south alignment between the site boundary and Dalton Street. Between Northern Distributor Road and the Orange University access it has a carriageway width of approximately 7.0 metres which accommodates one lane of traffic in each direction. North of the university access it has a reduced carriageway width of approximately 6.5 metres with no central linemarking. South of Northern Distributor Road it has a carriageway width of approximately 10 metres accommodating one lane of traffic in each direction and sealed shoulders. It has a speed limit of 80km/hr which is reduced to 50km/hr within the vicinity of the university and the built up residential and industrial areas within Orange.

Northern Distributor Road is a municipal arterial road under the care and management of Orange City Council. It provides a loop around the northern side of Orange extending between Mitchell Highway and Forbes Road. It acts as a key link between the North Orange Shopping Centre and the eastern and western extents of Orange. Within the vicinity of Leeds Parade it has a carriageway width of approximately 12 metres which accommodates one lane of traffic in each direction. It has a speed limit of 80km/hr east of Leeds Parade and a speed limit of 70km/hr west of Leeds Parade.

Planning Proposal to amend the Orange Environmental Plan 2011, Leeds Parade, Clergate
Traffic Impact Assessment

The intersection of Leeds Parade and Northern Distributor Road is controlled by a roundabout. Hanrahan Place provides a fifth leg to the intersection to the northeast which has a length of approximately 180 metres and provides access to several commercial/industrial properties.

Clergate Road is a municipal local road that extends in a north-south alignment between Burrendong Way and Northern Distributor Road. It runs to the west of the Main Western Railway Line before continuing as Pearce Lane for a short period near the north-western corner of the site, then continues north on the eastern side of the railway line. It has a typical carriageway width of approximately 7 metres and accommodates two-way vehicle movement. It has a speed limit of 50km/hr between Northern Distributor Road and Quartz Street which increases to 80km/hr at Industry Drive and 100km/hr further north.

The intersection of Clergate Road and Northern Distributor Road is priority controlled with vehicles exiting Clergate Road provided with Give Way signage and associate line marking.

Pearce Lane is a local road which runs in an east-west alignment between Ophir Road and Clergate Road. It has a typical sealed carriageway width of approximately 6.5 metres between its two connections with Clergate Road, and an unsealed carriageway width of approximately 6 metres east of Clergate Road.

2.3 Traffic Volumes

Due to the restrictions imposed by the NSW Government in response to the COVID-19 pandemic at the time of preparing this assessment, traffic surveys have been unable to be undertaken as they would not be reflective of typical operating conditions. In order to determine the existing traffic volumes on the road network data has been extracted from the Orange Strategic Transport Model. The model provides traffic volumes for 2018 based on collected survey data and estimates the traffic volumes in 2028. The model is described within the Orange Strategic Transport Model Update Report prepared by Stantec, dated September 2018.

Data from the model has been extracted for the surrounding intersections for the year 2018 and 2028 and is provided within Appendix A. The data has also been provided visually within Figure 5.

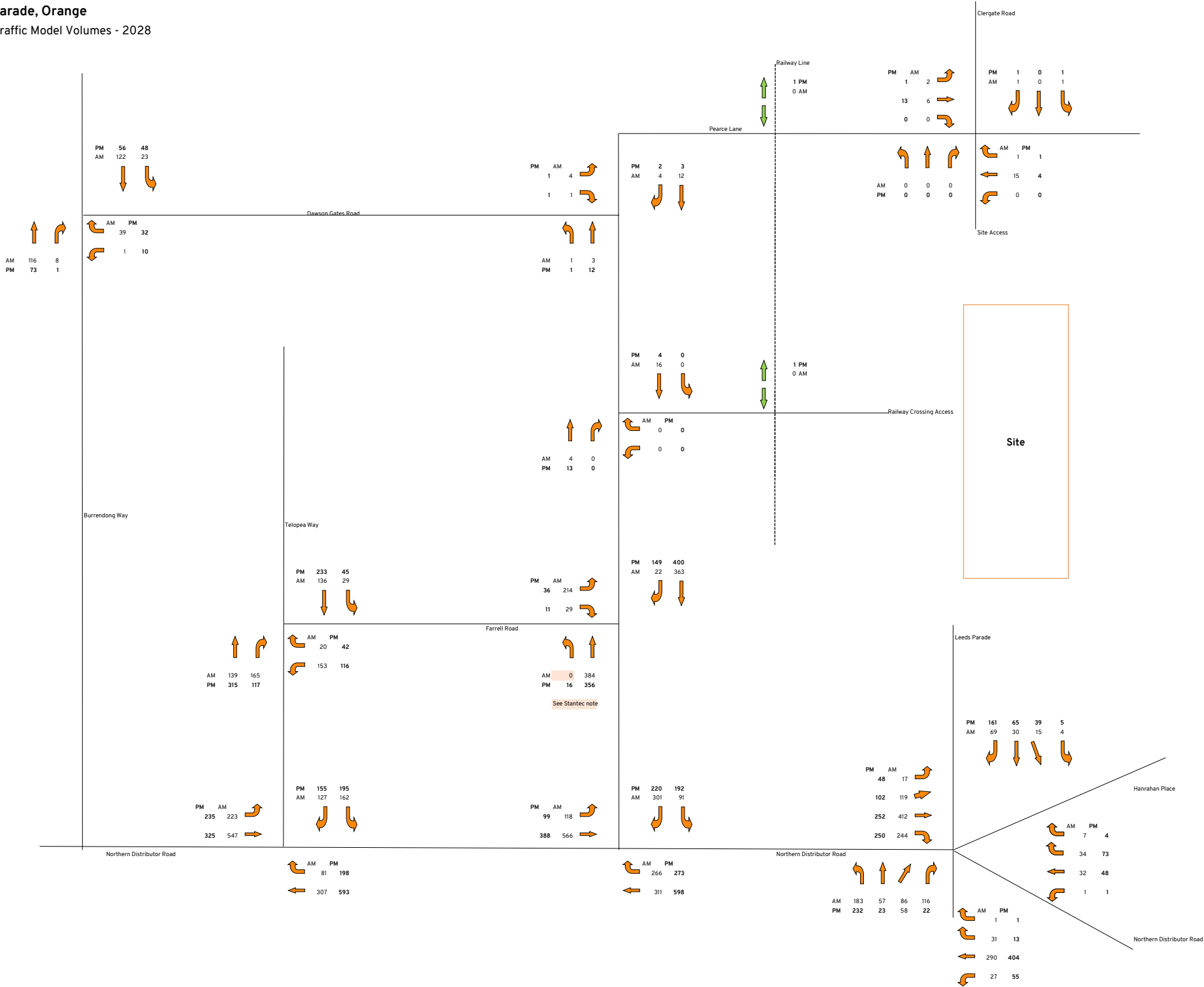
The data suggests that Northern Distributor Road accommodates relatively high traffic volumes, with Clergate Road and Telopea Way also recording relatively high traffic volumes. These volumes reflect the road classifications with Northern Distributor Road acting as an arterial road and Clergate Road and Telopea Way acting as collector roads that provide access to the North Orange Shopping Centre and adjacent residential and industrial uses.

Traffic volumes on Pearce Lane and Dawson Gates Road are low, with moderate traffic volumes recorded on Burrendong Way.

The traffic model volumes suggest that all roads within the vicinity of the site are expected to experience modest traffic growth between 2018 and 2028.

Rosedale Gardens Traffic Calculations

Leeds Parade, Orange
Orange Traffic Model Volumes - 2028

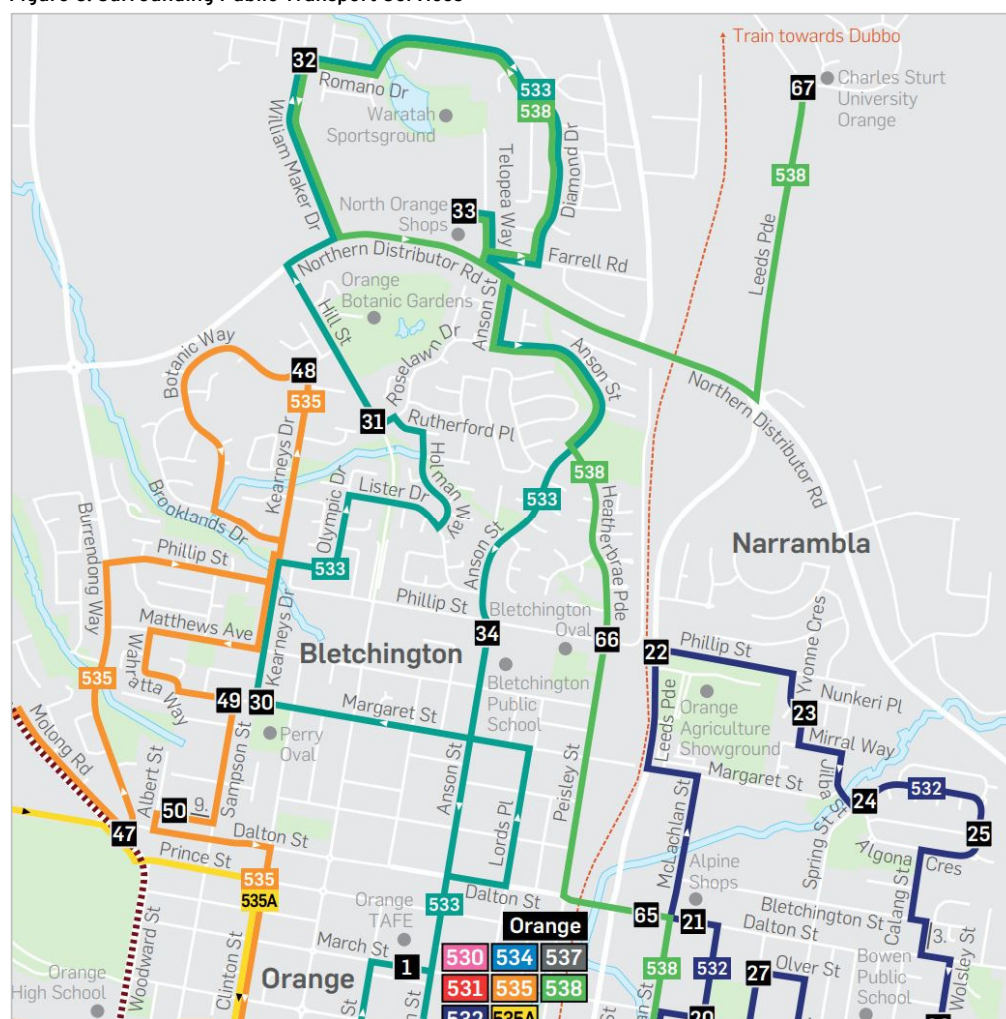


Planning Proposal to amend the Orange Environmental Plan 2011, Leeds Parade, Clergate
Traffic Impact Assessment

2.4 Public Transport

The public transport services within the vicinity of the site are shown within Figure 6. The map indicates the only existing bus service provided within the vicinity of the site is Route 67 which travels between the Orange University Campus along Leeds Parade to the Orange CBD.

Figure 6: Surrounding Public Transport Services



Source: Orange Buslines

2.5 Pedestrians and Cyclists

A shared path is provided along the majority of the western side of Leeds Parade between Dalton Street and the university, and a shared path is provided along the southern side of Northern Distributor Road west of Leeds Parade that links with the wider pedestrian / bicycle pathway network to the west.

Planning Proposal to amend the Orange Environmental Plan 2011, Leeds Parade, Clergate
Traffic Impact Assessment

2.6 Road Safety

Amber has conducted a review of the TfNSW Centre for Road Safety Crash and Casualty Statistics database for all injury crashes within the following search area:

- Northern Distributor Road between Leeds Parade and Clergate Road;
- Leeds Parade between Northern Distributor Road and the site;
- Clergate Road between Northern Distributor Road and Pearce Lane;
- The full length of Pearce Lane; and
- The relevant intersections.

The crash database provides the location and severity of all injury and fatal crashes for the five-year period from 2015 to 2019. The crash search revealed one moderate injury crash midblock on Clergate Road near Industry Drive when a vehicle lost control within the road carriageway.

The crash search indicates that there are no discernible crash trends within the surrounding road network. As such, it is concluded that the road network is currently operating in a relatively safe manner.

3. Development Proposal

3.1 Existing Site Approval

A Planning Proposal has previously been prepared for the site which resulted in an amendment to the LEP resulting in the rezoning of the subject land from RU1 – Primary Production and IN1 – General Industrial to R5 – Large Lot Residential, E4 – Environmental Living, RE1 – Public Recreation and SP2 – Infrastructure. A master plan for the site was developed which showed approximately 450 lots with a minimum lot size of 4,000 square metres. The master plan provided a draft internal road layout with access to the site proposed from Leeds Parade.

3.2 The Proposal

This Planning Proposal involves an amendment to the LEP which would reduce the minimum lot size and increase the yield of the land to approximately 700 lots. Exceedance of this limit would not be possible without further amendments to the LEP. Any further LEP amendment would require consultation with regulatory agencies including TfNSW and their Rail Infrastructure Manager.

The site currently has one legal road access, being south via Leeds Parade. It is expected this would be the primary point of access for vehicles travelling to and from the Orange CBD and industrial areas and for vehicles travelling east and west from Orange via the Northern Distributor Road.

In addition, the proposal introduces an upgrade of a private level crossing to a public level crossing to provide access via Clergate Road and introduces a third access via Pearce Lane which are described below:

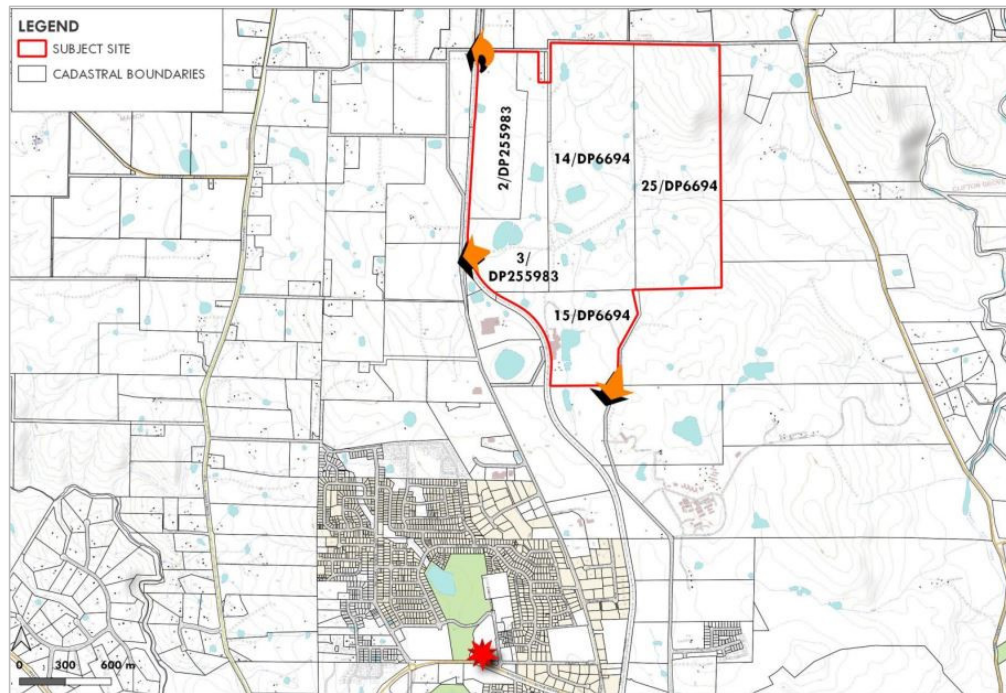
- A new western access is proposed across the Main Western Railway line via an existing private level crossing to be upgraded to an active level crossing. The access is expected to be utilised by residents making local trips to the North Orange Shopping Centre, via Farrell Road, or travelling to the North Orange residential/industrial areas;
- A new access is proposed in the north-western corner of the site via Pearce Lane. Vehicles travelling in this direction would be expected to predominantly be travelling north (such as to Clergate School), or to Burrendong Way to travel north towards Mullion Creek, Lake Burrendong or Wellington. A small proportion of these vehicles located in the very northern extent of the subdivision may also travel via Clergate Road to the North Orange Shopping Centre, via Farrell Road, or travelling to the North Orange residential/industrial areas.

Given the connectivity afforded by the Northern Distributor Road and Leeds Parade, it is expected that the majority of vehicles would utilise the Leeds Parade access.

Figure 7 shows the locations of the proposed accesses in relation to the surrounding road network and North Orange Shopping Centre, with a masterplan for the site provided within Appendix B.

Planning Proposal to amend the Orange Environmental Plan 2011, Leeds Parade, Clergate
Traffic Impact Assessment

Figure 7: Site Master Plan



Source: Premise

4. Traffic Assessment

4.1 Traffic Generation

The *Roads & Maritime Services Technical Direction 04a: Guide to Traffic Engineering Developments - Updated Traffic Surveys*, dated August 2013, has been used to estimate the traffic generation of the site. The traffic generation rates for low density residential land use within regional areas are as follows:

- Daily vehicle trips: 7.4 movements per dwelling;
- Weekday average morning peak hour vehicle trips: 0.78 movements per dwelling; and
- Weekday average evening peak hour vehicle trips: 0.71 movements per dwelling.

Application of the above rates to the 700 residential lots results in a future traffic generation of 5,180 vehicle movements per day, and 546 and 497 vehicle movements (two-way total) in the morning and evening peak hours respectively.

4.2 Trip Distribution

It is typical for residential activities to yield a trip distribution involving about 80% of traffic in the morning peak hour being departing trips, and 20% arriving trips. Similarly, it is typical that 30% of trips will be departing and 70% will be arriving trips in the evening peak hour. As such, the site is expected to generate the following traffic volumes during the morning and afternoon peak periods.

Table 1: Site Peak Hour Traffic Generation

	AM Peak (vph)	PM Peak (vph)
Arriving Trips	109	348
Departing Trips	437	149
Total	546	497

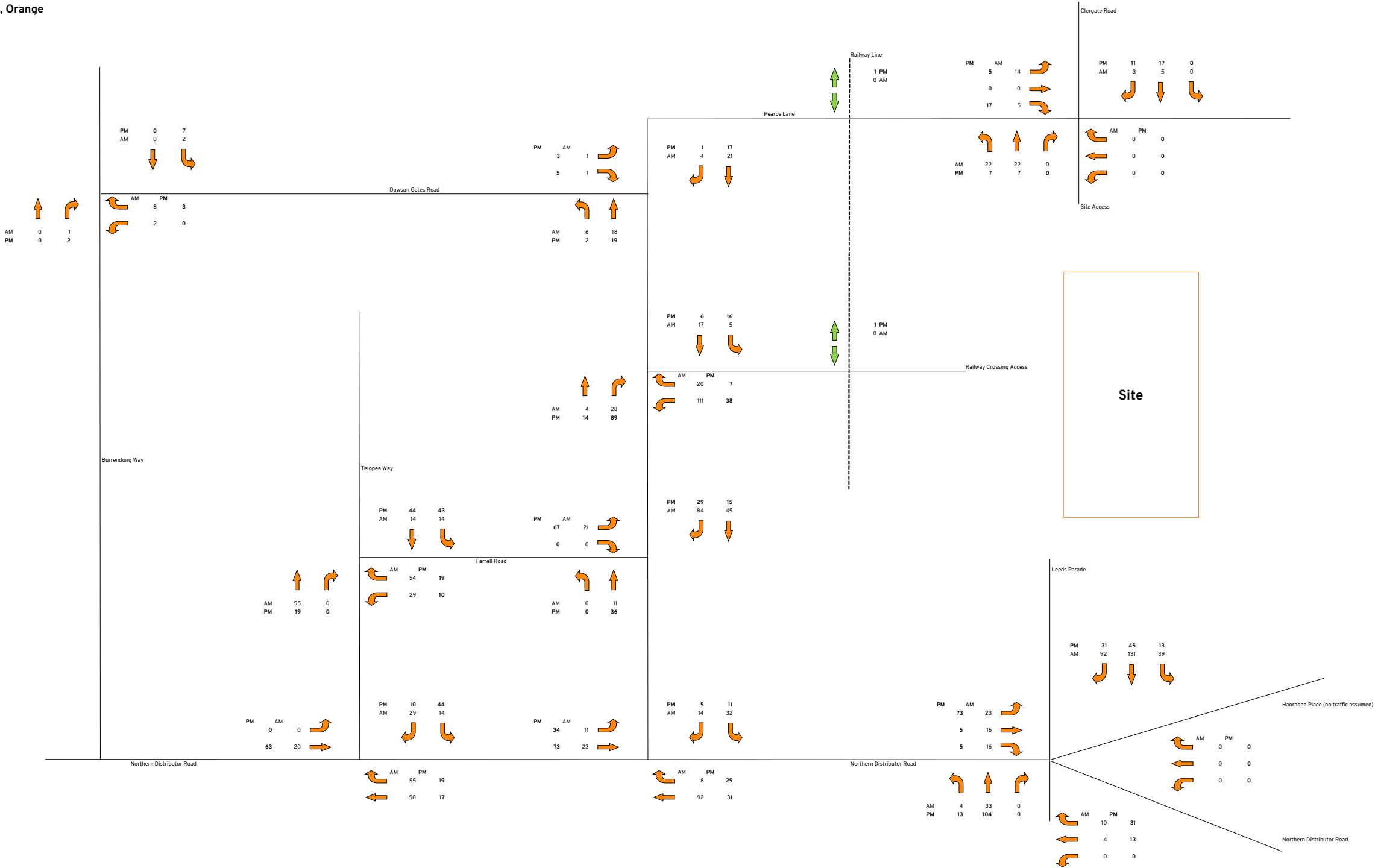
The site is provided with three connections to the road network which includes Leeds Parade, Clergate Road and Pearce Lane. The following provides a breakdown of the distribution of site traffic at the accesses:

- It has been assumed that 60% of traffic will utilise Leeds Parade which provides good access to the Orange CBD and Northern Distributor Road for the majority of the site;
- It has been assumed that 30% of traffic will utilise the Clergate Road access which will primarily be used by residents making local trips to the North Orange Shopping Centre via Farrell Road; and
- It has been assumed that 10% of traffic will utilise the northern access to Pearce Lane which will be utilised by some residents travelling north such as to Clergate School or to Burrendong Way. A small proportion of residents located in the very northern extent of the subdivision may also utilise the access to travel south via Clergate Road.

The distribution of site traffic on the road network is shown within Figure 8.

Rosedale Gardens Traffic Calculations

Leeds Parade, Orange
Site Traffic



4.3 Traffic Assessment

In order to determine the traffic impact generated by the subdivision an analysis of the operation of the surrounding intersections was carried out using the SIDRA computer modelling program. The concepts of intersection capacity and level of service, as defined in the guidelines published by the RTA (2002), are discussed in Appendix C together with criteria for their assessment. The assessment of the level of service for sign-controlled intersections is based on the average delay (seconds/vehicle) of the critical movement and the assessment for signalised intersections is the average delay over all movements at the intersection.

The intersections that have been assessed have been identified where a significant increase in traffic is expected based on the traffic distribution outlined within Figure 8. These intersections include:

- Leeds Parade / Northern Distributor Road
- Clergate Road / Northern Distributor Road
- Clergate Road / Farrell Road
- Farrell Road / Telopea Way
- Telopea Way / Northern Distributor Road
- Clergate Road / Site Access (middle access)
- Pearce Lane / Clergate Road / Site Access (northern access)

The traffic volumes used for the assessment have been based on the traffic volumes presented within Section 2.3 which are taken from the Orange Strategic Model for the year 2028. It is considered appropriate to utilise these volumes given survey data is unable to be collected at this time. Further, the model provides an estimate of the future traffic volumes on the road network which is when the site is likely to be constructed and the associated traffic volumes will be accommodated on the road network.

A future scenario has also been assessed which adds the development traffic to the strategic model 2028 traffic volumes. The future scenario traffic volumes are shown in Figure 9.

The results of the analysis are provided within Appendix D and are summarised below.

Leeds Parade, Orange
Orange Traffic Model



Planning Proposal to amend the Orange Environmental Plan 2011, Leeds Parade, Clergate
Traffic Impact Assessment

4.3.1 Leeds Parade / Northern Distributor Road

The roundabout intersection has been modelled based on the existing lane configuration. The results of the SIDRA analysis for the morning peak hour for the intersection of Leeds Parade, Hanrahan Place and Northern Distributor Road are summarised in Table 2.

Table 2: SIDRA Analysis Results Summary – AM Peak 2028

Movement		Strategic Model Traffic 2028			Future Traffic Conditions 2028		
		Average Delay (sec)	95% Queue (m)	Level of Service	Average Delay (sec)	95% Queue (m)	Level of Service
Leeds Parade South	Left	5.6	9.1	A	6.2	9.6	A
	Through	4.9		A	5.2		A
	Right	9.4		A	9.7		A
	Right-Right	11.8		B	12.1		B
Northern Distributor Road East	Left-Left	4.7	8.6	A	5.3	10.8	A
	Left	4.6		A	5.7		A
	Right	9.5		A	10.4		B
	Right-Right	10.7		B	11.6		B
Hanrahan Place	Left-Left	9.4	5.1	A	11.9	6.3	B
	Left	8.5		A	11.2		B
	Right	12.9		B	15.3		B
	Right-Right	15.3		B	17.7		B
Leeds Parade North	Left-Left	7.5	3.8	A	8.0	14.9	A
	Left	8.1		A	8.8		A
	Through	6.9		A	7.4		A
	Right Turn	11.9		B	12.7		B
Northern Distributor Road West	Left-Left	5.9	30.9	A	6.2	39.4	A
	Left	5.4		A	5.8		A
	Right	9.9		A	10.8		B
	Right-Right	11.1		B	12.0		B

The SIDRA analysis for the AM peak indicates the following:

- The intersection is expected to continue to operate with minimal queue lengths on all legs of the intersection. The longest queue is recorded on the western leg of Northern Distributor Road which increases from 30.9 metres to 39.4 metres;
- The overall average delay at the intersection increases by 1.2 seconds which represents a minimal change. All legs of the intersection experience a minor delay that is well within the acceptable operating conditions; and
- The intersection is expected to continue to operate with a good level of service.

Planning Proposal to amend the Orange Environmental Plan 2011, Leeds Parade, Clergate
Traffic Impact Assessment

The results of the SIDRA analysis for the evening peak hour for the intersection of Leeds Parade, Hanrahan Place and Northern Distributor Road are summarised in Table 3.

Table 3: SIDRA Analysis Results Summary – PM Peak 2028

Movement		Strategic Model Traffic 2028			Future Traffic Conditions 2028		
		Average Delay (sec)	95% Queue (m)	Level of Service	Average Delay (sec)	95% Queue (m)	Level of Service
Leeds Parade South	Left	6.3	8.2	A	6.7	8.9	A
	Through	6.1		A	6.2		A
	Right	10.6		B	10.7		B
	Right-Right	13.0		B	13.0		B
Northern Distributor Road East	Left-Left	4.9	13.8	A	5.1	15.9	A
	Left	5.9		A	6.5		A
	Right	10.1		B	10.5		B
	Right-Right	11.3		B	11.7		B
Hanrahan Place	Left-Left	7.7	6.2	A	8.3	7.0	A
	Left	7.5		A	8.2		A
	Right	11.8		B	12.4		B
	Right-Right	14.2		B	14.8		B
Leeds Parade North	Left-Left	6.7	6.9	A	6.8	10.4	A
	Left	6.7		A	6.8		A
	Through	6.3		A	6.4		A
	Right Turn	11.3		B	11.5		B
Northern Distributor Road West	Left-Left	4.5	16.9	A	5.2	20.5	A
	Left	4.0		A	4.7		A
	Right	8.6		A	9.3		A
	Right-Right	9.8		A	10.5		B

The SIDRA analysis for the PM peak indicates the following:

- The intersection is expected to continue to operate with minimal queue lengths on all legs of the intersection. The longest queue is recorded on the western leg of Northern Distributor Road which increases from 16.9 metres to 20.5 metres;
- The overall average delay at the intersection increases by 0.4 seconds which represents a minimal change. All legs of the intersection experience a minor delay that is well within the acceptable operating conditions; and
- The intersection is expected to continue to operate with a good level of service.

Overall, the intersection with the 2028 Orange Strategic Model volumes is shown to be operating with ample spare capacity to accommodate an increase in traffic resulting in the intersection operating with a good level of service. As a result, the moderate increase in traffic generated by the site traffic only results in minor increases to queue lengths and delays. The AM and PM peak

hour degree of saturation for the intersection with the development traffic is 0.615 and 0.431, respectively, which indicates there would still be ample spare capacity even with the development traffic.

4.3.2 Clergate Road / Northern Distributor Road

The intersection has been modelled based on the existing lane configuration which provides a right turn lane from Northern Distributor Road and separate right and left turn lanes from Clergate Road. Vehicles exiting Clergate Road are provided with Give Way restrictions.

The results of the SIDRA analysis for the morning peak hour for the intersection of Clergate Road and Northern Distributor Road are summarised in Table 4.

Table 4: SIDRA Analysis Results Summary – AM Peak 2028

Movement		Strategic Model Traffic 2028			Future Traffic Conditions 2028		
		Average Delay (sec)	95% Queue (m)	Level of Service	Average Delay (sec)	95% Queue (m)	Level of Service
Northern Distributor Road East	Through	0.0	13.9	A	0.1	15.5	A
	Right Turn	10.9		B	11.6		B
Clergate Road	Left Turn	8.4	664.5	A	8.7	921.8	A
	Right Turn	710.9		F	1266.5		F
Northern Distributor Road West	Left Turn	5.7	0.0	A	5.7	0.0	A
	Through	0.1		A	0.1		A

The SIDRA analysis for the AM peak indicates the intersection generally operates with acceptable queue lengths and delays except for the right turn movement from Clergate Road which has reached capacity even without the development traffic. Once the movement reaches capacity the reported queue lengths and delays increase exponentially and are not reportedly accurately by the model.

The results of the SIDRA analysis for the evening peak hour for the intersection of Clergate Road and Northern Distributor Road are summarised in Table 5.

Table 5: SIDRA Analysis Results Summary – PM Peak 2028

Movement		Strategic Model Traffic 2028			Future Traffic Conditions 2028		
		Average Delay (sec)	95% Queue (m)	Level of Service	Average Delay (sec)	95% Queue (m)	Level of Service
Northern Distributor Road East	Through	0.1	9.6	A	0.1	13.9	A
	Right Turn	8.2		A	9.7		A
Clergate Road	Left Turn	7.3	411.5	A	7.9	613.4	A
	Right Turn	529.7		F	1044.7		F
Northern Distributor Road West	Left Turn	5.6	0.0	A	5.7	0.0	A
	Through	0.1		A	0.1		A

The SIDRA analysis for the PM peak is similar to the AM peak and indicates the intersection generally operates with acceptable queue lengths and delays except for the right turn movement from Clergate Road which has reached capacity.

The traffic volumes are based on the Orange Strategic Traffic Model which estimates traffic volumes based on vehicles moving between an origin and a destination. The level of complexity of the model does not account for changes in behaviour generated by certain routes taking a significantly longer time due to delays at intersections such as what is being reported above for Clergate Road and Northern Distributor Road. In reality vehicles are likely to choose an alternative route in order to travel westbound on Northern Distributor Road once delays become unacceptable or an alternative route is available with a shorter travel time.

4.3.3 Clergate Road / Farrell Road

The intersection has been modelled based on the existing lane configuration which provides one lane of traffic in all directions with no dedicated turn facilities. Vehicles exiting Farrell Road are provided with Stop restrictions.

The results of the SIDRA analysis for the morning peak hour for the intersection of Clergate Road and Farrell Road are summarised in Table 6.

Table 6: SIDRA Analysis Results Summary – AM Peak 2028

Movement		Strategic Model Traffic 2028			Future Traffic Conditions 2028		
		Average Delay (sec)	95% Queue (m)	Level of Service	Average Delay (sec)	95% Queue (m)	Level of Service
Clergate Road South	Left Turn	5.6	0.0	A	5.6	0.0	A
	Through	0.1		A	0.1		A
Clergate Road North	Through	0.2	1.9	A	1.0	10.0	A
	Right Turn	7.7		A	8.1		A
Farrell Road	Left Turn	10.9	10.8	B	11.4	13.5	B
	Right Turn	15.9		C	19.7		C

The SIDRA analysis for the AM peak indicates the following:

- The intersection is expected to continue to operate with minimal queue lengths on all legs of the intersection;
- The overall average delay at the intersection increases by 0.8 seconds; and
- The intersection is expected to continue to operate with a good level of service on the Clergate Road legs of the intersection and an acceptable level of service on the Farrell Road leg of the intersection.

The results of the SIDRA analysis for the evening peak hour for the intersection of Clergate Road and Farrell Road are summarised in Table 7.

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Table 7: SIDRA Analysis Results Summary – PM Peak 2028

Movement		Strategic Model Traffic 2028			Future Traffic Conditions 2028		
		Average Delay (sec)	95% Queue (m)	Level of Service	Average Delay (sec)	95% Queue (m)	Level of Service
Clergate Road South	Left Turn	5.6	0.0	A	5.6	0.0	A
	Through	0.1		A	0.1		A
Clergate Road North	Through	1.1	13.0	A	1.6	18.0	A
	Right Turn	7.8		A	8.3		A
Farrell Road	Left Turn	9.9	1.9	A	10.4	4.3	B
	Right Turn	16.6		C	19.4		C

The SIDRA analysis for the PM peak indicates the following:

- The intersection is expected to continue to operate with minimal queue lengths on all legs of the intersection;
- The overall average delay at the intersection increases by 0.9 seconds; and
- The intersection is expected to continue to operate with a good level of service on the Clergate Road legs of the intersection and an acceptable level of service on the Farrell Road leg of the intersection.

Overall, the intersection is expected to operate with acceptable queue lengths and delays. The delay for vehicles turning from Farrell Road is moderate with all other legs of the intersection operating with minimal delays. The degree of saturation for the intersection with the development traffic is 0.369 and 0.396 during the morning and evening peak hour, respectively, which suggests there is capacity at the intersection to accommodate an increase in traffic.

4.3.4 Farrell Road / Telopea Way

The intersection has been modelled as a network with the intersection of Telopea Way and Northern Distributor Road given both intersections are signalised and the phasing for the intersections has been linked. The model is based on the existing lane configuration.

SCATS data has been provided by Transport for NSW for the intersection. The phasing provided has been adopted for the intersection however, the phase times have been optimised to account for the increase in traffic.

The results of the SIDRA analysis for the morning peak hour for the intersection of Farrell Road and Telopea Way are summarised in Table 8.

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Table 8: SIDRA Analysis Results Summary – AM Peak 2028

Movement		Strategic Model Traffic 2028			Future Traffic Conditions 2028		
		Average Delay (sec)	95% Queue (m)	Level of Service	Average Delay (sec)	95% Queue (m)	Level of Service
Telopea Way South	Through	3.6	5.8	A	3.7	8.4	A
	Right Turn	14.7	12.4	B	7.0	5.4	A
Farrell Road	Left Turn	14.2	10.6	B	15.4	13.9	B
	Right Turn	28.0	2.1	C	29.2	8.3	C
Telopea Way North	Left Turn	28.3	3.1	C	28.6	4.7	C
	Through	16.5	13.1	B	16.2	14.5	B

The SIDRA analysis for the AM peak indicates the following:

- The intersection is expected to continue to operate with moderate queue lengths on all legs of the intersection. The existing turn facilities are able to accommodate the expected queue lengths;
- The overall average delay at the intersection decreases by 0.6 seconds as a result of the traffic distribution and associated changes to the phase time. The only notable change to the delay at the intersection is the increase in delay to right turning vehicles from the southern leg of Telopea Way which increases by 7.7 seconds from 7.0 seconds to 14.7 seconds;
- The intersection is expected to continue to operate with a good or acceptable level of service on all legs of the intersection; and
- The degree of saturation at the intersection is expected to increase from 0.398 to 0.438.

The results of the SIDRA analysis for the evening peak hour for the intersection of Farrell Road and Telopea Way are summarised in Table 9.

Table 9: SIDRA Analysis Results Summary – PM Peak 2028

Movement		Strategic Model Traffic 2028			Future Traffic Conditions 2028		
		Average Delay (sec)	95% Queue (m)	Level of Service	Average Delay (sec)	95% Queue (m)	Level of Service
Telopea Way South	Through	4.3	11.7	A	3.3	11.6	A
	Right Turn	20.9	10.2	C	27.3	13.6	C
Farrell Road	Left Turn	12.9	6.4	B	18.7	10.8	B
	Right Turn	22.7	3.6	C	28.9	6.8	C
Telopea Way North	Left Turn	22.8	3.8	C	29.5	10.0	C
	Through	15.5	20.2	B	13.5	26.1	B

The SIDRA analysis for the PM peak indicates the following:

- The intersection is expected to continue to operate with moderate queue lengths on all legs of the intersection. The existing turn facilities are able to accommodate the expected queue lengths;
- The overall average delay at the intersection is expected to increase by 2.1 seconds, with minor increases in delay experienced on all legs of the intersection;
- The intersection is expected to continue to operate with a good or acceptable level of service on all legs of the intersection; and
- The degree of saturation at the intersection is expected to increase from 0.592 to 0.597.

Overall, the intersection is expected to continue to operate in an acceptable manner with only minor increases in queue lengths and delays generated by site traffic.

4.3.5 Telopea Way / Northern Distributor Road

The intersection has been modelled as a network with the intersection of Telopea Way and Farrell Road given both intersections are signalised and the phasing for the intersections has been linked. The model is based on the existing lane configuration.

SCATS data has been provided by Transport for NSW for the intersection. The phasing provided has been adopted for the intersection however, the phase times have been optimised to account for the increase in traffic.

The results of the SIDRA analysis for the morning peak hour for the intersection of Telopea Way and Northern Distributor Road are summarised in Table 10.

Table 10: SIDRA Analysis Results Summary – AM Peak 2028

Movement		Strategic Model Traffic 2028			Future Traffic Conditions 2028		
		Average Delay (sec)	95% Queue (m)	Level of Service	Average Delay (sec)	95% Queue (m)	Level of Service
Northern Distributor Road East	Through	4.2	15.1	A	4.4	18.2	A
	Right Turn	29.4	9.2	C	31.0	16.5	C
Telopea Way	Left Turn	17.4	16.0	B	17.6	17.4	B
	Right Turn	27.6	15.5	C	30.6	19.6	C
Northern Distributor Road West	Left Turn	9.6	10.5	A	9.6	10.5	A
	Through	16.3	59.1	B	17.5	63.9	B

The SIDRA analysis for the AM peak indicates the following:

- The intersection is expected to continue to operate with moderate queue lengths on all legs of the intersection. The existing turn facilities are able to accommodate the expected queue lengths;
- The overall average delay at the intersection is expected to increase by 1.3 seconds, with minor increases in delay experienced on all legs of the intersection;
- The intersection is expected to continue to operate with a good or acceptable level of service on all legs of the intersection; and

- The degree of saturation at the intersection is expected to increase from 0.753 to 0.780.

The results of the SIDRA analysis for the evening peak hour for the intersection of Telopea Way and Northern Distributor Road are summarised in Table 11.

Table 11: SIDRA Analysis Results Summary – PM Peak 2028

Movement		Strategic Model Traffic 2028			Future Traffic Conditions 2028		
		Average Delay (sec)	95% Queue (m)	Level of Service	Average Delay (sec)	95% Queue (m)	Level of Service
Northern Distributor Road East	Through	6.6	36.7	A	5.9	39.9	A
	Right Turn	27.0	20.3	C	29.4	26.4	C
Telopea Way	Left Turn	11.4	13.4	B	12.0	17.2	B
	Right Turn	19.8	13.8	B	20.0	17.0	C
Northern Distributor Road West	Left Turn	10.7	11.3	B	11.7	13.7	B
	Through	17.1	30.3	B	18.7	42.6	B

The SIDRA analysis for the PM peak indicates the following:

- The intersection is expected to continue to operate with moderate queue lengths on all legs of the intersection. The existing turn facilities are able to accommodate the expected queue lengths. It is noted that the through movement travelling eastbound on Northern Distributor Road experiences an increase in queue length of 12.3 metres which is equivalent to approximately two cars;
- The overall average delay at the intersection is expected to increase by 0.8 seconds, with minimal increases in delay experienced on all legs of the intersection;
- The intersection is expected to continue to operate with a good or acceptable level of service on all legs of the intersection; and
- The degree of saturation at the intersection is expected to decrease from 0.764 to 0.736 due to the distribution of traffic at the intersection with the site traffic and associated changes to the phase times.

Overall, the intersection is expected to continue to operate in an acceptable manner with only minor increases in queue lengths and delays generated by site traffic.

4.3.6 Clergate Road / Site Access (Middle Access)

The central access location proposed for the site is currently a private access that experiences a minimal level of traffic. As such, an assessment of the intersection has not been undertaken for the existing operation of the intersection.

The results of the SIDRA analysis for the morning and evening peak hours for the intersection of Clergate Road and the central site access are summarised in Table 12. Both roads are provided with one lane of traffic in each direction with no turn lanes provided on either road. Give Way restrictions are applied to vehicles exiting the site.

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Table 12: SIDRA Analysis Results Summary – AM and PM Peak 2028

Movement		AM Future Traffic Conditions			PM Future Traffic Conditions		
		Average Delay (sec)	95% Queue (m)	Level of Service	Average Delay (sec)	95% Queue (m)	Level of Service
Clergate Road South	Through	0.1	0.7	A	0.1	2.4	A
	Right Turn	5.6		A	5.6		A
Site Access	Left Turn	5.7	2.7	A	5.6	0.9	A
	Right Turn	5.8		A	6.0		A
Clergate Road North	Left Turn	5.6	0.0	A	5.6	0.0	A
	Through	0.0		A	0.0		A

The results of the SIDRA analysis indicate the following:

- The intersection is expected to operate with minimal queue lengths on all legs of the intersection;
- The average delay at the intersection is 4.5 seconds during both the AM and PM peak; and
- The intersection is expected to operate with a good level of service.

Overall, the intersection is expected to operate in a suitable manner with minimal delays and queue lengths, and has ample spare capacity to accommodate an increase in traffic.

4.3.7 Pearce Lane / Clergate Road / Site Access (Northern Access)

The intersection has been modelled as a cross-type intersection however, the ultimate intersection is likely to be established as a staggered T-intersection which provides a safer road alignment. Each leg of the intersection was modelled with one lane of traffic in each direction and no turn facilities. Give Way restrictions were applied to the eastern Pearce Lane leg of the intersection and the site access as the primary traffic movement is likely to be vehicles travelling north-south between the western leg of Pearce Lane and Clergate Road.

Based on discussions with Orange City Council no vehicles associated with the site have been assumed to be travelling along Pearce Lane to/from Ophir Road.

The results of the SIDRA analysis for the morning peak hour for the intersection of Pearce Lane, Clergate Road and the site access are summarised in Table 13.

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Table 13: SIDRA Analysis Results Summary – AM Peak 2028

Movement		Strategic Model Traffic 2028			Future Traffic Conditions 2028		
		Average Delay (sec)	95% Queue (m)	Level of Service	Average Delay (sec)	95% Queue (m)	Level of Service
Site Access	Left Turn	5.6	0.1	A	5.7	0.9	A
	Through	4.3		A	4.4		A
	Right Turn	5.6		A	5.7		A
Pearce Lane East	Left Turn	5.6	0.4	A	5.6	0.4	A
	Through	4.2		A	4.2		A
	Right Turn	5.6		A	5.8		A
Clergate Road	Left Turn	5.6	0.0	A	5.6	0.0	A
	Through	0.0		A	0.0		A
	Right Turn	5.5		A	5.5		A
Pearce Lane West	Left Turn	5.6	0.3	A	5.6	0.5	A
	Through	0.0		A	0.1		A
	Right Turn	5.5		A	5.5		A

The SIDRA analysis for the AM peak indicates the following:

- The intersection is expected to continue to operate with minimal queue lengths on all legs of the intersection;
- The overall average delay at the intersection increases by 0.8 seconds; and
- The intersection is expected to continue to operate with a good level of service.

The results of the SIDRA analysis for the evening peak hour for the intersection of Pearce Lane, Clergate Road and the site access are summarised in Table 14.

Table 14: SIDRA Analysis Results Summary – PM Peak 2028

Movement		Strategic Model Traffic 2028			Future Traffic Conditions 2028		
		Average Delay (sec)	95% Queue (m)	Level of Service	Average Delay (sec)	95% Queue (m)	Level of Service
Site Access	Left Turn	5.6	0.1	A	5.6	0.3	A
	Through	4.3		A	4.4		A
	Right Turn	5.6		A	5.8		A
Pearce Lane East	Left Turn	5.6	0.1	A	5.7	0.1	A
	Through	4.2		A	4.4		A
	Right Turn	5.6		A	5.8		A
Clergate Road	Left Turn	5.6	0.0	A	5.6	0.0	A
	Through	0.0		A	0.0		A
	Right Turn	5.5		A	5.5		A

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Pearce Lane West	Left Turn	5.6	0.4	A	5.7	0.9	A
	Through	0.0		A	0.2		A
	Right Turn	5.5		A	5.6		A

The results of the SIDRA analysis for the PM peak are similar to the AM peak and indicate the following:

- The intersection is expected to continue to operate with minimal queue lengths on all legs of the intersection;
- The overall average delay at the intersection increases by 1.4 seconds; and
- The intersection is expected to continue to operate with a good level of service.

Overall, the increase in traffic generated by the subdivision is expected to have a negligible impact to the operation of the intersection of Pearce Lane, Clergate Road which is expected to continue to operate with a good level of service.

4.4 Railway Level Crossings

Amber has contacted John Holland's Operational Team who operate the railway line that runs along the western boundary of the site. Their response is provided below:

'...there are no pathed trains through the location in the morning. The up direction XPT ex Dubbo is normally through Orange between 1700 and 1800. Freight services generally get through Orange after 1800. This might average one per day. So a total of two per day in the evening.'

There are two level crossings that would be traversed by development traffic which includes the level crossing at the Clergate Road site access and the level crossing on Pearce Lane near the northern access.

Given the infrequent number of services along the railway line and the low traffic volumes at each of the level crossings, the interaction of site traffic with the level crossings is not expected to create any congestion or safety impacts.

4.5 Summary

The SIDRA analysis provided a review of the impacts of the site traffic on the surrounding road network for the year 2028 based on the traffic volumes provided within the Orange Strategic Traffic Model and assumed the site had been fully constructed. The analysis is summarised in Table 15.

Table 15: SIDRA Analysis Results Summary

Intersection	AM Peak			PM Peak		
	Average Delay (sec)	95% Queue (m)	Level of Service	Average Delay (sec)	95% Queue (m)	Level of Service
Leeds Parade / Northern Distributor Road	9.1	39.4	A	8.1	20.5	A
Clergate Road / Northern Distributor Road	220.4	921.8	-	123.4	613.4	-

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Clergate Road / Farrell Road	3.9	13.5	-	3.2	18.0	-
Farrell Road / Telopea Way	13.0	14.5	B	14.7	26.1	B
Telopea Way / Northern Distributor Road	15.9	63.9	B	14.1	42.6	B
Clergate Road / Site Access (middle access)	4.5	2.7	-	4.5	2.4	-
Pearce Lane / Clergate Road / Site Access (northern access)	4.5	0.9	-	3.6	0.9	-

The analysis demonstrates that the surrounding road network is expected to continue to operate with good to satisfactory levels of service and acceptable queue lengths and delays with the exception of right turn movement from Clergate Road to Northern Distributor Road. However, it is noted that the right turn movement is already operating above capacity with the 2028 Orange Strategic Model traffic volumes. It is considered that this is due to the strategic model not accounting for the long delays and the associated redistribution of traffic on the road network as drivers choose a more suitable travel route.

Site traffic is able to avoid this right turn manoeuvre by either travelling eastbound on Northern Distributor Road via Leeds Parade and utilising the internal road network, or by utilising Farrell Road and Telopea Way. Each of these intersections has capacity to accommodate an increase in traffic generated by the redistribution of traffic.

Overall, it is concluded that site traffic will have a minor impact on the surrounding road network and the traffic volumes can be accommodated on the road network in a safe and efficient manner.

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5. Access and Internal Road Layout

A master plan for the site has been prepared by Premise which has previously been shown within Figure 7 and identifies the locations of the proposed accesses. The proposed road layout is considered to provide suitable vehicle circulation within the site. It is recommended that the internal road layout and cross-sections be established in accordance with the Orange Development Control Plan and relevant design standards.

The internal and external intersections are recommended to be designed to meet the Safe Intersection Sight Distance specified within *Austroads Guide to Road Design – Part 4A: Unsignalised Intersections* to ensure the sight distance at each intersection allows the safe movement of vehicles on the road network.

The traffic assessment indicates that the new accesses via Clergate Road and Pearce Lane are expected to operate with minimal delays and queue lengths. Notwithstanding this, it is recommended that any future design for the accesses consider the provision of turn facilities in accordance with the relevant Austroads Guidelines.

It is recommended that the Clergate Road access design give careful consideration to the operation of the Western Railway Line and associated level crossing upgrade given the proximity of the railway line to the intersection with Clergate Road.

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6. Car Parking

The applicant has advised that all car parking is to be provided in accordance with the Development Control Plan and relevant Council design documents. In addition, the carriageway width of the internal road network is expected to allow for two-way traffic and on-street parallel parking once fully constructed. The on-street spaces will be available to service the needs of visitors of future residents within the subdivision. Accordingly, the subdivision is not expected to generate any parking impacts and the parking demand can be readily accommodated internally within the site.

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7. Alternative Transport Modes

It is recommended that as part of any future development of the site that TfNSW be contacted to determine whether there will be any future bus services provided within the site. The internal road widths and intersections will need to be designed to accommodate the relevant vehicle and provisions will need to be made to allow for bus stop facilities.

It is also recommended that consideration be given to provide a shared path that connects with the existing path along Leeds Parade to provide a pedestrian / cyclist connection between the site and the Orange CBD.

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8. Conclusions

Amber has reviewed the traffic and parking matters of the proposed amendment to the LEP which would reduce the minimum lot size on-site and increase the yield of the land from 450 lots to approximately 700 lots. The proposal also introduces an upgrade of a private level crossing to a public level crossing to provide access via Clergate Road and introduces a third access via Pearce Lane.

Based on the above assessment, it is concluded that:

- The development is expected to generate approximately 5,180 vehicle movements per day, and 546 and 497 vehicle movements (two-way total) in the morning and evening peak hours respectively;
- Site traffic will have a minor impact on the surrounding road network, with modest increases to queue lengths and delays, and the traffic volumes can be accommodated on the road network in a safe and efficient manner;
- The access locations allow traffic to be distributed on the road network and they are not expected to create any operational or safety issues at the nearby railway level crossings;
- Car parking for the individual lots is to be provided in accordance with the DCP, with on-street parking provided for visitors; and
- It is recommended that future consideration be given to providing sustainable transport facilities within the site that link with existing bus routes and shared paths.

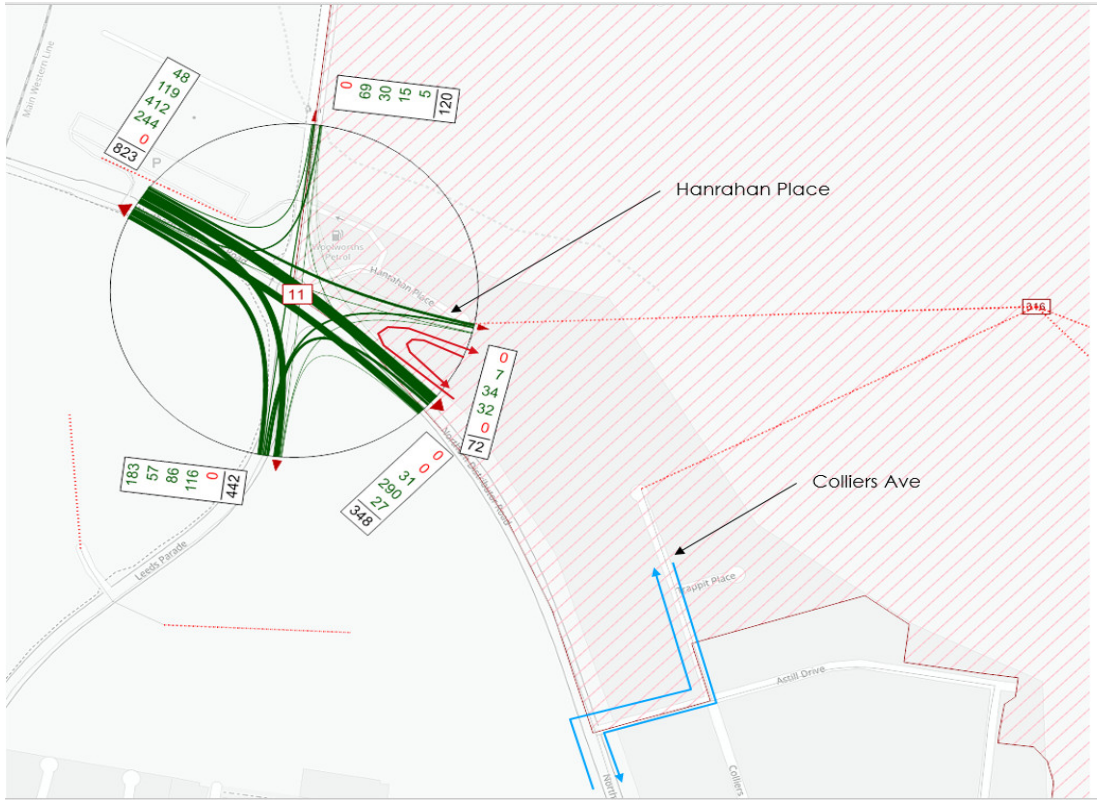
Therefore, it is concluded that the traffic and parking aspects of the proposed development are satisfactory, and the development will have a minimal impact on the surrounding environment.

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Appendix A

Orange Traffic Model Outputs

Intersection	Approach	Approach Movement	Movement	2018 AM	2018 PM	2028 AM	2028 PM	Comments
Leeds Parade / Northern Distributor	Leeds Parade	NB	NBL	113	199	183	232	For TAZ 316 the trips coming form and going to south Northern Distributor Road (NDR) are loaded from Colliers Ave. As a results trips from south NDR to Hanrahan Place (and vice-a-versa) are zero. In other words, NWBR2 and WBL2 movements have zero volume. Hanrahan Place is another loading point of TAZ 316 trips.
			NBT	52	21	57	23	
			NBR	67	31	86	58	
			NBR2	91	20	116	22	
			NBU	0	0	0	0	
	Leeds Parade	SB	SBL2	4	1	5	4	
			SBL	13	43	15	39	
			SBT	27	46	30	65	
			SBR	64	153	69	161	
			SBU	0	0	0	0	
	Hanrahan Place	WB	WBL2	0	0	0	0	
			WBL	13	34	32	48	
			WBT	19	63	34	73	
			WBR	4	3	7	4	
			WBU	0	0	0	0	
	Northern Distributor Road	NWB	NWBL	24	64	27	55	
			NWBT	240	361	290	404	
			NWBR	36	12	31	13	
			NWBR2	0	0	0	0	
			NWBU	0	0	0	0	
	Northern Distributor Road	SEB	SEBL2	43	15	48	17	
			SEBL	105	79	119	102	
			SEBT	356	217	412	252	
			SEBR	190	217	244	250	
			SEBU	0	0	0	0	
Clergate Road / Northern Distributor	Clergate Road	SB	SBL	262	173	301	220	
	Northern Distributor Road	EB	SBR	65	195	91	192	
	Northern Distributor Road	WB	EBL	42	59	118	99	
			EBT	464	334	566	388	
			WBT	252	536	311	598	
			WBR	184	240	266	273	
Clergate Road / Farrell Road	Clergate Road	NB	NBL	0	17	0	16	The trip attractions for the zone adjacent to Clergate road are very less in AM peak. Most of the traffic from the zone is getting loaded on south of Northern Distributor road (Anson street) instead from Clergate road. As a result NBL volume is zero at this intersection in AM Peak.
	Clergate Road	SB	NBT	226	282	384	356	
	Clergate Road	SB	SBT	291	361	363	400	
			SBR	17	61	22	149	
	Farrell Road	EB	EBL	151	39	214	36	
			EBR	36	6	29	11	
Farrell Road / Telopea Way	Telopea Way	NB	NBL	92	258	139	315	
	Telopea Way	SB	NBR	135	144	165	117	
	Telopea Way	SB	SBL	22	38	29	45	
			SBR	126	265	136	233	
	Farrell Road	WB	WBL	168	71	153	116	
			WBR	16	34	20	42	
Telopea Way (Farrell Road) / Northern Distributor Road	Telopea Way (Farrell Road)	SB	SBL	154	161	162	195	
	Northern Distributor Road	EB	SBR	139	176	127	155	
	Northern Distributor Road	WB	EBL	160	214	223	235	
			EBT	341	238	547	325	
			WBT	230	490	307	593	
			WBR	67	188	81	198	
Pearce Lane / Clergate Road	Clergate Road	SB	SBL	0	0	0	0	The OD demand for the TAZ connected through the SB approach of this intersection is very low (almost zero) as a results SB approach has zero/one volume.
	Pearce Lane	EB	SBR	0	1	0	1	
	Pearce Lane	WB	EBL	2	0	2	0	
			EBT	5	11	6	13	
	Pearce Lane	WB	WBT	12	3	15	4	
			WBR	0	0	0	0	
Dawson Gates Road / Clergate Road	Clergate Road	NB	NBL	0	0	0	0	No growth predicted in TAZs on left side of the intersection and therefore NBL and EBR movements shows zero volume.
	Clergate Road	SB	NBT	3	10	3	12	
	Clergate Road	SB	SBT	10	2	12	3	
			SBR	2	2	4	2	
	Dawson Gates Road	EB	EBL	4	1	4	1	
			EBR	0	0	0	0	
Dawson Gates Road / Burrendong Way	Burrendong Way	NB	NBT	47	79	116	73	Growth predicted in the TAZs on right side of this intersection is very low, as a results NBR movments has zero volume in PM peak and negligible in AM peak.
	Burrendong Way	SB	NBR	2	0	8	0	
	Burrendong Way	SB	SBL	47	23	48	23	
			SBT	102	46	122	56	
	Dawson Gates Road	WB	WBL	1	3	1	10	
			WBR	14	37	39	32	

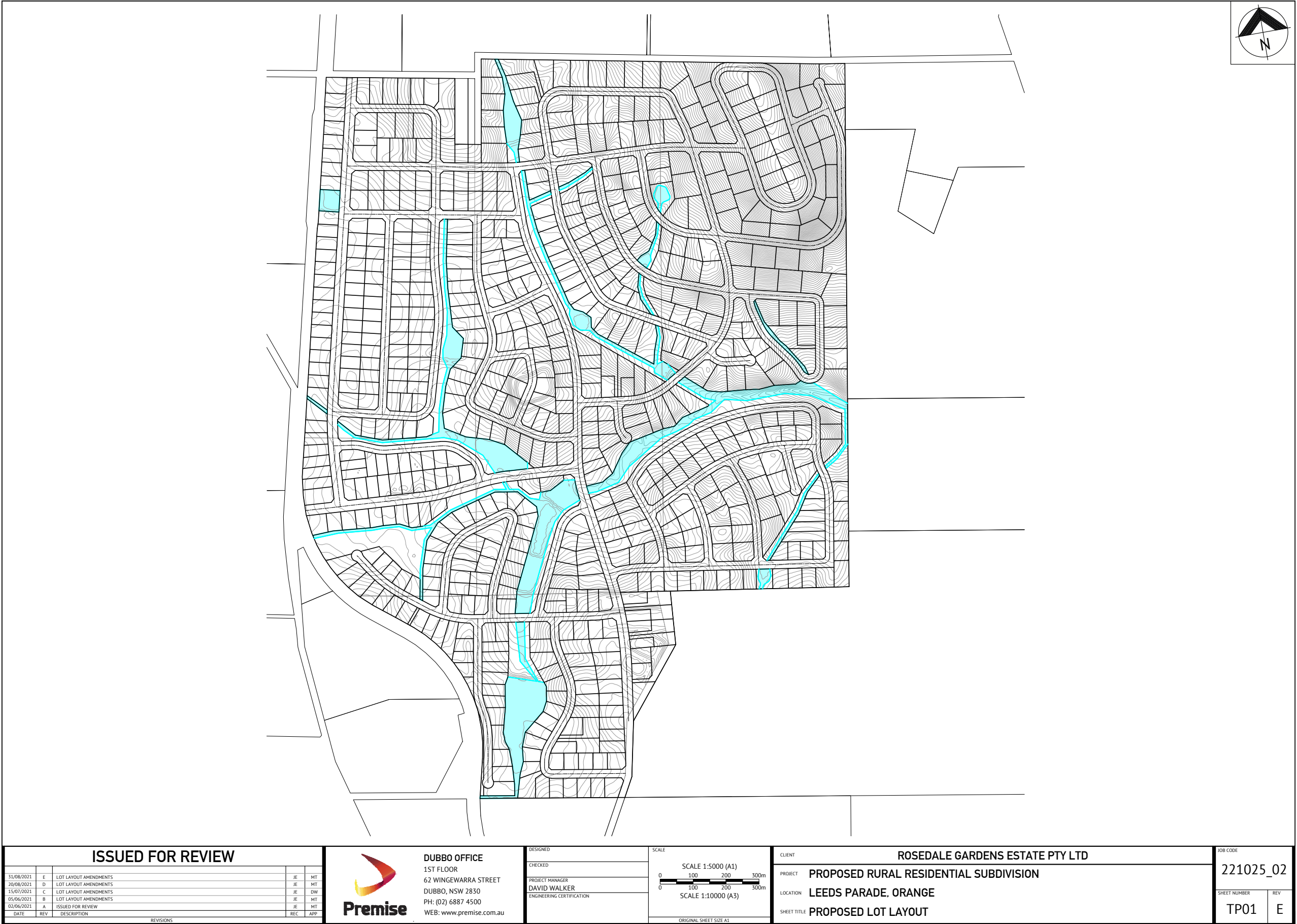


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Appendix B

Masterplan





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Appendix C

Guidelines for Assessing Intersection Performance

The *RTA Guide to Traffic Generating Developments* (October 2002, Issue 2.2), details the assessment of intersections. The assessment of the level of service of an intersection is based on the evaluation of the following Measures of Effectiveness:

- Average delay (seconds/veh) (all forms of control)
- Delay to critical movement (seconds/veh) (all forms of control)
- Degree of saturation (traffic signals and roundabouts)
- Cycle length (traffic signals)

SIDRA was used to calculate the relevant intersection parameters. The SIDRA software is an advanced lane-based micro-analytical tool for design and evaluation of individual intersections and networks of intersections including modelling of separate movement classes (light vehicles, heavy vehicles, buses, cyclists, large trucks, light rail / trams and so on). It provides estimates of capacity, level of service and a wide range of performance measures, including; delay, queue length and stops for vehicles and pedestrians, as well as fuel consumption, pollution emissions and operating costs.

It can be used to analyse signalised intersections (fixed-time / pretimed and actuated), signalised and unsignalised pedestrian crossings, roundabouts (unsignalised), roundabouts with metering signals, fully-signalised roundabouts, two-way stop sign and give-way / yield sign control, all-way stop sign control, single point interchanges (signalised), freeway diamond interchanges (signalised, roundabout, sign control), diverging diamond interchanges and other alternative intersections and interchanges. It can also be used for uninterrupted traffic flow conditions and merge analysis.

The best indicator of the level of service at an intersection is the average delay experienced by vehicles at that intersection. For traffic signals, the average delay over all movements should be taken. For roundabouts and priority control intersections (with Stop and Give Way signs or operating under the T-junction rule) the critical movement for level of service assessment should be that with the highest average delay.

With traffic signals, delays per approach tend to be equalised, subject to any over-riding requirements of signal co-ordination as well as to variations within individual movements. With roundabouts and priority - control intersections, the critical criterion for assessment is the movement with the highest delay per vehicle. With this type of control the volume balance might be such that some movements suffer high levels of delay while other movements have minimal delay. An overall average delay for the intersection of 25 seconds might not be satisfactory if the average delay on one movement is 60 seconds.

The average delay for level of service E should be no more than 70 seconds. The accepted maximum practical cycle length for traffic signals under saturated conditions is 120 - 140 seconds. Under these conditions 120 seconds is near maximum for two and three phase intersections and 140 seconds near maximum for more complex phase designs. Drivers and pedestrians expect cycle lengths of these magnitudes and their inherent delays in peak hours. A cycle length of 140 seconds for an intersection which is almost saturated has an average vehicle delay of about 70 seconds, although this can vary. If the average vehicle delay is more than 70 seconds, the intersection is assumed to be at Level of Service F.

Table 16 sets out average delays for different levels of service. There is no consistent correlation between definitions of levels of service for road links as defined elsewhere in this section, and the ranges set out in Table 16. In assigning a level of service, the average delay to the motoring public needs to be considered, keeping in mind the location of the intersection. For example, drivers in inner urban areas of Sydney have a higher tolerance of delay than drivers in country areas. Table 16 provides a recommended baseline for assessment.

Planning Proposal to amend the Orange Environmental Plan 2011, Leeds Parade, Clergate
Traffic Impact Assessment

Table 16: Level of Service Criteria for Intersections

Level of Service	Average Delay per Vehicle (sec/veh)	Traffic Signals, Roundabouts	Give Way and Stop Signs
A	Less than 14	Good operation	Good operation
B	15 - 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 - 42	Satisfactory	Satisfactory, but accident study required
D	43 - 56	Operating near capacity	Near capacity and accident study required
E	57 - 70	At capacity Signals, incidents will cause excessive delays Roundabouts require other control mode	At capacity, require other control mode

The figures in Table 16 are intended as a guide only. Any particular assessment should take into account site-specific factors including maximum queue lengths (and their effect on lane blocking), the influence of nearby intersections and the sensitivity of the location to delays. In many situations, a comparison of the current and future average delay provides a better appreciation of the impact of a proposal, and not simply the change in the level of service.

Planning Proposal to amend the Orange Environmental Plan 2011, Leeds Parade, Clergate
Traffic Impact Assessment

Appendix D

SIDRA Results

SITE LAYOUT

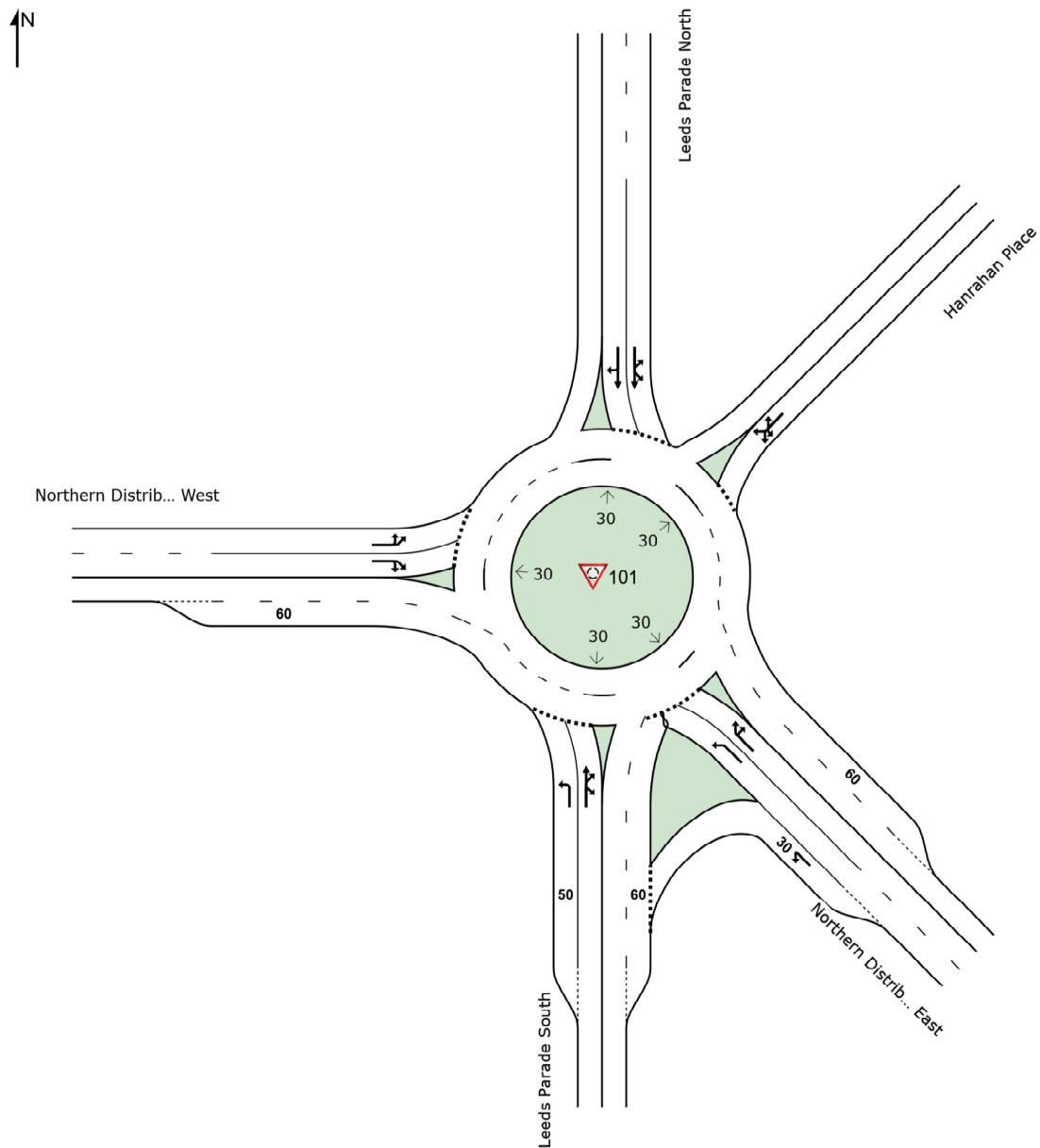
 **Site: 101 [Northern Distributor Road / Leeds Parade (Site Folder: General)]**

AM Peak - Strategic Model Volumes 2028

Site Category: (None)

Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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MOVEMENT SUMMARY

 **Site: 101 [Northern Distributor Road / Leeds Parade (Site Folder: General)]**

AM Peak - Strategic Model Volumes 2028

Site Category: (None)

Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Leeds Parade South														
1	L2	183	5.0	193	5.0	0.200	5.6	LOS A	0.9	6.4	0.49	0.63	0.49	54.4
2	T1	57	5.0	60	5.0	0.239	4.9	LOS A	1.1	8.1	0.48	0.69	0.48	53.0
3a	R1	86	5.0	91	5.0	0.239	9.4	LOS A	1.1	8.1	0.48	0.69	0.48	52.6
3b	R3	116	5.0	122	5.0	0.239	11.8	LOS B	1.1	8.1	0.48	0.69	0.48	54.0
Approach		442	5.0	465	5.0	0.239	7.9	LOS A	1.1	8.1	0.48	0.66	0.48	53.8
SouthEast: Northern Distributor Road East														
21b	L3	27	5.0	28	5.0	0.019	4.7	LOS A	0.1	0.6	0.36	0.50	0.36	54.5
21a	L1	290	5.0	305	5.0	0.217	4.6	LOS A	1.2	8.6	0.49	0.48	0.49	55.7
23a	R1	31	5.0	33	5.0	0.034	9.5	LOS A	0.1	1.1	0.46	0.64	0.46	52.6
23	R2	1	5.0	1	5.0	0.034	10.7	LOS B	0.1	1.1	0.46	0.64	0.46	53.3
Approach		349	5.0	367	5.0	0.217	5.1	LOS A	1.2	8.6	0.47	0.50	0.47	55.3
NorthEast: Hanrahan Place														
24	L2	1	5.0	1	5.0	0.128	9.4	LOS A	0.7	5.1	0.74	0.82	0.74	51.0
24a	L1	32	5.0	34	5.0	0.128	8.5	LOS A	0.7	5.1	0.74	0.82	0.74	52.0
26a	R1	34	5.0	36	5.0	0.128	12.9	LOS B	0.7	5.1	0.74	0.82	0.74	52.1
26b	R3	7	5.0	7	5.0	0.128	15.3	LOS B	0.7	5.1	0.74	0.82	0.74	53.4
Approach		74	5.0	78	5.0	0.128	11.2	LOS B	0.7	5.1	0.74	0.82	0.74	52.2
North: Leeds Parade North														
7b	L3	4	5.0	4	5.0	0.055	7.5	LOS A	0.2	1.7	0.65	0.72	0.65	52.7
7a	L1	15	5.0	16	5.0	0.055	8.1	LOS A	0.2	1.7	0.65	0.72	0.65	54.6
8	T1	30	5.0	32	5.0	0.108	6.9	LOS A	0.5	3.8	0.65	0.75	0.65	53.5
9	R2	69	5.0	73	5.0	0.108	11.9	LOS B	0.5	3.8	0.66	0.78	0.66	52.7
Approach		118	5.0	124	5.0	0.108	10.0	LOS A	0.5	3.8	0.65	0.76	0.65	53.1
West: Northern Distributor Road West														
10	L2	17	5.0	18	5.0	0.190	5.9	LOS A	0.9	6.4	0.49	0.57	0.49	54.4
10a	L1	119	5.0	125	5.0	0.190	5.4	LOS A	0.9	6.4	0.49	0.57	0.49	55.7
12a	R1	412	5.0	434	5.0	0.565	9.9	LOS A	4.2	30.9	0.61	0.72	0.62	51.8
12	R2	244	5.0	257	5.0	0.565	11.1	LOS B	4.2	30.9	0.61	0.72	0.62	52.4
Approach		792	5.0	834	5.0	0.565	9.5	LOS A	4.2	30.9	0.59	0.69	0.60	52.6
All Vehicles		1775	5.0	1868	5.0	0.565	8.3	LOS A	4.2	30.9	0.55	0.66	0.55	53.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Northern Distributor Road / Leeds Parade (Site Folder: General)]**

AM Peak - Future Volumes 2028

Site Category: (None)

Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Leeds Parade South														
1	L2	187	5.0	197	5.0	0.222	6.2	LOS A	1.0	7.0	0.53	0.68	0.53	54.2
2	T1	90	5.0	95	5.0	0.282	5.2	LOS A	1.3	9.6	0.53	0.71	0.53	53.2
3a	R1	86	5.0	91	5.0	0.282	9.7	LOS A	1.3	9.6	0.53	0.71	0.53	52.8
3b	R3	116	5.0	122	5.0	0.282	12.1	LOS B	1.3	9.6	0.53	0.71	0.53	54.1
Approach		479	5.0	504	5.0	0.282	8.1	LOS A	1.3	9.6	0.53	0.70	0.53	53.8
SouthEast: Northern Distributor Road East														
21b	L3	27	5.0	28	5.0	0.020	5.3	LOS A	0.1	0.7	0.43	0.53	0.43	54.3
21a	L1	294	5.0	309	5.0	0.247	5.7	LOS A	1.5	10.7	0.62	0.57	0.62	55.0
23a	R1	41	5.0	43	5.0	0.049	10.4	LOS B	0.2	1.7	0.57	0.70	0.57	52.2
23	R2	1	5.0	1	5.0	0.049	11.6	LOS B	0.2	1.7	0.57	0.70	0.57	52.9
Approach		363	5.0	382	5.0	0.247	6.2	LOS A	1.5	10.7	0.60	0.58	0.60	54.6
NorthEast: Hanrahan Place														
24	L2	1	5.0	1	5.0	0.157	11.9	LOS B	0.9	6.3	0.81	0.90	0.81	49.4
24a	L1	32	5.0	34	5.0	0.157	11.2	LOS B	0.9	6.3	0.81	0.90	0.81	50.3
26a	R1	34	5.0	36	5.0	0.157	15.3	LOS B	0.9	6.3	0.81	0.90	0.81	50.4
26b	R3	7	5.0	7	5.0	0.157	17.7	LOS B	0.9	6.3	0.81	0.90	0.81	51.7
Approach		74	5.0	78	5.0	0.157	13.7	LOS B	0.9	6.3	0.81	0.90	0.81	50.5
North: Leeds Parade North														
7b	L3	4	5.0	4	5.0	0.185	8.0	LOS A	0.8	6.1	0.70	0.80	0.70	52.3
7a	L1	54	5.0	57	5.0	0.185	8.8	LOS A	0.8	6.1	0.70	0.80	0.70	54.3
8	T1	161	5.0	169	5.0	0.362	7.4	LOS A	2.0	14.9	0.74	0.82	0.76	53.1
9	R2	161	5.0	169	5.0	0.362	12.7	LOS B	2.0	14.9	0.76	0.83	0.78	52.8
Approach		380	5.0	400	5.0	0.362	9.8	LOS A	2.0	14.9	0.74	0.82	0.76	53.2
West: Northern Distributor Road West														
10	L2	40	5.0	42	5.0	0.231	6.2	LOS A	1.1	8.1	0.53	0.62	0.53	54.2
10a	L1	119	5.0	125	5.0	0.231	5.8	LOS A	1.1	8.1	0.53	0.62	0.53	55.5
12a	R1	428	5.0	451	5.0	0.615	10.8	LOS B	5.4	39.4	0.69	0.78	0.75	51.5
12	R2	260	5.0	274	5.0	0.615	12.0	LOS B	5.4	39.4	0.69	0.78	0.75	52.2
Approach		847	5.0	892	5.0	0.615	10.2	LOS B	5.4	39.4	0.66	0.75	0.71	52.4
All Vehicles		2143	5.0	2256	5.0	0.615	9.1	LOS A	5.4	39.4	0.64	0.73	0.66	53.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Northern Distributor Road / Leeds Parade (Site Folder: General)]**

PM Peak - Strategic Model Volumes 2028

Site Category: (None)

Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Leeds Parade South														
1	L2	232	5.0	244	5.0	0.239	6.3	LOS A	1.1	8.2	0.57	0.66	0.57	54.1
2	T1	23	5.0	24	5.0	0.143	6.1	LOS A	0.6	4.3	0.57	0.76	0.57	53.0
3a	R1	58	5.0	61	5.0	0.143	10.6	LOS B	0.6	4.3	0.57	0.76	0.57	52.6
3b	R3	22	5.0	23	5.0	0.143	13.0	LOS B	0.6	4.3	0.57	0.76	0.57	53.9
Approach		335	5.0	353	5.0	0.239	7.5	LOS A	1.1	8.2	0.57	0.69	0.57	53.7
SouthEast: Northern Distributor Road East														
21b	L3	55	5.0	58	5.0	0.039	4.9	LOS A	0.2	1.2	0.36	0.53	0.36	54.5
21a	L1	404	5.0	425	5.0	0.322	5.9	LOS A	1.9	13.8	0.60	0.57	0.60	55.1
23a	R1	13	5.0	14	5.0	0.015	10.1	LOS B	0.1	0.5	0.52	0.64	0.52	52.4
23	R2	1	5.0	1	5.0	0.015	11.3	LOS B	0.1	0.5	0.52	0.64	0.52	53.0
Approach		473	5.0	498	5.0	0.322	5.9	LOS A	1.9	13.8	0.57	0.57	0.57	55.0
NorthEast: Hanrahan Place														
24	L2	1	5.0	1	5.0	0.178	7.7	LOS A	0.8	6.2	0.64	0.79	0.64	51.7
24a	L1	48	5.0	51	5.0	0.178	7.5	LOS A	0.8	6.2	0.64	0.79	0.64	52.7
26a	R1	73	5.0	77	5.0	0.178	11.8	LOS B	0.8	6.2	0.64	0.79	0.64	52.8
26b	R3	4	5.0	4	5.0	0.178	14.2	LOS B	0.8	6.2	0.64	0.79	0.64	54.1
Approach		126	5.0	133	5.0	0.178	10.2	LOS B	0.8	6.2	0.64	0.79	0.64	52.8
North: Leeds Parade North														
7b	L3	5	5.0	5	5.0	0.104	6.7	LOS A	0.4	3.1	0.56	0.66	0.56	53.1
7a	L1	39	5.0	41	5.0	0.104	6.7	LOS A	0.4	3.1	0.56	0.66	0.56	55.1
8	T1	65	5.0	68	5.0	0.204	6.3	LOS A	0.9	6.9	0.56	0.71	0.56	53.9
9	R2	161	5.0	169	5.0	0.204	11.3	LOS B	0.9	6.9	0.56	0.75	0.56	53.0
Approach		270	5.0	284	5.0	0.204	9.4	LOS A	0.9	6.9	0.56	0.73	0.56	53.5
West: Northern Distributor Road West														
10	L2	48	5.0	51	5.0	0.167	4.5	LOS A	0.8	5.7	0.31	0.44	0.31	55.2
10a	L1	102	5.0	107	5.0	0.167	4.0	LOS A	0.8	5.7	0.31	0.44	0.31	56.5
12a	R1	252	5.0	265	5.0	0.373	8.6	LOS A	2.3	16.9	0.33	0.60	0.33	52.7
12	R2	250	5.0	263	5.0	0.373	9.8	LOS A	2.3	16.9	0.33	0.60	0.33	53.3
Approach		652	5.0	686	5.0	0.373	8.0	LOS A	2.3	16.9	0.33	0.57	0.33	53.7
All Vehicles		1856	5.0	1954	5.0	0.373	7.7	LOS A	2.3	16.9	0.49	0.63	0.49	53.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Northern Distributor Road / Leeds Parade (Site Folder: General)]**

PM Peak - Future Volumes 2028

Site Category: (None)

Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Leeds Parade South														
1	L2	245	5.0	258	5.0	0.259	6.7	LOS A	1.2	8.9	0.60	0.68	0.60	54.0
2	T1	127	5.0	134	5.0	0.265	6.2	LOS A	1.2	8.7	0.61	0.71	0.61	53.9
3a	R1	58	5.0	61	5.0	0.265	10.7	LOS B	1.2	8.7	0.61	0.71	0.61	53.5
3b	R3	22	5.0	23	5.0	0.265	13.0	LOS B	1.2	8.7	0.61	0.71	0.61	54.9
Approach		452	5.0	476	5.0	0.265	7.4	LOS A	1.2	8.9	0.61	0.69	0.61	54.0
SouthEast: Northern Distributor Road East														
21b	L3	55	5.0	58	5.0	0.040	5.1	LOS A	0.2	1.3	0.40	0.54	0.40	54.4
21a	L1	417	5.0	439	5.0	0.349	6.5	LOS A	2.2	15.9	0.66	0.61	0.66	54.9
23a	R1	44	5.0	46	5.0	0.052	10.5	LOS B	0.2	1.8	0.57	0.70	0.57	52.2
23	R2	1	5.0	1	5.0	0.052	11.7	LOS B	0.2	1.8	0.57	0.70	0.57	52.9
Approach		517	5.0	544	5.0	0.349	6.7	LOS A	2.2	15.9	0.62	0.61	0.62	54.6
NorthEast: Hanrahan Place														
24	L2	1	5.0	1	5.0	0.194	8.3	LOS A	1.0	7.0	0.69	0.83	0.69	51.3
24a	L1	48	5.0	51	5.0	0.194	8.2	LOS A	1.0	7.0	0.69	0.83	0.69	52.3
26a	R1	73	5.0	77	5.0	0.194	12.4	LOS B	1.0	7.0	0.69	0.83	0.69	52.4
26b	R3	4	5.0	4	5.0	0.194	14.8	LOS B	1.0	7.0	0.69	0.83	0.69	53.7
Approach		126	5.0	133	5.0	0.194	10.8	LOS B	1.0	7.0	0.69	0.83	0.69	52.4
North: Leeds Parade North														
7b	L3	5	5.0	5	5.0	0.143	6.8	LOS A	0.6	4.5	0.59	0.68	0.59	52.9
7a	L1	52	5.0	55	5.0	0.143	6.8	LOS A	0.6	4.5	0.59	0.68	0.59	54.9
8	T1	110	5.0	116	5.0	0.280	6.4	LOS A	1.4	10.4	0.61	0.73	0.61	53.7
9	R2	192	5.0	202	5.0	0.280	11.5	LOS B	1.4	10.4	0.62	0.76	0.62	53.1
Approach		359	5.0	378	5.0	0.280	9.2	LOS A	1.4	10.4	0.61	0.74	0.61	53.5
West: Northern Distributor Road West														
10	L2	121	5.0	127	5.0	0.248	5.2	LOS A	1.3	9.3	0.46	0.55	0.46	54.5
10a	L1	102	5.0	107	5.0	0.248	4.7	LOS A	1.3	9.3	0.46	0.55	0.46	55.8
12a	R1	257	5.0	271	5.0	0.431	9.3	LOS A	2.8	20.5	0.51	0.67	0.51	52.1
12	R2	255	5.0	268	5.0	0.431	10.5	LOS B	2.8	20.5	0.51	0.67	0.51	52.7
Approach		735	5.0	774	5.0	0.431	8.4	LOS A	2.8	20.5	0.50	0.64	0.50	53.2
All Vehicles		2189	5.0	2304	5.0	0.431	8.1	LOS A	2.8	20.5	0.58	0.67	0.58	53.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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NDR - Leeds Parade.sip9

SITE LAYOUT

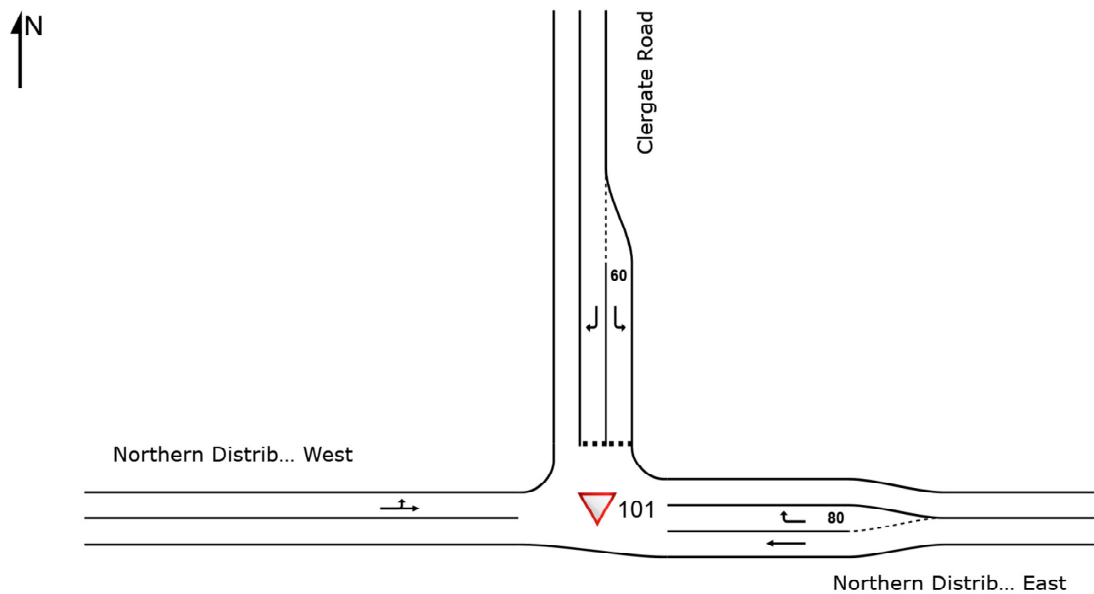
▼ Site: 101 [Northern Distributor Road / Clergate Road (Site Folder: General)]

PM Peak - Future Volumes 2028

Site Category: (None)

Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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MOVEMENT SUMMARY

▼ Site: 101 [Northern Distributor Road / Clergate Road (Site Folder: General)]

AM Peak - Strategic Model Volumes 2028

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist m				
East: Northern Distributor Road East														
5	T1	311	3.0	327	3.0	0.172	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	266	3.0	280	3.0	0.368	10.9	LOS B	1.9	13.9	0.68	0.93	0.88	49.4
Approach		577	3.0	607	3.0	0.368	5.0	NA	1.9	13.9	0.31	0.43	0.40	54.6
North: Clergate Road														
7	L2	91	3.0	96	3.0	0.113	8.4	LOS A	0.4	3.0	0.54	0.76	0.54	51.4
9	R2	301	3.0	317	3.0	1.754	710.9	LOS F	92.6	664.5	1.00	5.11	17.35	4.6
Approach		392	3.0	413	3.0	1.754	547.8	LOS F	92.6	664.5	0.89	4.10	13.45	5.9
West: Northern Distributor Road West														
10	L2	118	3.0	124	3.0	0.380	5.7	LOS A	0.0	0.0	0.00	0.10	0.00	57.1
11	T1	566	3.0	596	3.0	0.380	0.1	LOS A	0.0	0.0	0.00	0.10	0.00	58.8
Approach		684	3.0	720	3.0	0.380	1.1	NA	0.0	0.0	0.00	0.10	0.00	58.5
All Vehicles		1653	3.0	1740	3.0	1.754	132.1	NA	92.6	664.5	0.32	1.16	3.33	18.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▼ Site: 101 [Northern Distributor Road / Clergate Road (Site Folder: General)]

AM Peak - Future Volumes 2028

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist m				
East: Northern Distributor Road East														
5	T1	403	3.0	424	3.0	0.223	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	274	3.0	288	3.0	0.403	11.6	LOS B	2.2	15.5	0.71	0.96	0.97	48.9
Approach		677	3.0	713	3.0	0.403	4.7	NA	2.2	15.5	0.29	0.39	0.39	54.9
North: Clergate Road														
7	L2	123	3.0	129	3.0	0.158	8.7	LOS A	0.6	4.3	0.56	0.79	0.56	51.2
9	R2	315	3.0	332	3.0	2.374	1266.5	LOS F	128.4	921.8	1.00	5.38	18.97	2.7
Approach		438	3.0	461	3.0	2.374	913.3	LOS F	128.4	921.8	0.88	4.09	13.80	3.7
West: Northern Distributor Road West														
10	L2	129	3.0	136	3.0	0.399	5.7	LOS A	0.0	0.0	0.00	0.11	0.00	57.1
11	T1	589	3.0	620	3.0	0.399	0.1	LOS A	0.0	0.0	0.00	0.11	0.00	58.8
Approach		718	3.0	756	3.0	0.399	1.1	NA	0.0	0.0	0.00	0.11	0.00	58.5
All Vehicles		1833	3.0	1929	3.0	2.374	220.4	NA	128.4	921.8	0.32	1.16	3.44	12.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▼ Site: 101 [Northern Distributor Road / Clergate Road (Site Folder: General)]

PM Peak - Strategic Model Volumes 2028

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist m				
East: Northern Distributor Road East														
5	T1	598	3.0	629	3.0	0.331	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
6	R2	273	3.0	287	3.0	0.279	8.2	LOS A	1.3	9.6	0.58	0.78	0.60	51.3
Approach		871	3.0	917	3.0	0.331	2.6	NA	1.3	9.6	0.18	0.24	0.19	56.8
North: Clergate Road														
7	L2	192	3.0	202	3.0	0.187	7.3	LOS A	0.8	5.6	0.47	0.69	0.47	52.0
9	R2	220	3.0	232	3.0	1.540	529.7	LOS F	57.3	411.5	1.00	3.93	12.94	6.0
Approach		412	3.0	434	3.0	1.540	286.3	LOS F	57.3	411.5	0.75	2.42	7.13	10.3
West: Northern Distributor Road West														
10	L2	99	3.0	104	3.0	0.271	5.6	LOS A	0.0	0.0	0.00	0.12	0.00	57.1
11	T1	388	3.0	408	3.0	0.271	0.1	LOS A	0.0	0.0	0.00	0.12	0.00	58.8
Approach		487	3.0	513	3.0	0.271	1.2	NA	0.0	0.0	0.00	0.12	0.00	58.4
All Vehicles		1770	3.0	1863	3.0	1.540	68.3	NA	57.3	411.5	0.26	0.72	1.75	27.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▼ Site: 101 [Northern Distributor Road / Clergate Road (Site Folder: General)]

PM Peak - Future Volumes 2028

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist m				
East: Northern Distributor Road East														
5	T1	629	3.0	662	3.0	0.349	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
6	R2	298	3.0	314	3.0	0.356	9.7	LOS A	1.9	13.9	0.65	0.91	0.80	50.2
Approach		927	3.0	976	3.0	0.356	3.2	NA	1.9	13.9	0.21	0.29	0.26	56.3
North: Clergate Road														
7	L2	203	3.0	214	3.0	0.217	7.9	LOS A	0.9	6.4	0.52	0.74	0.52	51.8
9	R2	225	3.0	237	3.0	2.116	1044.7	LOS F	85.4	613.4	1.00	4.31	14.89	3.2
Approach		428	3.0	451	3.0	2.116	552.9	LOS F	85.4	613.4	0.77	2.62	8.08	5.8
West: Northern Distributor Road West														
10	L2	133	3.0	140	3.0	0.331	5.7	LOS A	0.0	0.0	0.00	0.13	0.00	56.9
11	T1	461	3.0	485	3.0	0.331	0.1	LOS A	0.0	0.0	0.00	0.13	0.00	58.6
Approach		594	3.0	625	3.0	0.331	1.4	NA	0.0	0.0	0.00	0.13	0.00	58.2
All Vehicles		1949	3.0	2052	3.0	2.116	123.4	NA	85.4	613.4	0.27	0.75	1.90	19.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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SITE LAYOUT

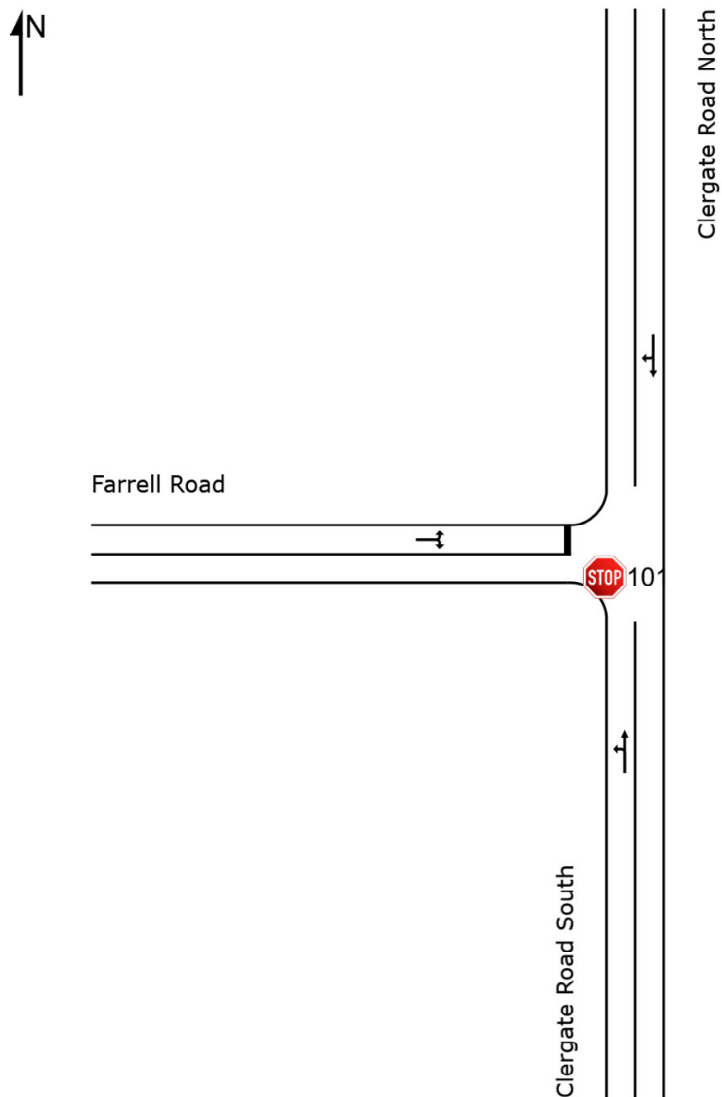
 **Site: 101 [Clergate Road / Farrell Road (Site Folder: General)]**

AM Peak - Strategic Model Volumes 2028

Site Category: (None)

Stop (Two-Way)

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MOVEMENT SUMMARY

 **Site: 101 [Clergate Road / Farrell Road (Site Folder: General)]**

AM Peak - Strategic Model Volumes 2028

Site Category: (None)

Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist m				
South: Clergate Road South														
1	L2	30	3.0	32	3.0	0.229	5.6	LOS A	0.0	0.0	0.00	0.04	0.00	57.7
2	T1	384	3.0	404	3.0	0.229	0.1	LOS A	0.0	0.0	0.00	0.04	0.00	59.5
Approach		414	3.0	436	3.0	0.229	0.5	NA	0.0	0.0	0.00	0.04	0.00	59.4
North: Clergate Road North														
8	T1	363	3.0	382	3.0	0.221	0.2	LOS A	0.3	1.9	0.08	0.04	0.08	59.3
9	R2	22	3.0	23	3.0	0.221	7.7	LOS A	0.3	1.9	0.08	0.04	0.08	57.0
Approach		385	3.0	405	3.0	0.221	0.6	NA	0.3	1.9	0.08	0.04	0.08	59.2
West: Farrell Road														
10	L2	214	3.0	225	3.0	0.320	10.9	LOS B	1.5	10.8	0.55	0.98	0.62	50.0
12	R2	29	3.0	31	3.0	0.320	15.9	LOS C	1.5	10.8	0.55	0.98	0.62	49.6
Approach		243	3.0	256	3.0	0.320	11.5	LOS B	1.5	10.8	0.55	0.98	0.62	50.0
All Vehicles		1042	3.0	1097	3.0	0.320	3.1	NA	1.5	10.8	0.16	0.26	0.17	56.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Clergate Road / Farrell Road (Site Folder: General)]**

AM Peak - Future Volumes 2028

Site Category: (None)

Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist m				
South: Clergate Road South														
1	L2	30	3.0	32	3.0	0.235	5.6	LOS A	0.0	0.0	0.00	0.04	0.00	57.7
2	T1	395	3.0	416	3.0	0.235	0.1	LOS A	0.0	0.0	0.00	0.04	0.00	59.5
Approach		425	3.0	447	3.0	0.235	0.5	NA	0.0	0.0	0.00	0.04	0.00	59.4
North: Clergate Road North														
8	T1	408	3.0	429	3.0	0.327	1.0	LOS A	1.4	10.0	0.30	0.14	0.32	57.7
9	R2	106	3.0	112	3.0	0.327	8.1	LOS A	1.4	10.0	0.30	0.14	0.32	55.4
Approach		514	3.0	541	3.0	0.327	2.4	NA	1.4	10.0	0.30	0.14	0.32	57.2
West: Farrell Road														
10	L2	235	3.0	247	3.0	0.369	11.4	LOS B	1.9	13.5	0.57	1.02	0.71	49.5
12	R2	29	3.0	31	3.0	0.369	19.7	LOS C	1.9	13.5	0.57	1.02	0.71	49.1
Approach		264	3.0	278	3.0	0.369	12.3	LOS B	1.9	13.5	0.57	1.02	0.71	49.5
All Vehicles		1203	3.0	1266	3.0	0.369	3.9	NA	1.9	13.5	0.25	0.30	0.29	56.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).


HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Clergate Road / Farrell Road (Site Folder: General)]**

PM Peak - Strategic Model Volumes 2028

Site Category: (None)

Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist m				
South: Clergate Road South														
1	L2	16	3.0	17	3.0	0.205	5.6	LOS A	0.0	0.0	0.00	0.03	0.00	57.9
2	T1	356	3.0	375	3.0	0.205	0.1	LOS A	0.0	0.0	0.00	0.03	0.00	59.7
Approach		372	3.0	392	3.0	0.205	0.3	NA	0.0	0.0	0.00	0.03	0.00	59.6
North: Clergate Road North														
8	T1	400	3.0	421	3.0	0.354	1.1	LOS A	1.8	13.0	0.35	0.19	0.38	57.2
9	R2	149	3.0	157	3.0	0.354	7.8	LOS A	1.8	13.0	0.35	0.19	0.38	55.0
Approach		549	3.0	578	3.0	0.354	2.9	NA	1.8	13.0	0.35	0.19	0.38	56.5
West: Farrell Road														
10	L2	36	3.0	38	3.0	0.075	9.9	LOS A	0.3	1.9	0.49	0.91	0.49	49.9
12	R2	11	3.0	12	3.0	0.075	16.6	LOS C	0.3	1.9	0.49	0.91	0.49	49.5
Approach		47	3.0	49	3.0	0.075	11.5	LOS B	0.3	1.9	0.49	0.91	0.49	49.8
All Vehicles		968	3.0	1019	3.0	0.354	2.3	NA	1.8	13.0	0.22	0.16	0.24	57.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Clergate Road / Farrell Road (Site Folder: General)]**

PM Peak - Future Volumes 2028

Site Category: (None)

Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist m				
South: Clergate Road South														
1	L2	16	3.0	17	3.0	0.225	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	57.9
2	T1	392	3.0	413	3.0	0.225	0.1	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
Approach		408	3.0	429	3.0	0.225	0.3	NA	0.0	0.0	0.00	0.02	0.00	59.6
North: Clergate Road North														
8	T1	415	3.0	437	3.0	0.396	1.6	LOS A	2.5	18.0	0.42	0.23	0.50	56.7
9	R2	178	3.0	187	3.0	0.396	8.3	LOS A	2.5	18.0	0.42	0.23	0.50	54.5
Approach		593	3.0	624	3.0	0.396	3.6	NA	2.5	18.0	0.42	0.23	0.50	56.0
West: Farrell Road														
10	L2	103	3.0	108	3.0	0.161	10.4	LOS B	0.6	4.3	0.51	0.93	0.51	50.2
12	R2	11	3.0	12	3.0	0.161	19.4	LOS C	0.6	4.3	0.51	0.93	0.51	49.7
Approach		114	3.0	120	3.0	0.161	11.2	LOS B	0.6	4.3	0.51	0.93	0.51	50.1
All Vehicles		1115	3.0	1174	3.0	0.396	3.2	NA	2.5	18.0	0.27	0.22	0.32	56.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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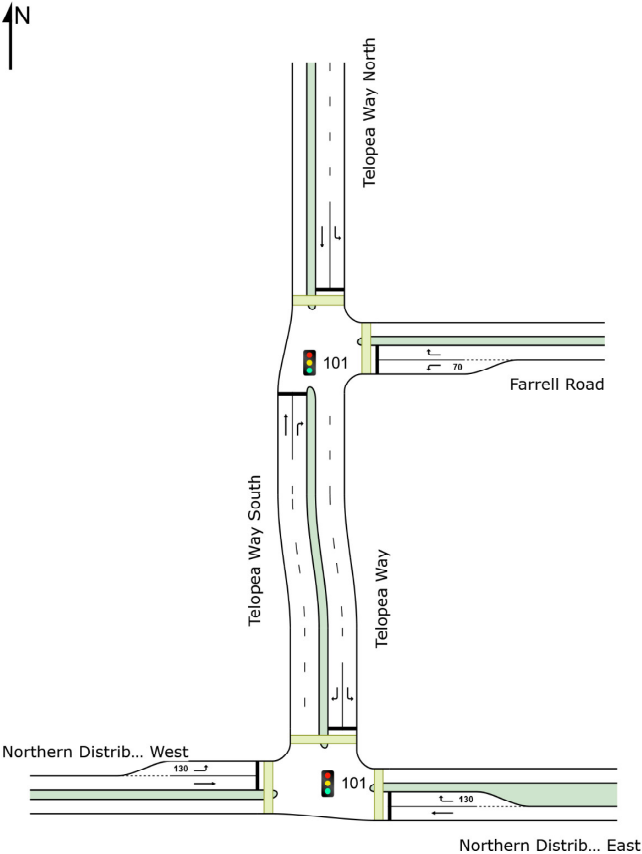
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NETWORK LAYOUT

Network: N101 [Telopea Way / Farrell Road / Northern Distributor Road (Network Folder: General)]

New Network
Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	CCG ID	Site Name
101	NA	Farrell Road / Telopea Way
101	NA	Telopea Way / Northern Distributor Road

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MOVEMENT SUMMARY

 Site: 101 [Farrell Road / Telopea Way (Site Folder: General)]

 Network: N101 [Telopea Way / Farrell Road / Northern Distributor Road (Network Folder: General)]

AM Peak - Strategic Model Volumes 2028

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 50 seconds (Network Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total HV veh/h]	[HV %]				[Veh. veh]	[Dist m]				
South: Telopea Way South														
2	T1	146	3.0	146	3.0	0.120	3.6	LOS A	0.8	5.8	0.39	0.32	0.39	54.0
3	R2	174	3.0	174	3.0	* 0.398	14.7	LOS B	1.7	12.4	0.67	0.71	0.67	39.5
Approach		320	3.0	320	3.0	0.398	9.6	LOS A	1.7	12.4	0.54	0.53	0.54	45.0
East: Farrell Road														
4	L2	161	3.0	161	3.0	0.261	14.2	LOS B	1.5	10.6	0.63	0.74	0.63	41.2
6	R2	21	3.0	21	3.0	0.096	28.0	LOS C	0.3	2.1	0.92	0.69	0.92	40.1
Approach		182	3.0	182	3.0	0.261	15.8	LOS B	1.5	10.6	0.66	0.73	0.66	41.0
North: Telopea Way North														
7	L2	31	3.0	31	3.0	* 0.140	28.3	LOS C	0.4	3.1	0.93	0.71	0.93	40.2
8	T1	143	3.0	143	3.0	* 0.378	16.5	LOS B	1.8	13.1	0.85	0.69	0.85	39.1
Approach		174	3.0	174	3.0	0.378	18.6	LOS B	1.8	13.1	0.86	0.69	0.86	39.4
All Vehicles		676	3.0	676	3.0	0.398	13.6	LOS B	1.8	13.1	0.66	0.63	0.66	42.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m					
East: Farrell Road											
P2	Full	53	19.4	LOS B	0.1	0.1	0.88	0.88	183.9	213.9	1.16
North: Telopea Way North											
P3	Full	53	19.4	LOS B	0.1	0.1	0.88	0.88	183.9	213.9	1.16
All Pedestrians		105	19.4	LOS B	0.1	0.1	0.88	0.88	183.9	213.9	1.16

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

 Site: 101 [Farrell Road / Telopea Way (Site Folder: General)]

 Network: N101 [Telopea Way / Farrell Road / Northern Distributor Road (Network Folder: General)]

AM Peak - Future Volumes 2028

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 50 seconds (Network Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total HV veh/h]	[HV %]				[Veh. veh]	[Dist m]				
South: Telopea Way South														
2	T1	204	3.0	204	3.0	0.167	3.7	LOS A	1.2	8.4	0.40	0.34	0.40	53.8
3	R2	174	3.0	174	3.0	* 0.434	7.0	LOS A	0.7	5.4	0.29	0.60	0.29	47.0
Approach		378	3.0	378	3.0	0.434	5.2	LOS A	1.2	8.4	0.35	0.46	0.35	50.5
East: Farrell Road														
4	L2	192	3.0	192	3.0	0.365	15.4	LOS B	1.9	13.9	0.69	0.76	0.69	40.1
6	R2	78	3.0	78	3.0	* 0.357	29.2	LOS C	1.2	8.3	0.96	0.75	0.96	39.6
Approach		269	3.0	269	3.0	0.365	19.4	LOS B	1.9	13.9	0.77	0.76	0.77	39.9
North: Telopea Way North														
7	L2	45	3.0	45	3.0	0.207	28.6	LOS C	0.7	4.7	0.94	0.73	0.94	40.0
8	T1	158	3.0	158	3.0	* 0.438	16.2	LOS B	2.0	14.5	0.85	0.70	0.85	39.3
Approach		203	3.0	203	3.0	0.438	18.9	LOS B	2.0	14.5	0.87	0.71	0.87	39.6
All Vehicles		851	3.0	851	3.0	0.438	13.0	LOS B	2.0	14.5	0.61	0.61	0.61	43.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m					
East: Farrell Road											
P2	Full	53	19.4	LOS B	0.1	0.1	0.88	0.88	183.9	213.9	1.16
North: Telopea Way North											
P3	Full	53	19.4	LOS B	0.1	0.1	0.88	0.88	183.9	213.9	1.16
All Pedestrians		105	19.4	LOS B	0.1	0.1	0.88	0.88	183.9	213.9	1.16

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

 Site: 101 [Farrell Road / Telopea Way (Site Folder: General)]

 Network: N101 [Telopea Way / Farrell Road / Northern Distributor Road (Network Folder: General)]

PM Peak - Strategic Model Volumes 2028

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 40 seconds (Network Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total HV veh/h]	[%]				[Veh. veh]	[Dist m]				
South: Telopea Way South														
2	T1	332	3.0	332	3.0	0.315	4.3	LOS A	1.6	11.7	0.43	0.36	0.43	52.8
3	R2	123	3.0	123	3.0	* 0.452	20.9	LOS C	1.4	10.2	0.92	0.76	0.92	35.1
Approach		455	3.0	455	3.0	0.452	8.8	LOS A	1.6	11.7	0.56	0.47	0.56	46.5
East: Farrell Road														
4	L2	122	3.0	122	3.0	0.172	12.9	LOS B	0.9	6.4	0.63	0.72	0.63	42.4
6	R2	44	3.0	44	3.0	0.162	22.7	LOS C	0.5	3.6	0.90	0.72	0.90	42.6
Approach		166	3.0	166	3.0	0.172	15.5	LOS B	0.9	6.4	0.70	0.72	0.70	42.5
North: Telopea Way North														
7	L2	47	3.0	47	3.0	* 0.174	22.8	LOS C	0.5	3.8	0.91	0.72	0.91	42.7
8	T1	245	3.0	245	3.0	* 0.592	15.5	LOS B	2.8	20.2	0.93	0.79	0.97	39.9
Approach		293	3.0	293	3.0	0.592	16.7	LOS B	2.8	20.2	0.93	0.78	0.96	40.7
All Vehicles		914	3.0	914	3.0	0.592	12.6	LOS B	2.8	20.2	0.70	0.62	0.72	43.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m					
East: Farrell Road											
P2	Full	53	14.5	LOS B	0.1	0.1	0.85	0.85	179.0	213.9	1.19
North: Telopea Way North											
P3	Full	53	14.5	LOS B	0.1	0.1	0.85	0.85	179.0	213.9	1.19
All Pedestrians		105	14.5	LOS B	0.1	0.1	0.85	0.85	179.0	213.9	1.19

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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- Telopea - Farrell - NDR 210817.sip9

MOVEMENT SUMMARY

 Site: 101 [Farrell Road / Telopea Way (Site Folder: General)]

 Network: N101 [Telopea Way / Farrell Road / Northern Distributor Road (Network Folder: General)]

PM Peak - Future Volumes 2028

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 50 seconds (Network Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total HV veh/h]	[HV %]				[Veh. veh]	[Dist m]				
South: Telopea Way South														
2	T1	352	3.0	352	3.0	0.287	3.3	LOS A	1.6	11.6	0.33	0.28	0.33	54.4
3	R2	123	3.0	123	3.0	* 0.564	27.3	LOS C	1.9	13.6	0.98	0.80	1.04	31.4
Approach		475	3.0	475	3.0	0.564	9.5	LOS A	1.9	13.6	0.50	0.41	0.51	45.7
East: Farrell Road														
4	L2	133	3.0	133	3.0	0.317	18.7	LOS B	1.5	10.8	0.76	0.76	0.76	37.4
6	R2	64	3.0	64	3.0	0.294	28.9	LOS C	0.9	6.8	0.95	0.74	0.95	39.7
Approach		197	3.0	197	3.0	0.317	22.0	LOS C	1.5	10.8	0.82	0.76	0.82	38.5
North: Telopea Way North														
7	L2	93	3.0	93	3.0	* 0.425	29.5	LOS C	1.4	10.0	0.97	0.76	0.97	39.6
8	T1	292	3.0	292	3.0	* 0.597	13.5	LOS B	3.6	26.1	0.84	0.72	0.85	41.7
Approach		384	3.0	384	3.0	0.597	17.3	LOS B	3.6	26.1	0.87	0.73	0.88	40.9
All Vehicles		1056	3.0	1056	3.0	0.597	14.7	LOS B	3.6	26.1	0.69	0.59	0.70	42.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m					
East: Farrell Road											
P2	Full	53	19.4	LOS B	0.1	0.1	0.88	0.88	183.9	213.9	1.16
North: Telopea Way North											
P3	Full	53	19.4	LOS B	0.1	0.1	0.88	0.88	183.9	213.9	1.16
All Pedestrians		105	19.4	LOS B	0.1	0.1	0.88	0.88	183.9	213.9	1.16

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

 **Site: 101 [Telopea Way / Northern Distributor Road (Site Folder: General)]**

 **Network: N101 [Telopea Way / Farrell Road / Northern Distributor Road (Network Folder: General)]**

AM Peak - Strategic Model Volumes 2028

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 50 seconds (Network Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total HV veh/h]	[%]				[Veh. veh]	[Dist m]				
East: Northern Distributor Road East														
5	T1	323	3.0	323	3.0	0.264	4.2	LOS A	2.1	15.1	0.46	0.39	0.46	56.1
6	R2	85	3.0	85	3.0	* 0.406	29.4	LOS C	1.3	9.2	0.96	0.76	0.96	30.7
Approach		408	3.0	408	3.0	0.406	9.5	LOS A	2.1	15.1	0.57	0.47	0.57	51.1
North: Telopea Way														
7	L2	171	3.0	171	3.0	0.261	17.4	LOS B	2.2	16.0	0.90	0.79	0.90	37.5
9	R2	134	3.0	134	3.0	* 0.613	27.6	LOS C	2.2	15.5	1.00	0.82	1.08	31.3
Approach		304	3.0	304	3.0	0.613	21.9	LOS C	2.2	16.0	0.94	0.80	0.98	34.5
West: Northern Distributor Road West														
10	L2	235	3.0	235	3.0	0.202	9.6	LOS A	1.5	10.5	0.44	0.69	0.44	45.8
11	T1	576	3.0	576	3.0	* 0.753	16.3	LOS B	8.2	59.1	0.92	0.87	1.03	47.3
Approach		811	3.0	811	3.0	0.753	14.4	LOS B	8.2	59.1	0.78	0.82	0.86	47.1
All Vehicles		1523	3.0	1523	3.0	0.753	14.6	LOS B	8.2	59.1	0.75	0.72	0.80	46.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
East: Northern Distributor Road East											
P2	Full	53	19.4	LOS B	0.1	0.1	0.88	0.88	183.9	213.9	1.16
North: Telopea Way											
P3	Full	53	19.4	LOS B	0.1	0.1	0.88	0.88	186.5	217.2	1.16
West: Northern Distributor Road West											
P4	Full	53	19.4	LOS B	0.1	0.1	0.88	0.88	183.9	213.9	1.16
All Pedestrians		158	19.4	LOS B	0.1	0.1	0.88	0.88	184.8	215.0	1.16

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

 **Site: 101 [Telopea Way / Northern Distributor Road (Site Folder: General)]**

 **Network: N101 [Telopea Way / Farrell Road / Northern Distributor Road (Network Folder: General)]**

AM Peak - Future Volumes 2028

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 50 seconds (Network Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total HV veh/h]	[HV %]				[Veh. veh]	[Dist m]				
East: Northern Distributor Road East														
5	T1	376	3.0	376	3.0	0.307	4.4	LOS A	2.5	18.2	0.48	0.41	0.48	56.0
6	R2	143	3.0	143	3.0	* 0.656	31.0	LOS C	2.3	16.5	1.00	0.85	1.16	29.9
Approach		519	3.0	519	3.0	0.656	11.7	LOS B	2.5	18.2	0.62	0.53	0.67	49.1
North: Telopea Way														
7	L2	184	3.0	184	3.0	0.281	17.6	LOS B	2.4	17.4	0.91	0.79	0.91	37.4
9	R2	164	3.0	164	3.0	* 0.753	30.6	LOS C	2.7	19.6	1.00	0.86	1.16	29.8
Approach		348	3.0	348	3.0	0.753	23.7	LOS C	2.7	19.6	0.95	0.82	1.02	33.4
West: Northern Distributor Road West														
10	L2	235	3.0	235	3.0	0.202	9.6	LOS A	1.5	10.5	0.44	0.69	0.44	45.8
11	T1	597	3.0	597	3.0	* 0.780	17.5	LOS B	8.9	63.9	0.93	0.91	1.08	46.6
Approach		832	3.0	832	3.0	0.780	15.2	LOS B	8.9	63.9	0.79	0.85	0.90	46.5
All Vehicles		1699	3.0	1699	3.0	0.780	15.9	LOS B	8.9	63.9	0.77	0.75	0.85	44.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
East: Northern Distributor Road East											
P2	Full	53	19.4	LOS B	0.1	0.1	0.88	0.88	183.9	213.9	1.16
North: Telopea Way											
P3	Full	53	19.4	LOS B	0.1	0.1	0.88	0.88	186.5	217.2	1.16
West: Northern Distributor Road West											
P4	Full	53	19.4	LOS B	0.1	0.1	0.88	0.88	183.9	213.9	1.16
All Pedestrians		158	19.4	LOS B	0.1	0.1	0.88	0.88	184.8	215.0	1.16

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

 **Site: 101 [Telopea Way / Northern Distributor Road (Site Folder: General)]**

 **Network: N101 [Telopea Way / Farrell Road / Northern Distributor Road (Network Folder: General)]**

PM Peak - Strategic Model Volumes 2028

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 40 seconds (Network Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total veh/h]	[HV %]				[Veh. veh]	[Dist m]				
East: Northern Distributor Road East														
5	T1	624	3.0	624	3.0	0.593	6.6	LOS A	5.1	36.7	0.72	0.63	0.72	54.1
6	R2	208	3.0	208	3.0	* 0.764	27.0	LOS C	2.8	20.3	1.00	0.94	1.35	32.0
Approach		833	3.0	833	3.0	0.764	11.7	LOS B	5.1	36.7	0.79	0.71	0.87	49.2
North: Telopea Way														
7	L2	205	3.0	205	3.0	0.251	11.4	LOS B	1.9	13.4	0.78	0.76	0.78	42.5
9	R2	163	3.0	163	3.0	* 0.598	19.8	LOS B	1.9	13.8	0.93	0.80	0.98	35.9
Approach		368	3.0	368	3.0	0.598	15.1	LOS B	1.9	13.8	0.85	0.77	0.87	39.3
West: Northern Distributor Road West														
10	L2	247	3.0	247	3.0	0.250	10.7	LOS B	1.6	11.3	0.55	0.72	0.55	44.6
11	T1	342	3.0	342	3.0	* 0.715	17.1	LOS B	4.2	30.3	0.97	0.89	1.13	46.8
Approach		589	3.0	589	3.0	0.715	14.4	LOS B	4.2	30.3	0.79	0.82	0.89	46.2
All Vehicles		1791	3.0	1791	3.0	0.764	13.3	LOS B	5.1	36.7	0.80	0.76	0.88	46.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
East: Northern Distributor Road East											
P2	Full	53	14.5	LOS B	0.1	0.1	0.85	0.85	179.0	213.9	1.19
North: Telopea Way											
P3	Full	53	14.5	LOS B	0.1	0.1	0.85	0.85	181.6	217.2	1.20
West: Northern Distributor Road West											
P4	Full	53	14.5	LOS B	0.1	0.1	0.85	0.85	179.0	213.9	1.19
All Pedestrians		158	14.5	LOS B	0.1	0.1	0.85	0.85	179.9	215.0	1.20

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

 **Site: 101 [Telopea Way / Northern Distributor Road (Site Folder: General)]**

 **Network: N101 [Telopea Way / Farrell Road / Northern Distributor Road (Network Folder: General)]**

PM Peak - Future Volumes 2028

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 50 seconds (Network Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total HV veh/h]	[HV %]				[Veh. veh]	[Dist m]				
East: Northern Distributor Road East														
5	T1	642	3.0	642	3.0	0.541	5.9	LOS A	5.6	39.9	0.61	0.55	0.61	54.7
6	R2	228	3.0	228	3.0	* 0.736	29.4	LOS C	3.7	26.4	0.99	0.91	1.22	30.7
Approach		871	3.0	871	3.0	0.736	12.1	LOS B	5.6	39.9	0.71	0.64	0.77	48.9
North: Telopea Way														
7	L2	252	3.0	252	3.0	0.301	12.0	LOS B	2.4	17.2	0.66	0.73	0.66	42.0
9	R2	174	3.0	174	3.0	* 0.682	20.0	LOS C	2.4	17.0	0.88	0.78	0.92	35.7
Approach		425	3.0	425	3.0	0.682	15.3	LOS B	2.4	17.2	0.75	0.75	0.77	39.1
West: Northern Distributor Road West														
10	L2	247	3.0	247	3.0	0.243	11.7	LOS B	1.9	13.7	0.54	0.72	0.54	43.6
11	T1	408	3.0	408	3.0	* 0.712	18.7	LOS B	5.9	42.6	0.95	0.86	1.04	45.9
Approach		656	3.0	656	3.0	0.712	16.1	LOS B	5.9	42.6	0.79	0.81	0.85	45.3
All Vehicles		1952	3.0	1952	3.0	0.736	14.1	LOS B	5.9	42.6	0.75	0.72	0.80	45.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
East: Northern Distributor Road East											
P2	Full	53	19.4	LOS B	0.1	0.1	0.88	0.88	183.9	213.9	1.16
North: Telopea Way											
P3	Full	53	19.4	LOS B	0.1	0.1	0.88	0.88	186.5	217.2	1.16
West: Northern Distributor Road West											
P4	Full	53	19.4	LOS B	0.1	0.1	0.88	0.88	183.9	213.9	1.16
All Pedestrians		158	19.4	LOS B	0.1	0.1	0.88	0.88	184.8	215.0	1.16

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

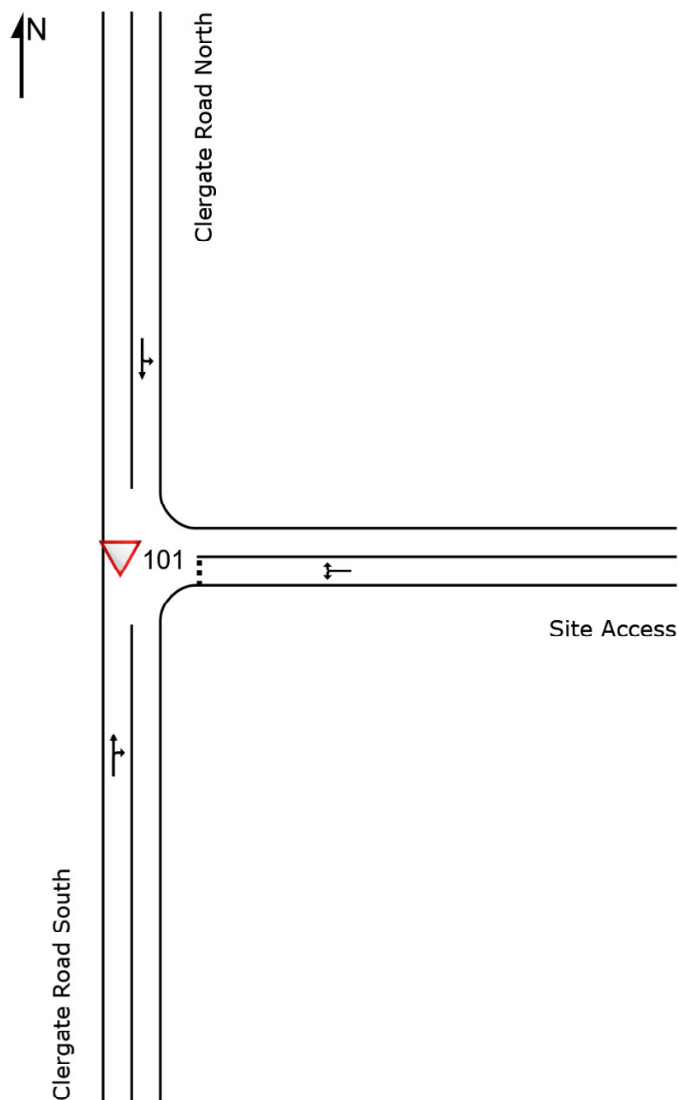
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SITE LAYOUT

▼ Site: 101 [Clergate Road / Site Access (Site Folder: General)]

PM Peak - 2028 Future Traffic Volumes
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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MOVEMENT SUMMARY

▼ Site: 101 [Clergate Road / Site Access (Site Folder: General)]

AM Peak - 2028 Future Traffic Volumes

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total veh/h]	[HV %]				[Veh. veh]	[Dist m]				
South: Clergate Road South														
2	T1	8	3.0	8	3.0	0.022	0.1	LOS A	0.1	0.7	0.12	0.44	0.12	55.7
3	R2	28	3.0	29	3.0	0.022	5.6	LOS A	0.1	0.7	0.12	0.44	0.12	53.6
Approach		36	3.0	38	3.0	0.022	4.4	NA	0.1	0.7	0.12	0.44	0.12	54.1
East: Site Access														
4	L2	111	3.0	117	3.0	0.092	5.7	LOS A	0.4	2.7	0.11	0.55	0.11	53.2
6	R2	20	3.0	21	3.0	0.092	5.8	LOS A	0.4	2.7	0.11	0.55	0.11	52.6
Approach		131	3.0	138	3.0	0.092	5.7	LOS A	0.4	2.7	0.11	0.55	0.11	53.1
North: Clergate Road North														
7	L2	5	3.0	5	3.0	0.021	5.6	LOS A	0.0	0.0	0.00	0.08	0.00	57.5
8	T1	33	3.0	35	3.0	0.021	0.0	LOS A	0.0	0.0	0.00	0.08	0.00	59.3
Approach		38	3.0	40	3.0	0.021	0.7	NA	0.0	0.0	0.00	0.08	0.00	59.0
All Vehicles		205	3.0	216	3.0	0.092	4.5	NA	0.4	2.7	0.09	0.44	0.09	54.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 101 [Clergate Road / Site Access (Site Folder: General)]

PM Peak - 2028 Future Traffic Volumes

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Clergate Road South														
2	T1	27	3.0	28	3.0	0.070	0.1	LOS A	0.3	2.4	0.10	0.44	0.10	55.8
3	R2	89	3.0	94	3.0	0.070	5.6	LOS A	0.3	2.4	0.10	0.44	0.10	53.7
Approach		116	3.0	122	3.0	0.070	4.3	NA	0.3	2.4	0.10	0.44	0.10	54.2
East: Site Access														
4	L2	38	3.0	40	3.0	0.032	5.6	LOS A	0.1	0.9	0.04	0.57	0.04	53.4
6	R2	7	3.0	7	3.0	0.032	6.0	LOS A	0.1	0.9	0.04	0.57	0.04	52.9
Approach		45	3.0	47	3.0	0.032	5.7	LOS A	0.1	0.9	0.04	0.57	0.04	53.3
North: Clergate Road North														
7	L2	16	3.0	17	3.0	0.015	5.6	LOS A	0.0	0.0	0.00	0.36	0.00	55.2
8	T1	10	3.0	11	3.0	0.015	0.0	LOS A	0.0	0.0	0.00	0.36	0.00	56.8
Approach		26	3.0	27	3.0	0.015	3.4	NA	0.0	0.0	0.00	0.36	0.00	55.8
All Vehicles		187	3.0	197	3.0	0.070	4.5	NA	0.3	2.4	0.07	0.46	0.07	54.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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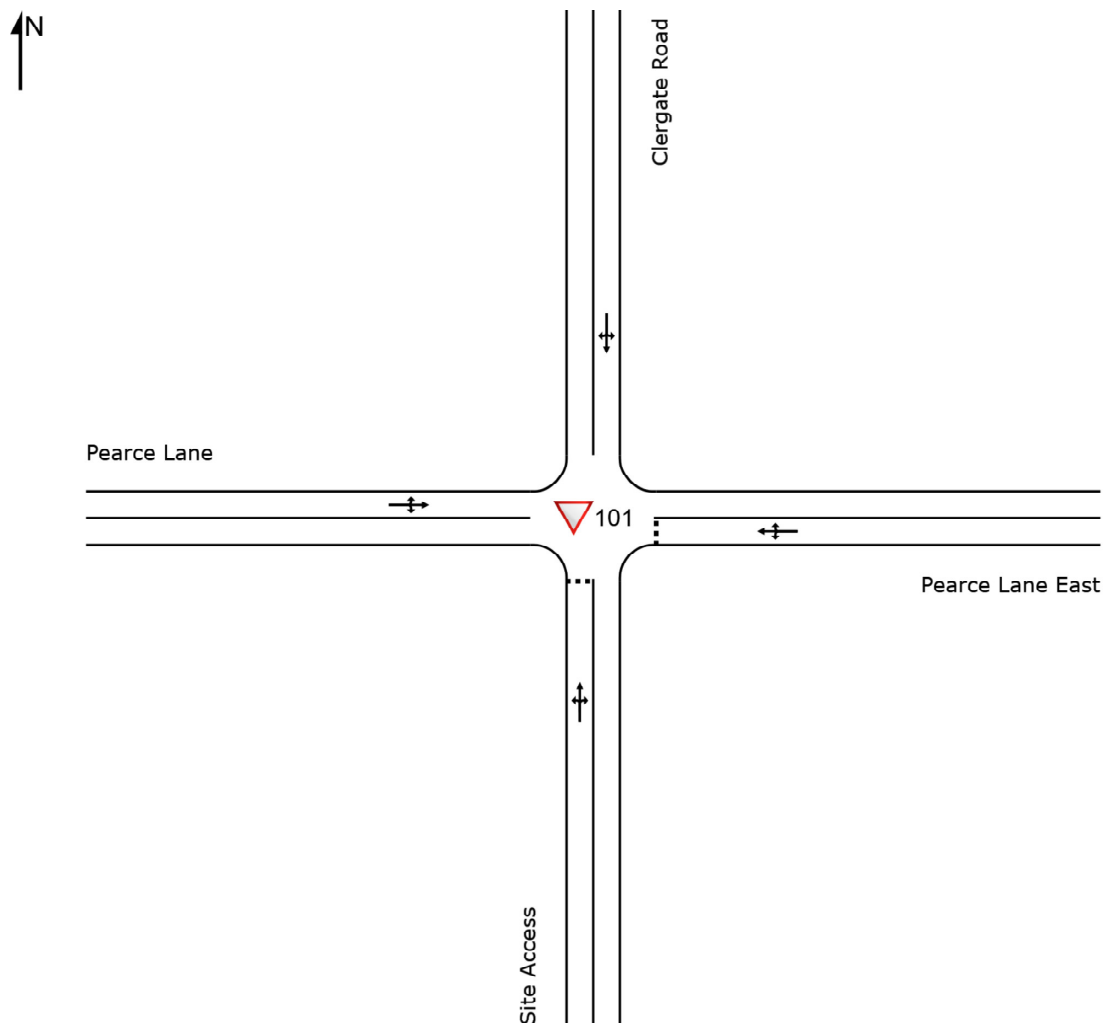
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SITE LAYOUT

▼ Site: 101 [Clergate Road / Pearce Lane / Site Access (Site Folder: General)]

AM Peak - 2028 Orange Traffic Model Volumes
Site Category: Future Conditions 1
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

▼ Site: 101 [Clergate Road / Pearce Lane / Site Access (Site Folder: General)]

AM Peak - 2028 Orange Traffic Model Volumes

Site Category: Future Conditions 1

Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Site Access														
1	L2	1	5.0	1	5.0	0.002	5.6	LOS A	0.0	0.1	0.08	0.54	0.08	53.6
2	T1	1	5.0	1	5.0	0.002	4.3	LOS A	0.0	0.1	0.08	0.54	0.08	53.8
3	R2	1	5.0	1	5.0	0.002	5.6	LOS A	0.0	0.1	0.08	0.54	0.08	53.0
Approach		3	5.0	3	5.0	0.002	5.2	LOS A	0.0	0.1	0.08	0.54	0.08	53.4
East: Pearce Lane East														
4	L2	1	5.0	1	5.0	0.014	5.6	LOS A	0.0	0.4	0.03	0.53	0.03	54.3
5	T1	15	5.0	16	5.0	0.014	4.2	LOS A	0.0	0.4	0.03	0.53	0.03	54.5
6	R2	1	5.0	1	5.0	0.014	5.6	LOS A	0.0	0.4	0.03	0.53	0.03	53.7
Approach		17	5.0	18	5.0	0.014	4.4	LOS A	0.0	0.4	0.03	0.53	0.03	54.4
North: Clergate Road														
7	L2	1	5.0	1	5.0	0.002	5.6	LOS A	0.0	0.0	0.00	0.40	0.00	54.9
8	T1	1	5.0	1	5.0	0.002	0.0	LOS A	0.0	0.0	0.00	0.40	0.00	56.6
9	R2	1	5.0	1	5.0	0.002	5.5	LOS A	0.0	0.0	0.00	0.40	0.00	54.3
Approach		3	5.0	3	5.0	0.002	3.7	NA	0.0	0.0	0.00	0.40	0.00	55.3
West: Pearce Lane														
10	L2	2	5.0	2	5.0	0.007	5.6	LOS A	0.0	0.3	0.03	0.20	0.03	56.3
11	T1	6	5.0	6	5.0	0.007	0.0	LOS A	0.0	0.3	0.03	0.20	0.03	58.1
12	R2	1	5.0	1	5.0	0.007	5.5	LOS A	0.0	0.3	0.03	0.20	0.03	55.7
Approach		9	5.0	9	5.0	0.007	1.9	NA	0.0	0.3	0.03	0.20	0.03	57.4
All Vehicles		32	5.0	34	5.0	0.014	3.7	NA	0.0	0.4	0.03	0.42	0.03	55.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▼ Site: 101 [Clergate Road / Pearce Lane / Site Access (Site Folder: General)]

AM Peak - 2028 Total Volumes
Site Category: Future Conditions 1
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Site Access														
1	L2	22	5.0	23	5.0	0.034	5.7	LOS A	0.1	0.9	0.08	0.53	0.08	53.7
2	T1	22	5.0	23	5.0	0.034	4.4	LOS A	0.1	0.9	0.08	0.53	0.08	53.9
3	R2	1	5.0	1	5.0	0.034	5.7	LOS A	0.1	0.9	0.08	0.53	0.08	53.1
Approach		45	5.0	47	5.0	0.034	5.0	LOS A	0.1	0.9	0.08	0.53	0.08	53.8
East: Pearce Lane East														
4	L2	1	5.0	1	5.0	0.014	5.6	LOS A	0.0	0.4	0.06	0.52	0.06	54.2
5	T1	15	5.0	16	5.0	0.014	4.2	LOS A	0.0	0.4	0.06	0.52	0.06	54.4
6	R2	1	5.0	1	5.0	0.014	5.8	LOS A	0.0	0.4	0.06	0.52	0.06	53.6
Approach		17	5.0	18	5.0	0.014	4.4	LOS A	0.0	0.4	0.06	0.52	0.06	54.3
North: Clergate Road														
7	L2	1	5.0	1	5.0	0.006	5.6	LOS A	0.0	0.0	0.00	0.30	0.00	55.7
8	T1	5	5.0	5	5.0	0.006	0.0	LOS A	0.0	0.0	0.00	0.30	0.00	57.4
9	R2	4	5.0	4	5.0	0.006	5.5	LOS A	0.0	0.0	0.00	0.30	0.00	55.1
Approach		10	5.0	11	5.0	0.006	2.8	NA	0.0	0.0	0.00	0.30	0.00	56.3
West: Pearce Lane														
10	L2	16	5.0	17	5.0	0.018	5.6	LOS A	0.1	0.5	0.05	0.44	0.05	54.2
11	T1	6	5.0	6	5.0	0.018	0.1	LOS A	0.1	0.5	0.05	0.44	0.05	55.9
12	R2	5	5.0	5	5.0	0.018	5.5	LOS A	0.1	0.5	0.05	0.44	0.05	53.7
Approach		27	5.0	28	5.0	0.018	4.4	NA	0.1	0.5	0.05	0.44	0.05	54.5
All Vehicles		99	5.0	104	5.0	0.034	4.5	NA	0.1	0.9	0.06	0.48	0.06	54.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▼ Site: 101 [Clergate Road / Pearce Lane / Site Access (Site Folder: General)]

PM Peak - 2028 Orange Traffic Model Volumes

Site Category: Future Conditions 1

Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Site Access														
1	L2	1	5.0	1	5.0	0.002	5.6	LOS A	0.0	0.1	0.04	0.55	0.04	53.7
2	T1	1	5.0	1	5.0	0.002	4.3	LOS A	0.0	0.1	0.04	0.55	0.04	53.9
3	R2	1	5.0	1	5.0	0.002	5.6	LOS A	0.0	0.1	0.04	0.55	0.04	53.1
Approach		3	5.0	3	5.0	0.002	5.2	LOS A	0.0	0.1	0.04	0.55	0.04	53.5
East: Pearce Lane East														
4	L2	1	5.0	1	5.0	0.005	5.6	LOS A	0.0	0.1	0.02	0.54	0.02	54.1
5	T1	4	5.0	4	5.0	0.005	4.2	LOS A	0.0	0.1	0.02	0.54	0.02	54.3
6	R2	1	5.0	1	5.0	0.005	5.6	LOS A	0.0	0.1	0.02	0.54	0.02	53.5
Approach		6	5.0	6	5.0	0.005	4.7	LOS A	0.0	0.1	0.02	0.54	0.02	54.1
North: Clergate Road														
7	L2	1	5.0	1	5.0	0.002	5.6	LOS A	0.0	0.0	0.00	0.40	0.00	54.9
8	T1	1	5.0	1	5.0	0.002	0.0	LOS A	0.0	0.0	0.00	0.40	0.00	56.6
9	R2	1	5.0	1	5.0	0.002	5.5	LOS A	0.0	0.0	0.00	0.40	0.00	54.3
Approach		3	5.0	3	5.0	0.002	3.7	NA	0.0	0.0	0.00	0.40	0.00	55.3
West: Pearce Lane														
10	L2	1	5.0	1	5.0	0.013	5.6	LOS A	0.1	0.4	0.03	0.08	0.03	57.3
11	T1	13	5.0	14	5.0	0.013	0.0	LOS A	0.1	0.4	0.03	0.08	0.03	59.1
12	R2	1	5.0	1	5.0	0.013	5.5	LOS A	0.1	0.4	0.03	0.08	0.03	56.7
Approach		15	5.0	16	5.0	0.013	0.8	NA	0.1	0.4	0.03	0.08	0.03	58.8
All Vehicles		27	5.0	28	5.0	0.013	2.4	NA	0.1	0.4	0.03	0.27	0.03	56.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▼ Site: 101 [Clergate Road / Pearce Lane / Site Access - (Site Folder: General)]

PM Peak - 2028 Total Volumes
Site Category: Future Conditions 1
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Site Access														
1	L2	7	5.0	7	5.0	0.012	5.6	LOS A	0.0	0.3	0.08	0.53	0.08	53.7
2	T1	7	5.0	7	5.0	0.012	4.4	LOS A	0.0	0.3	0.08	0.53	0.08	53.9
3	R2	1	5.0	1	5.0	0.012	5.8	LOS A	0.0	0.3	0.08	0.53	0.08	53.1
Approach		15	5.0	16	5.0	0.012	5.1	LOS A	0.0	0.3	0.08	0.53	0.08	53.7
East: Pearce Lane East														
4	L2	1	5.0	1	5.0	0.005	5.7	LOS A	0.0	0.1	0.12	0.52	0.12	53.8
5	T1	4	5.0	4	5.0	0.005	4.4	LOS A	0.0	0.1	0.12	0.52	0.12	54.0
6	R2	1	5.0	1	5.0	0.005	5.8	LOS A	0.0	0.1	0.12	0.52	0.12	53.2
Approach		6	5.0	6	5.0	0.005	4.8	LOS A	0.0	0.1	0.12	0.52	0.12	53.8
North: Clergate Road														
7	L2	1	5.0	1	5.0	0.017	5.6	LOS A	0.0	0.0	0.00	0.26	0.00	56.0
8	T1	17	5.0	18	5.0	0.017	0.0	LOS A	0.0	0.0	0.00	0.26	0.00	57.7
9	R2	12	5.0	13	5.0	0.017	5.5	LOS A	0.0	0.0	0.00	0.26	0.00	55.4
Approach		30	5.0	32	5.0	0.017	2.4	NA	0.0	0.0	0.00	0.26	0.00	56.7
West: Pearce Lane														
10	L2	6	5.0	6	5.0	0.026	5.7	LOS A	0.1	0.9	0.12	0.36	0.12	54.7
11	T1	13	5.0	14	5.0	0.026	0.2	LOS A	0.1	0.9	0.12	0.36	0.12	56.3
12	R2	17	5.0	18	5.0	0.026	5.6	LOS A	0.1	0.9	0.12	0.36	0.12	54.1
Approach		36	5.0	38	5.0	0.026	3.7	NA	0.1	0.9	0.12	0.36	0.12	55.0
All Vehicles		87	5.0	92	5.0	0.026	3.6	NA	0.1	0.9	0.07	0.37	0.07	55.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

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Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Planning,
Industry &
Environment

PP-2021-5680/IRF21/4676

Mr David Waddell
Chief Executive Officer
Orange City Council
PO Box 35
ORANGE NSW 2800

Dear Mr Waddell

Planning proposal [PP-2021-5680] to amend Orange Local Environmental Plan 2011 – Rosedale Gardens

I am writing in response to Council's request for a Gateway determination under section 3.34(1) of the *Environmental Planning and Assessment Act 1979* (the Act) and additional information received on 9 December 2021 in respect of the planning proposal to amend planning controls to facilitate increased residential development up to 700 lots for Rosedale Gardens at 440 Clergate Road and 463 Leeds Parade, Orange.

As delegate of the Minister for Planning and Homes, I have now determined that the planning proposal should proceed subject to the conditions in the enclosed Gateway determination.

Please note the conditions reflect the Department's support for the intent of the proposal to increase potential residential yield to 700 lots however further justification is required for:

- Reduction of Minimum Lot Size to 2,000m² across the entire site despite steep terrain restrictions on the land where the slope is 20% or more.
- Rezoning to R5 Large Lot Residential across the entire site despite environmental values and development constraints on the land such as biodiversity values, riparian corridors, electricity easements and need for open space.

The current development controls at Rosedale Gardens were only recently agreed to and notified through the Orange Local Environmental Plan 2011, Amendment 13 on 21 February 2020. The values and constraints reflected in these development controls are still present at Rosedale Gardens and adequate justification for changes to lot size and zoning provisions has not yet been provided.

Council may still need to obtain the agreement of the Secretary to comply with the requirements of relevant section 9.1 Directions 2.1 Environmental Protection Zones, 2.3 Heritage Conservation, 2.6 Remediation of Contaminated Land, 4.4 Planning for

Bushfire Protection, 5.10 Implementation of Regional Plans, 6.2 Reserving Land for Public Purposes and 6.3 Site Specific Provisions. Council should ensure this occurs prior to the plan being made.

Before community consultation, Council is to update the planning proposal to address the additional information requested in Condition 1 of the Gateway determination and then consult with agencies as per Condition 2.

I have considered Council's request to be the local plan-making authority and have determined not to condition the Gateway for Council to be the local plan-making authority due to the updates to the planning proposal and consultation with agencies that are required before key provisions of the proposal (eg. zones) can be supported. Council may request to become the local plan-making authority again before community consultation if these concerns are adequately addressed.

The amending local environmental plan (LEP) is to be finalised within 12 months of the date of the Gateway determination. Council should aim to commence the exhibition of the planning proposal as soon as possible. Council's request for the Department of Planning and Environment to draft and finalise the LEP should be made eight weeks prior to the projected publication date.

All related files for the LEP amendment must be submitted to the Department via the Planning Portal Website at www.planningportal.nsw.gov.au/reporting/online-submission-planning-data. Council is reminded to update the Planning Portal and notify the Department, Western Region Office when the plan making milestones are achieved.

Should you have any enquiries about this matter, I have arranged for
to assist you. can be contacted on .

Yours sincerely

23 December 2021

Garry Hopkins
Director, Western Region
Local and Regional Planning

Encl: Gateway determination



Planning,
Industry &
Environment

Gateway Determination

Planning proposal (Department Ref: PP-2021-5680): Rosedale Gardens

I, the Director, Western Region at the Department of Planning and Environment, as delegate of the Minister for Planning and Homes, have determined under section 3.34(2) of the *Environmental Planning and Assessment Act 1979* (the Act) that an amendment to the Orange Local Environmental Plan (LEP) 2011 to facilitate up to 700 residential lots at 440 Clergate Road and 463 Leeds Parade, Orange should proceed subject to the following conditions:

1. The planning proposal is to be updated prior to agency consultation to:
 - (a) Address steep terrain through appropriate local development controls.
 - (b) Provide additional justification for the proposed removal of the SP2 Infrastructure, RE1 Public Recreation and C4 Environmental Living zones, and to demonstrate consistency with:
 - i. Section 9.1 Directions 2.1 Environmental Protection Zones and 6.2 Reserving Land for Public Purposes.
 - ii. Directions 13, 14 and 15 of the Central West Orana Regional Plan 2036.
 - (c) Include discussion of section 9.1 Direction 2.6 Remediation of Contaminated Land to demonstrate the Planning Proposal Authority is satisfied the land can be adequately remediated and be made suitable for all future land uses; and
 - (d) Update discussion on the proposed lot averaging clause to include Council's overall objectives for the site and to support their consideration at the development assessment stage.
2. Before community consultation, consultation is required with the following public authorities/organisations under section 3.34(2)(d) of the Act and/or to comply with the requirements of relevant section 9.1 Directions:
 - Transport for NSW.
 - John Holland Rail.
 - TransGrid.
 - DPIE Water.
 - Natural Resources Access Regulator.
 - DPIE Biodiversity and Conservation Division.
 - Heritage NSW.
 - Environment Protection Authority.
 - Rural Fire Services.
 - Cabonne Shire Council.
 - Charles Sturt University

Each public authority/organisation is to be provided with a copy of the planning proposal and any relevant supporting material and given at least 21 days to comment on the proposal.

3. The planning proposal is to be revised to address agency feedback and forwarded to the Department for review and approval to progress to community consultation.
4. Public exhibition is required under section 3.34(2)(c) and schedule 1 clause 4 of the Act as follows:
 - (a) the planning proposal must be made publicly available for a minimum of **28 days**; and
 - (b) the planning proposal authority must comply with the notice requirements for public exhibition of planning proposals and the specifications for material that must be made publicly available along with planning proposals as identified in section 6.5.2 of *A guide to preparing local environmental plans* (Department of Planning and Environment, 2018).
5. A public hearing is not required to be held into the matter by any person or body under section 3.34(2)(e) of the Act. This does not discharge Council from any obligation it may otherwise have to conduct a public hearing (for example, in response to a submission or if reclassifying land).
6. The time frame for completing the LEP is to be **12 months** following the date of the Gateway determination.

Dated 23rd day of December 2021.

Garry Hopkins
Director, Western Region
Local and Regional Planning
Department of Planning and
Environment

Delegate of the Minister for Planning
and Homes

**Premise Australia Pty Ltd**

ABN: 82 620 885 832

154 Peisley St, Orange NSW 2800

PO Box 1963, Orange NSW 2800

02 6393 5000

orange@premise.com.au

premise.com.au

Our Ref: 221025_LET_005A

30 August 2022

Bob Healy and Company Pty Ltd

ORANGE NSW 2800

Attention: Bob Healy

CONTAMINATION ASSESSMENT: LAND ADJACENT RAIL CORRIDOR – 463 LEEDS PARADE AND 440 CLERGATE ROAD, ORANGE NSW

Premise Australia Pty Ltd (Premise) has completed a contamination assessment of soil and sediment at the western boundary of land comprised of 463 Leeds Parade (Lot 15 in DP 6694) and 440 Clergate Road (Lots 2 and 3 in DP 255983) – the site – in Orange NSW.

BACKGROUND

The western boundary of the site borders the rail alignment of the Main Western Railway, where potential for contaminated soil has been identified. Chemicals of potential concern (COPC) that may have resulted in contamination of land include:

- Asbestos – historically used in brake machinery of train engines
- Total petroleum hydrocarbons (TPH) and polycyclic aromatic hydrocarbons (PAH) – from spills and/or exhaust of diesel operated train engines, and treated rail sleepers
- Heavy metals – particularly chromium and arsenic from treated rail sleepers

A contamination migration pathway exists to the site via drainage channels (all COPC) and aerial deposition (asbestos only).

This environmental assessment has been conducted to establish the nature and extent of contamination impacts to soil which may have migrated to the site from the adjacent rail alignment.

METHODOLOGY

On 15 and 16 August 2022, seven (7) samples were collected from the western boundary of the site, corresponding to locations where drainage channels from the adjacent rail alignment was observed to enter the site. Where these drainage channels flow to nearby farm dams, sediment samples were collected from these dams where suspended sediment would be more likely to deposit.

An additional three (3) samples were collected at locations near to the rail alignment where deposition of airborne asbestos fibres may have occurred.



Soil and sediment samples were collected from the uppermost undisturbed layers at each sampling location, where potential for COPC was considered to be most likely. Sample locations are illustrated on **Figure 1** (attached).

Samples were collected directly by hand trowel. All samples were placed in clean, laboratory-supplied acid washed solvent rinsed glass jars with Teflon® lids. Samples were stored on ice in an esky whilst on-site and in transit to the laboratory. Soil and sediment samples were couriered to ALS Laboratories in Smithfield, NSW, who are NATA accredited to perform the scheduled analysis.

INVESTIGATION CRITERIA

The soil investigation levels utilised for this investigation are consistent with those described within the National Environment Protection Council (NEPC), Amended *National Environment Protection (Assessment of Site Contamination) Measure* 1999 (Amended ASC NEPM) 2013. Based on future uses at the site including residential with garden/accessible soil, corresponding investigation levels have been adopted.

ANALYTICAL RESULTS

No contamination impacts or evidence of stained material was apparent during collection of soil or sediment samples.

Results of analysis are included in **Table 1** (attached), and laboratory certificates have also been appended to this letter. All soil samples met the investigation criteria for the respective analytes.

Samples analysed for Asbestos, TPH and PAHs did not record concentrations of these analytes above the respective limits of detection. Heavy metals were recorded in all samples at concentrations below the adopted guidelines, and were considered to be representative of background levels.

SUMMARY

Based on known activities at and adjacent to the site, and analytical results of soil and sediment sampling conducted in August 2022, potential sources of contamination in the adjacent rail corridor are not considered to have impacted the site.

Accordingly, soil and sediment conditions of the site adjacent to the western boundary are considered to be consistent with proposed sensitive land uses (e.g. low density residential).

Please do not hesitate to contact us with any questions or comments you may have regarding this report.

Yours sincerely

BRENDAN STUART
Environmental Scientist

No. of Attachments – 3:

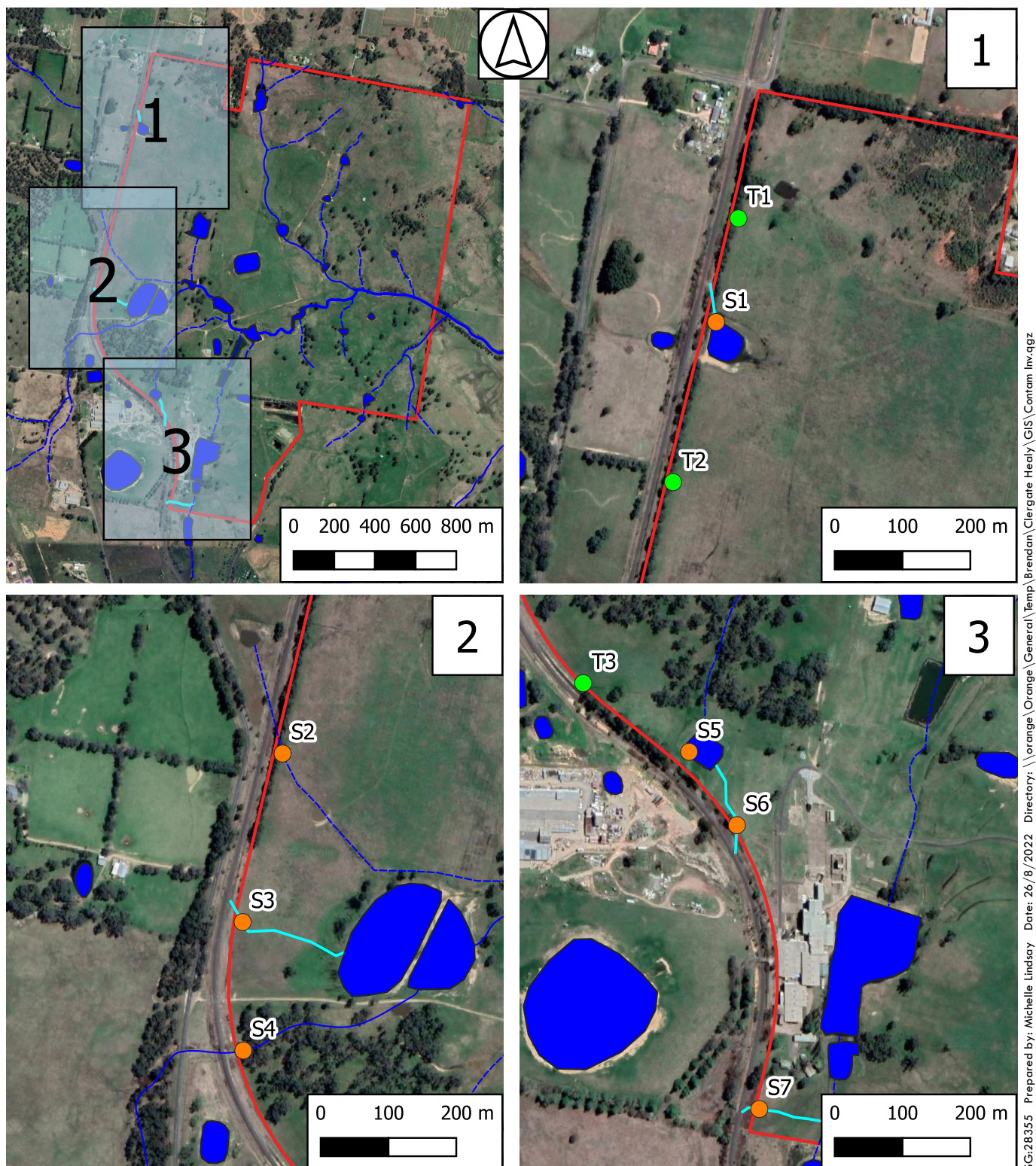
Figure 1 – Soil and Sediment Sampling Locations
Table 1 – Soil and Sediment Sampling Analytical Results, August 2022
ALS Laboratories Analytical Reports – August 2022



Premise

				Sample ID	S1	S2	S3	S4	S5	S6	S7	T1	T2	T3
				Sample Date	16/08/2022	16/08/2022	15/08/2022	15/08/2022	15/08/2022	15/08/2022	15/08/2022	16/08/2022	16/08/2022	15/08/2022
Group	Analyte	LOR	Units	Criteria	P5	P5	P5	P5	P5	P5	P5	P5	P5	P5
Physical Parameters	Moisture Content	1	%		35	43.3	29.5	19	23	26.3	28.8	-	-	-
Trace Metals	Arsenic (As)	5	mg/kg	100	24	21	26	13	9	17	5	-	-	-
	Cadmium (Cd)	1	mg/kg	20	<1	<1	<1	<1	<1	<1	<1	-	-	-
	Chromium (Cr)	2	mg/kg	-	50	71	23	68	24	31	11	-	-	-
	Copper (Cu)	5	mg/kg	6000	52	62	18	48	13	37	14	-	-	-
	Lead (Pb)	5	mg/kg	300	43	67	15	16	9	12	15	-	-	-
	Mercury (Hg)	0.1	mg/kg	40	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
	Nickel (Ni)	2	mg/kg	400	10	15	7	10	6	11	4	-	-	-
	Zinc (Zn)	5	mg/kg	7400	35	155	39	12	30	40	26	-	-	-
Total Recoverable Hydrocarbons	TRH C6-C10	10	mg/kg	700	<10	<10	<10	<10	<10	<10	<10	-	-	-
	TRH C6-C10 less BTEX (F1)	10	mg/kg	45	<10	<10	<10	<10	<10	<10	<10	-	-	-
	TRH >C10-C16	50	mg/kg	1000	<50	<50	<50	<50	<50	<50	<50	-	-	-
	TRH >C10-C16 less Naphthalene (F2)	50	mg/kg	110	<50	<50	<50	<50	<50	<50	<50	-	-	-
	TRH >C16-C34	100	mg/kg	2500	<100	<100	<100	<100	<100	<100	<100	-	-	-
	TRH >C34-C40	100	mg/kg	10000	<100	<100	<100	<100	<100	<100	<100	-	-	-
	TRH C10-C40	50	mg/kg	-	<50	<50	<50	<50	<50	<50	<50	-	-	-
Total Petroleum Hydrocarbons	TRH C6-C9	10	mg/kg	-	<10	<10	<10	<10	<10	<10	<10	-	-	-
	TRH C10-C14	50	mg/kg	-	<50	<50	<50	<50	<50	<50	<50	-	-	-
	TRH C15-C28	100	mg/kg	-	<100	<100	<100	<100	<100	<100	<100	-	-	-
	TRH C29-C36	100	mg/kg	-	<100	<100	<100	<100	<100	<100	<100	-	-	-
	TRH C10-C36	50	mg/kg	-	<50	<50	<50	<50	<50	<50	<50	-	-	-
BTEXN Analytes	Benzene	0.2	mg/kg	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-
	Toluene	0.5	mg/kg	160	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
	Ethylbenzene	0.5	mg/kg	55	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
	meta- & para-Xylene	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
	ortho-Xylene	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
	Total Xylenes	0.5	mg/kg	40	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
	Sum of BTEX	0.2	mg/kg	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-
	Napthalene (VOC)	1	mg/kg	-	<1	<1	<1	<1	<1	<1	<1	-	-	-
Polynuclear Aromatic Hydrocarbons	Acenaphthene	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
	Acenaphthylene	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
	Anthracene	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
	Benzo(a)anthracene	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
	Benzo(a)pyrene	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
	Benzo(b&j)fluoranthene	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
	Benzo(ghi)perylene	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
	Benzo(k)fluoranthene	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
	Chrysene	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
	Dibenzo(ah)anthracene	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
	Fluoranthene	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
	Fluorene	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
	Indeno(1,2,3-cd)pyrene	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
	Napthalene	0.5	mg/kg	3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
	Phenanthrene	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
	Pyrene	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
	Total PAHs	0.5	mg/kg	300	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
	Benzo(a)pyrene TEQ (half LOR)	0.5	mg/kg	-	0.6	0.6	0.6	0.6	0.6	0.6	0.6	-	-	-
	Benzo(a)pyrene TEQ (LOR)	0.5	mg/kg	-	1.2	1.2	1.2	1.2	1.2	1.2	1.2	-	-	-
	Benzo(a)pyrene TEQ (zero)	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-
Asbestos ID	Asbestos Detected*	0.1	g/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Fstimated Fibres	5	Fibres	Nil	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

within criteria
criteria exceeded



EPSC:28355 Prepared by: Michelle Lindsay Date: 26/8/2022 Directory: \\orange\Orange\General\Temp\Brendan\Clergate Healy\GIS\Contam Inv.qgz

LEGEND

Study Area

● Sediment Sample

● Soil Sample

Strahler Streams:

--- Order 1

--- Order 2

--- Order 3

--- Drainage Line

Farm Dam



Rosedale Gardens Estate

FIGURE 1

Soil and Sediment Sampling Locations

Source: NSW Six Maps



CERTIFICATE OF ANALYSIS

Work Order	: ES2229379	Page	: 1 of 9
Client	: PREMISE NSW Pty Ltd	Laboratory	: Environmental Division Sydney
Contact	: BRENDAN STUART	Contact	: Customer Services ES
Address	: 154 Peisley St, Orange 2800	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	:	Telephone	:
Project	: 221025	Date Samples Received	: 17-Aug-2022 16:52
Order number	: ----	Date Analysis Commenced	: 20-Aug-2022
C-O-C number	: ----	Issue Date	: 24-Aug-2022 17:30
Sampler	: Brendan Stuart		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 10		
No. of samples analysed	: 10		



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Alana Smylie	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, NSW

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 Client : PREMISE NSW Pty Ltd
 Project : 221025



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.

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 Project : 221025



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	S3	S4	S5	S6	S7
Sampling date / time					15-Aug-2022 00:00	15-Aug-2022 00:00	15-Aug-2022 00:00	15-Aug-2022 00:00	15-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		ES2229379-001	ES2229379-002	ES2229379-003	ES2229379-004	ES2229379-005
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		29.5	19.0	23.0	26.3	28.8
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		No	No	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres		No	No	No	No	No
Asbestos Type	1332-21-4	-	--		-	-	-	-	-
Synthetic Mineral Fibre	----	0.1	g/kg		No	No	No	No	No
Organic Fibre	----	0.1	g/kg		No	No	No	No	No
Sample weight (dry)	----	0.01	g		934	878	763	569	647
APPROVED IDENTIFIER:	----	-	--		A. SMYLLIE	A. SMYLLIE	A. SMYLLIE	A. SMYLLIE	A. SMYLLIE
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		26	13	9	17	5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		23	68	24	31	11
Copper	7440-50-8	5	mg/kg		18	48	13	37	14
Lead	7439-92-1	5	mg/kg		15	16	9	12	15
Nickel	7440-02-0	2	mg/kg		7	10	6	11	4
Zinc	7440-66-6	5	mg/kg		39	12	30	40	26
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+)fluoranthene	205-99-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

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 Client : PREMISE NSW Pty Ltd
 Project : 221025



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	S3	S4	S5	S6	S7
Sampling date / time					15-Aug-2022 00:00	15-Aug-2022 00:00	15-Aug-2022 00:00	15-Aug-2022 00:00	15-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		ES2229379-001	ES2229379-002	ES2229379-003	ES2229379-004	ES2229379-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	-----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	-----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	-----	0.5	mg/kg		0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	-----	0.5	mg/kg		1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	-----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	-----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	-----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	-----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	-----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	-----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	-----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	-----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	-----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	-----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	-----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	-----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		72.9	71.7	73.6	73.8	74.7
2-Chlorophenol-D4	93951-73-6	0.5	%		85.9	84.6	86.3	86.5	88.9

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 Client : PREMISE NSW Pty Ltd
 Project : 221025



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	S3	S4	S5	S6	S7
Sampling date / time					15-Aug-2022 00:00	15-Aug-2022 00:00	15-Aug-2022 00:00	15-Aug-2022 00:00	15-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		ES2229379-001	ES2229379-002	ES2229379-003	ES2229379-004	ES2229379-005
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2,4,6-Tribromophenol	118-79-6	0.5	%		72.8	72.1	69.8	68.7	74.2
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		95.4	95.4	95.9	97.5	99.6
Anthracene-d10	1719-06-8	0.5	%		89.0	89.5	89.2	90.7	91.2
4-Terphenyl-d14	1718-51-0	0.5	%		92.1	91.6	92.6	94.2	94.9
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		79.7	84.8	76.7	74.8	88.4
Toluene-D8	2037-26-5	0.2	%		97.0	98.0	93.9	97.7	95.9
4-Bromofluorobenzene	460-00-4	0.2	%		101	111	103	103	109

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	T3	S1	S2	T1	T2
Sampling date / time					15-Aug-2022 00:00	16-Aug-2022 00:00	16-Aug-2022 00:00	16-Aug-2022 00:00	16-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		ES2229379-006	ES2229379-007	ES2229379-008	ES2229379-009	ES2229379-010
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		----	35.2	43.3	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		No	No	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres		No	No	No	No	No
Asbestos Type	1332-21-4	-	--		-	-	-	-	-
Synthetic Mineral Fibre	----	0.1	g/kg		No	No	No	No	No
Organic Fibre	----	0.1	g/kg		No	No	No	No	No
Sample weight (dry)	----	0.01	g		906	31.4	29.2	29.4	52.6
APPROVED IDENTIFIER:	----	-	--		A. SMYLLIE	A. SMYLLIE	A. SMYLLIE	A. SMYLLIE	A. SMYLLIE
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		----	24	21	----	----
Cadmium	7440-43-9	1	mg/kg		----	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg		----	50	71	----	----
Copper	7440-50-8	5	mg/kg		----	52	62	----	----
Lead	7439-92-1	5	mg/kg		----	43	67	----	----
Nickel	7440-02-0	2	mg/kg		----	10	15	----	----
Zinc	7440-66-6	5	mg/kg		----	35	155	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		----	<0.1	<0.1	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg		----	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg		----	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	<0.5	----	----

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 Project : 221025



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	T3	S1	S2	T1	T2
Sampling date / time					15-Aug-2022 00:00	16-Aug-2022 00:00	16-Aug-2022 00:00	16-Aug-2022 00:00	16-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		ES2229379-006	ES2229379-007	ES2229379-008	ES2229379-009	ES2229379-010
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	<0.5	----	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		----	<0.5	<0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	0.6	0.6	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	1.2	1.2	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	<10	<10	----	----
C10 - C14 Fraction	----	50	mg/kg		----	<50	<50	----	----
C15 - C28 Fraction	----	100	mg/kg		----	<100	<100	----	----
C29 - C36 Fraction	----	100	mg/kg		----	<100	<100	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	<10	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg		----	<50	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg		----	<100	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg		----	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	<50	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	<50	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	<0.2	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg		----	<0.5	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		----	<0.5	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	<0.5	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		----	<0.5	<0.5	----	----
^ Sum of BTEX	----	0.2	mg/kg		----	<0.2	<0.2	----	----
^ Total Xylenes	----	0.5	mg/kg		----	<0.5	<0.5	----	----
Naphthalene	91-20-3	1	mg/kg		----	<1	<1	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	74.9	73.4	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		----	88.4	86.8	----	----

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 Project : 221025



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	T3	S1	S2	T1	T2
Sampling date / time					15-Aug-2022 00:00	16-Aug-2022 00:00	16-Aug-2022 00:00	16-Aug-2022 00:00	16-Aug-2022 00:00
Compound	CAS Number	LOR	Unit		ES2229379-006	ES2229379-007	ES2229379-008	ES2229379-009	ES2229379-010
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2,4,6-Tribromophenol	118-79-6	0.5	%		----	70.2	70.5	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	100	97.4	----	----
Anthracene-d10	1719-06-8	0.5	%		----	92.6	90.2	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		----	97.0	93.7	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		----	80.2	78.6	----	----
Toluene-D8	2037-26-5	0.2	%		----	76.3	80.7	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		----	85.4	97.2	----	----

Analytical Results

Descriptive Results

Sub-Matrix: SOIL		
Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	S3 - 15-Aug-2022 00:00	Soil sample.
EA200: Description	S4 - 15-Aug-2022 00:00	Soil sample.
EA200: Description	S5 - 15-Aug-2022 00:00	Soil sample.
EA200: Description	S6 - 15-Aug-2022 00:00	Soil sample.
EA200: Description	S7 - 15-Aug-2022 00:00	Soil sample.
EA200: Description	T3 - 15-Aug-2022 00:00	Soil sample.
EA200: Description	S1 - 16-Aug-2022 00:00	Soil sample.
EA200: Description	S2 - 16-Aug-2022 00:00	Soil sample.
EA200: Description	T1 - 16-Aug-2022 00:00	Soil sample.
EA200: Description	T2 - 16-Aug-2022 00:00	Soil sample.

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Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA200: AS 4964 - 2004 Identification of Asbestos in Soils



DOC22/309425-3

6 May 2022

Craig Mortell
Development Services
Orange City Council

Via Concurrences and Referral Portal

**Planning Proposal 2021-5680: Request for agency advice
440 Clergate Road and 463 Leeds Parade, Orange**

Dear Mr Mortell

Thank you for the request on 14 April 2022 for advice from the NSW Environment Protection Authority (EPA) on the Planning Proposal 2021-5680 (Proposal) for the rezoning of 440 Clergate Road and 463 Leeds Parade, Orange NSW (Premises) being Lots 2 and 3 in DP 255983 and Lots 14, 15, and 25 in DP 6694.

The Proposal regards the following changes:

- Re-zone the entire site to R5 large lot residential.
- Change the minimum lot size to 2,000m² from the current proposed no minimum lot size, 4,000m², and 8,000m².
- Increase the number of maximum dwellings to 700 from the current 450 proposed.
- Include portions of the site with a slope of 20% or more into Schedule 5 of the *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 (Codes SEPP)*.

The EPA recommends that you consider the following issues:

Noise

The proposed rezoning is in the vicinity of a rail line that has the potential to produce noise from its operation over a 24-hour period. It may be necessary to undertake an acoustical assessment to assess any potential noise impacts from the operation of the rail line to help identify any reasonable and feasible mitigation measures. Such an assessment should be prepared by a suitably qualified acoustical consultant. The assessment should consider the requirements of [State Environmental Planning Policy \(Transport and Infrastructure\) 2021](#) and the [Development near Rail Corridors and Busy Roads - Interim Guideline](#) (Department of Planning 2008).

The EPA regulates noise from rail lines, so it is important to ensure that any encroachment of sensitive development on the rail corridor does not result in potential land use conflict, as such conflict can be challenging to resolve.

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Potential land contamination**1. An updated preliminary site investigation report is recommended**

The EPA recommends that the preliminary site investigation (PSI) report is updated to describe current site conditions. It is recommended the PSI is expanded to include areas of environmental concern that can occur in an agricultural setting including potential sheep dips and a protocol for unexpected finds.

The PSI prepared to support this Planning Proposal is dated February 2016. Without an updated PSI it is unknown if there have been any developments, such as demolition works or illegal dumping at the site, between then and now.

The PSI should:

- be prepared, or reviewed and approved, by consultants certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme.
- be prepared in accordance with the relevant guidelines made or approved by the EPA under section 105 of the *Contaminated Land Management Act 1997*.

The EPA recommends that the updated PSI be submitted to the consent authority as part of consent conditions.

2. A targeted environment investigation is recommended for some areas

Given that majority of the site appears to have been used for agricultural purposes, the EPA recommends targeted environmental investigations focusing on portions of the site associated with former abattoir area and remnant site infrastructure, and the identified electrical substation / transformer area as well as any further areas identified in the updated PSI as potential areas of concern.

This should include comment on the potential for any contamination to pose unacceptable risk to human health or the environment (on- or off-site) and whether further assessment needs to be carried out and/or remediation is required to make the site suitable for the proposed use.

The targeted environmental investigations should:

- be prepared, or reviewed and approved, by consultants certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme.
- be prepared in accordance with the relevant guidelines made or approved by the EPA under section 105 of the *Contaminated Land Management Act 1997*.

3. A site audit statement should be prepared

The EPA recommends that a Section A1 or A2 Site Audit Statement certifying suitability of the land for the proposed use be prepared and submitted to the consent authority (Council) if and when an application for subdivision is lodged for those areas identified in the PSI and targeted investigations as areas of concern.

4. Consent conditions should ensure that contamination risk does not increase

The EPA recommends that any consent conditions that are subsequently issued ensure the proposed development does not result in a change of risk in relation to any pre-existing contamination on the site so as to result in significant contamination [note that this would render the Applicant the 'person responsible' for the contamination under section 6(2) of *Contaminated Land Management Act* (CLM Act)].

5. There may be a duty to notify the EPA of contamination

The EPA should be notified under section 60 of the CLM Act for any contamination identified which meets the triggers in the Guidelines for the Duty to Report Contamination. Further information is available here: www.epa.nsw.gov.au/resources/clm/150164-report-land-contamination-guidelines.pdf

6. Certified consultations should be used to assess contamination

The EPA recommends use of “certified consultants”. Please note that the EPA’s Contaminated Land Consultant Certification Policy (<https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/clm/18520-contaminated-land-consultant-certification-policy.pdf?la=en&hash=D56233C4833022719BCE0F40F870C19DC273A1F7>) supports the development and implementation of nationally consistent certification schemes in Australia, and encourages the use of certified consultants by the community and industry. Note that the EPA requires all reports submitted to the EPA to comply with the requirements of the CLM Act to be prepared, or reviewed and approved, by a certified consultant.

If you have any questions about this request, please contact _____ on _____
via email at _____

Yours sincerely

MITCHELL BENNETT
Unit Head – Statutory Planning



Department of Planning and Environment

Our ref: DOC22/365054
Your ref: PP-2021-5680

Craig Mortell
Orange City Council

Dear Craig

Planning Proposal – Amendment 33 – 440 Clergate Road, Orange - Rosedale Gardens

Thank you for your e-mail dated 12 April 2022 to the Biodiversity, Conservation and Science Directorate (BCS) of the Department of Planning and Environment inviting comments on the proposed amendments for 440 Clergate Road, Orange.

BCS understands that the proposal seeks to;

- Rezone the subject site to RU5 from a mix of RU5, RE1, SP2 and E4
- Reduce the minimum lot size across the site to 2000m² from a mix of 4000m² and 8000m².

BCS has the following primary areas of interest relating to strategic land use planning proposals:

1. The impacts of development and settlement intensification on biodiversity
2. Adequate investigation of the environmental constraints of affected land
3. Avoiding intensification of land use and settlement in environmentally sensitive areas (ESAs)
4. Ensuring that development within a floodplain is consistent with the NSW Government's Flood Prone Land Policy, the principles set out in the Floodplain Development Manual, and applicable urban and rural floodplain risk management plans.

We also understand that planning proposals must comply with current statutory matters such as the Local Planning Directions under S9.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

We generally support strategic planning proposals which:

- Avoid rural settlement intensification in areas of biodiversity value and other environmentally sensitive areas;
- Include objectives, such as 'no net loss of native vegetation'; and
- Minimise flood risk to human life, property and the local environment while maintaining floodplain connectivity for environmental benefit.

Some specific comments on the proposed amendments are provided in **Attachment A**. The BCS generic recommendations for planning proposal are provided in **Attachment B** and guidance for identifying High Environmental Value land is provided in **Attachment C**.

If you require any further information regarding this matter, please contact
Senior Conservation Planning Officer, via

Yours sincerely

Samantha Wynn
Senior Team Leader Planning North West
Biodiversity, Conservation and Science Directorate

10 May 2022

ATTACHMENT A**Planning Proposal – 440 Clergate Road, Orange (PP-2021-5680)****BCS Advice**

1. The proposed zoning, minimum lot size and subdivision plan could be revised to improve consistency with regional and local strategies

Central West and Orana Regional Plan 2036

Planning proposals should demonstrate consistency with the strategic planning framework including the relevant Regional Plan. To achieve directions, and actions in the relevant Regional Plan for areas with High Environmental Value (HEV), Planning Proposals should identify areas of HEV at the property scale and the current land uses in such areas should not be intensified.

The planning proposal is not consistent with the directions and actions of the Central West and Orana Regional Plan that relate to biodiversity. The planning proposal is not consistent with;

- Direction 13 – protect and manage environmental assets
- Action 13.1 – protect high environmental assets through local environmental plans
- Action 13.2 – minimise potential impacts arising from development in areas of high environmental value, and consider offsets or other mitigation mechanisms for unavoidable impacts

Whilst the planning proposal states that *‘the future subdivision of the land will trigger the BOS’* and therefore any impacts will be assessed under the Biodiversity Assessment Method (BAM) and offset in accordance with the *Biodiversity Conservation Act 2016* (BC Act), the planning proposal does not show that there has been any attempt to avoid areas of HEV, nor does it propose any provisions to protect these values. Furthermore, land use intensification is proposed for the areas that are currently zoned for conservation (C4).

Areas of HEV should instead be better protected by Planning Proposals through an appropriate zone which has strong conservation objectives and limited land uses, an appropriate minimum lot size so the land cannot be subdivided, and future management.

BCS does not support removing the current Conservation zoning without further site assessment.

Draft Central West and Orana Regional Plan 2041

In addition to above the draft Central West and Orana Regional Plan 2041 advocates;

- the validation of regional scale HEV mapping via site specific investigations during strategic and local planning, and development proposals
- avoidance of areas with identified HEV and focusing development on areas with lower biodiversity values

The planning proposal has not clearly identified all areas of HEV present or likely to be present on the subject site nor has there been any attempt to avoid such values.

Orange Local Strategic Planning Statement 2020 (LSPS)

Planning priority 13 of the Orange LSPS is *‘Protect, conserve and enhance Oranges urban tree canopy, landform, waterways and bushland’*. Action 3 of the planning priority is *‘require greenfield subdivisions to protect and enhance waterways and riparian corridors’*.

Page 23 of the planning proposal states *‘the mapped vegetation community in the south-west of the site would be predominantly retained and enhanced through augmentation of the waterway and the development of a riparian management and vegetation plan’*.

The planning proposal proposes to remove current RE1 and C4 zonings in areas where the riparian corridors are present. This is not consistent with planning priority 13 and action 3.

Recommendations

- a) The planning proposal should further identify and map the extent of areas of HEV on the subject site with both desktop analysis and site investigations.
- b) Areas identified as HEV should be protected through planning mechanisms (e.g. C zones and minimum lot sizes to preclude subdivision).

2. Conclusions of the likelihood of occurrence for predicted threatened species is not adequately justified or consistent

The planning proposal has not adequately justified conclusions that threatened species are unlikely to occur on the site. The assessment of likelihood for predicted threatened species presented in Table 5 of Appendix D of the planning proposal is not consistent with the conclusions in the Ecology Report (prepared by FloraSearch) that accompanies the planning proposal.

Recommendation

- a) Conclusions that threatened species are unlikely to occur should be adequately justified. Otherwise Council should acknowledge that the likelihood of threatened species being present on the site has not been adequately assessed and assume that future subdivision and development of the site has the potential to impact on threatened species habitat.

3. Biodiversity Offset Scheme is likely to apply to future subdivision of the site

The BC Act and *Biodiversity Conservation Regulation 2017* (BC Reg) section 7.1 apply to subdivisions. When assessing subdivisions, the consent authority must consider the clearing of native vegetation required, or likely to be required, for the purpose for which the land is to be subdivided.

Native vegetation includes trees, understorey plants, groundcover and plants occurring in a wetland that are native to New South Wales (including planted native vegetation), not just trees.

If the subdivision will impact native vegetation and the clearing exceeds the biodiversity offsets scheme (BOS) thresholds (Part 7, BC Reg), the BAM must be applied and a biodiversity development assessment report (BDAR) prepared to assess and calculate the biodiversity offset credit requirement.

Biodiversity offsets are calculated and secured in accordance with the BC Act for the subdivision. Once this is done, no further offsets are required for subsequent development of the land that is within the approved subdivision.

The BAM requires proponents to demonstrate that biodiversity impacts have been avoided and minimised as far as possible, with residual impacts offset. Both the complexity of assessments, and the costs to the proponent associated with complying with the BOS, are lower where impacts on biodiversity are avoided and/or concentrated in areas of lower vegetation integrity.

Based on the information provided it is likely that the impacts of the future subdivision of the subject site will trigger entry into the BOS. Entities at risk of SAI have additional assessment requirements under the BAM (see below for further information).

4. Any future development is likely to impact on SAI entities

Based on the information provided, BCS understands that the area currently zoned as C4 contains remnant native vegetation that is likely to conform to the threatened ecological community *White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions* (Box Gum Woodland). Box Gum Woodland is listed as a Critically Endangered Ecological Community (CEEC) under the BC Act and therefore is listed as an entity for Serious and Irreversible Impacts (SAI). Where a proposal is determined likely to have a serious and irreversible impact on biodiversity values the planning authority must not grant approval.

As stated above the planning proposal should identify and map the extent of HEV within the subject site. Any future development assessment could be simplified by identifying the extent of HEV and SAI entities on the subject site up front in the strategic planning for the site.

BCS does not support amendments that facilitate land use intensification in areas of HEV.

ATTACHMENT B**Biodiversity, Conservation and Science Directorate (North West Branch)**
general advice for local government strategic planning

Rural settlement intensification can have significant impacts on biodiversity. Development will have short and long-term negative impacts on biodiversity. These negative impacts are caused by activities such as:

- the clearing of house and building sites;
- the disturbance caused by infrastructure (such as new roads, fence lines, dams and access to utilities); and
- the construction of asset protection zones for statutory fire protection.

The cumulative effect of multiple subdivisions will magnify these substantial impacts on biodiversity. These impacts are not regulated by the *Biodiversity Conservation Act 2016* or *Local Land Services Act 2013*.

There is also a need to recognise climate change as a severe and wide ranging threat to biodiversity in NSW. Rising temperatures and sea-levels, changed rainfall and fire regimes will affect biodiversity in complex and often unpredictable ways. As a result of climate change, current threats to biodiversity, including habitat loss, weeds, pest animals and drought, are expected to intensify.

In many cases, existing approaches to biodiversity conservation (protection of intact vegetation, species recovery, mitigation of current threats and revegetation and restoration activities) will form the basis of adaptation programs to address the impacts of climate change. Reducing existing threats to biodiversity, such as habitat loss, pests and weeds is the most effective option for enabling species to adapt to climate change (at least in the short term) as this will increase the capacity of species to persist in their current locations and form the base from which migration can occur.

Council has the responsibility to control the location and, to a degree, development standards of settlement and other land use intensification. Local Environmental Plans (LEPs) can be used to avoid settlement and development in Environmentally Sensitive Areas (ESAs) including areas of remnant native vegetation.

The S9.1 Directions in the Environmental Planning and Assessment Act 1979 (EP&A Act) require that Councils in preparing a new LEP must include provisions that facilitate the protection and conservation of ESAs. As a minimum, these provisions must aim to maintain the existing level of protection for ESAs within the LGA, as afforded by the current LEP.

As a matter of priority the BCS recommends six actions be taken by Councils when developing new LEPs. These will address the S9.1 Directions, and protect biodiversity from growth, development and associated pressures and changes:

1. Implement appropriate Environmental Zonings;
2. Avoid development in remnant native vegetation;
3. Establish large minimum lot sizes;
4. Conduct comprehensive environmental studies if areas of high environmental sensitivity occur in sites where there is a strong imperative to intensify land use;
5. Include a biodiversity overlay and clauses within the LEP; and
6. Define biodiversity protection and management measures in Development Control Plans (DCPs).

1. Implement appropriate Conservation Zonings

The zone, C1 'National Parks and Nature Reserves', should be applied to all of the NPWS estate within the LGA. We also encourage Councils to apply other environmental and water ways zones in appropriate areas.

The C1 zoning (formally known as Environmental Zone E1) is intended to apply to all lands acquired under the *National Parks and Wildlife Act 1974* (NP&W Act), and therefore is not limited to only the 'National Park' and 'Nature Reserve' classifications.

BCS is also strongly supportive of the implementation of appropriate environmental zonings to other areas identified to have high biodiversity. Private and public lands with high conservation values, including those providing linkages or corridors, can be protected in LEPs through appropriate zoning and/or via overlays with associated development controls. Councils should implement land use zonings such as C2-C4 and W1-W2 to provide as much protection as possible to biodiversity and ecological communities. Specific advice regarding the use of these zones is included in Practice Note previously forwarded to Council.

In particular, we advocate the application of the C2 zone to areas of private or Crown lands that are presently managed primarily for conservation (such as crown reserves or areas under conservation covenants).

We also recommend that Travelling Stock Reserves (TSRs) with known conservation values are included in C3 zones at a minimum, although C2 zoning would be preferred. Mapping of TSRs, including identified conservation values, is available via the Grassy Box Woodlands Conservation Management Network. This mapping can be accessed via <http://gbwcmn.net.au/node/6>.

2. Avoid development in remnant native vegetation

- *Council, through the Land Use Strategy and LEP, can protect biodiversity by avoiding development such as settlement and other land use intensification, in areas of remnant native vegetation.*
- *Development should be directed to areas that have already been cleared, unless such areas have been identified as having environmental importance.*

Excluding remnant native vegetation from development pressure on private land could be largely achieved by retaining such areas on relatively large holdings, within RU1 and RU2 zones for example.

Similarly, higher density settlement in 'fire prone' locations should be avoided in the first instance. Where residential areas abut native vegetation there is pressure for the required Asset Protection Zones and other hazard management measures to encroach on that vegetation.

Avoiding settlement in remnant native vegetation is also likely to avoid bushfire prone lands.

Settlement should also be avoided in locations that are likely to be targeted for biodiversity investment. Landholders in such areas may receive incentive funding for protection and enhancement of native vegetation or revegetation of cleared areas.

BCS can direct Councils to the best available mapping of remnant native vegetation for their LGA to help Council identify areas where further settlement intensification should be avoided.

For the Orange LGA:

- The Orange LEP incorporates a terrestrial biodiversity layer based on regional scale mapping of ESA's supplied by the Department during preparation of the 2011 LEP.

- The Central West Orana Regional Plan 2036 incorporates mapping of potential areas of high environmental value (HEV). This dataset can be accessed via the NSW Government SEED Portal: <https://datasets.seed.nsw.gov.au/dataset/high-environmental-value-for-central-west-orana-regional-growth-planning-area-detailed7053e>

At the broad strategic level, these maps can be used to identify areas that are most likely to be free from significant biodiversity constraints, therefore more suited to development.

3. Establish large minimum lot size limits

Minimum lot size limits should be large in RU1 and RU2 zones as well as environmentally sensitive areas. This will reduce the pressures of development and settlement on biodiversity in rural lands.

Minimum lot size limits can be used to reduce the pressures of development and settlement on biodiversity. The LEP should define realistically large minimum lot size limits with associated dwelling provisions to control the intensity of development and settlement.

In particular, Council needs to ensure that minimum lot sizes in environmentally sensitive areas are of an appropriately large size to control the cumulative impact of any development and settlement intensification permitted in those areas by the LEP.

The selected lot sizes should be designed to meet expectations of rural living while minimising the adverse environmental impacts of any settlement that may occur with the subdivision.

If Council is strongly of the opinion that lot sizes need to be reduced then this should not be applied uniformly. Environmentally sensitive areas should be excluded from lot size reductions.

4. Conduct targeted environmental studies

Where development in areas of native vegetation or environmentally sensitive areas cannot be avoided, a targeted environmental study should be conducted. This should focus on ensuring a “maintain or improve” outcome for biodiversity.

Where Council is unable to avoid applying zonings or minimum lot sizes which permit essential development intensification in remnant native vegetation, a targeted study should be conducted to investigate the biodiversity values of the area. Any study should determine and demonstrate how potential biodiversity impacts can be avoided and mitigated on the subject land. Under the *Biodiversity Conservation Act 2016* biodiversity offsets may be required for future subdivisions.

This study and any resulting objectives, zonings and lot sizes should aim to ensure a ‘maintain or improve’ outcome. This is a vital step in the strategic planning process and in effectively addressing the s.9.1 Directions.

5. Define biodiversity protection and management measures in Development Control Plans

Biodiversity protection and management measures should be defined in DCPs for all areas zoned for rural small holdings, residential and other development intensifications.

We view DCPs as a secondary mechanism to provide biodiversity protection and management measures. It is vital that biodiversity values are first considered strategically in zoning decisions and development assessment provisions. We do not consider it acceptable to completely defer consideration of these matters to the DCP stage.

It is also important to consider the threats to remnant native vegetation posed by adjoining land uses.

For example, threats to biodiversity associated with nearby growth and intensification of residential land use include (but are not limited to):

- Clearing;
- domestic animals;
- invasive plants;
- effluent and waste dispersion;
- changes in hydrology and hydraulics;
- increasing access due to fire trails and other tracks; and
- firewood collection.

Particular attention should be paid to relevant Key Threatening Processes identified and listed under the *Biodiversity Conservation Act 2016*. Mechanisms to abate threats to ESAs (such as implementing codes of practice, best management practice, alternative designs and operations, control technology and buffers between remnant vegetation and small holdings) should be considered.

Council should recognise that buffers may be necessary between environmentally sensitive areas and other land uses. The size of the buffer will vary depending on the nature or activity being undertaken and the level of management control required to prevent or minimise adverse impacts. Provisions should be made to rigorously assess any developments within environmentally sensitive areas and adjoining buffers to prohibit land uses and activities that threaten the ecological integrity, values and function of the area.

Some forms of development adjacent to national parks and reserves can impact on their values and should be avoided or restricted. Council should consider how these areas could be buffered from incompatible development and activities so that potential conflicts can be minimised.

The Departments Guidelines for Developments adjacent to NPWS Estate have been designed to assist Councils when they are assessing development on lands adjoining NPWS estate. However, the issues identified in these guidelines are also relevant when considering buffers for protection of environmentally sensitive areas.

ATTACHMENT C

HEV Criteria and Identification Methods at the Property Scale

High Environmental Value (HEV) Criteria and Components		Property Scale HEV Identification Method
Criterion 1. Sensitive Biodiversity Mapped on the Biodiversity Values Map		
1.1 Biodiversity Values Map		<ul style="list-style-type: none"> a. Identify the parts of the land on the Biodiversity Values map which can be viewed at https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity-offsets-scheme/about-the-biodiversity-offsets-scheme/when-does-bos-apply/biodiversity-values-map. b. Inspect those mapped areas on the land to verify accuracy and map as HEV where the map is accurate.
Criterion 2. Native vegetation of high conservation value		
2.1 Over-cleared vegetation types		<ul style="list-style-type: none"> a. Identify Plant Community Types (PCTs) on the land through field work. b. Register and visit the Vegetation Information System (VIS) database at vis@environment.nsw.gov.au. c. Use the VIS to determine whether the % cleared status of the PCTs identified through field work on the land is above 70%. d. Map all PCTs on the land with the % cleared above 70% as HEV.
2.2 Vegetation in over-cleared landscapes (Mitchell landscapes)		<ul style="list-style-type: none"> a. Identify over-cleared Mitchell landscapes by viewing map data from the SEED portal https://www.seed.nsw.gov.au/ – selecting NSW (Mitchell Landscapes) – latest version, selecting Show on Seed Map and viewing the View Over Cleared Land Status. b. Map all native vegetation on the land as HEV if it is in an over-cleared Mitchell landscape.
2.3 Threatened Ecological Communities - any vulnerable, endangered, or critically endangered ecological community listed under the BC Act, the FM Act 1994 or the EPBC Act and not mapped on the BV map		<ul style="list-style-type: none"> a. Identify Plant Community Types (PCTs) on the land through field work. b. Register and visit the VIS database at vis@environment.nsw.gov.au. c. Use the VIS to determine whether the PCTs on the land have Threatened Ecological Community (TEC) Status. d. If not identified as a TEC from steps a – c above, then refer to the NSW Threatened Species Scientific Committee determinations to consider whether any of the PCTs accords with the determinations. e. Map all PCTs on the land that are TECs as HEV.
2.4 100m buffer on Coastal Wetlands and Littoral Rainforest areas as per the Coastal Management SEPP 2018		<ul style="list-style-type: none"> a. Locate the land on the SEPP Coastal Management SEPP maps available at https://webmap.environment.nsw.gov.au/PlanningHtml5Viewer/?viewer=SEPP_CoastalManagement b. Map any parts of the land shown as proximity areas for Coastal Wetlands and Littoral Rainforest as HEV.
Criterion 3. Threatened species		
3.1 Key habitat for threatened species (vulnerable, endangered, or critically endangered species listed under BC Act)	Key breeding habitats with known breeding occurrence	<ul style="list-style-type: none"> a. Search BioNet for threatened species records on and within 5km of the land b. Undertake field work to identify potential breeding habitats on the land for threatened species. c. Either assume breeding occurrence and map identified breeding habitats on the land as HEV or undertake targeted surveys during the breeding season and map these habitats as HEV if breeding occurs there.
	Core Koala Habitat	<ul style="list-style-type: none"> a. Check council records for approved comprehensive or individual property Koala Plans of Management (KPOM). b. Identify areas of core koala habitat on the land mapped in any

High Environmental Value (HEV) Criteria and Components		Property Scale HEV Identification Method
		<p>approved KPoM and map these areas as HEV.</p> <p>c. If there are no approved KPoMs, then undertake field work in accordance with the relevant State Environmental Planning Policy (SEPP) for koalas, e.g. SEPP (Koala Habitat Protection) 2020, to determine whether Core Koala Habitat is present on the land.</p> <p>d. Map any core koala habitat identified on the land through field work as HEV.</p>
	Habitat for known populations of species-credit-species and SAI entities (species-credit species and SAI entities are identified in the Threatened Biodiversity Data Collection)	<p>a. Search BioNet for threatened species records on and within 5km of the land.</p> <p>b. Undertake field work to identify populations of threatened species credit species on the land and their habitats.</p> <p>c. Map all habitats of known populations of species credit species on the land as HEV.</p> <p>The Biodiversity Assessment Method and the Department's survey assessment guidelines should be referred to for suitable habitat assessment methodologies.</p> <p>If a recent Biodiversity Development Assessment Report has been prepared for the land, then this could be referred to in support of demonstrating how this criterion has been considered.</p>
	Key habitats for migratory species	<p>a. Search BioNet for threatened migratory species records on and within 5km of the land.</p> <p>b. Undertake field work to identify habitats of threatened migratory species on the land.</p> <p>c. Map all habitats of threatened migratory species on the land as HEV.</p>
Criterion 4. Wetlands, rivers, estuaries & coastal features of high environmental value		
4.1 Nationally important wetlands	Note: Rivers and their riparian areas comprising HEV are included in the Biodiversity Values Map under HEV Criterion 1 as protected riparian land	<p>a. Search the Directory of Important Wetlands in Australia for those occurring in NSW available at http://www.environment.gov.au/cgi-bin/wetlands/search.pl?smode=DOIW.</p> <p>b. Identify any nationally important wetlands listed in the directory that occur on the land and map these areas as HEV.</p>
4.2 Vulnerable Estuaries and ICOLLS		<p>a. Identify whether any vulnerable estuaries or ICOLLS occur on, or in the vicinity of, the land by reviewing the maps available at https://datasets.seed.nsw.gov.au/dataset/vulnerableestuariesandicolls.</p> <p>b. Map any vulnerable estuaries or ICOLLS that occur on, or in the vicinity of, the land as HEV.</p>
Criterion 5. Areas of geological significance		
5.1 Karst landscapes		<p>a. Identify whether limestone outcrops or caves occur on the land.</p> <p>b. Consider any additional Karst landscapes that occur in the vicinity of the land, with reference to the NSW Government's <i>Guide to New South Wales Karst and Caves</i> available at https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Land-and-soil/nsw-karst-cave-guide-110455.pdf and any other available karst mapping, such as karts maps associated with local environmental plans.</p> <p>c. Map any limestone outcrops or caves on the land and any other karst landscapes that occur in the vicinity of the land as HEV.</p>
5.2 Sites of geological significance included in the State Heritage Register or Heritage Inventory		<p>a. Identify whether the land contains, or is in the vicinity of, the sites of geological significance.</p> <p>b. Map any sites of geological significance that occur on, or in the vicinity of, the land as HEV.</p>

**Department of Planning and Environment**

Our ref: PP-2021-5680/IRF22/2565

Mr David Waddell
Chief Executive Officer
Orange City Council
ORANGE NSW 2800

Attention: Craig Mortell, Senior Planner - Development Services

Dear Mr Waddell

Planning proposal [PP-2021-5680] to amend Orange Local Environmental Plan 2011 – Rosedale Gardens - agency consultation

Thank you for your correspondence of 2 June 2022 and updated planning proposal of 13 July 2022.

Council has asked whether conditions 1 to 3 of the Gateway determination dated 23 December 2021 have been satisfactorily completed and whether the planning proposal can proceed to community consultation.

The planning proposal is not ready for community consultation. The following must be addressed by Council before the proposal can proceed to community consultation:

1. As Planning Proposal Authority, Orange City Council is responsible for the governance of the planning proposal. Council has requested the planning proposal proceed to exhibition but has not addressed all the matters raised by agencies.

Section 4.5 of the revised planning proposal states the view of State agencies will be obtained post-Gateway, which has now occurred. This part of the planning proposal should be updated to show the issues raised by agencies and how they have been addressed. Agency correspondence received in meeting Gateway conditions will be publicly available and the community should be able to see how Council has considered and responded to matters raised when the proposal is exhibited.

2. Condition 1 is satisfied except for the following:

- steep terrain - the revised planning proposal provides discussion and a proposed new map for steep terrain where slopes greater than 20% have been mapped. However, the maps do not include all land that has a terrain greater than 20% terrain when compared to the slope analysis (Figure 14), and there is no text in the planning proposal justifying this discrepancy.
- SP2 zone – it is understood that further consultation with Transgrid is proposed. The planning proposal shows alternative options for zone and lot size maps but there is no discussion about when the different options would apply and at what stage a decision would be made. The community needs to understand the link between these maps and Transgrid.

- RE1 public recreation - the planning proposal does not adequately describe the reason why the RE1 zone is proposed to be removed and the methods by which Council will ensure land for recreation and open space is provided to Council's satisfaction. There is a reference to this being provided in the short term by a DCP but no indication of how this will work. The community viewing this planning proposal needs to understand how the loss of RE1 zoned land will be offset by recreation and open space land in the R5 zone. At this stage Ministerial Direction 6.2 - Reserving Land for Public Purposes has not been resolved and will need to be before the planning proposal is submitted for finalisation.
- C4 Environmental Living area – see discussion below under BCS response.
- Contamination of land - although the contamination report has recommended that the land can be made suitable, Transport for NSW required further work near the railway corridor.

3. Condition 2:

- Biodiversity, Conservation and Science Directorate (BCS)

Council's email correspondence of 2 June 2022 refers to a (then) upcoming meeting with BCS but no advice has been provided as to whether matters raised by BCS have been resolved.

BCS earlier advice requested the planning proposal map High Environmental Value (HEV) areas and identify how these will be avoided.

The revised planning proposal has included a map (Figure 4) described as 'Current high environmental value/sensitivity map' however there is no reference to this map in the planning proposal, including what it represents and how it relates to BCS's advice or to section 9.1 Direction 2.1 Environmental Protection Zones. The planning proposal also includes a 'concept site layout' which does not reflect the areas of sensitivity shown on Figure 4.

Orange LEP 2011 includes mechanisms to consider areas with high environmental value at development application stage (eg. cl. 7.4 and 7.5) however the narrative of how this might apply in this case is not documented in the planning proposal.

Updated mapping of environmental sensitivity to amend the LEP map layers, identification that the 'concept site layout' is subject to development assessment and may not be achieved given LEP provisions, and confirmation that there are no areas of sensitivity requiring specific conservation zoning could resolve the concerns raised by BCS and address the inconsistency with Section 9.1 Direction 2.1 Environmental Protection Zones which remains unresolved.

- Transport for NSW (TfNSW) – the amended proposal does not address or document the issues raised by TfNSW.
- Cabonne Council - the amended proposal does not refer to concerns raised by Cabonne Council in relation to potential land use conflict with adjoining rural land or how these will be addressed.

- Heritage NSW (HNSW) - the amended proposal does not address HNSW comments requiring archaeological test excavation and update to the due diligence report.

It is noted that no response has been received from John Holland Rail, Transgrid, Water NSW, NRAR, NSW RFS and Charles Sturt University. Section 4.5 of the Planning Proposal should be updated to show that consultation occurred but no response was received.

In updating the planning proposal in response to agency submissions, Council may determine that some matters are best handled at development application stage and through the proposed Development Control Plan. This may be appropriate, but Council should be clear about what will be included in the DCP and when it will be available for community consultation.

If you have any more questions, please contact _____, Manager at the Department of Planning and Environment on _____

Yours sincerely

2 August 2022

Garry Hopkins
Director, Western Region
Local and Regional Planning

David Walker

From: Samantha Gibbins
Sent: Wednesday, 31 August 2022 9:00 AM
To: David Walker; Kym McNamara
Cc: Rose O'Sullivan; Nicole Davis
Subject: RE: [#221025] Heritage NSW Response - Planning Proposal -Rosedale Gardens, Orange

Hi David,

Thanks for sending through this additional information and context. I note from your email that:

- The maximum lot yield will not exceed 700 lots.
- Out of the 290 hectare site, around 20 hectares of land could, if needed, be set aside for protection of sensitive landforms or sites.
- If the detailed investigations reveal the need for a greater area of protection, the resulting outcome would be delivery of less lots than the anticipated maximum. This is a reality the applicant apparently fully understands.
- The current proposal to rezone those areas of the site not currently identified as R5, to R5, means that flexibility exists to design an appropriate subdivision layout that takes full account of identified site sensitivities, such as those that may be identified through biodiversity, archaeological, stormwater or other detailed investigations.

Our preference is that an ACHAR, including test excavations, is prepared to inform the planning proposal, as per our original advice. However, given the particular circumstances you have outlined, along with the above, we agree that the completion of an ACHAR can be deferred to the DA stage. This is based on the understanding that the results of the test excavations, and the ACHAR, will be used to inform the final design of the subdivision, including avoidance of identified significant Aboriginal cultural heritage values where possible.

Please contact me if you have any questions about the above advice.

Kind regards,

Sam

From: David Walker
Sent: Thursday, 25 August 2022 11:10 AM
To: Samantha Gibbins

Kym McNamara

Cc: Rose O'Sullivan
Subject: RE: [#221025] Heritage NSW Response - Planning Proposal -Rosedale Gardens, Orange

Hi Samantha and Kym

Thanks again for your time last week regarding the Orange LEP amendment 33 and the current Heritage NSW advice requiring completion of an ACHA prior to finalisation of the amendment.

We discussed at the meeting that providing some additional details around the areas involved in the concept layout may provide Heritage NSW with sufficient comfort that there is capacity within the site to identify available areas that could, if necessary, be set aside for protection, without prejudicing the overarching targeted maximum lot yield.

The current concept plan (attached) provides for up to 700 lots. As you can see, the majority of lots exceed the 2000m² minimum area.

As proposed by the applicant via the planning proposal, the limit of 700 lots is to be enshrined in a specific LEP clause that will ensure that the maximum lot yield of the scheme does not exceed this number. In the context of the proposed minimum lot size of 2,000m², and the areas conceptually be set aside for open space and roads, we note the following:

- The site has an area of approximately 290 hectares
- 700 lots at an MLS of 2,000m² would require a minimum area of 140 ha
- Areas set aside for roads and open space (via the concept plan) are, respectively, 62.3 ha and 28.2 ha.
- Being reasonable and assuming that lots within areas of steeper slope or containing native vegetation may be larger, we have assumed that 20% of lots are in fact a minimum of 3,900m² (strategically ensuring these are less than 4,000m² so that further subdivision is not possible). This would result in approximately 490 x 2000m² lots and 210 x 3900m² lots. This increases the conceptual minimum development area from 140 ha to 180 ha.
- 290 ha less areas for roads and open space (62.3+28.2) leaves 199.5 ha for development.
- As a means of testing the above, it is common in land use planning terms to assume that around 20% of land should be excluded from conceptual lot yields to account for open space and roads. This is typically increased to 30% where the land is constrained (eg, due to slope). In this case, assuming a 30% reduction factor against the original 290 ha, leaves 203 ha for lot development, which is very close to the 199.5 ha figure flagged above. 203/2000 suggests the land could accommodate around 1,015 lots of 2000m². As per the above, a limit of 700 is placed on this subdivision, to ensure that lots can be larger than the minimum, or to provide for the yield target whilst still ensuring any areas of sensitivity can be accommodated.

Therefore, considering the difference between the area needed to deliver a mix of 2000 and 3900 m² lots, around 20 hectares of land could, if needed, be set aside for protection purposes. This is, in our submission, a significant area and more than sufficient to ensure that any conflict between the targeted lot yield and ensuring adequate protection of sensitive landforms or sites is possible.

Finally, we note that the maximum lot yield is just that, a maximum. In the unlikely event that detailed investigations revealed the need for a greater area of protection, the resulting outcome would be delivery of less lots than the anticipated maximum. This is a reality the applicant fully understands.

As a last point, it is the applicant's intention to work with Council to deliver a future housekeeping amendment to the LEP to ensure that all lands set aside for either recreation or protection are protected by an appropriate zoning. The challenge with the current layout is that it was established based on an early concept layout and it was always expected that amendments to the zone boundaries would be required to reflect the proposed concept. This approach adds an unnecessary step into the project whereby the delivery of the subdividing DA would be delayed whilst the amendment is actioned (noting that a subdivision proposing to divide areas of RE1 zoned land would not be permissible until an LEP amendment was completed. The current proposal to rezone those areas of the site not currently identified as R5, to R5, means that flexibility exists to design an appropriate subdivision layout that takes full account of identified site sensitivities, such as those that may be identified through biodiversity, archaeological, stormwater or other detailed investigations. On adoption of the layout (via the required DCP), and the subsequent delivery of the lots, the protection/recreation areas would be zoned appropriately to provide future protection. This approach is supported by Council as it provides for the more efficient and effective delivery of lots, a key object of the EP&A Act.

On the basis of the above, and noting the historic rezoning of the land for development purposes, we submit that there is no compelling need to complete an ACHA at this time and that this should, and can, reasonably be deferred to the DA stage, as is the case with the current rezoning arrangement.

We also note for relevance, that recent rezonings in Orange, such as the Shiralee subdivision, were not subject to ACHA's prior to rezoning.

It would be appreciated if we can further discuss the matter, or receive your comments on the above, in order that we can resolve DPE's concerns and enable the project to proceed to community exhibition.

Please let me know if you have any questions.

Kind regards,



DAVID WALKER
General Manager – Central NSW



A 154 Peisley St, Orange NSW 2800

From: Samantha Gibbins
Sent: Wednesday, 17 August 2022 1:50 PM
To: David Walker
Cc: Rose O'Sullivan
Subject: RE: [#221025] Heritage NSW Response - Planning Proposal -Rosedale Gardens, Orange

Thanks David,

I can certainly speak with you in the first instance to gain more understanding of the issues, but it is likely that I'll need to run things by Rose when she returns from leave in the week of the 29 Aug.

Would you prefer to wait and set up a meeting once Rose is back?

Otherwise, I'm available for an initial chat tomorrow between 1 pm and 3 pm if that works for you.

Kind regards,

Sam

From: David Walker
Sent: Wednesday, 17 August 2022 1:07 PM
To: Samantha Gibbins
Cc: Rose O'Sullivan
Subject: RE: [#221025] Heritage NSW Response - Planning Proposal -Rosedale Gardens, Orange

Hi Samantha

Thanks for your response.

We would like to discuss the need for an ACHA at this point, noting that the land was rezoned from RU1 only two years ago without an ACHA being completed, and due diligence being sufficient. Nothing has changed on the land in the intervening time and the nature of the proposed land use is consistent with the approved rezoning in 2020. Put simply, we would like to understand why an ACHA is required now when it was not required previously (in the absence of any other change to the site, landscape or regulatory framework).

As stated, the applicant has always been committed to completing the ACHA process at DA stage and this informing detailed design of the subdivision layout.

It would be greatly appreciated if you can find some time to discuss the above.

Kind regards,



DAVID WALKER
General Manager – Central NSW



A 154 Peisley St, Orange NSW 2800

From: Samantha Gibbins
Sent: Wednesday, 17 August 2022 12:37 PM
To: David Walker
Cc: Rose O'Sullivan
Subject: RE: [#221025] Heritage NSW Response - Planning Proposal -Rosedale Gardens, Orange

Hi David,

I apologise, but I have had no prior involvement with this project. I have looked at the advice previously provided by Rose and note that the due diligence assessment is not considered sufficient and that an Aboriginal Cultural Heritage Assessment Report (ACHAR) should be prepared to inform the planning proposal.

I note in your email that your preferred approach is to deal with the ACHAR and subsurface testing process in conjunction with DA. This is not something that we would usually support - our advice remains that an ACHAR, including consultation with the Aboriginal community and archaeological test excavation, should be prepared upfront to inform the planning proposal.

Could you please outline what you wish to discuss?

Kind regards,

Sam

Sam Gibbins, BA (Hons), PhD
Senior Assessments Officer, Archaeologist
Environment and Heritage - Heritage NSW
Department of Planning and Environment

heritage.nsw.gov.au and dpie.nsw.gov.au

Locked Bag 5020
Parramatta NSW 2124

Working days Monday to Friday, 8:00am – 4:00pm



I acknowledge the traditional custodians of the land and pay respects to Elders past and present. I also acknowledge all the Aboriginal and Torres Strait Islander staff working with NSW Government at this time.

Please consider the environment before printing this email.

From: David Walker
Sent: Wednesday, 17 August 2022 11:00 AM
To: Samantha Gibbins
Cc: Rose O'Sullivan
Subject: FW: [#221025] Heritage NSW Response - Planning Proposal -Rosedale Gardens, Orange

Hi Samantha

Can you advise if you have some time this week to discuss this project?

Kind regards,



DAVID WALKER
General Manager – Central NSW



A 154 Peisley St, Orange NSW 2800

From: David Walker
Sent: Friday, 12 August 2022 12:39 PM
To: Rose O'Sullivan
Cc: Samantha Gibbins
Subject: RE: [#221025] Heritage NSW Response - Planning Proposal -Rosedale Gardens, Orange

Hi Rose

We are under some time pressures to progress this. It would be great to speak to Samantha in the short term. Samantha, can you advise when you have 30 mins to discuss the project with us?

Kind regards,



DAVID WALKER
General Manager – Central NSW



A 154 Peisley St, Orange NSW 2800

From: Rose O'Sullivan
Sent: Friday, 12 August 2022 12:13 PM
To: David Walker
Cc: Samantha Gibbins
Subject: RE: [#221025] Heritage NSW Response - Planning Proposal -Rosedale Gardens, Orange

Hello David

Thank you for your email and apologies for the delay responding.

Broadly, our advice recommends thorough Aboriginal cultural heritage assessment at the planning proposal stage to provide the best opportunity to protect and conserve Aboriginal cultural heritage sites and values.

I am happy to arrange a time to meet and discuss this planning proposal and the timing of the detailed Aboriginal cultural heritage assessment work. However, I am currently on leave, returning on 29 August. I will be in touch when I return and we can arrange a time to meet.

If you have any queries in the meantime, my colleague Samantha Gibbins (cc'd above) may be able to assist. Otherwise I look forward to speaking with you in a few weeks.

Kind Regards
Rose

Rose O'Sullivan

Principal Assessments Officer – North (Archaeologist)
Heritage Assessments
Heritage NSW
Department of Planning and Environment

85 Faulkner Street
Armidale NSW 2350

Working days Monday to Friday



I acknowledge the traditional custodians of the land and pay respects to Elders past and present. I also acknowledge all the Aboriginal and Torres Strait Islander staff working with NSW Government at this time.

Please consider the environment before printing this email.

From: David Walker
Sent: Monday, 8 August 2022 1:11 PM
To: Rose O'Sullivan
Cc:
Subject: FW: [#221025] Heritage NSW Response - Planning Proposal -Rosedale Gardens, Orange

Hi Rose

With respect to the attached, we would appreciate the opportunity to discuss the response from Heritage NSW with respect to the Rosedale Gardens LEP Amendment in Orange, NSW.

You may be aware that the history of this site is that it was rezoned from RU1 and IN1 in 2020 to allow for a combination of R5, E4 and RE1. The client has decided to seek a reduced minimum lot size and update the zoning to be consistent as R5 across the site. This has not changed the areas of the site that would be impacted, as all areas of the land (outside the recreation areas) were to be developed with large lot residential allotments. At the time of the original rezoning a due diligence assessment was completed and the need for some further sub-surface testing was identified, to be completed at DA stage. We have completed the attached updated AHIMS search, which reflects the findings of the studies completed in 2016. Whilst the RE1 zoning is being removed via this amendment, the amount of recreation land to be provided would be consistent with the amount originally shown in the 2020 rezoning. The reason for removal of the RE1 zoning is to provide flexibility with the master planning and developed design. The recreation land would be dedicated to Council at DA stage and Council staff have confirmed it is expected that a housekeeping amendment would occur to adopt RE1 zoning of the recreation areas in the approved subdivision plan.

It remains the preferred approach to deal with the ACHA and subsurface testing process in conjunction with DA, as the master-planning of the subdivision will be further advanced. At this stage, the concept plan is very simplistic and requires further inputs to be refined. A masterplan and DCP are required to be developed due the urban release provisions of the LEP, which provides regulators with certainty that the opportunity exists for management of these issues.

I would welcome the opportunity to discuss the project with you. At the current time, heritage remains the only outstanding substantive issue holding back the next phase of the rezoning process, which is to proceed to community consultation.

Please advise when suits to discuss.

Kind regards,



DAVID WALKER
General Manager – Central NSW



A 154 Peisley St, Orange NSW 2800

From: Craig Mortell
Sent: Wednesday, 1 June 2022 8:47 AM
To: David Walker
Subject: FW: Heritage NSW Response - Planning Proposal -Rosedale Gardens, Orange

From: James Sellwood
Sent: Friday, 27 May 2022 6:33 PM
To: Craig Mortell
Cc: Rose O'Sullivan
James Sellwood
Subject: Heritage NSW Response - Planning Proposal -Rosedale Gardens, Orange

Hi Craig

Please find attached advice from my colleague Rose O'Sullivan on this planning proposal.

Apologies for the delay in our response, we've recently been through a restructure which has impact on our staff resources.

Best regards
James

James Sellwood (*he/him*)
Senior Heritage Planning Officer
Heritage Assessments
Heritage NSW
Department of Planning and Environment

heritage.nsw.gov.au

Level 6, 10 Valentine Avenue, Parramatta NSW 2150
Locked Bag 5020, Parramatta NSW 2124

Working days Monday to Friday



Heritage Management System is live – heritage.nsw.gov.au/what-we-do/heritage-management-system



I acknowledge the traditional custodians of the land and pay respects to Elders past and present. I also acknowledge all the Aboriginal and Torres Strait Islander staff working with NSW Government at this time.

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Heritage NSW

Our ref: DOC22/301412

Mr Craig Mortell
Orange City Council

Planning Proposal – Rosedale Gardens, Orange

Dear Mr Mortell

Thank you for the opportunity to provide comment on the planning proposal to make amendments to *Orange Local Environmental Plan 2011* (LEP) for the Rosedale Gardens Estate at 440 Clergate Road and 463 Leeds Parade, Orange, to allow for future subdivision and residential development. Our apologies for the delay in this response.

Aboriginal cultural heritage considerations under the *National Parks and Wildlife Act 1974*

A Due Diligence Assessment is not considered sufficient assessment to inform a planning proposal

An Aboriginal cultural heritage due diligence assessment prepared by Biosis Pty Ltd (2016) has been provided in support of this the planning proposal.

We advise Council that an assessment under the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (2010) is not considered an archaeological assessment or substitute for a comprehensive Aboriginal Cultural Heritage Assessment Report (ACHAR).

The due diligence process does not adequately assess the impacts of this planning proposal on Aboriginal cultural heritage as required by Local Planning Direction 3.2 – Heritage Conservation. This is because without Aboriginal community consultation and full archaeological investigation the extent of the impacts on Aboriginal objects and heritage values through the planning proposal and future development is not known.

In relation to the Biosis (2016) report, we advise Council that:

- archaeological test excavation is recommended within the planning proposal area. This should occur before the planning proposal is determined to provide accurate information about the extent and nature of Aboriginal heritage sites and the potential impact of the planning proposal on Aboriginal cultural heritage values.
- the due diligence assessment itself was prepared in 2016 and we consider that this report requires updating, and
- for the purposes of exercising due diligence, the results of an Aboriginal Heritage Information Management System (AHIMS) search may only be relied upon for 12 months. The Biosis (2016) report includes an outdated AHIMS search from 2015.

An Aboriginal Cultural Heritage Assessment Report should inform the planning proposal

Future development that the planning proposal is intended to facilitate must be appropriately assessed in the planning proposal and this has not occurred. We cannot provide certainty about whether an Aboriginal Heritage Impact Permit (AHIP) could be issued for any future development applications without a comprehensive ACHAR prepared in accordance with Heritage NSW guidelines.

Assessing Aboriginal cultural heritage impacts before or at the planning proposal stage:

- provides the best opportunity to identify Aboriginal cultural heritage values
- establishes how those values interact with proposed future development, and
- provides certainty to all parties about any future Aboriginal cultural heritage management requirements.

Heritage NSW recommends that an ACHAR, including consultation with the Aboriginal community and archaeological test excavation, is prepared to inform this planning proposal. Further information on how to prepare an ACHAR is available on our website at heritage.nsw.gov.au/applications/aboriginal-objects-and-places/before-you-apply/.

Local heritage considerations under the *Environmental Planning and Assessment Act 1979*

We note that the planning proposal site is located next to the following Local heritage items listed under Council's LEP:

- "Rosedale" homestead (I12) to its east
- "Wyselba" house (I310) to its west, and
- Canobolas Wool Topmaking building (I309) to its south west.

We note that, as these Local heritage items are listed under your LEP, Council is the consent authority, and the assessment and consideration of any impacts on them from the planning proposal rests with Council.

The Heritage Council, and Heritage NSW as its Delegate, do not have a role in the assessment and approval of impacts to Local heritage items. As such, we do not provide advice on planning matters which impact on Local heritage.

If you have any questions about this advice, please contact me by phone
at

or by email

Yours sincerely

Rose O'Sullivan

Senior Assessment Officer

Heritage Assessments

Heritage NSW

27 March 2022



THE GENERAL MANAGER
POST OFFICE BOX 17
MOLONG 2866

Doc ID: 1384380

Fax: 02 6392 3260

Your Ref:

Contact: HJ Nicholls

Website: www.cabonne.nsw.gov.au

ABN: 41992 919 200

Email: council@cabonne.nsw.gov.au

03 May 2022

Chief Executive Officer
David Waddell
Orange City Council
PO Box 35
ORANGE NSW 2800

Attention: Craig Mortell

Dear Sir,

ORANGE LOCAL ENVIRONMENTAL PLAN 2011 - AMENDMENT 33 (PP-2021-5680) AGENCY CONSULTATION – PLANNING PROPOSAL 463 LEEDS PAPRADE AND 440 CLERGATE ROAD, ORANGE– ROSEDALE GARDENS ESTATE PTY LTD

Council acknowledges your correspondence dated 4 April 2022. It is noted that Orange City Council invites Cabonne Council to review and provide comment on the above-mentioned Planning Proposal and associated documents. Please be advised that the Planning Proposal was put to council for its consideration at its April 2022 meeting.

Council notes that the planning proposal, seeks to rezone a 290ha orchard holding for large lot residential development creating a lot yield of 700 allotments.

The Planning Proposal, while addressing the relationship of the proposal to the housing and employment strategies of Orange City Council, is silent upon the potential impact of the development upon established adjacent farmland within the Cabonne LGA.

Council requests that consideration be given in the proposed rezoning of land known as 440 Clergate Road and 463 Leeds Parade, Orange, as to potential impact upon both Cabonne Council and the State government's right to farm policies, the protection of farmland within the Cabonne LGA, and request consideration of the aims and objectives of the Cabonne LEP 2012, the objectives of the RU1 zone, and measures to including biosecurity measures, to ensure the protection of established farming north of the subject land.

Furthermore, that consideration be given to implementation of adequate buffer distances or planning controls to address potential land use conflict between

residential and rural land uses, biosecurity measures, and to protect the right to farm for established nearby farmland should the rezoning proposal proceed.

If you wish to discuss this matter further, please contact the undersigned

Yours faithfully,

HJ Nicholls
Deputy General Manager – Cabonne Services



DOC22/265114-1

The General Manager
Orange Local Council
Orange, NSW, 2800

Attention: Craig Mortell
Senior Planner – Development Services

14/04/2022

Dear Mr Mortell,

AMENDMENT TO THE ORANGE LOCAL ENVIRONMENTAL PLAN - 2011

Thank you for the opportunity for the Environment Protection Authority (the EPA) to provide comment regarding the proposed amendment to the Orange Local Environmental Plan (LEP) in respect of the land located 463 Leeds Parade and 440 Clergate Road (the Site). The EPA received the planning proposal for the LEP on the 04 March 2022 from the Orange Regional Council (Council).

The EPA has not undertaken a detailed review of the LEP. However, the following comments are offered for your consideration.

Land Management

The EPA understands that the strategic focus of the plan is to facilitate the rezoning of land which currently contains land zoned R5, E4, RE1, SP2 and rezone the site to R5 Large Lot Residential. The current surrounding land zoning is a mixture of General Industrial (IN1), Primary Production (RE1) and Infrastructure (SP2). The EPA acknowledges the potential of future land-use conflict due to the surrounding site activities on residential properties. The EPA recommends that Council ensure an adequate buffer distance between the IN1, RU1 and the proposed R5 land. The buffer should consider potential noise, water and air quality impacts on the community from industrial activities such as those regulated by the EPA under Schedule 1 of the Protection of the Environment Operations Act (POEO Act). A list of industries the EPA regulates in the Orange local government area can be obtained via the EPA's public register, which can be found at <https://apps.epa.nsw.gov.au/prpoeoapp/default.aspx>

Contaminated Land

The EPA suggests that Council ensures that all site remediation work is completed in a planned and proper manner. This includes the removal of all asbestos waste by a trained and licenced professional to ensure further site contamination is not caused. After the destruction and removal of all abattoir infrastructure, including any underground storage units Council should ensure a full site investigation is completed to fully assess any potential ground and water pollution. Further information on

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(from outside NSW)

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NSW 2150 Australia

info@epa.nsw.gov.au

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contaminated land can be found via the EPA's website: <https://www.epa.nsw.gov.au/your-environment/contaminated-land>

If you have any questions or wish to discuss the matter further, please contact

Yours sincerely.

Carlie Armstrong
Unit Head - Regulatory Operations

Transport for NSW



Mr Craig Mortell
Orange City Council
PO Box 35
ORANGE NSW 2800

Dear Mr Mortell

Re: Orange Local Environmental Plan 2011 – Amendment 33 (PP-2021-5680)

Thank you for your referral via the planning portal inviting comment from Transport for NSW (TfNSW) as part of the exhibition of *Orange Local Environmental Plan 2011* (OLEP 2011) Amendment 33.

TfNSW understands the planning proposal would facilitate the creation of up to 700 R5 Large Lot Residential lots and proposes ongoing vehicular access via a new access onto Pearce Lane (near the existing level crossing) and converting a private level crossing (currently serving Lot 3 DP 255983) to a public level crossing. As indicated in the documentation supporting the PP, additional traffic generated from the proposal would use both level crossings.

We also note that the proposed development is located immediately adjacent to an operational rail corridor from Orange Junction to Dubbo. Future rail movements may increase along this corridor for maintenance and testing as part of the Regional Rail - Mindyarra Maintenance Centre, currently under construction in Dubbo.

TfNSW has reviewed the Traffic Impact Assessment (TIA) and notes the Level of Service (LoS) for right turn movements at Clergate Road onto the Northern Distributor Road will degrade to a LoS F under projected future traffic conditions, with queueing anticipated. Appropriate control measures for this intersection, including signalisation of the intersection of Clergate Road and Northern Distributor Road needs to be considered, in consultation with Council and TfNSW.

TfNSW does not currently support the proposal in its current form. Concerns are raised about the future safe operation of the aforementioned level crossings as a result of the increase in traffic from the future development.

Further investigation is required to demonstrate that the increase in traffic can be safely accommodated. Mitigation measures (such as upgrading the existing level crossings) may be required to ensure future safe operations. The cost of any proposed mitigation measures would need to be borne by the proponent, with the scope discussed and agreed with the following parties:

- TfNSW as the Rail Authority;
- UGL as TfNSW contracted Rail Infrastructure Manager; and
- Council (as the appropriate Roads Authority).

Further detailed comments in relation to the PP, details of the required additional investigation required and comments relevant to the future Development Application stage are provided in **Attachment A**. If you wish to discuss this matter further please contact the undersigned

Yours faithfully

Andrew McIntyre
Manager Development Services
West Region | Community & Place
Regional & Outer Metropolitan

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Attachment A – Detailed comment about the Planning Proposal**New Northern Access via Public level crossing at Pearce Lane**

The proposed new northern access is likely to have an impact on the public level crossing as the new access is in close proximity to the crossing. The Traffic Impact Assessment forecasts up to 10% of the traffic generated will utilise the northern access and have potential impact on the public level crossing on Pearce Lane. TfNSW requests additional safety assessment of the proposal against Australian Standard 1742.7 and *Railway Crossing Safety Series 2011, Plan: Establishing a Railway Crossing Safety Management Plan* (Roads and Traffic Authority 2011 and an ALCAM assessment on the crossing to confirm that it is safe and suitable to accommodate the expected increase in vehicle usage as a result of the development.

New Western Access and Upgrade of an existing private level crossing to a public level crossing

TfNSW's records indicate that the crossing is provided exclusively for Lot 3 DP 255983 as a private crossing. As suggested in the planning proposal, this private crossing is proposed to be upgraded to a public level crossing and required formal approval from TfNSW.

In addition to the SIDRA analysis of Clergate Road and western access intersection, the following assessments are required to facilitate TfNSW further review before approval is granted for such upgrade.

- Safety assessment adopting Safe Systems Approach and form safety interfacing agreement with all stakeholders investigating all treatment options including grade separation.
- ALCAM assessment and assessment against Australian Standard 1742.7 and *Railway Crossing Safety Series 2011, Plan: Establishing a Railway Crossing Safety Management Plan* (Roads and Traffic Authority 2011 to confirm that (in the event of an upgraded level crossing being proposed) level crossing is safe and suitable to accommodate the expected increase in vehicle usage as a result of the development, and
- Subject to the result of the above assessments, liaise and renew interfacing agreement with TfNSW regard the potential upgrade to the level crossing and subsequently form a Works In Kind agreement with local road authority (i.e Orange City Council).

Private overbridge

The Planning proposal states that there is a single lane bridge over the Main Western Railway Line constructed to accommodate abattoir staff to walk over after parking on land on the western side of the railway line. Although the Planning Proposal does not include the overbridge as an access, it is important for TfNSW to review the overbridge at this stage.

Although all lands including Lot 15 DP 6694, Lot 1 DP 1226372 and Lot A DP 100828 are owned by one landowner, the bridge does not appear to be required as an access to Lot 15 DP 6694 and Lot 1 DP 1226372 as both lots have separate legal access and the bridge may be required to be reviewed by TfNSW for its potential closure. As such, the bridge must not be used during the Planning Proposal stage until such time as TfNSW determines the future provision of the bridge. It is believed that non-use of the bridge during this stage will have negligible impacts as the proposed traffic route does not include the bridge. Prior to lodgement of the future DA for subdivision, it is requested that the applicant consult with TfNSW and the Rail Infrastructure Manager in regard to the future use of this overbridge.

Contamination of Rail Land

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Contamination of Rail Land

It is noted that a Preliminary Site Investigation Report has been submitted to support the Planning Proposal and concludes that negligible risks to human health or the environment existed at the site and residual contamination aspects would be more practicably addressed at construction DA stages following subdivision.

TfNSW is currently conducting an environmental assessment to identify contamination on the Country Regional Network. All railway corridors are generally deemed to be contaminated unless proven otherwise by sample testing. Contamination risk arises from both the construction (e.g., unknown fill used in rail construction) and operations (e.g., transportation of contaminated material, spills) of the railway. Potential contaminants could include, but are not limited to, heavy metals, PAHs, phenolics (boiler ash), Organochlorine Pesticides (OCPs) and Organophosphorus Pesticides (OPPs). Although TfNSW is committed to ensuring the health and wellbeing of the community, TfNSW is not aware whether there are contaminants found in the rail corridor or on the common boundaries with the development site.

In accordance with State Environmental Planning Policy (Resilience and Hazards) 2021- Section 4.6 'Contamination and remediation to be considered in determining development application' (Previously State Environmental Planning Policy No. 55 – Remediation of Land) the consent authority (Council) must consider whether the land is contaminated.
Noise, vibration & air quality

Noise, vibration & air quality

The Planning Proposal has not included any future residential development applications will be required to comply with Section 2.99 of State Environmental Planning Policy (SEPP) (Transport & Infrastructure) 2021 and the Guideline.

State Environmental Planning Policy (SEPP) (Transport & Infrastructure) 2021 provides that for development that is in or immediately adjacent to a rail corridor the consent authority must be satisfied that the development would not be adversely affected by rail noise, vibration or air quality due to the volume of traffic the rail line carries. It is important to ensure that a sensitive use such as a residential use should not be located adjacent to the rail corridor to ensure that people residing in the Site are not placed subject to adverse noise and air quality impacts as a result of rail operations.

As such, it is strongly recommended that Development for sensitive uses on the Site that is immediately adjacent to the operational rail corridor must ensure that acoustic building treatments are provided within 100m of the corridor to achieve noise requirements and compliance with the noise requirements shall only be based on shielding from fences, noise walls and intervening objects which are permanent structures, and exclude shielding from any object which forms part of a future development stage.

Stormwater management

Storm water Management

The Planning Proposal has not included details of stormwater management for TfNSW and Rail Infrastructure Manager to determine if it has any adverse impacts on the rail corridor.

As the Land is immediately adjacent to the rail corridor, the rail corridor must not be adversely impacted by any future developments in the Land in terms of stormwater management.
Future public transport service provision

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Future public transport service provision

Should the land be rezoned, and the project continue to the development assessment stage for subdivision, public transport service provision should be considered as part of the project scope. A future development application should consider opportunities to provide public transport through the subdivision area, providing customers with greater travel choices.

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Transport for NSW



8 February 2023

TfNSW reference: WST22/00062/01(WST19/00172/04)

Chief Executive Officer
Orange City Council
PO Box 35
ORANGE NSW 2800

Attention: Craig Mortell

Dear Craig,

Re: Orange Local Environmental Plan 2011 – Amendment 33 (PP-2021-5680)

Thank you for referring the abovementioned Planning Proposal for the '*Rosedale Gardens Urban Release Area*' via the NSW Planning Portal inviting comment from Transport for NSW (TfNSW).

TfNSW has previously provided comment in relation to Amendment 33 of Orange LEP 2011. It is understood the Planning Proposal was recently publicly exhibited and the exhibition material contained a response to the matters previously raised by TfNSW.

This submission is in response to the amended Planning Proposal and reiterates, where relevant, TfNSW's previously raised concerns relating the additional traffic generated by the future residential development. TfNSW primary interests relate to the intersection of the Northern Distributor Road (NDR) and Clergate Road and safety concerns relating to the creation of a public road over the western level crossing (currently a private level crossing).

TfNSW does not object to the Planning Proposal, but requests that Council consider the recommendations contained in **Attachment A**.

If you have any questions, please contact

Yours faithfully

Kylie-Anne Pont

Team Leader Development Services
West Region | Community and Place
Regional and Outer Metropolitan

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1 of 3

Transport for NSW



Attachment A – Detailed comments regarding the planning proposal – Amendment 33 – Orange LEP 2011

Context

TfNSW understands the Planning Proposal ('the Proposal') seeks to reduce the minimum lot size of the subject area, facilitating the creation of up to 700 *R5 Large Lot Residential* lots (noting the existing zoning controls would allow for approximately 450 lots). It is further understood that future stages of the development will utilise the existing level crossing within Pearce Lane and convert a private level crossing (currently serving Lot 3 DP 255983) to a public level crossing which will provide additional north / south connectivity via Clergate Road (noting these will occur under subsequent stages of the future development). As indicated in the documentation supporting the Proposal, additional traffic generated from the prospective development would use both level crossings.

As TfNSW previously noted, the subject site is located immediately adjacent to an operational rail corridor from Orange Junction to Dubbo. Future rail movements may increase along this corridor for maintenance and testing as part of the Regional Rail - Mindyarra Maintenance Centre, currently under construction in Dubbo.

Recommendations:

It is requested that Council consider the following recommendations in their assessment of the Planning Proposal:

Additional Traffic within Clergate Road

The future development facilitated under the Proposal is expected to generate approximately 5,180 vehicle movements per day. It is expected that a large proportion of these vehicles would use the NDR / Clergate Road intersection once the private level crossing has been upgraded under subsequent stages of the development. TfNSW understands that the NDR / Clergate Road intersection experiences traffic inefficiencies during peak periods and it is expected that the additional traffic associated with the future residential development will add further pressure to this intersection.

Accordingly, it is recommended that Council consider appropriate funding mechanisms for future intersection upgrades at the NDR / Clergate Road intersection to accommodate the additional residential traffic (e.g. via a s7.11 Development Contributions Plan for the Rosedale Gardens Urban Release Area).

New Northern Access via Public level crossing at Pearce Lane

It is noted from the amended documents recently exhibited that the northern level crossing will be used as a result of a new local road connection from the subdivision and that a Australian Level Crossing Assessment Model will be prepared and submitted for TfNSW consideration.

New Western Access and Upgrade of an existing private level crossing (LCW00329A) to a public level crossing

Comment has been obtained from the Asset Manager of the Country Regional Network, UGL Regional Linx (UGLRL) in relation to the upgrading of the existing private level crossing to a

public level crossing as part of future residential development.

UGLRL have indicated that the existing conditions of the level crossing are inadequate and have provided the following advice:

- *LCW00329A is a passive stop unsealed level crossing and due to sighting distance constraints and would not be appropriate to be used for heavy vehicle construction access (without appropriate risk management controls in place) and/or post-development access in its current status and would anticipate requiring a significant upgrade.*
- *The existing passive protection will be inadequate for the proposed frequency of road traffic.*
- *Note, the road manager will convert from the private landholder to Orange City Council when road status is changed, and corresponding change to the RRIA between UGLRL and Council to include this interface. The ISMP also would require a review and replacement when the road and level crossing configuration is finalized.*

TfNSW maintains that further investigation is required to demonstrate that the increase in traffic can be safely accommodated at the level crossing. Mitigation measures (such as upgrading the existing level crossings) may be required to ensure future safe operations, with costs of required mitigation measures borne by the proponent.

Private overbridged

It is noted that the Planning Proposal explains that the existing private rail overbridge associated with the abattoir will not form part of the future development.

Contamination of Rail Land

It is noted that samples have been collected and that a Preliminary Site Investigation report will be submitted addressing contamination within or adjacent to the rail corridor as part of the future development application.

Noise, vibration & air quality

TfNSW reiterates their previous comments in relation to noise impacts associated with the adjacent rail corridor.

TfNSW requests that the future development application for subdivision adequately addresses the potential noise impacts associated with the rail corridor in accordance with clause 2.99 of *State Environmental Planning Policy (Transport and Infrastructure) 2021* and the relevant guidelines.

Stormwater Management

TfNSW reiterates the previous comments in relation to stormwater, noting that the rail corridor must not be adversely impacted by stormwater runoff directed from future development.

Future public transport service provision

As previously noted, TfNSW recommends that consideration be given to the provision of both public and active transport opportunities within the subject locality at the DCP stage of the development.



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180 Thomas Street, Sydney
PO Box A1000 Sydney South
NSW 1235 Australia

F (02) 9284 3456

Monday, 6 February 2023

General Manager
Orange City Council

Dear General Manager

2022-190 Orange Local Environmental Plan 2011 - Amendment 33 (PP-2021-5680) Agency consultation

Transgrid's Wallerawang – Dubbo 132kV transmission line (Fdr947 Structures 371 – 379) traverses through the subject land. Attached is a TSS plan of the subject land and our transmission line.

We would request that restrictions be imposed as a condition of the LEP – Amendment 33, so that the development:

1. Is prohibited from having residential lots within the transmission line easement;
2. That any fencing proposed within or adjacent to the easement comply with TransGrid's Fencing guidelines [please provide with the response];
3. That any roads proposed to traverse the transmission line easement comply with our horizontal and vertical clearances;
4. That the Transgrid easement guidelines are adhered to;
5. That Transgrid is consulted throughout the design and development of the land.

Yours faithfully

Michael Platt

Easements and Development Assessment Advisor | Community and Policy

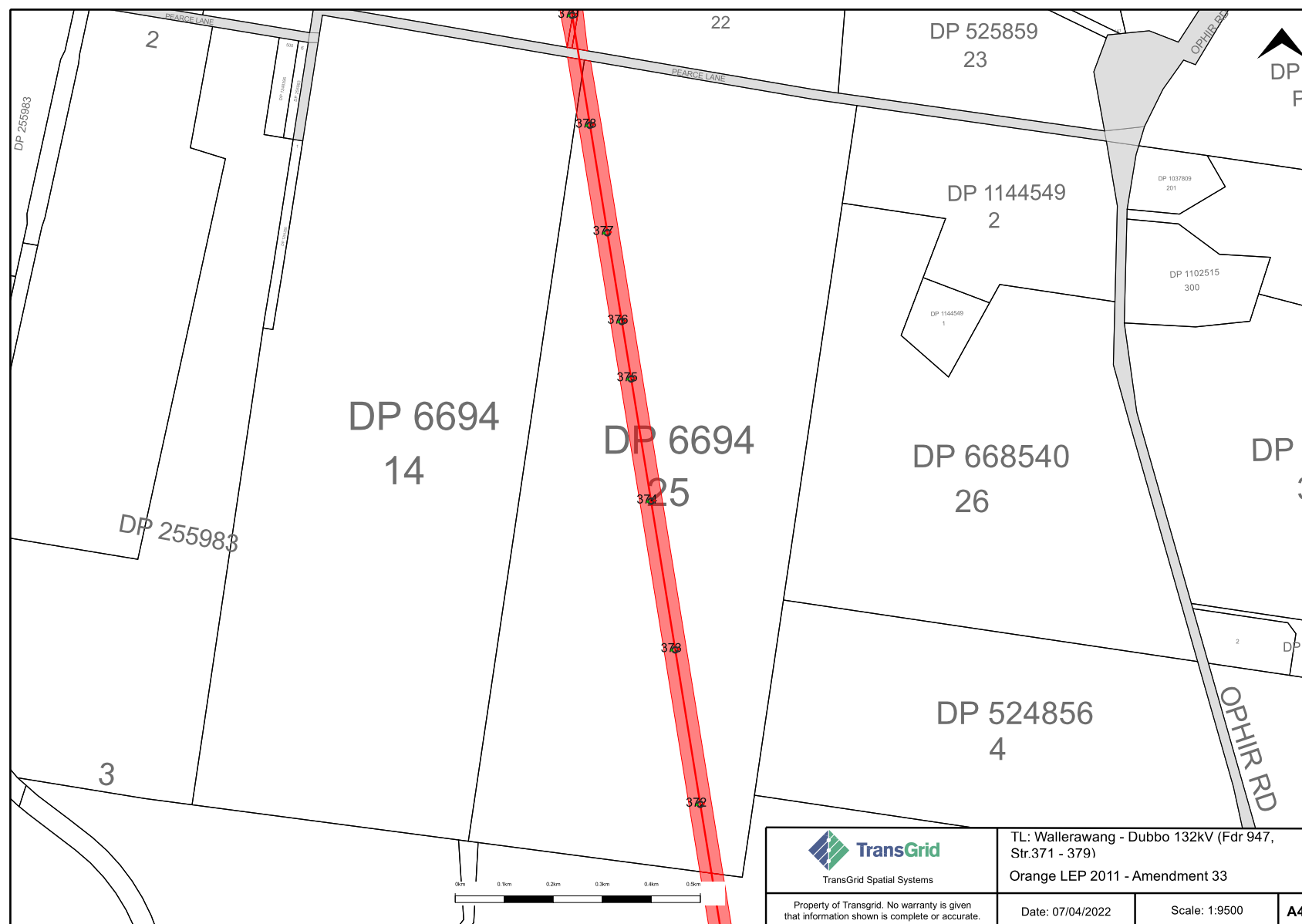
Transgrid | 200 Old Wallgrove Road, Wallgrove, NSW, 2766

Transgrid.com.au



W: www.transgrid.com.au





**Department of Planning and Environment**

David Walker
General Manager – Central NSW
Premise Australia Pty Ltd

Our ref: DOC22/1123366
Your ref: PP-2021-5680 / 221025_LET_ECO_001C

Dear Mr Walker

Planning Proposal – Amendment 33 – 440 Clergate Road, Orange – Rosedale Gardens post exhibition amendments

Thank you for the meeting on 1 December 2022 and letter dated 7 December 2022 to the Biodiversity, Conservation and Science Directorate (BCS) of the Department of Planning and Environment to discuss proposed amendments to the Orange Local Environmental Plan 2011 (LEP) to facilitate an additional 250 dwellings at Rosedale Gardens.

BCS welcomes the collaborative approach and revisions of the Rosedale Gardens proposal in response to our previous feedback on 10 May 2022 and 3 November 2022.

We note that the current revision to the proposed Rosedale Gardens will:

- Retain the existing RE1 Public Recreation zone and associated Minimum Lot Size (MLS) for the south-west woodland area.
- Rezone the remaining RE1 and C4 Environmental Living zones to R5 Large Lot Residential and reduce the MLS from 4,000m² to 2,000m².

BCS is only supportive of planning proposals which maintain or improve LEP protection levels on areas of high environmental value, such as parts of the property known to contain White Box – Yellow Box – Blakely's Red Gum Woodland Critically Endangered Ecological Community (CEEC).

BCS reiterates that Box-Gum Woodland CEEC is a serious and irreversible impact (SAIL) entity. Increasing development potential on other parts of the property known to contain Box-Gum Woodland CEEC can compromise avoid and minimise options if the Rosedale Gardens proposal proceeds to subdivision. The biodiversity development assessment report (BDAR) must provide additional information specifically addressing the SAIL. The SAIL assessment in the BDAR must detail measures taken to avoid, minimise and mitigate impacts on the SAIL (section 3.2.3 of *Guidance to assist a decision-maker to determine a serious and irreversible impact*). This will assist the decision-maker to determine whether a serious and irreversible impact will occur.

Opportunities for improved protection of the Box-Gum Woodland CEEC could occur through more refined mapping of the RE1 Public Recreation zone boundary and relevant LEP Terrestrial Biodiversity Maps to more closely align with Figure 5 'ground-truthed biodiversity mapping', of the planning proposal. This could ensure biodiversity related planning controls can be applied to all areas of known biodiversity value, without inhibiting development on parts of the property which have now been surveyed and found to contain exotic grasslands/vegetation.



Department of Planning and Environment

If you require any further information regarding this matter, please contact _____, Senior Conservation Planning Officer

Yours sincerely

Liz Mazzer
A/Senior Team Leader Planning North West
Biodiversity, Conservation and Science Directorate

20 December 2022

**Premise Australia Pty Ltd**

ABN: 82 620 885 832

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Our Ref: 221025_LET_ARC_001A.docx

2 September 2022

Bob Healy and Company Pty Ltd

ORANGE NSW 2800

Dear Bob

ABORIGINAL HERITAGE DUE DILIGENCE ASSESSMENT UPDATE – ROSEDALE GARDENS

This assessment has been prepared as an update to an existing Aboriginal Heritage Due Diligence Assessment undertaken by Biosis in 2016 for a proposed rezoning of land located at 440 Clergate Road and 463 Leeds Parade in Orange NSW. The site is associated with several previously recorded Aboriginal sites or places. As part of the rezoning process, an Aboriginal Heritage Due Diligence assessment has been undertaken to inform future development planning.

This assessment has been undertaken in accordance with the guidelines prepared in 2010 by the Department of Climate Change and Water (DECCW, 2010) [formerly Office of Environment and Heritage (OEH) now Heritage NSW] *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*. The aim of the guidelines is to assist individuals and organisations to exercise due diligence when carrying out activities that may harm Aboriginal objects. This assessment includes recommendations regarding Aboriginal heritage constraints for the proposed works.

Consultation with the Aboriginal community is not a formal requirement of the Due Diligence process and has not been undertaken as part of this assessment.

1.1 Study area

The proposed rezoning site is located in the Orange Local Government Area (LGA) within the County of Wellington and Parish of March. The study area falls within the Orange Local Aboriginal Land Council (LALC) boundary.

The study area is located across several land parcels:

- Lot 2 DP255983
- Lot 3 DP255983
- Lot 14 DP6694
- Lot 25 DP6694
- Lot 15 DP6694

The study area is also bound by Clergate Road and the main western railway on the west and Pearce Lane in the north.



1.2 Proposed Works and Project Background

Premise Australia Pty Ltd has been commissioned by Rosedale Gardens Estate Pty Ltd to prepare a planning proposal to amend the *Orange Local Environmental Plan 2011* (OLEP) in respect of land at 463 Leeds Parade and 440 Clergate Road, Orange.

The proposed works would involve rezoning of lots from a combination of large lot residential, environmental management, infrastructure and public recreation to large lot residential. The proposal entails the rezoning of the site to allow for a greater area of R5 Large Lot Residential zoned land and a reduction of the minimum lot size from a combination of 4,000 square metres (m²) and 8,000 m² to 2,000 m², together with the introduction of specific additional permitted use mapping and clauses to introduce a density limit and ensure tree protection. A lot yield limit of 700 is proposed.

The proposal has been developed in response to changes in the residential development market that have emerged since the original rezoning of the site was agreed, including increased demand for smaller housing lots within large lot residential areas in the City of Orange and the introduction of the *Biodiversity Conservation Act 2016*.

As part of the proposed rezoning works an Aboriginal Cultural heritage assessment was undertaken on the subject land (Biosis 2016). Prior to submission of the Planning Proposal and subsequent discussions with Heritage NSW an update to the Aboriginal Heritage Due Diligence assessment is required to address cultural heritage sensitivity of the site.

1.3 Heritage NSW Consultation

Recent correspondence with Heritage NSW and Premise (email dated 31 August 2022) confirmed that prior to development, further heritage investigations were requested, in the form of an Aboriginal Cultural Heritage Assessment (ACHAR). Premise advice and confirmation from Heritage NSW indicated that as part of the proposed rezoning:

- The maximum lot yield will not exceed 700 lots.
- Out of the 290 hectare site, around 20 hectares of land may be allocated for protection of sensitive landforms or sites (if needed).
- If the detailed investigations reveal the need for a greater area of protection, the resulting outcome would be delivery of less lots than the anticipated maximum. This is understood by the applicant.
- The current proposal to rezone those areas of the site not currently identified as R5, to R5, means that flexibility exists to design an appropriate subdivision layout that takes full account of identified site sensitivities, such as those that may be identified through biodiversity, archaeological, stormwater or other detailed investigations.

Heritage NSW subsequently confirmed that, although an ACHAR and test excavation program prior to rezoning is preferred, this assessment can be deferred to the DA stage. This advice was based on the understanding that the results of the test excavations, and the ACHAR, will be used to inform the final design of the subdivision, including avoidance of identified significant Aboriginal cultural heritage values where possible.

1.4 Desktop Assessment

A review of the *Orange Abattoir Archaeological Survey Report* prepared by Biosis (2016) was undertaken by Premise's archaeologist Latisha Ryall to understand the context of the site with reference to Aboriginal cultural heritage and to inform preparation of the updated due diligence assessment.

Biosis recommendations for the site indicates that further archaeological investigations are to be undertaken on areas that have been identified as having a Potential Archaeological Deposit (PAD). Premise agrees with this recommendation.

Biosis's recommendations for Aboriginal Heritage management and review by Premise are outlined in **Table 1**.



Table 1 – Aboriginal Heritage Recommendation Review – Biosis 2016_Premise 2022

No.	Recommendation	Notes	Premise 2022 Review
1	Further archaeological assessment	Areas identified as having a Potential Archaeological Deposit (PAD) (OA03, OA04, OA05, OA06, OA11, OA12, OA13, PAD 01, PAD 02, PAD03, PAD 04, PAD05 and PAD 06) should be avoided wherever possible. If impact to these areas cannot be avoided subsurface investigations (test excavations), undertaken in accordance with the code, will be required prior to the commencement of works. Consultation with Aboriginal stakeholders according to the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW 2010) ('the consultation requirements') will be required for the development to proceed.	Premise supports this recommendation
2	Application for an Aboriginal Heritage Impact Permit (AHIP) for the entire Project Area	<p>If the proposed works cannot avoid harm to OA01, OA02, OA03, OA04, OA05, OA06, OA07, OA08, OA09, OA10, OA11, OA12, OA13, OA14, PAD 01, PAD 02, PAD03, PAD 04, PAD05 and PAD 06 it is recommended that an application be made to the Office of Environment and Heritage (OEH) for an area based Aboriginal Heritage Impact Permit (AHIP) for the entirety of the Project Area. The AHIP should include the following conditions:</p> <ul style="list-style-type: none"> – Impact can occur to the Aboriginal cultural heritage sites OA01, OA02, OA03, OA04, OA05, OA06, OA07, OA08, OA09, OA10, OA11, OA12, OA13, OA14, PAD 01, PAD 02, PAD03, PAD 04, PAD05 and PAD 06. All of the sites occur within the proposed works area. – The isolated artefacts (Sites OA01, OA02, OA07, OA09 and OA10) should be relocated prior to ground disturbance and moved outside of the impact area, but within their original landscape context. – At sites OA03, OA04, OA05, OA06, OA11, OA12, OA13 and OA14, the surface artefacts should be relocated prior to ground disturbance and moved outside of the impact area, but within their original landscape context. Any subsurface archaeological material located within the impact area, with the exception of human remains, can be destroyed. – Impact within the limits of the area based destruction AHIP for any further Aboriginal objects encountered during construction unless human remains are involved. – For information about AHIPs and their preparation, see below. 	Premise supports this recommendation
3	Discovery of Aboriginal ancestral remains	<p>Aboriginal ancestral remains may be found in a variety of landscapes in NSW, including middens and sandy or soft sedimentary soils. If any suspected human remains are discovered during any activity you must:</p> <ul style="list-style-type: none"> – Immediately cease all work in the vicinity and not further move or disturb the remains. – Notify the Coroners Office and NSW Police immediately. Following this, contact OEH's Environmental Line on 	Premise supports this recommendation



No.	Recommendation	Notes	Premise 2022 Review
		131 555 as soon as practicable and provide details of the remains and their location. The find must also be reported to the Aboriginal parties. – Not recommence work at that location unless authorised in writing by OEH.	
4	Discovery of Unanticipated Historical Relics	Relics are historical archaeological resources of local or State significance and are protected in NSW under the Heritage Act 1977. Relics cannot be disturbed except with a permit or exception/exemption notification. Should unanticipated relics be discovered during the course of the project, work in the vicinity must cease and an archaeologist contacted to make a preliminary assessment of the find. The Heritage Council will require notification if the find is assessed as a relic.	Premise supports this recommendation



1.5 Previously Identified Sites – AHIMS

NSW Heritage (formerly OEH) maintains the Aboriginal Heritage Information Management System (AHIMS) database, a register of Aboriginal archaeological sites that have been recorded in New South Wales. The AHIMS search provides an archaeological context for the area and identifies whether any previously recorded Aboriginal sites are located within or near the study area.

***The locations and details of Aboriginal sites are considered culturally sensitive information. It is recommended that this information, including the AHIMS data, is removed from this report if it is to enter the public domain.**

A basic search of the AHIMS database was undertaken on 31 August 2022 (Client ID: 713404) using the same parameters previously undertaken by Biosis in 2016. The search parameters are as follows:

GDA 1994 MGA 55	[REDACTED]
	[REDACTED]
Buffer	[REDACTED]
Number of Sites	[REDACTED]

This search [REDACTED] since the original assessment was prepared, however these additional sites reflect new sites recorded from the 2016 Biosis assessment. On review of the data, [REDACTED] The AHIMS sites are shown in **Figure 1** and a copy of the AHIMS search is provided in **Appendix A**.

The nature and location of registered sites reflects past Aboriginal occupation of the land; however, the sites are also influenced by historical land-use, and the nature and extent of previous archaeological investigations. Although Aboriginal occupation covered the whole of the landscape, the availability of fresh water, and associated resources, was a significant factor in repeated and long-term occupation of specific areas within the landscape.

Figure 1 – AHIMS Sites and Site Locality

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1.6 National Native Title Tribunal

A search of the Native Title Tribunal and Native Title Vision (NTV) online database was undertaken on 31 August 2022 for the Orange LGA to ascertain if any Native Title claims, determinations or registrations were associated with the study area. No recorded Native Title claims, or determinations were identified on the study area.

1.7 Site Inspection

A site inspection was undertaken on 1 September 2022 to confirm site boundaries and landform features. Only a portion of the site could be accessed due to recent wet weather conditions and vehicle access restrictions. The site inspection included access into the property at Leeds Parade and also undertook observations from Clergate Road and Pearce Lane at the southern boundary of the proposed rezoning.

The landform is gently undulating across most of the site, with moderate to steep slopes observed in the eastern portion. A transmission line bisects the property in this area. Several farm dams and larger drainage lines are also scattered throughout the site. Overall dense ground coverage was observed in areas of intact landforms. It is however noted that the subject site has historically been subject to extensive ground disturbance with use as an abattoir and associated services such as effluent management and stock movement, through stock grazing.

In the south western portion of the study area (accessed off Leeds Parade), the landform had been subject to ground disturbance in the form of a disused Abattoir and associated infrastructure including access bitumen paths, cement pads, dams, and holding ponds. Other structures located across the western portion of the study area include farming infrastructure such as sheds, fences and stock yards.

The study area is shown in **Figure 2- Figure 13**.

Figure 2 – Access to site from Leeds Parade view north



Figure 3 – Abattoir Infrastructure view south



Figure 4 – Eastern portion of site



Figure 5 – Northern portion of site from Pearce Lane





Figure 6 – Ground coverage



Figure 7 – View west from eastern portion of site



Figure 8 – View south from eastern portion



Figure 9 – View east from Clergate Road



Figure 10 – View west from south eastern boundary



Figure 11 – Central portion of site, undulating landform



Figure 12 – Undulating landform in central portion



Figure 13 – view South from Pearce Lane





In summary, this updated Aboriginal heritage investigation as undertaken by the Premise archaeologist demonstrates that no changes to the landform have occurred since the original Biosis report was prepared in 2016. Premise also supports that further Aboriginal Heritage investigations are required across the site prior to any ground disturbing activities occur, however, this should occur at the DA stage.

Yours sincerely

A small, faint, handwritten signature in blue ink, appearing to read "Latisha Ryall".

LATISHA RYALL
Archaeologist



APPENDIX A

AHIMS SEARCH



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THE GENERAL MANAGER
POST OFFICE BOX 17
MOLONG 2866

Doc ID: 1384380

Your Ref:

Fax: 02 6392 3260

Contact: HJ Nicholls

Website: www.cabonne.nsw.gov.au

ABN: 41992 919 200

Email: council@cabonne.nsw.gov.au

03 May 2022

Chief Executive Officer
David Waddell
Orange City Council
PO Box 35
ORANGE NSW 2800

Attention: Craig Mortell

Dear Sir,

ORANGE LOCAL ENVIRONMENTAL PLAN 2011 - AMENDMENT 33 (PP-2021-5680) AGENCY CONSULTATION – PLANNING PROPOSAL 463 LEEDS PAPRADE AND 440 CLERGATE ROAD, ORANGE– ROSEDALE GARDENS ESTATE PTY LTD

Council acknowledges your correspondence dated 4 April 2022. It is noted that Orange City Council invites Cabonne Council to review and provide comment on the above-mentioned Planning Proposal and associated documents. Please be advised that the Planning Proposal was put to council for its consideration at its April 2022 meeting.

Council notes that the planning proposal, seeks to rezone a 290ha orchard holding for large lot residential development creating a lot yield of 700 allotments.

The Planning Proposal, while addressing the relationship of the proposal to the housing and employment strategies of Orange City Council, is silent upon the potential impact of the development upon established adjacent farmland within the Cabonne LGA.

Council requests that consideration be given in the proposed rezoning of land known as 440 Clergate Road and 463 Leeds Parade, Orange, as to potential impact upon both Cabonne Council and the State government's right to farm policies, the protection of farmland within the Cabonne LGA, and request consideration of the aims and objectives of the Cabonne LEP 2012, the objectives of the RU1 zone, and measures to including biosecurity measures, to ensure the protection of established farming north of the subject land.

Furthermore, that consideration be given to implementation of adequate buffer distances or planning controls to address potential land use conflict between

residential and rural land uses, biosecurity measures, and to protect the right to farm for established nearby farmland should the rezoning proposal proceed.

If you wish to discuss this matter further, please contact the undersigned

Yours faithfully,

HJ Nicholls
Deputy General Manager – Cabonne Services



Department of Planning and Environment

Our ref: DOC22/365054
Your ref: PP-2021-5680

Craig Mortell
Orange City Council

Dear Craig

Planning Proposal – Amendment 33 – 440 Clergate Road, Orange - Rosedale Gardens

Thank you for your e-mail dated 12 April 2022 to the Biodiversity, Conservation and Science Directorate (BCS) of the Department of Planning and Environment inviting comments on the proposed amendments for 440 Clergate Road, Orange.

BCS understands that the proposal seeks to;

- Rezone the subject site to RU5 from a mix of RU5, RE1, SP2 and E4
- Reduce the minimum lot size across the site to 2000m² from a mix of 4000m² and 8000m².

BCS has the following primary areas of interest relating to strategic land use planning proposals:

1. The impacts of development and settlement intensification on biodiversity
2. Adequate investigation of the environmental constraints of affected land
3. Avoiding intensification of land use and settlement in environmentally sensitive areas (ESAs)
4. Ensuring that development within a floodplain is consistent with the NSW Government's Flood Prone Land Policy, the principles set out in the Floodplain Development Manual, and applicable urban and rural floodplain risk management plans.

We also understand that planning proposals must comply with current statutory matters such as the Local Planning Directions under S9.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

We generally support strategic planning proposals which:

- Avoid rural settlement intensification in areas of biodiversity value and other environmentally sensitive areas;
- Include objectives, such as 'no net loss of native vegetation'; and
- Minimise flood risk to human life, property and the local environment while maintaining floodplain connectivity for environmental benefit.

Some specific comments on the proposed amendments are provided in **Attachment A**. The BCS generic recommendations for planning proposal are provided in **Attachment B** and guidance for identifying High Environmental Value land is provided in **Attachment C**.

If you require any further information regarding this matter, please contact
Senior Conservation Planning Officer, via

Yours sincerely

Samantha Wynn
Senior Team Leader Planning North West
Biodiversity, Conservation and Science Directorate

10 May 2022

ATTACHMENT A**Planning Proposal – 440 Clergate Road, Orange (PP-2021-5680)****BCS Advice**

1. The proposed zoning, minimum lot size and subdivision plan could be revised to improve consistency with regional and local strategies

Central West and Orana Regional Plan 2036

Planning proposals should demonstrate consistency with the strategic planning framework including the relevant Regional Plan. To achieve directions, and actions in the relevant Regional Plan for areas with High Environmental Value (HEV), Planning Proposals should identify areas of HEV at the property scale and the current land uses in such areas should not be intensified.

The planning proposal is not consistent with the directions and actions of the Central West and Orana Regional Plan that relate to biodiversity. The planning proposal is not consistent with;

- Direction 13 – protect and manage environmental assets
- Action 13.1 – protect high environmental assets through local environmental plans
- Action 13.2 – minimise potential impacts arising from development in areas of high environmental value, and consider offsets or other mitigation mechanisms for unavoidable impacts

Whilst the planning proposal states that *‘the future subdivision of the land will trigger the BOS’* and therefore any impacts will be assessed under the Biodiversity Assessment Method (BAM) and offset in accordance with the *Biodiversity Conservation Act 2016* (BC Act), the planning proposal does not show that there has been any attempt to avoid areas of HEV, nor does it propose any provisions to protect these values. Furthermore, land use intensification is proposed for the areas that are currently zoned for conservation (C4).

Areas of HEV should instead be better protected by Planning Proposals through an appropriate zone which has strong conservation objectives and limited land uses, an appropriate minimum lot size so the land cannot be subdivided, and future management.

BCS does not support removing the current Conservation zoning without further site assessment.

Draft Central West and Orana Regional Plan 2041

In addition to above the draft Central West and Orana Regional Plan 2041 advocates;

- the validation of regional scale HEV mapping via site specific investigations during strategic and local planning, and development proposals
- avoidance of areas with identified HEV and focusing development on areas with lower biodiversity values

The planning proposal has not clearly identified all areas of HEV present or likely to be present on the subject site nor has there been any attempt to avoid such values.

Orange Local Strategic Planning Statement 2020 (LSPS)

Planning priority 13 of the Orange LSPS is *‘Protect, conserve and enhance Oranges urban tree canopy, landform, waterways and bushland’*. Action 3 of the planning priority is *‘require greenfield subdivisions to protect and enhance waterways and riparian corridors’*.

Page 23 of the planning proposal states *‘the mapped vegetation community in the south-west of the site would be predominantly retained and enhanced through augmentation of the waterway and the development of a riparian management and vegetation plan’*.

The planning proposal proposes to remove current RE1 and C4 zonings in areas where the riparian corridors are present. This is not consistent with planning priority 13 and action 3.

Recommendations

- a) The planning proposal should further identify and map the extent of areas of HEV on the subject site with both desktop analysis and site investigations.
- b) Areas identified as HEV should be protected through planning mechanisms (e.g. C zones and minimum lot sizes to preclude subdivision).

2. Conclusions of the likelihood of occurrence for predicted threatened species is not adequately justified or consistent

The planning proposal has not adequately justified conclusions that threatened species are unlikely to occur on the site. The assessment of likelihood for predicted threatened species presented in Table 5 of Appendix D of the planning proposal is not consistent with the conclusions in the Ecology Report (prepared by FloraSearch) that accompanies the planning proposal.

Recommendation

- a) Conclusions that threatened species are unlikely to occur should be adequately justified. Otherwise Council should acknowledge that the likelihood of threatened species being present on the site has not been adequately assessed and assume that future subdivision and development of the site has the potential to impact on threatened species habitat.

3. Biodiversity Offset Scheme is likely to apply to future subdivision of the site

The BC Act and *Biodiversity Conservation Regulation 2017* (BC Reg) section 7.1 apply to subdivisions. When assessing subdivisions, the consent authority must consider the clearing of native vegetation required, or likely to be required, for the purpose for which the land is to be subdivided.

Native vegetation includes trees, understorey plants, groundcover and plants occurring in a wetland that are native to New South Wales (including planted native vegetation), not just trees.

If the subdivision will impact native vegetation and the clearing exceeds the biodiversity offsets scheme (BOS) thresholds (Part 7, BC Reg), the BAM must be applied and a biodiversity development assessment report (BDAR) prepared to assess and calculate the biodiversity offset credit requirement.

Biodiversity offsets are calculated and secured in accordance with the BC Act for the subdivision. Once this is done, no further offsets are required for subsequent development of the land that is within the approved subdivision.

The BAM requires proponents to demonstrate that biodiversity impacts have been avoided and minimised as far as possible, with residual impacts offset. Both the complexity of assessments, and the costs to the proponent associated with complying with the BOS, are lower where impacts on biodiversity are avoided and/or concentrated in areas of lower vegetation integrity.

Based on the information provided it is likely that the impacts of the future subdivision of the subject site will trigger entry into the BOS. Entities at risk of SAI have additional assessment requirements under the BAM (see below for further information).

4. Any future development is likely to impact on SAI entities

Based on the information provided, BCS understands that the area currently zoned as C4 contains remnant native vegetation that is likely to conform to the threatened ecological community *White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions* (Box Gum Woodland). Box Gum Woodland is listed as a Critically Endangered Ecological Community (CEEC) under the BC Act and therefore is listed as an entity for Serious and Irreversible Impacts (SAI). Where a proposal is determined likely to have a serious and irreversible impact on biodiversity values the planning authority must not grant approval.

As stated above the planning proposal should identify and map the extent of HEV within the subject site. Any future development assessment could be simplified by identifying the extent of HEV and SAI entities on the subject site up front in the strategic planning for the site.

BCS does not support amendments that facilitate land use intensification in areas of HEV.

ATTACHMENT B**Biodiversity, Conservation and Science Directorate (North West Branch)
general advice for local government strategic planning**

Rural settlement intensification can have significant impacts on biodiversity. Development will have short and long-term negative impacts on biodiversity. These negative impacts are caused by activities such as:

- the clearing of house and building sites;
- the disturbance caused by infrastructure (such as new roads, fence lines, dams and access to utilities); and
- the construction of asset protection zones for statutory fire protection.

The cumulative effect of multiple subdivisions will magnify these substantial impacts on biodiversity. These impacts are not regulated by the *Biodiversity Conservation Act 2016* or *Local Land Services Act 2013*.

There is also a need to recognise climate change as a severe and wide ranging threat to biodiversity in NSW. Rising temperatures and sea-levels, changed rainfall and fire regimes will affect biodiversity in complex and often unpredictable ways. As a result of climate change, current threats to biodiversity, including habitat loss, weeds, pest animals and drought, are expected to intensify.

In many cases, existing approaches to biodiversity conservation (protection of intact vegetation, species recovery, mitigation of current threats and revegetation and restoration activities) will form the basis of adaptation programs to address the impacts of climate change. Reducing existing threats to biodiversity, such as habitat loss, pests and weeds is the most effective option for enabling species to adapt to climate change (at least in the short term) as this will increase the capacity of species to persist in their current locations and form the base from which migration can occur.

Council has the responsibility to control the location and, to a degree, development standards of settlement and other land use intensification. Local Environmental Plans (LEPs) can be used to avoid settlement and development in Environmentally Sensitive Areas (ESAs) including areas of remnant native vegetation.

The S9.1 Directions in the Environmental Planning and Assessment Act 1979 (EP&A Act) require that Councils in preparing a new LEP must include provisions that facilitate the protection and conservation of ESAs. As a minimum, these provisions must aim to maintain the existing level of protection for ESAs within the LGA, as afforded by the current LEP.

As a matter of priority the BCS recommends six actions be taken by Councils when developing new LEPs. These will address the S9.1 Directions, and protect biodiversity from growth, development and associated pressures and changes:

1. Implement appropriate Environmental Zonings;
2. Avoid development in remnant native vegetation;
3. Establish large minimum lot sizes;
4. Conduct comprehensive environmental studies if areas of high environmental sensitivity occur in sites where there is a strong imperative to intensify land use;
5. Include a biodiversity overlay and clauses within the LEP; and
6. Define biodiversity protection and management measures in Development Control Plans (DCPs).

1. Implement appropriate Conservation Zonings

The zone, C1 'National Parks and Nature Reserves', should be applied to all of the NPWS estate within the LGA. We also encourage Councils to apply other environmental and water ways zones in appropriate areas.

The C1 zoning (formally known as Environmental Zone E1) is intended to apply to all lands acquired under the *National Parks and Wildlife Act 1974* (NP&W Act), and therefore is not limited to only the 'National Park' and 'Nature Reserve' classifications.

BCS is also strongly supportive of the implementation of appropriate environmental zonings to other areas identified to have high biodiversity. Private and public lands with high conservation values, including those providing linkages or corridors, can be protected in LEPs through appropriate zoning and/or via overlays with associated development controls. Councils should implement land use zonings such as C2-C4 and W1-W2 to provide as much protection as possible to biodiversity and ecological communities. Specific advice regarding the use of these zones is included in Practice Note previously forwarded to Council.

In particular, we advocate the application of the C2 zone to areas of private or Crown lands that are presently managed primarily for conservation (such as crown reserves or areas under conservation covenants).

We also recommend that Travelling Stock Reserves (TSRs) with known conservation values are included in C3 zones at a minimum, although C2 zoning would be preferred. Mapping of TSRs, including identified conservation values, is available via the Grassy Box Woodlands Conservation Management Network. This mapping can be accessed via <http://gbwcmn.net.au/node/6>.

2. Avoid development in remnant native vegetation

- *Council, through the Land Use Strategy and LEP, can protect biodiversity by avoiding development such as settlement and other land use intensification, in areas of remnant native vegetation.*
- *Development should be directed to areas that have already been cleared, unless such areas have been identified as having environmental importance.*

Excluding remnant native vegetation from development pressure on private land could be largely achieved by retaining such areas on relatively large holdings, within RU1 and RU2 zones for example.

Similarly, higher density settlement in 'fire prone' locations should be avoided in the first instance. Where residential areas abut native vegetation there is pressure for the required Asset Protection Zones and other hazard management measures to encroach on that vegetation.

Avoiding settlement in remnant native vegetation is also likely to avoid bushfire prone lands.

Settlement should also be avoided in locations that are likely to be targeted for biodiversity investment. Landholders in such areas may receive incentive funding for protection and enhancement of native vegetation or revegetation of cleared areas.

BCS can direct Councils to the best available mapping of remnant native vegetation for their LGA to help Council identify areas where further settlement intensification should be avoided.

For the Orange LGA:

- The Orange LEP incorporates a terrestrial biodiversity layer based on regional scale mapping of ESA's supplied by the Department during preparation of the 2011 LEP.

- The Central West Orana Regional Plan 2036 incorporates mapping of potential areas of high environmental value (HEV). This dataset can be accessed via the NSW Government SEED Portal: <https://datasets.seed.nsw.gov.au/dataset/high-environmental-value-for-central-west-orana-regional-growth-planning-area-detailed7053e>

At the broad strategic level, these maps can be used to identify areas that are most likely to be free from significant biodiversity constraints, therefore more suited to development.

3. Establish large minimum lot size limits

Minimum lot size limits should be large in RU1 and RU2 zones as well as environmentally sensitive areas. This will reduce the pressures of development and settlement on biodiversity in rural lands.

Minimum lot size limits can be used to reduce the pressures of development and settlement on biodiversity. The LEP should define realistically large minimum lot size limits with associated dwelling provisions to control the intensity of development and settlement.

In particular, Council needs to ensure that minimum lot sizes in environmentally sensitive areas are of an appropriately large size to control the cumulative impact of any development and settlement intensification permitted in those areas by the LEP.

The selected lot sizes should be designed to meet expectations of rural living while minimising the adverse environmental impacts of any settlement that may occur with the subdivision.

If Council is strongly of the opinion that lot sizes need to be reduced then this should not be applied uniformly. Environmentally sensitive areas should be excluded from lot size reductions.

4. Conduct targeted environmental studies

Where development in areas of native vegetation or environmentally sensitive areas cannot be avoided, a targeted environmental study should be conducted. This should focus on ensuring a “maintain or improve” outcome for biodiversity.

Where Council is unable to avoid applying zonings or minimum lot sizes which permit essential development intensification in remnant native vegetation, a targeted study should be conducted to investigate the biodiversity values of the area. Any study should determine and demonstrate how potential biodiversity impacts can be avoided and mitigated on the subject land. Under the *Biodiversity Conservation Act 2016* biodiversity offsets may be required for future subdivisions.

This study and any resulting objectives, zonings and lot sizes should aim to ensure a ‘maintain or improve’ outcome. This is a vital step in the strategic planning process and in effectively addressing the s.9.1 Directions.

5. Define biodiversity protection and management measures in Development Control Plans

Biodiversity protection and management measures should be defined in DCPs for all areas zoned for rural small holdings, residential and other development intensifications.

We view DCPs as a secondary mechanism to provide biodiversity protection and management measures. It is vital that biodiversity values are first considered strategically in zoning decisions and development assessment provisions. We do not consider it acceptable to completely defer consideration of these matters to the DCP stage.

It is also important to consider the threats to remnant native vegetation posed by adjoining land uses.

For example, threats to biodiversity associated with nearby growth and intensification of residential land use include (but are not limited to):

- Clearing;
- domestic animals;
- invasive plants;
- effluent and waste dispersion;
- changes in hydrology and hydraulics;
- increasing access due to fire trails and other tracks; and
- firewood collection.

Particular attention should be paid to relevant Key Threatening Processes identified and listed under the *Biodiversity Conservation Act 2016*. Mechanisms to abate threats to ESAs (such as implementing codes of practice, best management practice, alternative designs and operations, control technology and buffers between remnant vegetation and small holdings) should be considered.

Council should recognise that buffers may be necessary between environmentally sensitive areas and other land uses. The size of the buffer will vary depending on the nature or activity being undertaken and the level of management control required to prevent or minimise adverse impacts. Provisions should be made to rigorously assess any developments within environmentally sensitive areas and adjoining buffers to prohibit land uses and activities that threaten the ecological integrity, values and function of the area.

Some forms of development adjacent to national parks and reserves can impact on their values and should be avoided or restricted. Council should consider how these areas could be buffered from incompatible development and activities so that potential conflicts can be minimised.

The Departments Guidelines for Developments adjacent to NPWS Estate have been designed to assist Councils when they are assessing development on lands adjoining NPWS estate. However, the issues identified in these guidelines are also relevant when considering buffers for protection of environmentally sensitive areas.

ATTACHMENT C

HEV Criteria and Identification Methods at the Property Scale

High Environmental Value (HEV) Criteria and Components		Property Scale HEV Identification Method
Criterion 1. Sensitive Biodiversity Mapped on the Biodiversity Values Map		
1.1 Biodiversity Values Map		<ul style="list-style-type: none"> a. Identify the parts of the land on the Biodiversity Values map which can be viewed at https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity-offsets-scheme/about-the-biodiversity-offsets-scheme/when-does-bos-apply/biodiversity-values-map. b. Inspect those mapped areas on the land to verify accuracy and map as HEV where the map is accurate.
Criterion 2. Native vegetation of high conservation value		
2.1 Over-cleared vegetation types		<ul style="list-style-type: none"> a. Identify Plant Community Types (PCTs) on the land through field work. b. Register and visit the Vegetation Information System (VIS) database at vis@environment.nsw.gov.au. c. Use the VIS to determine whether the % cleared status of the PCTs identified through field work on the land is above 70%. d. Map all PCTs on the land with the % cleared above 70% as HEV.
2.2 Vegetation in over-cleared landscapes (Mitchell landscapes)		<ul style="list-style-type: none"> a. Identify over-cleared Mitchell landscapes by viewing map data from the SEED portal https://www.seed.nsw.gov.au/ – selecting NSW (Mitchell Landscapes) – latest version, selecting Show on Seed Map and viewing the View Over Cleared Land Status. b. Map all native vegetation on the land as HEV if it is in an over-cleared Mitchell landscape.
2.3 Threatened Ecological Communities - any vulnerable, endangered, or critically endangered ecological community listed under the BC Act, the FM Act 1994 or the EPBC Act and not mapped on the BV map		<ul style="list-style-type: none"> a. Identify Plant Community Types (PCTs) on the land through field work. b. Register and visit the VIS database at vis@environment.nsw.gov.au. c. Use the VIS to determine whether the PCTs on the land have Threatened Ecological Community (TEC) Status. d. If not identified as a TEC from steps a – c above, then refer to the NSW Threatened Species Scientific Committee determinations to consider whether any of the PCTs accords with the determinations. e. Map all PCTs on the land that are TECs as HEV.
2.4 100m buffer on Coastal Wetlands and Littoral Rainforest areas as per the Coastal Management SEPP 2018		<ul style="list-style-type: none"> a. Locate the land on the SEPP Coastal Management SEPP maps available at https://webmap.environment.nsw.gov.au/PlanningHtml5Viewer/?viewer=SEPP_CoastalManagement b. Map any parts of the land shown as proximity areas for Coastal Wetlands and Littoral Rainforest as HEV.
Criterion 3. Threatened species		
3.1 Key habitat for threatened species (vulnerable, endangered, or critically endangered species listed under BC Act)	Key breeding habitats with known breeding occurrence	<ul style="list-style-type: none"> a. Search BioNet for threatened species records on and within 5km of the land b. Undertake field work to identify potential breeding habitats on the land for threatened species. c. Either assume breeding occurrence and map identified breeding habitats on the land as HEV or undertake targeted surveys during the breeding season and map these habitats as HEV if breeding occurs there.
	Core Koala Habitat	<ul style="list-style-type: none"> a. Check council records for approved comprehensive or individual property Koala Plans of Management (KPOM). b. Identify areas of core koala habitat on the land mapped in any

High Environmental Value (HEV) Criteria and Components		Property Scale HEV Identification Method
		<p>approved KPoM and map these areas as HEV.</p> <p>c. If there are no approved KPoMs, then undertake field work in accordance with the relevant State Environmental Planning Policy (SEPP) for koalas, e.g. SEPP (Koala Habitat Protection) 2020, to determine whether Core Koala Habitat is present on the land.</p> <p>d. Map any core koala habitat identified on the land through field work as HEV.</p>
	Habitat for known populations of species-credit-species and SAI entities (species-credit species and SAI entities are identified in the Threatened Biodiversity Data Collection)	<p>a. Search BioNet for threatened species records on and within 5km of the land.</p> <p>b. Undertake field work to identify populations of threatened species credit species on the land and their habitats.</p> <p>c. Map all habitats of known populations of species credit species on the land as HEV.</p> <p>The Biodiversity Assessment Method and the Department's survey assessment guidelines should be referred to for suitable habitat assessment methodologies.</p> <p>If a recent Biodiversity Development Assessment Report has been prepared for the land, then this could be referred to in support of demonstrating how this criterion has been considered.</p>
	Key habitats for migratory species	<p>a. Search BioNet for threatened migratory species records on and within 5km of the land.</p> <p>b. Undertake field work to identify habitats of threatened migratory species on the land.</p> <p>c. Map all habitats of threatened migratory species on the land as HEV.</p>
Criterion 4. Wetlands, rivers, estuaries & coastal features of high environmental value		
4.1 Nationally important wetlands	Note: Rivers and their riparian areas comprising HEV are included in the Biodiversity Values Map under HEV Criterion 1 as protected riparian land	<p>a. Search the Directory of Important Wetlands in Australia for those occurring in NSW available at http://www.environment.gov.au/cgi-bin/wetlands/search.pl?smode=DOIW.</p> <p>b. Identify any nationally important wetlands listed in the directory that occur on the land and map these areas as HEV.</p>
4.2 Vulnerable Estuaries and ICOLLS		<p>a. Identify whether any vulnerable estuaries or ICOLLS occur on, or in the vicinity of, the land by reviewing the maps available at https://datasets.seed.nsw.gov.au/dataset/vulnerableestuariesandicolls.</p> <p>b. Map any vulnerable estuaries or ICOLLS that occur on, or in the vicinity of, the land as HEV.</p>
Criterion 5. Areas of geological significance		
5.1 Karst landscapes		<p>a. Identify whether limestone outcrops or caves occur on the land.</p> <p>b. Consider any additional Karst landscapes that occur in the vicinity of the land, with reference to the NSW Government's <i>Guide to New South Wales Karst and Caves</i> available at https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Land-and-soil/nsw-karst-cave-guide-110455.pdf and any other available karst mapping, such as karts maps associated with local environmental plans.</p> <p>c. Map any limestone outcrops or caves on the land and any other karst landscapes that occur in the vicinity of the land as HEV.</p>
5.2 Sites of geological significance included in the State Heritage Register or Heritage Inventory		<p>a. Identify whether the land contains, or is in the vicinity of, the sites of geological significance.</p> <p>b. Map any sites of geological significance that occur on, or in the vicinity of, the land as HEV.</p>



DOC22/265114-1

The General Manager
Orange Local Council
Orange, NSW, 2800

Attention: Craig Mortell
Senior Planner – Development Services

14/04/2022

Dear Mr Mortell,

AMENDMENT TO THE ORANGE LOCAL ENVIRONMENTAL PLAN - 2011

Thank you for the opportunity for the Environment Protection Authority (the EPA) to provide comment regarding the proposed amendment to the Orange Local Environmental Plan (LEP) in respect of the land located 463 Leeds Parade and 440 Clergate Road (the Site). The EPA received the planning proposal for the LEP on the 04 March 2022 from the Orange Regional Council (Council).

The EPA has not undertaken a detailed review of the LEP. However, the following comments are offered for your consideration.

Land Management

The EPA understands that the strategic focus of the plan is to facilitate the rezoning of land which currently contains land zoned R5, E4, RE1, SP2 and rezone the site to R5 Large Lot Residential. The current surrounding land zoning is a mixture of General Industrial (IN1), Primary Production (RE1) and Infrastructure (SP2). The EPA acknowledges the potential of future land-use conflict due to the surrounding site activities on residential properties. The EPA recommends that Council ensure an adequate buffer distance between the IN1, RU1 and the proposed R5 land. The buffer should consider potential noise, water and air quality impacts on the community from industrial activities such as those regulated by the EPA under Schedule 1 of the Protection of the Environment Operations Act (POEO Act). A list of industries the EPA regulates in the Orange local government area can be obtained via the EPA's public register, which can be found at <https://apps.epa.nsw.gov.au/prpoeoapp/default.aspx>

Contaminated Land

The EPA suggests that Council ensures that all site remediation work is completed in a planned and proper manner. This includes the removal of all asbestos waste by a trained and licenced professional to ensure further site contamination is not caused. After the destruction and removal of all abattoir infrastructure, including any underground storage units Council should ensure a full site investigation is completed to fully assess any potential ground and water pollution. Further information on

Phone 131 555

Phone +61 2 9995 5555
(from outside NSW)

TTY 133 677

ABN 43 692 285 758

Locked Bag 5022

Parramatta
NSW 2124 Australia

4 Parramatta Square

12 Darcy St, Parramatta
NSW 2150 Australia

info@epa.nsw.gov.au

www.epa.nsw.gov.au

contaminated land can be found via the EPA's website: <https://www.epa.nsw.gov.au/your-environment/contaminated-land>

If you have any questions or wish to discuss the matter further, please contact

Yours sincerely.

Carlie Armstrong
Unit Head - Regulatory Operations

Transport for NSW



Mr Craig Mortell
Orange City Council
PO Box 35
ORANGE NSW 2800

Dear Mr Mortell

Re: Orange Local Environmental Plan 2011 – Amendment 33 (PP-2021-5680)

Thank you for your referral via the planning portal inviting comment from Transport for NSW (TfNSW) as part of the exhibition of *Orange Local Environmental Plan 2011* (OLEP 2011) Amendment 33.

TfNSW understands the planning proposal would facilitate the creation of up to 700 R5 Large Lot Residential lots and proposes ongoing vehicular access via a new access onto Pearce Lane (near the existing level crossing) and converting a private level crossing (currently serving Lot 3 DP 255983) to a public level crossing. As indicated in the documentation supporting the PP, additional traffic generated from the proposal would use both level crossings.

We also note that the proposed development is located immediately adjacent to an operational rail corridor from Orange Junction to Dubbo. Future rail movements may increase along this corridor for maintenance and testing as part of the Regional Rail - Mindyarra Maintenance Centre, currently under construction in Dubbo.

TfNSW has reviewed the Traffic Impact Assessment (TIA) and notes the Level of Service (LoS) for right turn movements at Clergate Road onto the Northern Distributor Road will degrade to a LoS F under projected future traffic conditions, with queueing anticipated. Appropriate control measures for this intersection, including signalisation of the intersection of Clergate Road and Northern Distributor Road needs to be considered, in consultation with Council and TfNSW.

TfNSW does not currently support the proposal in its current form. Concerns are raised about the future safe operation of the aforementioned level crossings as a result of the increase in traffic from the future development.

Further investigation is required to demonstrate that the increase in traffic can be safely accommodated. Mitigation measures (such as upgrading the existing level crossings) may be required to ensure future safe operations. The cost of any proposed mitigation measures would need to be borne by the proponent, with the scope discussed and agreed with the following parties:

- TfNSW as the Rail Authority;
- UGL as TfNSW contracted Rail Infrastructure Manager; and
- Council (as the appropriate Roads Authority).

Further detailed comments in relation to the PP, details of the required additional investigation required and comments relevant to the future Development Application stage are provided in **Attachment A**. If you wish to discuss this matter further please contact the undersigned

Yours faithfully

Andrew McIntyre
Manager Development Services
West Region | Community & Place
Regional & Outer Metropolitan

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Attachment A – Detailed comment about the Planning Proposal**New Northern Access via Public level crossing at Pearce Lane**

The proposed new northern access is likely to have an impact on the public level crossing as the new access is in close proximity to the crossing. The Traffic Impact Assessment forecasts up to 10% of the traffic generated will utilise the northern access and have potential impact on the public level crossing on Pearce Lane. TfNSW requests additional safety assessment of the proposal against Australian Standard 1742.7 and *Railway Crossing Safety Series 2011, Plan: Establishing a Railway Crossing Safety Management Plan* (Roads and Traffic Authority 2011) and an ALCAM assessment on the crossing to confirm that it is safe and suitable to accommodate the expected increase in vehicle usage as a result of the development.

New Western Access and Upgrade of an existing private level crossing to a public level crossing

TfNSW's records indicate that the crossing is provided exclusively for Lot 3 DP 255983 as a private crossing. As suggested in the planning proposal, this private crossing is proposed to be upgraded to a public level crossing and required formal approval from TfNSW.

In addition to the SIDRA analysis of Clergate Road and western access intersection, the following assessments are required to facilitate TfNSW further review before approval is granted for such upgrade.

- Safety assessment adopting Safe Systems Approach and form safety interfacing agreement with all stakeholders investigating all treatment options including grade separation.
- ALCAM assessment and assessment against Australian Standard 1742.7 and *Railway Crossing Safety Series 2011, Plan: Establishing a Railway Crossing Safety Management Plan* (Roads and Traffic Authority 2011) to confirm that (in the event of an upgraded level crossing being proposed) level crossing is safe and suitable to accommodate the expected increase in vehicle usage as a result of the development, and
- Subject to the result of the above assessments, liaise and renew interfacing agreement with TfNSW regard the potential upgrade to the level crossing and subsequently form a Works In Kind agreement with local road authority (i.e Orange City Council).

Private overbridge

The Planning proposal states that there is a single lane bridge over the Main Western Railway Line constructed to accommodate abattoir staff to walk over after parking on land on the western side of the railway line. Although the Planning Proposal does not include the overbridge as an access, it is important for TfNSW to review the overbridge at this stage.

Although all lands including Lot 15 DP 6694, Lot 1 DP 1226372 and Lot A DP 100828 are owned by one landowner, the bridge does not appear to be required as an access to Lot 15 DP 6694 and Lot 1 DP 1226372 as both lots have separate legal access and the bridge may be required to be reviewed by TfNSW for its potential closure. As such, the bridge must not be used during the Planning Proposal stage until such time as TfNSW determines the future provision of the bridge. It is believed that non-use of the bridge during this stage will have negligible impacts as the proposed traffic route does not include the bridge. Prior to lodgement of the future DA for subdivision, it is requested that the applicant consult with TfNSW and the Rail Infrastructure Manager in regard to the future use of this overbridge.

Contamination of Rail Land

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Contamination of Rail Land

It is noted that a Preliminary Site Investigation Report has been submitted to support the Planning Proposal and concludes that negligible risks to human health or the environment existed at the site and residual contamination aspects would be more practicably addressed at construction DA stages following subdivision.

TfNSW is currently conducting an environmental assessment to identify contamination on the Country Regional Network. All railway corridors are generally deemed to be contaminated unless proven otherwise by sample testing. Contamination risk arises from both the construction (e.g., unknown fill used in rail construction) and operations (e.g., transportation of contaminated material, spills) of the railway. Potential contaminants could include, but are not limited to, heavy metals, PAHs, phenolics (boiler ash), Organochlorine Pesticides (OCPs) and Organophosphorus Pesticides (OPPs). Although TfNSW is committed to ensuring the health and wellbeing of the community, TfNSW is not aware whether there are contaminants found in the rail corridor or on the common boundaries with the development site.

In accordance with State Environmental Planning Policy (Resilience and Hazards) 2021- Section 4.6 'Contamination and remediation to be considered in determining development application' (Previously State Environmental Planning Policy No. 55 – Remediation of Land) the consent authority (Council) must consider whether the land is contaminated.
Noise, vibration & air quality

Noise, vibration & air quality

The Planning Proposal has not included any future residential development applications will be required to comply with Section 2.99 of State Environmental Planning Policy (SEPP) (Transport & Infrastructure) 2021 and the Guideline.

State Environmental Planning Policy (SEPP) (Transport & Infrastructure) 2021 provides that for development that is in or immediately adjacent to a rail corridor the consent authority must be satisfied that the development would not be adversely affected by rail noise, vibration or air quality due to the volume of traffic the rail line carries. It is important to ensure that a sensitive use such as a residential use should not be located adjacent to the rail corridor to ensure that people residing in the Site are not placed subject to adverse noise and air quality impacts as a result of rail operations.

As such, it is strongly recommended that Development for sensitive uses on the Site that is immediately adjacent to the operational rail corridor must ensure that acoustic building treatments are provided within 100m of the corridor to achieve noise requirements and compliance with the noise requirements shall only be based on shielding from fences, noise walls and intervening objects which are permanent structures, and exclude shielding from any object which forms part of a future development stage.

Stormwater management

Storm water Management

The Planning Proposal has not included details of stormwater management for TfNSW and Rail Infrastructure Manager to determine if it has any adverse impacts on the rail corridor.

As the Land is immediately adjacent to the rail corridor, the rail corridor must not be adversely impacted by any future developments in the Land in terms of stormwater management.
Future public transport service provision

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Future public transport service provision

Should the land be rezoned, and the project continue to the development assessment stage for subdivision, public transport service provision should be considered as part of the project scope. A future development application should consider opportunities to provide public transport through the subdivision area, providing customers with greater travel choices.

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Department of Planning and Environment

Craig Mortell
Senior Planner – Development Services
Orange City Council

Our ref: DOC22/951478
Your ref: PP-2021-5680

Dear Mr Mortell

**Planning Proposal – Amendment 33 – 440 Clergate Road, Orange – Rosedale Gardens
further advice**

Thank you for your e-mail dated 14 October 2022 to the Biodiversity, Conservation and Science Directorate (BCS) of the Department of Planning and Environment inviting comments on the proposed amendments to the Orange Local Environmental Plan 2011 (LEP) to facilitate an additional 250 dwellings at Rosedale Gardens.

BCS notes initial feedback on the Rosedale Gardens proposal was issued on 10 May 2022 as part of the agency consultation phase. Since then, the planning proposal (revision 1H – 12 September 2022) has been updated to respond to multiple agency's submissions and is the subject of this response.

After review of the updated planning proposal, additional GIS data, and a site visit by BCS staff on 25 October 2022, BCS's original submission is still considered relevant and detailed comments provided in **Attachment B** should be considered in addition to the 10 May 2022 submission.

BCS does not support uniformly reducing the Minimum Lot Size (MLS) and rezoning the entire site to R5 Large Lot Residential as it will reduce LEP protection levels uniformly across the site and increase impacts to threatened entities, including a critically endangered ecological community.

Instead, BCS recommends that protective zoning and appropriate lot sizes be applied to parts of the site containing White Box – Yellow Box – Blakely's Red Gum Woodland Critically Endangered Ecological Community (CEEC).

As well as being critically endangered, this ecological community is a Serious and Irreversible Impact (SII) entity. Under section 7.16 of the *Biodiversity Conservation Act 2016*, a consent authority must refuse to grant consent if it is of the opinion that a proposed development is likely to have a serious and irreversible impact.

Failure to demonstrate reasonable measures to avoid and minimise impacts at the rezoning stage can compromise the approval of a proposed development where SII entities are affected.

BCS recommendations for this proposal are available in **Attachment A** and detailed comments are available in **Attachment B**. If you require any further information regarding this matter, please contact _____, Senior Conservation Planning Officer

Yours sincerely

Liz Mazzer
A/Senior Team Leader Planning North West
Biodiversity, Conservation and Science Directorate

3 November 2022

ATTACHMENT A

**BCS – North West Branch additional recommendations for
Rosedale Gardens planning proposal (PP-2021-5680)**

Summary of all recommendations

- 1.1 Update the planning proposal to:
 - a. Discuss the whole suite of increased potential impacts associated with the rezoning and reduction of MLS.
 - b. Describe how protection of the Box Gum Woodland CEEC would be effectively achieved.
 - c. Update Figure 5 to include the whole extent of the Box Gum Woodland CEEC, including expanding the northern extent to include additional native grassland.
- 1.2 Revise the concept site layout to further avoid areas of Box Gum Woodland CEEC and derived native grassland.
 - a. Where remnant CEEC patches are small, or limited to paddock trees, retain hollow bearing trees wherever possible.
- 2.1 Retain the current C4 Environmental Living, RE1 Public Recreation zoning, and 4,000m² MLS on parts of the subject site which contain Box Gum Woodland CEEC and derived native grassland.

ATTACHMENT B

BCS – North West Branch additional advice for Rosedale Gardens planning proposal (PP-2021-5680)

1. Further justification may be required meet requirements of the Ministerial Direction 2.1 Environmental Protection ZonesConsideration of recent legislative history

Changes to State and local legislation since the original Rosedale Gardens rezoning in 2020 are relevant to the proposed development intensification of the Rosedale Gardens subdivision:

- 21 February 2020 – Orange Local Environmental Plan 2011 (Amendment No 13) notified to change the zoning, reduce Minimum Lot Size (MLS) and include Rosedale Gardens as an Urban Release Area.
 - Creation of the then E4 Environmental Living and RE1 Public Recreation zones was based on the recommendation of the preliminary biodiversity assessment (FloraSearch, 2016) to protect Box Gum Woodland vegetation and riparian corridors.
- 17 July 2020 – *Biodiversity Conservation Act 2016* uplisted Box Gum Woodland from an Endangered to a Critically Endangered Ecological Community (CEEC).
 - Based on the NSW Threatened Species Scientific Committee determination for *White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions* (Box Gum Woodland).
- 24 December 2021 – Conditional Gateway determination issued to facilitate up to 700 residential lots for the proposed Rosedale Gardens intensification.
 - The updated planning proposal confirms the Box Gum Woodland CEEC is still present at the site, based on a preliminary site visit by Premise ecologists on 8-9 April 2021.

The new proposal would increase development through permitting up to an additional 250 dwellings and associated increase in permissible land uses (e.g. 'extensive agriculture') across the whole site. This appears contradictory to the increased need to protect areas where a known critically endangered entity exists.

Requirements of the Ministerial Direction

The Section 9.1 Ministerial Direction 2.1 Environmental Protection Zones requires that Councils in preparing a planning proposal must:

1. Include provisions that facilitate the protection and conservation of Environmentally Sensitive Areas (ESA).
2. Not reduce the environmental protection standards that apply to the land.

Overall, justification for loss of 95ha of C4 Environmental Living zoned land and reduction of MLS to 2,000m², is based on the remaining planning controls not being removed and flexibility of lot design at subdivision stage (i.e., consideration of cl7.4 Terrestrial Biodiversity on land mapped as environmental sensitivity, and development of a site-specific Development Control Plan [DCP]).

Removing the C4 and RE1 zones reduces the environmental protection of the land. Reducing the MLS to 2,000m² would also increase the number of dwellings which can be built, increasing impacts on biodiversity. Given the confirmed presence of Box Gum Woodland, local environmental protection controls should be increased or at a minimum, aim to maintain the existing level of protection for ESAs within the LGA, as afforded by the current LEP.

Findings from site visit

BCS ecologists visited the site on 25 October 2022, along with Orange City Council and Premise representatives. Site visit confirmed the biodiversity values are largely consistent with the Figure 5 'Ground-truthed biodiversity mapping' of the planning proposal.

Given the 18-month period in between site visits, the extent of derived native grasslands mapped to the north of the property, along Pearce Lane at plot DNG8b, may have increased due to recent climatic conditions (see Plate 1). Native species dominant grasslands are of importance to protect as pasture improvement and grazing practices can result in invasion from exotic plant species which can be difficult to reverse (NSW Threatened Species Scientific Committee, 2020). As such, conservation of the derived native grasslands to the north of the property and large remnant CEEC patch to the south-west (at plot W1) are the priority areas for conservation.



Plate 1: Patch of grassland and drainage line, which is dominated by native species near Pearce Lane.

BCS has also reviewed the GIS data provided on 24 October 2022. We note there are 32 hollow bearing paddock trees recorded on the site, with many more hollow bearing trees likely to be present within areas mapped as a Plant Community Type (PCT). While the remnant PCTs and paddock trees may be small in extent and too isolated for accurate LEP mapping, they still provide important habitat for threatened species and corridors. For the remainder of the site, BCS recommends retention of paddock trees and PCTs within the lot layout wherever possible.

Recommendations

1.1 Update the planning proposal to:

- a. Discuss the whole suite of increased potential impacts associated with the rezoning and reduction of MLS.

- b. Describe how protection of the Box Gum Woodland CEEC would be effectively achieved.
- c. Update Figure 5 to include the whole extent of the Box Gum Woodland CEEC, including expanding the northern extent to include additional native grassland.
- 1.2 Revise the concept site layout to further avoid areas of Box Gum Woodland CEEC and derived native grassland.
 - a. Where remnant CEEC patches are small, or limited to paddock trees, retain hollow bearing trees wherever possible.

2. Adequate avoidance to reduce SAI impacts to Box Gum Woodland is relevant to the rezoning stage

Consideration of Serious and Irreversible Impacts (SAII)

Box Gum Woodland CEEC is listed as a candidate SAI entity under Principle 1 and Principle 2 in accordance with Section 6.7 of the *Biodiversity Conservation Regulations 2017*. These Principles state:

An impact is to be regarded as serious and irreversible if it is likely to contribute significantly to the risk of a threatened species or ecological community becoming extinct because -

Principle 1: it will cause a further decline of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to be in a rapid rate of decline, or

Principle 2: it will further reduce the population size of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to have a very small population size.

The Final Determination for this community lists the clearing of native vegetation as a key threatening process for the CEEC. In addition, there is no minimum clearing threshold identified within relevant databases which could be considered an insignificant decline in this community, therefore any incremental loss in any extent would be contributing to the principles above. As previously highlighted on 10 May 2022, should Council be in receipt of a Development Application for the proposed subdivision, Council is responsible for determining whether the development is likely to have a serious and irreversible impact on biodiversity values. Where a SAI is deemed likely, the planning authority must not grant approval to the Development Application.

Reliance on Development Control Plan (DCP) to protect biodiversity values is inadequate

Council, through land use strategies and LEPs, can protect biodiversity by avoiding development and other land use intensification in areas of remnant native vegetation.

BCS will not support strategic land use recommendations or LEP provisions which allow further settlement opportunities or intensification of development in high environmental value areas or remnant native vegetation, particularly if Council assumes that ongoing management could be effectively controlled by complex DCP rules.

We view DCPs as a secondary mechanism to provide biodiversity protection and management measures. It is vital that biodiversity values are first considered strategically in zoning decisions and development assessment provisions. BCS does not consider it acceptable to completely defer consideration of these matters to the DCP stage.

The BC Act establishes a legal framework to implement the principles of avoid, minimise and mitigate, in that order, with offsetting of residual impacts as a last resort. Creation of a DCP is a

mitigation step and cannot be relied upon until adequate avoidance and mitigation measures have first been applied. Failure to demonstrate reasonable measures to avoid and minimise can compromise the approval of a proposed development (as per case law in recent IRM Property Group (No. 2) Pty Ltd v Blacktown City Council [2021] NSWLEC 1306).

The life of the project is taken into consideration when determining SAI, and where appropriate hierarchy of controls has been applied. Reducing the environmental protection of the area (removing protective zonings) and increasing impact (reduction of MLS) is undermining the avoidance stage, which is critical when determining SAI and consideration of future development applications.

While the final impact footprint of the proposed development cannot be determined at this stage, the proposed rezoning and reduction of MLS will increase impacts to the Box Gum Woodland CEEC. Council needs to ensure MLS in environmentally sensitive areas (ESAs) are of an appropriately large size to control the cumulative impact of any development and settlement intensification permitted in those areas by the LEP. If Council is strongly of the opinion that lot sizes need to be reduced then this should not be applied uniformly across the site, with ESAs excluded from such revisions.

Recommendations

- 2.1 Retain the current C4 Environmental Living, RE1 Public Recreation zoning, and 4,000m² MLS on parts of the subject site which contain Box Gum Woodland CEEC and derived native grassland.

References

FloraSearch. (2016). *Proposed Subdivision Between The Former Orange Abattoir, The Main Western Railway Line and Pearce's Lane, Orange, NSW*. Orange.

NSW Threatened Species Scientific Committee. (2020, July 17). *NSW Threatened Species Scientific Committee – final determination*. Retrieved from <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Scientific-Committee/Determinations/2020/white-box-yellow-box-final-determination-ceec.pdf?la=en&hash=DD6076E55435D715E7E90B1A901EEB83D488563B>



Department of Planning and Environment

Craig Mortell
Senior Planner – Development Services
Orange City Council

Our ref: DOC22/1123366
Your ref: PP-2021-5680

Dear Mr Mortell

Planning Proposal – Amendment 33 – 440 Clergate Road, Orange – Summary of advice provided for Rosedale Gardens post exhibition amendments

The Biodiversity, Conservation and Science Directorate (BCS) of the Department of Planning and Environment is in receipt of a letter from Premise Australia Pty Ltd, dated 7 December 2022, to discuss proposed amendments to the Orange Local Environmental Plan 2011 (LEP) to facilitate an additional 250 dwellings at Rosedale Gardens.

In summary, the post-exhibition amendments to the Rosedale Gardens proposal includes:

- Retention of the existing RE1 Public Recreation zone and associated Minimum Lot Size (MLS) for the south-west woodland area.
- Rezoning of the remaining RE1 and C4 Environmental Living zones to R5 Large Lot Residential and reduction of MLS from 4,000m² to 2,000m².

BCS's response to the proposed amendments is provided in **Attachment A**.

BCS is only supportive of planning proposals which maintain or improve LEP protection levels on areas of high environmental value, such as parts of the property known to contain White Box – Yellow Box – Blakely's Red Gum Woodland Critically Endangered Ecological Community (CEEC).

BCS reiterates that Box-Gum Woodland CEEC is a Serious and Irreversible Impact (SII) entity. Increasing development potential on other parts of the property known to contain Box-Gum Woodland CEEC can compromise avoid and minimise options at the subdivision stage. This is a risk of the planning proposal for the consent authority to consider.

Under section 7.16 of the *Biodiversity Conservation Act 2016*, the consent authority must refuse to grant consent if the approval of a proposed development is likely to have a serious and irreversible impact on SII entities. Further advice regarding determination of serious and irreversible impacts is available via the *Guidance to assist a decision-maker to determine a serious and irreversible impact* (DPIE, 2019). This guidance is available on the Department's website at <https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity-offsets-scheme/local-government-and-other-decision-makers/serious-and-irreversible-impacts-of-development>.

If you require any further information regarding this matter, please contact _____, Senior
Conservation Planning Officer

Yours sincerely

Liz Mazzer
A/Senior Team Leader Planning North West
Biodiversity, Conservation and Science Directorate

20 December 2022



Department of Planning and Environment

David Walker
General Manager – Central NSW
Premise Australia Pty Ltd

Our ref: DOC22/1123366
Your ref: PP-2021-5680 / 221025_LET_ECO_001C

Dear Mr Walker

Planning Proposal – Amendment 33 – 440 Clergate Road, Orange – Rosedale Gardens post exhibition amendments

Thank you for the meeting on 1 December 2022 and letter dated 7 December 2022 to the Biodiversity, Conservation and Science Directorate (BCS) of the Department of Planning and Environment to discuss proposed amendments to the Orange Local Environmental Plan 2011 (LEP) to facilitate an additional 250 dwellings at Rosedale Gardens.

BCS welcomes the collaborative approach and revisions of the Rosedale Gardens proposal in response to our previous feedback on 10 May 2022 and 3 November 2022.

We note that the current revision to the proposed Rosedale Gardens will:

- Retain the existing RE1 Public Recreation zone and associated Minimum Lot Size (MLS) for the south-west woodland area.
- Rezone the remaining RE1 and C4 Environmental Living zones to R5 Large Lot Residential and reduce the MLS from 4,000m² to 2,000m².

BCS is only supportive of planning proposals which maintain or improve LEP protection levels on areas of high environmental value, such as parts of the property known to contain White Box – Yellow Box – Blakely's Red Gum Woodland Critically Endangered Ecological Community (CEEC).

BCS reiterates that Box-Gum Woodland CEEC is a serious and irreversible impact (SAIL) entity. Increasing development potential on other parts of the property known to contain Box-Gum Woodland CEEC can compromise avoid and minimise options if the Rosedale Gardens proposal proceeds to subdivision. The biodiversity development assessment report (BDAR) must provide additional information specifically addressing the SAIL. The SAIL assessment in the BDAR must detail measures taken to avoid, minimise and mitigate impacts on the SAIL (section 3.2.3 of *Guidance to assist a decision-maker to determine a serious and irreversible impact*). This will assist the decision-maker to determine whether a serious and irreversible impact will occur.

Opportunities for improved protection of the Box-Gum Woodland CEEC could occur through more refined mapping of the RE1 Public Recreation zone boundary and relevant LEP Terrestrial Biodiversity Maps to more closely align with Figure 5 'ground-truthed biodiversity mapping', of the planning proposal. This could ensure biodiversity related planning controls can be applied to all areas of known biodiversity value, without inhibiting development on parts of the property which have now been surveyed and found to contain exotic grasslands/vegetation.



Department of Planning and Environment

If you require any further information regarding this matter, please contact _____, Senior
Conservation Planning Officer

Yours sincerely

Liz Mazzer
A/Senior Team Leader Planning North West
Biodiversity, Conservation and Science Directorate

20 December 2022

2.4 ORANGE LOCAL ENVIRONMENTAL PLAN - PLANNING PROPOSAL - 274 LEEDS PARADE

RECORD NUMBER: 2023/253

AUTHOR: Craig Mortell, Senior Planner

EXECUTIVE SUMMARY

Council is in receipt of a planning proposal to rezone 274 Leeds Parade from B7 Business Park zone to R1 General Residential zone. The site forms the northern portion only of the Leeds Parade Candidate Area from the Orange Local Housing Strategy. The proposal has included a conceptual layout for both portions of the candidate area to illustrate consistency with the housing strategy, however the southern portion of the candidate area is in separate ownership and is not part of the proposal before Council.

The proposal is anticipated to facilitate the eventual development of approximately 47 lots ranging in size from 560m² to 820m². The existing dwelling would be retained on a larger lot of approximately 1000m². It is considered that a minimum lot size of 500m² is appropriate in this case which would match the minimum allotment size that currently applies to adjoining residential development. Lots along Leeds Parade and the southern dam would be expected to be larger allotments to accommodate appropriate buffers. It is appropriate at this stage that the site be designated as an Urban Release Area meaning that a DCP would need to be prepared, exhibited and adopted by the Council separate to the rezoning process prior to any development proceeding on the subject land.

The proposal is considered to be consistent with the recently adopted Local Housing Strategy. It is recommended that Council supports the proposal and directs staff to seek a gateway determination from the Department of Planning and Environment.

**LINK TO DELIVERY/OPERATIONAL PLAN**

The recommendation in this report relates to the Delivery/Operational Plan Strategy “7.1. Engage with the community to develop plans for growth and development that value the local environment”.

FINANCIAL IMPLICATIONS

Nil

POLICY AND GOVERNANCE IMPLICATIONS

Nil

RECOMMENDATION

- 1 That Council resolves to support the planning proposal to rezone Lot 211 DP 1177178 known as 274 Leeds Parade to the R1 General Residential Zone , establish a minimum allotment size and seek a gateway determination from the Department of Planning and Environment, subject to the site being designated as an Urban Release Area for the purposes of Section 6.3 of the Orange Local Environmental Plan.**
- 2 That subject to the terms of a gateway determination that Council proceed to undertake agency and community consultation of the planning proposal and return the matter to Council for determination.**
- 3 That Council request the Department of Planning and Environment provide Council with delegations to formally make the plan once relevant conditions of the gateway determination are satisfactorily completed.**
- 4 That the draft Development Control Plan provided with the planning proposal be noted, but deferred at this time to allow further refinement, including matters that may be raised during the agency and public consultations of the planning proposal.**

FURTHER CONSIDERATIONS

Consideration has been given to the recommendation's impact on Council's service delivery; image and reputation; political; environmental; health and safety; employees; stakeholders and project management; and no further implications or risks have been identified.

SUPPORTING INFORMATION

274 Leeds Parade is currently zoned B7 Business Park. This zone was established when Orange LEP 2011 was created. The intention was to provide opportunity for businesses and light industries that may have benefitted from being in proximity to the Charles Sturt University campus. To date the market has shown little to no interest in this potential and given the removal of industrial land further to the north under Amendment 33, the site was reviewed as part of the Orange Local Housing Strategy.

The OLHS found that land to the eastern side of Leeds Parade could be suitable for additional housing and created a candidate area that straddles Miriam Drive. The owner of the northern section of the candidate area is now seeking to pursue the residential potential identified in the strategy. The proposal has been reviewed internally and is considered to be consistent with the OLHS while the associated draft Development Control Plan will require further refinement. This is likely to be informed by matters that may arise during agency and public consultation.

Orange Local Housing Strategy

The proposal has included a conceptual subdivision layout for both portions of the candidate area. This shows the northern portion, the subject of this proposal, could yield approximately 47 lots, inclusive of the existing dwelling. While the southern portion could yield approximately 64 lots again inclusive of the existing dwelling. The total site area of both portions is 13.49ha which indicates an overall density of 8.22 dwellings per hectare this is somewhat below the density of 10 dwellings per hectare anticipated by the OLHS but is above the estimated final yield of 100 lots.

Subject site Concept layout - northern portion of the Leeds Parade Candidate Area



Concept layout of the subject site north of Miriam Drive above. Key features are:

- Through connections to the Charles Sturt University land to the north allowing for future connectivity.
- good solar orientation of the lots, with the majority in either a north-south or east-west alignment.
- all lots have internal access and will not need to have direct access to Leeds Parade
- Lots along the western edge of the site have significant depth, allowing mitigation of traffic noise along Leeds Parade.
- Lot density is slightly greater than the residential pattern to the east but the change is not substantial allowing for the character of the estate to feel consistent.
- The layout provides two entrances to reduce congestion and improve permeability.

Remainder of Leeds Parade Candidate Area - concept layout

An indicative layout of the southern portion of the candidate area below Miriam Drive has been provided to illustrate that both portions of the candidate area may be developed in a consistent character. Similar concepts have been employed however given that the land to the south comprises a large dam likely to be retained for stormwater management this layout has not anticipated a continuation of development, providing a single cul-de-sac bulb head to allow public/pedestrian access.

The road layout of the southern portion may benefit from some further adjustment to provide the lots adjoining Leeds Parade with greater depth for noise attenuation and a second exit from the estate onto Miriam Drive may also be beneficial to avoid creating a choke point. Notwithstanding this the focus of the planning proposal is the northern portion of the candidate area and the concept layout for both portions is only intended as a rough guide to the overall pattern of development that may emerge.

Contamination

The proposal has included a preliminary site investigation for the northern portion to confirm the site is suitable for residential development. The EnviroScience study concludes that:

- the structures on site do not have a hazardous material register and being constructed prior to 2003 may have some asbestos materials, an asbestos containing pipe was found on the site
- sample results on the site are below residential levels, Total chromium detected was above Residential A levels but further analysis specific to hexavalent Chromium Cr6+ were well below the threshold
- Recommendations that future works operate under an unexpected finds protocol and that if asbestos fragments are found during excavation works should cease and the affected area be investigated by an independent assessor.

These findings and recommendations are within the scope of normal development assessment and consent conditions.

Traffic

The concept layouts for both portions of the candidate area indicate a potential for approximately 111 lots (inclusive of the two existing dwellings). The layouts provided indicate that all lots can be served from internal roads connecting to Miriam Drive and then flowing to the intersection with Leeds Parade and further on to the intersection with the Northern Distributor Road.

The RTA guidelines anticipate nine daily vehicle trips per dwelling with a weekday peak hour of 0.85 trips per dwelling. This equates to approximately 1000 daily trips and a peak hour load of 94.35 trips. The proponent has argued that Council can consider traffic design, intersection locations and transport planning principles without a small scale Traffic Study with these matters to be addressed, including intersection and detailed road designs, footpaths and the like as part of the DA assessment stage.

It may be noted that as the proposal only relates to the northern portion, which is anticipated to yield 47 lots which accounts for 42.3% of the above estimates. However as both portions of the candidate area will need to rely upon the same road (Miriam Drive) for access each portion should be assessed on the basis of the total impact of the whole candidate area. Upgrades and traffic studies for either should have to reflect the needs and impacts of both.

Accordingly any support for the proposal should be regarded as conditional upon the future development application being required to address and make provision for any upgrades to Miriam Drive, Leeds Parade through to the Northern Distributor Road and the associated intersections.

Vegetation

The site has been cleared and used for low intensity agriculture for a considerable period of time. As such there is no significant remnant vegetation evident on the site and the land has been heavily disturbed.

State Environmental Planning Policies*SEPP (Transport and Infrastructure) 2021*

The proposal recognises the need to deliver appropriate supporting infrastructure in terms of sewer, water and stormwater assets that will be addressed through normal development application assessment. The proposal states that the development would not trigger Traffic Generating Development under Schedule 3 as the overall estate is less than 200 lots.

While it is acknowledged that Schedule 3 is not directly triggered by the proposal it is considered that any future development application assessment will need to evaluate the potential impacts upon Miriam Drive, Leeds Parade through to the NDR and associated intersections.

SEPP (Housing) 2021

The proposal acknowledges that the SEPP is seeking to increase social and affordable housing across the state. While the proposal does not seek to explicitly or directly provide these housing forms it does not detract from or prevent their delivery. By increasing the supply of residential land and contributing approximately 47 lots to the market this will make a marginal contribution to affordability within the local market.

SEPP (Resilience and Hazards) 2021

The proposal notes that the SEPP requires that land be evaluated for contamination during the rezoning and DA stage. In this regard the proposal has been accompanied by a preliminary site investigation by EnviroScience Solutions which has found the site broadly suitable for residential development subject to some recommendations in terms of potential asbestos containing materials and unexpected finds protocols. These matters can be incorporated into the site-specific DCP prior to the DCP being put forward for community consultation.

SEPP (Biodiversity and Conservation) 2021

The proposal notes that Clause 2.9 of the SEPP applies where a DCP has identified species or types of trees for which consent is required prior to removal. In this regard Orange DCP 2004 chapter 0 contains Councils tree preservation order controls in relation to trees with a diameter exceeding 300mm at breast height. Consequently, any tree clearing as part of the development will need to be considered during assessment of a future DA.

Draft Development Control Plan

The proponent has supplied a draft Development Control Plan that has not fully addressed the matters outlined in the OLHS for the candidate area. Accordingly, while the proposed rezoning can be tentatively supported at this time, further refinement of the DCP component will be required before it can be supported. During exhibition of the rezoning submissions from the public and relevant agencies may highlight additional matters or concerns that can be addressed within a site-specific Development Control Plan.

The draft DCP supplied has sought to address:

- Controlled access for traffic management
- Visual amenity along Leeds Parade (particularly in terms of fencing and sheds)
- Stormwater and water quality management
- Demonstrate servicing concepts
- Landscaping between southern residential lots and retention basin
- Landscaping buffer along Leeds Parade
- Water Sensitive Urban Design
- Pedestrian and cyclist amenity
- Solar access
- Public safety
- Fencing

The nominated provisions of the draft DCP need to be further investigated and refined prior to being put forward for community consultation. This deferral of the DCP component will allow matters arising from agency and public consultation on the rezoning to be incorporated. The draft DCP document supplied by the proponent can serve as a starting point to preparing a site specific DCP. As alluded to above it is appropriate at this stage that the site be designated as an Urban Release Area meaning that a DCP would need to be prepared, exhibited and adopted by the Council separate to the rezoning process prior to development proceeding on the subject land. The proponents will be invited to further refine the draft DCP while the planning proposal is with the Department for Gateway.

Central West and Orana Regional Plan (CWORP)

Direction 25 relates to increasing housing diversity and choice and contains a number of actions including:

25.1 Prepare local housing strategies that increase housing choice, including affordable housing options.

25.3 Align infrastructure planning with new land release areas to provide adequate and timely infrastructure.

Within this context allowing for lower density urban development of single family homes and dual occupancy sites will assist in the provision of housing opportunity including for modest residential development.

Direction 29 relates to delivering healthy built environments and better urban design and the following actions are relevant, particularly to the drafting of a site-specific DCP:

29.1 Develop regional urban design guidelines for planning, designing and developing healthy built environments.

29.2 Enhance the quality of neighbourhoods by integrating recreational walking and cycling networks.

29.3 Reflect local built form, heritage and character in new housing developments.

29.4 Incorporate water sensitive urban design in new developments.

Refinement of the draft DCP will enable further inclusion of these aspects in the overall estate.

Section 9.1 Ministerial Directions

The planning proposal has outlined a response to the full range of Ministerial Directions under Section 9.1 of the Act. The responses within the planning proposal document have been reviewed by staff and are supported.

ATTACHMENTS

- 1 Planning Proposal - 274 Leeds Parade, D23/9740 [↓](#)
- 2 Planning Proposal - 274 Leeds Parade - Draft Development Control Plan, D23/9742 [↓](#)
- 3 Planning Proposal - 274 Leeds Parade - Preliminary Site Investigation (contamination), D23/9744 [↓](#)



PLANNING PROPOSAL TO AMEND ORANGE LEP 2011

To Permit R1 – General Residential

Lot 211 DP1177178

Lot 20 DP1117081

**264 and 274 Leeds Parade,
Orange NSW 2800**

274 Leeds Parade, ORANGE NSW 2800

1.0 OVERVIEW

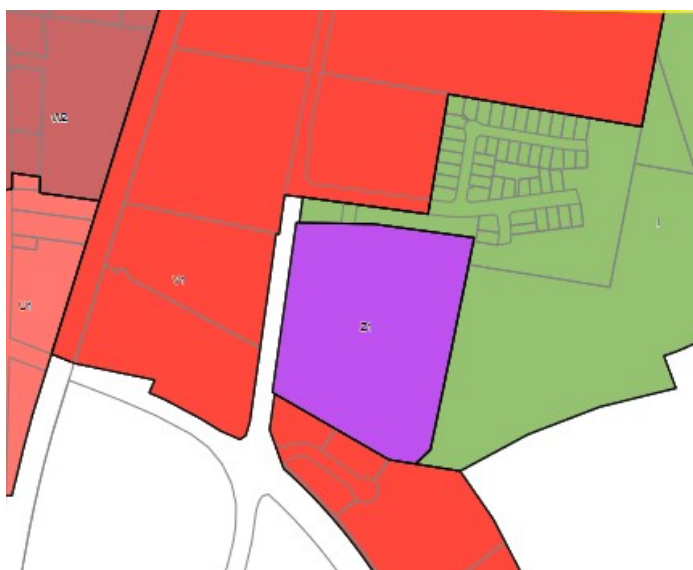
We have been engaged to present a Planning Proposal to Orange City Council for DMAA Pty Ltd to investigate the merit of establishing a residential subdivision development upon a 3.78 hectare and 9.7 hectare holding fronting Leeds Parade and Miriam Drive. The property is situated to the south of Charles Sturt University Campus in North Orange and has access to the Northern Distributor via Leeds Parade.

The study area is situated approximately 3.5 kilometres north east of Orange Post Office. The land is situated adjacent to recently subdivided and developed lands upon Scarborough Street, Miriam Drive and Milne Street.

We have undertaken preliminary discussions with Orange City Council's planning staff regarding the proposal and are prepared to consider now the Orange Local Housing Strategy has been adopted. We were advised to now address the adopted Leeds Parade Candidate listing notes and create a draft DCP for the candidate area.

We envisage the Lot Size amendments to represent a mix of lot sizes from 560m² to 1365m². The lot yield comprises 111 lots.

The minimum lot size map will need to show a 500 square metre minimum lot size consistent with the surrounding area.



274 Leeds Parade, ORANGE NSW 2800

Minimum Lot Size (sq m)

B	200
C	250
F	400
I	500
Q	700
S1	800
S2	850
U1	1,000
U2	1,500
U3	1,750
V1	2,000

2.0 APPLICANT

David Miers and Associates Pty Ltd

c/ Saunders Property

2/124-128 Summer Street

ORANGE NSW 2800

3.0 SUBJECT LAND

3.1 Location and Land Description

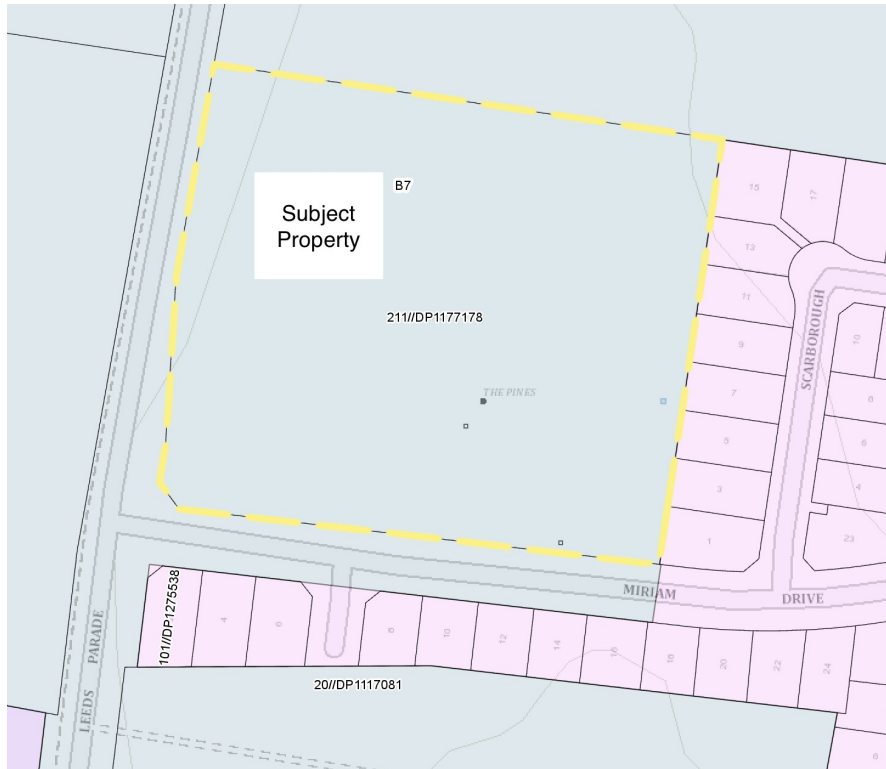
The subject land is located at the eastern side of Leeds Parade and on the northern and southern side of Miriam Drive.

The study area comprises:

274 Leeds Parade – Lot 211 DP1177178 – 3.79 hectares

264 Leeds Parade – Lot 20 DP 1117081 – 9.7 hectares

274 Leeds Parade, ORANGE NSW 2800



This information is obtained from various sources and cannot be guaranteed. You must make your own enquiries as to its accuracy.

Figure 1. Location of subject property.

4.0 THE PROPOSAL

The proposal incorporates the inclusion of the subject land into the Leeds Parade/Narrambla urban release development for the purposes of residential zoned land use in accordance with Sub Regional Strategy recommendations for lands east of Leeds Parade to the south of Charles Sturt University campus.

274 Leeds Parade, ORANGE NSW 2800

5.0 PLANNING REQUIREMENTS AND ASSESSMENT

In determining the application, Council is required to consider the relevant matters identified under the Environmental Planning and Assessment Act, 1979 and associated Regulations 2000. This section forms the basis of our assessment below.

5.1. Provisions of Environmental Planning Instruments

The subject land is currently zoned B7 Business Park as follows: -

Zone B7 Business Park

1 Objectives of zone

- *To provide a range of office and light industrial uses.*
- *To encourage employment opportunities.*
- *To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area.*
- *To encourage a mix of light industrial activities and research activities that encourage the sharing of facilities.*
- *To ensure development is ordered in such a way as to maximise public transport patronage, and encourage walking and cycling, in close proximity to settlement.*

2 Permitted without consent

Environmental protection works

3 Permitted with consent

Centre-based child care facilities; Garden centres; Hardware and building supplies; Light industries; Neighbourhood shops; Office premises; Oyster aquaculture; Passenger transport facilities; Respite day care centres; Roads; Take away food and drink premises; Tank-based aquaculture; Warehouse or distribution centres; Any other development not specified in item 2 or 4

4 Prohibited

Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Biosolids treatment facilities; Boat building and repair facilities; Boat launching ramps; Boat sheds; Camping grounds; Car parks; Caravan parks; Cemeteries; Charter and tourism boating facilities; Correctional centres; Crematoria; Depots; Eco-tourist facilities; Entertainment facilities; Exhibition homes; Exhibition villages; Extractive industries; Forestry; Freight transport facilities; Function centres; Heavy industrial storage

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establishments; Helipads; Highway service centres; Home-based child care; Home business; Home occupations; Home occupations (sex services); Industrial retail outlets; Industrial training facilities; Industries; Jetties; Marinas; Mooring pens; Moorings; Mortuaries; Open cut mining; Passenger transport facilities; Places of public worship; Pond-based aquaculture Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Residential accommodation; Retail premises; Rural industries; Service stations; Sewage treatment plants; Sex services premises; Storage premises; Tourist and visitor accommodation; Transport depots; Vehicle body repair workshops; Veterinary hospitals; Waste or resource management facilities; Water recreation structures; Water recycling facilities; Wholesale supplies

State Environmental Planning Policies

State Environmental Planning Policy (Transport and Infrastructure) 2021

The State Environmental Planning Policy (Transport and Infrastructure) 2021 aims to facilitate the effective delivery of infrastructure throughout the state.

This provides for local Council's and other public authorities to deliver necessary infrastructure to communities via a framework of assessment and accountability. Any proposed sewer, water or stormwater works will require consent.

We also note that the subject area would not trigger Traffic Generating Development under Schedule 3 requirements being less than 200 lots.

State Environmental Planning Policy (Housing) 2021

The aims of the *State Environmental Planning Policy (Housing) 2021* are:

3 Principles of Policy

The principles of this Policy are as follows—

- (a) enabling the development of diverse housing types, including purpose-built rental housing,*
- (b) encouraging the development of housing that will meet the needs of more vulnerable members of the community, including very low to moderate income households, seniors and people with a disability,*
- (c) ensuring new housing development provides residents with a reasonable level of amenity,*
- (d) promoting the planning and delivery of housing in locations where it will make good use of existing and planned infrastructure and services,*
- (e) minimising adverse climate and environmental impacts of new housing development,*

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(f) reinforcing the importance of designing housing in a way that reflects and enhances its locality,

(g) supporting short-term rental accommodation as a home-sharing activity and contributor to local economies, while managing the social and environmental impacts from this use,

(h) mitigating the loss of existing affordable rental housing.

The policy applies to all of the state. Via the demographic analysis in Section 2.1, affordable and social housing are recognised as forms of housing in key demand within the Orange LGA. The Housing SEPP seeks to facilitate delivery of these forms of housing.

The Housing SEPP provides a range of enabling clauses that seek to promote the provision of affordable housing, including infill development, secondary dwellings, boarding houses, supportive accommodation and residential flat buildings. The SEPP provides a variable range of concessions with respect to matters like minimum site area, car parking provision, landscaping, deep soil zones and solar access. These provisions are designed to facilitate the provision of affordable housing.

State Environmental Planning Policy (Resilience and Hazards) 2021

State Environmental Planning Policy (Resilience and Hazards) 2021 Chapter 2 aims to:

...promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment...

This policy applies to the whole of the State, including the Orange LGA. The SEPP defines 'contaminated land' as per the definition in Part 5 of the *Contaminated Land Management Act 1997 No 140* as:

the presence in, on or under the land of a substance a concentration above the concentration at which the substance is normally present in, on, or under (respectively) land in the same locality, being a presence that presents a risk of harm to human health or any other aspect of the environment.

Clause 4.6 of the SEPP states:

(1) A consent authority must not consent to the carrying out of any development on land unless—

(a) it has considered whether the land is contaminated, and

(b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and

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(c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.

(2) Before determining an application for consent to carry out development that would involve a change of use on any of the land specified in subsection (4), the consent authority must consider a report specifying the findings of a preliminary investigation of the land concerned carried out in accordance with the contaminated land planning guidelines.

(3) The applicant for development consent must carry out the investigation required by subsection (2) and must provide a report on it to the consent authority. The consent authority may require the applicant to carry out, and provide a report on, a detailed investigation (as referred to in the contaminated land planning guidelines) if it considers that the findings of the preliminary investigation warrant such an investigation.

(4) The land concerned is—

(a) land that is within an investigation area,

(b) land on which development for a purpose referred to in Table 1 to the contaminated land planning guidelines is being, or is known to have been, carried out,

(c) to the extent to which it is proposed to carry out development on it for residential, educational, recreational or child care purposes, or for the purposes of a hospital—land—

(i) in relation to which there is no knowledge (or incomplete knowledge) as to whether development for a purpose referred to in Table 1 to the contaminated land planning guidelines has been carried out, and

(ii) on which it would have been lawful to carry out such development during any period in respect of which there is no knowledge (or incomplete knowledge).

The Resilience and Hazards SEPP is a relevant consideration at rezoning and DA stage and the identification of contamination land is relevant Planning Proposal preparation level to identify those areas confirmed as being affected by known contamination and which may act as a limit, particularly in relation to greenfield re-development or urban consolidation situations.

Refer to the Enviroscience Report attached on the Planning Portal.

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State Environmental Planning Policy (Primary Production) 2021

The land is zoned B7. The not relevant to the Planning proposal.

State Environmental Planning Policy (Biodiversity and Conservation) 2021

The Chapter 2 objectives of the *State Environmental Planning Policy (Biodiversity and Conservation) 2021* are:

- (a) *to protect the biodiversity values of trees and other vegetation in non-rural areas of the State, and*
- (b) *to preserve the amenity of non-rural areas of the State through the preservation of trees and other vegetation.*

Clause 2.9 of the SEPP identifies that the SEPP applies where a Development Control Plan has been created that identifies species or types of trees for which consent is required prior to removal and which refers to the SEPP. Chapter 0 of the Orange Development Control Plan 2004 (DCP) identifies tree types and species that require approval prior to removal. Tree clearing occurring as a result of urban development requires consideration and is therefore relevant in the context of this Planning Proposal.

5.2 Provisions of Draft Environmental Planning Instruments

There is no known draft regional, state or local environmental planning instruments that affect the subject property.

The new Central West and Orana Regional Plan 2036 is referred to later in our Planning Proposal.

The recently adopted Orange Local Housing Strategy is in support of the designated land being identified for residential zoning.

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5.3 LEP Options

Zone R1 General Residential

1 Objectives of zone

- To provide for the housing needs of the community.
- To provide for a variety of housing types and densities.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.
- To ensure development is ordered in such a way as to maximise public transport patronage and encourage walking and cycling in close proximity to settlement.
- To ensure that development along the Southern Link Road has an alternative access.

2 Permitted without consent

Environmental protection works; Home-based child care; Home occupations

3 Permitted with consent

*Attached dwellings; Bee keeping; Boarding houses; Building identification signs; Business identification signs; Camping grounds; Caravan parks; Centre-based child care facilities; Community facilities; **Dwelling houses**; Electricity generating works; Environmental facilities; Exhibition homes; Exhibition villages; Group homes; Home businesses; Home industries; Hostels; Information and education facilities; Kiosks; Multi dwelling housing; Neighbourhood shops; Oyster aquaculture; Places of public worship; Pond-based aquaculture; Recreation areas; Recreation facilities (indoor); Recreation facilities (outdoor); **Residential accommodation**; Residential flat buildings; Respite day care centres; Roads; Semi-detached dwellings; Seniors housing; Shop top housing; Tank-based aquaculture; Tourist and visitor accommodation; Veterinary hospitals; Water supply systems*

4 Prohibited

Farm stay accommodation; Rural workers' dwellings; Any other development not specified in item 2 or 3

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5.4 Part 1 - Objectives or Intended Outcomes

To enable a site specific residential precinct upon the subject land adjacent to the east Leeds Parade/Narrambla urban release development.

The intended outcome is to allow an R1 zone that allows for serviced general residential development.



Existing Land Use Zones

Proposed Land Use Zones



Existing Minimum Lot Size

Proposed Minimum Lot Size

Figure 2 Showing the existing and proposed Land Use Zones and development controls for the subject site.

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5.5 Part 2 – Explanation of Provisions

The proposed outcome will be achieved by means of changing the zone from B7 to R1 and the relevant lot size map. This is one alternative.

5.6 Part 3 - Justification – The Need

The proposal may be justified in terms of the need for general residential housing where minimal impact is likely is reasonable and practical from an economic, social and environmental perspective.

Section A – Need for the Planning Proposal

Question 1: *Is the planning proposal a result of an endorsed local strategic planning statement, strategic study or report?*

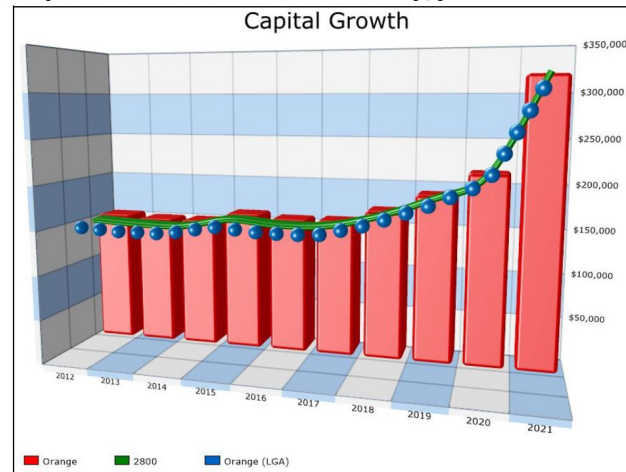
The scale of the proposal does not warrant a detailed Planning Strategy rather a full description of the existing environment and the proposed description of the proposed use and associated impacts in the context of the existing strategies for Orange. We have referred to the Orange Local Housing Strategy.

Supply and Demand

Please refer to some of the data considered in the Draft Housing Strategy. The Strategy identifies a growth rate of 1.1% or 52 000 by 2041. Vacant sales show reduced supply and increased demand in the last 3 years.

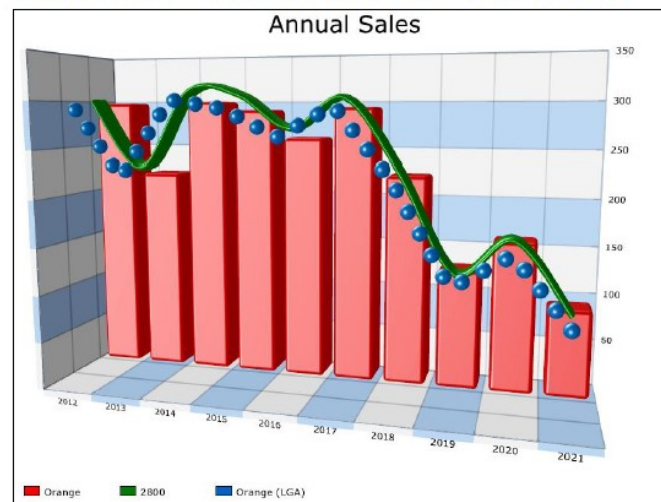
274 Leeds Parade, ORANGE NSW 2800

Capital Growth - Last 10 Years (\$)



Vacant land values (Source EAC Red Square)

Annual Sales - Last 10 Years and Year to Date



Period	Orange	2800	Orange (LGA)
Sales	Sales	Sales	Sales
2021	92	97	93
2020	159	168	162
2019	127	132	128
2018	224	230	226
2017	294	303	295
2016	261	272	265
2015	291	306	292
2014	300	310	301
2013	221	230	223
2012	298	300	300

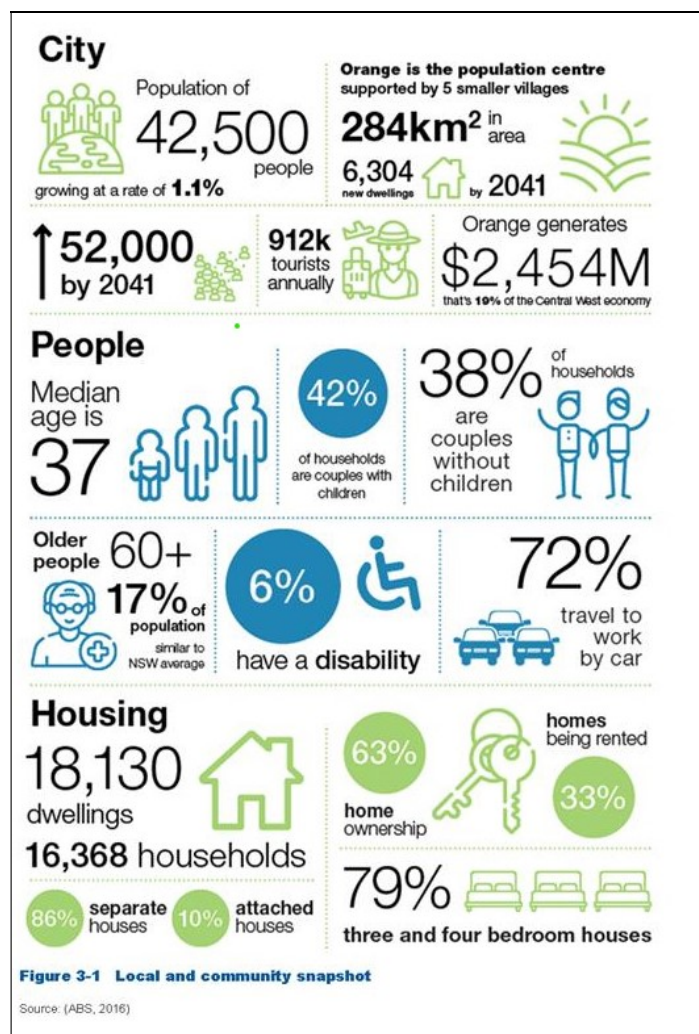
Information provided is for Vacant Land

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The above data illustrates that despite a well known surge in the Orange property market, vacant land sales have experienced a reduction in volume. Builders and designers have been forced to undertake consolidations, renovations and additions due to buyers having limited supply compared to demand. This has resulted in vacant land in average locations selling at over \$400 000 and development sites selling for over \$100 000 per lot compared to \$45 000 2-3 years ago.

Projects such as the submitted land will assist in meeting demand and providing needed supply. Sales rates in Shiralee and the Carwoola area illustrate the proposed lots will sell off the plan, before construction, in less than 6 weeks.

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Source Council Local Housing Strategy

Question 2: *Is the planning proposal the best means of achieving the objectives or intended outcomes, or is there a better way?*

We submit that the proposal is a logical step as an extension to existing residential development between the Northern Distributor and CSU.

The proposal considers the location of efficient transport links, access to facilities and associated environmental advantages in less carbon production.

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The proposal also allows opportunity for sound urban design principles, housing affordability and diversity.

The proposal (through the DCP) also considered buffer treatment to busy roads and sound water management principles with existing dams and Stormwater Harvesting links close to the site.

The proposal considers supply and demand for the City, current growth pressures and strategic links regarding transport and infrastructure development in an efficient, incremental manner.

Section B – Relationship to Strategic Planning Framework

Question 3: *Will the planning proposal give effect to the objectives and actions of the applicable regional, or district plan or strategy (including any exhibited draft plans or strategies)?*

The newly adopted **Central West and Orana Regional Plan 2036** needs to be considered in reference to its objectives and strategies and the current planning proposal. However, not all parts of the region are projected to experience growth equally and as such the plan will identify strategies to ensure population sustainability and to manage population decline.

We have considered the context of the proposal and its relationship to the CWORP 2036:

CWORP Direction 22:

Manage growth and change in regional cities and strategic and local centres

Strengthened relationships across the three regional cities, five strategic centres and the local centres will form the backbone of a diverse, interconnected and interdependent network of centres – a major strength for the region. The growth of regional cities and strategic centres will encourage future investment, increase housing choices, diversify industry and create new job opportunities – all of which will benefit the immediate and broader regional community. For example, Dubbo acts as the primary service centre for the Far West and has a catchment population that extends well beyond the boundaries of the region, to more than 120,000 people.³³ The regional cities and strategic centres will capitalise on their location along national highways and rail networks. Bathurst and Lithgow can capitalise on their proximity to Sydney, and Dubbo and Mudgee on their proximity to Newcastle. Over the next 20 years, most new housing is likely to be built in regional cities and strategic centres, and this will need to be supported by infrastructure. Many councils have planned for aspirational growth, reflecting the desires of local communities, through land use planning decisions (for example, making land or infrastructure available for development). This may influence population growth patterns. Local centres and rural communities make an important contribution to the region by providing affordable housing, attractive lifestyles and jobs in agribusiness, mining and tourism. These areas need access to

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regional cities and strategic centres for higher level services. As the population gets older, public transport will also assume greater importance in these centres.

Actions

22.1 Coordinate infrastructure delivery across residential and industrial land in regional cities and strategic centres.

22.2 Reinforce the role, function and relationship between regional cities and strategic centres in local housing strategies.

22.3 Improve transport in regional cities and strategic centres, and their connections with regional communities.

The proposal is not inconsistent with the regional planning objectives of the above Plan and Directions.

CWORP Direction 25:

Increase housing diversity and choice

Local housing strategies identify housing needs, plan for a range of housing types and identify the infrastructure needed to support local communities. The strategies need to be flexible and responsive to shifts in local housing demand and supply, and deal with uneven rates of development or unexpected population growth. Infrastructure must be planned and provided to support the construction of new housing.

Areas with stable or declining populations will still face demand for new dwellings and for a variety of housing types. It is important that new dwellings reflect the character and heritage of the area.

More one and two bedroom homes, and smaller homes, such as studio apartments with good access to infrastructure and services, will be needed. Opportunities for medium density development should be encouraged near town centres and villages to take advantage of existing services. Councils should consider these factors when planning for housing in local land use strategies.

Appropriate planning controls and incentives that can deliver more affordable housing include:

- expanding the range of model provisions that promote or require the inclusion of affordable housing in developments. For example, a floor space bonus to deliver a percentage of affordable housing in a development;*

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- *providing development incentives and reduced contributions, or using other mechanisms that may boost construction of secondary dwellings as alternative affordable housing;*
- *ensuring councils consider planning incentives under the State Environmental Planning Policy Affordable Rental Housing (2009); and*
- *promoting the establishment of new caravan parks and manufactured home estates on unconstrained land in existing settlements and new land release areas*

Social and affordable housing is available across the region, with the largest amount of social housing in Orange. Dubbo, Bathurst and Lithgow also have significant of social housing stock. The NSW Land and Housing Corporation owns social housing estates at East Dubbo, Kelso in Bathurst, and Bowen and Glenroi in Orange.

A number of community housing providers also provide affordable housing options. The NSW Land and Housing Corporation is reviewing social housing estates across NSW.

Actions

- 25.1 Prepare local housing strategies that increase housing choice, including affordable housing options.*
- 25.2 Increase housing choice in regional cities and strategic centres at locations near or accessible to services and jobs.*
- 25.3 Align infrastructure planning with new land release areas to provide adequate and timely infrastructure.*
- 25.4 Locate higher density development close to town centres to capitalise on existing infrastructure and increase housing choice.*
- 25.5 Promote incentives to encourage greater housing affordability including a greater mix of housing in new release areas.*
- 25.6 Prepare guidelines for local housing strategies to address local affordable housing needs.*
- 25.7 Work with councils to appropriately plan for future social and affordable housing needs.*

The R1 zone allows for a diversity of lower density planning and design solutions. Broad strategies relate to the whole City with higher density R2 and R3 considered in areas suited to infill development. Release areas such as the study area are best suited to lower density and dual occupancy style development. This approach also allows for modest affordable housing for the first home buyer.

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CWORP Direction 29:

Deliver healthy built environments and better urban design

Good urban design can add to the community's cultural, economic and physical wellbeing by creating safe, healthy and socially inclusive places that meet the needs of children, young people, families, singles, people with disabilities and seniors. Planning for redeveloping town centres should consider how pedestrians and cyclists will move about, landscaping and infrastructure for public spaces. Councils should apply water sensitive urban design to improve water use, supply and security. This includes re-using wastewater on parks, gardens and reserves, or to supplement agricultural uses. Urban design guidelines are commonly developed with a metropolitan focus and do not necessarily apply to regional and rural environments. Regional urban design guidelines will help councils when preparing environmental planning instruments for new development in existing areas or land release areas, to revitalise town centres and respond to climate and water security challenges. The design guidelines will promote design excellence particularly in higher density areas such as regional cities and strategic centres.

Actions

29.1 Develop regional urban design guidelines for planning, designing and developing healthy built environments.

29.2 Enhance the quality of neighbourhoods by integrating recreational walking and cycling networks.

29.3 Reflect local built form, heritage and character in new housing developments.

29.4 Incorporate water sensitive urban design in new developments.

Council's DCP Planning Outcomes largely promote good housing design principles in terms of privacy, solar access, built form and open space access. The proposal can accommodate these principles at the appropriate design stage.

Assessment Criteria

a) Does the proposal have strategic merit? Will it:

- give effect to the relevant regional plan outside of the Greater Sydney Region, the relevant district plan within the Greater Sydney Region, or corridor/precinct plans applying to the site, including any draft regional, district or corridor/precinct plans released for public comment; or*
- give effect to a relevant local strategic planning statement or strategy that has been endorsed by the Department or required as part of a regional or district plan or local strategic planning statement; or*

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- *responding to a change in circumstance, such as the investment in new infrastructure or changing demographic trends that have not been recognised by existing strategic plans.*

The proposal is consistent with current and draft planning policies.

b) Does the proposal have site-specific merit, having regard to the following?

- *the natural environment (including known significant environmental values, resources or hazards and*
- *the existing uses, approved uses, and likely future uses of land in the vicinity of the proposal and*
- *the services and infrastructure that are or will be available to meet the demands arising from the proposal and any proposed financial arrangements for infrastructure provision.*

The site and its surrounds are consistent with the above requirements, presenting some logical land use continuity with a logical link to existing service infrastructure. The proposal also has a logical flow-on to development likely between the adjoining Miriam Drive and vacant development land further north to the CSU Campus.

Question 4: *Will the planning proposal give effect to a Council's endorsed local strategic planning statement, or another endorsed local strategy or strategic plan?*

The proposal is not inconsistent with any local planning strategy though is considered a logical planning approach given the zoning boundary using Leeds Parade as the gateway to the Narrambla urban release sector. Further comment below regarding the Leeds Parade Candidate Area is presented in terms of the planning merits and outcomes to be achieved.

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Orange Sustainable Settlement Strategy Update

1.2 Strategy purpose and objectives

The purpose of the 2004 SSS was to provide Council with a strategic plan to manage growth and to provide strategic direction for urban and rural residential land release in the City. The objectives of the 2004 SSS were to:

- *prepare a strategic analysis of urban and rural residential land supply and demand;*
- *understand infrastructure servicing constraints for candidate future urban areas;*
- *identify appropriate direction and form for future growth in the City; and*
- *recommend indicative staging of urban land release areas in the City*

The preparation of the 2004 SSS was considered important to the ongoing responsible management of land use decisions in the City in that it:

- gave landowners and investors greater certainty about the future;
- could remove or reduce the speculative element in subsequent land use planning and settlement;
- informed landowners whose land fell outside the strategy release areas so they will be less likely to have false rezoning expectations;
- could decrease conflict over land use decisions in the future;
- could decrease wastage in public or private resources;
- provided a basis for good planning and development decisions; and
- ensured there was enough land available to prevent large increases in land prices.

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Orange Local Housing Strategy

We submit detailed justification and planning comment regarding specifically section 8.4.2.4 Leeds Parade:



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Leeds Parade Candidate Area Considerations

Planning Provisions

The proposal is consistent with the Leeds Parade OLHS Candidate Area guidelines. The proposed R1 zoning and 10 lots per hectare is achieved with 111 lots over 13.49 hectares.

Infrastructure

The DCP presents a good road design scenario that allows for linkage to adjoining land and limits long culdesacs and promotes a good orientation scenario in terms of solar access for dwelling design and urban living. The lot yield is well under the Traffic Generating Development criteria of 200 lots. Council is able to consider traffic design, intersection locations and transport planning principles without a small scale Traffic Study. Further compliance with the Subdivision Code can also address intersection and road designs, footpaths and the like as part of the DA assessment stage.

The site can be efficiently serviced with a leap frogging of infrastructure having occurred with subdivision already developed further east along Miriam Drive. From an infrastructure servicing perspective, the proposal presents a good opportunity to connect to passing infrastructure and linkage to stormwater drainage infrastructure.

The DCP illustrates how drainage will flow at a concept level to allow use of an existing dam to the south for retention and water quality management.

The DCP also considers a buffer to the south for good amenity to the southern dam retention area. Further buffer treatment is also considered along Leeds Parade as detailed with landscaping and shed width consideration to protect visual amenity and a traffic/noise buffer for residents facing west over Leeds Parade.

Environmental Considerations

Vegetation cover is minimal and naturally occurring asbestos are low level considerations for the Candidate Area.

Groundwater vulnerability is a consideration in urban environments with infrastructure design, slope management, vegetation on individual sites and site coverage all considerations that can protect groundwater infiltration and water quality.

Other Considerations

The proposal has regard to existing urban design east along Miriam Drive and future development to the north with expected road connections.

The OLHS also discusses visual quality toward CSU to the north and also from CSU overlooking the site and Orange Urban Area in a broader perspective.

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DCP Consideration

Development Control Plan Matters for the Leeds Parade Candidate Area.

In addition to a conceptual layout Council anticipates that the following matters will be reflected in the Development Control Plan required by section 6.3 of Orange LEP 2011.

• Staging Plan

Development of the urban release area is anticipated to release residential lots to the market across a number of stages. The approximate rate of release is shown below.

Note: Councils infrastructure and servicing plans, while flexible, are informed by this estimate, any accelerated release rate should be discussed with Council at an early stage.

- To extend logically from land adjacent to existing urban areas
- Infrastructure to be sized and located to suit the full development to avoid duplication.

The northern section (47 lots) will be undertaken with no response or interest from the owner of the southern section (64 lots) as this time.

The northern section will be considered as one DA with possible staging of the 47 lots to be determined.

Miriam Drive presents an obvious staging and servicing focus to the north and southern sectors with sewer and drainage links as shown on the DCP.

• Transport and Movement Hierarchy / Roads

- Upgrade of Leeds Parade frontage.

The draft DCP considers limited access to Leeds Parade and existing Miriam Drive intersection suitable for existing and proposed lot yield.

• Landscaping Strategy

- The southern edge built form exclusion zone to be embellished for both visual amenity and as a contribution to water quality management.

The DCP allows for a landscape area to the south of residential lots 11-21, allowing for existing vegetation to be retained along the northern side of the existing dam.

Further landscaping is to be included along Leeds Parade as a buffer between the eastern side of Leeds Parade and lots 3-11 south and lots 1-12 north.

• Passive and Active Recreation Network

- Sports field and open space areas to be informed by a review / update of the Orange recreational needs study.
- Active transport route to connect into the existing north Orange active transport network.

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- Community open space (1 lot) with a playground located to be within easy walking distance of majority of residents

The DCP identifies cycleway and pedestrian access to larger regional open space links and local sportsgrounds in the vicinity such as Waratahs Sports Precinct, Brendon Sturgeon Oval and the Botanic Gardens. The larger scale higher utility areas have been opted rather than smaller scale parks that have been transitioned toward larger facilities. Council has opted to sell small neighbourhood parks over the last 25 years with reduced utility and maintenance considerations.

- **Stormwater and Water Quality Management**

- Stormwater flows detained to pre-development levels, southern built form exclusion zone incorporated into water quality management through suitable landscaping treatment.

Consideration has been made to enable stormwater detention as the southern end of the site utilising the existing dam for water quality management and the Stormwater Harvesting Scheme further east.

- **Natural Hazards**

- Localised flood study to accompany planning proposal.

The subject land is not flood prone nor forms part of the Blackmans Swamp Creek area situated further east.

- **Urban Design and Significant Sites**

- Limited driveway access directly onto Leeds Parade to be managed by establishing a minimum lot width along this frontage.
- All built form along Leeds Parade to be setback behind landscape edge, including any lots that are accessed internally.

Achieved in DCP with buffer strip and landscaping as part of subdivision approval. Other urban design consideration presented under Subdivision Design in DCP.

- **Higher Density Living**

- Not applicable. Site will not contain supporting facilities.

- **Neighbourhood Commercial**

- None envisaged.

Site is in proximity to both North Orange shopping centre and the Leeds Parade B1 zone

- **Public Services and Facilities**

- None envisaged.

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Site is in proximity to both North Orange shopping centre and the Leeds Parade B1 zone

Question 5: *Is the planning proposal consistent with applicable State Environmental Planning Policies?*

Yes

Question 6: *Is the planning proposal consistent with applicable Ministerial Directions (s.9.1 directions)?*

9.1 Directions by the Minister (cf previous s 117)

(1) *The Minister may direct a public authority or person having functions under this Act or an environmental planning instrument to exercise those functions at or within such times as are specified in the direction.*

(2) *In addition to any direction which may be given under subsection (1), the Minister may direct a council—*

(a) *to exercise its functions under section 3.21 or Division 3.4 of Part 3 in relation to the preparation of a local environmental plan in accordance with such principles, not inconsistent with this Act, as are specified in the direction, and*

(b) *without limiting paragraph (a), to include in a planning proposal prepared by the council provisions which will achieve or give effect to such principles or such aims, objectives or policies, not inconsistent with this Act, as are specified in the direction, and*

(b1) *on a matter relating to the establishment and procedure of a local planning panel, on the development applications (including applications to modify development consents) that are to be determined on behalf of a council by a local planning panel and on the planning proposals that are required to be referred to a local planning panel for advice, and*

(c) *to provide the Minister, in the manner and at the times specified in the direction, with reports, containing such information as the Minister may direct, on the council's performance in relation to planning and development matters.*

(2A) *A direction under subsection (2)—*

(a) *may be given to a particular council or to councils generally, and*

(b) *may require the inclusion in planning proposals of provisions to achieve or give effect to particular principles, aims, objectives or policies, and*

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(c) may require planning proposals to be strictly consistent or substantially consistent with the terms of the direction (or provide for the circumstances in which an inconsistency can be justified).

Any such direction may be given to councils generally by its publication in the Gazette or on a website maintained by the Department (or both).

(2B) A reference to a council in subsections (2) and (2A) includes a reference to a planning proposal authority under Division 3.4 that is not a council.

(3) A public authority or person to whom a direction is given under subsection (1) or (2) shall comply, and is hereby empowered to comply, with the direction in accordance with the terms of the direction.

(4) Before giving a direction under subsection (1) or (2), the Minister shall consult with the responsible Minister concerned.

(4A) Before giving a direction under subsection (2)(c), the Minister is to consult with the Local Government and Shires Association of New South Wales and any other industry organisation the Minister considers to be relevant, in relation to the information that the Minister is proposing to seek. This requirement is in addition to the requirement under subsection (4).

(5) A local environmental plan (or any planning proposal or purported plan) cannot in any court proceedings be challenged, reviewed, called into question, prevented from being made or otherwise affected on the basis of anything in a direction under subsection (1) or (2).

1. Employment and Resources

1.1 Business and Industrial Zones

The proposal allows for a residential precinct and does not threaten the consolidation of North Orange commercial precinct, Narrambla Business Park or Orange CBD.

1.2 Rural Zones – Not applicable in the zone

The location of the land in an urban fringe area tagged under existing and draft strategies identifies other areas of significant agricultural land. The size of the land does not support sustainable rural activity or production.

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1.3 Mining, petroleum Production and Extractive Industries

The proposal does not prevent mining or extractive industries, however in the context of the planning directions for North Orange and the close proximity to Orange urban area it is unlikely that a mining or quarry proposal would be able to achieve environmental compliance in such a developed locality. The proposal is considered to have minimal impact on the operations of the Phillip Street Quarry situated approximately 1.7 kilometres south east of the subject land.

1.4 Oyster Aquaculture – Not applicable

1.5 Rural Lands – The property does not affect the production of agricultural commodities and degrade agricultural resources.

2. Environment and Heritage

2.1 Environment Protection Zones – Not applicable with no sensitive areas present.

2.2 Coastal Protection – Not applicable

2.3 Heritage Conservation – Not applicable

2.4 Recreational Vehicle Access – The area is not environmentally sensitive nor are recreational vehicles part of the proposal

2.5 Application of E2 and E3 Zones and Environmental Overlays in Far North Coast LEP's – Not applicable

2.6 Remediation of Contaminated Land – Historically the land has been used for general grazing with no history of contamination relating to fuel storage or farm pesticide usage.

It is envisaged that suitable assessment will occur as part of the PP for residential land use. Refer to the Enviroscience Report.

3 Housing, Infrastructure and Urban Development

3.1 Residential Zones

Objectives

(1) The objectives of this direction are:

- (a) to encourage a variety and choice of housing types to provide for existing and future housing needs,*
- (b) to make efficient use of existing infrastructure and services and ensure that new housing has appropriate access to infrastructure and services, and*

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(c) to minimise the impact of residential development on the environment and resource lands.

The proposal is consistent with this direction promoting a diversity of housing choice of general residential land. This type of housing represents approximately 20% of the current housing choice or vacant sales per annum. The location of the proposal area close to the City's facilities and services is a positive feature.

The proposal therefore supports the objectives in terms of housing diversity, utilising infrastructure whilst minimising impacts on natural resources and environmentally sensitive areas.

- 3.2 Caravan Parks and Manufactured Home Estates – The proposal does not involve this use and would be prohibited by exclusion in the Land Use table for the proposed R1 zone.
- 3.3 Home Occupations – The proposal is consistent providing the ability to work at home.
- 3.4 Integrating Land Use and Transport – The proposal present good access to local connector roads, the Northern Distributor and local and regional services. The development will also consolidate local bus services in conjunction with adjoining residential development.

Objectives

(1) The objective of this direction is to ensure that urban structures, building forms, land use locations, development designs, subdivision and street layouts achieve the following planning objectives:

(a) improving access to housing, jobs and services by walking, cycling and public transport, and

(b) increasing the choice of available transport and reducing dependence on cars, and

(c) reducing travel demand including the number of trips generated by development and the distances travelled, especially by car, and

(d) supporting the efficient and viable operation of public transport services, and

(e) providing for the efficient movement of freight.

The location of the site close to transport links and local employment sources is a positive outcome with opportunities to promote links to the university and Narrambla as employment sources as well as North Orange commercial area including Woolworths, Bunnings and fast food outlets in walking/cycling distance.

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3.5 Development Near Licensed Aerodromes – Not Inconsistent

3.6 Shooting Ranges – Not Inconsistent

3.7 Reduction in non-hosted short term rental accommodation period – Not applicable, applies to Byron Bay Shire Council

4. Hazard and Risk

4.1 Acid Sulfate Soils – Not evident

4.2 Mine Subsidence and Unstable Land – Not evident

4.3 Flooding – Not applicable

4.4 Planning for Bushfire Protection – no obvious risk.

5. Regional Planning

5.1 Implementation of Regional Strategies (Revoked 17 October 2017)

5.2 Sydney Drinking Water Catchment – Not Inconsistent

5.3 Farmland of State and Regional Significance on the NSW Far North Coast – No applicable

5.4 Commercial and Retail Development along the Pacific highway, North Coast – Not applicable

5.5 Development in the vicinity of Ellalong, Paxton and Millfield (Cessnock LGA) (Revoked 18 June 2010)

5.6 Sydney to Canberra Corridor (Revoked 10 July 2008)

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5.5.1 Central Coast (Revoked 10 July 2008)

5.6 Second Sydney Airport: Badgery's Creek (Revoked 20 August 2018)

5.7 North West Rail Link Corridor Strategy – Not applicable

5.10 Implementation of Regional Plans - The proposal discusses the key objectives within the Central West and Orana Regional Plan 2036 that are relevant being Objectives 22, 25 and 29. The proposal is consistent in this regard by managing growth and delivering infrastructure in a co-ordinated manner, increasing housing diversity and choice, and delivering healthy built environments through better urban design.

5.11 Development of Aboriginal Land Council land – Not applicable

6.0 Local Plan Making

6.1 Approval and Referral Requirements - The proposal will be able to be managed with specific standards that allow the desired planning outcomes through an R1 General Residential Zone and supporting DCP planning controls for associated development.

6.2 Reserving Land for Public Purposes – consistent with local open space planning such as the Waratahs Precinct.

6.3 Site Specific Provisions – The proposal will comply with local design criteria, subdivision Code and minimum LEP and DCP criteria.

The proposed road concept will promote good urban design principles for the end built form within normal expectations.

7.0 Metropolitan Planning

7.1 Implementation of A Plan for Growing Sydney (Revoked 9 November 2020)

7.2 Implementation of Greater Macarthur Land Release Investigation (Revoked 28 November 2019)

7.3 Parramatta Road Corridor Urban Transformation Strategy – Not applicable

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- 7.4 Implementation of North West Priority Growth Area Land Use and Infrastructure Implementation Plan – Not applicable
- 7.5 Implementation of Greater Parramatta Priority Growth Area Interim Land Use and Infrastructure Implementation Plan – Not applicable
- 7.6 Implementation of Wilton Priority Growth Area Interim Land Use and Infrastructure Implementation Plan – Not applicable
- 7.7 Implementation of Glenfield to Macarthur Urban Renewal Corridor – Not applicable
- 7.8 Implementation of the Western Sydney Aerotropolis Plan – Not applicable
- 7.9 Implementation of Bayside West Precincts 2036 Plan – Not applicable
- 7.10 Implementation of Planning Principles for Cooks Cove Precinct – Not applicable
- 7.11 Implementation of St Leonards and Crows Nest 2036 Plan – Not applicable
- 7.12 Implementation of Greater Macarthur 2040 – Not applicable
- 7.13 Implementation of the Pyrmont Peninsula Place Strategy – Not applicable

Section C – Environmental, social and economic impact

Question 7: *Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?*

There are no adverse planning issues that relate to critical habitat, populations or ecological communities upon the subject land. The land is devoid of any significant native vegetation.

The proposal area is substantially altered by European settlement patterns resulting in broad acre land clearing. Further, the proximity to an urban area has resulted in native fauna being driven out by foxes, dogs and cats. Any remnant eucalypts are limited to the southern border of the subject land and would not be considered a significant habitat for native species.

The existing settlement pattern of General residential and Business Park along Leeds Parade and the Northern Distributor also promotes disturbance and impact on pets upon native populations. Areas of remnant vegetation to the east of Ophir Road and north of Banjo Patterson Way are more likely to present areas to promote and protect native habitat.

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Question 8: *Are there any other likely environmental effects as a result of the planning proposal and how are they proposed to be managed?*

Any likely environmental effects can be assessed at a more specific DA assessment stage. Matters such as traffic generation, effluent and stormwater management or occasional noise generation are considered within expectations.

Question 9: *Has the planning proposal adequately addressed any social and economic effects?*

The location of the site close to transport links, employment opportunities and open space networks provides a logical social and economic scenario for positive living with good access to services, community interaction and support systems such as medical, employment and recreational opportunities.

Section D – State and Commonwealth interests

Question 10: *Is there adequate public infrastructure for the planning proposal?*

The proposal will utilise existing infrastructure in the vicinity of the Leeds Parade/Narrambla Urban release development including water, sewer, drainage and telecommunications available.

Question 11: What are the views of state and Commonwealth public authorities consulted in accordance with the Gateway determination

The proposal has not been referred with no required transport, heritage, water and environmental agencies of interest at this point. We understand the Proposal will be referred as part of the Gateway determination process.

5.7 Part 4 - Mapping

The attached plans indicate a likely subdivision layout that compliments the adjacent residential development. The lot yield may be applied to an LEP Lot Size Map with a further DCP amendment to have regard to the outcomes for the location for general residential land use.

5.8 Part 5 – Community Consultation

As part of the Gateway assessment appropriate public exhibition of the proposal will be applied for the prescribed period.

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It is envisaged that the proposal will be advertised in the prescribed manner under the Gateway procedures.

5.9 Part 6 – Project Timeline

It is envisaged that the gateway process will take approximately 6 months for a project of this scale dependent on the grouping of the proposal with other LEP amendments.

5.10 Environmental Compatibility

The site is largely cleared under European settlement and is considered to have satisfactory environmental management included in the proposal such as stormwater retention, soil erosion control and soil suitability assessment.

5.11 Control of Stormwater Runoff from Site

The site will be linked to off-site systems including Council's Stormwater Harvesting System situated nearby to the south east.

5.12 Contamination

The property does not to the best of our knowledge have any toxic soil issues and no toxic products are produced on the property. Normal 8 point analysis will occur to assess whether more detailed assessment or 'hotspots' are identified. Refer to the attached Enviroscience report on the NSW Planning Portal.

5.13 Other Studies

The modest size and scale of the proposal, the suitability of the site, existing transport links and previous grazing use does not warrant further studies at this stage.

5.14 Application Management

The Planning Proposal is the first stage with further consultation envisaged regarding environmental management and design and further engineering design and DA management in due course.

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5.15 Merit of Proposal

The proposal is considered to present a good opportunity to provide for residential development close to existing urban facilities and employment opportunities. The current limited supply and escalating demand presents an obvious case for sites ready for development.

Environmentally and in terms of good urban design, the proposal has merit with suitable location, land characteristics and opportunities for good living outcomes likely.

5.16 Utility Services

The site is surrounded by a mix of residential and business land uses and has good access to a range of utility services including water and sewage reticulation, gas and communication infrastructure.

5.17 The Suitability of the Site for Development

It is submitted the proposal is well suited to a general residential environment in terms of landform and aspect plus proximity to road networks, services and surrounding land uses.

Access opportunities are easily available from the Northern Distributor, via Leeds Parade, and directly from Miriam Drive.

5.18 The Public Interest

We submit that it is the public interest to fulfill current housing needs in a manner that presents a good opportunity for good urban design outcomes. The project will be positive for the local building and development sector and will consolidate the economic needs of the City overall.

6.0 CONSEQUENCES OF NOT PROCEEDING

Should the site not be developed then other sites will be required in other locations.

Ecologically Sustainable Development

The Precautionary Principle

An assessment of all potential environmental interactions indicates no threat of serious damage. Suitable measures could be adopted to prevent environmental degradation if apparent and in particular to ensure protection of the local environment. Accordingly, the development would comply with the precautionary principle.

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Inter-Generational Equity

The proposed development will not compromise the health, diversity or productivity of the environment for future generations and it does not require the use of resources that are, or are likely to be in short supply. At present there is a level of uncertainty as to the planning direction for landholders and the future use of the land and how it will relate to surrounding land.

Conservation of Biological Diversity and Ecological Integrity

The development will cause no significant reduction in habitat for threatened species of flora and fauna and has the ability to enhance the locality. Accordingly, biodiversity diversity will not be jeopardised nor would ecological integrity be threatened.

Improved Valuation and Pricing of Environmental Resources

The ability to utilise the land with minimal impact on the general environment will result in an economic benefit to the locality. The resultant development upon completion will allow the area to be better utilised with enhanced sustainability.

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7.0 CONCLUSION

The planning proposal could be supported by Council on the following grounds:-

- The proposal is supported under the Orange Local Housing Strategy.
- Minor environmental impact.
- Presents a justified and firmer planning direction for the land with the context of the CWROP 2036 and OSSS update.
- Council's ability to impose relevant conditions of consent at the subdivision and construction stage under a DA with specified performance criteria under the DCP.

We trust the above information satisfies Council's requirements at this preliminary level.

We request that Council make a recommendation to proceed with an appropriate change to R1 General Residential zoning and amendment to the relevant Lot Size Map 007D to allow 500m² allotments as shown on the proposed layout.

Yours faithfully,

ANDREW SAUNDERS

FAPI Certified Practising Valuer
B Urb Reg Plan
Ass Dip Bus (Val)
Registered Valuer No. 68807



**DRAFT
DEVELOPMENT CONTROL PLAN**

DCP 07.17 DEVELOPMENT MIRIAM DRIVE-LEEDS PARADE

ORANGE NSW 2800

Exhibition Summary

Principal Intent:

Rezone 264 and 274 Leeds Parade to R1 General Residential
Specify minimum lot size of 500 square metres

DCP Control measures:

- Control Leeds Parade access
- Control visual amenity along rear fence to Leeds Parade including shed length and heights
- Control stormwater and water quality management
- Allow for continuity of urban design concepts across land parcels
- Show servicing concepts
- Provide for landscaping between southern residential lots and retention basin
- Provide for landscape buffer along Leeds Parade

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7.17 DEVELOPMENT IN THE VICINITY OF LEEDS PARADE AND MIRIAM DRIVE

This chapter applies to land zoned R1 General Residential northern and southern side of Miriam Drive and west of Leeds Parade.

The land is identified as 274 Leeds Parade lot 211 DP 1177178 and 264 Leeds Parade lot 20 DP1117081 as shown on DCP Map 19 – Leeds Parade/Miriam Drive.

The intention is to create a residential design outcome that respects development to Leeds Parade, co-ordinated grid street layout and consideration of urban concept design between land holdings to the north and south.

SUBDIVISION LAYOUT

A masterplan for the precinct is attached in Map 19. The defined road and allotment layout provides for an accessible and permeable network of streets, walkways and open spaces. The layout includes opportunities for detention basins to manage stormwater. The DCP also addresses visual and access treatment to Leeds Parade. The masterplan also provides for connectivity with surrounding lands to the north and south.

PO 7.17-1 PLANNING OUTCOMES – SUBDIVISION LAYOUT

- 1 The subdivision layout is generally in accordance with the Conceptual Subdivision Layout (Map 19).
- 2 Subdivision design and construction complies with the Orange City Development and Subdivision Code.
- 3 Lots are oriented to maximise energy-efficiency principles. Where practicable, lots are rectangular rather than splay shaped and oriented to provide the long axis within the range N 20 degrees W to N 30 degrees E or E 20 degrees N to E 30 degrees S.
- 4 An achievable range of lot sizes are provided that provide for diversity in housing development and choice. A minimum lot size of 550 square metres overall.
- 5 Road widths are provided consistent with or greater than indicated on the masterplan.
- 6 Connectivity within the internal road network is consistent with the DCP Map.

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7 Future road link connections to adjoining lands are provided for as indicated on the DCP Map.

8 Battleaxe lots have a minimum area of 650m², excluding the access handle. Access handles have a minimum width of 4.5m incorporating a 3m- wide driveway.

9 Local collector roads connect to Leeds Parade generally at the locations shown on the Conceptual Subdivision Layout. Future road connections to adjoining land are located generally in accordance with the Conceptual Subdivision Layout.

10 Residential lots have direct frontage and access to a public road. Access is not available to Leeds Parade for adjoining lots.

11 On-site stormwater detention basins and drainage reserves are provided.

12 All utility services are provided to the proposed lots.

13 Significant landscape features are retained and disturbance to natural vegetation, landform and overland-flow paths is minimised.

14 Public open-space areas are sited in accordance with the Conceptual Subdivision Layout. Public open-space contains significant trees/tree groups, threatened species, populations, ecological communities or their habitats. Public open-space areas incorporate stormwater detention basins where required.

15 A 15m- wide landscape buffer with a vegetative height of 15-20m is provided adjacent to the rear western boundary of lots adjoining Leeds Parade.

WATER SENSITIVE URBAN DESIGN

The site comprises land at and above the headwaters of first order streams. First order streams are frequently vulnerable to erosion and scouring if significant additional volumes of overland flow are experienced. As such it is imperative that development of the overall site and individual lots within manage stormwater discharges appropriately.

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PO 7.17-2 PLANNING OUTCOMES - WATER SENSITIVE URBAN DESIGN

- 1 Stormwater runoff from the precinct is managed through appropriate detention basins to manage volumes, quality and runoff speeds to pre-development levels.
- 2 Raingardens are incorporated into public open spaces to manage the runoff speeds and water quality.
- 3 Development of individual lots minimises impermeable surfaces to reduce the extent of runoff.
- 4 Development of individual lots includes raingardens to minimise discharge rates and improve water quality.

PEDESTRIAN & CYCLIST AMENITY

The masterplan illustrates a deformed grid layout that provides a high degree of permeability for motorists. This is augmented by the inclusion of midblock walkways on extended blocks. The walkways loosely align to provide for ease of movement without creating gun barrel rat runs.

Additionally street widths are sufficient to provide for footpaths and street trees that will provide for a village feel to the pedestrian experience.

Traffic calming speed humps on the principal internal road aligned with walkways will reduce potential conflicts between motorists and pedestrians and/or cyclists. A wide principal road allows space for cyclists on the road. Road locations further help to provide more direct travel routes for alternate modes of travel on footpaths and roadside cycling routes.

PO 7.17-3 PLANNING OUTCOMES - PEDESTRIAN AND CYCLIST AMENITY

- 1 Walkways be incorporated with road locations as indicated on the masterplan in Map 19.
- 2 Road design loosely aligns to provide a reasonably direct travel route across the precinct, connecting open spaces with the future student housing area further north.
- 3 Side and rear fencing that forms part of the perimeter of this master plan is encouraged to be made of colorbond construction using a consistent style to other perimeter fencing in the area. Where factory pre-coloured metal fencing is used it must be of a light cream colour so as to blend with any timber fencing that will be visible from beyond the master plan area.

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SOLAR ACCESS

The majority of lots indicated in the masterplan have been oriented north-south or east west or within a few degrees of such alignments. This configuration has natural benefits for passive solar design and ensures that private outdoor spaces receive a considerable amount of solar access.

PO 7.17-4 PLANNING OUTCOMES - SOLAR ACCESS

- 1 Lot layouts are consistent with the prevailing orientations indicated in the masterplan, i.e. predominately north-south or east-west, or within a few degrees of such, to maximise solar passive design options.
- 2 The majority of lots have a width to depth ratio of 1:1.6 or greater to ensure sufficient space behind primary dwellings for outdoor courtyard space with good solar access.
- 3 Dual occupancy sites have a near square configuration and are located to the northern side of intersections to minimise the extent of overshadowing on neighbouring land.

PUBLIC SAFETY

Minimal use of cul-de-sacs, battle-axe lots and the adoption of modest street curvature helps to maximise passive surveillance of public spaces. Providing open road areas and minimal hidden walkways will deter antisocial use of these features. Open space landscaping needs to be designed to limit concealment opportunities while also providing pleasant visual relief. Placement of street trees is to be considered in relation to the placement of street lights to ensure appropriate night time illumination of footpaths.

PO 7.17-5 PLANNING OUTCOMES – PUBLIC SAFETY

- 1 Street trees and street lights are located clear of each other to ensure appropriate illumination of footways as well as roads
- 2 Open space area landscaping is configured to minimise concealment opportunities and maximise passive surveillance to discourage antisocial use of the area.
- 3 Traffic calming speed bumps are incorporated into the main internal road that align with walkways to ensure there are sufficient safe crossing points.

Saunders Property

FENCING

Front fences and walls:

- assist in highlighting entrances and creating a sense of identity within the streetscape.
- are constructed of materials compatible with associated housing and with fences visible from the site that positively contribute to the streetscape.
- provide for facilities in the street frontage area such as mail boxes.

PO 7.17-5 PLANNING OUTCOMES – FENCING

- 1 Front fences and walls have a maximum height of 1.2 metres.
- 2 Front fences and walls are designed to use similar or compatible materials used in the locality to positively contribute to the streetscape.
- 3 Front fencing is integrated with a variety of plantings.
- 4 Colorbond, timber, masonry or similar solid fencing is not erected on Leeds Parade forward of the 15m front dwelling setback. (relates to lot 12 only).
- 5 Side fences on corner lots fronting a street:
 - have a maximum height of 1.8 metres behind the front building line of the dwelling;
 - use similar or compatible materials used in the locality to positively contribute to the streetscape.

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ALLOTMENTS ADJACENT TO LEEDS PARADE

Allotment facing the eastern side of Leeds Parade will not have access to Leeds Parade.

As part of the subdivision, landscape treatment and fencing is to be constructed. A detailed landscape and fencing plan will be required with the development application for subdivision. Landscaping is to be placed in the shown open space buffer area with rear fencing not to include access gates.

Provide a visual landscape barrier between rear yards and Leeds Parade to achieve privacy.

Provide visual amenity when travelling along Leeds Parade.

Reduce the visual dominance of sheds in yards facing Leeds Parade in terms of width and height.

PO 7.17-6 PLANNING OUTCOMES – ALLOTMENTS FACING LEEDS PARADE

The location and design of backyard sheds is to be a minimum width of 7 metres with landscaping situated between the rear boundary and the shed.

A detailed landscape plan is required as part of an application for a shed or other outbuilding (studio, green house, BBQ structure etc).

Rear sheds are to be no higher than 3.5 metres ridge height and 2.5 metres wall height.

Dwellings on these lots will face an internal street with associated access from that internal street.

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PRELIMINARY CONTAMINATED SITE INVESTIGATION 274 Leeds Parade, Orange, NSW 2800

September 2022



PRELIMINARY CONTAMINATED SITE INVESTIGATION
274 Leeds Parade,
Orange, NSW 2800

September 2022
Report #27182

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Status	Date	Prepared	Reviewed	Approved
Ver 1	13 Sep 2022	B Croxon	S Ramsey	J Duffy
Final	21 Sep 2022	B Croxon	S Ramsey	J Duffy



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Appendix 1 - Site Images

Appendix 2 - Laboratory Analysis Results B27182R1, 305195 & 305195-A

Appendix 3 - Lot Search Report



1. EXECUTIVE SUMMARY

EnviroScience Solutions Pty Ltd were engaged by Mr Tom Miers of DMAA Group to undertake a preliminary contaminated site investigation for the residential property and vacant land located at 274 Leeds Parade, Orange, NSW 2800.

The site is surrounded by residential properties, vacant land, and agricultural paddocks, located on the northeast edge of the township of Orange, NSW, 2800.

The available history of the site found potential contaminants from on-site and nearby activities including the use and storage of fuels, oils, metals, herbicides, and pesticides.

Potential contamination of soil from a variety of sources is shown in Table 3.

Sample results reported to be below the HIL A - Residential, HSL A – Residential, and ESL Urban residential and public open spaces for all analytes assessed. Alongside the lack of visual indicators at the time of inspection to suggest further contamination at a depth greater than that sampled, no further sampling is necessary.

It is recommended that future development works operate under an unexpected finds protocol. Should any unexpected foreign material be exposed, discoloured soils or odours observed then works should cease and the areas assessed by an environmental scientist for assessment and testing.



2. INTRODUCTION

EnviroScience Solutions Pty Ltd were engaged by Mr Tom Miers of DMAA Group to undertake a preliminary contaminated site investigation for the commercial property located at 274 Leeds Parade, Orange, NSW 2800.

The site is surrounded by residential properties and adjacent to a service station, located on the Northeast edge of the township of Orange, NSW, 2800.

The land is zoned B7 – Business Park and it is proposed to be converted into residential housing.

3. OBJECTIVES AND SCOPE OF WORKS

The objectives of the Preliminary Site Investigation were to:

- Identify potential contaminants of concern on-site
- Identify potential locations of contaminants
- Identify potential exposure routes and pathways
- Identify appropriate Assessment criteria for chemicals of concern, and
- Determine if the site requires further investigation, remediation or management prior to works commencing

To achieve these objectives, the scope of works includes:

- Undertake a site history to identify potential contaminants on site,
- To ensure the investigation undertaken meets the identified data quality objectives, and
- Determine if further sampling or remediation of the site is required.



4. SITE DESCRIPTION

The site is located in the northeast portion of the township of Orange, NSW, 2800.

The site consists of one (1) parcel of land located at 274 Leeds Parade. A house, located in the southwestern quarter of the lot, was built prior to 1954 based on available historical aerial photographs. The sheds adjacent to the house are present from the aerial photograph from 1973.

The majority of the site is covered with short grasses, with some shrubs and trees dividing the southeast quadrant from the rest of the lot. A gravel driveway leads up to the house on the south edge of the lot via Mariam Drive.

The land surrounding the site consists of residential properties, vacant lots, and agricultural paddocks. The site is relatively flat and slopes slightly to the north. Numerous small dams lie to the north, east, and south of the lot, with the closest water way being Summer Hill Creek, located approximately 1.65km to the east. The site is identified in Figure 1.

Site Owner: Unknown

Address: 274 Leeds Parade, Orange, NSW 2800

Planned Land use: Residential Housing

Local Government Area: Orange City Council

Real Property Description: Lot 211 DP1177178



Figure 1-Site Location 274 Leeds Parade, Orange, NSW 2800 – Courtesy of Nearmap



4.1 NEIGHBOURING LAND USES

Current land uses in the vicinity of the site can be described as Residential and Agricultural.

4.2 PREVIOUS LAND USE

The property appears to have been used for agricultural purposes from 1954 to 1989 based on historical aerial photographs.

4.3 TOPOGRAPHY

Orange is located near the slopes of Mount Canobolas in New South Wales, Australia. The lot resides on the northeast edge of the township, is relatively flat, and slopes slightly towards the north; a decline of approximately 3 metres between the south and north boundaries.

4.4 GEOLOGY

Gisbornian to Bolindian in age; part of the Oakdale Formation. The Oakdale formation contains mafic volcanic sandstone of basalt, basaltic andesite, and latite; volcanoclastic breccia and conglomerate, siltstone, shale, and chert.

An examination of the Geological Survey of NSW maps of Naturally Occurring Asbestos, shows the site is mapped as being underlain by geological units with low naturally occurring asbestos potential.

4.5 SOILS

The soils within the area are identified as being Kandosol soils, which have a sandy to loamy surface, and porous sandy-clay subsoils. Kandosol soils have low chemical fertility and poor water-holding capacity.

4.6 HYDROLOGY

Reference to the Water NSW All Groundwater Map shows there is one (1) registered groundwater bore within 500m of the site, which does not have its water supply level listed. The profile consists of topsoil which overlies clay-coloured and grey rock, serpentine green rock, and coarse granite. Aquifers within the area are described as fractured or fissured, low to moderately productive aquifers.

The bore cards are included in Appendix 3. The location of the bores is shown in Appendix 3.



Table 1: Groundwater information

Groundwater Bore Reference	Authorised Purpose	Total Depth (m)	Yield (L/s)	Standing Water Level	Salinity (ppm)
GW048167	Water Supply	90.6	-	-	0-500

4.7 ASSESSMENT CRITERIA

The primary assessment tool for the site will be the *National Environment Protection (Assessment of Site Contamination) Measure 2013* (NEPM). The NEPM uses different settings to manage the risk to human health and the environment. Health Investigation Level Setting A - Standard residential with garden/accessible soil settings will be used given the surrounding land zoning and use.



5. SITE HISTORY

A site history was undertaken to identify potential contaminants of concern for the site, pathways and exposure routes. The site history comprised of database searches, a review of previous investigations undertaken on the site, supplied aerial photographs and Council records.

The following information has been reviewed to determine historical land use and assess the likelihood of potentially contaminating activities having occurred at the site:

- Historical aerial photographs;
- NSW Environment Protection Authority (EPA) contaminated land database and public register for regulated contaminated sites;
- Protection of Environment Operations Act 1997 Public Register;
- List of NSW Contaminated Sites Notified to EPA;
- Business Directory Records;
- Historic Parish Maps; and
- Land holder interviews.

5.1 HISTORICAL AERIAL PHOTOGRAPHS

Historical aerial photographs were obtained as part of the research results for the site.

The research results are below;

- The historic aerial photographs from 1954 to 1982 show the house in its current location, surrounded by a plantation of unknown variety. The plantation is absent on site from the 1989 photograph to present day.
- Aerial photographs from 1982 to 2022 show the sheds adjacent to the house. They may have existed prior to this; however, it is unclear in early photographs due to the poor picture quality.
- A large, rectangular, grey section east of the house, possible a concrete slab or gravelled area, is present in the 1998 aerial photograph but not in the subsequent 2003 photograph.
- A small dam east of the house appears in the 2012 and 2016 aerial photographs but is absent in 2022. Due to its small size, it may have been a depression temporarily filled by rain.



5.2 NSW ENVIRONMENT PROTECTION AUTHORITY (EPA) CONTAMINATED LAND DATABASE AND PUBLIC REGISTER FOR REGULATED CONTAMINATED SITES

A search of the register was undertaken on the 31st of August 2022. No sites in the vicinity were listed.

5.3 PROTECTION OF ENVIRONMENT OPERATIONS ACT 1997 PUBLIC REGISTER

A search of the register was undertaken on the 31st of August 2022. One (1) licensed activity is active within 500m of the site. This is classed as "Railway Systems Activities" by UGL Regional Linx Pty Ltd, located 260m west of the lot, and is part of the country regional railway network.

Former licensed activities located in nearby waterways 96m to the southeast of the lot were listed as "application of herbicides". These were issued in September and November 2000 but have since been surrendered.

5.4 LIST OF NSW CONTAMINATED SITES NOTIFIED TO EPA

A search was conducted of the NSW Contaminated Sites Notified to EPA on the 31st of August 2022. No sites were listed in the area.

5.5 BUSINESS DIRECTORY RECORDS

A search of the Historic Business Directories was undertaken on the 31st of August 2022. It states that no dry cleaners, motor garages & service stations are active, or have been active, within 500m of the site.

5.6 HISTORIC PARISH MAPS

A review of the available historic was reviewed on the 31st of August 2022. The historic maps for the site did not show any additional important information regarding the property.

5.7 SOURCES OF POTENTIAL CONTAMINATION ON SITE

Multiple potential contamination sources have been identified on the area of interest. Sources and potential contaminants are listed in Table 2 below.

**Table 2:** Sources and Potential Contaminants on Site

Source	Potential Contaminants	Migration/exposure pathways
Residential Housing and Storage Sheds	Asbestos, Lead Paint, PCBs, biological	Asbestos debris may exist in structures or in the soil from previous structures that have been removed. Direct contact with contaminated soils during excavations. Inhalation of dust from soils during excavations. Inadvertent ingestion of soils due to poor hygiene practices during excavations.
Adjacent Roads - Petrol / Diesel / Oil Runoff	BTEX, TRH, PAH, Phenols	Direct contact with contaminated soils during excavations. Inhalation of dust from soils during excavations. Inadvertent ingestion of soils due to poor hygiene practices during excavations. Migration to surface waters through erosion and sediments.
Nearby Farmland - Pesticide and Herbicide Runoff	Pesticides and herbicides, such as DDT	Direct contact with contaminated soils during excavations. Inhalation of dust from soils during excavations. Inadvertent ingestion of soils due to poor hygiene practices during excavations. Migration to surface waters through erosion and sediments.
Waste burial	Low risk- no evidence of waste burial on site over history available.	None evident.

5.8 RECEPTORS

Human receptors are the most likely with the site being developed as a residential area. Methods of exposure include inhalation of dust, direct skin contact with soils, ingestion of soils, and contact with potentially contaminated surface water.



6. CONCEPTUAL SITE MODEL

Based on the above history, a conceptual site model was developed to identify the potential pathways for transport and exposure to contaminants. The conceptual site model is in Table 3 below.

Table 3: Summary of Conceptual Site Model

Source	Fuels and oils spills from on-site fuel storage and vehicles from adjacent roads; chemical storage from on-site sheds and adjacent sites; agrichemical runoff from nearby farmland, and asbestos and lead building products.
Pathways	Direct contact with soil, inhalation of dust, ingestion of dust. Surface water. Potential for groundwater contamination given depth of groundwater in the area.
Receptors	Humans during destruction, construction, landscaping, and servicing.
Depth of Impacts	Surface staining. Filling and leaks from tanks, drips onto soil. Surface around chemical, oil and fuel storage, debris on surface from previous demolitions.
Locations of known soil Impacts	Unknown
Depth of GW	Deep groundwater reported in bore logs available for the area. Groundwater bores were not ground truthed to confirm this information.
GW Impacts	Potential for groundwater contamination, given the high mobility of water through the soil.



7. PRELIMINARY SAMPLING RESULTS

Preliminary Sampling was conducted as an initial indicator to provide analysis proof of what was identified from the desktop study. Twelve (12) samples were obtained from exposed soil locations in areas deemed most likely to contain contaminants. Samples were compared against the Health Investigation Level A Residential limits. Ecological settings were compared Urban residential and public open space limits, given the surrounding land zoning and use. Laboratory Analysis Certificate of Analysis can be found attached in Appendix 2.

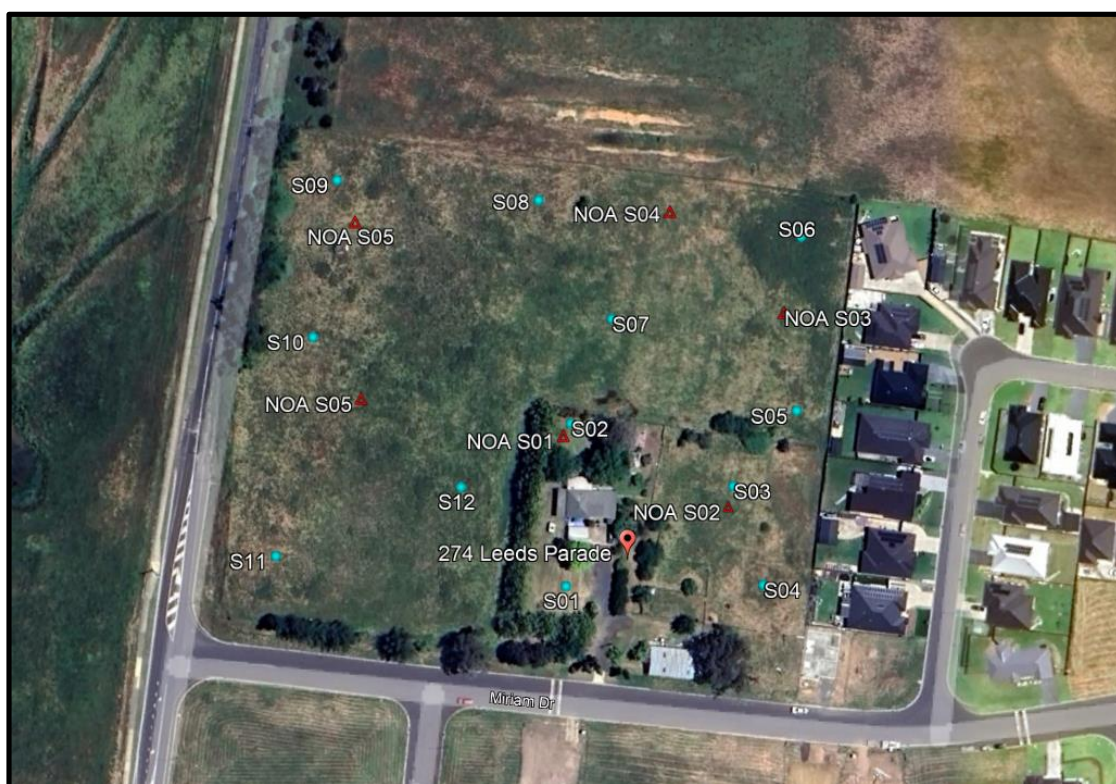


Figure 2: Sampling locations at 274 Leeds Parade, Orange, NSW 2800 – Courtesy of Google Earth.



7.1 ASSESSMENT CRITERIA

Analysis Results will be assessed against the Health Investigation Levels (HILs) for HIL-A Residential as displayed in the Table below.

Table 4: Health Investigation Levels Residential A-Residential (NEPM, 2013)

Chemical	HIL A Residential (mg/kg)
Metals	
Arsenic	100
Cadmium	20
Chromium (VI)	100
Copper	7000
Lead	300
Mercury	200
Nickel	400
Zinc	8000
Cyanide (free)	250
Polycyclic Aromatic Hydrocarbons (PAHs)	
Carcinogenic PAHs (as BaP TEQ)	3
Total PAHs	300
Phenols	
Phenol	3000
Organochlorine Pesticides	
DDT+DDE+DDD	260
Aldrin and dieldrin	7
Chlordane	50
Endosulfan	300
Endrin	10
Heptachlor	7
HCB	10
Methoxychlor	400
Other Pesticides	
Chlorpyrifos	170
Other Organics	
PCBs	1



The analysis results will also be assessed against the Health Screening Levels (HSLs) for HSL A Residential for clay at a depth of 0 to <1m *Table 1A (3) Schedule B1 NEPM*.

Table 5: Health Screening Levels A-Residential (NEPM, 2013)

Chemical	HSL A (mg/kg) Clay 0m to<1m
Benzene	0.8
F1 (C ₆ -C ₁₀)	60

The analysis results will also be assessed against the Ecological Significance Levels (ESLs) for Urban Residential use for Fine Soil *Table 1B(6) Schedule B1, NEPM*.

Table 6: Ecological Screening Levels A-Urban residential and public open space (NEPM, 2013)

Chemical	ESLs Urban residential (mg/kg) Coarse Soil
F1 (C ₆ -C ₁₀)	180
F2 (>C ₁₀ -C ₁₆)	120
F3 (>C ₁₆ -C ₃₄)	300
F4 (>C ₃₄ -C ₄₀)	2800
Benzene	50
Toluene	85
Ethylbenzene	70
Xylenes	105
Benzo (a) pyrene	0.7

7.2 ANALYSIS RESULTS

Sample results for the twelve (12) samples obtained were found to be below the HIL A, HSL A and ESL Urban residential thresholds. It should be noted that analytes were not considered to be elevated to a level that require further investigations.

**Table 7:** Metal Analysis Results VS Health Investigation LEVEL A Residential (NEPM, 2013)

Sample	Depth	Date Sampled	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium Cr6+ (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)	Cyanide (mg/kg)
27182-S1	0-400mm	06/09/2022	15	<0.4	-	42	31	<0.1	26	52	<0.5
27182-S2	0-400mm	06/09/2022	36	<0.4	-	42	20	<0.1	16	45	<0.5
27182-S3	0-400mm	06/09/2022	21	<0.4	<1	83	45	<0.1	78	130	<0.5
27182-S4	0-400mm	06/09/2022	6	<0.4	2	29	16	<0.1	54	22	<0.5
27182-S5	0-400mm	06/09/2022	62	<0.4	<1	40	180	<0.1	37	23	<0.5
27182-S6	0-400mm	06/09/2022	15	<0.4	<1	47	21	<0.1	44	17	<0.5
27182-S7	0-400mm	06/09/2022	22	<0.4	-	51	18	<0.1	16	84	<0.5
27182-S8	0-400mm	06/09/2022	18	<0.4	-	24	13	<0.1	18	12	<0.5
27182-S90	0-400mm	06/09/2022	18	<0.4	-	33	14	<0.1	15	12	<0.5
27182-S10	0-400mm	06/09/2022	28	<0.4	-	52	21	<0.1	22	22	<0.5
27182-S11	0-400mm	06/09/2022	16	<0.4	-	28	31	<0.1	22	22	<0.5
27182-S12	0-400mm	06/09/2022	50	<0.4	<1	43	51	<0.1	29	29	<0.5
27182-S13 (Triplicate)	0-400mm	06/09/2022	28	<0.4	-	40	17	<0.1	46	46	<0.5
Residential A Health Investigation Levels (mg/kg)			100	20	100	7000	300	200	400	8000	250

**Table 8:** PAH Analysis Results VS Health Investigation LEVEL A Residential (NEPM, 2013)

Sample	Depth	Date Sampled	Carcinogenic PAHs (as BaP TEQ) (mg/kg)	Total PAHs (mg/kg)
27182-S1	0-400mm	06/09/2022	<0.5	<0.05
27182-S2	0-400mm	06/09/2022	<0.5	<0.05
27182-S3	0-400mm	06/09/2022	<0.5	<0.05
27182-S4	0-400mm	06/09/2022	<0.5	<0.05
27182-S5	0-400mm	06/09/2022	<0.5	<0.05
27182-S6	0-400mm	06/09/2022	<0.5	<0.5
27182-S7	0-400mm	06/09/2022	<0.5	<0.5
27182-S8	0-400mm	06/09/2022	<0.5	<0.5
27182-S9	0-400mm	06/09/2022	<0.5	<0.5
27182-S10	0-400mm	06/09/2022	<0.5	<0.5
27182-S11	0-400mm	06/09/2022	<0.5	<0.5
27182-S12	0-400mm	06/09/2022	<0.5	<0.5
Residential A Health Investigation Levels (mg/kg)			3	300

**Table 9:** Organochlorine Pesticides Analysis Results VS Health Investigation LEVEL A Residential (NEPM, 2013)

Sample	Depth	Date Sampled	DDT + DDE + DDD (mg/kg)	Aldrin and dieldrin (mg/kg)	Chlordane (mg/kg)	Endosulfan (mg/kg)	Endrin (mg/kg)	Heptachlor (mg/kg)	HCB (mg/kg)	Methoxychlor (mg/kg)
27182-S1	0-400mm	06/09/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
27182-S2	0-400mm	06/09/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
27182-S3	0-400mm	06/09/2022	0.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
27182-S4	0-400mm	06/09/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
27182-S5	0-400mm	06/09/2022	1.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
27182-S6	0-400mm	06/09/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
27182-S7	0-400mm	06/09/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
27182-S8	0-400mm	06/09/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
27182-S9	0-400mm	06/09/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
27182-S10	0-400mm	06/09/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
27182-S11	0-400mm	06/09/2022	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
27182-S12	0-400mm	06/09/2022	0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Residential A Health Investigation Levels (mg/kg)			260	7	50	300	10	7	10	400

**Table 10:** Other Pesticides Analysis Results VS LEVEL A Residential (NEPM, 2013)

Sample	Depth	Date Sampled	Chlorpyrifos (mg/kg)
27182-S1	0-400mm	06/09/2022	<0.1
27182-S2	0-400mm	06/09/2022	<0.1
27182-S3	0-400mm	06/09/2022	<0.1
27182-S4	0-400mm	06/09/2022	<0.1
27182-S5	0-400mm	06/09/2022	<0.1
27182-S6	0-400mm	06/09/2022	<0.1
27182-S7	0-400mm	06/09/2022	<0.1
27182-S8	0-400mm	06/09/2022	<0.1
27182-S9	0-400mm	06/09/2022	<0.1
27182-S10	0-400mm	06/09/2022	<0.1
27182-S11	0-400mm	06/09/2022	<0.1
27182-S12	0-400mm	06/09/2022	<0.1
Residential A Health Investigation Levels (mg/kg)			170

**Table 11:** Other Organics and Phenols Analysis Results VS Health Investigation LEVEL A Residential (NEPM, 2013)

Sample	Depth	Date Sampled	PCBS (mg/kg)	Phenol (mg/kg)
27182-S1	0-400mm	06/09/2022	<0.1	<5
27182-S2	0-400mm	06/09/2022	<0.1	<5
27182-S3	0-400mm	06/09/2022	<0.1	<5
27182-S4	0-400mm	06/09/2022	<0.1	<5
27182-S5	0-400mm	06/09/2022	<0.1	<5
27182-S6	0-400mm	06/09/2022	<0.1	<5
27182-S7	0-400mm	06/09/2022	<0.1	<5
27182-S8	0-400mm	06/09/2022	<0.1	<5
27182-S9	0-400mm	06/09/2022	<0.1	<5
27182-S10	0-400mm	06/09/2022	<0.1	<5
27182-S11	0-400mm	06/09/2022	<0.1	<5
27182-S12	0-400mm	06/09/2022	<0.1	<5
LEVEL A Residential Health Investigation Levels (mg/kg)			1	3000

**Table 12:** Hydrocarbon results VS Health Screening Levels A Residential Clay (NEPM, 2013)

Sample	Depth	Date Sampled	Benzene (mg/kg)	F1 (C ₆ C ₁₀) (mg/kg)
27182-S1	0-400mm	3/08/2022	<0.2	<25
27182-S2	0-400mm	3/08/2022	<0.2	<25
27182-S3	0-400mm	3/08/2022	<0.2	<25
27182-S4	0-400mm	3/08/2022	<0.2	<25
27182-S5	0-400mm	06/09/2022	<0.2	<25
27182-S6	0-400mm	06/09/2022	<0.2	<25
27182-S7	0-400mm	06/09/2022	<0.2	<25
27182-S8	0-400mm	06/09/2022	<0.2	<25
27182-S9	0-400mm	06/09/2022	<0.2	<25
27182-S10	0-400mm	06/09/2022	<0.2	<25
27182-S11	0-400mm	06/09/2022	<0.2	<25
27182-S12	0-400mm	06/09/2022	<0.2	<25
HSL A Health Screening Clay Levels (mg/kg)			0.8	60

**Table 13:** Analysis results VS Ecological Screening Levels Urban residential and public open space coarse Soil (NEPM, 2013)

Sample	Depth	Date Sampled	F1 C ₆ -C ₁₀ (mg/kg)	F2 (C ₁₀ - C ₁₆) (mg/kg)	F3 (C ₁₆ - C ₃₄) (mg/kg)	F4 (C ₃₄ - C ₄₀) (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl benzene (mg/kg)	Xylenes (mg/kg)	Benzo(a)pyrene (mg/kg)
27182-S1	0-400mm	06/09/2022	<25	82	<100	<100	<0.2	<0.5	<1	<1	<0.05
27182-S2	0-400mm	06/09/2022	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
27182-S3	0-400mm	06/09/2022	<25	<50	<100	190	<0.2	<0.5	<1	<1	<0.05
27182-S4	0-400mm	06/09/2022	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
27182-S5	0-400mm	06/09/2022	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
27182-S6	0-400mm	06/09/2022	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
27182-S7	0-400mm	06/09/2022	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
27182-S8	0-400mm	06/09/2022	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
27182-S9	0-400mm	06/09/2022	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
27182-S10	0-400mm	06/09/2022	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
27182-S11	0-400mm	06/09/2022	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
27182-S12	0-400mm	06/09/2022	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
Ecological Screening Levels Urban Residential Coarse Soil (mg/kg)			180	120	300	2800	50	85	70	105	0.7

**Table 14:** Analysis results for Naturally occurring Asbestos (NOA)

Sample Number	Depth	Date Sampled	Sample Type	Asbestos Fibres Detected
27182-S1	0-400mm	06/09/2022	Soil Core	No Naturally Occurring Asbestos Detected
27182-S2	0-400mm	06/09/2022	Soil Core	No Naturally Occurring Asbestos Detected
27182-S3	0-400mm	06/09/2022	Soil Core	No Naturally Occurring Asbestos Detected
27182-S4	0-400mm	06/09/2022	Soil Core	No Naturally Occurring Asbestos Detected
27182-S5	0-400mm	06/09/2022	Soil Core	No Naturally Occurring Asbestos Detected



8. DISCUSSION

8.1 SITE OBSERVATIONS

The site largely consists of paddocks, with the house and all structures on site being located in the southeast quadrant of the lot. A gravel driveway leads to the house from Miriam Drive on the southern border.

A raised portion of land was sighted south of the house which contained remnants of a concrete slab, household waste, and blue-grey rocks similar to those in the driveway. This appears to be as a result of levelling the adjacent area for a yard.

A chicken shed, storage shed, and gardens shed are located near the house. A fibre cement pipe which has been assumed to contain asbestos was sighted behind a storage shed. The area around the sheds contained general household debris.

Small stockyards, a large storage shed, rock and timber walls, a water tank, and water troughs are located to the east and southeast of the house.

No surface staining or other abnormal vegetation growth was observed to be present on the site.



9. CONCLUSION AND RECOMMENDATIONS

Given the information provided from within this Preliminary Site Investigation, EnviroScience believes that the following further investigations at 274 Leeds Parade, Orange, NSW, 2800;

- The structures on site do not have a Hazardous Materials Register as far as EnviroScience Solutions staff are aware. Since, according to historical aerial images, the current structures had been constructed prior to 2003 and since an asbestos-containing pipe was found on the site, it is recommended that at minimum an asbestos register and management plan is developed before demolition or renovation works.
- Sample results reported to be below the HIL A - Residential, HSL A – Residential, and ESL Urban residential and public open spaces for all analytes assessed. Alongside the lack of visual indicators at the time of inspection to suggest further contamination at a depth greater than that sampled, no further sampling is necessary.
- Initial total Chromium results reported levels above the Residential A - Health Investigation Levels in samples S3, S4, S5, S6, and S12. However, when analysed specifically for hexavalent Chromium Cr6+, all fell well below the threshold.
- It is recommended that future development works operate under an unexpected finds protocol. Should any unexpected foreign material be exposed, discoloured soils or odours observed then works should cease and the areas assessed by an environmental scientist for assessment and testing.
- If asbestos fragments are found during excavations work should cease and the affected area be investigated by an independent Licensed Asbestos Assessor.



9.1 CONCLUSIONS

The objectives of the Preliminary Site Investigation were to:

- Identify potential contaminants of concern on site
- Identify potential locations of contaminants
- Identify potential exposure routes and pathways
- Identify appropriate assessment criteria for chemicals of concern, and
- Determine if the site requires further investigation, remediation or management prior to works commencing

The available history of the site found no potential contaminants from on-site activities including the potential use and storage of chemicals, oils, fuels and gas.

Given the above investigations and the data quality assessment, the investigation has met the identified objectives.

9.2 CONTINGENCY/UNEXPECTED FINDS PLAN

9.2.1 HAZARDOUS MATERIALS

If unexpected hazardous materials are discovered during the construction activities, the following procedures are recommended;

- Cease work and evacuate the area of work immediately
- Erect barricades to isolate the area and ensure no one accesses without permission from the Environmental Consultant (EnviroScience Solutions).
- Immediately notify the Site Project Manager
- Sampling of the suspected material is to be carried out by the Environmental Consultant to undergo laboratory testing
- The Environmental Consultant will develop a management plan for the discovered material dependent on the laboratory analysis results.
- Remedial works, if required, will need to be undertaken in the area by personnel suitably qualified
- Once the area has remediated and clearance report issued, only then may the barricade be removed and work activities resumed, under direction of the Environmental Consultant.



9.2.2 OTHER UNEXPECTED FINDS

- Heritage – Stop work immediately if you uncover anything that might be an Aboriginal tool or carving or if European heritage items are encountered and contact the Environmental Consultant



10. LIMITATIONS

The proposed works were limited to areas indicated above that are outlined in this report. The following also applies;

1. To the extent permitted by law, EnviroScience Solutions Pty Ltd will not be responsible in tort, contract or otherwise for any loss or damage, including for any personal injuries or death, or any consequential loss, loss of markets and pure economic loss, suffered by the Customer, whether or not the loss or damage occurs in the course of performance by EnviroScience Solutions of this contract or in events which are in the contemplation of EnviroScience Solutions and/or the Customer or in events which are foreseeable by EnviroScience Solutions and/or the Customer.
2. To the extent that liability has not been effectively excluded by the proceeding clause, then EnviroScience Solutions limits its liability to:-
 - (a) The supply of services again; or
 - (b) The payment of the cost of supplying the services again, at the election of EnviroScience Solutions Pty Ltd.



11. REFERENCES

- Code of Practice; How to Manage and Control Asbestos in the Workplace* [Safe Work NSW: 2019]
- Code of Practice; How to Safely Remove Asbestos* [SafeWork NSW: 2019].
- Contaminated Land Management Act, 1997 (CLM Act).
- Guidelines for Consultants Reporting on Contaminated Land (April 2020)
- National Environment Protection (Assessment of Site Contamination) Measure, NEPC 2013
- NSW EPA, Contaminated Sites, Sampling Design Guidelines
- NSW Work Health and Safety Act 2011*
- NSW Work Health and Safety Regulation 2017
- Protection of the Environment Operations Act, 1997 (POEO Act).
- State Environmental Planning Policy No- 55 2014 (SEPP 55).
- The National Standard for Synthetic Mineral Fibres – NOHSC: 1004(1990)
- Waste Avoidance and Resource Recovery Act, 2001 (WARR Act).
- Waste Classification Guidelines – Part 1 – Classifying Waste* (November 2014) – NSW Environment Protection Authority (EPA)
- Western Australia Department of Health, 'Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in WA'
- WorkCover NSW, *Managing asbestos in or on soil*, March 2014
- Managing Urban Stormwater: *Soils and Construction*. Landcom, (4th Edition) March 2004 (reprinted 2006) (the "Blue Book"). Volume 1 and Volume 2.



Appendix 1: Site Images – 274 Leeds Pde, Orange



Image 1 – House



Image 2 – Ground Surface near house



Image 3 – Mound of waste and fill south of house



Image 4 – Fibre cement pipe behind shed



Image 5 – Paddock; looking east



Image 6 – Paddock; looking north



Image 7 – Soil sample 1



Image 8 – Soil sample 2



Image 8 – Soil sample 3



Image 9 – Soil sample 4



Image 10 – Soil sample 5



Image 11 – Soil sample 6



Image 11 – Soil sample 7



Image 12 – Soil sample 8



Image 13 – Soil sample 9



Image 14 – Soil sample 10



Image 15 – Soil sample 11



Image 16 – Soil sample 12



Image 17 – Soil sample 1 (NOA)



Image 18 – Soil sample 2 (NOA)



Image 19 – Soil sample 3 (NOA)



Image 20 – Soil sample 4 (NOA)



Image 21 – Soil sample 5 (NOA)



Image 22 – Soil sample 6 (NOA)

**LABORATORY ANALYSIS REPORT**
Asbestos Identification Report

Report No: B27182-R1
Client: DMAA Group
Client Address: 71 Pearson Street,
Kangaroo Point, QLD, 4169

Report Date: Monday, September 12, 2022
Analysed Date: Monday, September 12, 2022
Laboratory Receival Date: Monday, September 12, 2022
Sampled Date: Tuesday, September 6, 2022
Sampled by : Michael Williamson
Approved Identifier and Signatory: Simone Lobo

Attention: Tom Miers
Sampled From: 274 Leeds Parade, Orange NSW 2800

Test Method: Polarised Light Microscopy (PLM) including Dispersion Staining (DS), EnviroScience Solutions Pty Ltd in-house laboratory method, in accordance with Australian Standard AS4964-2004 'Method for the qualitative identification of asbestos in bulk samples'. Accredited for compliance with ISO/IEC:17025-Testing.
Please note that EnviroScience Solutions does not accept responsibility for the sample submitted in relation to its source.

Sample Number	Sample Location	Sample Description	Sample Size	Asbestos Fibres Detected
B27182-S1	Location 13	Soil Core	790.0 gm	No Naturally Occurring Asbestos Detected
B27182-S2	Location 14	Soil Core	646.0 gm	No Naturally Occurring Asbestos Detected
B27182-S3	Location 15	Soil Core	669.0 gm	No Naturally Occurring Asbestos Detected
B27182-S4	Location 16	Soil Core	678.0 gm	No Naturally Occurring Asbestos Detected
B27182-S5	Location 17	Soil Core	597.0 gm	No Naturally Occurring Asbestos Detected
B27182-S6	Location 18	Soil Core	552.0 gm	No Naturally Occurring Asbestos Detected

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CERTIFICATE OF ANALYSIS 305195

Client Details

Client	EnviroScience Solutions
Attention	Michael Williamson
Address	PO Box 1645, Dubbo, NSW, 2830

Sample Details

Your Reference	<u>27182, 274 Leeds Parade, Orange, NSW</u>
Number of Samples	12 Soil
Date samples received	08/09/2022
Date completed instructions received	08/09/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	15/09/2022
Date of Issue	15/09/2022
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Results Approved By

Diego Bigolin, Inorganics Supervisor
Kyle Gavril, Senior Chemist
Liam Timmins, Organic Instruments Team Leader
Loren Bardwell, Development Chemist
Steven Luong, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		305195-1	305195-2	305195-3	305195-4	305195-5
Your Reference	UNITS	S01	S02	S03	S04	S05
Date Sampled		06/09/2022	06/09/2022	06/09/2022	06/09/2022	06/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	93	88	83	94	89

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		305195-6	305195-7	305195-8	305195-9	305195-10
Your Reference	UNITS	S06	S07	S08	S09	S10
Date Sampled		06/09/2022	06/09/2022	06/09/2022	06/09/2022	06/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	93	90	96	89	94

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		305195-11	305195-12
Your Reference	UNITS	S11	S12
Date Sampled		06/09/2022	06/09/2022
Type of sample		Soil	Soil
Date extracted	-	12/09/2022	12/09/2022
Date analysed	-	12/09/2022	12/09/2022
TRH C ₆ - C ₉	mg/kg	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
Naphthalene	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	103	102

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

svTRH (C10-C40) in Soil						
Our Reference		305195-1	305195-2	305195-3	305195-4	305195-5
Your Reference	UNITS	S01	S02	S03	S04	S05
Date Sampled		06/09/2022	06/09/2022	06/09/2022	06/09/2022	06/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₆ - C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH >C ₃₄ - C ₄₀	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	95	98	97	95	98

svTRH (C10-C40) in Soil						
Our Reference		305195-6	305195-7	305195-8	305195-9	305195-10
Your Reference	UNITS	S06	S07	S08	S09	S10
Date Sampled		06/09/2022	06/09/2022	06/09/2022	06/09/2022	06/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₆ - C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH >C ₃₄ - C ₄₀	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	101	97	98	97	96

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

svTRH (C10-C40) in Soil			
Our Reference		305195-11	305195-12
Your Reference	UNITS	S11	S12
Date Sampled		06/09/2022	06/09/2022
Type of sample		Soil	Soil
Date extracted	-	12/09/2022	12/09/2022
Date analysed	-	12/09/2022	12/09/2022
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50
TRH >C ₁₀ - C ₁₆	mg/kg	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50
TRH >C ₁₆ - C ₃₄	mg/kg	<100	<100
TRH >C ₃₄ - C ₄₀	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	97	98

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

PAHs in Soil						
Our Reference		305195-1	305195-2	305195-3	305195-4	305195-5
Your Reference	UNITS	S01	S02	S03	S04	S05
Date Sampled		06/09/2022	06/09/2022	06/09/2022	06/09/2022	06/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Date analysed	-	13/09/2022	13/09/2022	13/09/2022	13/09/2022	13/09/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	115	115	115	110	113

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

PAHs in Soil						
Our Reference		305195-6	305195-7	305195-8	305195-9	305195-10
Your Reference	UNITS	S06	S07	S08	S09	S10
Date Sampled		06/09/2022	06/09/2022	06/09/2022	06/09/2022	06/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Date analysed	-	13/09/2022	13/09/2022	13/09/2022	13/09/2022	13/09/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	112	113	111	109	107

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

PAHs in Soil			
Our Reference		305195-11	305195-12
Your Reference	UNITS	S11	S12
Date Sampled		06/09/2022	06/09/2022
Type of sample		Soil	Soil
Date extracted	-	12/09/2022	12/09/2022
Date analysed	-	13/09/2022	13/09/2022
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b,j,k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	105	104

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

Organochlorine Pesticides in soil						
Our Reference		305195-1	305195-2	305195-3	305195-4	305195-5
Your Reference	UNITS	S01	S02	S03	S04	S05
Date Sampled		06/09/2022	06/09/2022	06/09/2022	06/09/2022	06/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Date analysed	-	13/09/2022	13/09/2022	13/09/2022	13/09/2022	13/09/2022
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	0.6	<0.1	1.6
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	0.6	<0.1	1.8
Surrogate TCMX	%	117	114	115	115	116

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

Organochlorine Pesticides in soil						
Our Reference		305195-6	305195-7	305195-8	305195-9	305195-10
Your Reference	UNITS	S06	S07	S08	S09	S10
Date Sampled		06/09/2022	06/09/2022	06/09/2022	06/09/2022	06/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Date analysed	-	13/09/2022	13/09/2022	13/09/2022	13/09/2022	13/09/2022
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	112	113	117	117	113

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

Organochlorine Pesticides in soil			
Our Reference		305195-11	305195-12
Your Reference	UNITS	S11	S12
Date Sampled		06/09/2022	06/09/2022
Type of sample		Soil	Soil
Date extracted	-	12/09/2022	12/09/2022
Date analysed	-	13/09/2022	13/09/2022
alpha-BHC	mg/kg	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	0.1	0.8
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	0.1	0.8
Surrogate TCMX	%	112	110

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

Organophosphorus Pesticides in Soil						
Our Reference		305195-1	305195-2	305195-3	305195-4	305195-5
Your Reference	UNITS	S01	S02	S03	S04	S05
Date Sampled		06/09/2022	06/09/2022	06/09/2022	06/09/2022	06/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Date analysed	-	13/09/2022	13/09/2022	13/09/2022	13/09/2022	13/09/2022
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	117	114	115	115	116

Organophosphorus Pesticides in Soil						
Our Reference		305195-6	305195-7	305195-8	305195-9	305195-10
Your Reference	UNITS	S06	S07	S08	S09	S10
Date Sampled		06/09/2022	06/09/2022	06/09/2022	06/09/2022	06/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Date analysed	-	13/09/2022	13/09/2022	13/09/2022	13/09/2022	13/09/2022
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	112	113	117	117	113

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

Organophosphorus Pesticides in Soil			
Our Reference		305195-11	305195-12
Your Reference	UNITS	S11	S12
Date Sampled		06/09/2022	06/09/2022
Type of sample		Soil	Soil
Date extracted	-	12/09/2022	12/09/2022
Date analysed	-	13/09/2022	13/09/2022
Dichlorvos	mg/kg	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1
Surrogate TCMX	%	112	110

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

PCBs in Soil						
Our Reference		305195-1	305195-2	305195-3	305195-4	305195-5
Your Reference	UNITS	S01	S02	S03	S04	S05
Date Sampled		06/09/2022	06/09/2022	06/09/2022	06/09/2022	06/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Date analysed	-	13/09/2022	13/09/2022	13/09/2022	13/09/2022	13/09/2022
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	117	114	115	115	116

PCBs in Soil						
Our Reference		305195-6	305195-7	305195-8	305195-9	305195-10
Your Reference	UNITS	S06	S07	S08	S09	S10
Date Sampled		06/09/2022	06/09/2022	06/09/2022	06/09/2022	06/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Date analysed	-	13/09/2022	13/09/2022	13/09/2022	13/09/2022	13/09/2022
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	112	113	117	117	113

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

PCBs in Soil			
Our Reference		305195-11	305195-12
Your Reference	UNITS	S11	S12
Date Sampled		06/09/2022	06/09/2022
Type of sample		Soil	Soil
Date extracted	-	12/09/2022	12/09/2022
Date analysed	-	13/09/2022	13/09/2022
Aroclor 1016	mg/kg	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1
Surrogate TCMX	%	112	110

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

Acid Extractable metals in soil						
Our Reference		305195-1	305195-2	305195-3	305195-4	305195-5
Your Reference	UNITS	S01	S02	S03	S04	S05
Date Sampled		06/09/2022	06/09/2022	06/09/2022	06/09/2022	06/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/09/2022	14/09/2022	14/09/2022	14/09/2022	14/09/2022
Date analysed	-	14/09/2022	14/09/2022	14/09/2022	14/09/2022	14/09/2022
Arsenic	mg/kg	15	36	21	6	62
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	87	37	220	270	180
Copper	mg/kg	42	42	83	29	40
Lead	mg/kg	31	20	45	16	180
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	26	16	78	54	37
Zinc	mg/kg	52	45	130	22	23

Acid Extractable metals in soil						
Our Reference		305195-6	305195-7	305195-8	305195-9	305195-10
Your Reference	UNITS	S06	S07	S08	S09	S10
Date Sampled		06/09/2022	06/09/2022	06/09/2022	06/09/2022	06/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/09/2022	14/09/2022	14/09/2022	14/09/2022	14/09/2022
Date analysed	-	14/09/2022	14/09/2022	14/09/2022	14/09/2022	14/09/2022
Arsenic	mg/kg	15	22	18	18	28
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	130	46	46	77	91
Copper	mg/kg	47	51	24	33	52
Lead	mg/kg	21	18	13	14	21
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	44	16	18	15	22
Zinc	mg/kg	17	84	12	12	22

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

Acid Extractable metals in soil				
Our Reference		305195-11	305195-12	305195-13
Your Reference	UNITS	S11	S12	S01 - [TRIPLICATE]
Date Sampled		06/09/2022	06/09/2022	06/09/2022
Type of sample		Soil	Soil	Soil
Date prepared	-	14/09/2022	14/09/2022	14/09/2022
Date analysed	-	14/09/2022	14/09/2022	14/09/2022
Arsenic	mg/kg	16	50	14
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	83	190	89
Copper	mg/kg	28	43	40
Lead	mg/kg	31	51	17
Mercury	mg/kg	<0.1	<0.1	<0.1
Nickel	mg/kg	11	78	25
Zinc	mg/kg	22	29	46

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

Misc Soil - Inorg						
Our Reference		305195-1	305195-2	305195-3	305195-4	305195-5
Your Reference	UNITS	S01	S02	S03	S04	S05
Date Sampled		06/09/2022	06/09/2022	06/09/2022	06/09/2022	06/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/09/2022	14/09/2022	14/09/2022	14/09/2022	14/09/2022
Date analysed	-	14/09/2022	14/09/2022	14/09/2022	14/09/2022	14/09/2022
Total Cyanide	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference		305195-6	305195-7	305195-8	305195-9	305195-10
Your Reference	UNITS	S06	S07	S08	S09	S10
Date Sampled		06/09/2022	06/09/2022	06/09/2022	06/09/2022	06/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/09/2022	14/09/2022	14/09/2022	14/09/2022	14/09/2022
Date analysed	-	14/09/2022	14/09/2022	14/09/2022	14/09/2022	14/09/2022
Total Cyanide	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg			
Our Reference		305195-11	305195-12
Your Reference	UNITS	S11	S12
Date Sampled		06/09/2022	06/09/2022
Type of sample		Soil	Soil
Date prepared	-	14/09/2022	14/09/2022
Date analysed	-	14/09/2022	14/09/2022
Total Cyanide	mg/kg	<0.5	<0.5
Total Phenolics (as Phenol)	mg/kg	<5	<5

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

Moisture						
Our Reference	UNITS	305195-1	305195-2	305195-3	305195-4	305195-5
Your Reference		S01	S02	S03	S04	S05
Date Sampled		06/09/2022	06/09/2022	06/09/2022	06/09/2022	06/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Date analysed	-	13/09/2022	13/09/2022	13/09/2022	13/09/2022	13/09/2022
Moisture	%	15	20	22	19	15

Moisture						
Our Reference	UNITS	305195-6	305195-7	305195-8	305195-9	305195-10
Your Reference		S06	S07	S08	S09	S10
Date Sampled		06/09/2022	06/09/2022	06/09/2022	06/09/2022	06/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Date analysed	-	13/09/2022	13/09/2022	13/09/2022	13/09/2022	13/09/2022
Moisture	%	16	13	20	22	22

Moisture			
Our Reference	UNITS	305195-11	305195-12
Your Reference		S11	S12
Date Sampled		06/09/2022	06/09/2022
Type of sample		Soil	Soil
Date prepared	-	12/09/2022	12/09/2022
Date analysed	-	13/09/2022	13/09/2022
Moisture	%	24	19

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Inorg-014	Cyanide - free, total, weak acid dissociable by segmented flow analyser (in line dialysis with colourimetric finish). Solids/Filters and sorbents are extracted in a caustic media prior to analysis. Impingers are pH adjusted as required prior to analysis. Cyanides amenable to Chlorination - samples are analysed untreated and treated with hypochlorite to assess the potential for chlorination of cyanide forms. Based on APHA latest edition, 4500-CN_G,H.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.

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Method ID	Methodology Summary
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	305195-2
Date extracted	-			12/09/2022	1	12/09/2022	12/09/2022		12/09/2022	12/09/2022
Date analysed	-			12/09/2022	1	12/09/2022	12/09/2022		12/09/2022	12/09/2022
TRH C ₆ - C ₉	mg/kg	25	Org-023	<25	1	<25	<25	0	102	90
TRH C ₆ - C ₁₀	mg/kg	25	Org-023	<25	1	<25	<25	0	102	90
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	96	84
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	104	92
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	102	89
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	105	93
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	105	96
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	108	1	93	87	7	107	95

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	12/09/2022	12/09/2022		[NT]	[NT]
Date analysed	-			[NT]	11	12/09/2022	12/09/2022		[NT]	[NT]
TRH C ₆ - C ₉	mg/kg	25	Org-023	[NT]	11	<25	<25	0	[NT]	[NT]
TRH C ₆ - C ₁₀	mg/kg	25	Org-023	[NT]	11	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	11	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	11	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	11	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	11	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	11	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	11	103	100	3	[NT]	[NT]

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QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	305195-2
Date extracted	-			12/09/2022	1	12/09/2022	12/09/2022		12/09/2022	12/09/2022
Date analysed	-			12/09/2022	1	12/09/2022	12/09/2022		12/09/2022	12/09/2022
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	<50	1	<50	<50	0	107	106
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	<100	1	<100	<100	0	78	86
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	<100	1	<100	<100	0	86	121
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	<50	1	<50	<50	0	107	106
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	<100	1	<100	<100	0	78	86
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	<100	1	<100	<100	0	86	121
Surrogate o-Terphenyl	%		Org-020	93	1	95	98	3	88	94

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	12/09/2022	12/09/2022		[NT]	[NT]
Date analysed	-			[NT]	11	12/09/2022	12/09/2022		[NT]	[NT]
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	[NT]	11	<50	<50	0	[NT]	[NT]
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	[NT]	11	<100	<100	0	[NT]	[NT]
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	[NT]	11	<100	<100	0	[NT]	[NT]
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	[NT]	11	<50	<50	0	[NT]	[NT]
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	[NT]	11	<100	<100	0	[NT]	[NT]
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	[NT]	11	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	11	97	95	2	[NT]	[NT]

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

QUALITY CONTROL: PAHs in Soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	305195-2
Date extracted	-			12/09/2022	1	12/09/2022	12/09/2022		12/09/2022	12/09/2022
Date analysed	-			13/09/2022	1	13/09/2022	13/09/2022		13/09/2022	13/09/2022
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	103	105
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	95	97
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	99	105
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	110	112
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	106	106
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	109	111
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	87	79
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	<0.05	<0.05	0	136	128
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	111	1	115	117	2	107	109

QUALITY CONTROL: PAHs in Soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	12/09/2022	12/09/2022		[NT]	[NT]
Date analysed	-			[NT]	11	13/09/2022	13/09/2022		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	11	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	11	105	103	2	[NT]	[NT]

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	305195-2
Date extracted	-			12/09/2022	1	12/09/2022	12/09/2022		12/09/2022	12/09/2022
Date analysed	-			13/09/2022	1	13/09/2022	13/09/2022		13/09/2022	13/09/2022
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	100	108
HCB	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	103	110
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	103	107
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	124	128
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	110	110
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	121	121
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	118	118
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	102	111
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	94	98
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	106	108
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	109	1	117	118	1	102	108

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QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	12/09/2022	12/09/2022		[NT]	[NT]
Date analysed	-			[NT]	11	13/09/2022	13/09/2022		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	11	0.1	0.2	67	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	11	112	110	2	[NT]	[NT]

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	305195-2
Date extracted	-			12/09/2022	1	12/09/2022	12/09/2022		12/09/2022	12/09/2022
Date analysed	-			13/09/2022	1	13/09/2022	13/09/2022		13/09/2022	13/09/2022
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	117	113
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	95	101
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	91	99
Malathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	91	106
Chlorpyrifos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	106	114
Parathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	84	93
Bromophos-ethyl	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	102	119
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	109	1	117	118	1	102	108

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	12/09/2022	12/09/2022		[NT]	[NT]
Date analysed	-			[NT]	11	13/09/2022	13/09/2022		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	11	112	110	2	[NT]	[NT]

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

QUALITY CONTROL: PCBs in Soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	305195-2
Date extracted	-			12/09/2022	1	12/09/2022	12/09/2022		12/09/2022	12/09/2022
Date analysed	-			13/09/2022	1	13/09/2022	13/09/2022		13/09/2022	13/09/2022
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	122	120
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	109	1	117	118	1	102	108

QUALITY CONTROL: PCBs in Soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	12/09/2022	12/09/2022		[NT]	[NT]
Date analysed	-			[NT]	11	13/09/2022	13/09/2022		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	11	112	110	2	[NT]	[NT]

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	305195-2
Date prepared	-			14/09/2022	1	14/09/2022	14/09/2022		14/09/2022	14/09/2022
Date analysed	-			14/09/2022	1	14/09/2022	14/09/2022		14/09/2022	14/09/2022
Arsenic	mg/kg	4	Metals-020	<4	1	15	14	7	96	104
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	94	74
Chromium	mg/kg	1	Metals-020	<1	1	87	80	8	97	101
Copper	mg/kg	1	Metals-020	<1	1	42	39	7	93	103
Lead	mg/kg	1	Metals-020	<1	1	31	20	43	95	88
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	100	87
Nickel	mg/kg	1	Metals-020	<1	1	26	25	4	96	80
Zinc	mg/kg	1	Metals-020	<1	1	52	50	4	102	95

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	11	14/09/2022	14/09/2022		[NT]	[NT]
Date analysed	-			[NT]	11	14/09/2022	14/09/2022		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	11	16	18	12	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	11	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	11	83	120	36	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	11	28	28	0	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	11	31	33	6	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	11	11	15	31	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	11	22	22	0	[NT]	[NT]

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

QUALITY CONTROL: Misc Soil - Inorg						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	305195-2
Date prepared	-			14/09/2022	1	14/09/2022	14/09/2022		14/09/2022	14/09/2022
Date analysed	-			14/09/2022	1	14/09/2022	14/09/2022		14/09/2022	14/09/2022
Total Cyanide	mg/kg	0.5	Inorg-014	<0.5	1	<0.5	<0.5	0	96	90
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	1	<5	<5	0	105	[NT]

QUALITY CONTROL: Misc Soil - Inorg						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	11	14/09/2022	14/09/2022		[NT]	[NT]
Date analysed	-			[NT]	11	14/09/2022	14/09/2022		[NT]	[NT]
Total Cyanide	mg/kg	0.5	Inorg-014	[NT]	11	<0.5	<0.5	0	[NT]	[NT]
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	[NT]	11	<5	<5	0	[NT]	[NT]

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

Result Definitions	
NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

Report Comments

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 305195-1 for Pb. Therefore a triplicate result has been issued as laboratory sample number 305195-13.



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CERTIFICATE OF ANALYSIS 305195-A

Client Details

Client	EnviroScience Solutions
Attention	Mark Austin
Address	PO Box 1645, Dubbo, NSW, 2830

Sample Details

Your Reference	27182, 274 Leeds Parade, Orange, NSW
Number of Samples	additional analysis
Date samples received	08/09/2022
Date completed instructions received	16/09/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	21/09/2022
Date of Issue	21/09/2022
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Results Approved By

Nick Sarlamis, Assistant Operation Manager

Authorised By

Nancy Zhang, Laboratory Manager

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

Misc Soil - Inorg						
Our Reference	UNITS	305195-A-3	305195-A-4	305195-A-5	305195-A-6	305195-A-12
Your Reference		S03	S04	S05	S06	S12
Date Sampled		06/09/2022	06/09/2022	06/09/2022	06/09/2022	06/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/09/2022	20/09/2022	20/09/2022	20/09/2022	20/09/2022
Date analysed	-	20/09/2022	20/09/2022	20/09/2022	20/09/2022	20/09/2022
Hexavalent Chromium, Cr ⁶⁺	mg/kg	<1	2	<1	<1	<1

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

Method ID	Methodology Summary
Inorg-024	Hexavalent Chromium (Cr6+) - determined colourimetrically. Waters samples are filtered on receipt prior to analysis.

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

QUALITY CONTROL: Misc Soil - Inorg						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	305195-A-4
Date prepared	-			20/09/2022	3	20/09/2022	20/09/2022		20/09/2022	20/09/2022
Date analysed	-			20/09/2022	3	20/09/2022	20/09/2022		20/09/2022	20/09/2022
Hexavalent Chromium, Cr ⁶⁺	mg/kg	1	Inorg-024	<1	3	<1	<1	0	110	127

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

Result Definitions	
NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Client Reference: 27182, 274 Leeds Parade, Orange, NSW

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
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Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
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The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
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In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

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Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.



Date: 31 Aug 2022 15:55:36

Reference: LS035833 EP

Address: 274 Leeds Parade, Orange, NSW 2800

Disclaimer:

The purpose of this report is to provide an overview of some of the site history, environmental risk and planning information available, affecting an individual address or geographical area in which the property is located. It is not a substitute for an on-site inspection or review of other available reports and records. It is not intended to be, and should not be taken to be, a rating or assessment of the desirability or market value of the property or its features.

You should obtain independent advice before you make any decision based on the information within the report.

The detailed terms applicable to use of this report are set out at the end of this report.

Dataset Listing

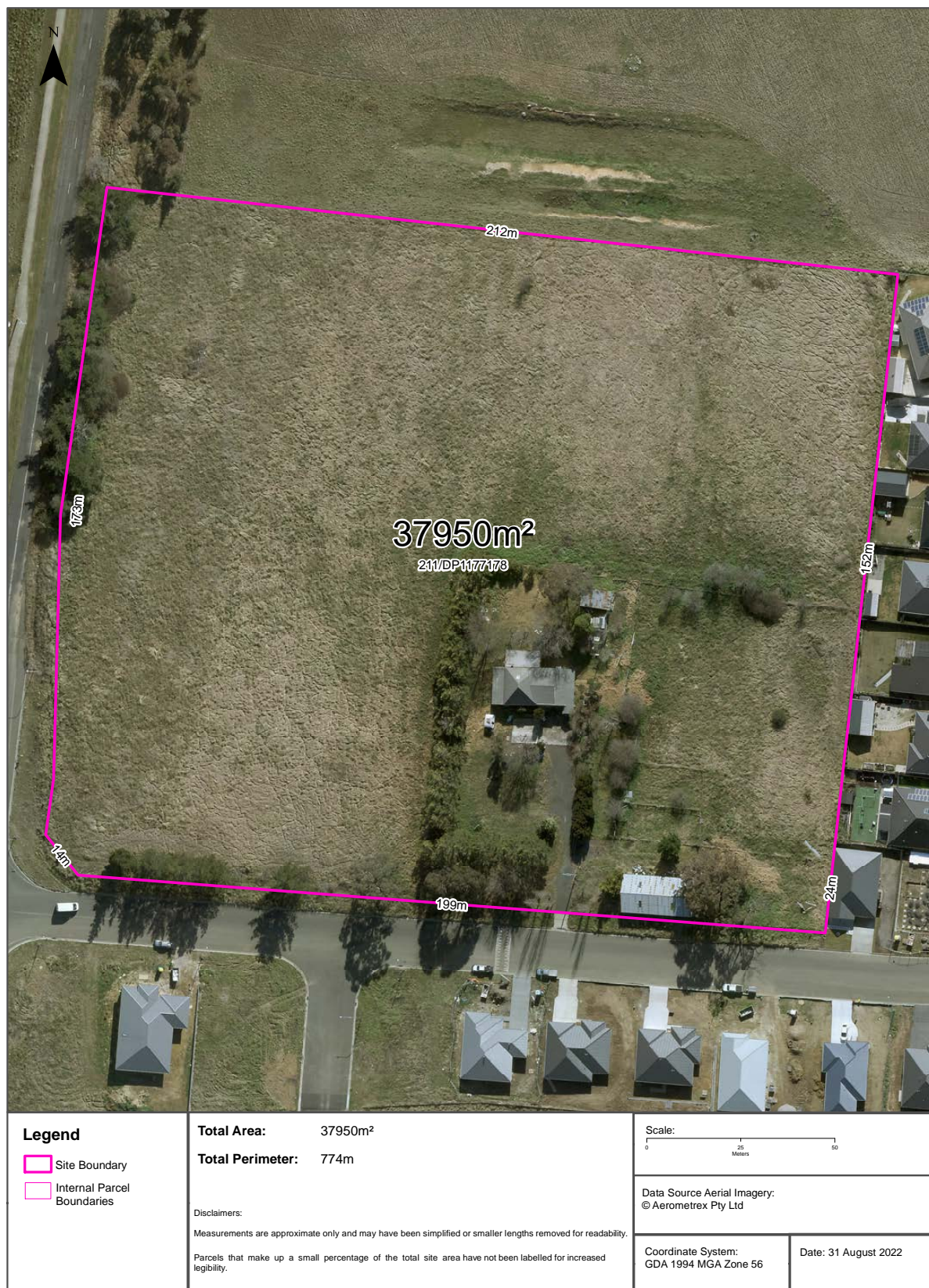
Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Customer Service - Spatial Services	17/06/2022	17/06/2022	Quarterly	-	-	-	-
Topographic Data	NSW Department of Customer Service - Spatial Services	22/08/2022	22/08/2022	Annually	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	01/08/2022	07/07/2022	Monthly	1000m	0	0	0
Contaminated Land Records of Notice	Environment Protection Authority	19/08/2022	19/08/2022	Monthly	1000m	0	0	0
Former Gasworks	Environment Protection Authority	03/06/2022	14/07/2021	Quarterly	1000m	0	0	0
National Waste Management Facilities Database	Geoscience Australia	26/05/2022	07/03/2017	Annually	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	23/08/2022	13/07/2012	Annually	1000m	0	0	0
EPA PFAS Investigation Program	Environment Protection Authority	01/08/2022	14/07/2021	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	01/08/2022	01/08/2022	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	01/08/2022	01/08/2022	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	01/08/2022	01/08/2022	Monthly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	06/06/2022	06/06/2022	Quarterly	2000m	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	16/02/2022	13/12/2018	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	19/08/2022	19/08/2022	Monthly	1000m	0	0	2
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	19/08/2022	19/08/2022	Monthly	1000m	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	19/08/2022	19/08/2022	Monthly	1000m	0	3	3
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150m	0	0	0
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150m	-	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500m	0	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500m	-	0	0
Points of Interest	NSW Department of Customer Service - Spatial Services	18/08/2022	18/08/2022	Quarterly	1000m	1	1	7
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	18/08/2022	18/08/2022	Quarterly	1000m	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	18/08/2022	18/08/2022	Quarterly	1000m	0	0	4
Major Easements	NSW Department of Customer Service - Spatial Services	29/08/2022	29/08/2022	Quarterly	1000m	0	0	3
State Forest	Forestry Corporation of NSW	16/08/2022	14/08/2022	Annually	1000m	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	10/02/2022	31/12/2021	Annually	1000m	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	29/08/2022	19/08/2019	Annually	1000m	1	1	1
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Planning, Industry and Environment	28/03/2022	23/02/2018	Annually	1000m	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	24/01/2022	24/01/2022	Annually	2000m	0	0	65

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
NSW Seamless Geology Single Layer: Rock Units	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	1	1	3
NSW Seamless Geology – Single Layer: Trendlines	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	0
NSW Seamless Geology – Single Layer: Geological Boundaries and Faults	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	1	1	4
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000m	1	1	2
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	19/05/2017	17/02/2011	As required	1000m	1	1	1
Soil Landscapes of Central and Eastern NSW	NSW Department of Planning, Industry and Environment	18/08/2022	27/07/2020	Annually	1000m	1	1	2
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	26/05/2022	06/05/2022	Monthly	500m	0	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000m	1	1	1
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000m	0	0	0
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	19/08/2021	05/08/2021	Quarterly	1000m	0	0	0
Current Mining Titles	NSW Department of Industry	01/08/2022	01/08/2022	Monthly	1000m	0	0	1
Mining Title Applications	NSW Department of Industry	01/08/2022	01/08/2022	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Industry	01/08/2022	01/08/2022	Monthly	1000m	4	4	9
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	15/11/2021	07/12/2018	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	15/11/2021	05/11/2021	Monthly	1000m	1	3	26
Commonwealth Heritage List	Australian Government Department of the Agriculture, Water and the Environment	03/06/2022	13/04/2022	Annually	1000m	0	0	0
National Heritage List	Australian Government Department of the Agriculture, Water and the Environment	03/06/2022	13/04/2022	Annually	1000m	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	17/08/2022	11/02/2022	Quarterly	1000m	0	0	0
Environmental Planning Instrument Local Heritage	NSW Department of Planning, Industry and Environment	26/05/2022	01/04/2022	Monthly	1000m	0	0	2
Bush Fire Prone Land	NSW Rural Fire Service	29/08/2022	08/08/2022	Weekly	1000m	0	0	0
Central Tablelands Vegetation	NSW Office of Environment & Heritage	21/11/2015	31/10/2010	Unknown	1000m	0	0	3
Ramsar Wetlands of Australia	Australian Government Department of Agriculture, Water and the Environment	28/03/2022	19/03/2020	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	14/08/2017	15/05/2017	Annually	1000m	0	0	0
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000m	0	0	0
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	29/08/2022	29/08/2022	Weekly	10000m	-	-	-

Site Diagram

274 Leeds Parade, Orange, NSW 2800



Contaminated Land

274 Leeds Parade, Orange, NSW 2800

List of NSW contaminated sites notified to EPA

Records from the NSW EPA Contaminated Land list within the dataset buffer:

Map Id	Site	Address	Suburb	Activity	Management Class	Status	Location Confidence	Dist	Direction
N/A	No records in buffer								

The values within the EPA site management class in the table above, are given more detailed explanations in the table below:

EPA site management class	Explanation
Contamination being managed via the planning process (EP&A Act)	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the Environmental Planning and Assessment Act 1979 (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment.
Contamination currently regulated under CLM Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's Contaminated Land Public Record of Notices.
Contamination currently regulated under POEO Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. Management of the contamination is regulated under the Protection of the Environment Operations Act 1997 (POEO Act). The EPA's regulatory actions under the POEO Act are available on the POEO public register.
Contamination formerly regulated under the CLM Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). The contamination was addressed under the CLM Act.
Contamination formerly regulated under the POEO Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed under the Protection of the Environment Operations Act 1997 (POEO Act).
Contamination was addressed via the planning process (EP&A Act)	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the Environmental Planning and Assessment Act 1979 (EP&A Act).
Ongoing maintenance required to manage residual contamination (CLM Act)	The EPA has determined that ongoing maintenance, under the Contaminated Land Management Act 1997 (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's Contaminated Land Public Record of Notices.
Regulation being finalised	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997. A regulatory approach is being finalised.
Regulation under the CLM Act not required	The EPA has completed an assessment of the contamination and decided that regulation under the Contaminated Land Management Act 1997 is not required.
Under assessment	The contamination is being assessed by the EPA to determine whether regulation is required. The EPA may require further information to complete the assessment. For example, the completion of management actions regulated under the planning process or Protection of the Environment Operations Act 1997. Alternatively, the EPA may require information via a notice issued under s77 of the Contaminated Land Management Act 1997 or issue a Preliminary Investigation Order.

NSW EPA Contaminated Land List Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Contaminated Land

274 Leeds Parade, Orange, NSW 2800

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

Map Id	Name	Address	Suburb	Notices	Area No	Location Confidence	Distance	Direction
N/A	No records in buffer							

Contaminated Land Records of Notice Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Terms of use and disclaimer for Contaminated Land: Record of Notices, please visit

<http://www.epa.nsw.gov.au/clm/clmdisclaimer.htm>

Former Gasworks

Former Gasworks within the dataset buffer:

Map Id	Location	Council	Further Info	Location Confidence	Distance	Direction
N/A	No records in buffer					

Former Gasworks Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Waste Management & Liquid Fuel Facilities

274 Leeds Parade, Orange, NSW 2800

National Waste Management Site Database

Sites on the National Waste Management Site Database within the dataset buffer:

Site Id	Owner	Name	Address	Suburb	Class	Landfill	Reprocess	Transfer	Comments	Loc Conf	Dist	Direction
N/A	No records in buffer											

Waste Management Facilities Data Source: Geoscience Australia

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National Liquid Fuel Facilities

National Liquid Fuel Facilities within the dataset buffer:

Map Id	Owner	Name	Address	Suburb	Class	Operational Status	Operator	Revision Date	Loc Conf	Dist	Direction
N/A	No records in buffer										

National Liquid Fuel Facilities Data Source: Geoscience Australia

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PFAS Investigation & Management Programs

274 Leeds Parade, Orange, NSW 2800

EPA PFAS Investigation Program

Sites that are part of the EPA PFAS investigation program, within the dataset buffer:

Map ID	Site	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

EPA PFAS Investigation Program: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Defence PFAS Investigation Program

Sites being investigated by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Investigation Program Data Custodian: Department of Defence, Australian Government

Defence PFAS Management Program

Sites being managed by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Management Program Data Custodian: Department of Defence, Australian Government

Airservices Australia National PFAS Management Program

Sites being investigated or managed by Airservices Australia for PFAS contamination within the dataset buffer:

Map ID	Site Name	Impacts	Loc Conf	Dist	Dir
N/A	No records in buffer				

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites

274 Leeds Parade, Orange, NSW 2800

Defence 3 Year Regional Contamination Investigation Program

Sites which have been assessed as part of the Defence 3 Year Regional Contamination Investigation Program within the dataset buffer:

Property ID	Base Name	Address	Known Contamination	Loc Conf	Dist	Dir
N/A	No records in buffer					

Defence 3 Year Regional Contamination Investigation Program, Data Custodian: Department of Defence, Australian Government

EPA Other Sites with Contamination Issues

274 Leeds Parade, Orange, NSW 2800

EPA Other Sites with Contamination Issues

This dataset contains other sites identified on the EPA website as having contamination issues. This dataset currently includes:

- James Hardie asbestos manufacturing and waste disposal sites
- Radiological investigation sites in Hunter's Hill
- Pasminco Lead Abatement Strategy Area

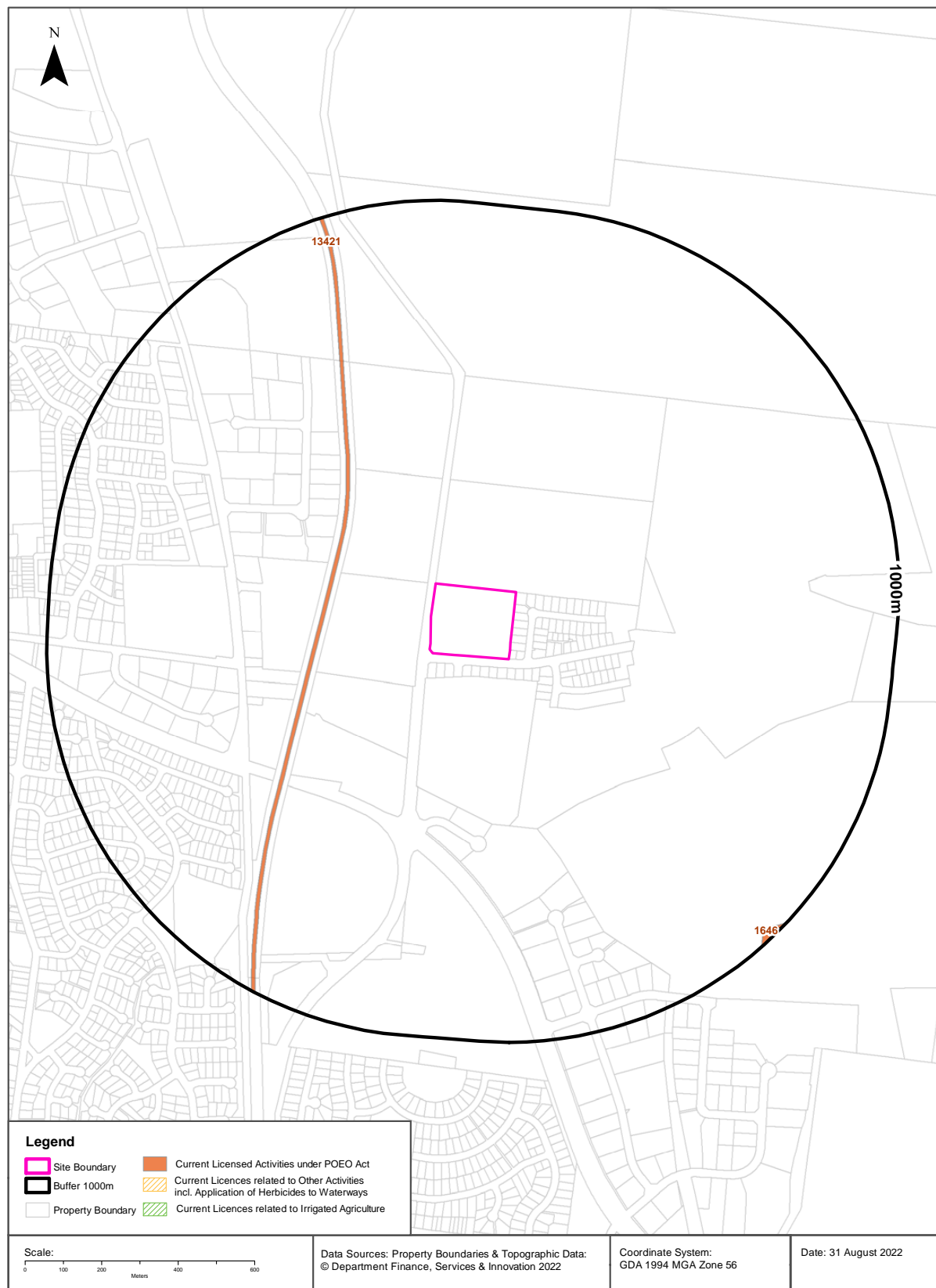
Sites within the dataset buffer:

Site Id	Site Name	Site Address	Dataset	Comments	Location Confidence	Distance	Direction
N/A	No records in buffer						

EPA Other Sites with Contamination Issues: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Current EPA Licensed Activities

274 Leeds Parade, Orange, NSW 2800



EPA Activities

274 Leeds Parade, Orange, NSW 2800

Licensed Activities under the POEO Act 1997

Licensed activities under the Protection of the Environment Operations Act 1997, within the dataset buffer:

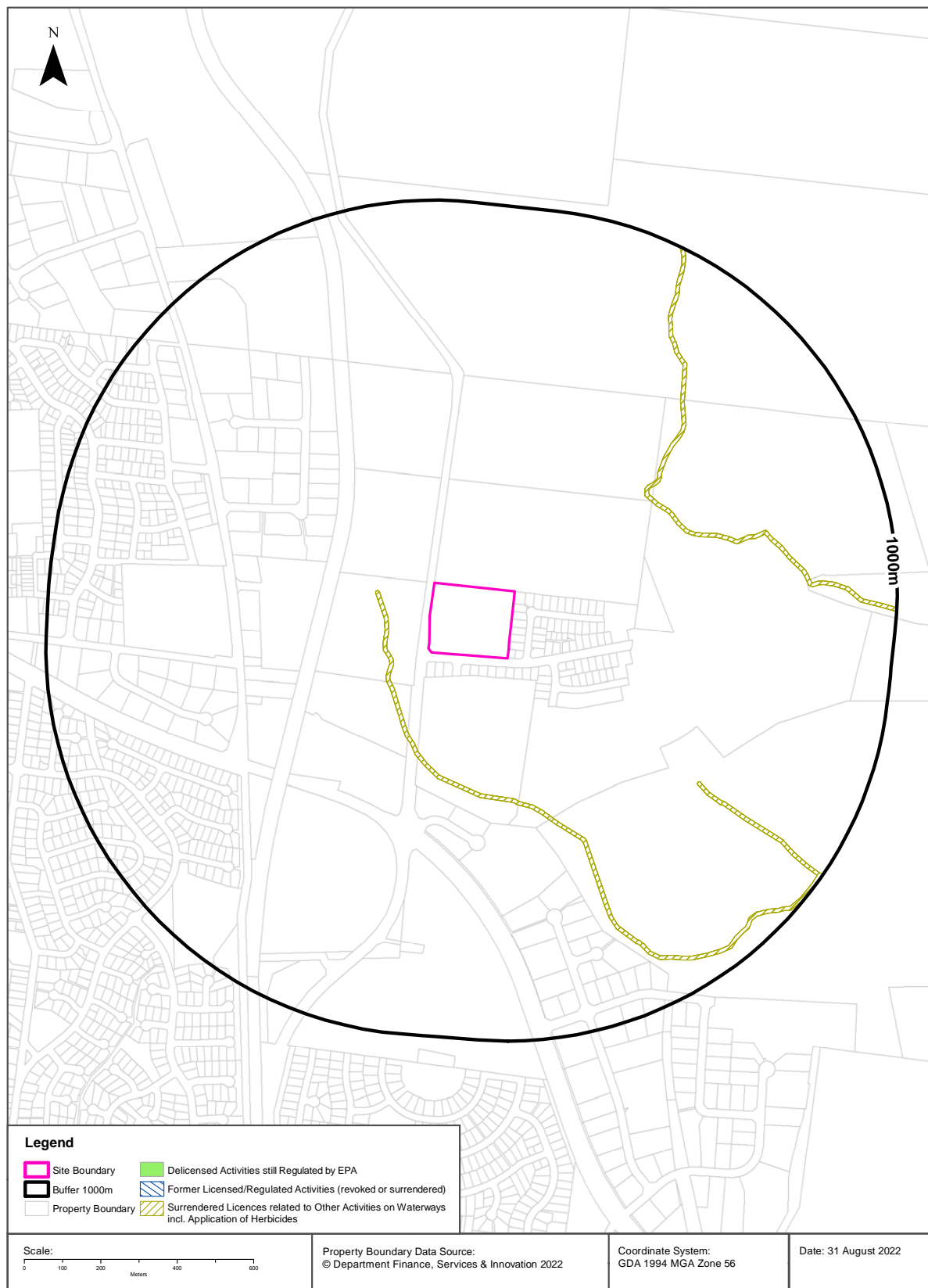
EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
13421	UGL REGIONAL LINX PTY LTD		COUNTRY REGIONAL NETWORK, ORANGE, NSW 2800		Railway systems activities	Network of Features	260m	West
1646	ORANGE CITY COUNCIL	ORANGE SEWAGE TREATMENT SYSTEM	PHILLIP STREET	ORANGE	Sewage treatment processing by small plants	Premise Match	968m	South East

POEO Licence Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Delicensed & Former Licensed EPA Activities

274 Leeds Parade, Orange, NSW 2800



EPA Activities

274 Leeds Parade, Orange, NSW 2800

Delicensed Activities still regulated by the EPA

Delicensed activities still regulated by the EPA, within the dataset buffer:

Licence No	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
N/A	No records in buffer							

Delicensed Activities Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Former Licensed Activities under the POEO Act 1997, now revoked or surrendered

Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	96m	South East
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered	07/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	96m	South East
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered	09/11/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	96m	South East

Former Licensed Activities Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Historical Business Directories

274 Leeds Parade, Orange, NSW 2800

Business Directory Records 1950-1991 Premise or Road Intersection Matches

Universal Business Directory records from years 1991, 1982, 1970, 1961 & 1950, mapped to a premise or road intersection within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
N/A	No records in buffer						

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Business Directory Records 1950-1991 Road or Area Matches

Universal Business Directory records from years 1991, 1982, 1970, 1961 & 1950, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
N/A	No records in buffer					

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Historical Business Directories

274 Leeds Parade, Orange, NSW 2800

Dry Cleaners, Motor Garages & Service Stations Premise or Road Intersection Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a premise or road intersection, within the dataset buffer.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
N/A	No records in buffer						

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Dry Cleaners, Motor Garages & Service Stations Road or Area Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
N/A	No records in buffer					

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Aerial Imagery 2022

274 Leeds Parade, Orange, NSW 2800



Aerial Imagery 2016

274 Leeds Parade, Orange, NSW 2800



Aerial Imagery 2012

274 Leeds Parade, Orange, NSW 2800



Aerial Imagery 2003

274 Leeds Parade, Orange, NSW 2800



Aerial Imagery 1998

274 Leeds Parade, Orange, NSW 2800



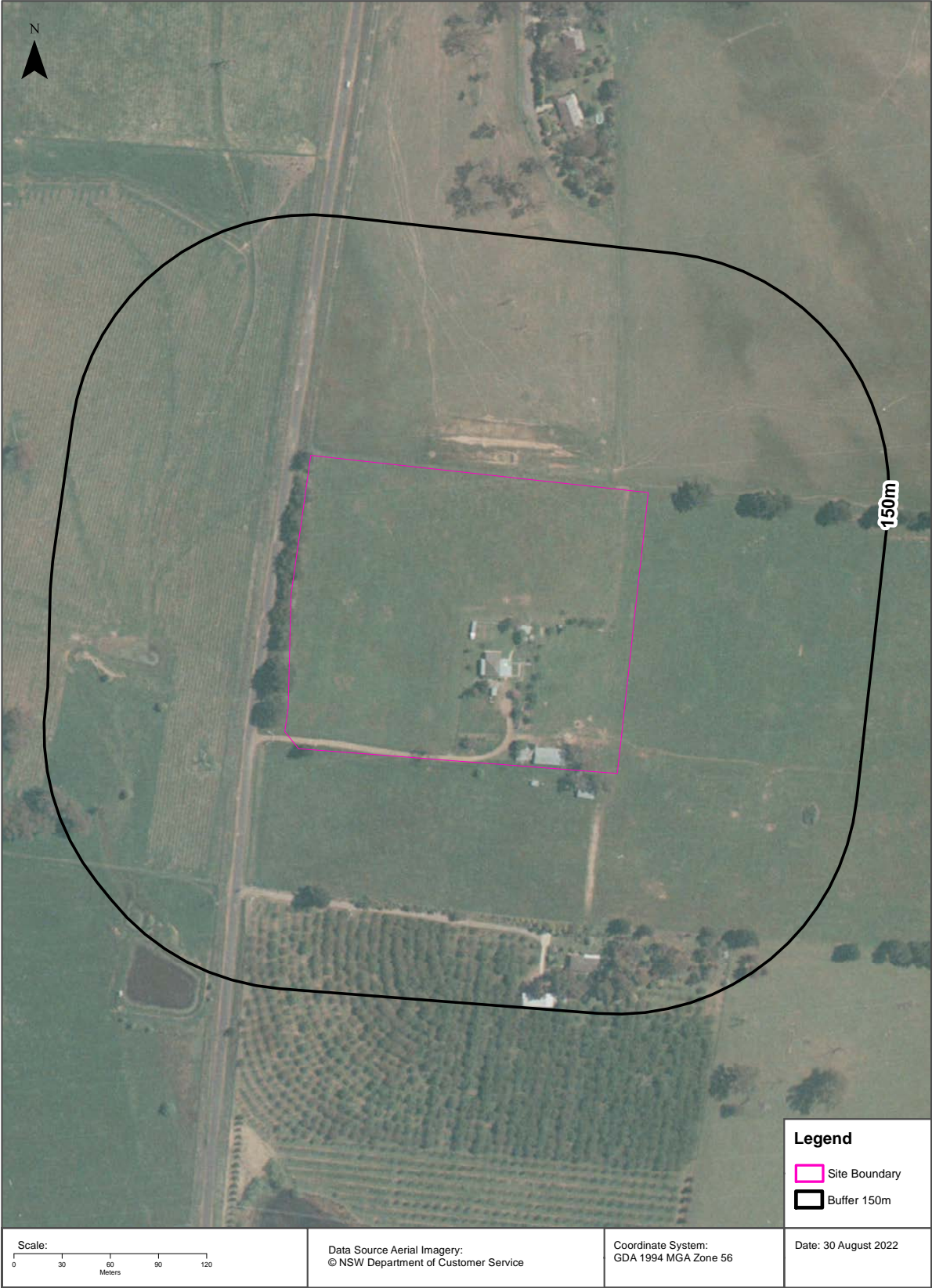
Aerial Imagery 1993

274 Leeds Parade, Orange, NSW 2800



Aerial Imagery 1989

274 Leeds Parade, Orange, NSW 2800



Aerial Imagery 1982

274 Leeds Parade, Orange, NSW 2800



Aerial Imagery 1973

274 Leeds Parade, Orange, NSW 2800



Aerial Imagery 1964

274 Leeds Parade, Orange, NSW 2800



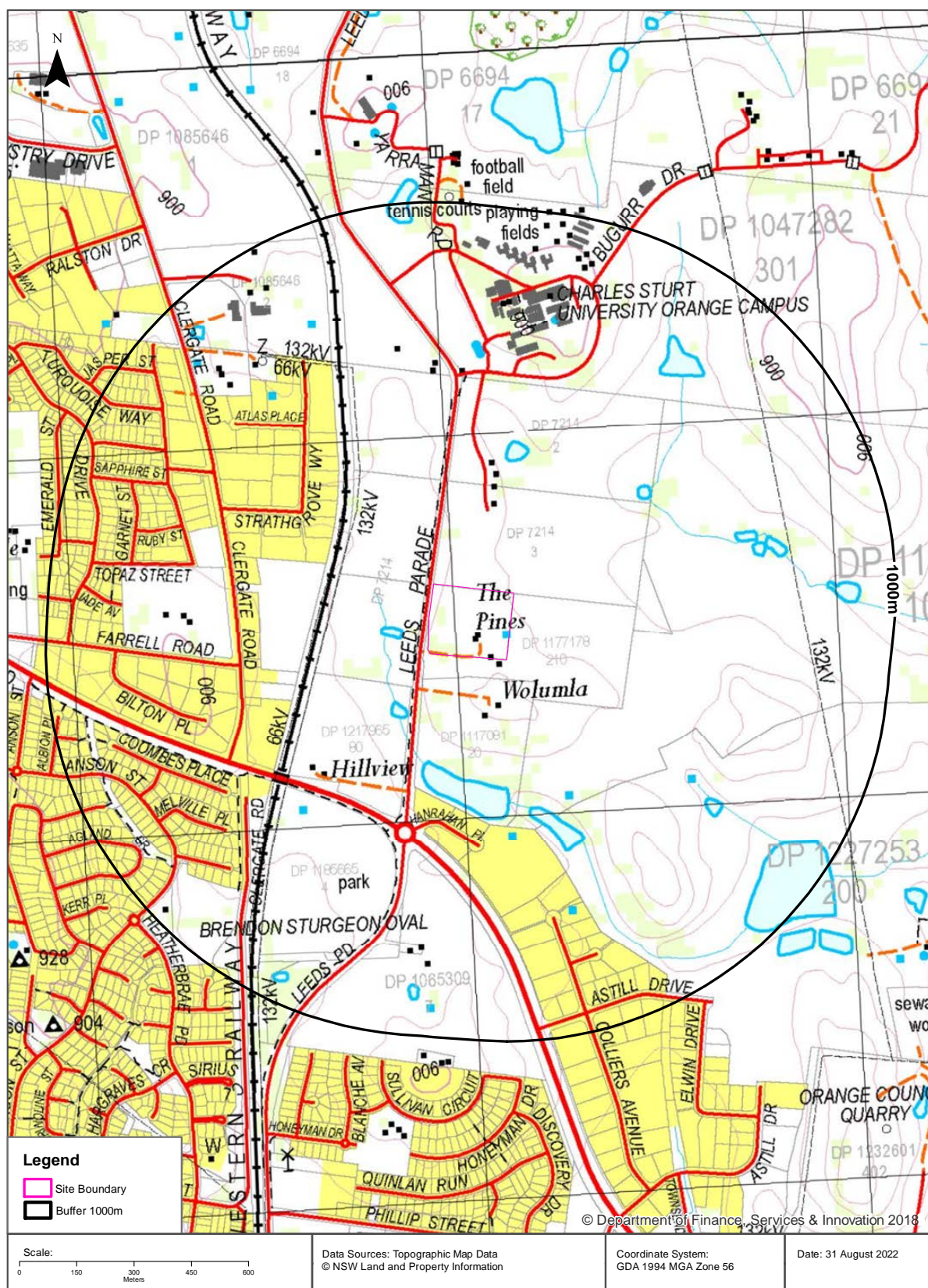
Aerial Imagery 1954

274 Leeds Parade, Orange, NSW 2800



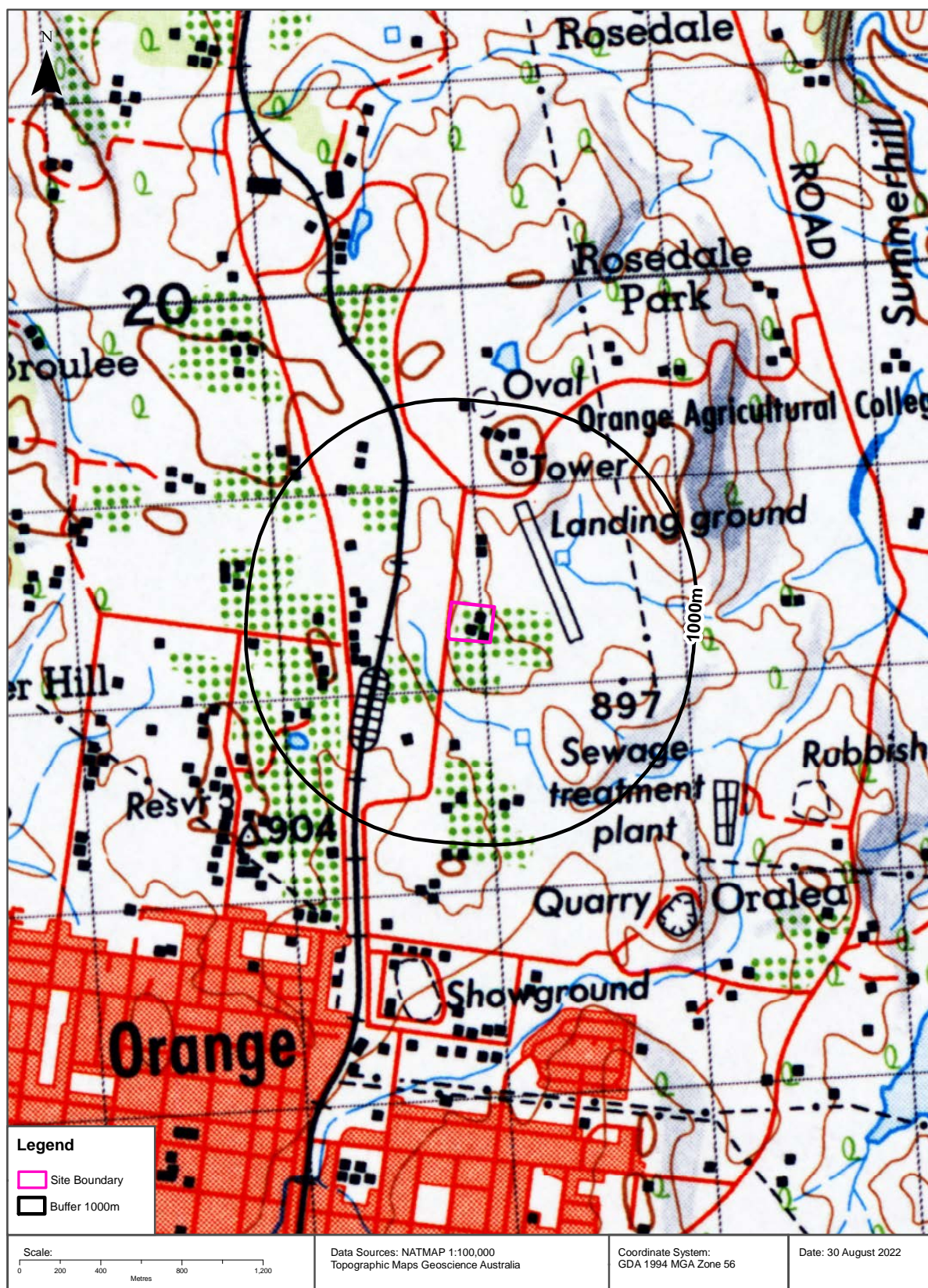
Topographic Map 2015

274 Leeds Parade, Orange, NSW 2800



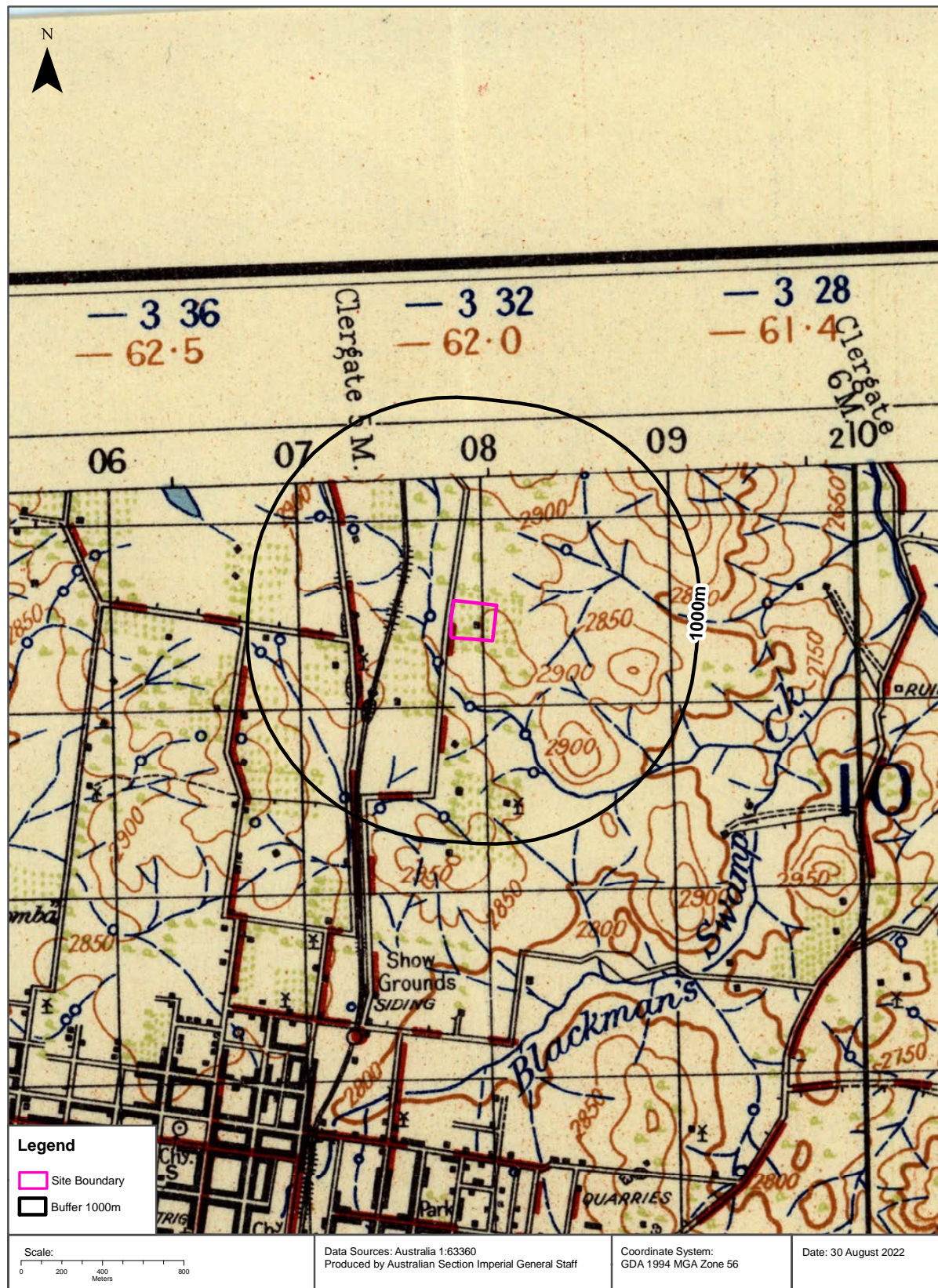
Historical Map 1975

274 Leeds Parade, Orange, NSW 2800



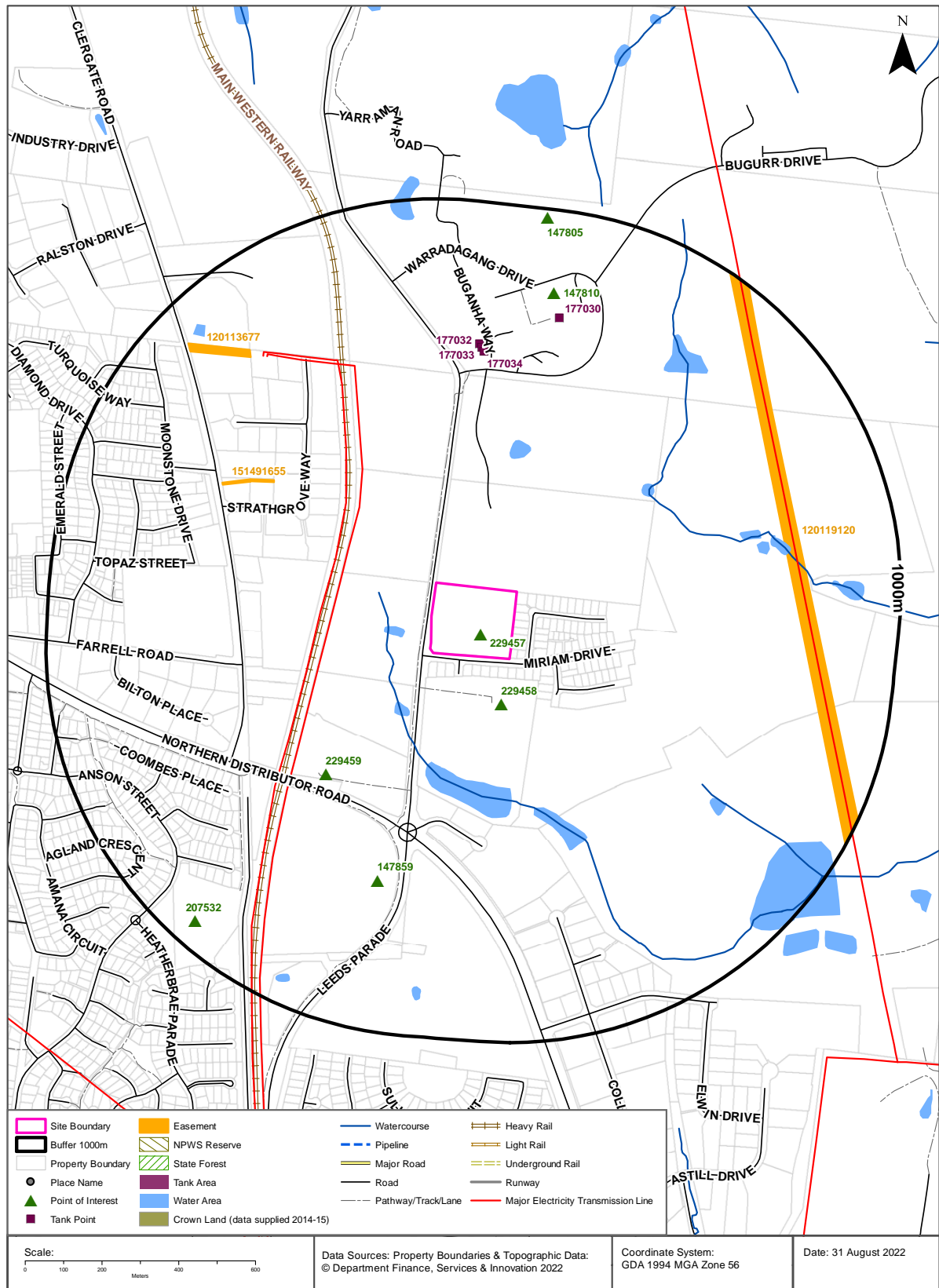
Historical Map c.1938

274 Leeds Parade, Orange, NSW 2800



Topographic Features

274 Leeds Parade, Orange, NSW 2800



Topographic Features

274 Leeds Parade, Orange, NSW 2800

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
229457	Homestead	THE PINES	0m	On-site
229458	Homestead	WOLUMLA	120m	South
229459	Homestead	HILLVIEW	422m	South West
147859	Park	Park	611m	South
147810	University	CHARLES STURT UNIVERSITY ORANGE CAMPUS	783m	North
207532	Sports Field	BRENDON STURGEON OVAL	934m	South West
147805	Sports Field	PLAYING FIELDS	976m	North

Topographic Data Source: © Land and Property Information (2015)

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Topographic Features

274 Leeds Parade, Orange, NSW 2800

Tanks (Areas)

What are the Tank Areas located within the dataset buffer?

Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
N/A	No records in buffer					

Tanks (Points)

What are the Tank Points located within the dataset buffer?

Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
177034	Water	Operational		24/10/2012	612m	North
177033	Water	Operational		24/10/2012	622m	North
177032	Water	Operational		24/10/2012	631m	North
177030	Water	Operational		24/10/2012	721m	North

Tanks Data Source: © Land and Property Information (2015)

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Major Easements

What Major Easements exist within the dataset buffer?

Note. Easements provided by LPI are not at the detail of local governments. They are limited to major easements such as Right of Carriageway, Electrical Lines (66kVa etc.), Easement to drain water & Significant subterranean pipelines (gas, water etc.).

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
151491655	Primary	Right of way	6m	497m	North West
120119120	Primary	Undefined		709m	East
120113677	Primary	Undefined		760m	North West

Easements Data Source: © Land and Property Information (2015)

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Topographic Features

274 Leeds Parade, Orange, NSW 2800

State Forest

What State Forest exist within the dataset buffer?

State Forest Number	State Forest Name	Distance	Direction
N/A	No records in buffer		

State Forest Data Source: © NSW Department of Finance, Services & Innovation (2018)

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National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the dataset buffer?

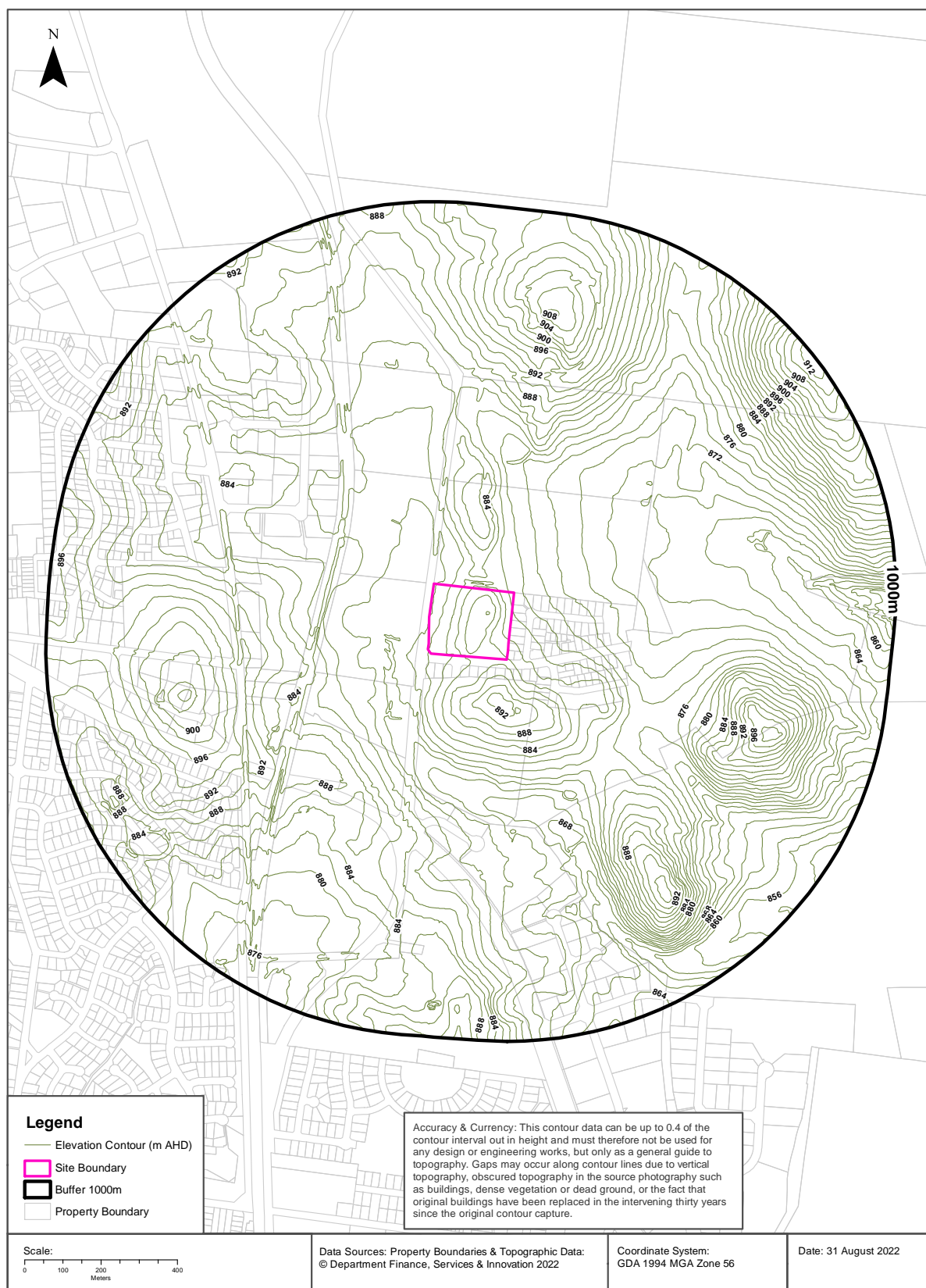
Reserve Number	Reserve Type	Reserve Name	Gazetted Date	Distance	Direction
N/A	No records in buffer				

NPWS Data Source: © NSW Department of Finance, Services & Innovation (2018)

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Elevation Contours (m AHD)

274 Leeds Parade, Orange, NSW 2800



Hydrogeology & Groundwater

274 Leeds Parade, Orange, NSW 2800

Hydrogeology

Description of aquifers within the dataset buffer:

Description	Distance	Direction
Fractured or fissured, extensive aquifers of low to moderate productivity	0m	On-site

Hydrogeology Map of Australia : Commonwealth of Australia (Geoscience Australia)
Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018

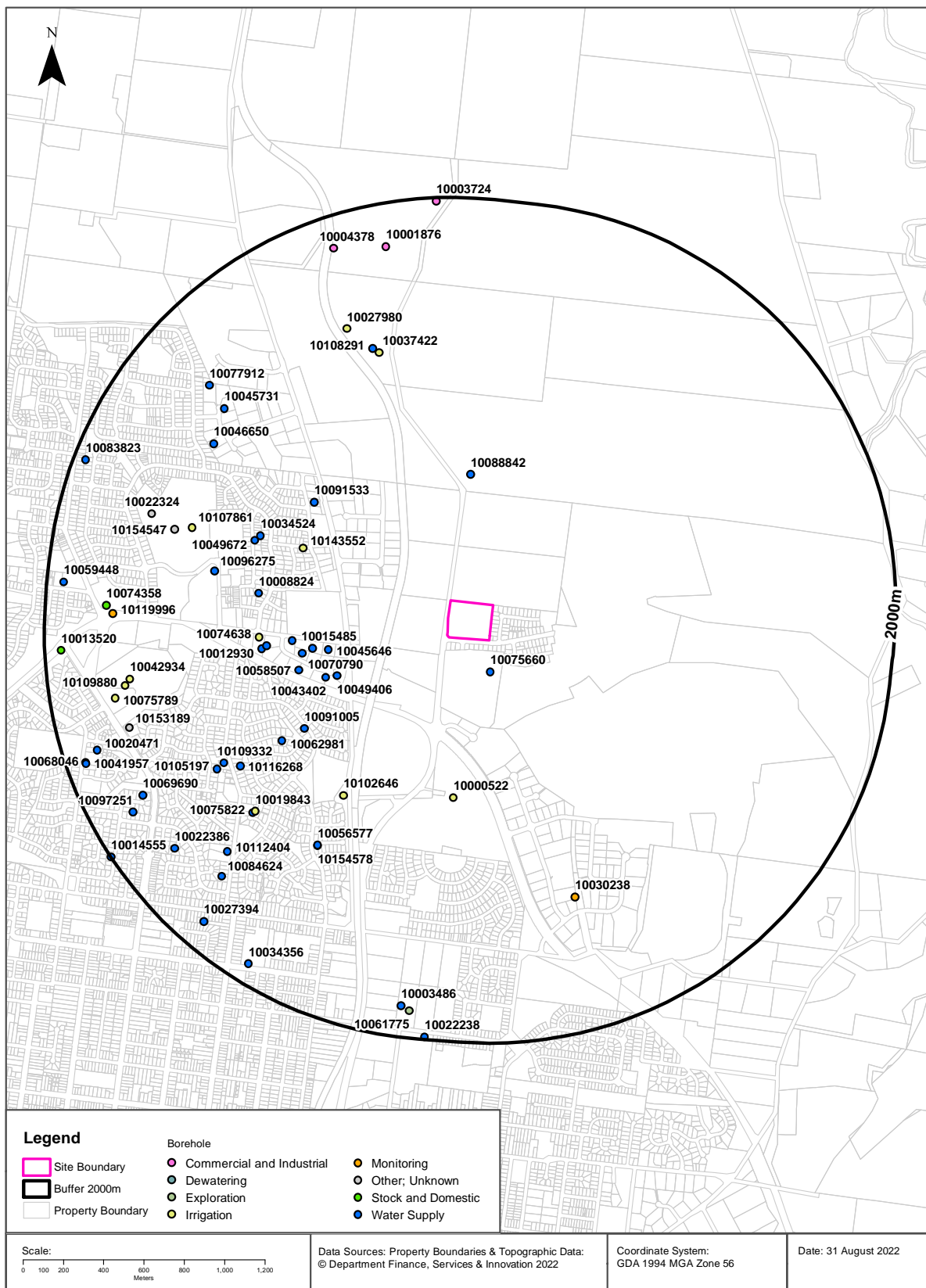
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

Prohibition Area No.	Prohibition	Distance	Direction
N/A	No records in buffer		

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018 Data Source : NSW Department of Primary Industries

Groundwater Boreholes

274 Leeds Parade, Orange, NSW 2800



Hydrogeology & Groundwater

274 Leeds Parade, Orange, NSW 2800

Groundwater Boreholes

Boreholes within the dataset buffer:

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10075660	GW048167	Water Supply	Unknown	01/01/1978	90.60		AHD	0-500 ppm			158m	South
10049406	GW801931	Water Supply	Functioning	26/08/2003	68.00		AHD		1.011		583m	South West
10045646	GW805009	Water Supply	Functioning	06/11/2012	40.00		AHD		1.000		593m	West
10088842	GW021512	Water Supply	Functioning	01/01/1964	21.90		AHD		1.010	4.90	631m	North
10043402	GW802346	Water Supply	Functioning	13/12/2004	54.50		AHD		0.750	24.00	637m	West
10015485	GW800342	Water Supply	Functioning	24/04/1997	48.00		AHD				671m	West
10070790	GW804940	Water Supply	Functioning	15/11/2004	36.00		AHD		1.000	12.00	726m	West
10058507	GW800334	Water Supply	Functioning	26/03/1997	40.00		AHD	Good	0.370	17.00	758m	West
10059978	GW805001	Water Supply	Functioning	07/11/2012	40.00		AHD		0.200		768m	West
10143552	GW016004	Irrigation	Unknown	01/10/1960	24.10		AHD		1.140	7.30	776m	North West
10000522	GW031666	Irrigation	Unknown	01/06/1968	82.30		AHD				793m	South
10091533	GW805430	Water Supply	Functioning	12/08/2014	24.00		AHD		3.000	4.00	832m	North West
10091005	GW016019	Water Supply	Unknown	01/01/1957	24.40		AHD				847m	South West
10091395	GW802140	Water Supply	Functioning	20/01/2003	39.00		AHD		1.011	14.00	897m	West
10012930	GW802674	Water Supply	Functioning	25/03/2003	48.00		AHD		0.821		923m	West
10074638	GW031667	Irrigation	Functioning	01/02/1968	21.50		AHD	Hard	0.380	17.70	932m	West
10102646	GW016015	Irrigation	Unknown	01/01/1940	16.20		AHD				944m	South West
10008824	GW802869	Water Supply	Functioning	31/05/2004	28.00		AHD		0.800	22.00	947m	West
10062981	GW802388	Water Supply	Functioning	11/04/2005	30.00		AHD		1.800	12.00	972m	South West
10034524	GW803474	Water Supply	Functioning	15/12/2007	38.00		AHD		0.834	15.00	996m	West
10049672	GW804222	Water Supply	Functioning	19/01/2010	38.00		AHD	Good	1.260	15.00	1014m	West
10096275	GW801946	Water Supply	Functioning	04/09/2003	38.00		AHD		0.563	14.00	1180m	West
10116268	GW805483	Water Supply	Abandoned	15/12/2014	150.00		AHD		0.018		1215m	South West
10056577	GW805793	Water Supply	Functioning	18/03/2017	60.00		AHD			0.00	1221m	South West
10154578	GW805801	Water Supply	Functioning	18/03/2017	60.00		AHD				1221m	South West
10109332	GW802727	Water Supply	Abandoned	15/12/2003	114.00		AHD				1277m	South West
10037422	GW021545	Irrigation	Unknown	01/12/1963	19.70		AHD				1278m	North
10019843	GW016016	Irrigation	Unknown	01/01/1920	25.30		AHD	Good			1292m	South West
10075822	GW805365	Water Supply	Functioning	03/03/2013	58.00		AHD		0.500		1306m	South West
10108291	GW800811	Water Supply	Functioning	10/10/1994	64.00		AHD	Good	0.880		1307m	North

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10105197	GW022336	Water Supply	Unknown	01/04/1964	21.30		AHD				1322m	South West
10107861	GW026040	Irrigation	Unknown	01/04/1966	39.60		AHD		0.380	12.20	1330m	West
10030238	GW805225	Monitoring	Functioning	16/07/2013	42.00		AHD		1.000	6.00	1344m	South
10046650	GW803005	Water Supply	Functioning	17/08/2005	40.00		AHD	Fresh	1.500	24.00	1408m	North West
10154547	GW805683	Other	Functioning	08/02/2016	126.00		AHD				1414m	West
10027980	GW021554	Irrigation	Unknown	01/03/1964	20.70		AHD				1441m	North West
10045731	GW802293	Water Supply	Functioning	14/04/2004	61.00		AHD		1.375	35.00	1469m	North West
10112404	GW804663	Water Supply	Functioning	10/02/2010	57.00		AHD		0.450	9.00	1530m	South West
10022324	GW801669	Other	Functioning	06/12/2002	81.00		AHD		0.820		1542m	West
10042934	GW013781	Irrigation	Unknown	01/10/1958	28.30		AHD				1588m	West
10077912	GW800675	Water Supply	Functioning	25/03/1999	65.00		AHD		1.800	32.00	1602m	North West
10109880	GW015211	Irrigation	Unknown	01/04/1957	17.40		AHD				1617m	West
10084624	GW802974	Water Supply	Functioning	11/04/2005	18.00		AHD		2.000	5.00	1637m	South West
10153189	GW807116	Unknown	Functioning	16/06/2016	41.00		AHD				1642m	West
10119996	GW090102	Monitoring	Functional	17/05/2011	54.00	894.18	AHD			18.37	1662m	West
10075789	GW006955	Irrigation	Unknown	01/08/1958	36.60		AHD				1677m	West
10074358	GW019049	Stock and Domestic	Unknown	01/02/1961	18.60		AHD	Soft			1695m	West
10069690	GW802155	Water Supply	Functioning	30/01/2004	36.00		AHD		0.688	4.00	1707m	South West
10022386	GW804973	Water Supply	Functioning	15/12/2012	54.00		AHD		0.600	10.00	1718m	South West
10001876	GW015886	Commercial and Industrial	Unknown	01/12/1946	20.10		AHD				1784m	North
10097251	GW801916	Water Supply	Functioning	01/08/2003	31.00		AHD		2.000	10.00	1790m	South West
10020471	GW804266	Water Supply	Functioning	22/05/2009	46.00		AHD		1.263	10.00	1828m	West
10004378	GW015885	Commercial and Industrial	Unknown	01/02/1944	19.40		AHD				1839m	North
10003486	GW803930	Water Supply	Unknown	23/09/2008	65.00		AHD		12.300	6.00	1845m	South
10027394	GW802824	Water Supply	Functioning	26/05/2004	42.00		AHD		0.250	15.00	1863m	South West
10061775	GW034202	Exploration	Proposed	01/05/1968	45.70		AHD	Fresh			1865m	South
10068046	GW804223	Water Supply	Functioning	26/04/2010	50.00		AHD	Good	1.220	7.00	1901m	West
10034356	GW804470	Water Supply	Functioning	05/07/2010	30.00		AHD		1.900	12.00	1902m	South West
10041957	GW804280	Water Supply	Functioning	12/05/2010	38.50		AHD		12.200	7.00	1902m	West
10059448	GW070889	Water Supply	Functioning	30/11/1992	40.00	885.00	AHD		2.530	10.00	1914m	West
10013520	GW066747	Stock and Domestic	Functioning	04/01/1991	39.08	883.50	AHD	fresh	1.125	14.15	1917m	West
10083823	GW803662	Water Supply	Functioning	09/05/2008	48.00		AHD		0.631		1939m	North West
10003724	GW019062	Commercial and Industrial	Unknown	01/05/1961	8.20		AHD	Good			1981m	North
10022238	GW804213	Water Supply	Functioning	17/12/2009	76.00		AHD		14.000	10.00	1989m	South
10014555	GW803912	Water Supply	Functioning	26/10/2005	54.00		AHD		0.758		2000m	South West

Borehole Data Source: Bureau of Meteorology; Water NSW. Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

Hydrogeology & Groundwater

274 Leeds Parade, Orange, NSW 2800

Driller's Logs

Drill log data relevant to the boreholes within the dataset buffer:

NGIS Bore ID	Drillers Log	Distance	Direction
10075660	0.00m-0.30m Topsoil 0.30m-2.40m Clay Coloured 2.40m-9.80m Rock Grey Soft Water Supply 9.80m-36.60m Serpentine Green 36.60m-90.60m Granite Coarse	158m	South
10049406	0.00m-0.50m Topsoil 0.50m-7.00m Clay Brown 7.00m-27.00m Shale Coloured 27.00m-32.00m Shale Brown 32.00m-68.00m Basalt	583m	South West
10045646	0.00m-0.30m Topsoil 0.30m-3.00m Clay 3.00m-27.00m Shale 27.00m-40.00m Basalt	593m	West
10088842	0.00m-6.71m Earth 6.71m-21.95m Quartz Seams Rock Soft Water Supply	631m	North
10043402	0.00m-2.00m Topsoil, red 2.00m-12.00m Shale, yellow 12.00m-12.50m Basalt 12.50m-20.00m Shale, yellow & Broken Basalt 20.00m-54.20m Basalt	637m	West
10015485	0.00m-1.00m Red Clay 1.00m-17.00m Orange Clay with Quartz Bands 17.00m-21.00m Blue Basalt 21.00m-24.50m Orange Clay 24.50m-48.00m Blue Basalt	671m	West
10070790	0.00m-0.30m Topsoil 0.30m-6.00m Sandy Clay, tight, brown 6.00m-13.00m Basalt, decomposed 13.00m-27.00m Basalt, hard, blue 27.00m-36.00m Shale, fractured & quartz	726m	West
10058507	0.00m-1.00m Red Clay 1.00m-4.00m Shale With Red Clay 4.00m-8.00m Basalt With Red Clay 8.00m-40.00m Basalt Blue	758m	West
10059978	0.00m-0.30m Topsoil 0.30m-2.00m Clay 2.00m-23.00m Shale 23.00m-40.00m Basalt	768m	West
10143552	0.00m-0.30m Driller 0.30m-15.24m Clay 15.24m-23.47m Slate Water Supply 23.47m-24.08m Basalt	776m	North West
10000522	0.00m-1.83m Topsoil 1.83m-6.10m Shale 6.10m-13.11m Shale Green 13.11m-18.29m Basalt Decomposed Clay 18.29m-43.59m Basalt Water Supply 43.59m-56.39m Serpentine 56.39m-82.30m Basalt Green	793m	South
10091533	0.00m-2.00m Fill; & clay, brown 2.00m-5.00m Clay; yellow 5.00m-16.00m Shale; sandy 16.00m-24.00m Basalt	832m	North West
10091395	0.00m-0.50m Topsoil 0.50m-1.00m Clay 1.00m-15.00m Shale 15.00m-20.00m Basalt, soft 20.00m-39.00m Basalt, hard	897m	West
10012930	0.00m-1.00m Topsoil 1.00m-10.00m Shale, brown 10.00m-26.00m Shale, grey 26.00m-48.00m Basalt	923m	West

NGIS Bore ID	Drillers Log	Distance	Direction
10074638	0.00m-7.62m Clay 7.62m-18.29m Shale 18.29m-21.49m Gravel Hard Formation/strata Water Supply	932m	West
10008824	0.00m-0.50m Topsoil, red 0.50m-20.00m Clay, yellow 20.00m-22.00m Weathered Volcanic, grey 22.00m-28.00m Andesite, fresh, fine, grey	947m	West
10062981	0.00m-3.00m Clay, dark brown, puggy 3.00m-6.00m Clay, light brown 6.00m-12.00m Clay, light brown & Decomposed Basalt 12.00m-14.00m Decomposed basalt 14.00m-30.00m Basalt, blue & Quartz layers	972m	South West
10034524	0.00m-3.00m Topsoil 3.00m-17.00m Clay 17.00m-24.00m Shale 24.00m-38.00m Basalt	996m	West
10049672	0.00m-0.20m Topsoil 0.20m-3.00m Clay 3.00m-18.00m Shale 18.00m-38.00m Basalt	1014m	West
10096275	0.00m-0.50m Top Soil 0.50m-4.00m Clay 4.00m-14.00m Shale - soft yellow 14.00m-24.00m Basalt - frac 24.00m-38.00m Basalt	1180m	West
10116268	0.00m-2.00m Topsoil 2.00m-35.00m Shale; brown 35.00m-150.00m Shale; blue	1215m	South West
10109332	0.00m-3.00m Clay 3.00m-16.00m Weathered Basalt 16.00m-20.00m Basalt, grey 20.00m-21.00m Broken Basalt 21.00m-42.00m Basalt, black 42.00m-50.00m Basalt, grey 50.00m-102.00m Andesite, white & grey seams 102.00m-114.00m Shale, grey	1277m	South West
10037422	0.00m-4.57m Clay 4.57m-7.62m Rock Soft 7.62m-16.15m Rock Medium Hard 16.15m-19.51m Basalt Hard Water Supply 19.51m-19.66m Driller	1278m	North
10075822	0.00m-1.00m Topsoil 1.00m-3.00m Clay 3.00m-25.00m Shale 25.00m-28.20m Basalt; water bearing 28.20m-37.00m Basalt 37.00m-37.10m Basalt; water bearing 37.10m-53.00m Basalt 53.00m-53.20m Basalt; water bearing 53.20m-58.00m Basalt	1306m	South West
10108291	0.00m-1.00m Topsoil 1.00m-4.00m Clay 4.00m-10.00m Shale 10.00m-64.00m Basalt	1307m	North
10105197	0.00m-1.22m Driller 1.22m-7.62m Shale Soft 7.62m-17.68m Shale Medium Soft 17.68m-21.34m Basalt Soak	1322m	South West
10107861	0.00m-18.29m Clay Soak 18.29m-29.26m Shale 29.26m-34.44m Gravel Formation/strata 34.44m-39.62m Seams Gravel Water Supply	1330m	West
10030238	0.00m-2.30m Fill 2.30m-5.00m Shale; weathered 5.00m-42.00m Limestone	1344m	South
10046650	0.00m-0.30m Topsoil 0.30m-8.00m Sandy Clay, brown 8.00m-28.00m Weathered Shale, brown 28.00m-36.00m Shale, brown 36.00m-38.00m Slate, blue 38.00m-40.00m Slate, black	1408m	North West
10027980	0.00m-7.62m Clay 7.62m-20.73m Rock Yellow Soft Gravel Water Supply 7.62m-20.73m Granite Seams	1441m	North West

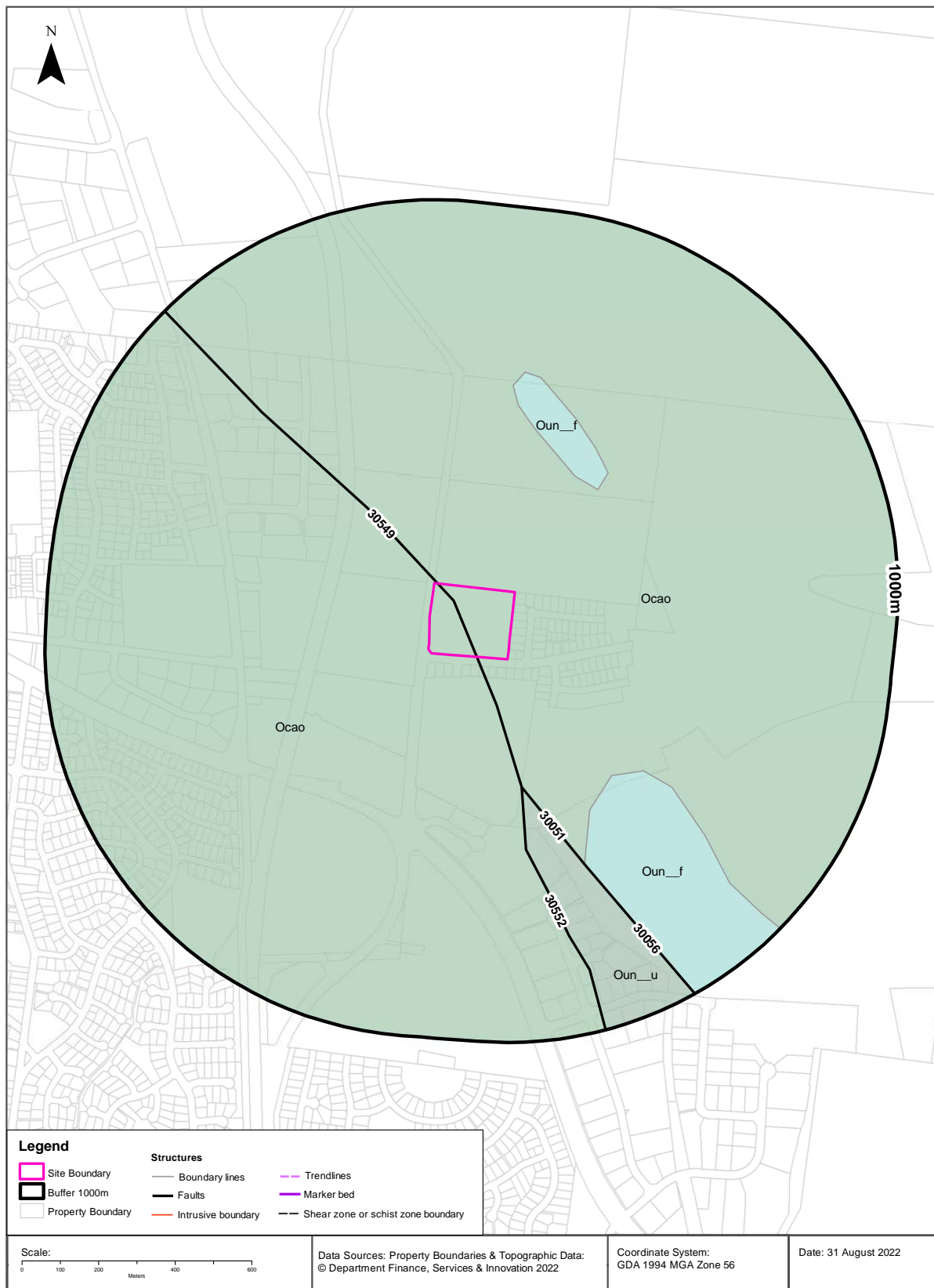
NGIS Bore ID	Drillers Log	Distance	Direction
10045731	0.00m-0.50m Topsoil 0.50m-3.00m Sandy Clay, red 3.00m-20.00m Sandy Clay 20.00m-23.00m Sandy Clay with Basalt 23.00m-31.00m Sandy Clay 31.00m-54.00m Basalt 54.00m-61.00m Basalt, hard	1469m	North West
10112404	0.00m-1.00m Topsoil 1.00m-5.00m Clay, brown 5.00m-8.50m Shale, grey 8.50m-9.00m Shale, broken 9.00m-54.00m Shale, fractured, grey 54.00m-57.00m Shale, green	1530m	South West
10022324	0.00m-10.00m Clay 10.00m-33.00m Rock, soft broken 33.00m-45.00m Broken Basalt 45.00m-81.00m Basalt	1542m	West
10042934	0.00m-14.33m Earth Geologist 14.33m-25.30m Chert Geologist 25.30m-26.82m Basalt Decomposed Water Supply Geologist 26.82m-28.35m Chert Geologist	1588m	West
10077912	0.00m-0.50m Topsoil 0.50m-13.00m Clay, red 13.00m-22.00m Clay, red and quartz bands 22.00m-39.50m Shale, soft 39.50m-42.00m Shale, black 42.00m-65.00m Basalt, black	1602m	North West
10084624	0.00m-0.50m Topsoil 0.50m-18.00m Shale	1637m	South West
10119996	0.00m-12.00m silty, orange 12.00m-23.00m clay, orange with some siltstone 23.00m-39.00m siltstone, weathered 39.00m-40.00m quartzite 40.00m-43.00m siltstone 43.00m-54.00m basalt	1662m	West
10075789	0.00m-2.44m Earth Geologist 2.44m-17.98m Slate Chert Geologist 17.98m-36.58m Chert Very Hard Geologist	1677m	West
10074358	0.00m-6.10m Soft 6.10m-18.59m Shale Water Supply	1695m	West
10069690	0.00m-0.20m Topsoil 0.20m-1.00m Sandy Clay 1.00m-2.00m Clay, puggy 2.00m-8.00m Shale, soft, yellow 8.00m-17.00m Basalt, decomposed 17.00m-25.00m Decomposed Basalt & Clay 25.00m-31.00m Basalt, hard, grey 31.00m-36.00m Shale, grey	1707m	South West
10022386	0.00m-1.00m Topsoil 1.00m-3.00m Shale, decomposed 3.00m-54.00m Shale, dark grey	1718m	South West
10097251	0.00m-0.70m Topsoil 0.70m-15.00m Sandy Clay, coloured with hard broken Clay 15.00m-24.00m Broken Basalt 24.00m-31.00m Basalt, hard	1790m	South West
10020471	0.00m-13.00m Shale 13.00m-46.00m Basalt, with quartz bands	1828m	West
10003486	0.00m-1.00m Topsoil 1.00m-5.50m Clay 5.50m-11.00m Basalt, decomposed 11.00m-19.00m Basalt 19.00m-43.00m Basalt, fractured 43.00m-65.00m Basalt, hard	1845m	South
10027394	0.00m-0.50m Topsoil 0.50m-6.00m Sandy Clay & Oxides 6.00m-7.00m Weathered Basalt 7.00m-12.00m Weathered Basalt & Clay 12.00m-42.00m Basalt, blue with Quartz	1863m	South West
10061775	0.00m-0.91m Topsoil 0.91m-5.48m Clay Yellow 5.48m-10.66m Basalt Decomposed 10.66m-25.29m Basalt Broken Clay Seams 25.29m-28.95m Basalt Black 28.95m-33.52m Basalt Grey Water Supply 33.52m-45.72m Basalt Black Water Supply	1865m	South

NGIS Bore ID	Drillers Log	Distance	Direction
10068046	0.00m-3.00m Rock, weathered, brown grey 3.00m-6.00m Rock, weathered, brown yellow 6.00m-12.00m Rock, broken, yellow brown 12.00m-20.00m Rhyolite, light grey, fine grained, hard 20.00m-23.00m Rhyolite, grey, fine grained, hard 23.00m-50.00m Rhyolite, grey, fine grained, hard	1901m	West
10034356	0.00m-0.10m Topsoil 0.10m-3.00m Clay 3.00m-20.00m Shale, yellow 20.00m-30.00m Basalt	1902m	South West
10041957	0.00m-3.00m Rock, weathered, brown/grey 3.00m-6.00m Rock, weathered, brown/yellow 6.00m-12.00m Rock, broken, yellow/brown 12.00m-20.00m Rhyolite, light grey, fine grained, hard 20.00m-23.00m Rhyolite, grey, fine grained, hard 23.00m-38.50m Rhyolite, grey, fine grained	1902m	West
10059448	0.00m-1.00m Topsoil 1.00m-13.00m Clay, and shale 13.00m-40.00m Basalt	1914m	West
10013520	0.00m-0.30m Topsoil 0.30m-5.50m Clay 5.50m-16.60m Shale, weathered 16.60m-39.08m Slate	1917m	West
10083823	0.00m-1.00m Topsoil 1.00m-3.00m Clay, brown 3.00m-8.00m Shale 8.00m-31.00m Shale with hard bands 31.00m-33.00m Shale, very hard, brown 33.00m-48.00m Basalt & Quartz	1939m	North West
10003724	0.00m-0.91m Topsoil 0.91m-1.52m Clay Yellow 1.52m-2.13m Clay 2.13m-3.05m Clay Yellow 3.05m-4.27m Shale Black 4.27m-4.88m Clay Yellow Shale 4.88m-6.55m Limestone 6.55m-6.71m Shale Soft Water Supply 6.71m-8.23m Diorite Hard	1981m	North
10022238	0.00m-0.30m Topsoil 0.30m-3.00m Clay 3.00m-9.00m Shale, yellow 9.00m-20.00m Basalt, weathered 20.00m-35.00m Basalt, brown 35.00m-56.00m Basalt, blue 56.00m-76.00m Basalt, grey	1989m	South
10014555	0.00m-1.00m Topsoil 1.00m-18.00m Clay, red 18.00m-27.00m Clay, soft with quartz 27.00m-54.00m Andesite	2000m	South West

Drill Log Data Source: Bureau of Meteorology; Water NSW. Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

Geology

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Geology

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Geological Units

What are the Geological Units within the dataset buffer?

Unit Code	Unit Name	Description	Unit Stratigraphy	Age	Dominant Lithology	Distance
Ocao	Oakdale Formation	Mafic volcanic sandstone; basalt, basaltic andesite, latite and intrusions emplaced as a lava. Volcaniclastic breccia and conglomerate, siltstone, shale, chert. Minor allochthonous limestone and calcareous sedimentary rocks.	/Cabonne Group//Oakdale Formation//	Gi1 (Gisbornian) (base) to Bo2 (Bolindian) (top)	Sandstone	0m
Oun__u	Unassigned Ordovician intrusions - ultramafics	Ultramafic cumulates and lava.	/Unassigned Ordovician intrusions//Unassigned Ordovician intrusions - ultramafics//	Late Ordovician (base) to Late Ordovician (top)	Ultramafic igneous rock	336m
Oun__f	Unassigned Ordovician intrusions - felsic	Monzonite to monzodiorite, monzogabbro, quartz monzonite and minor granite.	/Unassigned Ordovician intrusions//Unassigned Ordovician intrusions - felsic//	Late Ordovician (base) to Late Ordovician (top)	Igneous rock	340m

Linear Geological Structures

What are the Dyke, Sill, Fracture, Lineament and Vein trendlines within the dataset buffer?

Map ID	Feature Description	Map Sheet Name	Distance
No Features			

What are the Faults, Shear zones or Schist zones, Intrusive boundaries & Marker beds within the dataset buffer?

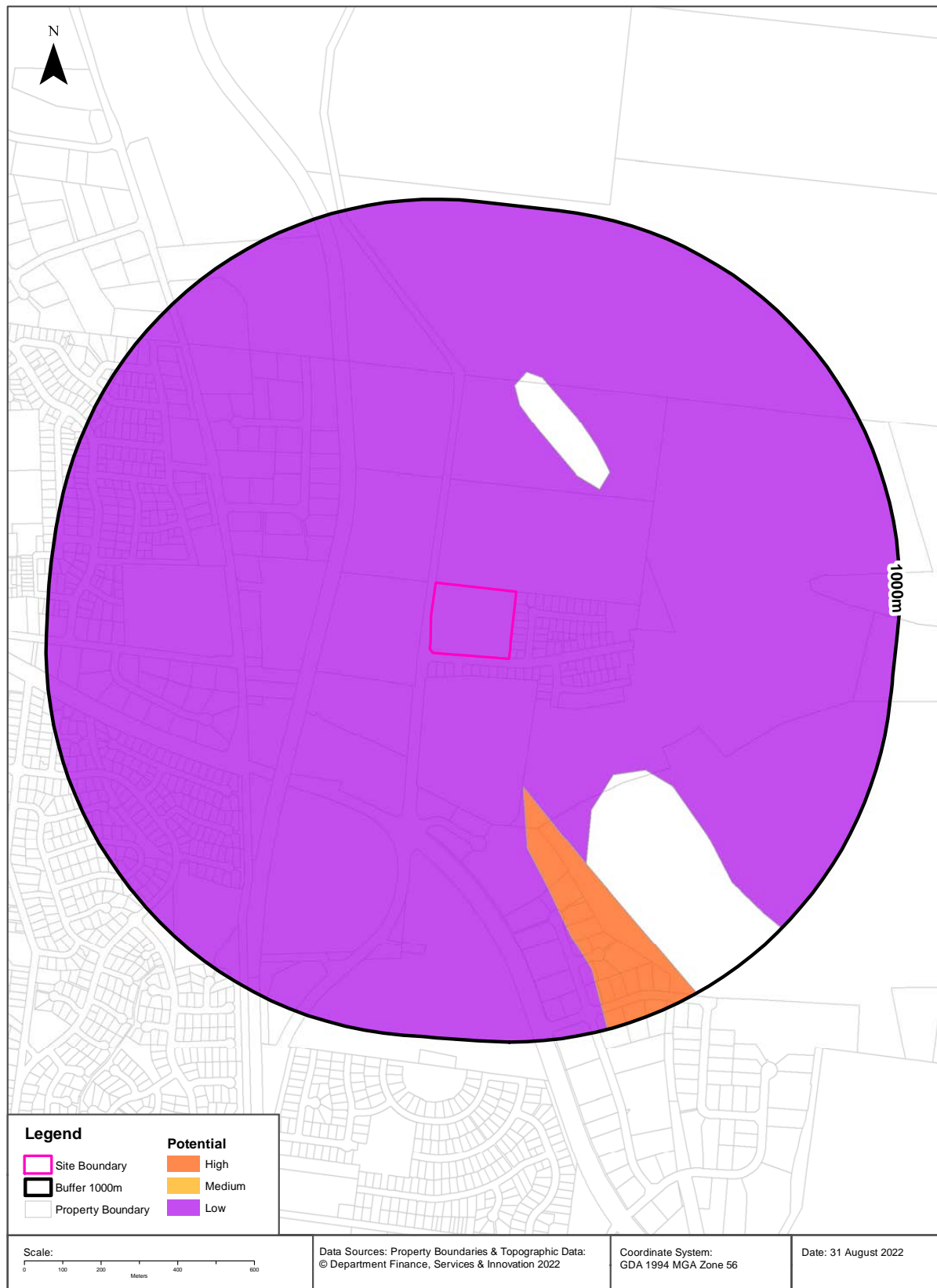
Map ID	Boundary Type	Description	Map Sheet Name	Distance
30549	Faulted boundary	Thrust-fault, approximate	Orange 1:100,000 Geological Sheet	0m
30051	Faulted boundary	Thrust-fault, accurate.	Orange 1:100,000 Geological Sheet	336m
30552	Faulted boundary	Thrust-fault, approximate	Orange 1:100,000 Geological Sheet	336m
30056	Faulted boundary	Thrust-fault, accurate.	Orange 1:100,000 Geological Sheet	572m

Geological Data Source: Statewide Seamless Geology v2.1, Department of Regional NSW

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Naturally Occurring Asbestos Potential

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Naturally Occurring Asbestos Potential

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Naturally Occurring Asbestos Potential

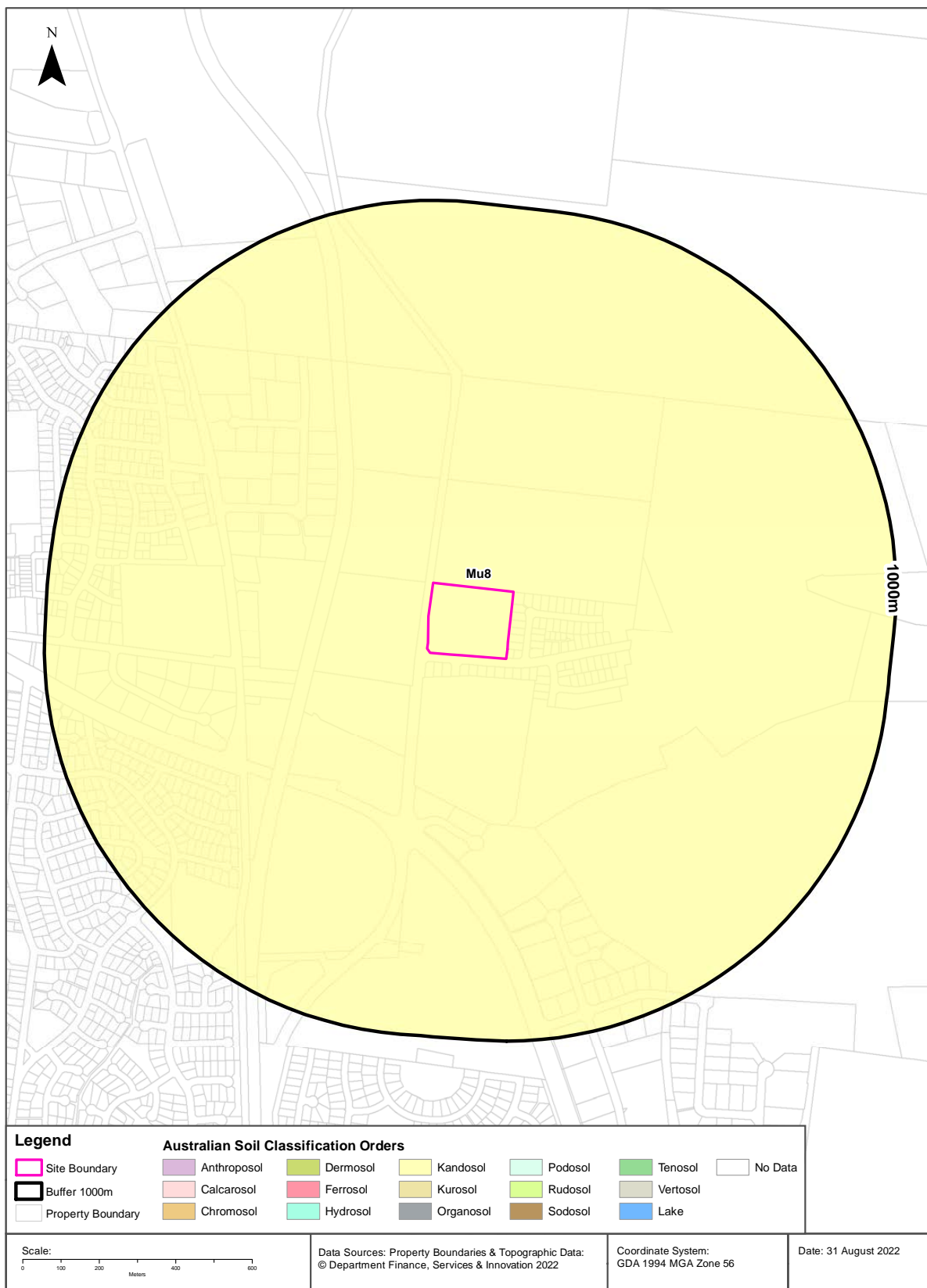
Naturally Occurring Asbestos Potential within the dataset buffer:

Potential	Sym	Strat Name	Group	Formation	Scale	Min Age	Max Age	Rock Type	Dom Lith	Description	Dist	Dir
Low	Oco	Oakdale Formation	Cabonne Group	Oakdale Formation	250000	Early Silurian	Late Ordovician	clastic sediment	sandstone, basalt, siltstone, shale, chert, breccia, conglomerate	Mafic volcanic sandstone, basalt, siltstone, black shale, chert, breccia, conglomerate	0m	On-site
High	Ou	undifferentiated	unknown		250000	Early Silurian	Late Ordovician	volcaniclastic	ultramafic	Ultramafic cumulates and lava	336 m	South East

Naturally Occurring Asbestos Potential Data Source: © State of New South Wales through NSW Department of Industry, Resources & Energy

Atlas of Australian Soils

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Soils

274 Leeds Parade, Orange, NSW 2800

Atlas of Australian Soils

Soil mapping units and Australian Soil Classification orders within the dataset buffer:

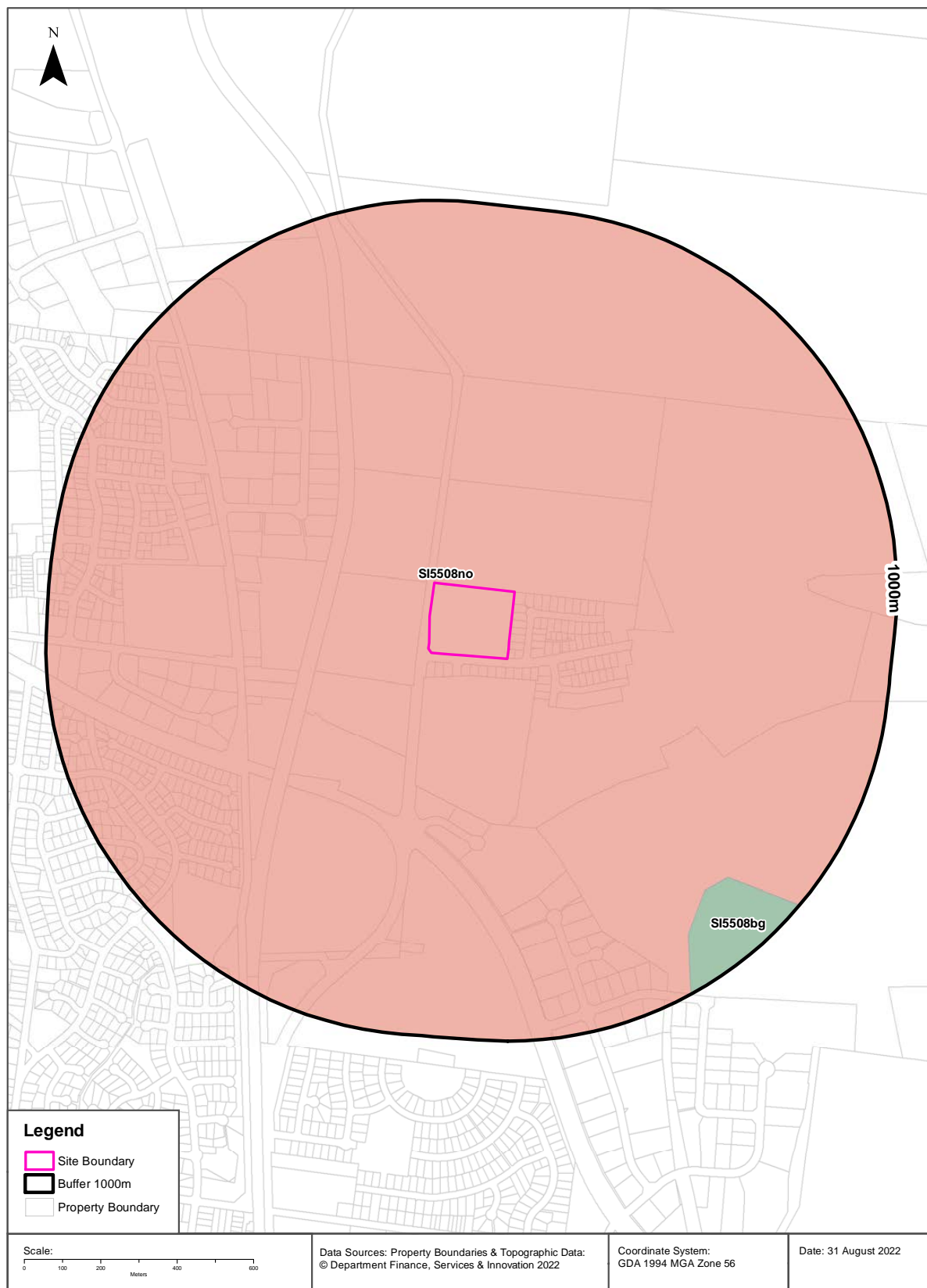
Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Mu8	Kandosol	Dissected and stepped plateau generally of a rolling to rounded hilly terrain with some ranges and steep valley side slopes: chief soils are neutral and acid leached red earths (Gn2.15 and Gn2.14) on the rolling to rounded hilly areas with yellow earths, such as (Gn2.25, Gn2.35, Gn2.34), some containing ironstone gravels, on rolling areas and benched slopes, and hard neutral yellow mottled soils (Dy3.42) and sometimes other (D) soils, such as (Dd1.43), in the flatter, often seasonally wet, areas. Associated are: narrow ranges, also steep side slopes flanking some transit streams (compare unit Tb31), of various (D) soils, including (Dr2.41) and (Dy3.41), and (Um4.1) soils and rock outcrops; some flat hill tops; some terrace-like remnants of (Dr2.42) soils in the broader flatter valleys (?remnants of unit Qd1); and areas of other soils, such as (Dr4. 13) and (Um6.43). The area is complex and data are limited.	0m	On-site

Atlas of Australian Soils Data Source: CSIRO

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Soil Landscapes of Central and Eastern NSW

274 Leeds Parade, Orange, NSW 2800



Soils

274 Leeds Parade, Orange, NSW 2800

Soil Landscapes of Central and Eastern NSW

Soil Landscapes of Central and Eastern NSW within the dataset buffer:

Soil Code	Name	Distance	Direction
SI5508no	North Orange	0m	On-site
SI5508bg	Byng	796m	South East

Soil Landscapes of Central and Eastern NSW: NSW Department of Planning, Industry and Environment
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Acid Sulfate Soils

274 Leeds Parade, Orange, NSW 2800

Environmental Planning Instrument - Acid Sulfate Soils

What is the on-site Acid Sulfate Soil Plan Class that presents the largest environmental risk?

Soil Class	Description	EPI Name
N/A		

If the on-site Soil Class is 5, what other soil classes exist within 500m?

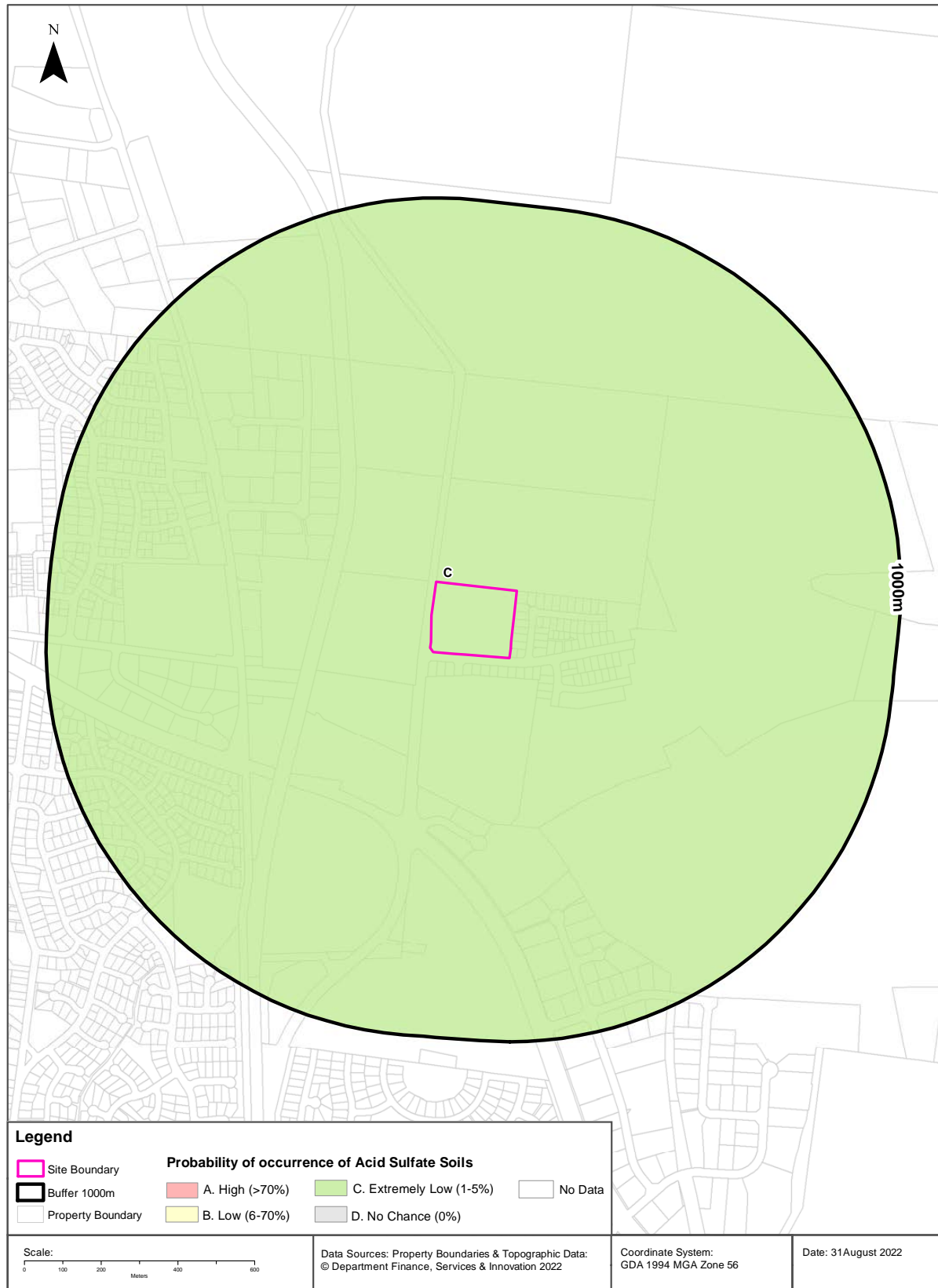
Soil Class	Description	EPI Name	Distance	Direction
N/A				

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Atlas of Australian Acid Sulfate Soils

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Acid Sulfate Soils

274 Leeds Parade, Orange, NSW 2800

Atlas of Australian Acid Sulfate Soils

Atlas of Australian Acid Sulfate Soil categories within the dataset buffer:

Class	Description	Distance	Direction
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	0m	On-site

Atlas of Australian Acid Sulfate Soils Data Source: CSIRO

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Dryland Salinity

274 Leeds Parade, Orange, NSW 2800

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

No

Is there Dryland Salinity - National Assessment data within the dataset buffer?

No

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
N/A	N/A	N/A		

Dryland Salinity Data Source : National Land and Water Resources Audit

The Commonwealth and all suppliers of source data used to derive the maps of "Australia, Forecast Areas Containing Land of High Hazard or Risk of Dryland Salinity from 2000 to 2050" do not warrant the accuracy or completeness of information in this product. Any person using or relying upon such information does so on the basis that the Commonwealth and data suppliers shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information. Any persons using this information do so at their own risk.

In many cases where a high risk is indicated, less than 100% of the area will have a high hazard or risk.

Mining

274 Leeds Parade, Orange, NSW 2800

Mining Subsidence Districts

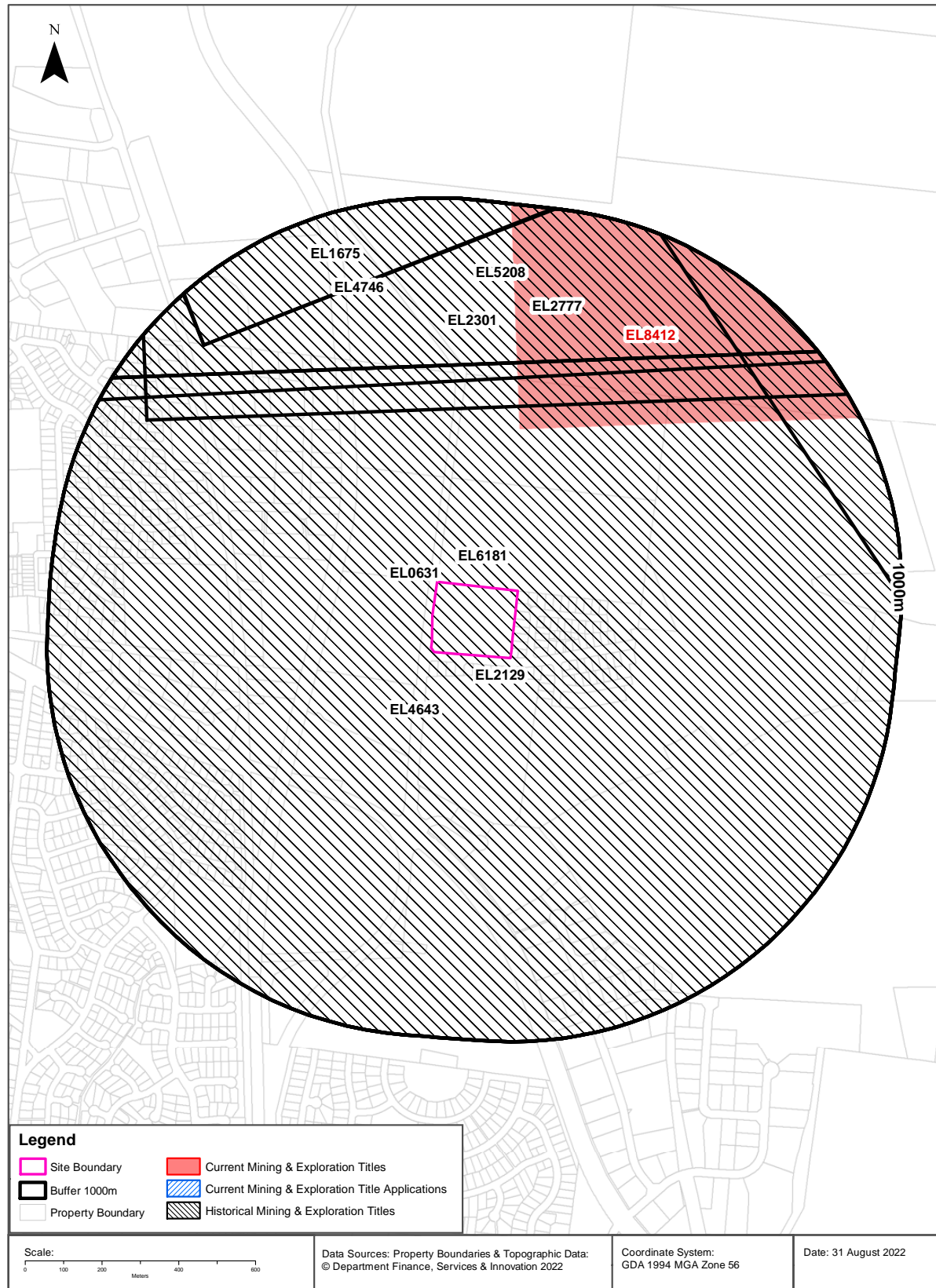
Mining Subsidence Districts within the dataset buffer:

District	Distance	Direction
There are no Mining Subsidence Districts within the report buffer		

Mining Subsidence District Data Source: © Land and Property Information (2016)
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Mining & Exploration Titles

274 Leeds Parade, Orange, NSW 2800



Mining

274 Leeds Parade, Orange, NSW 2800

Current Mining & Exploration Titles

Current Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Grant Date	Expiry Date	Last Renewed	Operation	Resource	Minerals	Dist	Dir
EL8412	GOLD AND COPPER RESOURCES PTY LIMITED	02/12/2015	02/12/2024	23 Apr 2019	EXPLORING	MINERALS	Group 1	419m	North East

Current Mining & Exploration Titles Data Source: © State of New South Wales through NSW Department of Industry

Current Mining & Exploration Title Applications

Current Mining & Exploration Title Applications within the dataset buffer:

Application Ref	Applicant	Application Date	Operation	Resource	Minerals	Dist	Dir
N/A	No records in buffer						

Current Mining & Exploration Title Applications Data Source: © State of New South Wales through NSW Department of Industry

Mining

274 Leeds Parade, Orange, NSW 2800

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
EL6181	CLANCY EXPLORATION LIMITED	19 Jan 2004	18 Jan 2016	MINERALS	Au Cu Zn	0m	On-site
EL4643	HARGRAVES RESOURCES NL	15 Mar 1994	14 Mar 1996	MINERALS	Au	0m	On-site
EL0631	UNION CORPORATION (AUSTRALIA) PTY LIMITED	01 Sep 1973	01 Sep 1974	MINERALS	Cu Zn Au	0m	On-site
EL2129	DOWMILL PTY LIMITED	01 Jul 1983	01 Jul 1984	MINERALS	Au	0m	On-site
EL2301	PLACER PACIFIC PTY LIMITED	01 Nov 1984	01 May 1986	MINERALS	Au	449m	North
EL2777	BHP GOLD MINES LIMITED	01 Nov 1986	01 Sep 1989	MINERALS	Au	520m	North
EL5208	MICHELAGO RESOURCES NL	05 Feb 1997	04 Feb 1999	MINERALS		562m	North
EL4746	CRA EXPLORATION PTY LIMITED	09 Dec 1994	08 Dec 1996	MINERALS	Au Cu	562m	North
EL1675	TECK EXPLORATIONS LIMITED	01 Jul 1981	01 Jul 1983	MINERALS	Cu Pb Zn	796m	North

Historical Mining & Exploration Titles Data Source: © State of New South Wales through NSW Department of Industry

State Environmental Planning Policy

274 Leeds Parade, Orange, NSW 2800

State Significant Precincts

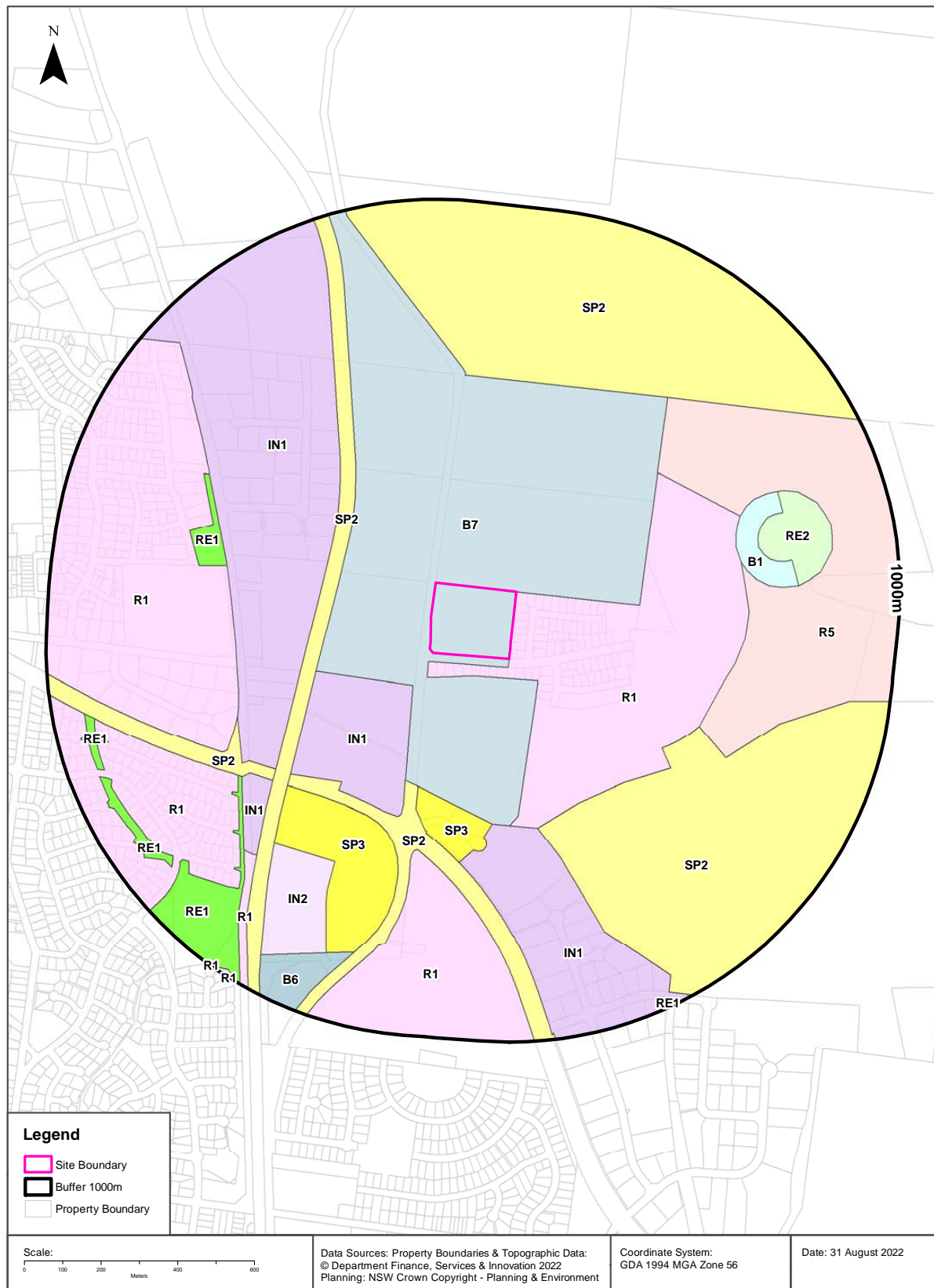
What SEPP State Significant Precincts exist within the dataset buffer?

Map Id	Precinct	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
N/A	No records in buffer							

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EPI Planning Zones

274 Leeds Parade, Orange, NSW 2800



Environmental Planning Instrument

274 Leeds Parade, Orange, NSW 2800

Land Zoning

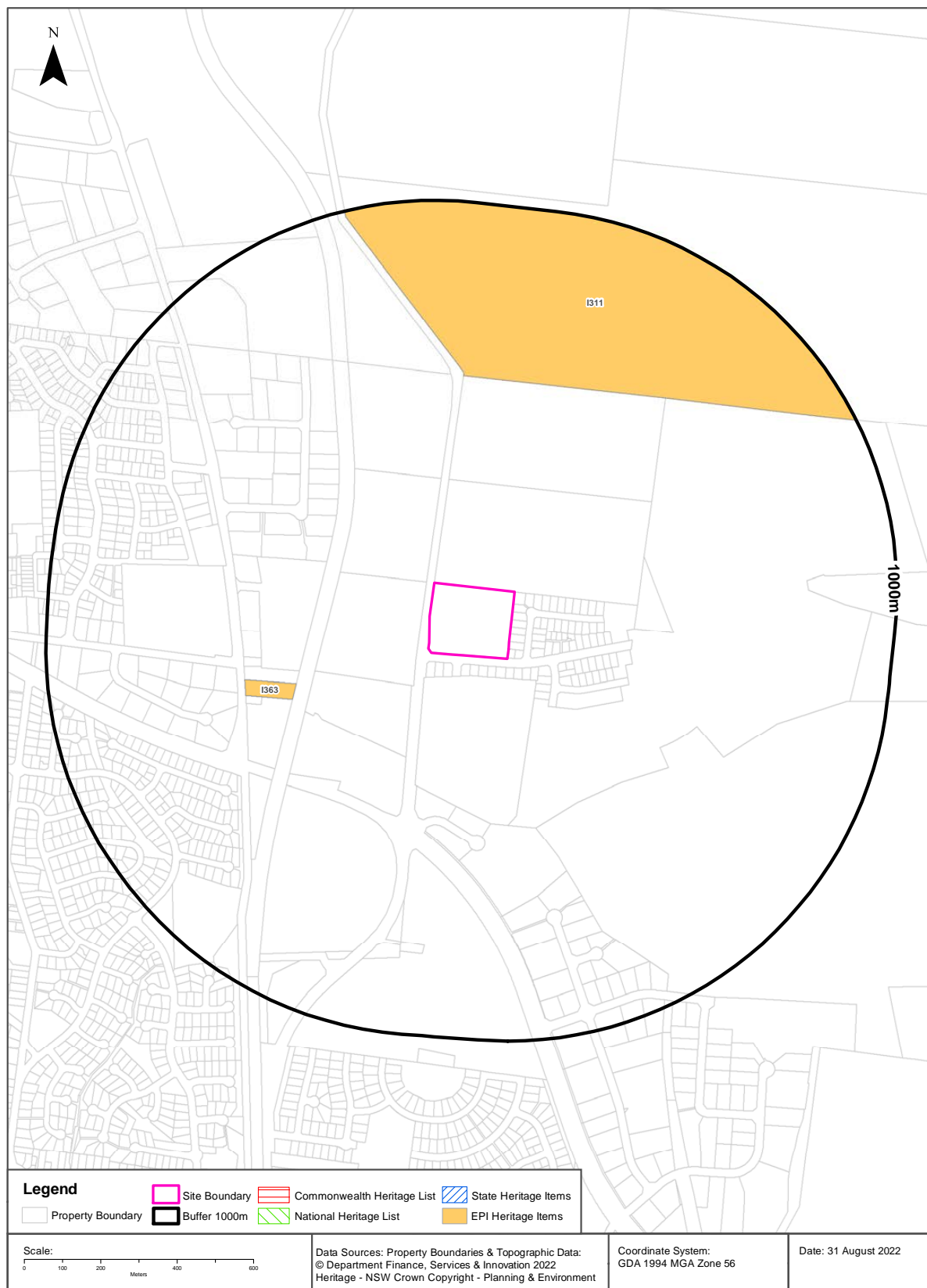
What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
B7	Business Park		Orange Local Environmental Plan 2011	24/02/2012	24/02/2012	03/09/2021		0m	On-site
R1	General Residential		Orange Local Environmental Plan 2011	24/02/2012	24/02/2012	03/09/2021		0m	East
IN1	General Industrial		Orange Local Environmental Plan 2011	24/02/2012	24/02/2012	03/09/2021		100m	South West
SP2	Infrastructure	Rail Infrastructure Facility	Orange Local Environmental Plan 2011	05/03/2021	05/03/2021	03/09/2021	Amendment No 24	246m	West
IN1	General Industrial		Orange Local Environmental Plan 2011	24/02/2012	24/02/2012	03/09/2021		286m	North West
SP2	Infrastructure	Classified Road	Orange Local Environmental Plan 2011	05/03/2021	05/03/2021	03/09/2021	Amendment No 24	340m	South
SP3	Tourist		Orange Local Environmental Plan 2011	24/02/2012	24/02/2012	03/09/2021		351m	South
SP2	Infrastructure	Sewage Treatment Plant	Orange Local Environmental Plan 2011	05/03/2021	05/03/2021	03/09/2021	Amendment No 24	418m	South East
IN1	General Industrial		Orange Local Environmental Plan 2011	05/03/2021	05/03/2021	03/09/2021	Amendment No 24	432m	South
SP3	Tourist		Orange Local Environmental Plan 2011	02/07/2021	02/07/2021	03/09/2021	Map Amendment No 1	456m	South West
R5	Large Lot Residential		Orange Local Environmental Plan 2011	05/03/2021	05/03/2021	03/09/2021	Amendment No 24	480m	East
R1	General Residential		Orange Local Environmental Plan 2011	24/02/2012	24/02/2012	03/09/2021		503m	West
SP2	Infrastructure	Classified Road	Orange Local Environmental Plan 2011	05/03/2021	05/03/2021	03/09/2021	Amendment No 24	510m	West
R1	General Residential		Orange Local Environmental Plan 2011	24/02/2012	24/02/2012	03/09/2021		515m	South
IN1	General Industrial		Orange Local Environmental Plan 2011	24/02/2012	24/02/2012	03/09/2021		534m	South West
RE1	Public Recreation		Orange Local Environmental Plan 2011	24/02/2012	24/02/2012	03/09/2021		545m	West
SP2	Infrastructure	Educational Establishment	Orange Local Environmental Plan 2011	24/02/2012	24/02/2012	03/09/2021		548m	North
B1	Neighbourhood Centre		Orange Local Environmental Plan 2011	24/02/2012	24/02/2012	03/09/2021		583m	East
RE1	Public Recreation		Orange Local Environmental Plan 2011	24/02/2012	24/02/2012	03/09/2021		593m	South West
R1	General Residential		Orange Local Environmental Plan 2011	24/02/2012	24/02/2012	03/09/2021		599m	South West
IN2	Light Industrial		Orange Local Environmental Plan 2011	02/07/2021	02/07/2021	03/09/2021	Map Amendment No 1	602m	South West
RE2	Private Recreation		Orange Local Environmental Plan 2011	24/02/2012	24/02/2012	03/09/2021		642m	East
B6	Enterprise Corridor		Orange Local Environmental Plan 2011	24/02/2012	24/02/2012	03/09/2021		807m	South West
RE1	Public Recreation		Orange Local Environmental Plan 2011	24/02/2012	24/02/2012	03/09/2021		860m	South West
RE1	Public Recreation		Orange Local Environmental Plan 2011	24/02/2012	24/02/2012	03/09/2021		871m	West
RE1	Public Recreation		Orange Local Environmental Plan 2011	24/02/2012	24/02/2012	03/09/2021		981m	South East

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Heritage Items

274 Leeds Parade, Orange, NSW 2800



Heritage

274 Leeds Parade, Orange, NSW 2800

Commonwealth Heritage List

What are the Commonwealth Heritage List Items located within the dataset buffer?

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch
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National Heritage List

What are the National Heritage List Items located within the dataset buffer?

Note. Please click on Place Id to activate a hyperlink to online website.

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch
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State Heritage Register - Curtilages

What are the State Heritage Register Items located within the dataset buffer?

Map Id	Name	Address	LGA	Listing Date	Listing No	Plan No	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: NSW Crown Copyright - Office of Environment & Heritage
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Environmental Planning Instrument - Heritage

What are the EPI Heritage Items located within the dataset buffer?

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I363	Cottage and brickworks	Item - General	Local	Orange Local Environmental Plan 2011	14/03/2014	14/03/2014	29/10/2021	357m	West
I311	Charles Sturt University water tower	Item - General	Local	Orange Local Environmental Plan 2011	29/10/2021	29/10/2021	29/10/2021	548m	North

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Natural Hazards

274 Leeds Parade, Orange, NSW 2800

Bush Fire Prone Land

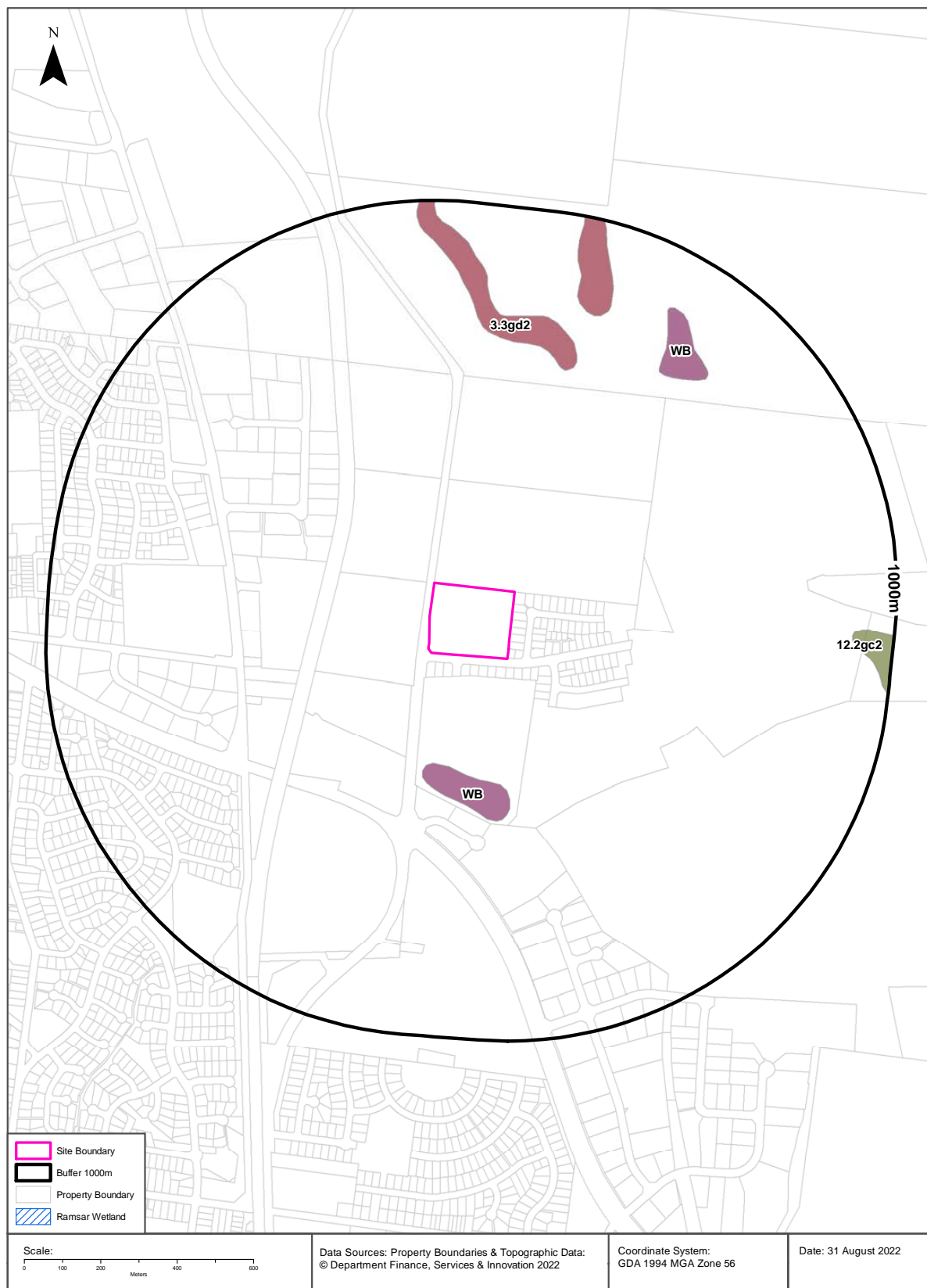
What are the nearest Bush Fire Prone Land Categories that exist within the dataset buffer?

Bush Fire Prone Land Category	Distance	Direction
No records in buffer		

NSW Bush Fire Prone Land - © NSW Rural Fire Service under Creative Commons 4.0 International Licence

Ecological Constraints - Vegetation & Ramsar Wetlands

274 Leeds Parade, Orange, NSW 2800



Ecological Constraints

274 Leeds Parade, Orange, NSW 2800

Vegetation of the Central Tablelands

What Vegetation of the Central Tablelands exists within the dataset buffer?

Vegetation Code	Vegetation Type	Description	Class	Formation	Crown Cover	Disturbance	Confidence	Distance	Direction
WB	Water	Water Bodies						289m	South
3.3gd2	Mountain Gum - Peppermint forest at high altitudes	Eucalyptus dives, E. dalrympleana/E. viminalis, E. radiata (E. bridgesiana); shrubby/grassy understorey; basalt hills; Tablelands	Southern Tableland Wet Sclerophyll Forests	Wet sclerophyll forests (Grassy subformation)	20-50%	Disturbed	Relatively confident on typing	594m	North
12.2gc2	Apple Box - Yellow Box - Mountain Gum open-woodland on flats and low hills of the central tablelands	Eucalyptus bridgesiana, E. melliodora, E. rubida/E. viminalis, E. dalrympleana; grassy/herb understorey; alluvial or basalt creek flats & slopes; well drained deep soil; Tablelands	Southern Tableland Grassy Woodlands	Grassy woodlands	10-20%	Cleared/ logged	Relatively confident on typing	890m	East

Vegetation of the Central Tablelands Data Source: NSW Office of Environment and Heritage
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Ramsar Wetlands

What Ramsar Wetland areas exist within the dataset buffer?

Map Id	Ramsar Name	Wetland Name	Designation Date	Source	Distance	Direction
N/A	No records in buffer					

Ramsar Wetlands Data Source: © Commonwealth of Australia - Department of Agriculture, Water and the Environment

Ecological Constraints

274 Leeds Parade, Orange, NSW 2800

Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
N/A	No records in buffer					

Groundwater Dependent Ecosystems Atlas Data Source: The Bureau of Meteorology
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Ecological Constraints

274 Leeds Parade, Orange, NSW 2800

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
N/A	No records in buffer					

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology

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Ecological Constraints

274 Leeds Parade, Orange, NSW 2800

NSW BioNet Atlas

Species on the NSW BioNet Atlas that have a NSW or federal conservation status, a NSW sensitivity status, or are listed under a migratory species agreement, and are within 10km of the site?

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Apus pacificus	Fork-tailed Swift	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Calidris acuminata	Sharp-tailed Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calyptorhynchus lathami	Glossy Black-Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Certhionyx variegatus	Pied Honeyeater	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Chthonicola sagittata	Speckled Warbler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Gallinago hardwickii	Latham's Snipe	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Glossopsitta pusilla	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Limosa lapponica	Bar-tailed Godwit	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Neophema pulchella	Turquoise Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox connivens	Barking Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox strenua	Powerful Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Oxyura australis	Blue-billed Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Petroica boodang	Scarlet Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Petroica phoenicea	Flame Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Polytelis swainsonii	Superb Parrot	Vulnerable	Category 3	Vulnerable	
Animalia	Aves	Stagonopleura guttata	Diamond Firetail	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stictonetta naevosa	Freckled Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Mammalia	Miniopterus orianae oceanensis	Large Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Nyctophilus bifax	Eastern Long-eared Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Petauroides volans	Greater Glider	Not Listed	Not Sensitive	Endangered	
Animalia	Mammalia	Petaurus norfolcensis	Squirrel Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascogale carolinensis	Koala	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Reptilia	Caretta caretta	Loggerhead Turtle	Endangered	Not Sensitive	Endangered	
Animalia	Reptilia	Chelonia mydas	Green Turtle	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus aggregata	Black Gum	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus canobolensis	Silver-Leaf Candlebark	Vulnerable	Not Sensitive	Endangered	
Plantae	Flora	Swainsona sericea	Silky Swainson-pea	Vulnerable	Not Sensitive	Not Listed	

Data does not include NSW category 1 sensitive species.

NSW BioNet: © State of NSW and Office of Environment and Heritage

Location Confidences

Where Lotsearch has had to georeference features from supplied addresses, a location confidence has been assigned to the data record. This indicates a confidence to the positional accuracy of the feature. Where applicable, a code is given under the field heading "LC" or "LocConf". These codes lookup to the following location confidences:

LC Code	Location Confidence
Premise Match	Georeferenced to the site location / premise or part of site
Area Match	Georeferenced to an approximate or general area
Road Match	Georeferenced to a road or rail corridor
Road Intersection	Georeferenced to a road intersection
Buffered Point	A point feature buffered to x metres
Adjacent Match	Land adjacent to a georeferenced feature
Network of Features	Georeferenced to a network of features
Suburb Match	Georeferenced to a suburb boundary
As Supplied	Spatial data supplied by provider

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 10. Lotsearch acknowledges that if, under applicable State, Territory or Commonwealth law, End User is a consumer certain rights may be conferred on End User which cannot be excluded, restricted or modified. If so, and if that law applies to Lotsearch, then, Lotsearch's liability is limited to the greater of an amount equal to the cost of resupplying the Report and the maximum extent permitted under applicable laws.
 11. Subject to paragraph 9, neither Lotsearch nor the End User is liable to the other for:
 - (a) any indirect, incidental, consequential, special or exemplary damages arising out of or in relation to the Report or these Terms; or
 - (b) any loss of profit, loss of revenue, loss of interest, loss of data, loss of goodwill or loss of business opportunities, business interruption arising directly or indirectly out of or in relation to the Report or these Terms,
 irrespective of how that liability arises including in contract or tort, liability under indemnity or for any other common law, equitable or statutory cause of action or otherwise.
 12. These Terms are subject to New South Wales law.