



muswellbrook
shire council

Muswellbrook Shire Council

ORDINARY COUNCIL MEETING

BUSINESS PAPER

TUESDAY 26 MARCH 2024



MUSWELLBROOK SHIRE COUNCIL

P.O Box 122
MUSWELLBROOK
20 March 2024

Councillors,

You are hereby requested to attend the Ordinary Council Meeting to be held in the Training Room, Level 2, University of Newcastle - Upper Hunter Campus, 87 Hill Street, Muswellbrook, NSW 2333 Australia on **Tuesday 26 March 2024** commencing at 6:00 pm.

Derek Finnigan
GENERAL MANAGER



Council Meetings

Meeting Principles

Council and committee meetings should be:

- Transparent:* Decisions are made in a way that is open and accountable.
- Informed:* Decisions are made based on relevant, quality information.
- Inclusive:* Decisions respect the diverse needs and interests of the local community.
- Principled:* Decisions are informed by the principles prescribed under Chapter 3 of the Act.
- Trusted:* The community has confidence that councillors and staff act ethically and make decisions in the interests of the whole community.
- Respectful:* Councillors, staff and meeting attendees treat each other with respect.
- Effective:* Meetings are well organised, effectively run and skilfully chaired.
- Orderly:* Councillors, staff and meeting attendees behave in a way that contributes to the orderly conduct of the meeting.

Public Forums

The council may hold a public forum prior to each ordinary meeting of the council for the purpose of hearing oral submissions from members of the public on items of business to be considered at the meeting. Public forums may also be held prior to extraordinary council meetings and meetings of committees of the council.

To speak at a public forum, a person must first make an application to the council in the approved form. Applications to speak at the public forum must be received by no later than 9.00 am two (2) days prior to the day of the meeting before the date on which the public forum is to be held, and must identify the item of business on the agenda of the council meeting the person wishes to speak on, and whether they wish to speak 'for' or 'against' the item.

Approved speakers at the public forum are to register with the council any written, visual or audio material to be presented in support of their address to the council at the public forum, and to identify any equipment needs no more than 3 days before the public forum. The general manager or their delegate may refuse to allow such material to be presented.

Each speaker will be allowed 2 minutes to address the council. This time is to be strictly enforced by the chairperson.



Declarations of Interest

Statement of Ethical Obligations

Councillors are reminded of their oath or affirmation of office, made under section 233A of the NSW Local Government Act 1993, to undertake the duties of the office of Councillor in the best interests of the people of Muswellbrook Shire and Muswellbrook Shire Council and to faithfully and impartially carry out the functions, powers, authorities and discretions vested in them, under the Local Government Act 1993 or any other Act, to the best of their ability and judgment. Pursuant to the provisions of the Muswellbrook Shire Council Code of Meeting Practice and the Muswellbrook Shire Council Code of Conduct, Councillors are reminded of their obligations to disclose and appropriately manage conflicts of interest.

Section 451 of the Local Government Act requires that if a Councillor or Member of a Council or committee has a pecuniary interest in any matter before the Council or Committee, he/she must disclose the nature of the interest to the meeting as soon as practicable and must not be present at, or in sight of, the meeting, when the matter is being discussed, considered or voted on.

A pecuniary interest is an interest that a person has in a matter because of a reasonable likelihood or expectation of financial gain or loss (see sections 442 and 443 of the Local Government Act).

A non-pecuniary interest can arise as a result of a private or personal interest which does not involve a financial gain or loss to the councillor or staff member (eg friendship, membership of an association, or involvement or interest in an activity). A Councillor must disclose the nature of the interest to the meeting as soon as practicable.

Council's Model Code of Conduct now recognises two forms of non-pecuniary conflict of interests:

- Significant
- Less than significant

A Councillor must make an assessment of the circumstances and determine if the conflict is significant.

If a Councillor determines that a non-pecuniary conflict of interests is less than significant and does not require further action, they must provide an explanation of why it is considered that the conflict does not require further action in the circumstances.

If the Councillor has disclosed the existence of a significant non-pecuniary conflict of interests at a meeting they must not be present at, or in sight of, the meeting, when the matter is being discussed, considered or voted on.



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- 1. Applications for Attendance via Audio Visual Link**
- 2. Acknowledgement of Country**
- 3. Civic Prayer**
- 4. Apologies and Applications for a Leave of Absence**
- 5. Confirmation of Minutes**

Ordinary Council Meeting held in 27 February 2024

Extra-Ordinary Council Meeting held on 14 March 2024

RECOMMENDATION

The Minutes of the Ordinary Council Meeting held on **27 February 2024** and Extra-Ordinary Council Meeting held on **14 March 2024**, a copy of which has been distributed to all members, be taken as read and confirmed as a true record.

Moved: _____ Seconded: _____

- 6. Disclosure of any Pecuniary or Non-Pecuniary Interests**
- 7. Mayoral Minute**

Nil
- 8. Public Participation**
- 9. Business Arising (From Previous Meetings)**

Nil



10. Business (Specific Reports)

10.1. Planning and Environment

10.1.1. DA 2007/462 and DA 2008/325 Release of Covenant and Planning Agreement

Attachments:	1. Attachment A - Deed to Revoke Planning Agreement SIGNED BY BBT PROPERTY [10.1.1.1 - 7 pages]
	2. Attachment B - Planning Agreement - Explanatory Note [10.1.1.2 - 4 pages]
	3. Attachment C - Section 88B Instrument and Planning Agreement Detail [10.1.1.3 - 19 pages]
Responsible Officer:	Sharon Pope - Director - Planning & Environment
Author:	Hamish McTaggart (Development Co-Ordinator)
Community Plan Issue:	<i>Not Applicable</i>
Community Plan Goal:	<i>Not Applicable</i>
Community Plan Strategy:	<i>Not Applicable</i>
	Not applicable

PURPOSE

Council Officers have received a request to release a Section 88B Instrument from the title of Lot 101 DP 793194.

As the development consents to which the 88B instrument relates have not been acted on, and have now been formally surrendered, the owner of the land is requesting Council to release the related Section 88B Instrument and revoke the defunct Planning Agreement.

OFFICER'S RECOMMENDATION

Council delegates to the General Manager authority to:

1. Complete the public notification of the intention to revoke the Planning Agreement related to the surrendered development applications DA 2008/325 (bulky goods retail premises) and DA 2007/462 (supermarket, specialty shops and subdivision) at 8 Thompson Street, Muswellbrook, Lot 101 DP 79319.
2. Finalise the revocation of the Planning Agreement related to the surrendered development applications DA 2008/325 (bulky goods retail premises) and DA 2007/462 (supermarket, specialty shops and subdivision) at 8 Thompson Street, Lot 101 DP 79319.
3. Release of the Section 88B instrument imposed on the title of Lot 101 DP 79319.

Moved: _____ **Seconded:** _____



BACKGROUND

Council has received requests to revoke a Planning Agreement related to surrendered DAs, DA 2008/325 and DA 2007/462, and to release a related easement imposed on the title of the property which references that Planning Agreement.

Neither DA 2008/325 nor DA 2007/462 were acted on within the statutory 5-year period from the date of their determination. While it is accepted that both DAs have lapsed, the landowner has formally surrendered the development consents to avoid any doubt on this issue. This conclusively means that there is no ability for either consent to be acted on in the future.

A copy of the Planning Agreement entered into in relation to these consents and the site is attached for Council's information.

The Planning Agreement required the developer to upgrade the intersection of Thompson Street and the New England Highway, with the installation of traffic lights, with Council to pay 50% of the costs incurred by the developer to a maximum of \$300,000. The signalisation of this intersection has recently been completed by Council through works carried out by Council and funded independently of the development of this site.

Given that the consents to which the Planning Agreement relates have lapsed, and that the works the Agreement involves have been completed, Council Officers accept that the Planning Agreement is now redundant and may be revoked, and the related instrument released.

CONSULTATION

Prior to formalising the revocation of the Planning Agreement, Council is required to undertake 28 days of public consultation and to consider any submissions received through that period.

In preparing this report, Council Officers have consulted with Council's in house Legal Counsel.

OPTIONS

Council may:

- a) Endorse the recommendation and progress the revocation of the Planning Agreement and the release of the related Section 88B Instrument; or
- b) Retain the Planning Agreement and not release the related Section 88B Instrument and provide reasoning related to its decision.

CONCLUSION

The development applications (DA 2007/462 and DA 2008/325) were not acted upon and have been formally surrendered.

The work which the Planning Agreement sought to require (the signalisation of the Thompson Street traffic lights) has been completed by Council outside of the Planning Agreement.

Consequently, the development and works which the Planning Agreement attach to are no longer current and the Planning Agreement is functionally redundant.

Council Officers are satisfied that the Planning Agreement may be revoked, and the related instrument released.

BBT PROPERTY PTY LTD ACN 145 010 297

AND

MUSWELLBROOK SHIRE COUNCIL

DEED TO REVOKE PLANNING AGREEMENT

Solari & Stock Lawyers

Level 2, 12 Central Road, Miranda NSW 2228

Phone: (02) 8525 2700

Email: law@solariandstock.com.au

Ref: MS:VA:221254

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THIS DEED dated day of 2024

BETWEEN BBT Property Pty Ltd ACN 145 010 297 of Suite 13/249 Kingsgrove Road,
Kingsgrove, New South Wales (**BBT Property**)

AND Muswellbrook Shire Council of 60-82 Bridge Street, Muswellbrook, New
South Wales (**Muswellbrook Shire Council**)

RECITALS

- A.** BBT Property is the registered proprietor of the Property.
- B.** The Parties entered into the Planning Agreement requiring BBT Property to carry out certain works as required pursuant to their Development Applications.
- C.** The Development Applications have lapsed and BBT Property did not commence any works to the Property pursuant to the Development Applications.
- D.** The Parties have agreed to enter into this Deed to revoke the Planning Agreement and in respect to their respective rights and obligations thereof.

OPERATIVE PART

1. Interpretation

This deed is governed by the laws of New South Wales and the parties submit to the non-exclusive jurisdiction of the courts of that state.

In the interpretation of this deed:

- (a) References to legislation or provisions of legislation include changes or re-enactments of the legislation and statutory instruments and regulations issued under the legislation;
- (b) Words denoting the singular include the plural and vice versa, words denoting individuals or persons include bodies corporate and vice versa, words denoting one gender include all genders, and references to documents or agreements also mean those documents or agreements as changed, novated or replaced;
- (c) Grammatical forms of defined words or phrases have corresponding meanings;

-
- (d) Parties must perform their obligations on the dates and times fixed by reference to the capital city of New South Wales;
 - (e) Reference to an amount of money is a reference to the amount in the lawful currency of the Commonwealth of Australia;
 - (f) If the day on or by which anything is to be done is a Saturday, a Sunday or a public holiday in the place in which it is to be done, then it must be done on the next business day;
 - (g) References to a party are intended to bind their executors, administrators and permitted transferees; and
 - (h) Obligations under this deed affecting more than one party bind them jointly and each of them severally.

2. Definitions

Dealing means Request registration number AG623537, registering the Planning Agreement on the title of the Property.

Development Applications means Development Application 325/2008 for a Bulky Goods Retail Development dated 9 March 2009 and Development Application 462/2007 for Modifications to Supermarket and Carpark Layout dated 8 March 2008.

Party means a party to this Deed and Parties means all of them.

Planning Agreement means the Planning Agreement entered into between BBT Property and Muswellbrook Shire Council dated 20 December 2010.

Property means the land contained in Lot 101 in Deposited Plan 793194 in Certificate of Title Folio Identifier 101/793194 and located at 8 Thompson Street, Muswellbrook NSW 2333.

3. Relinquishment of Planning Agreement

BBT Property has requested, and Muswellbrook Shire Council has agreed to revoke the Planning Agreement on the terms and conditions contained in this Deed.

4. Parties Obligations

The Parties agree to do all acts and things and sign all necessary documents as may be reasonably required by the other Party so as to carry out and give effect to the terms and intentions of this Deed to revoke the Planning Agreement and the removal of the Dealing registered on the title to the Property.

5. Release

Upon the execution of this Deed, Muswellbrook Shire Council will release BBT Property from any and all obligations under the Development Applications and Planning Agreement.

6. Entire agreement

This Deed is the entire agreement and understanding between the parties on everything connected with the subject matter of this Deed, and supersedes any prior understanding, arrangement, representation or agreements between the parties as to the subject matter contained in this Deed.

7. Amendment

An amendment or variation to this Deed is not effective unless it is in writing and signed by all the parties.

8. Severance

If anything in this deed is unenforceable, illegal or void, it is severed and the rest of the deed remains in force.

9. Successors

This Deed is binding on the Parties and their respective successors and permitted assigns, and shall be enforceable by and against the Parties or those successors and assigns.

10. Counterparts

This Deed may be executed in any number of counterparts each of which will be an original but such counterparts together will constitute one and the same instrument and the date of the deed will be the date on which it is executed by the last party.

11. Costs

Each party will pay their own costs in relation to this Deed.

12. Electronic Signatures



Where effected in accordance with the Electronic Transactions Act, 2000 and any other applicable laws from time to time, each party consents to the use of electronic signatures and accepts that such signatures will have the same effect as a handwritten signature. In such cases the electronic format signature will be valid and binding

13. Governing Law

The construction, validity and performance of this Deed shall be governed in all respects by the law of New South Wales

Execution page

EXECUTED AS A DEED

EXECUTED by BBT Property Pty Ltd ACN 145 010 297 in accordance with s127 of the Corporations Act, 2001 (Cth)	
<div>DocuSigned by:  F79622BEE133408...</div> <div>Director</div> <div>Name: Richard Geoffrey Batten 7/3/2024 6:43:47 PM AEDT</div>	<div>DocuSigned by:  3A030AFFEAD04B0...</div> <div>Director</div> <div>Name: Brendan David Tertini 8/3/2024 6:41:21 AM AEDT</div>

SIGNED, SEALED & DELIVERED BY Muswellbrook Shire Council by its authorised officer in the presence of:	
<div>Signature of witness</div> <div>_____</div>	<div>Signature of authorised officer</div> <div>_____</div> <div>Name: Authority:</div>
<div>Print name of witness</div> <div>_____</div>	

Explanatory Note to Planning Agreement
between Muswellbrook Shire Council and Patarm Pty Ltd

Environmental Planning and Assessment Regulation 2000

(Clause 25E)

1. Background

Patarm Pty Ltd (ACN 115 080 629) (Developer) has made an offer to Muswellbrook Shire Council (Planning Authority) to enter into a Planning Agreement in connection with two separate development applications.

2. Description of Subject Land

The Planning Agreement relates to land identified as Lot 101 DP 793194 known as Lot 101 Thompson Street, Muswellbrook (the Land).

3. Description of Development Applications

On 10 March 2008, Council granted deferred commencement consent to Development Application No. 462/2007 for a supermarket, specialty shops and a two (2) lot commercial subdivision on the Land (the Development Consent).

Prior to the application being determined by Council, the Developer made an offer by letter dated 27 February 2008 to enter into a Planning Agreement to make a development contribution towards upgrading the intersection of Thompson Street and the New England Highway for the safe ingress and egress of vehicles associated with the proposed development and surrounding area by the installation of traffic lights

The Development Consent was granted subject to two deferred commencement conditions. Condition No. 1 requires the proponent to enter into a Planning Agreement with Council in accordance with:

- (a) Division 6 of Part 4 of the *Environmental Planning and Assessment Act 1979 (EP&A Act)*; and

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(b) The terms of the proponent's offer to Council dated 27 February 2008.

Condition No. 2 relates to the submission of stormwater engineering details.

The Development Consent does not operate until the above conditions have been satisfied and Council has issued written notice to this effect.

On 9 March 2009, Council resolved to modify the Development Consent under Section 96 of the EP&A Act in the following manner:

- Extension of timeframe to comply with Deferred Commencement conditions to 10 March 2010;
- Reconfigured building to align with northern and eastern boundaries;
- Reduced supermarket floor area from 2500m² Gross Floor Area (GFA) to 2040m² GFA;
- Reduced specialty retail (7 x retail outlets) from 540m² GFA to 355m² GFA;
- Reduced total built upon area from 3154m² to 2400m²;
- Increased car parking from 127 spaces and two disabled parking spaces to 140 parking spaces including three (3) disabled spaces;
- Reconfigured car parking area, landscaped areas and loading dock;
- Reconfigured entry courtyard/plaza area and colonnade;
- Realigned exit driveway;
- Slight repositioning of the two pylon signs;
- Realigned public amenities; and
- New signs approach; two smaller flush wall signs and one additional flush wall sign.

A separate Development Application No. 325/2008 for a bulky goods retail outlet proposed at the southern end of the site was approved by Council on 9 March 2009.

The development consent was granted to DA No. 325/2008 subject to two deferred commencement conditions. Condition No. 1 requires the proponent to enter into a Planning Agreement with Council in accordance with

(c) Division 6 of Part 4 of the Environmental Planning and Assessment Act 1979; and

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(d) The terms of the proponent's offer to Council dated 24 February 2009.

Condition No. 2 relates to the submission of stormwater engineering details.

The consent does not operate until the above conditions have been satisfied and Council has issued written notice to this effect.

4. Summary of Objectives, Nature and Effect of the Planning Agreement

The objective of the Planning Agreement is to facilitate the payment of monetary contributions by Council towards the cost of the intersection upgrade works.

The Planning Agreement requires the Developer to upgrade the intersection of Thompson Street and the New England Highway by the installation of traffic lights to RTA standards. Council will pay 50% of the costs incurred by the Developer, including any project management fees payable to an independent project manager engaged by the Developer, in carrying out the works up to a maximum amount of \$300,000 (excluding GST).

5. Key Features of the Voluntary Planning Agreement

The key features of the Planning Agreement are set out below with an explanation as necessary:

- (a) The Planning Agreement requires the upgrading of the intersection of Thompson Street and New England Highway to be completed within 12 months after the date on which a contract is entered into between the Developer and Contractor to carry out the works;
- (b) The Council will pay 50% of the costs incurred by the Developer, including any project management fees, in carrying out the works up to a maximum of \$300,000 (excluding GST);
- (c) The Planning Agreement contains provisions relating to dispute resolution, should disputes arise between the relevant parties; and
- (d) The Planning Agreement will be registered on the title to the Land.

6. Merits of the Planning Agreement and impact on the public

The Planning Purposes Served by the Draft Planning Agreement

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The Planning Agreement provides the upgrading of the intersection of Thompson Street and the New England Highway through the installation of traffic signals and completion of associated road works. The intersection improvements will benefit both the subject development and the local area by improving the efficiency and safety of the intersection which is currently operating at a poor level of service (Level of Service F).

How the Draft Planning Agreement Promotes the Objects of the EP&A Act

The Planning Agreement is consistent with the objects of the EP&A Act as it promotes the orderly and economic use and development of land.

How the Draft Planning Agreement Promotes the Public Interest

The Planning Agreement is in the public interest as it will facilitate the upgrading of public infrastructure (ie the intersection of Thompson Street and New England Highway) to the benefit of the local community. The proposed upgrade will improve public safety and the operational efficiency of the intersection.

For Planning Authorities:

(a) Councils – How the Planning Agreement Promotes the Elements of the Council's Charter

The contributions payable under the Planning Agreement will be used to fund the development and upgrading of a community asset in accordance with Council's obligations under the charter. The agreement considers the long term needs of the local community and promotes the effective management of the assets for which Council is responsible.

(b) All Planning Authorities – Whether the Draft Planning Agreement Conforms with the Authority's Capital Works Program

Council's contribution payable under the Planning Agreement is allocated in Council's approved Capital Works Budget.

The Impact of the Draft Planning Agreement on the Public or Any Section of the Public

The Planning Agreement will not have an adverse impact on the public or any section of the public.

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REQUEST

New South Wales
Real Property Act 1900



AG62537C

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

(A) STAMP DUTY	If applicable. Office of State Revenue use only		
(B) TORRENS TITLE	401/79194 101/793194		
(C) REGISTERED DEALING	Number	Torrens Title	
(D) LODGED BY	Document Collection Box 263P	Name, Address or DX, Telephone, and Customer Account Number if any SOLARI & STOCK 130479 M 522 KINGSWAY MIRANDA 2228 Reference (optional): MS: 15344	CODE R
(E) APPLICANT	BBT PROPERTY PTY LIMITED		
(F) NATURE OF REQUEST	Removal and registration of Planning Agreement pursuant to s93H Environmental Planning and Assessment Act 1979		
(G) TEXT OF REQUEST	It is requested that registered dealing AF365465 be withdrawn from the title and replaced with the attached Planning Agreement between the Council and BBT Property Pty Ltd as per the Planning Agreement.		

RELODGE:

10 MAR 2011

TIME: 11.15

DATE 21.2.2011

(H)

off PLA AF365465
ON PLA.

Certified correct for the purposes of the Real Property Act 1900 by the person whose signature appears below.

Signature:

Signatory's name: ADAM TOROK
Capacity: Solicitor for the applicant

(I) This section is to be completed where a notice of sale is required and the relevant data has been forwarded to LPMA through eNOS. The applicant's solicitor certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. Full Name: Signature:

All handwriting must be in block capitals.

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Number additional pages sequentially

extra plan assessed
ACN 145 010287
2322465

PLANNING AGREEMENT

Parties

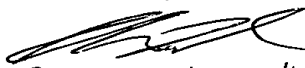
MUSWELLBROOK SHIRE COUNCIL of 157 Maitland Street, Muswellbrook, New South Wales
(Council)

and

BBT PROPERTYPTY LTD (ACN 145 010 297) care of Solari and Stock Lawyers, Suite 5, 522
Kingsway, Miranda, New South Wales 2228 (Developer)

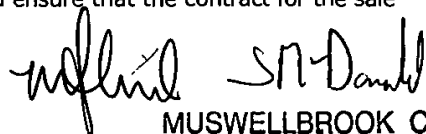
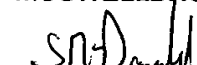
Background

- A. On 19 December 2007, Mr Rick Bennell of Bennell & Associates on behalf of Patarm Pty Ltd (ACN 115 080 629) ("Patarm") made a Development Application (DA No. 462/2007) to Council for Development Consent to carry out the Supermarket Development on the Land.
- B. After lodging the Development Application, Bennell & Associates (on behalf of Patarm) made an offer by letter dated 27 February 2008 to enter into a planning agreement to carry out the Works if the development consent was granted to the Supermarket Development.
- C. On 10 March 2008 the Council approved the Supermarket Development with a deferred commencement condition requiring a planning agreement to be entered into between the parties in relation to the Council's acceptance of Patarm's offer referred to in paragraph B herein.
- D. On 28 November 2008, Mr Brett Cooper on behalf of Patarm made a Development Application (DA No. 325/2008) to the Council for development consent to carry out the Bulky Goods Development on the Land.
- E. Bennell & Associates (on behalf of Patarm) made an offer by letter dated 24 February 2009 to enter into a planning agreement to carry out the Works if development consent was granted to the Bulky Goods Development and on the proviso that the planning agreement offer contained in the letter dated 27 February 2008 referred to in paragraph B herein is not proceeded with.
- F. On 13 March 2009 the Council approved the Bulky Goods Development with a deferred commencement condition requiring a planning agreement to be entered into between the parties in relation to the Council's acceptance of Patarm's offer referred to in paragraph E herein.
- G. On 27 November 2009 Council and Patarm entered into a Planning Agreement ("Original Planning Agreement").
- H. Clause 13.1 of the Original Planning Agreement provided in effect that in the event that Patarm entered into a contract for the sale of the Land whilst the Original Planning Agreement was in force Patarm would ensure that the contract for the sale


Solicitor for the applicant.

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MUSWELLBROOK COUNCIL

General Manager

of the Land contained a clause that the Purchaser would enter into an agreement with the Council to the same effect as the Original Planning Agreement.

- I. The Developer has entered into a Contract for the purchase of the Land from Patarm.
- J. The Developer and the Council now enter into this agreement pursuant to the requirements of the deferred commencement conditions referred to in paragraphs C and F above.

Operative Provisions

- 1 Planning agreement under the Act
 - 1.1 The Parties agree that this Agreement is a planning agreement governed by Subdivision 2 of Division 6 of Part 4 of the Act.
- 2 Application of this Agreement
 - 2.1 This Agreement relates to the Land and the Development.
3. Operation of this Agreement
 - 3.1 This Agreement shall take effect upon the date hereof.
4. Definitions and Interpretation
 - 4.1 In this Agreement the following definitions apply;
Act means the *Environmental Planning and Assessment Act 1979(NSW)*
Bulky Goods Development means the bulky goods retail development that is the subject of Development Application 325/2008.
Contractor means the Suitably Qualified Contractor selected by the Parties pursuant to Clause 5.2.4 to carry out the Works.
Date for Completion means the date twelve (12) months after the date on which the contract is entered into with the Contractor to carry out the Works
Dealing, in relation to the Land, means, without limitation, selling, transferring, assigning, mortgaging, charging, encumbering or otherwise dealing with the Land.
Development Application has the same meaning as in the Act.
Development Consent has the same meaning as in the Act.
GST has the same meaning as in the GST Law.
GST Law has the meaning given to that term in *A New Tax System (Goods and Services Tax) Act 1999* (Cth) and any other Act or regulation relating to the imposition or administration of the GST.
Land means Lot 101 DP 793194 known as Lot 101 Thompson Street, Muswellbrook.
Party means a party to this agreement, including their successors and assigns.
Public Facilities means the upgrade of the intersection of Thompson Street and New England Highway by the installation of Traffic Lights to RTA standards.

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Register means the Torrens tile register maintained under the *Real Property Act 1900 (NSW)*.

Regulation means the *Environmental Planning and Assessment Regulation 2000*.

RTA means the Roads and Traffic Authority, NSW.

Suitably Qualified Contractor means a contractor who is prequalified to carry out the Works under the RTA's Prequalification Scheme for Construction Industry Contractors.

Supermarket Development means supermarket, specialty shops and two (2) lot commercial subdivision, that is the subject of Development Application 462/2007.

Works means the design and construction of the Public Facilities.

Works Authorisation Deed means the formally executed agreement between the RTA and the Developer, authorising the Developer to implement the Public Facilities.

4.2 In the interpretation of this Agreement, the following provisions apply unless the context otherwise requires:

- (a) Headings are inserted for convenience only and do not affect the interpretation of this Agreement.
- (b) A reference in this Agreement to a business day means a day other than a Saturday or Sunday on which banks are open for business generally in Sydney.
- (c) If the day on which any act, matter or thing is to be done under this Agreement is not a business day, the act, matter or thing must be done on the next business day.
- (d) A reference in this Agreement to dollars or \$ means Australian dollars and all amounts payable under this Agreement are payable in Australian dollars.
- (e) A reference in this Agreement to any law, legislation or legislative provision includes any statutory modification, amendment or re-enactment, and any subordinate legislation or regulations issued under that legislation or legislative provision.
- (f) A reference in this Agreement to any agreement, deed or document is to that agreement, deed or document as amended, novated, supplemented or replaced.
- (g) A reference to a clause, part, schedule or attachment is a reference to a clause, part, schedule or attachment of or to this Agreement.
- (h) An expression importing a natural person includes any company, trust, partnership, joint venture, association, body corporate or governmental agency.

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- (i) Where a word or phrase is given a defined meaning, another part of speech or other grammatical form in respect of that word or phrase has a corresponding meaning.
- (j) A word which denotes the singular denotes the plural, a word which denotes the plural denotes the singular, and a reference to any gender denotes the other genders.
- (k) Reference to the word 'include' or 'including' are to be construed without limitation.
- (l) A reference to this Agreement includes the agreement recorded in this Agreement.
- (m) A reference to a party to this Agreement includes a reference to the servants, agents and contractors of the party, and the party's successors and assigns.
- (n) Any scheduled and attachments form part of this Agreement.

5. The Works

- 5.1 The Developer agrees to carry out the Works in accordance with and subject to the terms of this Agreement.
- 5.2 For the avoidance of doubt entry into this Agreement constitutes satisfaction of the deferred commencement condition requiring entry into a planning agreement contained in the Development Consent for the Bulky Goods Development and the Supermarket Development.
- 5.3 The Works shall be undertaken by the Developer in the following stages:
 - 5.3.1 Within sixty (60) days of the date of this Agreement, the Developer is to contact the RTA in relation to the concept design for the Works.
 - 5.3.2 Within twelve (12) months of the date of this Agreement, the Developer must enter into a Works Authorisation Deed with the RTA with respect to the Works. A copy of the executed Works Authorisation Deed is to be provided to the Council within two days of it being entered into.
 - 5.3.3 Within ninety (90) days of the Works Authorisation Deed being executed, the Developer is to obtain at least two (2), but no more than three(3), lump sum quotations from Suitably Qualified Contractors to carry out the Works in accordance with the requirements of the Works Authorisation Deed.
 - 5.3.4 Within 28 days of receiving quotations from the Suitably Qualified Contractors, the Developer is to attend a meeting with the Council to discuss the quotations. If all of the quotations exceed \$600,000 (excluding GST) then this Agreement may be terminated by either Party by notice given in writing and within 14 days of the meeting

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held by the Parties to discuss the quotations. If all of the quotations do not exceed \$600,000 (excluding GST) then the Parties will jointly evaluate the quotes in good faith and select a Contractor to carry out the Works.

- 5.3.5 The Developer must, within ninety (90) days of selecting the Contractor, enter into a written contract with the Contractor to carry out the Works.
- 5.3.6 The Works are to be completed by the Developer in accordance with the Works Authorisation Deed and by the Date for Completion.
- 5.3.7 Should the performance of the Works be delayed by reason of:
 - 5.3.7.1 any instructions of any of the Council or the RTA;
 - 5.3.7.2 any alterations to the Works required by the Council or the RTA;
 - 5.3.7.3 any act of God, fire explosion, earthquake, civil commotion, act of war, inclement weather affecting directly or indirectly the Developer and sub-contractors of the Developer or the suppliers of materials for the Works;
 - 5.3.7.4 the period known as "Industry Shutdown" during the two (2) week period commencing on or about 22 December in each year;
 - 5.3.7.5 the failure by any of the Council or RTA to do any act or sign any document required pursuant to the terms of this Agreement;
 - 5.3.7.6 strikes, lockouts or other industrial action and disputation affecting directly or indirectly the Developer, his sub-contractors or suppliers,

THEN in every such case the Developer shall be entitled to a fair and reasonable extension of the Date for Completion.

- 5.3.8 The Developer shall within fourteen (14) days of the completion of each of any of the events referred to in clause 5.2.7 notify the Council in writing of:
 - 5.3.8.1 the reason for the delay;
 - 5.3.8.2 the extension of time claimed by the Developer for that event.
- 5.3.9 In the event that the Council does not, by notice in writing within twenty eight (28) days of the date of any notice given pursuant to clause 5.2.8 herein dispute the extension of time claimed by the Developer then such extension of time shall be granted.

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5.3.10 Within twenty eight (28) days of any notice given to the Council pursuant to clause 5.2.8, the Council must give the Developer a written notice which shall specify:

5.3.10.1 whether the reason for the extension of time is accepted or otherwise; and

5.3.10.2 whether the length of the extension of time claimed is accepted or not.

5.3.11 The Developer agrees to make no monetary claim for delays, interferences or hindrances of any kind in the performance of the Works and agrees that any such claim shall be fully compensated for by an extension of time claimed under clause 5.2.8 or granted under clause 5.2.9 and 5.2.10, except where such increase in costs has occurred as a result of any act of the Council, RTA or any of their agents.

5.3.12 Any works in Thompson Street required to complete the Works must be the subject of a section 138 approval obtained by the Developer pursuant to section 138 of the *Roads Act 1993 (NSW)*.

6. Costs of the Works

- 6.1 The Council will pay 50% of the costs incurred by the Developer, including any project management fees payable to an independent project manager engaged by the Developer, in carrying out the Works up to a maximum amount of \$300,000 (excluding GST).
- 6.2 The Developer shall claim payment for the Works by notice given in writing to the Council on the 10th and 24th of each month.
- 6.3 Each progress claim must be given in writing to the Council and must include details for the value of the Works carried out. Claims for payments will contain sufficient details to justify costs.
- 6.4 The Council must pay the payment required by this clause to be made within 14 days of the claim for payment being made by the Developer. If the Council does not pay the amount claimed in the Developer's progress claim, the Council shall with the payment, give the Developer reasons for any difference.
- 6.5 Within twenty eight (28) days after a Final Certificate and acceptance of the Works by the RTA has been served upon the Developer by the RTA, the Developer shall give the Council a written final payment claim endorsed "Final Payment Claim" being a progress claim together with all other claims whatsoever in connection with the subject matter of this Agreement. Those monies shall be paid by the Council to the Developer within 14 days after the Council receives the final payment claim.
- 6.6 If the Council defaults in making payment in accordance with clause 6.4 and 6.5, the Council must pay interest on the outstanding amount at the rate

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prescribed by section 101(7) of the *Civil Procedure Act 2005*. Interest will only be payable for payments which are more than 30 days overdue.

7 Application of s94 and s94A of the Act to the Development

- 7.1 The application of section 94 and 94A of the Act to the Development are excluded by this Agreement.

8 Registration of this Agreement

- 8.1 The Developer agrees to procure registration of this Agreement on the relevant folio of the Register pertaining to the Land upon commencement of this Agreement

9. Dispute Resolution

9.1 Scope of clause

This clause applies in respect of any dispute, disagreement or difference between the Parties relating to the interpretation of the purpose, and implementation of, this agreement ("the Dispute").

9.2 Dispute Resolution

If the Parties are unable to resolve a Dispute then this clause 9 will apply.

9.3 Dispute handling procedure

A Party to this Agreement who has a Dispute with any other Party may start the dispute procedure provided for in this clause 9.

9.4 Dispute Procedure

The Complainant must give the Respondent a Notice setting out the following;

- (a) the nature of the Dispute;
- (b) the outcome the Complainant wants; and
- (c) what action the Complainant thinks will settle the Dispute.

9.5 Failure to resolve dispute

As soon as is reasonably practicable after a Respondent receives a Notice from a Complainant pursuant to clause 9.4, the Respondent and Complainant must try to agree about how to resolve the Dispute. If within 21 days after the service of the Complainant's Notice on the Respondent pursuant to clause 9.4 the Complainant and the Respondent have either not met and resolved the Dispute or, alternatively, have met but not resolved the Dispute, then the Dispute must be submitted to determination in accordance with clause 9.6.

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9.6 Determination

A determination, in accordance with clause 9.5, will be obtained in accordance with the following provisions:

- (a) the Complainant must send a Notice to the Respondent requiring a determination of the matter;
- (b) the determination will be made by:
 - (i) a Person agreed upon by the interested parties; or
 - (ii) if such agreement cannot be reached, a Person nominated by the President of the New South Wales Law Society and if so determined by the President or Acting President of the New South Wales Law Society, an appropriate expert with at least 5 years experience dealing with similar Disputes;
- (c) the determination will be made in the form of a written option, expressing conclusions as to:
 - (i) the outcome of the Dispute; and
 - (ii) which Party should bear the Costs of the determination, or the proportions in which the Costs of the determination should be borne amongst the Parties;
- (d) for the purpose of making the termination, each Party will be at liberty to furnish to the Person making the determination ("Referee"):
 - (i) a written submission; and
 - (ii) documents which the Party regards as relevant to the making of the determination;
- (e) either Party may request that the Referee meet with the Parties in conference, in which event:
 - (i) the conference will be held at a time and place nominated by the Referee;
 - (ii) the conference will be conducted informally;
 - (iii) the Parties will be entitled, but not obliged, to attend the conference;
 - (iv) the Parties will be entitled, but not obliged, to have legal representation at the conference;
 - (v) the Parties will be entitled, but not obliged, to make oral submissions at the conference;
 - (vi) the Parties will be entitled, but not obliged, to make statements of fact in course of the conference, either under oath or in such other way as the Referee thinks fit;

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- (vii) in the event that statements of fact are made at the conference by or on behalf of any of the Parties, the Person making such statement will be subject to cross-questioning by or on behalf of the other Party, in the discretion of the Referee;
- (viii) no formal rules of evidence will apply to such conference, and
- (ix) the conference will be conducted in private;
- (f) the Referee may give directions to the relevant Parties of a procedural nature;
- (g) the Referee will be entitled to inform himself or herself of any matter, in whatever manner the Referee thinks fit;
- (h) the Referee will make the determination in accordance with his or her understanding of the law, including his or her understanding of the true construction of this Agreement and evidence of the negotiations leading up to the execution of this Agreement can be submitted by either Party as evidence of the true construction of this Agreement;
- (i) subject to applying his or her understanding of the law, including his or her understanding of the true construction of this Agreement, the Referee will make the determination in accordance with equity and good conscience;
- (j) the Referee's fees will be payable by the Parties jointly and severally, but, amongst the relevant Parties, will be borne in accordance with the determination;
- (k) if the Referee thinks fit, he or she may determine that a Party recover from another Party their own Costs for and incidental to the determination, in which event:
 - (I) such Costs will be assessed in accordance with the determination by a legal cost assessor practicing in New South Wales; and
 - (ii) the amount so assessed will be debt due and payable between the parties in accordance with the determination.

9.7 Effect of determination

A determination made in accordance with clause 9.6 will be final and binding on the Parties, such that:

- (a) any amount found to be due and payable by one of the Parties to another Party may be enforced as a debt;
- (b) any other Obligation owed by a Party to another Party under the determination will have effect and be enforceable as a contractual

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Obligation, whether by way of specific performance or injunctive relief, or an action for damages; and

- (c) the determination may be pleaded as a bar to, and will constitute a lawful accord in respect of, any Claim in respect of the same matter;
- (d) no Party will commence proceedings in any court in respect of a Dispute to which this clause relates, unless and until a determination has been obtained in accordance with clause 9.6;
- (e) all Rights existing between the Parties prior to the making of a determination in accordance with clause 9.6 will be merged in determination, to the intent that in any subsequent proceedings the relevant Parties' Rights and Obligations will be fixed by the determination rather than by their Rights and Obligations antecedent to the determination.
- (f) neither Party will challenge a determination under clause 9.6 except on the grounds of;
 - (i) non-compliance with the provisions of this clause;
 - (ii) want of, or excess of, jurisdiction;
 - (iii) non-compliance with the applicable rules of natural justice; or
 - (iv) fraud or misrepresentation.

9.8 Continuity

This clause 9 will continue in full force and effect between the Parties to this Agreement notwithstanding the termination or rescission (or purported termination or rescission) of this Agreement, whether before or after a matter has arisen to which this clause relates, and notwithstanding that the matter concerns the termination or rescission (or purported termination or rescission) of this Agreement.

10. Enforcement

10.1 Without limiting any other remedies available to the Parties, this Agreement may be enforced by either Party in any court of competent jurisdiction.

10.2 For the avoidance of doubt, nothing in this Agreement prevents:

- (a) a Party from bringing proceedings in the Land & Environment Court to enforce any aspect of this Agreement or any matter to which this Agreement relates; and
- (b) the Council from exercising any function under the Act or any other Act or law relating to the enforcement of any aspect of this Agreement or any matter to which this Agreement relates.

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11. Notices

11.1 Any notice, consent, information, application or request that must or may be given or made to a Party under this Agreement is only given or made if it is in writing and sent in one of the following ways:

- (a) Delivered or posted to that Party at its address set out below.
- (b) Faxed to that Party at its fax number set out below.
- (c) Emailed to that Party at its email address set out below.

Council

Attention: The General Manager
Address: P O Box 122, Muswellbrook NSW 2333
Fax No: 02 65 49 3701
Email: council@muswellbrook.nsw.gov.au

Developer

Attention: Brett Cooper
Address: PO Box 2833, Taren Point NSW 2229
Fax No: 9524 5559
Email: brett@cooperwilson.com.au

11.2 If a Party gives the other Party 3 business days notice of a change of its address or fax number, any notice, consent, information, application or request only given or made by that other Party if it is delivered, posted or faxed to the latest address or fax number.

11.3 Any notice, consent, information, application or request is to be treated as given or made at the following time:

- (a) If it is delivered, when it is left at the relevant address.
- (b) If it is sent by post, 2 business days after it is posted.
- (c) If it is sent by fax, as soon as the sender receives from the sender's fax machine a report of an error free transmission to the correct fax number.

11.4 If any notice, consent, information, application or request is delivered, or an error free transmission report in relation to it is received, on a day that is not a business day, or if on a business day, after 5pm on that day in the place of the Party to whom it is sent, it is to be treated as having been given or made at the beginning of the next business day.

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12. Approvals and consent

- 12.1 Except as otherwise set out in this Agreement, and subject to any statutory obligations, a Party may not unreasonably refuse to give its approval or consent and if consent is to be given can be subject to any conditions determined by that party acting reasonably..

13. Assignment and Dealings

- 13.1 In the event that the Developer shall enter into a contract of sale of the Land whilstever this Agreement is in force then the Developer shall include in such contract for sale a clause requiring any Purchaser of the Land to enter into an Agreement with the Council on the same terms as this Agreement.

14. Costs

- 14.1 Each party is to be responsible for their own legal costs in relation to the negotiation and entering into of this Agreement.

15. Entire agreement

- 15.1 This Agreement contains everything to which the Parties have agreed in relation to the matters it deals with. No Party can rely on an earlier document, or anything said or done by another Party, or by a director, officer, agent or employee of that Party, before this Agreement was executed, except as permitted by law.

16. Further acts

- 16.1 Each Party must promptly execute all documents and do all things that another Party from time to time reasonably requests to affect, perfect or complete this Agreement and all transactions incidental to it.

17. Governing law and jurisdiction

- 17.1 This Agreement is governed by the law of New South Wales. The Parties submit to the non-exclusive jurisdiction of its courts and courts of appeal from them. The Parties will not object to the exercise of jurisdiction by these courts on any basis.

18. Joint and individual liability and benefits

- 18.1 Except as otherwise set out in this Agreement, any agreement, covenant, representation or warranty under this Agreement by 2 or more persons binds them jointly and each of them individually, and any benefit in favour of 2 or more persons is for the benefit of them jointly and each of them individually.

19. No fetter

- 19.1 Nothing in this Agreement shall be construed as requiring Council to do anything that would cause it to be in breach of any obligations at law, and

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without limitation, nothing shall be construed as limiting or fettering in any way the exercise of any statutory discretion or duty.

20 Representations and warranties

- 20.1 The Parties represent and warrant that they have power to enter into this Agreement and comply with their obligations under the Agreement and that entry into this Agreement will not result in the breach of any law.

21 Severability

- 21.1 If a clause or part of a clause of this Agreement can be read in a way that makes it illegal, unenforceable or invalid, but can also be read in a way that makes it legal, enforceable and valid, it must be read in the latter way. If any clause or part of a clause is illegal, unenforceable or invalid, that clause or part is to be treated as removed from this Agreement, but the rest of the Agreement is not affected.

22. Modification

- 22.1 No modification of this Agreement will be of any force or effect unless it is in writing and signed by the Parties to this Agreement.

23 Waiver

- 23.1 The fact that a Party fails to do, or delays in doing, something the Party is entitled to do under this Agreement, does not amount to a waiver of any obligation of, or breach of obligation by, another Party. A waiver by a Party is only effective if it is in writing. A written waiver by a Party is only effective in relation to the particular obligation or breach in respect of which it is given. It is not to be taken as an implied waiver of any other obligation or breach or as an implied waiver of that obligation or breach in relation to any other occasion.

24. GST

- 24.1 If any Party reasonably decides that it is liable to pay GST on a supply made to the other Party under this Agreement and the supply was not priced to include GST, then recipient of the supply must pay an additional amount equal to the GST on that supply.

25. Termination

- 25.1 Subject to clause 5.2.4, this Agreement is terminated on the date the Developer is released and discharged in accordance with clause 25.2.
- 25.2 The Council agrees to provide a release and discharge of this Agreement upon the acceptance of the Works by the RTA and to do all things necessary to have such release and discharge registered by the Register-General in the relevant folio of the Register.

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26 Explanatory Memorandum

- 26.1 The Explanatory Memorandum relating to this Agreement must not be used to assist in construing this Agreement.

Execution

Executed as an Agreement this 20 day of DECEMBER 2010.

The Seal of
Muswellbrook Shire Council
was affixed in accordance
with the resolution dated: 8 November 2010

General Manager

STEVE McDONALD
(print name)

Mayor
Marian Rish
(print name)

Executed by **BBT PROPERTY PTY LTD**
(ACN 145 010 297) in accordance with
Section 127 of the Corporations Act 2001
by:

Signature - Director

RICHARD BARRELL
Name

Signature - Director

BREN BARRELL
Name

Explanatory Note to Planning Agreement
Between Muswellbrook Shire Council and BBT Property Pty Ltd
Environmental Planning and Assessment Regulation 2000
(clause 25E)

1. Background

- 1.1 On 27 November 2009 Patarm Pty Ltd (ACN115 080 629) ("Patarm") entered into a Planning Agreement with Muswellbrook Shire Council (Planning Authority) in connection with two separate development applications.
- 1.2 Patarm proposes to enter into a Contract for the sale of Lot 101 DP 793194 known as Lot 101 Thompson Street, Muswellbrook (the Land) to BBT Property Pty Ltd (ACN 145 010 297) (Developer).
- 1.3 It is a condition of the Planning Agreement between Patarm and the Planning Authority that in the event Patarm sells the Property it is to ensure that BBT enters into a new Planning Agreement with the Planning Authority in connection with the two separate development applications.

2. Description of Subject Land

The Planning Agreement relates to the Land.

3. Description of Development Applications

On 10 March 2008, Council granted deferred commencement consent to Development Application No. 462/2007 for a supermarket, specialty shops and a two (2) lot commercial subdivision on the Land (the Development Consent).

Prior to the application being determined by Council, Patarm made an offer by letter dated 27 February 2008 to enter into a Planning Agreement to make a development contribution towards upgrading the intersection of Thompson Street and the New England Highway for the safe ingress and egress of vehicles associated with the proposed development and surrounding area by the installation of traffic lights.

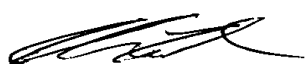
The Development Consent was granted subject to two deferred commencement conditions. Condition No. 1 requires the proponent to enter into a Planning Agreement with Council in accordance with:

- (a) Division 6 of Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act); and
- (b) The terms of the proponent's offer to Council dated 27 February 2008.

Condition No. 2 relates to the submission of stormwater engineering details.

The Development Consent does not operate until the above conditions have been satisfied and Council has issued written notice to this effect.


On 9 March 2009, Council resolved to modify the Development Consent under Section 96 of the EP&A Act in the following manner:

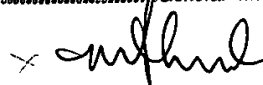


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MUSWELLBROOK COUNCIL

 General Manager



- Extension of timeframe to comply with Deferred Commencement conditions to 10 March 2010;
- Reconfigured building to align with northern and eastern boundaries;
- Reduced supermarket floor area from 2500m² Gross Floor Area (GFA) to 2040m² GFA;
- Reduced specialty retail (7x retail outlets) from 540m² GFA to 355m² GFA;
- Reduced total built upon area from 3154m² to 2400m²;
- Increased car parking spaces from 127 spaces and 2 disabled parking spaces to 140 parking spaces and 3 disabled spaces;
- Reconfigured car parking area, landscaped areas and loading dock;
- Reconfigured entry courtyard/plaza area and colonnade;
- Realigned exit driveway;
- Slight repositioning of the two pylon signs;
- Realigned public amenities; and
- New signs approach; two smaller flush wall signs and one additional flush wall sign.

A separate Development Application No. 325/2008 for a bulky goods retail outlet proposed at the southern end of the site was approved by Council on 9 March 2009. The development consent was granted to DA No. 325/2008 subject to two deferred commencement conditions. Condition No. 1 requires the proponent to enter into a Planning Agreement with Council in accordance with

- (a) Division 6 of Part 4 of the Environmental Planning and Assessment Act 1979; and
- (b) The terms of the proponent's offer to Council dated 24 February 2009.

Condition No. 2 relates to the submission of stormwater engineering details.

The consent does not operate until the above conditions have been satisfied and Council has issued written notice to this effect.

4. Summary of Objectives, Nature and Effect of the Planning Agreement

The objective of the Planning Agreement is to facilitate the payment of monetary contributions by Council towards the cost of the intersection upgrade works.

The Planning Agreement requires the Developer to upgrade the intersection of Thompson Street and the New England Highway by the installation of traffic lights to RTA standards. Council will pay 50% of the costs incurred by the Developer, including any project management fees payable to an independent project manager

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engaged by the Developer, in carrying out the works up to a maximum amount of \$300,000 (excluding GST).

5. Key Features of the Voluntary Planning Agreement

The key features of the Planning Agreement are set out below with an explanation as necessary:

- (a) The Planning Agreement requires the upgrading of the intersection of Thompson Street and New England Highway to be completed within 12 months after the date on which a contract is entered into between the developer and Contractor to carry out the works;
- (b) The Council will pay 50% of the costs incurred by the Developer, including any project management fees, in carrying out the works up to a maximum of \$300,000.00 (excluding GST);
- (c) The Planning Agreement contains provisions relating to dispute resolution, should disputes arise between the relevant parties; and
- (d) The Planning Agreement will be registered on the title to the Land.

6. Merits of the Planning Agreement and impact on the public

The Planning Purposes Served by the Draft Planning Agreement

The Planning Agreement provides the upgrading of the intersection of Thompson Street and the New England Highway through the installation of traffic signals and completion of associated road works. The intersection improvements will benefit both the subject development and the local area by improving the efficiency and safety of the intersection which is currently operating at a poor level of service (Level of Service F).

How the Draft Planning Agreement Promoted the Objects of the EP&A Act

The Planning Agreement is consistent with the objects of the EP&A Act as it promotes the orderly and economic use and development of land.

How the Draft Planning Agreement Promotes the Public Interest

The Planning Agreement is in the public interest as it will facilitate the upgrading of public infrastructure (i.e. the intersection of Thompson Street and New England Highway) to the benefit of the local community. The proposed upgrade will improve public safety and the operational efficiency of the intersection.

For Planning Authorities:

(a) Councils – How the Planning Agreement Promotes the Elements of the Council's Charter

The contributions payable under the Planning Agreement will be used to fund the development and upgrading of a community asset in accordance with Council's obligations under the charter. The agreement considers the long term needs of the

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local community and promotes the effective management of the assets for which Council is responsible.

(b) All Planning Authorities – Whether the Draft Planning Agreement Conforms with the Authority's Capital Works Program

Council's contribution payable under the Planning Agreement is allocated in Council's approved Capital Works Budget.

The Impact of the Draft Planning Agreement on the Public or Any Section of the Public

The Planning Agreement will not have an adverse impact on the public or any section of the public

Signed and Dated by All Parties

MUSWELLBROOK COUNCIL




.....General Manager

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**10.1.2. DA 2023-78 Geotechnical Investigations for Upper Reservoir proposed Muswellbrook Pumped Hydro****Attachments:**

1. Attachment A - S4.15 Development Assessment Report [**10.1.2.1** - 18 pages]
2. Attachment B - DA 2023-78 Recommended conditions of Consent [**10.1.2.2** - 4 pages]
3. Attachment D - Redacted Submission [**10.1.2.3** - 1 page]
4. Attachment C - Development Proposal [**10.1.2.4** - 102 pages]
5. Attachment E - Applicant's response to Submissions [**10.1.2.5** - 5 pages]

Responsible Officer: Sharon Pope - Director - Planning & Environment

Author: Tanya Alsleben (Development Planner)

Community Plan Issue: *Not Applicable*

Community Plan Goal: *Not Applicable*

Community Plan Strategy: *Not Applicable*

Not applicable

PURPOSE

This report has been prepared to assist Council in the determination of DA 2023-78 for geotechnical investigations and associated land clearing related to investigations to inform the design of the upper reservoir for the proposed Muswellbrook Pumped Hydro project.

The application has been reported to Council for determination as the project is related to mining and energy generation.

OFFICER'S RECOMMENDATION

Council grants development consent to DA 2022-78 for Geotechnical Investigations and associated works at Lot 93 DP: 752484, Lot 24 DP: 752484, Lot 84 DP: 752484, Lot 85 DP: 752484, Lot 23 DP: 752484, Lot 167 DP: 752444, Lot 5 DP: 1178473, Lot 1 DP: 134665, Lot 1 DP: 398873, Lot 100 DP: 666041, Lot 1 DP: 113760, Part Lot 126 DP: 752444, subject to the recommended conditions of consent included in Attachment B.

Moved: _____ **Seconded:** _____



DESCRIPTION OF PROPOSED DEVELOPMENT

This development application seeks consent to carry out geotechnical investigations to inform a feasibility study for a possible future pumped hydro energy storage scheme.

The proposed geotechnical works would be carried out across a site that incorporates 12 Lots (the majority of which are in the ownership of Idemitsu and part of the Muswellbrook Coal Mine site).

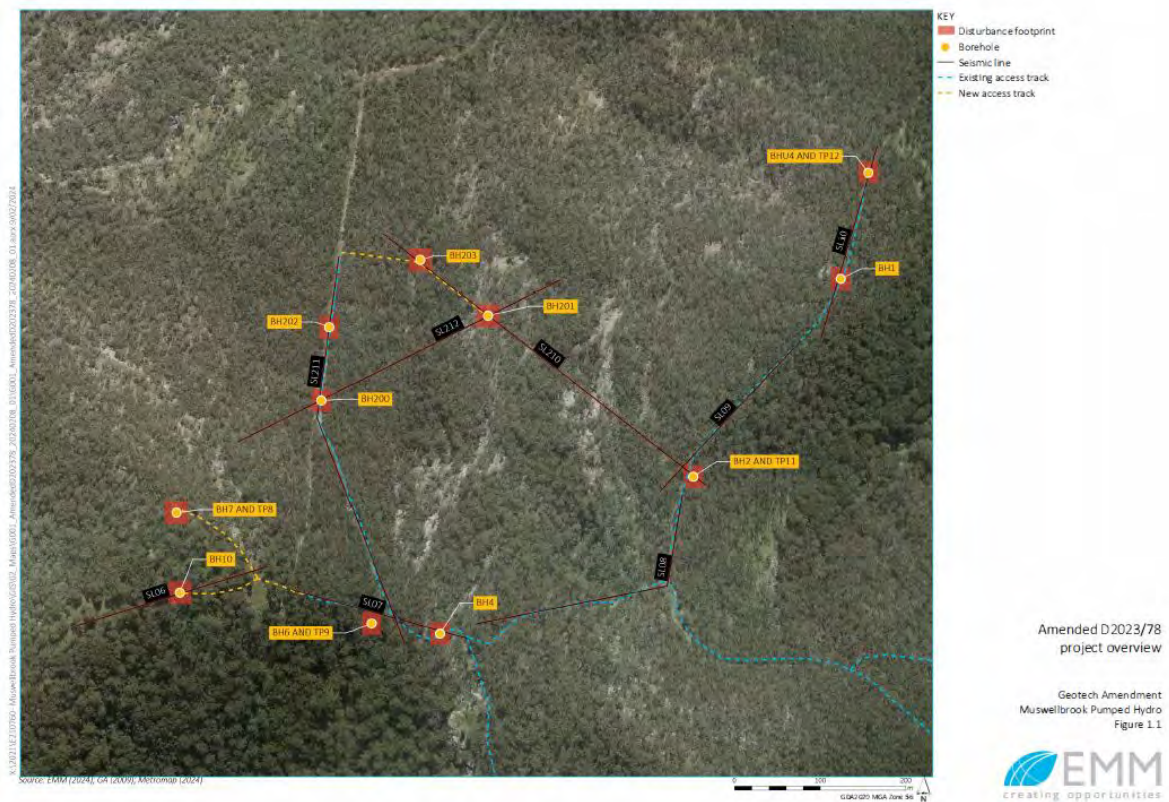
Works proposed in this application involve:

- The improvement and establishment of access tracks and seismic lines within the site to drilling locations.
- Earthworks, clearing, and site establishment works at bore hole and test pit investigation locations.
- The drilling of 11 borehole pits – boreholes would involve drilling between 200m – 300m below surface level.
- The excavation of four test pits – test pits would involve excavations up to 5m deep and 4m in length.
- Removal of investigation equipment and site restoration at the completion of the investigatory works.

The works are proposed to be completed within a 12-week period, as a 24-hour, 7 days per week operation, as the drills do not perform efficiently if they are required to stop and restart.

Vehicle access to the site would be via the New England Highway, Sandy Creek Road, and Dolahentys Road. A Traffic Impact Assessment has been submitted in relation to the project.

The image below identifies the test pit and borehole location at the site.





Access to the site investigation area is identified by the blue dashed line in the image below.



ASSESSMENT SUMMARY

Several technical documents were submitted as part of the proposed development. Given the size of these reports they have not been included as attachments. A summary of the reports and key findings have been included below for Council's information.

Copies of the accompanying reports can be circulated to Councillors under separate cover for their review, if requested

- Statement of Environmental Effects details the scope of the proposed development and includes an assessment of the project's impacts.
- Flora and Fauna Assessment – Examines vegetation and ecosystem disturbance associated with the proposed works against legislated criteria. The report concludes that the proposed development may proceed.
- Aboriginal Heritage Assessment – The report identifies potential cultural heritage implications of the project and concludes that the proposed development will have a low risk of harming Aboriginal objects or places, and outlines recommendations to minimise any potential impact to Aboriginal Heritage.
- Noise and Vibration Assessment – This report assesses the noise and vibration impacts for the proposed works. The report concludes that predicted noise levels will stay below the acceptable noise threshold (below 76dB(A)).
- Traffic Impact Assessment – The overall volume of traffic related to this, and the lower reservoir project, is anticipated to involve 48 heavy vehicle movements per day during both mobilisation and demobilisation, and 8 heavy vehicle movements and 16 light vehicle movements per day for the duration of the proposed works. Considering the short duration of the work, and the capacity of the road network, this traffic will have minimal impact on the road network.

Council Officers have assessed the proposal under Section 4.15 of the Environmental Planning and Assessment Act 1979 (see Attachment A). Council Officers recommend that the development application be approved subject to conditions. Key issues and findings are:

- The site is zoned partly RU1 Primary Production and partly C3 Environmental



Management under the provisions of the Muswellbrook LEP 2009. The proposed earthworks are a type of activity permissible with consent under this Environmental Planning Instrument and compatible with the relevant land use zone provisions.

- The proposed development was lodged as integrated development pursuant to the Water Management Act 1993. The Department of Planning and Environment – Water advised that the proposed works did not require a controlled activity permit under this legislation and may proceed subject to Council requirements.
- The proposed development is compliant with the relevant provisions of the Muswellbrook Development Control Plan (DCP).
- The proposed development meets the requirements of relevant State Environmental Planning Policies.
- The Noise Impact Assessment prepared in relation to the works concluded that the works may be carried out with unrestricted operating hours without generating noise emissions that would have a significant impact on adjoining residential receivers.

In 2020 Council granted development consent to a previous development application involving geotechnical work related to the pumped hydro project (DA 2020/40). That development application proposed site access via Limestone and involved site investigation works. Council has not received any complaint related to the impact of works associated with DA 2020/40.

CONSULTATION

The Application was notified to adjoining owners from 24/08/2023 – 14/09/2023 (21-day notification period). A notice was also placed on the Council's website and Facebook page at the commencement of the notification period.

One (1) submission was received during the notification period. A redacted copy of the submission has been included in attachment D.

Matters raised in the submissions primarily relate to concerns about the detrimental impact to the environment, natural habitats, and future impact to the locality. These matters have been considered through the assessment of the development application and were not considered to present an issue that would substantiate the refusal of the proposed development.

OPTIONS

Council may:

- A. Approve the proposed development subject to the recommended conditions of consent.
- B. Approve the proposed development subject to amended conditions of consent.
- C. Refuse the proposed development and, in doing so, provide reasons for refusal.

CONCLUSION

DA 2023-78 has been assessed against the provisions of Section 4.15 of the Environmental Planning and Assessment Act 1979. Council Officers recommend that the development be approved subject to the recommended conditions outlined in Attachment B.

LEGAL IMPLICATIONS

Where the applicant is dissatisfied with the determination of the development application, they have an opportunity, under the provisions of the Environmental Planning and Assessment Act 1979, to appeal that determination at the Land and Environment Court.

**Extended
DEVELOPMENT ASSESSMENT REPORT**

Attached: Site Plan

REPORT TO: COUNCIL

ADDRESS:	LOT: 93 DP: 752484, LOT: 24 DP: 752484, LOT: 84 DP: 752484, LOT: 85 DP: 752484, LOT: 1 DP: 113760, PRT: 126 DP: 752444, LOT: 23 DP: 752484, LOT: 167 DP: 752444, LOT: 5 DP: 1178473, LOT: 1 DP: 134665, LOT: 1 DP: 398873, LOT: 100 DP: 666041 Dolahentys Road MCCULLYS GAP, 250 Dolahentys Road MCCULLYS GAP, Muscle Creek Road MUSWELLBROOK, Limestone Road MUSWELLBROOK
APPLICATION No:	2023/78
PROPOSAL:	Geotechnical Drilling & minor vegetation clearing
OWNER:	Mr M H Keegan
APPLICANT:	AGL Macquarie Level 24 200 George Street SYDNEY NSW 2000
AUTHOR:	Tanya Alsleben
DATE LODGED:	11/08/2023
DATE OF REPORT:	11/03/2024

1. RECOMMENDATION

It is recommended that development consent be granted to DA 2023/78 for Geotechnical Drilling and associated works subject to the recommended conditions of consent.

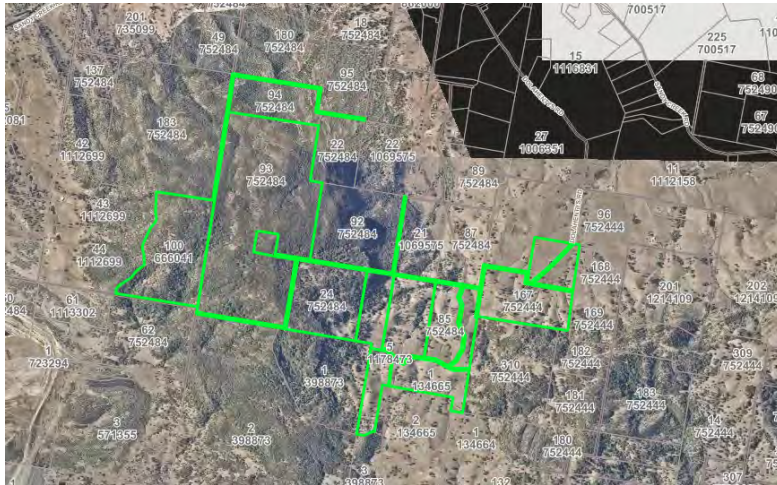
2. SITE LOCALITY AND DESCRIPTION

The subject site is located to the northeast of the Muswellbrook Coal Mine site. The lots are zoned as RU1 Primary Production and C3 Environmental Management. Access to the site is derived via Dolahentys Road, which terminates at Lot 167 DP 752444. The site comprises 12 Lots, most of which are located on a relatively undisturbed hill (Bells Mountain).

- LOT: 93 DP: 752484,
- LOT: 24 DP: 752484,
- LOT: 84 DP: 752484,
- LOT: 85 DP: 752484,
- LOT: 23 DP: 752484,
- LOT: 167 DP: 752444,
- LOT: 5 DP: 1178473,
- LOT: 1 DP: 134665,
- LOT: 1 DP: 398873,
- LOT: 100 DP: 666041
- LOT: 1 DP: 113760,
- PRT: 126 DP: 752444,

The entirety of the subject site is identified in the image below.

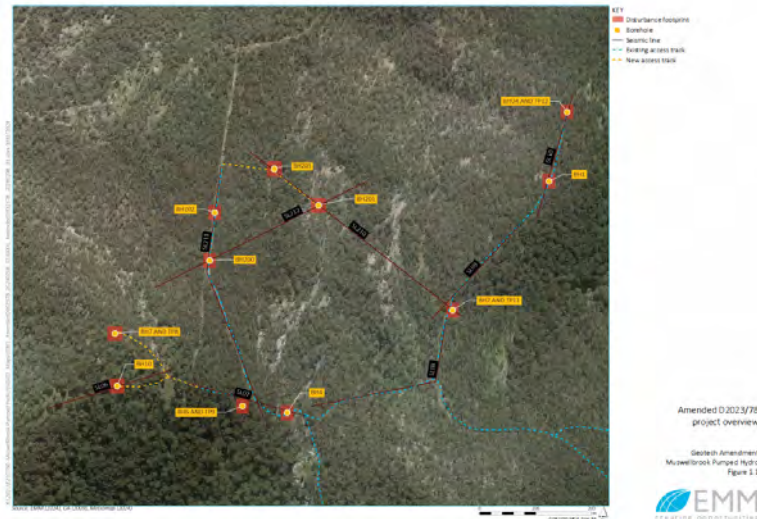
Figure 1. – Site Aerial Image (Source: Spectrum)



The site has a total area of approximately 500ha and is located to the North East of the town of Muswellbrook.

The site is zoned partly RU1 Primary Production and partly C3 Environmental Management Zone.

The image below illustrates the boreholes, test pits and seismic lines currently proposed.



To facilitate the geotechnical investigation works, clearing and access track construction is required.

A summary of the full scope of associated works has been included below:

A. Creation of access tracks and seismic lines

- Augmentation and improvement of existing farm access tracks to facilitate safe site access.
- Creation of new access tracks 4m wide.
- Creation of new seismic lines 0.5m wide.
- Ongoing Maintenance of the access tracks and seismic lines.

B. Establishment of laydown areas

- Creation of a level laydown area with a maximum pad size of 25m by 25m for each borehole. This equates to a total of $625\text{m}^2 \times 11 = 6875\text{m}^2 = 0.69\text{ha}$ of vegetation clearing for the boreholes. The test pits require a level laydown area with a maximum pad size of 10m by 10m, however, the test pits will be located within the laydown area of the boreholes and therefore do not require further vegetation clearing.

C. Borehole Creation, Use and Decommissioning

- Borehole creation using a drilling rig, reaching depths of around 200 m – 300 m below ground surface
- Excavating the test pits using a track mounted excavator digging pits up to 5 m deep, 1 m wide and 4 m long. Test pits are backfilled immediately after reaching target depth and geotechnical logging and sampling is completed
- Boreholes would be decommissioned within 28 days of completing all drilling, testing, and imaging. This would involve either the Installation of fully grouted vibrating wire piezometers and data logger or backfilling with grout.

D. Site rehabilitation works, including:

- Removing all equipment and environmental controls
- Undertaking maintenance works including erosion control of temporary access tracks
- Reinstating areas where a cut/fill benches were created
- Re-seeding access track areas which are not required for future site access

E. Geophysical Survey Work

Geophysical survey using seismic refraction tomography (SRT) may be undertaken which involves placing a series of non-destructive geophones on the ground surface, connected by cables and collecting

F. Survey and Mapping Works

Minor geophysical survey works may be undertaken as exempt development, under Clause 2.30 of *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* as part of the development.

4. RELEVANT HISTORY

The Assessing Officer could not find any previous approvals for the sites on Council's Mapping System.

5. REFERRAL COMMENTS

Internal Referrals

The application was referred to Council's Roads and Drainage Section and Council's Environmental Officer.

Roads and Drainage Section

Advised that overall, the proposed development is considered unlikely to have any significant impact on Council's Road network as the proposal only involves geotechnical investigations conducted over a limited duration with limited heavy vehicle or operational traffic within that period.

Development Compliance Officer

Made recommendations related to conditions of consent and management practices to minimise the environmental impact of the investigation works. These recommendations have been considered in preparing the recommended conditions of consent.

External Referrals

The application was referred to NSW Subsidence Advisory and the Department of Planning and Environment-Water (also known as Natural Resources & Access Regulator).

Subsidence Advisory

The subject site is located within a 'subsidence district' identified as being potentially impacted by mine subsidence under the Coal Mine Subsidence Compensation Act 2017. Accordingly, the proposed development is integrated development under the Environmental Planning and Assessment Act 1979 and requiring referral to NSW Subsidence Advisory.

NSW Subsidence Advisory responded to the referral noting that the proposed works do not require the approval of Subsidence Advisory NSW.

Department of Planning and Environment-Water

The proposed development was lodged as integrated development pursuant to the provisions

Commented [TA1]: waiting to dept updated comments, thought i would forward to review as this will not take very long to update

of the Water Management Act 1993. The proposed development was referred to the Department of Planning and Environment – Water who advised that the proposed works did not require a controlled activity permit under this legislation and may proceed subject to Council requirements.

6. ASSESSMENT - Section 4.15 Matters for Consideration

An assessment of the material presented in the Application against the relevant State and local planning legislation and policy has been undertaken.

Section 4.15(1)(a)(i) The provisions of any Environmental Planning Instrument (EPI)

A. Muswellbrook Local Environmental Plan 2009 (MLEP 2009)

Part 2 Permitted or prohibited development

Land use Zone	C3 Environmental Management
Proposed Use	Earthworks
Permissibility	Permitted with Consent
Zone Objective	Complies with Objective

Land Use Zone and Permitted Land Use

The development does not propose the establishment of a land use at the site, only the carrying out of geotechnical investigation works as earthworks.

Earthworks are not deemed development types under the Standard Instrument and are therefore not subject to the Land Use Table of the MLEP 2009. The proposed geotechnical investigations are therefore permissible with consent at the Site, as these are works that are not prohibited. Council Officers are satisfied that the proposed works are permissible with consent.

Land use zone objectives

In addition to the land use permissibility the Muswellbrook LEP also requires consideration of the related land use zone objectives. The subject site is zoned a mixture of RU1 Primary Production and C3 Environmental Management.

The objectives under the RU1 Primary Production Zone are as follows:

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- To encourage diversity in primary industry enterprises and systems appropriate for the area.
- To minimise the fragmentation and alienation of resource lands.
- To minimise conflict between land uses within this zone and land uses within adjoining zones.
- To protect the agricultural potential of rural land not identified for alternative land use, and to minimise the cost to the community of providing, extending and maintaining public amenities and services.
- To maintain the rural landscape character of the land in the long term.
- To ensure that development for the purpose of extractive industries, underground mines (other than surface works associated with underground mines) or open cut mines (other than open cut mines from the surface of the flood plain), will not—
 - (a) destroy or impair the agricultural production potential of the land or, in the case of underground mining, unreasonably restrict or otherwise affect any other development on the surface, or

- (b) detrimentally affect in any way the quantity, flow and quality of water in either subterranean or surface water systems, or
- (c) visually intrude into its surroundings, except by way of suitable screening.

- To protect or conserve (or both)—

- (a) soil stability by controlling development in accordance with land capability, and
- (b) trees and other vegetation, and
- (c) water resources, water quality and wetland areas, and their catchments and buffer areas, and
- (d) valuable deposits of minerals and extractive materials by restricting development that would compromise the efficient extraction of those deposits.

The proposed development is a temporary use (investigation) and not contrary to the objectives under the RU1 Primary Production Zone.

The objectives under the C3 Environmental Management Zone are as follows:

- To protect, manage and restore areas with special ecological, scientific, cultural or aesthetic values.
- To provide for a limited range of development that does not have an adverse effect on those values.
- To maintain, or improve in the long term, the ecological values of existing remnant vegetation of significance including wooded hilltops, river valley systems, major scenic corridors and other local features of scenic attraction.
- To limit development that is visually intrusive and ensure compatibility with the existing landscape character.
- To allow agricultural activities that will not have an adverse impact on the environmental and scenic quality of the existing landscape.
- To promote ecologically sustainable development.
- To ensure that development in this zone on land that adjoins land in the land zoned C1 National Parks and Nature Reserves is compatible with the objectives for that zone.

The proposed development is a temporary use (investigation) and not contrary to the objectives under the C3 Environmental Management Zone.

Part 4 Principal Development Standards

The provisions set out in this Part of Muswellbrook LEP 2009 do not include any controls which affect the carrying out of the proposed development.

Part 5 Miscellaneous Provisions

The provisions set out in this Part of Muswellbrook LEP 2009 do not include any controls which affect the carrying out of the proposed development.

Part 6 Urban Release Area

The provisions set out in this Part of Muswellbrook LEP 2009 do not include any controls which affect the carrying out of the proposed development.

Part 7 Additional Local Provisions

7.6 Earthworks

The proposed development involves extensive earthworks for the preparation of the site and the geotechnical investigation. Clause 7.6 of the Muswellbrook LEP states that

(3) Before granting development consent for earthworks, the consent authority must consider the following matters—

- (a) the likely disruption of, or any detrimental effect on, existing drainage patterns and soil stability in the locality,
- (b) the effect of the proposed development on the likely future use or redevelopment of the land,
- (c) the quality of the fill or of the soil to be excavated, or both,
- (d) the effect of the proposed development on the existing and likely amenity of adjoining properties,
- (e) the source of any fill material or the destination of any excavated material,
- (f) the likelihood of disturbing relics,
- (g) the proximity to and potential for adverse impacts on any watercourse, drinking water catchment or environmentally sensitive area.

Drainage Patterns and Soil Stability - The development involves minor above ground works that will have erosion control measures imposed in accordance with an approved erosion and sediment control plan. The development is unlikely to have any significant impact on the overland flow of rainwater. The underground penetration of the development has been referred to the Department of Planning and Environment-Water who has issued general terms of approval requiring a water licensing approval. This requirement has been included in the recommended condition of consent should the application be approved.

Future Use and redevelopment of the land – The proposed development is part of the initial preliminary works to investigate the potential for future development of the land for the purposes of the Muswellbrook Pumped Hydro Scheme.

Quality of Soil to be excavated – The drilling involved for the geotechnical investigation has been estimated to create around 60 tonnes of dirty water and drill cuttings. A condition has been included requiring drilling waste to be disposed of by a licensed contractor in accordance with the NSW requirements. The Assessing Officer recommends including a condition requiring receipts to be provided to Council confirming that the material has been disposed of to a licensed facility.

Impact on Adjoining properties – Discussed in detail later in this report.

Source or destination of any fill material – Discussed in points above. Condition Imposed.

Likelihood of disturbing relics – A standard Heritage NSW condition has been imposed in relation to uncovering relics:

Archaeological deposits or Relics

The applicant must ensure that if any unexpected archaeological deposits or relics not identified and considered in the supporting documents for this approval are discovered, work must cease in the affected area(s) and the Environmental Protection and Regulation Group of the OEH must be contacted.

Additional assessment and approval may be required prior to works continuing in the affected area(s) based on the nature of the discovery.

Adverse impacts on any watercourse etc – Considered under DPE-Water License.

B. State Environmental Planning Policies Relevant to Muswellbrook Shire

SEPP (Biodiversity and Conservation) 2021

Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
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Chapter 2 Vegetation in non-rural areas

This chapter aims to protect the biodiversity values of trees and other vegetation in non-rural areas of the State, and to preserve the amenity of non-rural areas of the State through the preservation of trees and other vegetation by outlining the types of clearing permitted with or without consent and relevant provisions for the same.

The proposal does not involve the clearing of any native vegetation in a non-rural area and therefore this section of the SEPP does not need to be considered further.

Chapter 3 Koala habitat protection 2020

This Chapter applies in the Muswellbrook Shire Council local government area. This environmental planning instrument encourages the conservation and management of natural vegetation areas that provide habitat for koalas.

Under Schedule 2 of this SEPP, the Central Coast Koala Management Plan is applicable within the Muswellbrook Shire Council. This Chapter applies to land in the following land use zones:

- (a) Zone RU1 Primary Production,
- (b) Zone RU2 Rural Landscape,
- (c) Zone RU3 Forestry.

The land subject to this development application has been identified as RU1 Primary Production and C3 Environmental Management and therefore, this chapter under the SEPP applies if:

- i. the land has an area of more than 1ha or
- ii. has, together with adjoining land in the same ownership, an area of more than 1 hectare.

The proposed development will require the removal of 0.91 hectares of potential Koala habitat. While this does not trigger the Koala SEPP, the applicant has provided a Biodiversity Assessment considering the potential impacts to flora and fauna caused by the development (discussed later in this report)

Chapter 4, 5 & 13 Koala habitat protection 2021

These Chapters of the SEPP does not apply to Muswellbrook Shire Council.

SEPP (Building Sustainability Index: BASIX) 2004

Satisfactory: ☐ Yes ☐ No ☒ NA

The proposed development is not defined as BASIX Affected Development

SEPP (Housing) 2021

Satisfactory: ☐ Yes ☐ No ☐ NA

The proposal does not involve any affordable or diverse housing as defined under this SEPP and therefore does not need to be considered further.

SEPP (Industry and Employment) 2021

Satisfactory: ☐ Yes ☐ No ☒ NA

Not Applicable

Chapter 3 Advertising and signage

The proposal does not involve any signage and therefore, this chapter under the SEPP does not

need to be considered further.
SEPP No 65—Design Quality of Residential Apartment Development
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
The proposal does not involve any residential apartment development and therefore, this chapter under the SEPP does not need to be considered further.
SEPP (Planning Systems) 2021
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
Chapter 2 State and regional development
The DA will be determined by MSC as the capital investment value is \$ 1,888,600.00 and does not meet the requirements for designation as State Significant Development or Regionally Significant Development under the State Environmental Planning Policy (Planning Systems) 2021.
Chapter 3 Aboriginal land
The proposed development is not located within the Aboriginal Land Application Map and therefore this section of the SEPP does not need to be considered further.
SEPP (Primary Production) 2021
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
The proposal does not involve any Primary Production use as defined under this SEPP and therefore does not need to be considered further.
SEPP (Resilience and Hazards (2021)
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
Chapter 2 Coastal Management
The proposed development is not located in a coastal zone and therefore this section of the SEPP is not applicable.
Chapter 3 Hazardous and offensive development
The proposal does not involve any hazardous or offensive development and will not be impacted by any such nearby development and therefore this section of the SEPP does not need to be considered further.
Chapter 4 Remediation of Land
This chapter under the SEPP requires that a consent authority must not consent to the carrying out of any development on land unless:
<ul style="list-style-type: none"> (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 (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.

Council Officers are unaware of any activities which have carried out on the site likely to have caused the contamination of the land. Furthermore, there are no known previous investigations regarding contamination on the subject land or land use restrictions issued by the EPA. The site seems to be virgin land that has not had any previous development on the site and is therefore unlikely to have any significant contamination.

It is considered that the subject site is unlikely to be affected by contamination requiring remediation in accordance with the SEPP due to the nature of the proposed works. The proposed development may therefore proceed without the need to further consider the provisions of this SEPP

SEPP (Resources and Energy) 2021

Satisfactory: ☐ Yes ☐ No ☒ NA

Chapter 2 Mining, petroleum production and extractive industries

The proposal does not involve any development outlined under this SEPP.

Chapter 3 Extractive industries in Sydney area

Not within applicable area.

SEPP (Transport and Infrastructure) 2021

Satisfactory: ☐ Yes ☐ No ☒ NA

Chapter 2 Infrastructure

The proposed development application does not involve any such development as outlined under part 2.3 of this SEPP and therefore does not need to be considered further.

Chapter 3 Educational establishments and child care facilities

The proposal does not involve any educational establishments or child care facilities and therefore does not need to be considered further.

Chapter 4 Major infrastructure corridors

This chapter applies to all land:

- in a future infrastructure corridor; or
- within 25 in any direction of a future infrastructure corridor

The proposal does not involve any development on the land to which this SEPP applies and therefore does not need to be considered further.

Section 4.15(1)(a)(ii) the provisions of any draft EPI.

There are no draft EPIs relevant to the subject Application.

Section 4.15(1)(a)(iii) the provisions of any development control plan

Muswellbrook DCP 2009

Section 3 Site Analysis

Satisfactory: ☒ Yes ☐ No ☐ NA

A site and other relevant documentation has been provided with the application.	
Section 5 Subdivision	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	
Section 6 Residential Development	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	
Section 7 Village Zones	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	
Section 8 Rural and Environmental Zones	
8.2 Built Form	
8.2.1 Scenic Protection and Building Location	The controls under this section of the DCP relate to new buildings constructed in rural zones and minimisation of their impact on the natural landscape. The proposed development does not involve any new buildings, however, there will heavy machinery on the site for 12 weeks. The subject site is located away from any residential dwellings and screened by trees and therefore is not expected to have a significant impact on the scenic qualities of the locality.
8.2.2 Setbacks	No buildings proposed, development will be over 50m from any public road. Complies
8.2.3 Colours and Materials	No buildings proposed, not applicable.
8.2.4 Car Parking and Access	The development will increase the number of heavy vehicles accessing Dolahentys Road for a period of 12 weeks. This has been discussed in detail later in this report. Conditions Imposed for management.
8.2.5 Temporary Dwellings	Not applicable.
8.3 Environmental Matters	
8.3.1 Topography	<p>The development will involve laydown areas for: 11 boreholes (11 x 25m x 25m = 6875m²)</p> <p>In addition to this, access tracks will be created which will require minor filling around existing culverts to provide safe access.</p> <p>A condition is proposed requiring the submission of a detailed soil erosion and sediment control plan to be approved by Council prior to the commencement of the work.</p>
8.3.2 Vegetation	<p>The development will involve clearing of trees and vegetation for the establishment of the level pads and the access tracks. The applicant has provided a Biodiversity Assessment assessing the impacts of the development against the relevant legislation and found to be compliant. The report also outlines measures to mitigate or minimise damage to vegetation and species habitat.</p> <p>Council's Assessing Officer has reviewed the Biodiversity Assessment and found the proposed measures to be satisfactory and recommend a condition of consent requiring the development to be carried out in accordance with the measures outlined in the Biodiversity Assessment.</p>
8.3.3 Riparian Buffers	The development will require a controlled activity approval from DPE-Water, discussed earlier in this report.

8.3.4 Management of Rivers, Creeks, Streams and Drainage	As above.
8.3.5 Services	Not relevant.
Section 9 - Local Centre Development	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	
Section 10 – Industrial Development	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	
Section 11 – Extractive industry	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	
Section 12 – tourist facilities and accommodation	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	
Section 13 – Flood Prone Land	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	
Section 14 Outdoor Signage	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	
Section 15 Heritage Conservation	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	
Section 16 Car Parking and Access	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	
Section 17 – sex services and restricted premises	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	
Section 18 – Child Care Centres	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	
Section 19 – Use of Public Footpaths	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	
Section 20 – Erosion and Sediment Control	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	
Soil Erosion and Sediment control plan conditioned to be provided.	
Section 21 – Contaminated land	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	
Discussed under remediation SEPP considerations.	
Section 22 – Land use Buffers	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	
Section 23 – On-Site Sewage Management	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable	
Section 24 – Waste Minimisation and Management Systems	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable	
The following waste is expected to be created by the development:	
Table 6-5: Expected waste streams associated with the geotechnical investigations	
Waste Stream	Description
Green waste	From the clearing of vegetated areas including both native and exotic vegetation species for access tracks and test pit and borehole sites.
Excavation waste /spoil	Spoil material generated from geotechnical investigation works.
Wastewater	Approximately 60 tonnes of liquid wastewater from the geotechnical investigation drilling works will be generated and potential for stormwater runoff.
General wastes	This includes site work area waste, scrap materials, recyclables (aluminium cans, glass etc.) and putrescible waste.

Other than general construction waste, there will be additional excavation waste and waste water.
The management of this waste is regulated by the state and therefore Council's Assessing Officer has included a condition requiring the drilling waste to be disposed of by a licensed contractor in accordance with the NSW requirements. The Assessing Officer recommends including a condition requiring receipts to be provided to Council confirming that the material has been disposed of to a licensed facility.
Section 25 – Stormwater Management
Satisfactory: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
The development does not involve any construction works that will increase hardstand space on the site. The development does, however, involve earthworks that can change the natural flow of stormwater on the site and the site is suitably setback from any nearby development and therefore is not likely to impact these developments. The Assessing Officer has included a condition for a Soil Erosion and Sediment control plan to be prepared for the site to ensure that the stormwater flow does not cause soil erosion issues in the locality due to the development.
Section 26 – Site Specific Controls
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable
Section 27 – West Denman Urban Release Area
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable
Section 28 – Muswellbrook Showground
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable

Section 4.15(1)(a) (iiia) the provisions of any planning agreement

There are no planning agreements relevant to the subject Application.

Section 4.15(1)(a)(iv) the provisions of the regulations

Division 8A of the Environmental Planning and Assessment Regulation 2000 applies to the development.

Development Contributions

The cost of works for the proposed development is \$1,888,600.00. A developer contribution under s 7.12 of the EP&A Act of \$18,886.00 will apply to the proposed development should the Application be approved.

Section 4.15(1)(a)(v) the provisions of any coastal zone management plan

Not applicable - The Application does not relate to a coastal area.

Section 4.15(1)(b) the likely impacts of that development

Context and Setting

The application does not involve the construction of any buildings. Visual impacts of clearing and access track construction related to these works would be limited and would present no significant long-term impact on the existing context and setting.

Potential Impact on Adjacent Properties

The proposed development would have a limited impact on the amenity of neighbouring properties. The proposed works would be carried out over 12 weeks. During this period there is the potential for noise, lighting and traffic impacts in the locality related to the construction work. Noise, Vibration and Traffic Impact Assessment's prepared in relation to the application indicate that related impacts would not have a significant adverse impact on the amenity of neighbouring properties.

Access, Transport and Traffic

A Traffic Impact Assessment has been prepared for the development. The table below identifies the number of traffic movements anticipated for the upper and lower geotech investigation works for the duration of mobilisation and demobilisation parts of their work programme – more limited traffic volumes were expected outside these peak periods.

Table 2-1: Estimated Heavy and Light Vehicle Movements (one-way)

Task Name	Vehicle Type	No. of one-way vehicle movements per day- Lower Reservoir	No. of one-way vehicle movements per day- Upper Reservoir	Total no. of one-way heavy vehicle movements per day
Site mobilization and demobilisation (first/ last few days)	Medium Rigid Truck	12	12	24
Geotechnical investigation works	Light Vehicles	8	8	16
	Medium Rigid Truck (water cart plus sucker truck)	4	4	8

Vehicles would access the site via New England Highway onto Sandy Creek and Dolahentys Road and then a private property located at 250 Dolahentys Road, McCullys Gap.

Council Officers are satisfied that the traffic described in that report could be accommodated by and is unlikely to have any significant impact on the local road network.

Air/Microclimate

The proposed works will be physically separated from residential receivers in the locality. The works would involve the disturbance of soil and related dust exposures. The applicant has outlined the following measure below to reduce the development impact on air quality:

When accessing the Site along unsealed roads:

- *Maintain a speed that limits dust generation behind moving vehicles. If dust plumes are observed, slow down*
- *Accelerate and decelerate slower than on sealed roads, to avoid wheel spinning that could generate dust*

During construction and maintenance of the drilling cut/fill pad:

- *Limit the size of exposed material within practicable safe limits*
- *During periods of hot, windy weather, spray clean water on the exposed material to limit dust generation potential*

Where carried out in accordance with the above and best practice sediment and erosion control management, the project is not anticipated to have significant air quality impacts.

Flora and Fauna

The proposed development would involve vegetation clearing related to the establishment of access tracks and set down areas for the geotechnical investigations. An Ecological Assessment has been prepared to quantify the clearing and consider its likely impacts on significant and threatened species.

This report has identified that the proposed clearing would not have a significant impact on ecological communities and would not exceed trigger levels within the Biodiversity Conservation Act 2016 that require additional investigations or the establishment of off-sets under that legislation.

Waste

Commentary has been included under the DCP Waste minimisation management heading

related to the waste generation and management associated with the proposed development. Where the development is carried out in accordance with proposed waste management strategies it is unlikely to have an adverse related impact on the environment.

Noise & Vibration

A noise and vibration assessment has been carried out to assess the potential noise and vibration impacts that may be generated by the geotechnical investigation work.

The report identifies potentially affected noise and vibration sensitive receivers. There are no exceedances of the standard hours noise management levels predicted at any sensitive receivers for any bore hole locations. Construction noise levels are predicted to be well below the highly affected NML of 75 dB(A).

The report has outlined best-practice standard noise mitigation measures to be implemented. Council Officers have reviewed this information and is satisfied that the proposed mitigation measures are satisfactory.

Natural Hazards

The site has been identified to Bushfire prone. The proposed works are temporary in nature and therefore no specific bushfire requirements are outlined in Planning for Bushfire Protection 2019. The Assessing Officer recommends including a condition to restrict any works on days identified on the Bushfire Danger index as Extreme or Catastrophic.

Social and Economic Impact on the Locality

The proposed development is temporary in nature and not expected to have any long term social or economic impact in the locality.

Cumulative Impacts

The proposed development will assist with the design of a potential pumped hydro battery storage system on Bell's Mountain. The impacts of that development are not within the scope of the development at this stage and will need to be considered at the later stages of the development, should it proceed.

Section 4.15(1)(c) the suitability of the site for the development

The proposed development is compatible with surrounding land uses and site characteristics, subject to consent conditions.

Section 4.15(1)(d) any submissions made

The Application was notified to adjoining owners from 18/08/2023 – 14/09/2023. A notice was also placed on Council's website and Facebook page at the commencement of the notification period.

One (1) submission was received during the notification period.

The applicant has submitted a response to the concerns raised. In addition to this document, Council Officers have completed their own review and provide the following comments:

Submitter Concern	Planning Comment
The project will have a detrimental impact to the environment and natural habitats	The environmental impacts raised were associated with the full Bells Mountain Pumped Hydro Project not just this development application. It is important to recognise that that Council is not determining an application for a pumped Hydro project.

	The applicant has engaged appropriately qualified consultants to undertake ecological, aboriginal due diligence, noise and traffic impact assessments. Each of these investigations identify that the proposed development would not have significant adverse environmental impacts. Council Officers have had regard to these reports and completed their own review of associated environmental impacts and are satisfied that development application may be supported with conditions.
Concerns relating to Dust and noise having a detrimental impact to the residents	<p>The applicant has proposed several measures to minimise noise dust such as speed limits and operational limits. The proposed development is located over 250 to the nearest dwelling.</p> <p>The development is only for geotechnical drilling and expected to last for around 12 weeks. Noting the physical separation of drill rigs from adjoining properties and the limited duration of works dust associated with the works are anticipated to be limited.</p>
Opposition to the Pumped Hydro Project as it will destroy the integrity of Bell's Mountain	<p>Council is required to assess and determine the development before it.</p> <p>Council does not have full details of the Pumped Hydro Project to assess impacts – this will be the subject of a further Development Application.</p> <p>Refusal of the application for reasons associated with the concept of a future pumped hydro project could be challenged through the Land and Environment Court.</p>

Council Officers have considered the matters raised in the submissions and consider that the proposal may be approved subject to conditions

Section 4.15(1)(e) the public interest.


It is considered that the proposal is in the public interest.

7. CONCLUSION

The proposed development has been assessed against the relevant heads of consideration of Section 4.15 of the Environmental Planning and Assessment Act 1979. As outlined above it is considered that the proposed development would be in accordance with the relevant planning provisions.

Accordingly, it is recommended the application be approved subject to conditions of consent.

Signed by:	
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Tanya Alsleben	
Development Planner	
Date: 11/03/2024	

DA 2023-78 - Recommended conditions of Consent

IDENTIFICATION OF APPROVED PLANS

(1) Approved Plans and Supporting Documents

Development must be carried out in accordance with the following approved plans and supporting documentation (stamped by Council), except where the conditions of this consent expressly require otherwise.

Document Title.	Ver. No.	Prepared By.	Dated.
Statement of Environmental Effects (As amended by DA Amendment)	1	SMEC Australia Pty Ltd	11/06/2023
Letter requesting amendment to DA		EMM Consulting	09/02/2024
Traffic Impact Assessment		SMEC Australia Pty Ltd	09/06/2023
Revised Noise and Vibration Assessment	F	Resonate	17/01/2024
Flora and Fauna Assessment	1	EMM Consulting	09/02/2024
Aboriginal Heritage Management	-	Extent Heritage Pty Ltd	08/06/2023

In the event of any inconsistency between the approved plans and the supporting documentation, the approved plans prevail. In the event of any inconsistency between the approved plans and a condition of this consent, the condition prevails.

Note: an inconsistency occurs between an approved plan and supporting documentation or between an approved plan and a condition when it is not possible to comply with both at the relevant time.

Reason: To ensure all parties are aware of the approved plans and supporting documentation that applies to the development

(2) General Terms of Approval

The development is to be carried out in accordance with the General Terms of Approval issued by the following approval bodies and referenced below:

- a) NSW Subsidence Advisory, General Terms of Approval reference No TBA23-02653, dated 21 August 2023.

These General Terms of Approval have been stamped with Council's Approval Stamp and form part of this Notice of Determination.

Note: the application was referred to Department of Planning and Environment – Water, who advised the works did not require General Terms of Approval under the Water Management Act 2000.

Reason: prescribed, legislated.

CONDITIONS THAT MUST BE ADDRESSED PRIOR TO COMMENCEMENT**(3) Environmental Management Plan (EMP)**

Prior to the commencement of works, an environmental management plan (EMP) must be submitted to and approved by Council. The plan must include the following matters identified in Table 6-6 Safeguards and management measures in the approved Statement of Environmental Effects.

Reason: To require details of measures that will protect the public, and the surrounding environment, during site works and construction.

(4) Section 7.12 Contributions

Pursuant to section 4.17(1) of the Environmental Planning and Assessment Act 1979, and the Muswellbrook Shire Council Section 94A Development Contributions Plan 2010, a contribution of \$18,886.00 shall be paid to Muswellbrook Shire Council.

The amount to be paid is to be adjusted at the time of the actual payment, in accordance with the provisions of the Muswellbrook Shire Council Section 94A Development Contributions Plan 2010. The contribution is to be paid prior to the commencement of works.

Reason: Prescribed by legislation through Section 7.11 of the Environmental Planning and Assessment Act 1979 and Council's Section 94A Contribution Plan

(5) Section 138 Permit

Prior to commencing of any works, a permit must be obtained from Council, under Section 138 of the Roads Act 1993.

A traffic Management Plan is to be submitted to Council with any Section 138 application detailing traffic management controls to be implemented through the development for the management of traffic. The Traffic Management Plan is to be developed by a suitably qualified Traffic Engineer.

Reason: ensure safe movement of heavy vehicles and comply with Roads Act requirements.

(6) Site Sign

A sign must be erected in a prominent position at any entry point to the work site work site:

- a) stating that unauthorised entry to the work site is prohibited,
- b) showing the name of the principal contractor (or person in charge of the work site), and a telephone number at which that person may be contacted at any time for business purposes and outside working hours, and
- c) showing the name, address and telephone number of the Council.

Any such sign must be maintained while building work or demolition work is being carried out but must be removed when the work has been completed. This condition does not apply to building works being carried out inside an existing building.

Reason: Prescribed Condition under Clause 70 of EP&A Regulation

(7) Complaints Management

The person acting with this consent is to prepare a complaint management procedure in relation to noise and dust complaints associated with the works. The procedure must detail a process for receiving, investigating, acting on and the reporting of complaints received during the carrying out of works.

Prior to the commencement of works a written notice is to be provided to neighbouring property owners and nearby residential receivers identified in the documentation accompanying this development application advising those individuals of the phone number and any other relevant contact information for making complaints related to the works. A site sign is also to be installed at a prominent position at the Limestone Road site access displaying this contact information.

A copy of the complaint management procedure is to be submitted to Muswellbrook Shire Council prior to the commencement of works along with evidence demonstrating compliance with the other requirements of this condition.

Reason: ensure the development incorporates measures to address impacts on adjoining properties where they arise through the carrying out of work.

CONDITIONS THAT MUST BE COMPLIED WITH DURING THE CARRYING OUT OF WORKS

(8) Archaeological deposits or Relics

The applicant must ensure that if any unexpected archaeological deposits or relics not identified and considered in the supporting documents for this approval are discovered, work must cease in the affected area(s) and the Environmental Protection and Regulation Group of the OEH must be contacted.

Additional assessment and approval may be required prior to works continuing in the affected area(s) based on the nature of the discovery.

Reason: Prescribed by legislation

(9) Erosion and Sediment Controls

At all times erosion and sediment controls are to be maintained across the site in accordance with the Construction Environmental Management Plan and the requirements of this approval.

Reason: manage soil erosion impacts.

(10) Damage to Adjoining Properties

All precautions must be taken to prevent any damage likely to be sustained to adjoining properties. Adjoining owner property rights must be observed at all times. Where damage occurs to adjoining property all necessary repair or suitable agreement for necessary repairs are to be undertaken by the applicant in consultation with, and with the consent of, the affected property owner.

Reason: To ensure that the development does not have any lasting negative impact on adjoining properties

(11) Damage to Public Infrastructure

The applicant shall bear the cost of all restoration works to Council property damaged during this development. The applicant shall submit to Council, in writing and/or photographic record, evidence of any existing damage to Council property before commencement of work.

Note: This documentation will be used to resolve any dispute over damage to infrastructure. If no documentation is received prior to commencement of work, it will be assumed that the infrastructure was undamaged, and the applicant will be required to restore all damaged infrastructure at their expense.

Reason: Protection of Council infrastructure

(12) Rehabilitation

Prior to the completion of works rehabilitation of the site including bore holes and test pits is to be completed in accordance with the Statement of Environmental Effects and industry best practice.

Reason: ensure the site is appropriately remediated and left in safe condition at the completion of works.

Bush Fire Mangement

Drilling and excavations activities that may generate sparks are not to occur on declared total fire ban days or on days identified on the Bushfire Danger index as Extreme or Catastrophic.

Reason: to minimise the potential for bush fire resulting from undertaking the works.



To whom it may concern

Development Application number : 2023/78

I am putting in writing my **OBJECTION** to the proposed 'Geotechnical Drilling & Minor Vegetation Clearing'

My Family has lived in McCullys Gap since the mid 1970's. We have put up with the noise and dust pollution from Muswellbrook Coal for that entire time.

I was elated to hear that Muswellbrook Coal shut down operations!! But then utterly enraged to hear the proposed idea of a 'Hydro Scheme' to go on top of our beautiful mountain 'Bells'.

So first you allowed for Bells mountain to be dug under and next to, wasn't that enough to hurt the heart of Bells? But no, now you are proposing to damage it from above as well. I could not think of a more idiotic idea.

This will destroy the integrity of our mountain, you will open it up and damage it beyond belief.

The noise from further work will be constant, as well will be dust.

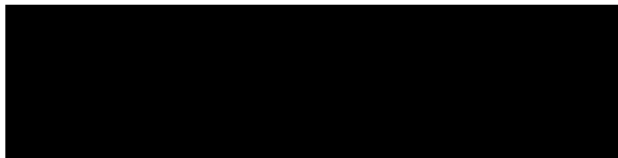
All of this should have been taken into consideration before shutting down our coal powered power stations, you do know that we are about the only country shutting these down? A lot of countries are building more! The amount of environmental damage that Australia is doing to world is very minimal, sustainable energy is a load of codswallop .

Why is it that McCullys Gap has to have not only this idiotic proposed 'Hydro Scheme', but solar panels as well as the flaming windfarm at opposite ends of the valley???? Please answer that.

I OBJECT, I OBJECT, I OBJECT, I OBJECT, I OBJECT, I OBJECT, I OBJECT, I OBJECT, I OBJECT, I OBJECT!

To any work that is detrimental to Bells Mountain and is associated with proposed Hydro Scheme on Bells Mountain!!

From a local that is greatly concerned



9 February 2024

Sharon Pope
Director Environment and Planning
Muswellbrook Shire Council
via email

Re: Muswellbrook Pumped Hydro Energy Storage Upper Reservoir Geotechnical Investigation (DA2023/78) - Amendment

Dear Sharon,

1 Introduction

A Geotechnical Investigation Development Application (DA2023/78) was lodged on 11 August 2023 to Muswellbrook Shire Council (MSC) by the Muswellbrook Pumped Hydro Company Pty Ltd (MPH) to facilitate geotechnical investigations within the upper reservoir area of the proposed Muswellbrook Pumped Hydro Energy Storage Project (the project) which is currently subject of prefeasibility and environmental assessment.

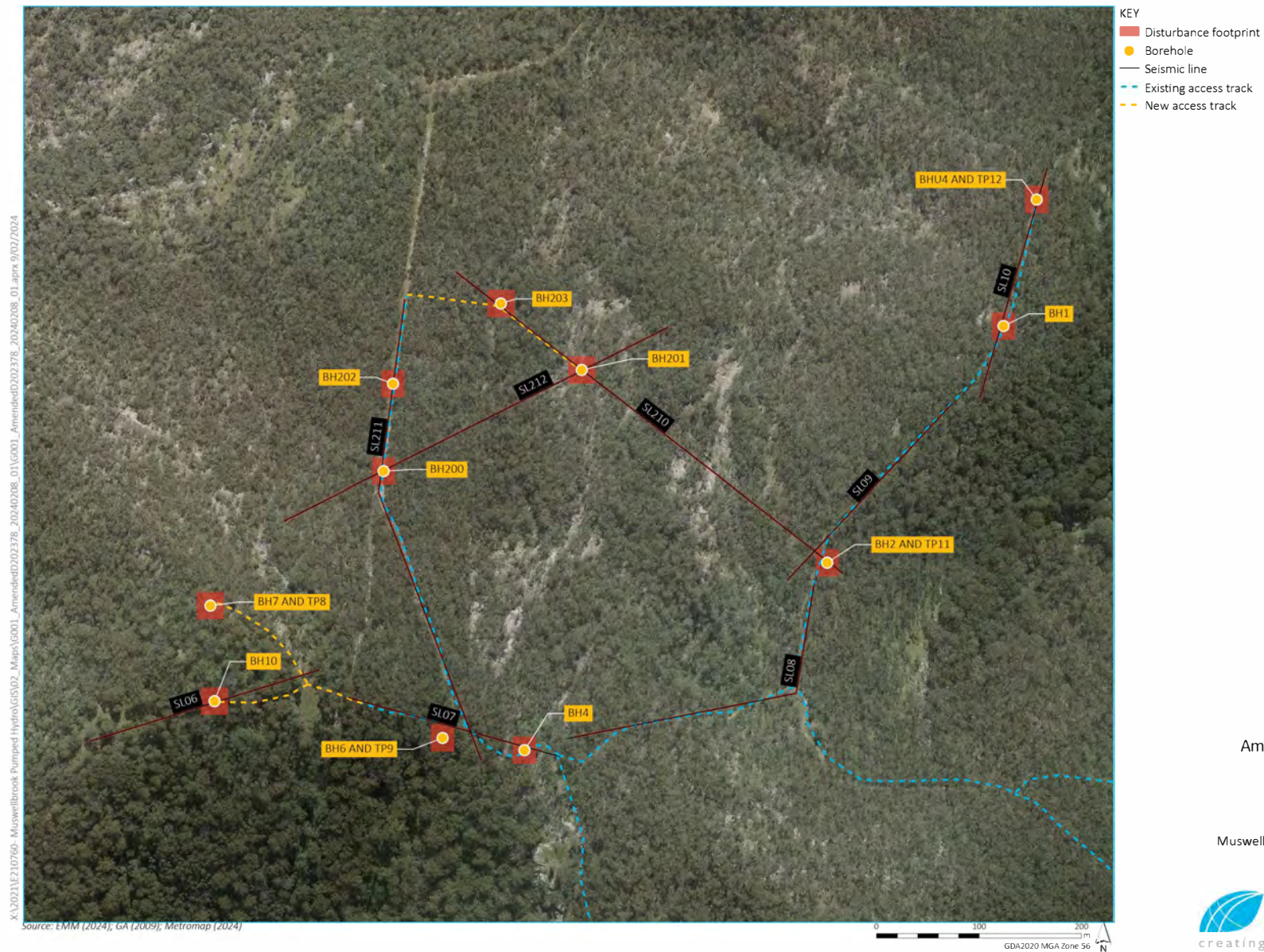
DA2023/78 and the supporting Statement of Environmental Effects (SMEC 2023; SoEE), was publicly exhibited by MSC between 17 August 2023 and 14 September 2023.

Since this time, further design assessment has been completed and MPH seek an amendment to the project in accordance with Division 2, Section 37 (1) of the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation) which allows an applicant to apply to the consent authority for an amendment to the development application at any time prior to its determination.

The proposed amendment project is outlined below and identified in

Figure 1.1:

- Removal of four boreholes and associated tracks proposed in the SoEE, including BHU1, BHU2, BHU3 and BHU5
- Addition of four new boreholes and associated tracks, identified as BH200, BH201, BH202 and BH203
- Addition of nine seismic lines (SL, 0.5m wide) between the boreholes, identified as SL 211, SL212, SL210, SL06, SL07, SL08, SL09 and SL10
- Boreholes BH1, BH2, BH4, BH6, BH7 and BH10 are maintained under the amended project as per the SoEE
- All test pits (TP) proposed within the SoEE are maintained under the amended project including TP8, TP9, TP11 and TP12. All test pits are located on borehole pads.



2 Planning and strategic context

The planning context and strategic context remain unchanged to that presented in Section 2 of the SoEE, and as such is not duplicated within this document.

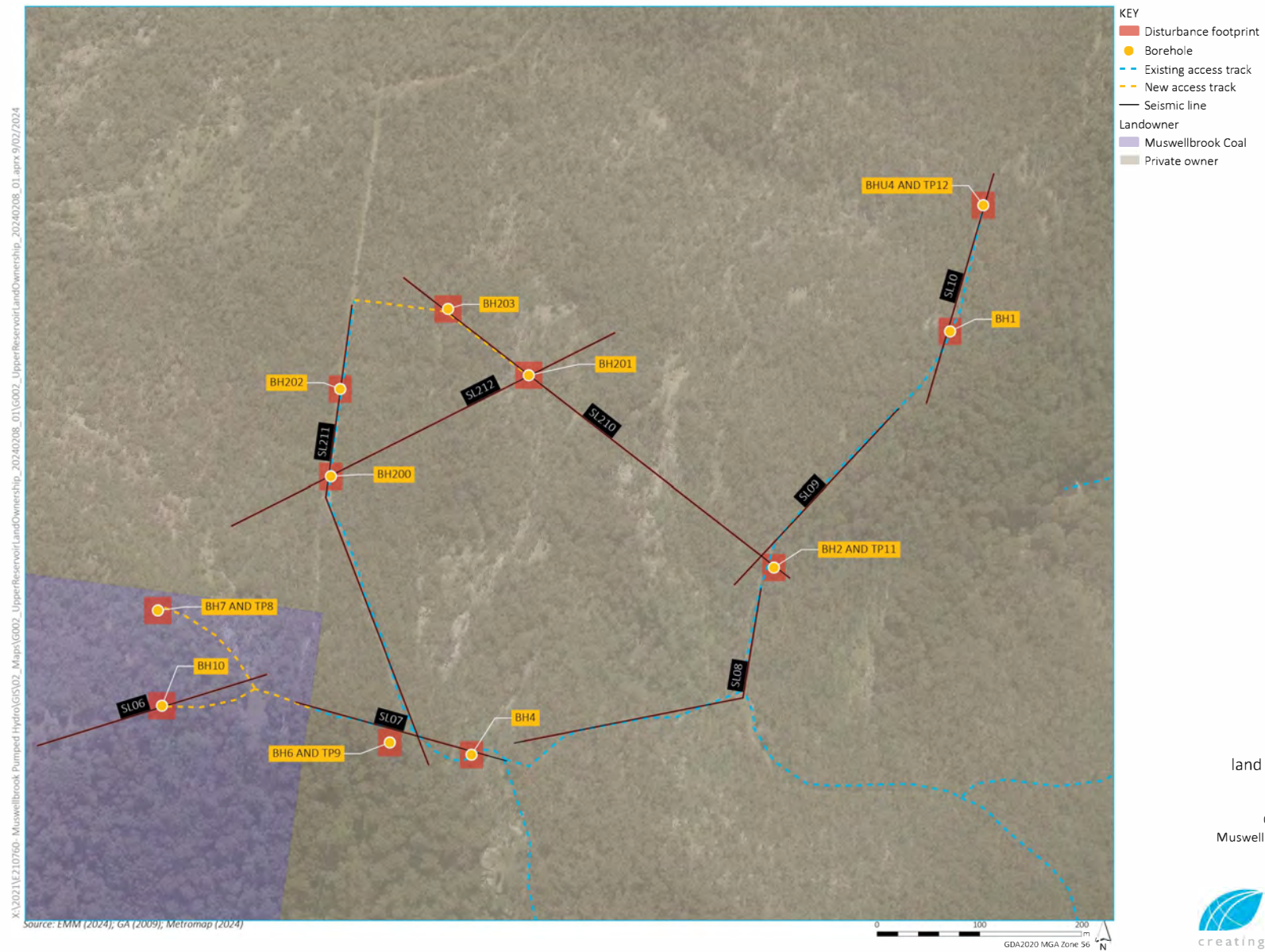
3 Site description

The addition of four new boreholes and seismic lines will increase the number of land parcels within the project area. The geotechnical investigations comprise works within, or access gained via the land parcels under the amended project are outlined in Table 3.1 below.

Figure 3.2 provides a map of land ownership within the upper reservoir portion of the overall proposed PHES project. The proposed geotechnical investigations will not traverse any crown land lots; however, access will be gained to the test sites along tracks which are in the near vicinity of mapped crown lands.

Table 3.1 Parcel details

Nature of works	Parcel details
Access	Lot 126 DP752444, 250 Dolahentys Road McCullys Gap 2333
	Lot 5 DP1178473, 250 Dolahentys Road McCullys Gap 2333
	Lot 1 DP113760, 250 Dolahentys Road McCullys Gap 2333
	Lot 167 DP752444, 250 Dolahentys Road McCullys Gap 2333
	Lot 85 DP752484, 250 Dolahentys Road McCullys Gap 2333
	Lot 84 DP752484, 250 Dolahentys Road McCullys Gap 2333
	Lot 23 DP752484, 250 Dolahentys Road McCullys Gap 2333
	Lot 24 DP752484, 250 Dolahentys Road McCullys Gap 2333
	Lot 1 DP134665 Muscle Creek Road Muscle Creek 2333
Geotechnical works	Lot 1 DP398873 Muscle Creek Road Muscle Creek 2333
	Lot 93 DP752484, 250 Dolahentys Road McCullys Gap 2333
	Lot 100 DP666041, Coal Road Muswellbrook 2333
	Lot 183 DP752484, 820 Sandy Creek Road McCullys Gap 2333
	Lot 5 DP1178473, 250 Dolahentys Road McCullys Gap 2333



Upper reservoir
land ownership detail

Geotech Amendment
Muswellbrook Pumped Hydro
Figure 3.1



4 Amendment description

The geotechnical drilling will be undertaken in the same manner as described in the SoEE. The site access, work hours, traffic movements, decommissioning and rehabilitation will remain unchanged.

A comparison of the original proposed project and the proposed amendment is provided in Table 4.1 and presented in

Figure 1.1.

Table 4.1 Amended project details

Element	Original project	Amended project
Number of boreholes and test pits	Eleven boreholes and four test pits: <ul style="list-style-type: none">• BH1• BH2 and TP11• BH4• BH6 and TP9• BH7 and TP8• BH10• BHU1• BHU2• BHU3• BHU4 and TP12• BHU5.	Eleven boreholes and four test pits: <ul style="list-style-type: none">• BH1• BH2 and TP11• BH4• BH6 and TP9• BH7 and TP8• BH10• BHU4 and TP12• BH200• BH201• BH202• BH203.
Seismic lines	Geophysical surveys utilising seismic refraction tomography profiling between boreholes within existing and cleared access tracks.	Revised seismic lines, inclusive of eight defined seismic lines between boreholes located on both existing access tracks and vegetation, up to 835m in length and 0.5m wide: SL 211, SL212, SL210, SL06, SL07, SL08, SL09 and SL10
Upper reservoir access tracks	Approximately 750 m of access tracks to be developed for access to borehole locations.	Approximately 675 m of access tracks to be developed for access to borehole locations, being approximately 4m wide.
Clearing area – native vegetation	0.9875 ha	0.91 ha

5 Statutory Assessment

The statutory assessment remains unchanged to that presented in Section 5 of the SoEE.

Noting, Division 2, Section 37 (1) of the EP&A Regulation allows an applicant to apply to the consent authority for an amendment to the development application at any time prior to its determination. As such facilitating this amendment.

5.1 Muswellbrook Local Environment Plan 2009

The site is subject to the provisions of the *Muswellbrook Local Environment Plan 2009*. The amended site includes two additional lots, both of which are zoned as C3 Environmental Management. The objectives of this zone are detailed in the SoEE and the conclusion that the proposed investigations are consistent with these objectives remains the same.

6 Evaluation of impacts

6.1 Impact assessment summary

As described in Section 4, the amended project is smaller in scope than that assessed in the SoEE. As such, a substantial change in impacts is not anticipated. The potential impacts of the proposed amendment is provided in Table 6.1.

As result of the amended project, biodiversity and noise assessment were revised to consider relevant changes as documented in Section 1. These environmental elements are considered in Table 6.1, with key assessment outcomes discussed in the following sections.

Table 6.1 Summary of impacts

Environmental element	Potential impacts
Biodiversity	<p>The amended project would result in a decrease in the area of clearing, from 0.94 ha in the SoEE to 0.91 ha.</p> <p>The amended project disturbance area in relation to biodiversity impacts were assessed, see Flora and Fauna Assessment (FFA, EMM 2024), available within Appendix A and further discussed in Section 6.2 of this report.</p> <p>The residual impacts of the amended project are summarised below:</p> <ul style="list-style-type: none">clearing of 0.91 ha of native vegetation and fauna habitatimpacts to potential habitat for 1 threatened flora species and 1 endangered population, 20 threatened fauna species and one migratory speciesindirect impacts to retained vegetation and fauna habitat <p>No additional mitigation measures are required.</p>
Aboriginal heritage	<p>As identified in the SoEE, the study area was overgrown with thick vegetation. Ground surface visibility was reduced in some areas due to vegetation cover. Some borehole locations could not be accessed during survey efforts.</p> <p>The report concluded that there was low potential for Aboriginal archaeology to exist in areas that were surveyed. For the areas that were not surveyed, given that they are in directly analogous environments to those locations that were accessed, and where no artefacts were identified, it is reasonable to conclude that these locations also have low potential for Aboriginal artefacts to exist there.</p> <p>The proposed amendments to the project will decrease the area of surface impact required for the geotechnical investigations.</p> <p>The mitigation measures identified in the SoEE remain applicable:</p> <ul style="list-style-type: none">A Change Find Procedure be adopted during works and monitoring by a qualified archaeologist.If unexpected artefacts are identified during project works at any of these locations, an AHIP may be required to proceed with the works. <p>In addition to the above controls and as discussed with consulted Aboriginal parties, Aboriginal cultural monitors will be present at site during any clearing activities to monitor activities and provide advice should cultural materials be identified, both within areas identified within the SoEE and the amended project activity areas.</p>
Non-Aboriginal heritage	<p>No non-Aboriginal heritage items will be disturbed as part of the proposed amendments.</p> <p>No additional mitigation measures are required.</p>

Table 6.1 **Summary of impacts**

Environmental element	Potential impacts
Noise and vibration	<p>The Noise Assessment and Vibration Assessment (Resonate, 2023) which informed the SoEE was updated to reflect the amended project and is available as Appendix B of this report.</p> <p>The revised noise assessment (Resonate, 2024) assessed geotechnical borehole drilling works with a piling rig (bored), water cart and light vehicles. It identified that noise levels are not predicted to exceed the standard hours noise management levels at sensitive receivers for any of the bore hole locations. The proposed amendments result in some activities being located approximately 200m closer to residential receptors, however residential receptors are in excess of 1km away.</p> <p>The proposed amendments include out-of-hours work. No exceedances of the day, evening, or night out-of-hours criteria are predicted to occur at any residential receivers.</p> <p>The assessment also considered vibration impacts associated with drilling and access track development works. The works were assessed to comply with safe working distances for potential building damage and not result in vibration levels above human comfort criteria.</p> <p>No additional mitigation measures are required.</p>
Traffic and access	<p>There would be no change in the site access point for the proposed works, and no change in the number of vehicles movements.</p> <p>No additional mitigation measures are required.</p>
Waste	<p>The proposed amendments would result in a decrease in vegetation clearing, and therefore a decrease in green waste. All other waste streams would be similar to that assessed in the SoEE.</p> <p>The management of waste generated streams generated from the upper reservoir geotechnical investigation will be defined in the geotechnical investigations works Environmental Management Plan (EMP) inclusive of waste disposal options.</p> <p>No additional mitigation measures are required.</p>
Surface Water	<p>The proposed amendments would not result in any significant changes to the surface water environment.</p> <p>An erosion and sediment control plan would be prepared in accordance with Managing Urban Stormwater: Soils and Construction (Landcom, 2004) and included in the EMP.</p> <p>A Controlled Activity approval would also be sought for these works under the <i>Water Management Act 2000</i> for works within the C3 Environmental Management Zone as mapped on the <i>Muswellbrook Local Environment Plan 2009</i>.</p> <p>No additional mitigation measures are required.</p>
Groundwater	<p>The proposed amendments would not result in any significant changes to the groundwater environment to that identified within the SoEE.</p> <p>No additional mitigation measures are required.</p>

6.2 Biodiversity

A new FFA has been prepared for the amended project, and is available as Appendix A.

6.2.1 Direct impacts

The amended project requires clearing for boreholes, access tracks and the installation of seismic lines. The works would result in the removal of shrubs and groundcovers, while avoiding the removal of any trees greater than 10 cm diameter at breast height (DBH).

Direct impacts to native vegetation are identified in Table 6.2.

Table 6.2 Direct impacts to native vegetation

Plant community types (PCT)	Original area (ha)	Amended area (ha)
PCT 3439 Hunter Escarpment Grey Gum Forest	0.94	
PCT 3525 Upper Hunter Box-Blakely's Red Gum Grassy Forest		
PCT 3525 Upper Hunter Box-Blakely's Red Gum Grassy Forest	-	0.91
Total change in clearing compared to original project		-0.03

6.2.2 Threatened and migratory species

The biodiversity assessment for the original project identified four threatened flora species with a moderate likelihood of occurring in the study area, none of which were recorded during field survey. In addition, the assessment identified 32 threatened or migratory fauna species with a moderate to high likelihood of occurrence.

The assessment for the amended project identified one threatened flora species and one endangered population with moderate to high likelihood of occurrence. In addition, the assessment identified 21 threatened or migratory fauna species with a moderate to high likelihood of occurrence.

Assessments of significance under the *Biodiversity Conservation Act* (BC Act) and *Environment Protection and Biodiversity Conservation* (EPBC Act) were prepared for species with a moderate to high likelihood of occurrence in the study area for both the original and amended project areas. These assessments concluded that the project would not result in a significant impact to threatened or migratory fauna.

6.2.3 Indirect impacts

Indirect impacts associated with the original and amended project will remain substantially unchanged, and include:

- weed introduction and spread
- potential inadvertent disturbance of retained habitats
- removal of habitat resources for threatened fauna
- temporary increased noise, vibration and dust levels resulting in disturbance of fauna species, and consequent abandonment of habitat, or changes in behaviour (including breeding behaviour)
- temporary change to surface runoff and sedimentation.

6.2.4 Summary

The hierarchy of avoid, minimise and mitigate has been used in the development of the disturbance footprint. This has included avoidance (wherever feasible) of key biodiversity values identified during the field investigations. Habitat trees (dead stags) have been avoided.

Assessments of significance were prepared under the BC Act and EPBC Act. These assessments determined that the project will not result in a significant impact to threatened species and communities and preparation of a BDAR or referral of the project under the EPBC Act is not required.

No additional biodiversity mitigation measures are required for the amended project.

6.3 Noise

6.3.1 Overview and assessment outcomes

The Noise and Vibration Assessment (NVA, Resonate 2023) prepared for the SoEE was reviewed in appreciation of the amended Geotechnical Investigation program described in Section **Error! Reference source not found.**, and is available as Appendix B.

The revised NVA (Resonate 2024, see Appendix B) determined the below in respect of the Interim Construction Noise Guideline (ICNG, Department of Environment and Climate Change 2009) criteria:

- There are no exceedances of the standard hours noise management levels predicted at any receivers for any of the test pit and bore hole works during standard hours work.
- There are no exceedances of the out of hours noise management levels predicted at any receivers for any of the test pit and bore hole works during out of hours work.
- Bore hole works noise levels are predicted to be well below the highly affected NML of 75 dB(A) at all receivers.

It is noted that the location of the sensitive receivers considered within the revised NVA (Resonate 2024) are available in Figure 1 of Appendix B, detailed predicted construction noise levels are similarly available in Appendix B of the revised NVA.

6.3.2 Summary

Noise mitigation measures as outlined in the SoEE would continue to be adopted by the amended geotechnical drilling program. A summary of the proposed mitigation measures noted in the SoEE is provided below:

- Fixed and mobile construction plant and equipment shall be located to maximise separation distance from nearest noise and vibration sensitive and residential receivers
- Construction plant shall be orientated away from nearest receivers where possible
- Where practical, simultaneous operation of dominant noise generating plant shall be managed to reduce noise impacts, such as operating at different times or increasing the distance between the plant
- Where possible and in compliance with occupational safety and health standards, reversing beepers on trucks would be replaced with low pitch non-tonal beepers (quackers). Alternatives to reversing beepers include the use of spotters and designing the site to reduce the need for reversing may assist in minimising the use of reversing beepers

- Ensure that all works comply with the ICNG standard daytime period's start and finish times (noting this will be adopted for the test pits, this amendment seeks approval of OOHs works)
- Where feasible and practicable, surrounding residences shall be notified of potential construction works at least two weeks prior to the commencement of works
- Construction noise and vibration management practices are to be provided to all staff and contractors and be included during site inductions and daily tool-box talks. The tool-box talks should include as a minimum, the permitted hours of construction work, work site locations, site ingress/egress and the required noise management measures for each construction phase.

6.4 Environmental management

The amended project will reduce direct environmental impacts as a result of the decreased disturbance footprint when compared to that originally proposed.

In summary, no additional mitigation measures as outlined in Section 6.9 of the SoEE, are required based on the amendments proposed. With the exception of Aboriginal cultural monitors, present at site during any clearing activities. As to monitor activities and provide advice should cultural materials be identified.

7 Justification and conclusion

The geotechnical investigations demonstrate compliance with the relevant environmental planning instruments and would allow MPH to fully consider its option to develop a pumped hydro energy storage (PHES) scheme at Bells Mountain. The amended project will not result in any substantial change in the assessment outcomes presented in the SoEE and will decrease disturbance of native vegetation to that originally proposed.

The geotechnical investigations are considered critical if MPH is to meet its responsibilities for relevant actions under the Hunter Regional Plan 2026 (DPE 2016) for diversifying and growing the energy sector. The geotechnical investigations are also considered to be wholly aligned with the Pumped Hydro Roadmap (DPE 2018). It is also a direct response to Action 1 of the Pumped Hydro Roadmap, which is bringing forward private investment, described as “supporting the commercialisation of new, large-scale on-demand electricity projects.”

The geotechnical investigations would assist MPH in verifying the site’s suitability to for a pumped hydro project, by providing a range of geotechnical data which are prerequisite to finalising feasibility assessments. The geotechnical investigations would, therefore, allow MPH to better understand how to direct its resources into future planning to meet the needs of NSW’s energy demand. Moreover, the geotechnical investigations can be undertaken with only minimal environmental impacts. Overall, the geotechnical investigations are considered to be in the public interest and are therefore recommended for MSC’s approval.

The site is considered to be suitable to support the current geotechnical investigations as:

- The geotechnical investigations constitute earthworks, a deemed development type which is permitted in any land zone
- There are no relevant matters under SEPP (Resilience and Hazards) 2021 which require further considerations to support the geotechnical investigations
- The geotechnical investigations comprise a temporary package of works which would not create lasting amenity impacts or other land use conflicts within the locality
- The geotechnical investigations can be undertaken with minimal environmental impacts, and a comprehensive EMP setting out the mitigation measures outlined in the SoEE
- The potential environmental and amenity impacts of the geotechnical investigations are also considered to be minimal while its public benefit holds great significance. The site is moreover considered to be suitable for the geotechnical investigations.

Accordingly, it is recommended that MSC grants favourable consideration to the amended geotechnical investigations.

Yours sincerely



Tom Frankham
Associate Environmental Scientist
tfrankham@emmconsulting.com.au

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Resonate 2024. Muswellbrook Pump Hydro Upper Reservoir - Geotechnical Investigation Noise and Vibration Assessment

SMEC 2023. Muswellbrook Pumped Hydro Energy Storage Upper Reservoir Geotechnical Investigation Statement of Environmental Effects. Prepared for: Muswellbrook Pumped Hydro Company Pty Ltd

Appendix A

Flora and fauna assessment

Muswellbrook Pumped Hydro Project - Geotech Amendment

Flora and fauna assessment

Prepared for Muswellbrook Pumped Hydro Pty Ltd

February 2024

Muswellbrook Pumped Hydro Project - Geotech Amendment

Flora and fauna assessment

Muswellbrook Pumped Hydro Pty Ltd

E210760 RP1

February 2024

Version	Date	Prepared by	Reviewed by	Comments
V1	9 February 2023	P. Fagan	T. Frankham	

Approved by



Tom Frankham
Associate Environmental Scientist
09 February 2024

Level 3 175 Scott Street
Newcastle NSW 2300

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1 Introduction

Muswellbrook Pumped Hydro Pty Ltd as trustee for the Muswellbrook Pumped Hydro Trust (MPH) is proposing to develop the Muswellbrook Pumped Hydro Energy Storage Project (the project). The Proponent is a joint venture (JV) partnership between AGL Energy Pty Ltd (AGL) and Idemitsu Renewable Developments Australia Pty Ltd (Idemitsu).

The Proponent is proposing to design, construct and operate a pumped hydroelectric energy storage (PHES) facility partly within the Muswellbrook Coal Company Ltd (MCC) mine site and on land on top of Bells Mountain located approximately four kilometres north-east from Muswellbrook, New South Wales. Figure 1.1 shows the location of the project.

The overarching Project will provide up to 500 MW of electricity-generating capacity and up to eight hours of deep energy storage, feeding into the NEM with direct transmission links to Newcastle and Sydney demand centres. The overarching Project will also be used to augment existing gaps in the NSW renewable energy market by providing electricity during times of peak needs and grid support services, and otherwise as needed.

Preliminary design of the project requires four exploration boreholes and seismic lines to be installed, in order to finalise the footprint for the overarching Project. This report addresses the biodiversity impacts resulting from these Geotech works, hereafter referred to as 'the project'.

The project would result in the removal of areas of native vegetation and habitats for local fauna, including matters of national environmental significance (MNES).

1.1 Description of the proposed development

The project subject to this flora and fauna assessment will involve:

- installation of eleven Geotech boreholes, each at 625 m²
- new access tracks, each at 4 m wide
- installation of seismic lines at 0.5 m wide
- removal of shrubs and groundcovers, while avoiding the removal of any trees greater than 10 cm diameter at breast height (DBH).

1.2 Development location

The proposed development is located within the Muswellbrook Local Government Area (LGA), north-east of the Muswellbrook City Centre (Figure 1.1) on Bells Mountain.

1.3 Purpose of this report

The purpose of this report is to assess the likely impacts of the proposed development on biodiversity, and to determine whether there is likely to be a significant impact on threatened species or ecological communities, or on their habitats.

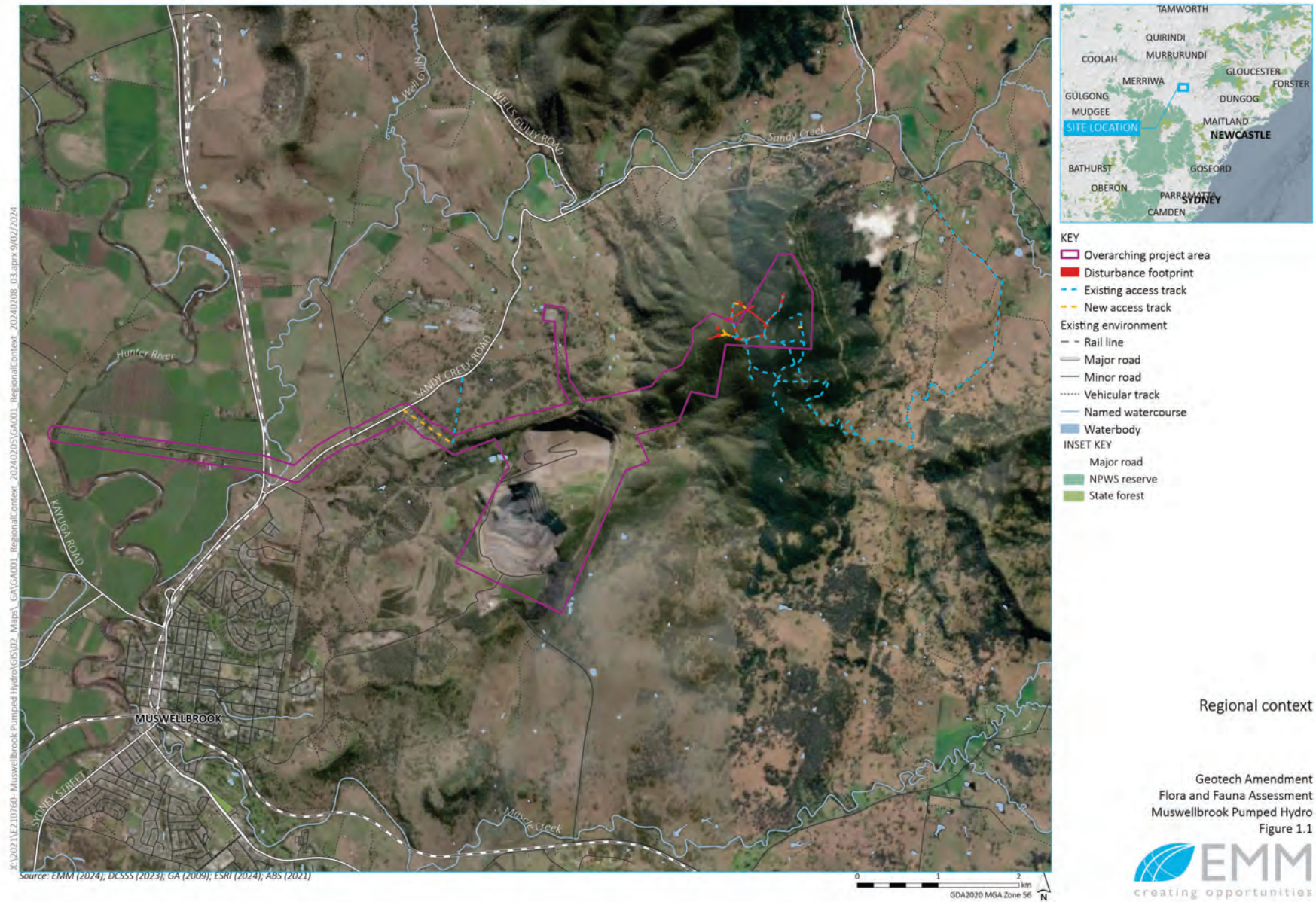
Threatened species or ecological communities, or their habitats, refers to those threatened biota listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), NSW *Biodiversity Conservation Act 2016* (BC Act) and NSW *Fisheries Management Act 1994* (FM Act).

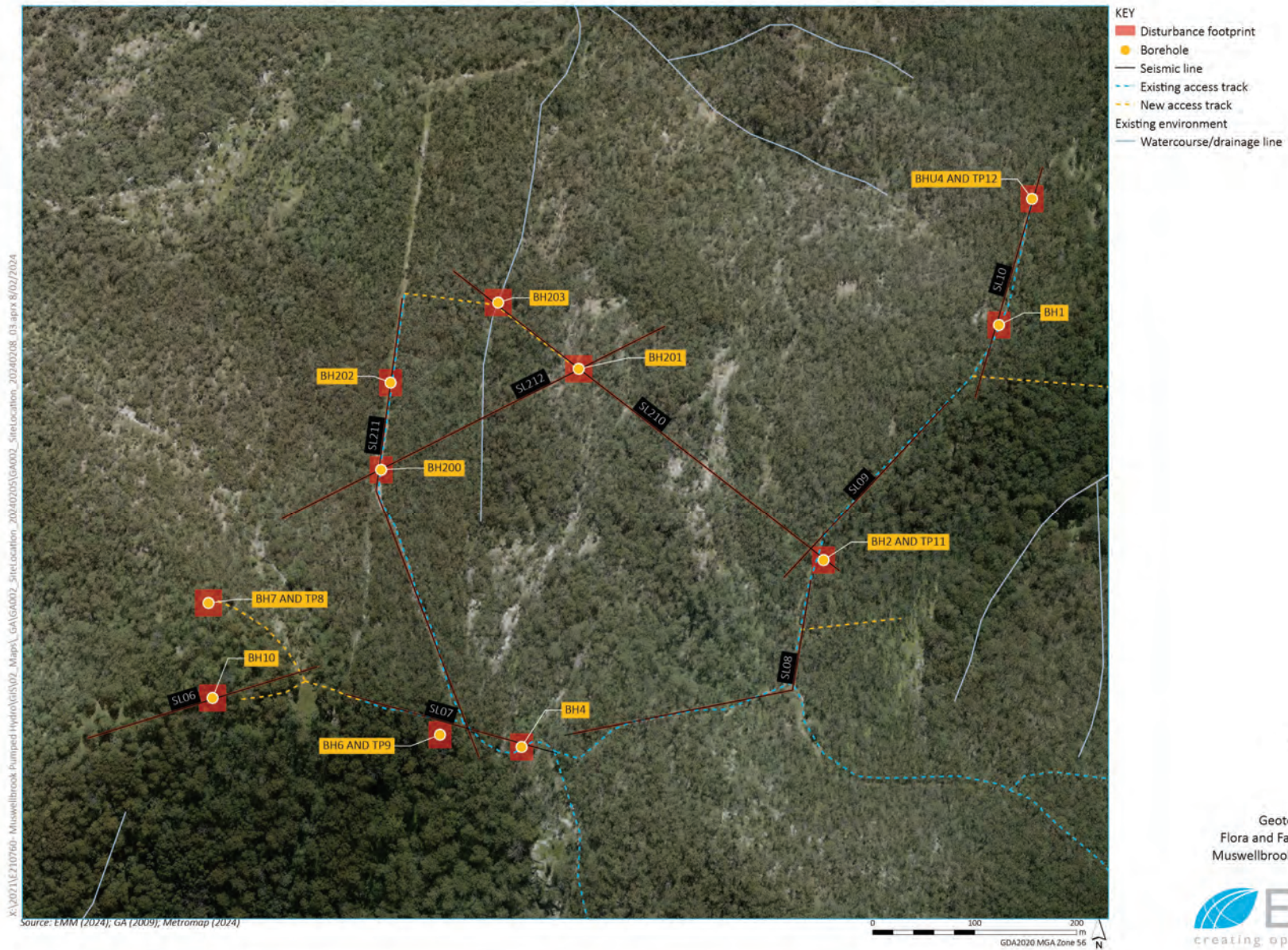
1.4 Terminology

Terminology used in this report is listed in Table 1.1.

Table 1.1 Terminology

Term	Definition
Disturbance footprint (Figure 1.2)	The area directly impacted by the project/activity.
The Project	The activity proposed to be undertaken within the Disturbance Footprint.
Overarching Project	The larger Project encompassing the proposed Pumped Energy Hydro Storage Facilities.
Locality	10 km radius centred on the Disturbance Footprint, in which threatened species records database searches were conducted (Figure 1.1).





Site location

2 Legislative context

This project has been assessed against key biodiversity legislation and government policy, including:

- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
- *Environmental Planning and Assessment Act 1979* (EP&A Act)
 - State Environmental Planning Policies
- *Biodiversity Conservation Act 2016* (BC Act)
- *Fisheries Management Act 1994* (FM Act)
- *Biosecurity Act 2015* (BS Act).

An assessment of the project against relevant legislation is provided in Section 6.

2.1 *Environment Protection and Biodiversity Conservation Act 1999*

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities, heritage places and water resources which are defined as Matters of National Environmental Significance (MNES) under the EPBC Act. These are:

- world heritage properties
- places listed on the National Heritage Register
- Ramsar wetlands of international significance
- threatened flora and fauna species and ecological communities
- migratory species
- Commonwealth marine areas
- the Great Barrier Reef Marine Park
- nuclear actions (including uranium mining)
- water resources, in relation to coal seam gas or large coal mining development.

Under the EPBC Act, an action that may have a significant impact on a MNES is deemed to be a 'controlled action' and can only proceed with the approval of the Commonwealth Minister for the Environment. An action that may have a significant impact on a MNES is to be referred to the Department of Climate Change, Energy, Environment and Water (DCCEEW) for determination as to whether or not it is a controlled action. If deemed a controlled action, the project is assessed under the EPBC Act and a decision made as to whether or not to grant approval.

An assessment of the project against the EPBC Act is provided in Section 6.1.

2.2 Environmental Planning and Assessment Act 1979

The NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) was enacted to encourage the consideration and management of impacts of proposed development or land-use changes on the environment and the community. The EP&A Act is administered by the NSW Department of Planning and Environment (DPE).

The EP&A Act provides the overarching structure for planning in NSW; however, it is supported by other statutory environmental planning instruments (EPIs) including State Environmental Planning Policies (SEPPs). EPIs relevant to the natural environment are outlined further below.

2.2.1 State Environmental Planning Policy (Biodiversity and Conservation) 2021: Koala Habitat Protection

Chapters 3 and 4 of the *State Environmental Planning Policy (Biodiversity and Conservation) 2021* aim to encourage the proper conservation and management of areas of natural vegetation that provide habitat for Koalas (*Phascolarctos cinereus*) to ensure a permanent free-living population over their present range and reverse the current trend of Koala population decline.

If development occurs within an area to which an approved Koala plan of management (KPoM) applies the Koala SEPP must be considered and the determination of the project must be consistent with this KPoM. The Disturbance Footprint is not located within an area to which an approved KPoM applies.

As the Disturbance Footprint is not located within an area to which an approved KPoM applies, a review of the development process set out in Clause 9 of the Koala SEPP is provided below:

- The Disturbance Footprint is located in the Muswellbrook LGA, which is an LGA listed in Schedule 1 of the Koala SEPP.
- The land on which the Disturbance Footprint is located is greater than 1 ha in size.
- The Disturbance Footprint is identified on the [Koala Development Application Map](#) checked on 7 February 2024.

Based on the above, the Koala SEPP applies to the project. An assessment of impacts to the Koala has been prepared in accordance with the requirements of the *Koala Habitat Protection Guideline* (DPIE 2020).

An assessment of the project against the Koala SEPP is provided in Section 6.2.1.

2.3 Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act) is the legislation responsible for the conservation of biodiversity in NSW through the protection of threatened flora and fauna species, populations and ecological communities. The BC Act, together with the Biodiversity Conservation Regulation 2017 (BC Regulation), established the Biodiversity Offsets Scheme (BOS).

The BOS includes establishment of the *Biodiversity Assessment Method* (the BAM, OEH 2020) for use by accredited persons in biodiversity assessment under the scheme. The purpose of the BAM is to assess the impact of actions on threatened species and threatened ecological communities, and their habitats and determine offset requirements. For major projects, use of the BAM is mandatory, unless a BDAR waiver is granted.

The BAM sets out the requirements for a repeatable and transparent assessment of terrestrial biodiversity values on land in order to:

- identify the biodiversity values on land subject to proposed development area
- determine the impacts of a proposed development, following all measures to avoid, minimise and mitigate impacts
- quantify and describe the biodiversity credits required to offset the residual impacts of proposed development on biodiversity values.

The proposed development does not trigger automatic entry into the BOS based on the trigger thresholds (refer to Section 6.3.). This report assesses whether the proposed development is likely to significantly affect threatened species or ecological communities, or their habitats, according to the BC Act Section 7.3 test of significance.

2.3.1 Biodiversity assessment pathway

Criteria for entry into the BOS, thereby triggering the requirement for a Biodiversity Development Assessment Report (BDAR) under the BAM, have been outlined in Table 2.1.

Table 2.1 Assessment of whether the project will trigger entry into the BOS

Criterion	Assessment
The proposed development is likely to significantly affect threatened species or ecological communities, or their habitats, according to the test in Section 7.3 of the BC Act.	Assessments of significance have been prepared in accordance with OEH (2018a) and are provided in Appendix A. These assessments have determined that the project will not result in a significant effect on threatened species or communities.
The development exceeds the biodiversity offsets scheme thresholds outlined in Section 7.1 of the BC Regulation: <ul style="list-style-type: none"> • it involves clearing of native vegetation that exceeds the threshold for clearing 	The minimum lot size gazetted for the Disturbance Footprint is 80 ha. The clearing threshold for this minimum lot size is 1 ha or more. The project will result in clearing of less than 1 ha and thus does not exceed this threshold.
<ul style="list-style-type: none"> • clearing of native vegetation on land included in the Biodiversity Values Map 	The Disturbance Footprint is not located on land mapped on the Biodiversity Values Map.
The site is a declared area of outstanding biodiversity value.	The Disturbance Footprint is not located in an area of outstanding biodiversity value.

The project will not significantly affect threatened species or communities and, thus, preparation of a BDAR is not required.

2.4 Fisheries Management Act 1994

The *Fisheries Management Act 1994* (FM Act) contains provisions for the conservation of fish stocks, key fish habitat, biodiversity, threatened species, populations and ecological communities. It regulates the conservation of fish, vegetation and some aquatic macroinvertebrates and the development and sharing of the fishery resources of NSW for present and future generations. The FM Act lists threatened species, populations and ecological communities, key threatening processes (KTPs) and declared critical habitat. Assessment guidelines to determine whether a significant impact is expected are detailed in section 220ZZ and 220ZZA of the FM Act.

Another objective of the FM Act is to conserve key fish habitat (KFH). These are defined as aquatic habitats that are important to the sustainability of recreational and commercial fishing industries, the maintenance of fish populations generally and the survival and recovery of threatened aquatic species. KFH is defined in Section 3.2.1 and 3.2.2 of the *Policy and Guidelines for Fish Conservation and Management* (DPI 2013).

No aquatic habitats are present and do not need to be further considered.

2.5 *Biosecurity Act 2015*

The primary objective of the Biosecurity Act is to provide a framework for the prevention, elimination and minimisation of biosecurity risks posed by biosecurity matter, dealing with biosecurity matter, carriers and potential carriers, and other activities that involve biosecurity matter, carriers or potential carriers.

The Biosecurity Act stipulates management arrangements for weed biosecurity risks in NSW, with the aim to prevent, eliminate and minimise risks. Management arrangements include:

- any land managers and users of land have a responsibility for managing weed biosecurity risks that they know about or could reasonably be expected to know about
- applies to all land within NSW and all waters within the limits of the State
- local strategic weed management plans will provide guidance on the outcomes expected to discharge duty for the weeds in that plan.

The Disturbance Footprint is located within the Hunter Local Land Services (LLS) region and is subject to the Hunter Regional Strategic Weed Management Plan 2023–2027.

The provisions of the Biosecurity Act are discussed further in Section 6.4.

3 Method

3.1 Desktop assessment

To determine the field investigation scope, a desktop assessment was undertaken. The desktop assessment comprised database searches and review of relevant information, including:

- Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) Protected Matters Search Tool (PMST) for Matters of National Environmental Significance (MNES) likely to occur within the subject lands (DCCEEW 2024) (a copy of the search results is provided in Appendix B)
- NSW Biodiversity and Conservation Division (BCD) BioNet Atlas of NSW Wildlife, for items listed under the BC Act and EPBC Act (EES (Environment Energy and Science) 2021)
- NSW Plant Community Types (PCTs), as held within the BioNet Vegetation Classification database (DPIE 2022)
- regional vegetation mapping, *State Vegetation Type Map: Muswellbrook LGA Vegetation Map*.
- a review of NSW Vegetation Information System (VIS), managed by BCD, to review plant community types (PCTs) that may occur
- a review of the NSW Weedwise website to determine priority weeds for the Hunter LLS region (LLS 2017)
- a review of aerial imagery for the survey area and locality
- data obtained and ecological observations throughout the EMM surveys for overarching Project.

Base map data were obtained from NSW Department of Finance, Services and Innovation (DFS) databases, with cadastral data obtained from DFS digital cadastral database. Mapping for stream orders was obtained from NSW Department of Primary Industries (DPI). Spatial data encompassing the Disturbance Footprint and the Disturbance Footprint itself were provided by AGL.

The following spatial datasets were utilised during the development of this report:

- Mitchell Landscapes Version V3.1 (DAWE 2018)
- Interim Biogeographic Regionalisation of Australia (IBRA) Version 7 (DoEE 2018)
- NSW Department of Primary Industries (Fisheries) Freshwater threatened species distribution maps (DPI 2021)
- Australian Ramsar Wetlands (DAWE 2021).

Mapping undertaken during the assessment was conducted using Field Maps for ArcGIS™ and aerial photo interpretation. Accuracy is subject to accuracy of GPS devices, generally ± 5 m. Mapping has been produced using a Geographic Information System (GIS; ArcGIS 10.5).

3.2 Field investigations

Field investigations within the Disturbance Footprint were conducted on 18 January 2024 by one EMM ecologist, accompanied by an AGL representative, and included:

- vegetation assessment: vegetation mapping and condition assessment and identification of flora species, including priority weeds
- habitat assessment: identification of potential habitat for threatened flora and fauna species to assess the value of habitat resources within the Disturbance Footprint and to assess the potential for threatened species to occur and recording incidental fauna observations.

No targeted flora surveys were undertaken; however, field surveys provided the opportunity for identification of conspicuous threatened plant species and assess habitat for threatened flora not readily detectable during the survey. Targeted surveys already completed by EMM ecologists for the overarching Project provided suitable background into the availability of habitats and presence of threatened species in the Disturbance Footprint. The survey methods are outlined below.

3.2.1 Vegetation and threatened flora habitat assessment

A site walk-over was undertaken to identify PCTs within the Disturbance Footprint through observation and recording of dominant plant species, landscape, terrain, and soil characteristics. Photographs were taken to assist with evaluation of vegetation type and condition.

Rapid data points (RDP) were recorded at various locations and notes taken of the dominant (i.e. most frequently recorded and/or apparent) species at these locations. Focus was given to species that are characteristic of threatened ecological communities (TECs) known to occur in the search area to evaluate the likely presence of such TECs within the Disturbance Footprint.

3.2.2 Threatened fauna habitat assessment

Concurrent with vegetation mapping, a habitat assessment was undertaken seeking to identify the presence and abundance of the following fauna habitat features within the Disturbance Footprint:

- habitat trees including large hollow-bearing trees and trees containing large stick nests
- availability of flowering shrubs and feed tree species
- waterways
- ground litter and fallen logs
- rock outcrops, cliffs, and caves that may provide roosting habitat for microbats or other threatened fauna.

3.2.3 Targeted fauna survey

Targeted fauna surveys have been conducted in the overarching Project area by EMM during 2023. The species detected to date, and methods used include:

- Large-eared Pied Bat (*Chalinolobus dwyeri*) – acoustic detectors and roost search
- Southern Myotis (*Myotis macropus*) – acoustic detectors
- Little Bent-wing Bat (*Miniopterus australis*) – acoustic detectors and roost search

- Large Bent-wing Bat (*Miniopterus orianae-oceanensis*) – acoustic detectors and roost search
- Koala (*Phascolarctos cinereus*) – spotlighting, searches for scat and signs
- Hunter Valley delma (*Delma vescolineata*) – pitfall trapping and searches under rocks, cow pats
- Masked Owl (*Tyto novaehollandiae*) – spotlighting and songmeters
- *Cymbidium canaliculatum* population in the Hunter Catchment – targeted parallel searches.

3.3 Likelihood of occurrence assessment

Matters considered in determining the likelihood of occurrence include:

- known natural distributions including prior records (database searches) and site survey results
- geological/soil preferences
- specific habitat requirements (e.g. aquatic environs, seasonal nectar resources, tree hollows)
- climatic considerations (e.g. wet summers and snow fall)
- home range size and habitat dependence
- topographical preferences (e.g. coastal headlands, ridgetops, midslopes, gilgai and wetlands).

The criteria for assessing likelihood of occurrence for threatened species, used to inform the impact assessment of the proposed development is listed in Table 3.1.

Table 3.1 Likelihood of occurrence criteria

Likelihood	Description	Further assessment conducted?
Negligible	<ul style="list-style-type: none"> • The potential for the species to occur is considered so low as to not be worth considering. 	No
Low	<ul style="list-style-type: none"> • Based on data collected during field investigations, it was considered that the species was unlikely to occur in the investigation envelope or use habitats in the Disturbance Footprint. A species may utilise the Disturbance Footprint on rare occasions. • The species is considered vagrant in the bioregion and is thus considered unlikely to occur in the Disturbance Footprint. 	No
Moderate	<ul style="list-style-type: none"> • The species is known to occur in the bioregion, and the Disturbance Footprint provides some habitat value for the species. This includes species for which optimal habitat is present that have not been recorded in the locality, as well as species that have been recorded in the locality for which habitat on site is considered suboptimal. 	Yes
High	<ul style="list-style-type: none"> • The species is known to occur in the bioregion, the Disturbance Footprint supports optimal habitat features for the species and it has been recorded in the locality. 	Yes
Recorded	<ul style="list-style-type: none"> • The species was recorded during site visit or reliable, recent, and spatially accurate records of the species strongly indicate its presence in the Disturbance Footprint. 	Yes

3.4 Limitations

While the biodiversity assessments outlined above provide a reasonable assessment of the biodiversity values, the assessment is subject to a number of limitations outlined below. These limitations are not considered to represent a significant limitation on this survey:

- Field surveys were only completed over a one-day site visit. However, the work done previously by EMM for the overarching Project provides a solid understanding of the habitats available on site, as well as the threatened species detected to date.
- While some species have been assessed as having a low likelihood of occurrence, it is acknowledged that this does not indicate the species will never occur. Rather, it means that based on data collected during desktop and field surveys, it was considered that the species may only utilise the Disturbance Footprint on rare occasions.
- Pelagic and marine species have been excluded from the assessment due to the absence of habitat within the Disturbance Footprint.

4 Results

4.1 Vegetation

The Disturbance Footprint consists of a native woodland vegetation, that appears to have been historically cleared for agriculture in some areas (indicated by regrowth vegetation). The Disturbance Footprint consists entirely of regrowth woodland vegetation. As such, the site is dominated by trees that are a small to moderate size (<40 cm DBH), with few hollows within the immediate vicinity. Leaf litter and fallen logs are present within the Disturbance Footprint. An existing dirt track is present within the Disturbance Footprint and is cleared of native vegetation, aside from outlying groundcovers that have recolonised the track.

A summary of vegetation types within the Disturbance Footprint is included in Table 4.1 and Figure 4.1. A description of these is provided in Sections 4.1.1. to 4.1.2.

4.1.1 Plant community types

Field investigations, including determination of vegetation communities using the methods described in Section 3.2.1, identified the presence of one PCT within the Disturbance Footprint. This PCT is uniform in condition across the Footprint and was therefore stratified into one vegetation zone. The remainder of the Disturbance Footprint falls on the existing track and does not require vegetation removal. This is summarised in Table 4.1 and shown in Figure 4.1. The PCT is described in further detail within the following section and in Table 4.2.

Table 4.1 PCT 3525 – Upper Hunter Box-Blakelys Red Gum Grassy Forest

Zone	Plant community type	Area (ha)
1	3525 - Upper Hunter Box-Blakelys Red Gum Grassy Forest	0.91

As described in Section 2.3, the clearance of native vegetation does not equate to 1 ha or more and, therefore, entry into the BOS is not required.

Table 4.2 PCT 3525 – Upper Hunter Box-Blakelys Red Gum Grassy Forest

PCT 3525 – Upper Hunter Box-Blakelys Red Gum Grassy Forest		
PCT ID	3525	
Common name	Upper Hunter Box-Blakelys Red Gum Grassy Forest	
Condition class and extent within the Disturbance Footprint	Vegetation zone	Extent in the Disturbance Footprint (ha)
	VZ1 – 3525_moderate	0.91
Description	<p>The canopy is co-dominated by Narrow-leaved Ironbark (<i>Eucalyptus crebra</i>) with Blakely's Red Gum (<i>Eucalyptus blakelyi</i>) and Grey Box (<i>Eucalyptus moluccana</i>) also present. Very occasional individuals of Grey Gum (<i>Eucalyptus punctata</i>) and Kurrajong (<i>Brachychiton populneus</i>) are also present but sparsely distributed.</p> <p>The midstorey is dense and dominated by Mock Olive (<i>Notelaea macrocarpa</i>) and Sticky Daisy Bush (<i>Olearia elliptica</i>), with occasional violet nightshade (<i>Solanum brownii</i>), <i>Cassinia quinquefaria</i>, Sticky Hop-bush (<i>Dodonaea viscosa</i>) and <i>Hibbertia linearis</i>.</p> <p>Across the Disturbance Footprint the groundlayer is co-dominated by a mix of native herbs and grass species. Dominant species include Ringed Wallaby Grass (<i>Rytidosperma caespitosum</i>), Brown's Lovegrass (<i>Eragrostis brownii</i>), Barbed Wire Grass (<i>Cymbopogon refractum</i>), Native St. John's Wort (<i>Hypericum gramineum</i>), Many-flowered Mat-rush (<i>Lomandra multiflorum</i>), Poison Rock Fern (<i>Cheilanthes sieberi</i>), <i>Lepidosperma laterale</i>, Sprawling Bluebell (<i>Wahlenbergia gracilis</i>) and Large Tick-trefoil (<i>Oxytes brachypoda</i>).</p>	

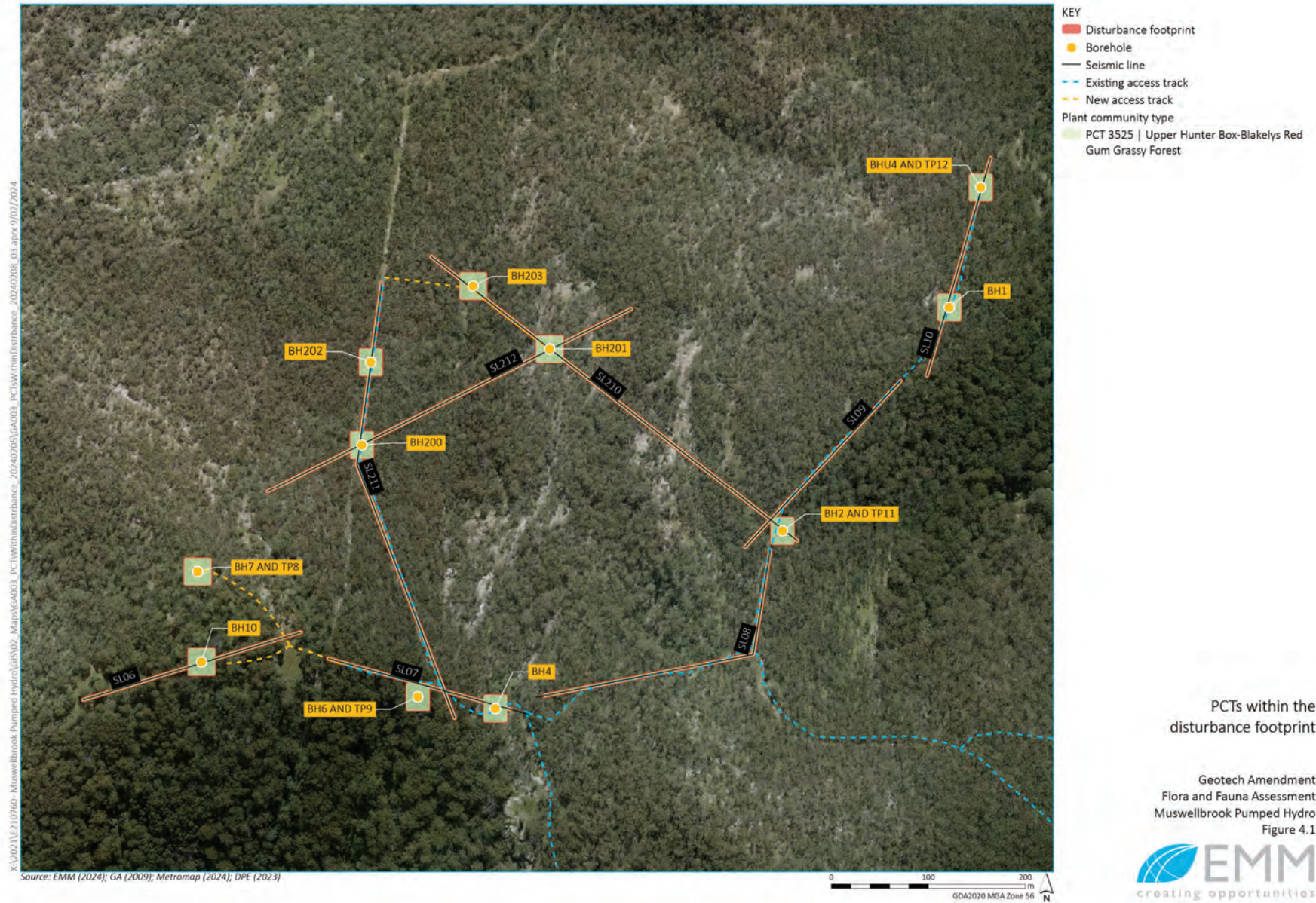
Table 4.2 **PCT 3525 – Upper Hunter Box-Blakelys Red Gum Grassy Forest**

PCT 3525 – Upper Hunter Box-Blakelys Red Gum Grassy Forest	
Condition description	The Disturbance Footprint is in relatively high condition, with very few weeds and a high diversity of native species in all strata. There is, however, a general lack of large trees, and much of the canopy exist as young trees less than 20 cm DBH. This suggests that the area has been subject to historic clearing practices, and conversations with the landholder confirm this, as well as confirmation that the mountain top was used for heavy sheep and cattle grazing in the past.
Status	PCT 3525 is not consistent with any threatened ecological community listed under the BC Act or EPBC Act.



Photograph 4.1 **PCT 3525 in moderate condition, representative of the Disturbance Footprint**

Approximately 0.09 ha the Disturbance Footprint is unvegetated / cleared, consisting of existing dirt access track.



4.1.2 Threatened ecological communities

No threatened ecological communities are present within the Disturbance Footprint.

4.2 Threatened species

4.2.1 Habitat description

Bells Mountain supports dry sclerophyll forests with a dense, shrubby understorey. Narrow-leaved Ironbark and Blakely's Red Gum dominate the overstorey, with a moderately dense herbaceous and grassy groundcover. Weed species are very few and the habitat is in good condition.

Due to historical clearing and grazing activities, hollows are extremely rare within the Disturbance Footprint, as no large old trees remain. Several dead stags are present that contain small to medium hollows. Large logs and coarse woody debris are also uncommon, providing limited habitat for fauna species, although macropods and smaller mammals would be common, such as wallabies, antechinus and possums. When flowering, the canopy species would provide copious nectar for nectarivorous birds and mammals, such as the grey-headed flying-fox. Watercourses are present on steep slopes but are ephemeral and only flow for brief periods after heavy rains. Leaf litter is abundant in the forested areas, providing excellent habitat for insects and smaller skinks and amphibians. A large cliff line exists on the eastern slopes of Bells Mountain, providing excellent habitat for microbats and reptiles. This cliff line is greater than 300 metres from the Disturbance Footprint.

Database searches were conducted as per Section 3.1. A likelihood of occurrence assessment was undertaken in accordance with Section 3.1. The results are presented in Appendix A. Of the species assessed, the following are considered likely to occur.

4.2.2 Threatened flora

Based on the desktop assessment, 18 threatened flora species listed under the BC Act and/or the EPBC Act are known or have potential to occur in the Disturbance Footprint (Appendix A).

No threatened flora species have been recorded in the Disturbance Footprint previously or during targeted surveys

Based on the presence of suitable habitat, one threatened flora species and one threatened population is considered to have a moderate to high likelihood of occurrence (Appendix A). Table 4.3 provides a summary of the species considered likely to occur in the Disturbance Footprint.

Table 4.3 Threatened flora species known or likely to occur in the Disturbance Footprint

Scientific name	Common name	BC Act status	EPBC Act status	Habitat/potential habitat in Disturbance Footprint
<i>Diuris tricolor</i>	Pinke Donkey Orchid	V	-	Species known from the locality and could potentially occur within Disturbance Footprint.
<i>Diuris tricolor</i>	Pink Donkey Orchid population in the Muswellbrook local government area	EP	-	Species known from the locality and could potentially occur within Disturbance Footprint.

Notes: CE = critically endangered, E = endangered, V = vulnerable, EP = Endangered Population

Significance assessments have been completed for these species under the BC act (Appendix B).

4.2.3 Threatened fauna

Based on the desktop assessment, 56 threatened fauna species listed under the EPBC Act and/or BC Act are known or have potential to occur in the Disturbance Footprint (Appendix A).

No threatened fauna species have been recorded in the Disturbance Footprint previously, though several have been detected in the vicinity during surveys for the overarching Project (Section 3.2.3).

Based on the presence of suitable habitat, 21 threatened and/or migratory fauna species are considered to have a moderate to high likelihood of occurrence (Appendix A). Table 4.4 provides a summary of the species considered likely to occur in the Disturbance Footprint.

Table 4.4 Threatened fauna species known or likely to occur in the Disturbance Footprint

Scientific name	Common name	BC Act status	EPBC Act status	Habitat/potential habitat in Disturbance Footprint
<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	V	-	Suitable habitat in the Disturbance Footprint. Species known from the locality.
<i>Daphoenositta chrysoptera</i>	Varied Sittella	V	-	Potential foraging and breeding habitat in the Disturbance Footprint.
<i>Glossopsitta pusilla</i>	Little Lorikeet	V	-	Species may forage in canopy species when flowering. Known from locality.
<i>Monarcha melanopsis</i>	Black-faced Monarch		Mi	Species may utilise the Disturbance Footprint for foraging and breeding.
<i>Tyto novaehollandiae</i>	Masked Owl	V	-	Species recorded during surveys for the overarching Project. May occasionally forage over the Disturbance Footprint.
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	V	V	Species recorded during surveys for the overarching Project. May forage over the Disturbance Footprint.
<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	V	E	Suitable denning habitat nearby in the form of rocks. May occasionally forage in the Disturbance Footprint.
<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	V	-	May forage within the Disturbance Footprint. No hollows in Disturbance Footprint.
<i>Micronomus norfolkensis</i>	Eastern Coastal Free-tailed Bat	V	-	Potential foraging and roosting habitat within Disturbance Footprint.
<i>Miniopterus australis</i>	Little Bent-winged Bat	V	-	Species recorded during surveys for the overarching Project. May forage over the Disturbance Footprint.
<i>Miniopterus orianae oceanensis</i>	Large Bent-winged Bat	V	-	Species recorded during surveys for the overarching Project. May forage over the Disturbance Footprint.
<i>Myotis macropus</i>	Southern Myotis	V	-	Species recorded during surveys for the overarching Project. May forage over the Disturbance Footprint.
<i>Notamacropus parma</i>	Parma Wallaby	V	V	May occur within the Disturbance Footprint.
<i>Nyctophilus corbeni</i>	Corben's Long-eared Bat	V	V	Potential foraging and roosting habitat within Disturbance Footprint.
<i>Petaurus norfolkensis</i>	Squirrel Glider	V	-	Many records in the locality. No suitable hollows within Disturbance Footprint but foraging habitat available.

Table 4.4 **Threatened fauna species known or likely to occur in the Disturbance Footprint**

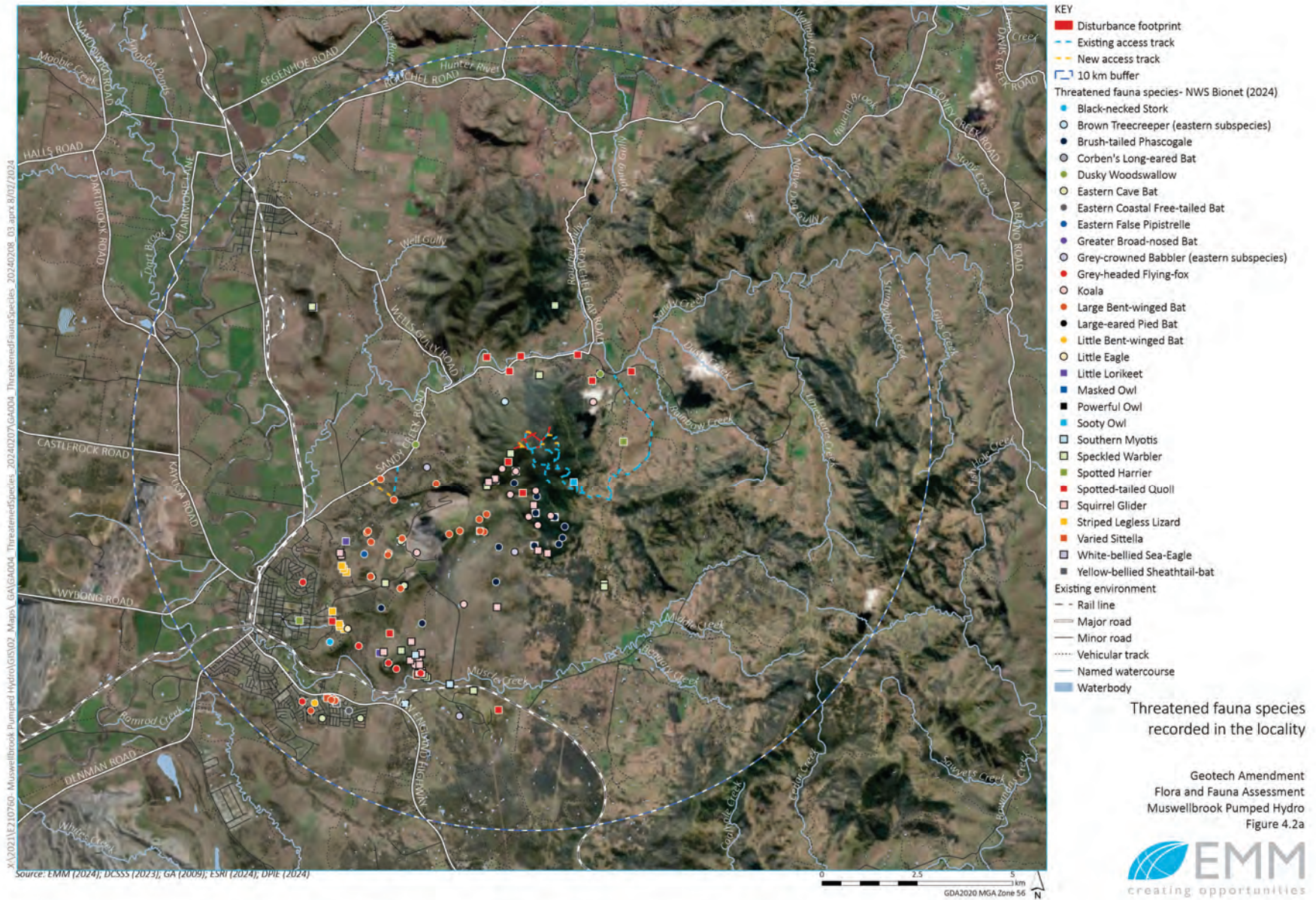
Scientific name	Common name	BC Act status	EPBC Act status	Habitat/potential habitat in Disturbance Footprint
<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	V	-	Many records in the locality. No suitable hollows within Disturbance Footprint but foraging habitat available.
<i>Phascolarctos cinereus</i>	Koala	V	E	Recorded during surveys for the overarching Project.
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V	V	Species may forage within the Disturbance Footprint when canopy in flower. Species known from area with a camp present in Muswellbrook.
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	V	-	Potential foraging habitat within Disturbance Footprint.
<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat	V	-	Potential foraging habitat within Disturbance Footprint.
<i>Vespadelus troughtoni</i>	Eastern Cave Bat	V	-	Recorded during surveys for the overarching Project.

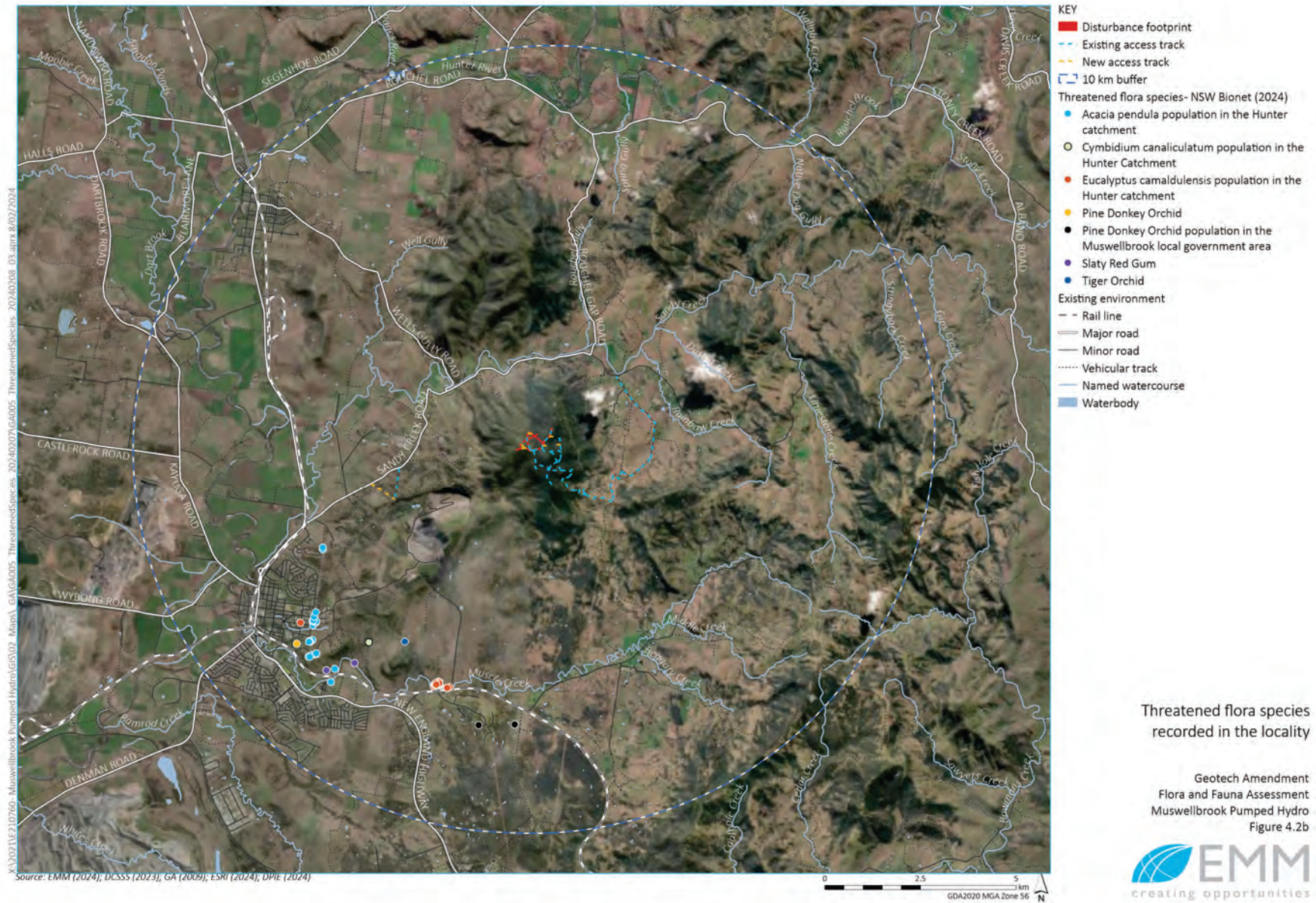
Notes: CE = critically endangered, E = endangered, V = vulnerable, Mi = migratory

Significance assessments have been completed for these species under the BC act and EPBC Act (Appendix B).

i Koala habitat

Koalas were recorded on songmeters during surveys for the overarching Project in 2023. While the habitat in the Disturbance Footprint is likely to be of low quality for the Koala, due to its regenerating nature, there are two secondary feed tree species present, including Grey Gum (*Eucalyptus punctata*) and Grey Box (*Eucalyptus moluccana*). Habitat elsewhere in the locality is likely to provide more suitable habitat where there are preferred tree species present, such as Swamp Mahogany (*Eucalyptus robusta*).





5 Impact assessment

5.1 Avoidance, minimisation and mitigation

The hierarchy of avoid, minimise and mitigate has been used in the development of the Disturbance Footprint. This has included avoidance (wherever feasible) of key biodiversity values identified during the field investigations.

The process below has been followed to ensure impacts are avoided and minimised to the greatest extent possible, within the design and other limitations of the project:

- identification of biodiversity values through an ecological site visit; values to be avoided (dead stags and hollows) were discussed and agreed with the AGL representative on site
- communication of identified values to the project team
- consultation between the project team and project ecologists on various elements to consider both direct and indirect impacts; wherever possible, the Disturbance Footprint was placed within the existing cleared access track, to avoid further vegetation clearance
- finalisation of measures to avoid, minimise and mitigate impacts within this document.

The measures outlined in Table 5.1 have been incorporated into the project to avoid, minimise and mitigate impacts.

Table 5.1 Measures incorporated into the project to avoid, minimise and mitigate impacts

Step	Measure
Avoid and minimise	<ul style="list-style-type: none">• Disturbance Footprint placed in area of regrowth forest, and all dead stags are to be avoided.• Where possible, Disturbance Footprint incorporated into existing access track to minimise clearing.• Vegetation clearance for seismic lines will not result in removal of any trees, and consists of brush-cutting of shrub layer only.
Mitigate	<ul style="list-style-type: none">• A pre-clearing inspection of all vegetation has been conducted prior to clearing. Habitat trees (dead stags) avoided.• Ensure works vehicles are washed down prior to entering the works area if weed seed is likely to be present.

Table 5.1. provides a summary of the mitigation measures proposed to avoid, minimise and mitigate impacts to biodiversity.

5.2 Residual impacts

The residual impacts of the project, after application of the hierarchy of avoid, minimise and mitigate, are described here and were used to inform the assessments of impact significance for threatened flora and fauna (Appendix B).

Clearing of native vegetation can result in a range of direct and indirect impacts including:

- reduction in the extent of vegetation communities
- loss of local populations of species
- fragmentation of remnants of vegetation communities or local populations of individual species

- increased edge effects and habitat for invasive species
- reduction in the viability of ecological communities resulting from loss or disruption of ecological functions (e.g. increased desiccation, light penetration, increased herbivore activity, weed invasion, increased predation, and loss of animals that are seed dispersers and pollinators)
- destruction of flora and fauna habitat and associated loss of biological diversity
- soil exposure and altered water flow patterns resulting in increased erosion and sedimentation.

These direct and indirect impacts are discussed below.

5.2.1 Direct impacts

This section outlines the project's direct impacts, following the implementation of avoidance, minimisation and mitigation measures outlined in Section 5.1. Direct impacts for the project comprise:

- loss of 0.91 ha native vegetation
- loss and degradation of native fauna habitats.

The project will result in the direct impacts shown in Table 5.2. As discussed previously, as less than 1 ha of native vegetation is being impacted, entry into the BOS is not triggered. No BDAR is required.

Table 5.2 Direct impact area

Zone	Plant community type	Ancillary code	Area (ha)
1	3525 - Upper Hunter Box-Blakelys Red Gum Grassy Forest		0.91
2	Cleared/disturbed track		0.09
Total			1.0

i Impacts on threatened or migratory species

a Flora and Fauna

No threatened or migratory species were recorded during the site visit within the Disturbance Footprint. However, based on surveys for the Overarching Project and desktop studies, 23 species or endangered populations are considered a moderate to high likelihood of occurrence in the Disturbance Footprint as described in Section 4.2.

Assessments of significance have been prepared for these species under the BC Act and EPBC Act (Appendix B) for these species. These assessments concluded that the project would not result in a significant impact to threatened or migratory fauna.

5.2.2 Indirect impacts

This section outlines the project's indirect impacts, following the implementation of avoidance, minimisation and mitigation measures outlined in Section 5.1. Indirect impacts relating to the project comprise:

- weed introduction and spread
- potential inadvertent disturbance of retained habitats
- removal of habitat resources for threatened fauna
- temporary increased noise, vibration and dust levels resulting in disturbance of fauna species, and consequent abandonment of habitat, or changes in behaviour (including breeding behaviour).

Excavation and earthworks undertaken for the boreholes may expose soils that have the potential to enter surrounding areas of vegetation, possibly resulting in sedimentation and dispersal of weeds, if not properly managed. Erosion and sediment controls are recommended to be included during activities.

In addition to the loss of total habitat area, the process of fragmentation can affect species within the newly created fragments in a number of ways, including barrier effects, genetic isolation, and edge effects. The degree to which these potential impacts affect the flora and fauna within the newly created fragments depends on a number of variables, including distance between the fragments, local environmental conditions, the species present and any proposed mitigation measures. However, given the extremely minor nature of the works and the short distances between disturbance areas (25 x 25 m for a borehole and 4-metre-wide tracks), the effects of fragmentation are considered to be unlikely to affect local species.

6 Assessment against key legislation and policy

6.1 *Environment Protection and Biodiversity Conservation Act 1999*

The project has been assessed against the requirements of the EPBC Act. No species or communities listed under the EPBC Act were recorded within the Disturbance Footprint. However, several species have potential to occur.

Assessments of significance have been prepared in accordance with Matters of National Environmental Significance: Significant impact guidelines 1.1 (DoE 2013). These assessments concluded that the project was unlikely to result in a significant impact to threatened species or communities. Referral of the project to the Commonwealth Minister for the Environment for assessment is not required.

6.2 *Environmental Planning and Assessment Act 1979*

6.2.1 *State Environmental Planning Policy (Biodiversity and Conservation) 2021: Koala Habitat Protection*

An assessment of impacts to the Koala has been prepared in accordance with the requirements of the *Koala Habitat Protection Guideline* (DPIE 2020). As the project involves clearing of native vegetation, it does not meet the requirements for Tier 1 – Low or no impact development under the Koala SEPP and a Tier 2 assessment is required.

An assessment of Koala habitat was undertaken in accordance with Appendix C of DPIE (2020; see Section 4.2.3i). Tree species composition was assessed using a series of plots for the overarching project and against the list of Koala use trees identified in Appendix A of DPI (2020) for the Central Coast Koala Management Area (KMA). These surveys determined that the Disturbance Footprint does support highly suitable Koala habitat, especially considering the Koala was detected during surveys for the overarching project. Highly suitable Koala habitat was mapped across the Disturbance Footprint; however, the trees are in a state of regrowth and are fairly small in size (<20 cm DBH).

Surveys were undertaken for the Koala (see Section 3.2.2) for the overarching Project. These surveys determined that the Koala is present within the vicinity.

Based on the above, the Disturbance Footprint is identified as core Koala habitat under the Koala SEPP, based on the presence of highly suitable Koala habitat and the presence of Koalas. The following measures have been taken to avoid impacts to core Koala habitat:

- no large trees (>10 cm DBH) to be removed
- activities are temporary and minor in nature.

6.3 *Biodiversity Conservation Act 2016*

Assessments of significance have been prepared in accordance with OEH (2018a). These assessments determined that the project will not result in a significant effect on threatened species or communities. The project will not exceed the biodiversity offsets scheme thresholds outlined in Section 7.1 of the BC Regulation and is not located in an area of outstanding biodiversity value.

As outlined in Section 4.2, the project will not significantly affect threatened species or communities and thus preparation of a BDAR is not required.

6.4 *Biosecurity Act 2015*

No weeds of national significance (WoNS) were identified within the Disturbance Footprint.



6.5 *Water Management Act 2000*

The project will not occur on waterfront land and a controlled activity permit is not required.

7 Conclusions

This biodiversity assessment has been completed to assess potential impacts of the project on species and communities listed under the BC Act and EPBC Act.

Biodiversity surveys were undertaken to understand the biodiversity values of the Disturbance Footprint (Section 4) and inform measures to avoid, minimise and mitigate these impacts (Section 5.1). Residual impacts arising from the project, following all measures to avoid, minimise and mitigate impacts, include:

- clearing of 0.91 ha of native vegetation and fauna habitat
- impacts to potential habitat for 1 threatened flora species and 1 endangered population, 20 threatened fauna species and one migratory species
- indirect impacts to retained vegetation and fauna habitat.

Assessments of significance were prepared under the BC Act and EPBC Act (Appendix B).

These assessments determined that the project will not result in a significant impact to threatened species and communities and preparation of a BDAR or referral of the project under the EPBC Act is not required.

Provided the proponent implements the measures outlined in Section 5.1, the project is predicted to result in minor impacts to biodiversity values within the Disturbance Footprint.

References

DEC 2004, Threatened Biodiversity Survey and Assessment: Guidelines for Development and Activities, Department of the Environment and Conservation.

DECC 2009, Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna Amphibians, Department of Environment and Climate Change.

DoE, 2013. Matters of National Environmental Significance Significant impact guidelines 1.1 Environment Protection and Biodiversity Conservation Act 1999.

DPIE 2020, Koala Habitat Protection Guideline, Department of Planning, Industry and Environment.

OEH 2020a, Biodiversity Assessment Method, Office of Environment and Heritage.

OEH 2018a, Threatened Species Test of Significance Guidelines, Office of Environment and Heritage.

Appendix A

Likelihood of Occurrence table

Table A.1 Likelihood of Occurrence table

Class	Scientific name	Common name	BC Act Status	EPBC Act status	Habitat and geographic distribution	Likelihood of occurrence	Justification	Bionet records
Bird	<i>Anseranas semipalmata</i>	Magpie Goose	V	-	Mainly found in shallow wetlands (less than 1 m deep) with dense growth of rushes or sedges. Equally at home in aquatic or terrestrial habitats; often seen walking and grazing on land; feeds on grasses, bulbs and rhizomes.	None	No habitat available within the Disturbance Footprint.	1
Bird	<i>Anthochaera phrygia</i>	Regent Honeyeater	E	CE	The Regent Honeyeater mainly inhabits temperate woodlands and open forests of the inland slopes of south-east Australia. These birds are also found in drier coastal woodlands and forests in some years. Every few years non-breeding flocks are seen foraging in flowering coastal Swamp Mahogany (<i>Eucalyptus robusta</i>) and Spotted Gum (<i>Corymbia maculata</i>) forests, particularly on the central coast and occasionally on the upper north coast. Birds are occasionally seen on the south coast. Mistletoe is a favoured food source.	Low	Few feed trees available in the Disturbance Footprint. Narrow-leaved ironbark unlikely to provide copious nectar, and no mistletoe species observed. No records in the locality. Species would be likely to be passing through at best.	0
Bird	<i>Aphelocephala leucopsis</i>	Southern Whiteface	V	V	Usually found in dry open forests and woodland and inland scrubs of mallee, mulga and saltbush are the preferred habitat of Southern Whiteface, especially areas with fallen timber or dead trees and stumps.	Low	Marginal habitat in the Disturbance Footprint. Species generally found further west towards the arid zone.	1
Bird	<i>Apus pacificus</i>	Fork-tailed Swift	-	Mi	In Australia, the Fork-tailed Swift mostly occurs over inland plains but sometimes above foothills or in coastal areas. This species can also occur over cliffs and beaches and also over islands and sometimes well out to sea.	Negligible	Species may forage aerially over the Disturbance Footprint but unlikely to land within.	0
Bird	<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	V	-	The species occurs throughout most of NSW, but is sparsely scattered in, or largely absent from, much of the upper western region. Most breeding activity occurs on the western slopes of the Great Dividing Range. The most common habitat for this species is in woodlands and dry open sclerophyll forests, usually dominated by eucalyptus, including mallee associations. The species has also been recorded in shrublands and heathlands and various modified habitats, including regenerating forests, very occasionally in moist forests or rainforests. Understorey is typically open with sparse Eucalyptus saplings, Acacia and other shrubs, including heath. The ground cover may consist of grasses, sedges or open ground, often with coarse woody debris (OEH 2018).	Moderate	Suitable habitat in the Disturbance Footprint. Species known from the locality.	1
Bird	<i>Botaurus poiciloptilus</i>	Australasian Bittern	E	E	The Australasian Bittern is widespread and found over most of NSW except for far north-west. Preferred habitat is composed of wetlands with tall dense vegetation, where it forages in still, shallow water up to 0.3 m deep, often at the edges of pools or waterways, or from platforms or mats of vegetation over deep water. It favours permanent and seasonal freshwater habitats, particularly those dominated by sedges, rushes and reeds or cutting grass (<i>Gahnia</i> sp.) growing over a muddy or peaty substrate (OEH 2018).	None	No habitat available within the Disturbance Footprint.	0
Bird	<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	V	E	In summer, the Gang-gang Cockatoo is generally found in tall mountain forests and woodlands, particularly in heavily timbered and mature wet sclerophyll forests. In winter, they may occur at lower altitudes in drier more open eucalypt forests and woodlands, and often found in urban areas.	Low	No habitat available within the Disturbance Footprint.	0
Bird	<i>Calyptrorhynchus lathamii</i>	Glossy Black-Cockatoo	V	-	The Glossy Black Cockatoo inhabits open forest and woodlands of the coast and the Great Dividing Range up to 1000 m in which stands of She-oak species, particularly Black She-oak (<i>Allocasuarina littoralis</i>), Forest She-oak (<i>A. torulosa</i>) or Drooping She-oak (<i>A. verticillata</i>) occur.	Low	Disturbance Footprint lacks heavily timbered areas and she-oak species. No hollow-bearing trees suitable for breeding within the Disturbance Footprint. Not recorded within the locality.	0
Bird	<i>Chthonicola sagittata</i>	Speckled Warbler	V	-	The Speckled Warbler lives in a wide range of Eucalyptus dominated communities that have a grassy understorey, often on rocky ridges or in gullies. Typical habitat would include scattered native tussock grasses, a sparse shrub layer, some eucalypt regrowth and an open canopy. Large, relatively undisturbed remnants are required for the species to persist in an area.	Low	While the species is known from the area, Disturbance Footprint is entirely regrowth forest with dense shrubbery. Species may pass through at best but habitat largely unsuitable.	14
Bird	<i>Circus assimilis</i>	Spotted Harrier	V	-	Occurs in grassy open woodland including <i>Acacia</i> and mallee remnants, inland riparian woodland, grassland and shrub steppe. It is found most commonly in native grassland, but also occurs in agricultural land, foraging over open habitats including edges of inland wetlands.	Low	While the species is known from the locality, it generally occurs within and nearby grassland, which is not present in the Disturbance Footprint.	1

Table A.1 Likelihood of Occurrence table

Class	Scientific name	Common name	BC Act Status	EPBC Act status	Habitat and geographic distribution	Likelihood of occurrence	Justification	Bionet records
Bird	<i>Climacteris picumnus</i>	Brown Treecreeper	V	V	Found in eucalypt woodlands (including Box-Gum Woodland) and dry open forest of the inland slopes and plains inland of the Great Dividing Range; mainly inhabits woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey, sometimes with one or more shrub species; also found in mallee and River Red Gum (<i>Eucalyptus camaldulensis</i>) Forest bordering wetlands with an open understorey of acacias, saltbush, lignum, cumbungi and grasses; usually not found in woodlands with a dense shrub layer; fallen timber is an important habitat component for foraging; also recorded, though less commonly, in similar woodland habitats on the coastal ranges and plains.	Low	Species not known from the locality and habitat within the Disturbance Footprint consists of regrowth ironbark and redgum, rather than stringy barks or box-gum associations. Typically found west of the Great Dividing Range.	0
Bird	<i>Daphoenositta chrysoptera</i>	Varied Sittella	V	-	Inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland. Feeds on arthropods gleaned from crevices in rough or decortivating bark, dead branches, standing dead trees and small branches and twigs in the tree canopy. Builds a cup-shaped nest of plant fibres and cobwebs in an upright tree fork high in the living tree canopy, and often re-uses the same fork or tree in successive years.	Moderate	Potential foraging and breeding habitat in the disturbance footprint	5
Bird	<i>Erythriotriocrhis radiatus</i>	Red Goshawk	E	E	Red Goshawks inhabit open woodland and forest, preferring a mosaic of vegetation types, a large population of birds as a source of food, and permanent water, and are often found in riparian habitats along or near watercourses or wetlands. In NSW, preferred habitats include mixed subtropical rainforest, <i>Melaleuca</i> swamp forest and riparian <i>Eucalyptus</i> forest of coastal rivers.	Low	No suitable habitat and not recorded from the locality. Extremely rare in NSW.	0
Bird	<i>Falco hypoleucos</i>	Grey Falcon	E	V	The Grey Falcon is sparsely distributed in NSW, chiefly throughout the Murray-Darling Basin, with the occasional vagrant east of the Great Dividing Range. The species is usually restricted to shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast. Also occurs near wetlands where surface water attracts prey (OEH 2018).	Low	No suitable habitat and not recorded from the locality. Extremely rare in NSW.	0
Bird	<i>Gallinago hardwickii</i>	Latham's Snipe	-	Mi	Latham's Snipe is a non-breeding visitor to south-eastern Australia, and is a passage migrant through northern Australia. Latham's Snipe occurs in permanent and ephemeral wetlands up to 2,000 m above sea-level. They usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies)	None	No suitable wetland habitat.	0
Bird	<i>Glossopsitta pusilla</i>	Little Lorikeet	V	-	Forages primarily in the canopy of open Eucalyptus forest and woodland, yet also finds food in Angophora, Melaleuca and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity. Isolated flowering trees in open country (e.g. paddocks, roadside remnants and urban trees) also help sustain viable populations of the species. Feeds mostly on nectar and pollen, occasionally on native fruits such as mistletoe, and only rarely in orchards.	Moderate	Species may forage in canopy species when flowering. Known from locality.	8
Bird	<i>Grantiella picta</i>	Painted Honeyeater	E	V	The species is sparsely distributed from south-eastern Australia to north-western Queensland, with its greatest concentrations and breeding locations occurring on the inland slopes of the Great Dividing Range in NSW. It inhabits mistletoes in eucalypt forests/woodlands, riparian woodlands of Black Box (<i>E. largiflorens</i>) and River Red Gum (<i>E. camaldulensis</i>), Box-Ironbark-Yellow Gum woodlands, Acacia-dominated woodlands, Paperbarks, Casuarina, Callitris, and trees on farmland or gardens. The species prefers woodlands which contain a higher number of mature trees, as these host more mistletoes.	Low	No records of this species within the locality. Strongly associated with mistletoe species, which were not recorded in Disturbance Footprint.	0
Bird	<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	V	-	The White-bellied Sea-Eagle is found in coastal habitats (especially those close to the sea-shore) and around terrestrial wetlands in tropical and temperate regions of mainland Australia and its offshore islands. The habitats occupied by the sea-eagle are characterised by the presence of large areas of open water (larger rivers, swamps, lakes and the sea).	Low	Disturbance Footprint lacks large trees suitable for breeding. No suitable foraging habitat within the Disturbance Footprint.	1
Bird	<i>Hieraaetus morphnoides</i>	Little Eagle	V	-	The Little Eagle is found throughout the Australian mainland excepting the most densely forested parts of the Dividing Range escarpment. It occurs as a single population throughout NSW. This species occupies open eucalypt forest, woodland or open woodland. She-oak or Acacia woodlands and riparian woodlands of interior NSW are also used.	Low	Disturbance Footprint lacks large trees suitable for breeding. No potential foraging habitat within the Disturbance Footprint as forest is closed and dense.	3

Table A.1 Likelihood of Occurrence table

Class	Scientific name	Common name	BC Act Status	EPBC Act status	Habitat and geographic distribution	Likelihood of occurrence	Justification	Bionet records
Bird	<i>Hirundapus caudacutus</i>	White-throated Needletail	-	Mi	The White-throated Needletail is widespread in eastern and south-eastern Australia. In NSW this species extends inland to the western slopes of the Great Divide and occasionally onto the adjacent inland plains. In Australia, the White-throated Needletail is almost exclusively aerial, recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland (DoEE 2018).	Negligible	This species may forage aerially over the Disturbance Footprint, however, is unlikely to be impacted by the project.	4
Bird	<i>Lathamus discolor</i>	Swift Parrot	E	CE	This species migrates in the autumn and winter months to south-eastern Australia. In NSW, it mostly occurs on the coast and south-west slopes in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations (OEH 2018). Favoured feed trees include winter flowering species such as Swamp Mahogany, Spotted Gum, Red Bloodwood, Mugga Ironbark and White Box. Commonly used lerp infested trees include Inland Grey Box, Grey Box and Blackbutt.	Low	Species unlikely to forage within the Disturbance Footprint. Marginal habitat available when canopy in flower, but no prolifically winter-flowering species present (when species is present on mainland).	0
Bird	<i>Melanodryas cucullata</i>	South-eastern Hooded Robin	E	E	Prefers lightly wooded country, usually open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open areas. Requires structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses. Often perches on low dead stumps and fallen timber or on low-hanging branches, using a perch-and-pounce method of hunting insect prey.	Low	Habitat marginal at best. Forest is dense and closed with thick shrubbery and Disturbance Footprint not close to open grassy areas. Species not known from locality.	0
Bird	<i>Monarcha melanopsis</i>	Black-faced Monarch		Mi	The Black-faced Monarch is found in rainforests, eucalypt woodlands, coastal scrub and damp gullies. It may be found in more open woodland when migrating.	Moderate	Species may utilise the Disturbance Footprint for foraging and breeding.	0
Bird	<i>Myiagra cyanoleuca</i>	Satin Flycatcher		Mi	The Satin Flycatcher is found in tall forests, preferring wetter habitats such as heavily forested gullies, but not rainforests.	Low	No suitable habitat and not recorded from the locality.	0
Bird	<i>Neophema chrysostoma</i>	Blue-winged Parrot	V	V	In NSW, populations are found in the western arid zones. It inhabits a range of habitats from coastal, sub-coastal and inland areas, right through to semi-arid zones. Throughout their range, they favour grasslands and grassy woodlands. They are often found near wetlands both near the coast and in semi-arid zones.	None	Typically found in the arid zone in NSW, and habitat marginal at best.	0
Bird	<i>Ninox strenua</i>	Powerful Owl	V	-	In NSW, the Powerful Owl is widely distributed throughout the eastern forests from the coast inland to tablelands, with scattered, mostly historical records on the western slopes and plains. This species roosts by day in dense vegetation comprising species such as Turpentine (<i>Syncarpia glomulifera</i>), Black She-oak (<i>Allocasuarina littoralis</i>), Blackwood (<i>Acacia melanoxylon</i>), Rough-barked Apple (<i>Angophora floribunda</i>), Cherry Ballart (<i>Exocarpus cupressiformis</i>) and a number of eucalypt species.	Low	Disturbance Footprint lacks suitable tree hollows for breeding and would not provide a suitable foraging habitat due to a lack of prey in the regenerating forest. May pass over the area occasionally but unlikely to specifically use the regenerating forest in the Disturbance Footprint.	2
Bird	<i>Pandion cristatus</i>	Eastern Osprey	V	-	Favour coastal areas, especially the mouths of large rivers, lagoons and lakes. Feed on fish over clear, open water. Breed from July to September in NSW. Nests are made high up in dead trees or in dead crowns of live trees, usually within one kilometre of the sea.	None	No suitable habitat present.	0
Bird	<i>Polytelis swainsonii</i>	Superb Parrot	V	V	Inhabit Box-Gum, Box-Cypress-pine and Boree woodlands and River Red Gum forest in the Riverina, South-west Slopes and Southern Tablelands.	None	Species does not occur in the region.	0
Bird	<i>Pomatostomus temporalis temporalis</i>	Grey- crowned Babbler	V	-	Inhabits open Box-Gum Woodlands on the slopes, and Box-Cypress-pine and open Box Woodlands on alluvial plains. Woodlands on fertile soils in coastal regions.	Low	While the species is known from the locality and likely to be present nearby, the Disturbance Footprint provides very little habitat, being too dense and of a regenerating nature.	6
Bird	<i>Rostratula australis</i>	Australian Painted Snipe	E	E	The Australian Painted Snipe generally inhabits shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans. The species also uses inundated or waterlogged grassland or saltmarsh, dams, rice crops, sewage farms and bore drains (OEH 2018).	None	Disturbance Footprint lacks shallow freshwater wetland areas of suitable quality to be utilised by this species. PMST; Species or species habitat known to occur within area.	0

Table A.1 Likelihood of Occurrence table

Class	Scientific name	Common name	BC Act Status	EPBC Act status	Habitat and geographic distribution	Likelihood of occurrence	Justification	Bionet records
Bird	<i>Stagonopleura guttata</i>	Diamond Firetail	V	V	Found in grassy eucalypt woodlands, including Box-Gum Woodlands and Snow Gum Eucalyptus pauciflora Woodlands. Also occurs in open forest, mallee, Natural Temperate Grassland, and in secondary grassland derived from other communities. Often found in riparian areas (rivers and creeks), and sometimes in lightly wooded farmland. Feeds exclusively on the ground, on ripe and partly-ripe grass and herb seeds and green leaves, and on insects (especially in the breeding season).	Low	Dense shrubbery does not provide the grassy understorey required for these species. While some native grasses are present, this species typically inhabits more open grasslands.	1
Bird	<i>Tyto novaehollandiae</i>	Masked Owl	V	-	Lives in dry eucalypt forests and woodlands from sea level to 1,100 m. A forest owl, but often hunts along the edges of forests, including roadsides. The typical diet consists of tree-dwelling and ground mammals, especially rats. Pairs have a large home-range of 500 to 1,000 hectares. Roosts and breeds in moist eucalypt forested gullies, using large tree hollows or sometimes caves for nesting. Extends from the coast where it is most abundant to the western plains. Overall records for this species fall within approximately 90% of NSW, excluding the most arid north-western corner. There is no seasonal variation in its distribution.	Known	Species recorded during surveys for the overarching Project. May occasionally forage over the Disturbance Footprint.	1
Bird	<i>Tyto tenebricosa</i>	Sooty Owl	V	-	Occurs in rainforest, including dry rainforest, subtropical and warm temperate rainforest, as well as moist eucalypt forests. Roosts by day in the hollow of a tall forest tree or in heavy vegetation; hunts by night for small ground mammals or tree-dwelling mammals such as the Common Ringtail Possum (<i>Pseudocheirus peregrinus</i>) or Sugar Glider (<i>Petaurus breviceps</i>). Nests in very large tree-hollows. Occupies the easternmost one-eighth of NSW, occurring on the coast, coastal escarpment and eastern tablelands. Territories are occupied permanently.	Low	Habitat is not suitable for this species, which typically requires tall, wet forest.	1
Mammal	<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	V	V	In NSW this species has been recorded from a large range of vegetation types including dry and wet sclerophyll forest; Cyprus Pine (<i>Callitris glauca</i>) dominated forest; tall open eucalypt forest with a rainforest sub-canopy; sub-alpine woodland; and sandstone outcrop country. The species requires a combination of sandstone cliff/escarpment to provide roosting habitat that is adjacent to higher fertility sites, particularly box gum woodlands or river/rainforest corridors which are used for foraging. Roosting has also been observed in disused mine shafts, caves, overhangs and disused Fairy Martin (<i>Hirundo ariel</i>) nests, also possibly roosts in the hollows of trees.	Known	Species recorded during surveys for the overarching Project. May forage over the Disturbance Footprint.	7
Mammal	<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	V	E	This species has been recorded from a wide range of habitats, including coastal heathlands, open and closed eucalypt woodlands, wet sclerophyll and lowland forests (OEH 2018). Unlogged forest or forest that has been less disturbed by timber harvesting is preferable. Habitat requirements include suitable den sites such as hollow logs, tree hollows, rock outcrops or caves. Individuals require an abundance of food, such as birds and small mammals, and large areas of relatively intact vegetation through which to forage. Home ranges are estimated to be 620–2,560 ha for males and 90–650 ha for females (DoEE 2018).	Moderate	Suitable denning habitat nearby in the form of rocks. May occasionally forage in the Disturbance Footprint.	16
Mammal	<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	V	-	Prefers moist habitats, with trees taller than 20 m. Generally roosts in eucalypt hollows, but has also been found under loose bark on trees or in buildings. Hunts beetles, moths, weevils and other flying insects above or just below the tree canopy. Hibernates in winter. Females are pregnant in late spring to early summer. The Eastern False Pipistrelle is found on the south-east coast and ranges of Australia, from southern Queensland to Victoria and Tasmania.	Moderate	May forage within the Disturbance Footprint. No hollows in Disturbance Footprint.	4
Mammal	<i>Micronomus norfolkensis</i>	Eastern Coastal Free-tailed Bat	V	-	Occurs in dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range. Roost mainly in tree hollows but will also roost under bark or in man-made structures. Usually solitary but also recorded roosting communally, probably insectivorous. The Eastern Freetail-bat is found along the east coast from south Queensland to southern NSW.	Moderate	Potential foraging and roosting habitat within Disturbance Footprint.	4
Mammal	<i>Miniopterus australis</i>	Little Bent-winged Bat	V	-	The Little Bent-wing Bat is distributed on the East coast and ranges of Australia from Cape York in Queensland to Wollongong in NSW. It is generally found in well-timbered areas. Little Bent-wing bats roost in caves, tunnels, tree hollows, abandoned mines, stormwater drains, culverts, bridges and sometimes buildings during the day, and at night forage for small insects beneath the canopy of densely vegetated habitats.	Known	Species recorded during surveys for the overarching Project. May forage over the Disturbance Footprint.	1

Table A.1 Likelihood of Occurrence table

Class	Scientific name	Common name	BC Act Status	EPBC Act status	Habitat and geographic distribution	Likelihood of occurrence	Justification	Bionet records
Mammal	<i>Miniopterus orianae oceanensis</i>	Large Bent-winged Bat	V	-	Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. This species hunts in forested areas, catching moths and other flying insects above the tree tops. Eastern Bent-wing-bats occur along the east and north-west coasts of Australia.	Known	Species recorded during surveys for the overarching Project. May forage over the Disturbance Footprint.	30
Mammal	<i>Myotis macropus</i>	Southern Myotis	V	-	The Southern Myotis is found in the coastal band from the north-west of Australia, across the top-end and south to western Victoria. It is rarely found more than 100 km inland, except along major rivers. They generally roost in groups of 10–15 close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage. Southern Myotis forage over streams and pools catching insects and small fish by raking their feet across the water surface.	Known	Species recorded during surveys for the overarching Project. May forage over the Disturbance Footprint.	10
Mammal	<i>Notamacropus parma</i>	Parma Wallaby	V	V	Preferred habitat is moist eucalypt forest with thick, shrubby understorey, often with nearby grassy areas, rainforest margins and occasionally drier eucalypt forest. Typically feed at night on grasses and herbs in more open eucalypt forest and the edges of nearby grassy areas. During the day they shelter in dense cover.	Moderate	May occur within the Disturbance Footprint.	0
Mammal	<i>Nyctophilus corbeni</i>	Corben's Long-eared Bat	V	V	Inhabits a variety of vegetation types, including mallee, bulloke <i>Allocasuarina leuhmanni</i> and box eucalypt dominated communities, but it is distinctly more common in box/ironbark/cypress-pine vegetation that occurs in a north-south belt along the western slopes and plains of NSW and southern Queensland. Roosts in tree hollows, crevices, and under loose bark.	Moderate	Potential foraging and roosting habitat within Disturbance Footprint.	2
Mammal	<i>Petauroides volans</i>	Greater Glider	-	V	Largely restricted to eucalypt forests and woodlands. It is primarily folivorous, with a diet mostly comprising eucalypt leaves, and occasionally flowers. It is typically found in highest abundance in taller, montane, moist eucalypt forests with relatively old trees and abundant hollows. The greater glider favours forests with a diversity of eucalypt species, due to seasonal variation in its preferred tree species.	Low	Disturbance Footprint lacks mature forest and hollows and habitat unsuitable.	0
Mammal	<i>Petaurus australis australis</i>	Yellow-bellied Glider (south-eastern)	V	-	Occur in tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils. The Yellow-bellied Glider is found along the eastern coast to the western slopes of the Great Dividing Range, from southern Queensland to Victoria.	Low	Disturbance Footprint lacks mature forest and hollows and habitat unsuitable.	0
Mammal	<i>Petaurus norfolkensis</i>	Squirrel Glider	V	-	Inhabits mature or old growth Box, Box-Ironbark woodlands and River Red Gum forest west of the Great Dividing Range and Blackbutt-Bloodwood forest with heath understorey in coastal areas. Prefers mixed species stands with a shrub or Acacia midstorey.	Moderate	Many records in the locality. No suitable hollows within Disturbance Footprint but foraging habitat available.	25
Mammal	<i>Petrogale penicillata</i>	Brush-tailed Rock-wallaby	E	V	In NSW the Brush-tailed Rock Wallaby occurs from the Queensland border in the north to the Shoalhaven in the south, with the population in the Warrumbungle Ranges being the western limit. This species occupies rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges, often facing north. The Brush-tailed Rock Wallaby browse on vegetation in and adjacent to rocky areas eating grasses and forbs as well as the foliage and fruits of shrubs and trees.	Low	Disturbance Footprint lacks rocky areas required by this species.	0
Mammal	<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	V	-	Prefer dry sclerophyll open forest with sparse groundcover of herbs, grasses, shrubs or leaf litter. Also inhabit heath, swamps, rainforest and wet sclerophyll forest.	Moderate	Many records in the locality. No suitable hollows within Disturbance Footprint but foraging habitat available.	24
Mammal	<i>Phascolarctos cinereus</i>	Koala	V	E	The Koala inhabits eucalypt woodlands and forests and feeds on the foliage of more than 70 eucalypt species and 30 non-eucalypt species, but in any one area will select preferred browse species (OEH 2018). Large populations of koalas occur on the western slopes and plains, in particular the Pilliga region (Kavanagh and Barrott 2001) and in Gunnedah (Smith 1992) and Walgett LGAs (J. Callaghan, Australian Koala Foundation, pers. comm.). Primary feed trees within the Western Slopes and Plains Koala Management Area (KMA) are River Red Gum (<i>E. camaldensis</i>) and Coolabah (<i>E. coolabah</i>).	Known	Recorded during surveys for the overarching Project.	15

Table A.1 Likelihood of Occurrence table

Class	Scientific name	Common name	BC Act Status	EPBC Act status	Habitat and geographic distribution	Likelihood of occurrence	Justification	Bionet records
Mammal	<i>Potorous tridactylus trisulcatus</i>	Long-nosed Potoroo	V	V	The long-nosed potoroo is found on the south-eastern coast of Australia, from Queensland to eastern Victoria and Tasmania, including some of the Bass Strait islands. There are geographically isolated populations in western Victoria. In NSW it is generally restricted to coastal heaths and forests east of the Great Dividing Range, with an annual rainfall exceeding 760 mm. Inhabits coastal heaths and dry and wet sclerophyll forests. Dense understorey with occasional open areas is an essential part of habitat, and may consist of grass-trees, sedges, ferns or heath, or of low shrubs of tea-trees or melaleucas. A sandy loam soil is also a common feature.	None	There are no records of this species within the locality and the Disturbance Footprint does not contain suitable foraging or breeding habitat.	0
Mammal	<i>Pseudomys novaehollandiae</i>	New Holland Mouse	-	V	Found from coastal areas and up to100 km inland on sandstone country. Known to inhabit a range of habitats including open heathland, open woodland with a heathland understory and vegetated sand dunes. Soil type may be an important indicator of suitability of habitat with deeper top soils and softer substrates being preferred for digging burrows. Other factors such as slope, geology and the amount of sun received in an area may also influence site selection.	Low	There are no records of this species within the locality and the Disturbance Footprint does not contain suitable foraging or breeding habitat.	0
Mammal	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V	V	Grey-headed Flying foxes occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy.	Moderate	Species may forage within the Disturbance Footprint when canopy in flower. Species known from area with a camp present in Muswellbrook.	16
Mammal	<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheathtail-bat	V	-	Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory. Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows.	Moderate	Potential foraging habitat within Disturbance Footprint.	3
Mammal	<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat	V	-	The Greater Broad-nosed Bat is found mainly in the gullies and river systems that drain the Great Dividing Range, from north-eastern Victoria to the Atherton Tableland. It extends to the coast over much of its range. In NSW it is widespread on the New England Tablelands, however, does not occur at altitudes above 500 m. This species utilises a variety of habitats from woodland through to moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest.	Moderate	Potential foraging habitat within Disturbance Footprint.	3
Mammal	<i>Vespadelus trougtoni</i>	Eastern Cave Bat	V	-	A cave-roosting species that is usually found in dry open forest and woodland, near cliffs or rocky overhangs; has been recorded roosting in disused mine workings, occasionally in colonies of up to 500 individuals. Occasionally found along cliff-lines in wet eucalypt forest and rainforest.	Known	Recorded during surveys for the overarching Project.	10
Reptile	<i>Aprasia parapulchella</i>	Pink-tailed Worm Lizard		V	Inhabits sloping, open woodland areas with predominantly native grassy groundlayers, particularly those dominated by Kangaroo Grass (<i>Themeda australis</i>). Sites are typically well-drained, with rocky outcrops or scattered, partially-buried rocks.	None	No suitable habitat in Disturbance Footprint.	0
Reptile	<i>Delma impar</i>	Striped Legless Lizard	V	V	Found mainly in Natural Temperate Grassland but has also been captured in grasslands that have a high exotic component. Also found in secondary grassland near Natural Temperate Grassland and occasionally in open Box-Gum Woodland. Species in the Hunter is <i>Delma vescolineata</i> .	None	No suitable habitat in Disturbance Footprint.	11

Appendix B

Assessments of significance

B.1 Assessments of significance under the NSW BC Act

B.1.1 Pine Donkey Orchid, Dusky Woodswallow, Varied Sittella, Little Lorikeet, Masked Owl, Large-eared Pied Bat, Spotted-tailed Quoll, Eastern False Pipistrelle, Eastern Coastal Free-tailed Bat, Little Bent-winged Bat, Large Bent-winged Bat, Southern Myotis, Parma Wallaby, Corben's Long-eared Bat, Squirrel Glider, Brush-tailed Phascogale, Koala, Grey-headed Flying-fox, Yellow-bellied Sheath-tail-bat, Greater Broad-nosed Bat and Eastern Cave Bat

Table B.1 Assessment of significance for woodland birds

Criteria	Assessment
a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,	<p>Based on the <i>Threatened Species Test of Significance Guidelines</i> the local populations of fauna species 'comprises those individuals known or likely to occur in the study area, as well as any individuals occurring in adjoining areas (contiguous or otherwise) that are known or likely to utilise habitats in the study area' (OEH 2018). Therefore, local populations of the above are assumed present within the vicinity due to the presence of suitable habitat, as well as adjoining areas of contiguous habitat.</p> <p>The Disturbance Footprint is considered likely to provide occasional foraging habitat for the fauna species subject to this test of significance. Due to the extremely minor nature of the works, removing 0.91 ha of habitat, it is considered unlikely that any breeding habitat for these species would be impacted, however this test of significance errs on the side of caution. No hollow-bearing trees will be impacted.</p> <p>In the case of the pine donkey orchid, the Disturbance Footprint is considered to provide habitat for the species, considering it is found in relatively large numbers in the locality (162 records within 10 km).</p> <p>Impacts to habitat for these flora and fauna species totals 0.91 ha. Therefore, despite the direct loss of foraging and breeding woodland habitat, the proposal is extremely unlikely to adversely affect the lifecycle processes of these species, given the minor and temporary impacts. While construction noise and an increase in dust will discourage these species from inhabiting the disturbance area at the time of the works, these activities are temporary only. Flora and fauna species will continue to persist in the vast tract of surrounding vegetation and can move back into the Disturbance Footprint at the cessation of the works. The surrounding habitats are also likely to be more suitable for these species, as they consist of remnant forests rather than younger regrowth.</p> <p>Given the availability of suitable vegetation outside the subject land in which to complete their lifecycle processes, and the temporary nature of the disturbance, the proposal is unlikely to adversely affect the life cycles of these species, such that viable local populations would be placed at risk of extinction.</p>
b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity—	Not applicable.
i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,	

Table B.1 Assessment of significance for woodland birds

Criteria	Assessment
<p>c) in relation to the habitat of a threatened species or ecological community—</p> <p>i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and</p> <p>ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and</p> <p>iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,</p>	<p>i) The extent to which habitat will be removed or modified as a result of the project is 0.91 ha. This is an extremely minor area, when considering the entire mountain itself encompasses approximately 1,000 ha of native vegetation. Therefore, the removal of 0.91 ha of habitat is unlikely to significantly impact upon any of these species.</p> <p>ii) Native vegetation within the Disturbance Footprint may become fragmented from surrounding vegetation as a result of these works. However, fragmentation is considered to be relatively minor, being a 25 x 25 m area for boreholes and 4 m for tracks. Regarding fauna species, all are highly mobile and will not be impacted by these minor areas of fragmentation. In the case of the pine donkey orchid, fragmentation may result in minor impacts to the species, however there is ample suitable contiguous habitat over the remainder of the mountain, totalling approximately 1,000 ha, as well as within the grassland areas surrounding the mountain. Fragmentation effects are considered to be negligible.</p> <p>iii) It is not expected that the proposal will remove habitat important to the long-term survival of these species, as the proposal will remove a relatively small area of suitable habitat for these species (approximately 0.91 ha).</p>
d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),	No areas of outstanding biodiversity values are present within, or adjacent to, the subject land (DPE 2023b). Therefore, the proposed development would not have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly).
e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.	<p>The proposal will contribute to the following key threatening process relevant to these species:</p> <ul style="list-style-type: none"> • <i>Clearing of native vegetation</i> <p>The impact of vegetation clearing on the loss, fragmentation, and degradation of habitat for these species are discussed under the responses to parts a and c.</p>
Conclusion	<p>The project is unlikely to have a significant impact on these threatened flora and fauna species due to the following:</p> <ul style="list-style-type: none"> • The extent to which habitat will be removed from the native vegetation extent is minor at 0.91 ha. • While there is potential for habitat to become fragmented, this is likely to be negligible especially regarding the highly mobile fauna species. • It is not expected that the proposal will remove habitat important to the long-term survival of these species, given the minor extent to be removed, being 0.91 ha. <p>In conclusion, the proposed development is unlikely to result in a significant impact on any threatened species.</p>

B.2 Assessments of significance under the Commonwealth EPBC Act

B.2.1 Endangered species

Table B.2 Assessment of significance for the Koala and Spotted-tailed Quoll

Assessment question	Response
1. lead to a long-term decrease in the size of a population	The project will remove 0.91 ha of habitat for these species. The habitat is not considered to be important to these species, given the very minor nature of the works, and the fact that the forest is in a state of regeneration and regrowth following historical clearing.
2. reduce the area of occupancy of the species	The project will remove 0.91 ha of habitat that is potentially occupied by these species. Given the very large area of habitat surrounding the Disturbance Footprint, that is arguably more suitable for these species due to its remnant state, it is unlikely that the area of occupancy would be reduced for these species such that they would be impacted.
3. fragment an existing population into two or more populations	The project will not fragment any existing populations of these highly mobile species.
4. adversely affect habitat critical to the survival of a species	It is extremely unlikely that the forested habitat within the Disturbance Footprint comprises habitat that is critical to the survival of these species. There are no large trees present within the Disturbance Footprint, no denning areas for spotted-tailed quolls, and no preferred feed tree species for the koala to be removed.
5. disrupt the breeding cycle of a population	The project is unlikely to disrupt the breeding cycle of any population of these species. While there will be temporary human activity, noise and potential dust in the Disturbance Footprint during the works, these will not be long term disruptions. These species may temporarily move away from the area, which is feasible given the large area of arguably better habitat in the immediate vicinity of the works.
6. modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	<p>The project will result in the removal of 0.91 ha of habitat for these species. Given the availability of more suitable habitat in the immediate vicinity, and the very minor area of habitat to be removed, it is highly unlikely that the removal of this habitat would cause either species to decline.</p> <p>Mitigation measures such as weed control and weed hygiene protocols will also be implemented to ensure habitat condition is not decreased.</p>
7. result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	<p>The clearing of vegetation and construction activities has the potential to result in the spread of exotic species. This will be mitigated by weed hygiene measures such as vehicle and machinery wash downs and weed control prior to clearing.</p> <p>The proposed activity is unlikely to result in an increase in invasive species into the adjacent vegetation and habitats.</p>
8. introduce disease that may cause the species to decline, or	The proposed activity is unlikely to introduce disease such as <i>Chlamydia</i> or koala Retrovirus to the Disturbance Footprint that could impact koalas, or any other disease harmful to spotted-tailed quolls.
9. interfere with the recovery of the species.	While the proposed works do not assist in the recovery of these species, the removal of 0.91 ha is considered negligible.
Conclusion	<p>The project will remove 0.91 ha of habitat for these species. While all habitat removal is considered a loss, the removal of this extremely minor area in a much larger tract of contiguous and better quality remnant forest is considered negligible.</p> <p>Based on the above considerations, the project is unlikely to result in a significant impact on these species.</p>

B.2.2 Vulnerable species

Table B.3 **Assessment of significance for the Corben's Long-eared Bat, Large-eared Pied Bat, Parma Wallaby and Grey-headed Flying-fox**

Assessment question	Response
1. lead to a long-term decrease in the size of an important population of a species	No known important populations are present within the Disturbance Footprint. These species all have a broad distribution and generally inhabit a wide range of habitat types. As 0.91 ha of regrowth vegetation is proposed to be removed, it is not considered likely that this activity would result in the decrease in size of any important populations of these species, should they occur in the locality.
2. reduce the area of occupancy of an important population	The area of occupancy to be removed for these species is 0.91 ha. No important populations of any species are considered to occur in the Disturbance Footprint, however, if they were present, the removal of this very minor area would not reduce their overall viability in the locality or immediate vicinity of the Disturbance Footprint.
3. fragment an existing important population into two or more populations	All of these species are extremely mobile, and no fragmentation of populations would occur as a result of the removal of 0.91 ha.
4. adversely affect habitat critical to the survival of a species	The removal of 0.91 ha of regrowth forest is not considered to be critical to the survival of any of these species. As they are highly mobile, these species would be well-equipped to move into other, more suitable areas of habitat that are present nearby.
5. disrupt the breeding cycle of an important population	Human activity, noise and potentially dust are likely to be increased over a short period during the activity. While this will discourage local fauna from being near to the Disturbance Footprint, it is temporary only and it is extremely unlikely that breeding cycles of any important population would be disrupted.
6. modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The removal of 0.91 ha of regrowth forest is extremely unlikely to lead to the decline of any species. The Disturbance Footprint is immediately adjacent to a vast tract of contiguous remnant vegetation greater than 1,000 ha in area. These species can reliably move into these areas to forage and breed.
7. result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Hygiene protocols such as washing down all vehicles, machinery, and equipment, and appropriate weed management is recommended during construction to minimise the potential introduction or spread of weeds. Therefore, the proposal is considered unlikely to result in invasive species that are harmful becoming established.
8. introduce disease that may cause the species to decline, or	As mentioned above, hygiene protocols such as washing down all vehicles, machinery, and equipment should be undertaken, appropriate weed management is recommended during construction to minimise the potential introduction or spread of pathogens. Therefore, the proposed pipeline is not expected to introduce disease that may cause the species to decline.
9. interfere substantially with the recovery of the species.	While the proposed works do not assist in the recovery of these species, the removal of 0.91 ha is considered negligible.
Conclusion	<p>The project will remove 0.91 ha of habitat for these species. While all habitat removal is considered a loss, the removal of this extremely minor area in a much larger tract of contiguous and better-quality remnant forest is considered negligible.</p> <p>Based on the above considerations, the project is unlikely to result in a significant impact on these species.</p>

B.2.3 Migratory species

Table B.4 **Assessment of significance for the black-faced monarch**

Assessment question	Response
1. substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species	The Black-faced Monarch may inhabit much of the forested area present within the immediate vicinity of the project, as well as within the wider locality. While 0.91 ha of habitat will be removed, it is considered negligible given the large area of suitable habitat available for the species immediately adjacent. The activity will not isolate any habitat for the species, given its highly mobile nature.
2. result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species, or	Hygiene protocols such as washing down all vehicles, machinery, and equipment, and appropriate weed management is recommended during construction to minimise the potential introduction or spread of weeds. Therefore, the proposal is considered unlikely to result in invasive species that are harmful becoming established.
3. seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species	No ecologically significant proportion of this species is likely to exist within an area of 0.91 ha of regrowth forest. Therefore, the lifecycle of any significant population is unlikely to be impacted by the activity.
Conclusion	<p>The project will remove 0.91 ha of habitat for these species. While all habitat removal is considered a loss, the removal of this extremely minor area in a much larger tract of contiguous and better-quality remnant forest is considered negligible.</p> <p>Based on the above considerations, the project is unlikely to result in a significant impact on these species.</p>

Australia

SYDNEY

Ground floor 20 Chandos Street
St Leonards NSW 2065
T 02 9493 9500

NEWCASTLE

Level 3 175 Scott Street
Newcastle NSW 2300
T 02 4907 4800

BRISBANE

Level 1 87 Wickham Terrace
Spring Hill QLD 4000
T 07 3648 1200

CANBERRA

Level 2 Suite 2.04
15 London Circuit
Canberra City ACT 2601

ADELAIDE

Level 4 74 Pirie Street
Adelaide SA 5000
T 08 8232 2253

MELBOURNE

Suite 8.03 Level 8 454 Collins
Street
Melbourne VIC 3000
T 03 9993 1900

PERTH

Suite 9.02 Level 9 109 St
Georges Terrace
Perth WA 6000

Canada

TORONTO

2345 Young Street Suite 300
Toronto ON M4P 2E5

VANCOUVER

60 W 6th Ave Suite 200
Vancouver BC V5Y 1K1



[linkedin.com/company/emm-consulting-pty-limited](https://www.linkedin.com/company/emm-consulting-pty-limited)



emmconsulting.com.au

Appendix B

Geotechnical Investigation Noise and Vibration Assessment



Muswellbrook Pump Hydro Upper Reservoir

Geotechnical Investigation Noise and Vibration Assessment

S210514RP2 Revision F

Wednesday, 17 January 2024

www.resonate-consultants.com



Document Information

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0	13 December 2022	Draft – first issue	Marc Schlusel	Raymond Sim
A	13 January 2023	Final	Marc Schlusel	Raymond Sim
B	1 February 2023	Final – update work duration	Marc Schlusel	Raymond Sim
C	20 April 2023	Final – update site description	Marc Schlusel	Raymond Sim
D	5 June 2023	Final – update borehole locations	Marc Schlusel	Raymond Sim
F	17 January 2024	Final – update bore hole locations	Marc Schlusel	Raymond Sim

Glossary

A-weighting	A spectrum adaption that is applied to measured noise levels to represent human hearing. A-weighted levels are used as human hearing does not respond equally at all frequencies.
Ambient noise	The total noise in a given situation, inclusive of all noise source contributions in the near and far field.
Characteristic	Associated with a noise source, means a tonal, impulsive, low frequency or modulating characteristic of the noise that is determined in accordance with the NSW EPA's <i>Noise Policy for Industry</i> to be fundamental to the nature and impact of the noise.
Compliance	The process of checking that source noise levels meet with the noise limits in a statutory context.
Day	Between 7 am and 6 pm as defined in the NPI
dB	Decibel—a unit of measurement used to express sound level. It is based on a logarithmic scale which means a sound that is 3 dB higher has twice as much energy. We typically perceive a 10 dB increase in sound as a doubling of loudness.
dB(A)	dB(A) denotes a single number sound pressure level that includes a frequency weighting ("A-weighting") to reflect the subjective loudness of the sound level. The frequency of a sound affects its perceived loudness. Human hearing is less sensitive at low and very high frequencies, and so the A-weighting is used to account for this effect. An A-weighted decibel level is written as dB(A).
Evening	Between 6 pm and 10 pm as defined in the NPI
Frequency (Hz)	The number of times a vibrating object oscillates (moves back and forth) in one second. Fast movements produce high frequency sound (high pitch/tone), but slow movements mean the frequency (pitch/tone) is low. 1 Hz is equal to 1 cycle per second.
ICNG	NSW EPA's <i>Interim Construction Noise Guideline</i> .
L ₁₀	Noise level exceeded for 10 % of the measurement time. The L ₁₀ level represents the typical upper noise level and is often used to represent traffic or music noise.
L ₉₀	Noise level exceeded for 90 % of the measurement time. The L ₉₀ level is commonly referred to as the background noise level.
L _{eq}	Equivalent Noise Level—Energy averaged noise level over the measurement time.
L _{max}	The maximum instantaneous noise level.
Night	Between 10 pm on one day and 7 am on the following day as defined in the NPI
Noise criteria	The general set of non-mandatory noise levels for protecting against intrusive noise (for example, background noise plus 5 dB) and loss of amenity (e.g. noise levels for various land use).
Noise source	Premises or a place at which an activity is undertaken, or a machine or device is operated, resulting in the emission of noise
NPI	NSW EPA's <i>Noise Policy for Industry</i> .

Resonate

Rating Background Level (RBL)	<p>The RBL is the overall single figure background level representing each assessment period (day, evening and night) over the whole monitoring period (as opposed to over each 24-hour period used for the ABL). This is the level used for assessment purposes. It is the median value of:</p> <ul style="list-style-type: none">• All the day assessment background levels over the monitoring period for the day;• All the evening assessment background levels over the monitoring period for the evening; or <p>All the night assessment background levels over the monitoring period for the night.</p>
Sound Power Level (SWL)	<p>The sound power level of a noise source is the sound energy emitted by the source. Notated as SWL, sound power levels are typically presented in $dB(A)$.</p>
Sound Pressure Level (SPL)	<p>The level of noise, usually expressed as SPL in $dB(A)$, as measured by a standard sound level meter with a pressure microphone. The sound pressure level in $dB(A)$ gives a close indication of the subjective loudness of the noise.</p>

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1 Introduction

Resonate Consultants has been engaged by SMEC Australia Pty Ltd to conduct a noise and vibration assessment for geotechnical investigations drilling works to be undertaken in early 2023 at the upper reservoir location of the proposed Muswellbrook Pump Hydro. This geotechnical investigation noise and vibration assessment would be used to support the application to conduct the borehole works.

It is understood the bore hole works are likely to occur 24 hours (i.e. standard hours and OOHs) and have an expected duration of 12 weeks. In accordance with the EPA's *Interim Construction Noise Guideline*, standard hours of construction are as follows:

- Monday to Friday 7 am to 6 pm
- Saturday 8 am to 1 pm
- No work on Sundays or public holidays.

It is also understood that works at the boring sites at the upper reservoir location would be undertaken consecutively and not concurrently.

The objective of this report is to document the potential noise and vibration impacts that may be generated due to the geotechnical site investigation work. A number of noise sensitive receivers located near the boring sites have been identified to be potential impacted by the works and hence an assessment of noise and vibration impacts is required.

2 Existing ambient noise environment

2.1 Site location and noise catchment areas

The borehole sites are to be located on the upper slopes of Bells Mountain. The surrounding land-uses of the site are detailed below:

- North – Distant noise sensitive receivers scattered to the north of the site. Nearest sensitive receiver is at a distance of approximately 1.2 kilometres.
- West – Distant noise sensitive receivers scattered to the west of the site. Nearest sensitive receiver is at a distance of approximately 1.2 kilometres.
- East – Distant noise sensitive receivers scattered to the west of the site. Nearest sensitive receiver is at a distance of approximately 1.2 kilometres.
- South – Vegetation and hills are located to the east of the site with no noise sensitive receivers.

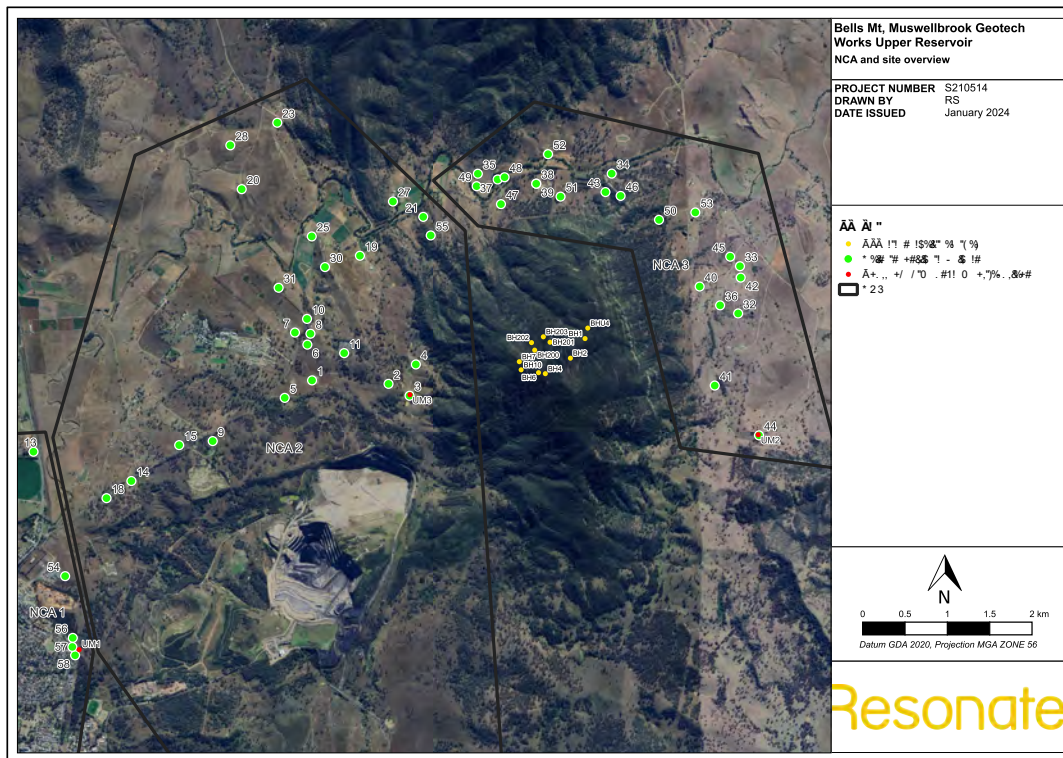


Figure 1: NCA and noise study area overview

2.2 Unattended noise monitoring

Unattended noise monitoring was undertaken between the dates of 11 November 2022 and 23 November 2022 at three locations (UM1, UM2 and UM3 as shown in Figure 1) to characterise the background noise level of the nearest sensitive receiver locations.

2.3 Instrumentation

The instrumentation of the unattended noise monitoring comprised of three Rion NL-42 environmental noise loggers (serial number: 00946983, 00946978, 00946981) fitted with wind shields. Field calibration was conducted at the commencement and at the conclusion of the logging period and no significant calibration drift was observed (drift in calibration did not exceed ± 0.5 dB(A)). All instrumentation carried appropriate and current NATA (or manufacturer) calibration certificates.

2.4 Weather conditions

It is a requirement that noise data is captured during periods of favourable weather conditions avoiding adverse impacts of wind and rain on background noise levels. To assess weather conditions for the measurement period, half-hourly weather data was obtained from the Bureau of Meteorology (BOM) weather observation station ID 061363 at Scone Airport AWS.

Noise data has been excluded from the processed results if:

- rain was observed during a measurement period, and/or
- wind speed exceeded 5 m/s (18 km/h) at the measurement height of 1.5 m above ground. Wind data obtained from the BOM is presented as the value at 10 m above ground.

The BOM wind speed data obtained for this report was measured at a height of 10 m above ground level. It is therefore necessary to apply a correction factor in order to estimate the wind speed at the height of the logger (1.5 m).

The methodology to formulate a correction factor has been derived¹. The correction multiplier for the measured wind speed at 10 m is derived by the following formula:

$$W_{1.5} = W_{10} \times \left(\frac{M_{1.5,cat}}{M_{10,cat}} \right)$$

where:

- $W_{1.5}$ = Wind speed at height of 1.5 m
- W_{10} = Wind speed at height of 10 m
- $M_{1.5,cat}$ = AS 1170 multiplier for receiver height of 1.5 m and terrain category
- $M_{10,cat}$ = AS 1170 multiplier for receiver height of 10 m and terrain category

2.5 Unattended noise monitoring results

The noise data obtained from the noise logger has been processed in accordance with the procedures contained in the NSW Noise Policy for Industry (NPI) to establish representative noise levels at the monitoring location.

A summary of background L_{A90} results from the unattended noise survey during proposed operational hours of the playground is presented in Table 1.

The background noise levels were determined by taking the arithmetic mean noise level that was exceeded for 90% of the time during the relevant assessment periods for each day and then taking the median of all the days where monitoring took place for each assessment period as identified in the NPI. This process provides a single figure rating background noise level (RBL) for the day, evening and night periods. These RBLs were used to establish the relevant noise criteria in accordance with the NPI for each assessment period.

¹ Gowen, T., Karantonis, P. & Rofail, T. (2004), *Converting Bureau of Meteorology wind speed data to local wind speeds at 1.5m above ground level*, Proceedings of ACOUSTICS 2004

Detailed graphs presenting measured noise levels versus time overlaid with weather data for the monitoring period are presented in Appendix A.

Table 1: Unattended noise monitoring results summary

Monitoring location	Baseline noise levels – dB(A)					
	Daytime 7:00 am – 6:00 pm		Evening 6:00 pm – 10:00 pm		Night 10:00 pm – 7:00 am	
	RBL	L _{eq} , period	RBL	L _{eq} , period	RBL	L _{eq} , period
UM1	35 (33 ¹)	44	35	49	33	42
UM2	35 (27 ¹)	56	31	46	30 (26 ¹)	37
UM3	35 (27 ¹)	46	34	53	30 (29 ¹)	49

(1) Actual RBL is below assumed policy minimums; therefore, NPI minimum RBL has been adopted.

3 Construction noise and vibration criteria

The NSW Department of Environment and Climate Change – *Interim Construction Noise Guideline* (ICNG), presents an accepted method by which construction noise impacts may be assessed for a range of receptor types for works completed in NSW. It provides a set of recommended standard hours of construction, as reproduced below:

- Monday to Friday: 7 am to 6 pm.
- Saturday: 8 am to 1 pm.
- No work on Sundays or public holidays.

The ICNG encourages works to occur within the recommended standard hours of construction unless justification is provided. It focuses on minimising construction noise impacts, rather than only on achieving numeric noise levels, and recognises that some noise from construction sites is inevitable.

The ICNG encourages organisations involved with construction, maintenance or upgrading works (e.g. large scale contractors or Government agencies) to develop their best-practice techniques for managing construction noise and vibration and implementing feasible and reasonable mitigation measures.

In this case, the ICNG is the most suitable guideline document to quantitatively assess potential noise emissions and impacts associated with project construction. The ICNG assessment methodology has been adopted to develop project-specific construction noise management levels (refer Chapter 3), assess potential impacts (refer Chapter 4) and recommend any necessary mitigation, management measures or provisions for monitoring (refer Chapter 5).

Table 2 details the construction noise management levels guidance for residential noise sensitive receptors developed in accordance with the ICNG.

Table 2: Construction airborne noise management levels for residential receivers

Time of Day	Noise Management Level, $L_{Aeq, 15 \text{ minute}} - \text{dB(A)}$	How to Apply
Recommended standard hours: Monday to Friday 7 am to 6 pm Saturday 8 am to 1 pm No work on Sundays or Public Holidays	Noise affected Rating Background Level (RBL) + 10 dB(A)	The noise affected level represents the point above which there may be some community reaction to noise. <ul style="list-style-type: none"> • Where the predicted or measured $L_{Aeq, 15 \text{ minute}}$ is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. • The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
	Highly noise affected 75 dB(A)	The highly noise affected level represents the point above which there may be a strong community reaction to noise. <ul style="list-style-type: none"> • Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account: <ol style="list-style-type: none"> 1. times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid-

Time of Day	Noise Management Level, L _{Aeq} , 15 minute – dB(A)	How to Apply
		<p>morning or mid-afternoon for works near residences)</p> <p>2. if the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.</p>
Outside recommended standard hours	Noise affected Rating Background Level (RBL) + 5 dB(A)	<ul style="list-style-type: none"> A strong justification would typically be required for works outside the recommended standard hours. The proponent should apply all feasible and reasonable work practices to meet the noise affected level. Where all feasible and reasonable practices have been applied and noise is more than 5 dB(A) above the noise affected level, the proponent should negotiate with the community. For guidance on negotiating agreements see section 7.2.2 of the ICNG.

3.1 Noise Policy for Industry

Responsibility for the control of noise emissions in NSW is typically vested in Local Government and the NSW Environment Protection Authority (EPA). The *Noise Policy for Industry* (NPI) and relevant application notes provide a framework and methodology for deriving limit conditions for project consent and environment protection licence conditions.

The NPI is designed for the assessment of operational noise emissions from large and complex industrial sources and outlines processes designed to strike a feasible and reasonable balance between the operations of industrial activities and the protection of the community from noise levels that are intrusive or unpleasant.

The NPI measurement and evaluation methodology to quantify existing ambient and background noise levels has been adopted for this assessment, with the baseline values utilised to derive construction noise management levels.

3.2 Construction noise and vibration management levels

Construction works for this project would be undertaken in accordance with the ICNG and could potentially occur 24 hours a day, 7 days a week, over a period of 12 weeks.

3.2.1 Airborne noise

The project-specific construction “Noise Management Levels” (NML), for works within and outside the recommended standard hours for construction, are presented in Table 3 below.

Table 3: Noise Management Levels

Receiver Type	Construction Noise Management Levels, L _{eq} , 15 minute, dB(A)				High Noise Affected, L _{eq} , 15 minute, dB(A)
	Standard Hours	Out-of-Hours			Daytime (Standard Hours)
	Day	Day	Evening	Night	
Residential NCA 1 (UM1)	45	40	40	38	75
Residential NCA 2 (UM2)	45	40	36	35	75
Residential NCA 3 (UM3)	45	40	39	35	75
Commercial	70	70	70	70	_ ¹
Industrial	75	75	75	75	_ ¹
Classrooms at schools and other educational institutions	45 ²	45 ²	45 ²	45 ²	_ ¹
Hospital wards and operating theatres	45 ²	45 ²	45 ²	45 ²	_ ¹
Places of worship	45 ²	45 ²	45 ²	45 ²	_ ¹
Active recreation areas	65	65	65	65	-
Passive recreation Areas	60	60	60	60	-

(1) Dash “-” indicates that these criteria do not apply to that receiver type.

(2) Internal noise level criteria. An assumed 10 dB façade noise reduction has been implemented for internal properties.

3.2.2 Sleep disturbance criteria

As stated in the NPI the potential for sleep disturbance from maximum noise level events generated by industrial premises during the night-time period needs to be considered. The term “sleep disturbance” is considered to be both awakenings and disturbance to sleep stages.

To evaluate potential sleep disturbance or awakening issues associated with the operation of the proposal the NPI screening method has been adopted as follows. There is limited potential for sleep disturbance or awakening issues to occur, where:

- The predicted project night-time noise level (L_{eq}, 15 minute in dB(A)) at any residential receptor remains below 40 dB(A) (or the prevailing night-time background noise level plus 5 dB(A)), whichever is the greater.
- The predicted project night-time noise level (L_{max} in dB(A)) at any residential receptor remains below 52 dB(A) (or the prevailing night-time background noise level plus 15 dB(A)), whichever is the greater.

These screening method features have been adopted for likely maximum noise level events from the operation of the proposal.

In accordance with the NPI, the sleep disturbance noise criteria for assessing the proposal are presented in Table 4 below.

Table 4: Sleep disturbance noise criteria for all NCAs

Receiver Type	L _{eq, 15minute} dB(A)	L _{max} dB(A)
Residential receivers (all NCAs)	40	52

3.2.3 Ground-borne noise

Ground-borne noise will not be a controlling factor with respect to construction noise impacts. No underground works will occur and therefore air-borne noise levels will exceed the ground-borne noise levels and control noise management requirements. As such, a detailed ground-borne noise assessment is not required for the geotechnical investigation works.

3.2.4 Construction vibration criteria

Ground vibration generated by construction can have a range of effects on buildings and building occupants, with the main effects generally classified as:

- Human disturbance – disturbance to building occupants: vibration which inconveniences or interferes with the activities of the occupants or users of the building
- Effects on building structures – vibration that may compromise the condition of the building structure itself.

In general, vibration criteria for human disturbance are more stringent than vibration criteria for effects on building contents and structural damage. Building occupants will normally feel vibration readily at levels well below those that may cause a risk of cosmetic or structural damage to a structure. However, it may not always be practical to achieve the human comfort criteria. Furthermore, unnecessary restriction of construction activities can prolong construction works longer than necessary, potentially resulting in other undesirable effects for the local community.

Construction vibration criteria have been adopted from the following sources:

- Cosmetic and structural damage to buildings: German Standard DIN 4150-3²
- NSW Environmental Protection Agency's Human comfort: Assessing Vibration – a technical guideline (the Guideline)

Cosmetic and structural damage

The DIN 4150-3 structural and cosmetic damage assessment criteria for different types of buildings are presented in Table 5. The criteria are specified as Peak Particle Velocity (PPV) levels measured in any direction at or adjacent to the building foundation.

DIN 4150-3 states that exposing buildings to vibration levels higher than that recommended in Table 5 would not necessarily result in damage. Rather it recommends these values as maximum levels of short-term construction vibration at which experience has shown that damage that reduces the serviceability of structures will not occur due to vibration effects.

DIN 4150-3 is considered to be suitable for the assessment of both structural and cosmetic damage as the standard considers a reduction in serviceability of the structure is deemed to have occurred if:

- Cracks form in plastered surfaces of walls.

² German Standard DIN 4150-3, 1999, *Structural Vibration – Part 3: Effects of vibration on structures*.

- Existing cracks in the building are enlarged.
- Partitions become detached from loadbearing walls or floors.

Table 5: DIN 4150-3 vibration cosmetic and structural damage criteria

Structure type	Peak Particle Velocity (PPV), mm/s			
	Foundation of structure			Vibration at horizontal plane of highest floor at all frequencies
	<10 Hz	10-50 Hz	50-100 Hz	
Buildings used for commercial, industrial purposes, industrial buildings and buildings of similar design	20	20 to 40	40 to 50	40
Dwelling and buildings of similar design and/or use	5	5 to 15	15 to 20	15
Structures that, because of their particular sensitivity to vibration, do not correspond to those listed in rows 1 and 2, and are of great intrinsic value (e.g. heritage-listed buildings)	3	3 to 8	8 to 10	8

DIN4150 states that exceedances of the guidance values do not necessarily mean that damage will occur, but that more detailed analysis may be required in order to quantify the site specific relationship between vibration levels, strain and the potential for damage. If required, the additional analysis may include more detailed vibration, strain or displacement measurements combined with engineering analysis.

Human comfort

The ICNG recommends that vibration from construction works be assessed under the EPA's *Assessing Vibration – a technical guideline* (the Vibration Guideline). The vibration assessment criteria defined in this Vibration Guideline are for human comfort and represent goals that, where predicted or measured to be exceeded, require the application of all feasible and reasonable mitigation measures. Where the maximum value cannot be feasibly and reasonably achieved, the operator would need to negotiate directly with the affected community.

The Vibration Guideline defines vibration assessment criteria for continuous, impulsive and intermittent vibration. Vibration can be classified according to the following definitions:

- Continuous vibration: continues uninterrupted for a defined period. Applies to continuous construction activity such as tunnel boring machinery.
- Impulsive vibration: rapid build-up to a vibration peak followed by a damped decay or the sudden application of several cycles of vibration at approximately the same magnitude providing that the duration is short. Applies to very occasional construction activities that create distinct events such as the occasional dropping of heavy equipment.
- Intermittent vibration: interrupted periods of continuous vibration (such as a drill) or repeated periods of impulsive vibration (such as a pile driver).
- The majority of construction works as part of the proposal would be expected to be intermittent in nature with the potential for some impulsive activities (e.g. demolition works).

Table 6 presents the management levels for continuous and impulsive vibration at different land uses. The management levels specified are as overall unweighted root-mean-square (rms) vibration velocity levels (V_{rms}). The

Guideline specifies the management levels as suitable for vibration sources predominantly in the frequency range 8-80 Hz as would be expected for construction vibration.

Table 6: Daytime V_{rms} management levels for continuous and impulsive vibration

Receiver	Continuous vibration V_{rms} , mm/s		Impulsive vibration V_{rms} , mm/s	
	Preferred	Maximum	Preferred	Maximum
Residences – daytime	0.2	0.4	6	12
Residences – night-time	0.14	0.28	2	4
Offices, schools, place of worship	0.4	0.8	13	26
Workshops	0.8	1.6	13	26

For intermittent vibration, the Vibration Dose Value (VDV) is used as the metric for assessment as it accounts for the duration of the source, which will occur intermittently over the assessment period. The VDV management levels at different land uses for intermittent vibration sources are presented in Table 7.

Table 7: VDV management levels for intermittent vibration

Receiver	VDV – Intermittent vibration, $m/s^{1.75}$	
	Preferred	Maximum
Residences – daytime	0.2	0.4
Residences – night-time	0.13	0.26
Offices, schools, places of worship	0.4	0.8
Workshops	0.8	1.6

4 Construction noise assessment

In order to quantify noise emissions from the proposed construction works, environmental noise modelling software (SoundPLAN v8.2 using the CONCAWE calculation algorithm Category 6) has been utilised to predict the $L_{Aeq}(15\text{-minute})$ noise levels at nearby receivers. The calculations include: the source noise levels of the anticipated equipment, the location of selection of nearby sensitive receivers, the number of plant items likely to be operating at any given time and the distance between the equipment and the receivers.

Total sound power levels (SWLs) are then provided for required construction stage. The typical noise levels are based on previous measurements conducted by Resonate and RMS's *Construction Noise and Vibration Guideline* (CNVG). The predicted noise level results are presented as a summary of the potential noise impacts when the work is located at the nearest position within the project area to the sensitive receiver in question.

In practice, the noise levels will vary because plant will move around the worksites and will not all be operating concurrently. As such, noise levels are likely to be lower than the worst-case noise levels presented for notable periods of time during the works.

4.1 Plant and equipment

The predicted plan and equipment that will be used at the site are presented in Table 8 with their associated sound power levels. The schedule of plant and equipment to be used would be confirmed with the final construction program. The current staging and plant for the bore hole works have been provided by the client. All plant and equipment sound power levels have been derived from Transport for New South Wales' *Construction Noise and Vibration Strategy* (2018).

Table 8 Plant and equipment sound power levels

Stage	Plant and equipment	Plant items	Lw, dB(A)
Borehole works (24 hours; i.e. standard hours and OOHs)	Piling rig (bored)	1	112
	Water cart	1	107
	Light vehicles	3	93
	Daymakers	1	98
	Total Lw		113

4.2 Predicted construction noise impacts and discussions

Detailed predicted noise levels (PNLs) from the bore hole works are presented in Appendix B.

Based on our review of the predicted noise levels in Appendix B, it is noted that there are no exceedances of the noise criteria predicted from any borehole locations.

Notwithstanding, noise mitigation measures and application of good practice noise management have been considered. Noise mitigation and management measures are discussed in Chapter 5 of this document.

4.3 Construction vibration

It is understood that the vibration-intensive equipment that may be used during the proposal includes compaction equipment such as a vibratory roller. Relevant recommended safe setback distances to maintain building cosmetic and human comfort criteria for these types of plant are reproduced from the CNVG below in Table 9.

Table 9: Recommended safe setback distances for relevant vibration-generating plant

Plant Item	Rating/Description	Minimum Working Distance – Cosmetic Damage ¹ (BS7385)	Minimum Working Distance – Human Response (OH&E Guideline)
Pile Boring	≤ 800 mm	2 m (nominal)	4 m

The nearest residential building has been identified to be approximately 1.2 kilometres from the nearest borehole site. At this distance, the works are assessed to comply with the safe working distance for potential building damage Pile boring as described in Table 9 and are not expected to result in vibration levels above the human comfort criteria.

5 Construction noise management and mitigation measures

This section details pre-construction and construction phase management and mitigation measures designed as best-practice methods to mitigate construction noise and vibration impacts regardless of predicted exceedances.

The management measures have been informed from guidance provided in the ICNG which promotes principles of best management practice and community notification of likely noise and vibration impacts.

It will be important for the contractor to undertake all reasonable and feasible measures to reduce noise impacts and minimise impact potential through programming works to minimise duration and liaise with affected landowners and local communities throughout the construction program.

All Contractors commissioned to undertake construction works associated with the Project are recommended to adhere to all noise and vibration management and mitigation measures recommended.

5.1 Recommended measures

During the planning and scheduling of construction works, the predicted noise levels should be considered in establishing work site locations, construction techniques and on-site practices.

Construction works should adopt Best Management Practice (BMP) and Best Available Technology Economically Achievable (BATEA) practices as addressed in the ICNG. BMP includes factors discussed within this report and encouragement of a project objective to reduce noise emissions. BATEA practices involve incorporating the most advanced and affordable technology to minimise noise emissions. The following principles and proactive noise management measures are to be considered for implementation:

- Fixed and mobile construction plant and equipment shall be located to maximise separation distance from nearest noise and vibration sensitive and residential receivers.
- Construction plant shall be orientated away from nearest receivers where possible.
- Where practical, simultaneous operation of dominant noise generating plant shall be managed to reduce noise impacts, such as operating at different times or increasing the distance between the plant.
- Where possible and in compliance with occupational safety and health standards, reversing beepers on trucks would be replaced with low pitch non-tonal beepers (quackers). Alternatives to reversing beepers include the use of spotters and designing the site to reduce the need for reversing may assist in minimising the use of reversing beepers.
- Where feasible and practicable, surrounding residences shall be notified of potential construction works at least 2 weeks prior to the commencement of works.
- Construction noise and vibration management practices are to be provided to all staff and contractors and be included during site inductions and daily tool-box talks. The tool-box talks should include as a minimum, the permitted hours of construction work, work site locations, site ingress/egress and the required noise management measures for each construction phase.

5.2 Monitoring of construction noise

This section details the noise monitoring strategy for borehole works:

- In the event of justified adverse community response or complaint to construction noise, monitoring of construction noise is recommended to confirm construction noise levels at the complainant's property.
- All noise monitoring should be undertaken by suitably qualified practitioners with consideration to guidance provided in the ICNG and relevant regulatory and statutory guidelines.

5.3 Non-compliance / complaint response

Non-conformances for noise and vibration during construction works may include:

- Exceedance of adopted receiver specific construction noise management levels; triggering the requirement for noise management measures.
- Exceedance of annoyance and structural vibration objectives.
- Justified community complaints relating to noise and vibration.

The construction works shall be immediately assessed to review operation of noise generating plant, required construction activity and current on and off-site noise mitigation measures in place.

Any non-conformances and subsequent corrective actions shall be resolved with consideration to the project's Community Consultation Strategy. The Environment Manager and Site Supervisor shall determine where corrective action is required and implement necessary mitigation measures.

All adopted noise mitigation measures should be updated in work method statements and identified as part of routine tool-box talks to inform staff of current construction noise and vibration issues and required mitigation measures.

Consistent with the noise mitigation measures presented in this report; examples of corrective actions to be implemented by the Environment Manager include:

- Implementing alternative construction methodologies utilising low noise or low vibration generating plant.
- Replacing excessively noisy equipment.
- Fitting additional acoustic controls to minimise emissions from machinery.
- Increasing separation distance between noise generating plant and nearest sensitive receivers.
- Consider respite periods where construction noise impacts include potential tonal, low frequency or impulsive annoying characteristics at nearest receivers.

6 Conclusion

Resonate Consultants has completed a noise and vibration impact assessment to support the application of the borehole works.

Due to the location of the construction site, several potentially affected noise and vibration sensitive receivers have been identified. Background noise levels have been established with unattended noise measurements and the NPI and have been used to establish the project specific NMLs.

Construction noise impacts have been assessed against the project specific NMLs in accordance with the ICNG. Construction vibration impacts have been assessed against recommended limits specified in the German Standard DIN 4150-3³ and the *Assessing Vibration – a technical guideline*.

Construction noise levels during the boring works are predicted to be within the NMLs at all receivers. Construction noise levels are predicted to be well below the highly affected NML of 75 dB(A). Based on the predicted noise levels, best-practice standard noise mitigation measures have been recommended for implementation where feasible and reasonable.

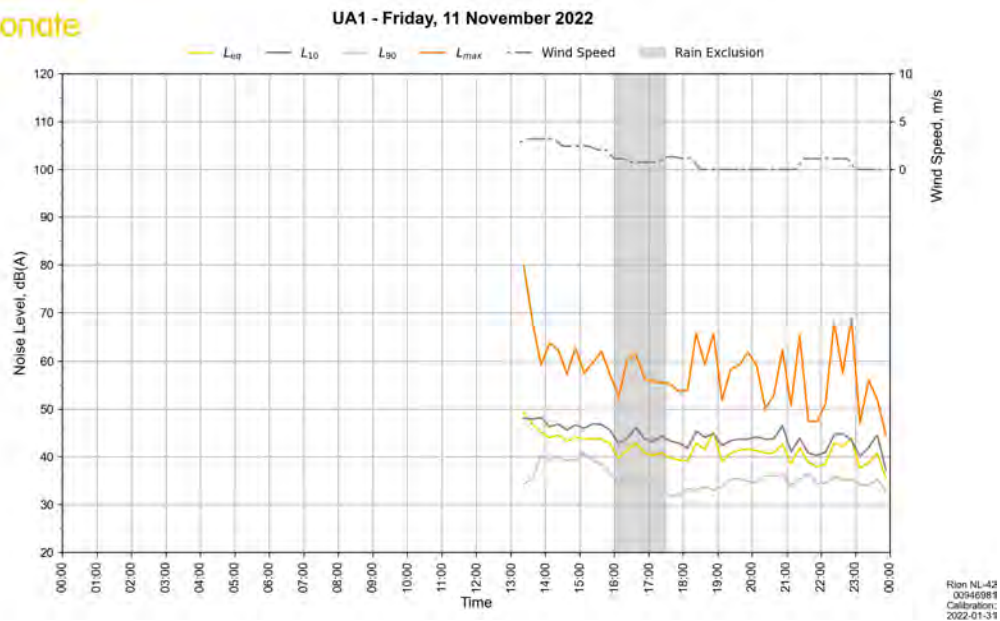
Vibration emissions generated by activities associated with the construction works have been assessed to have very low risk of structural damage to and adverse comments from the closest sensitive receivers. Based on the assessed compliance of the construction vibration, implementation of measures to reduce vibration impacts are not deemed to be necessary.

³ German Standard DIN 4150-3, 1999, *Structural Vibration – Part 3: Effects of vibration on structures*.

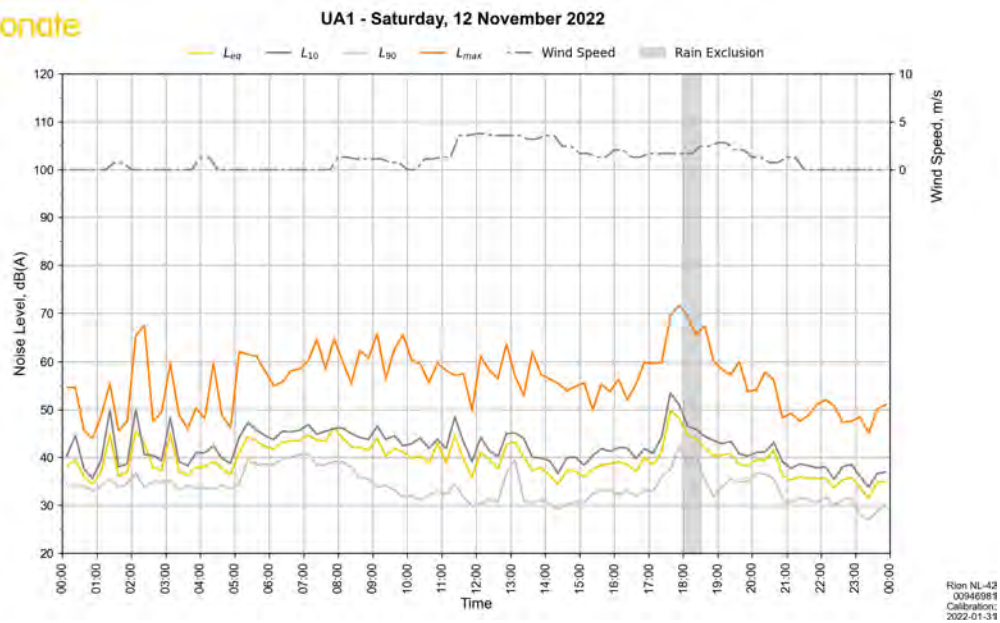
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Appendix A – Noise logger graphs

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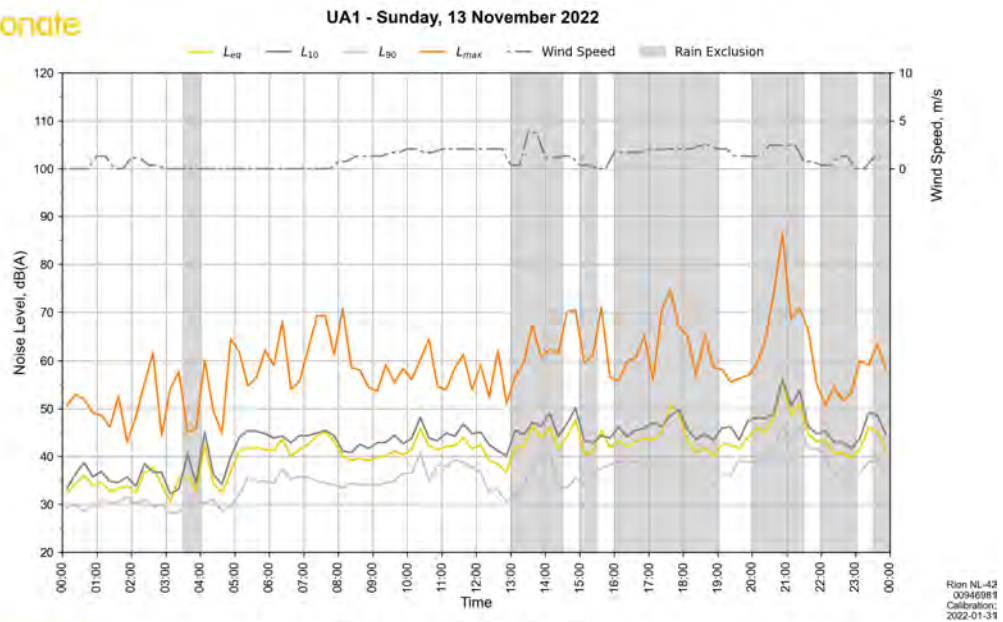
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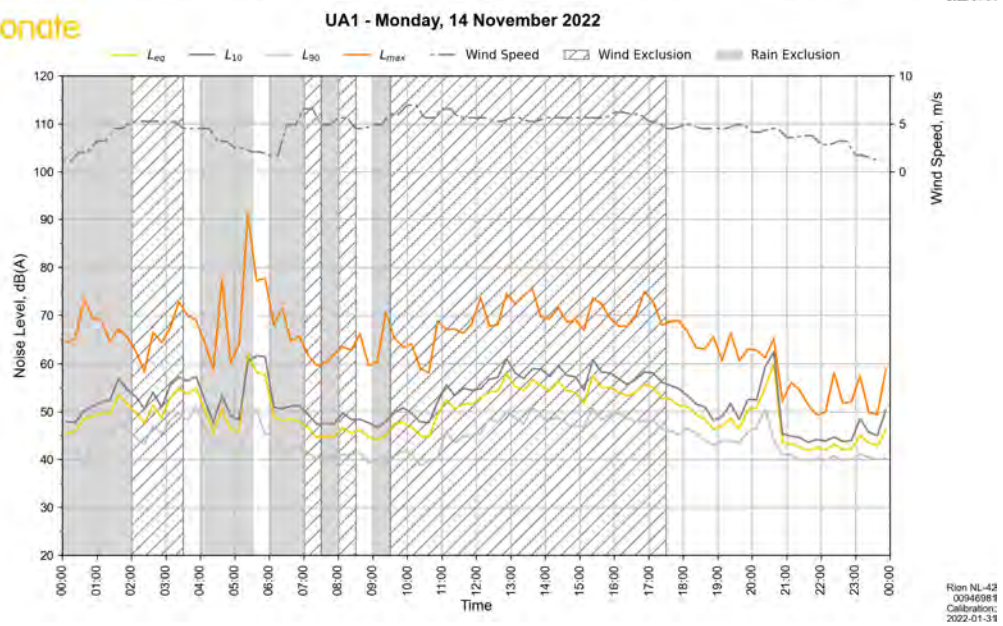
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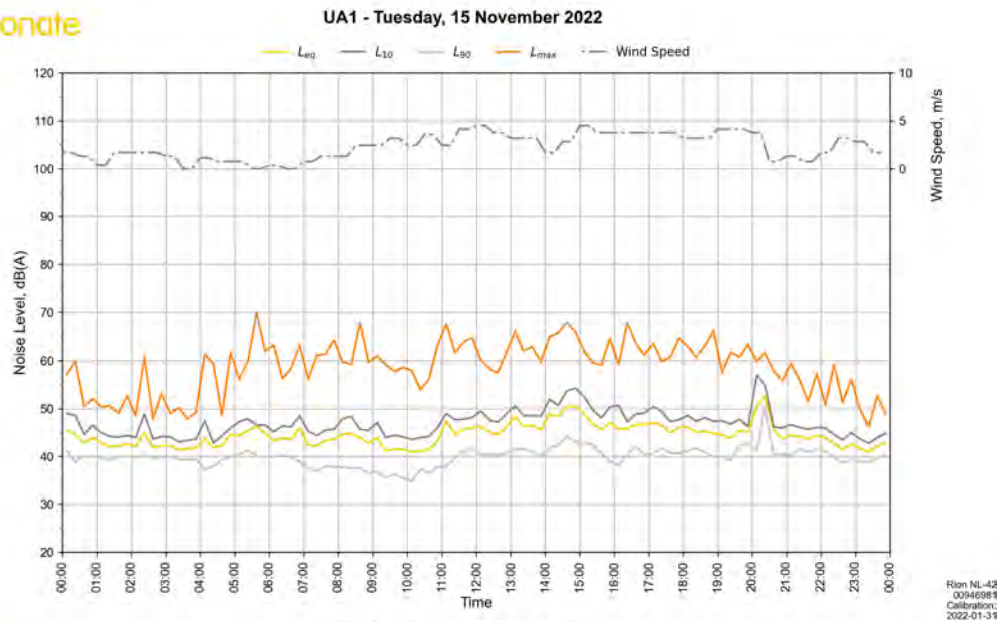
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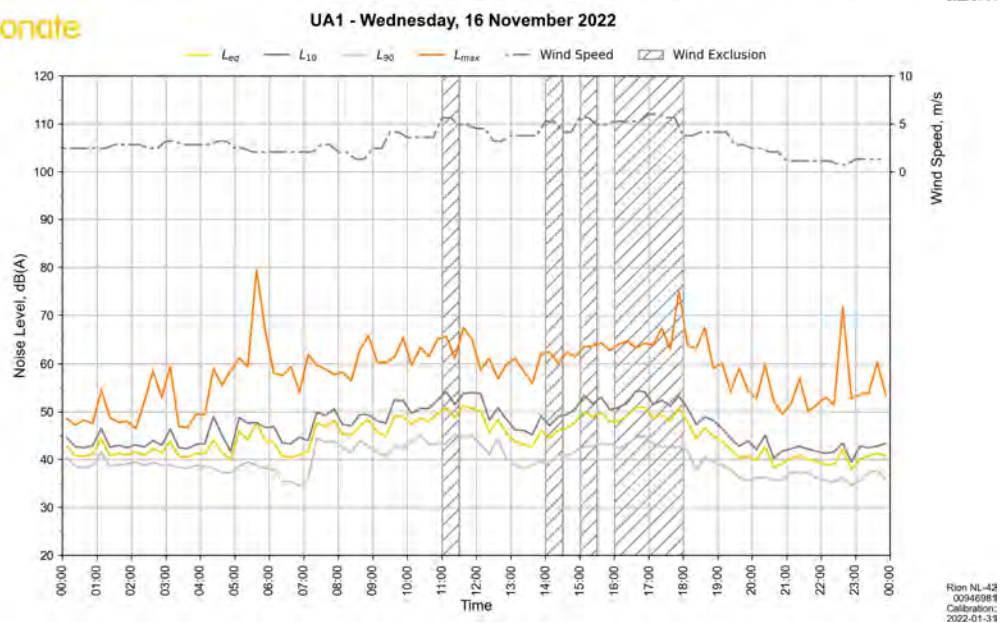
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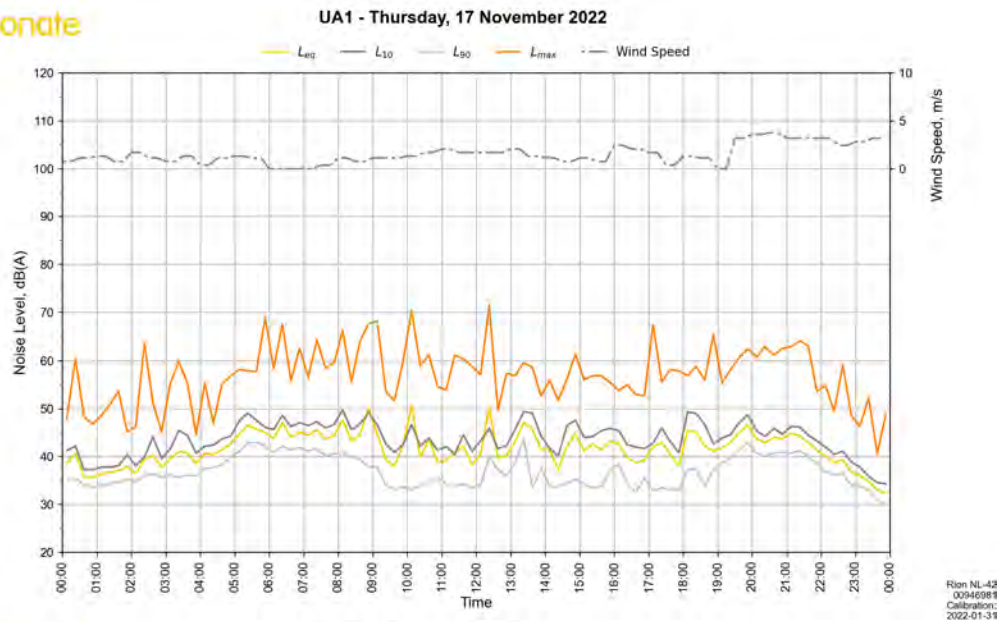
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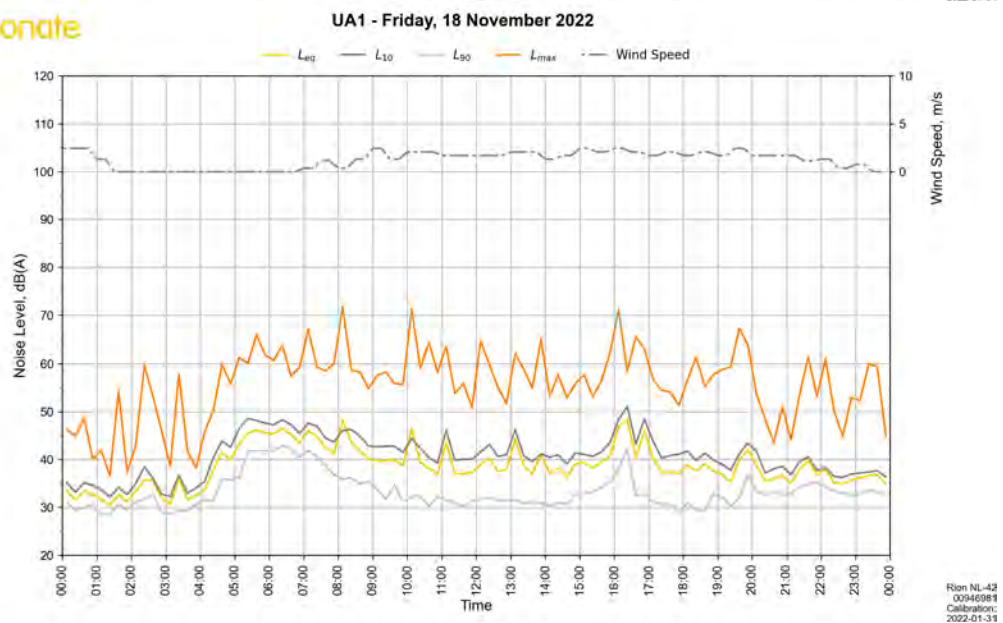
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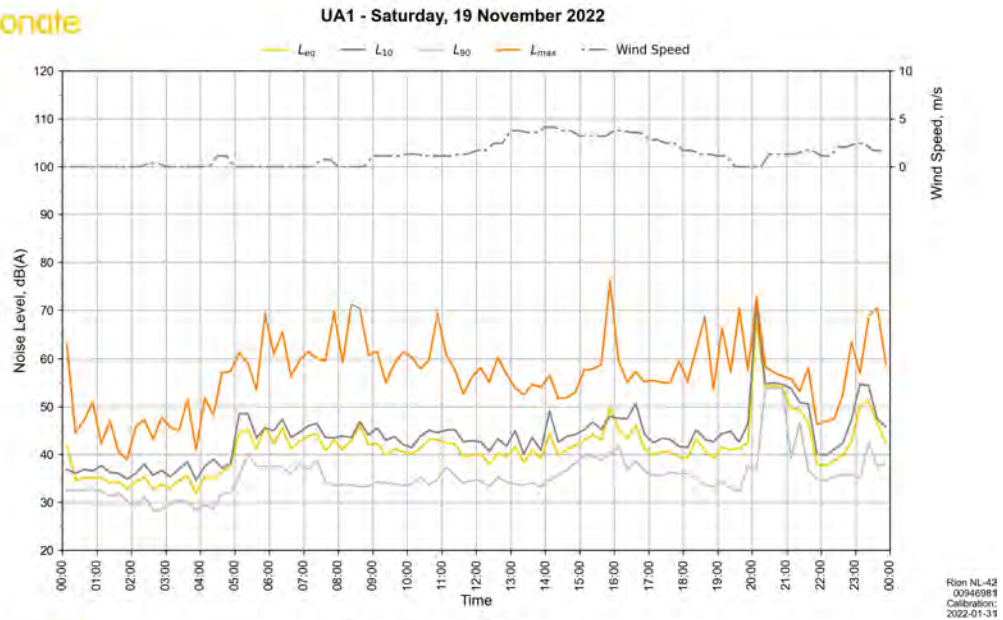
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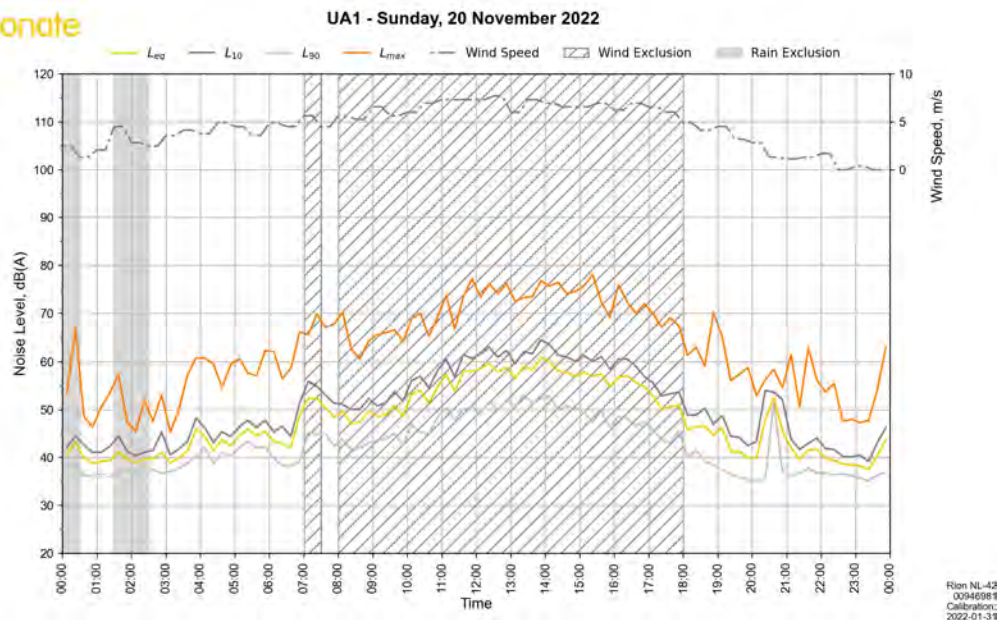
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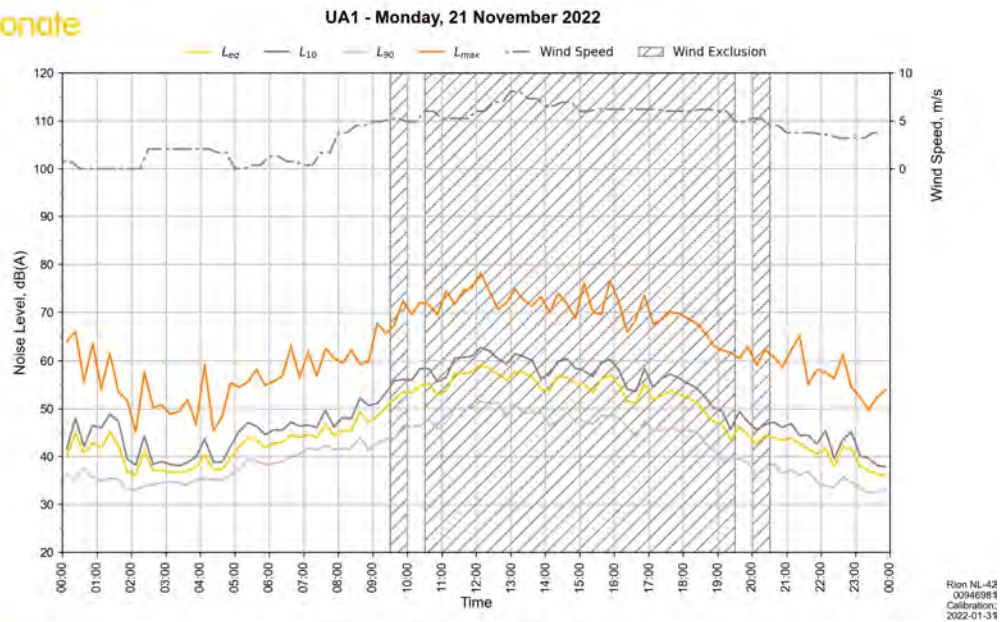
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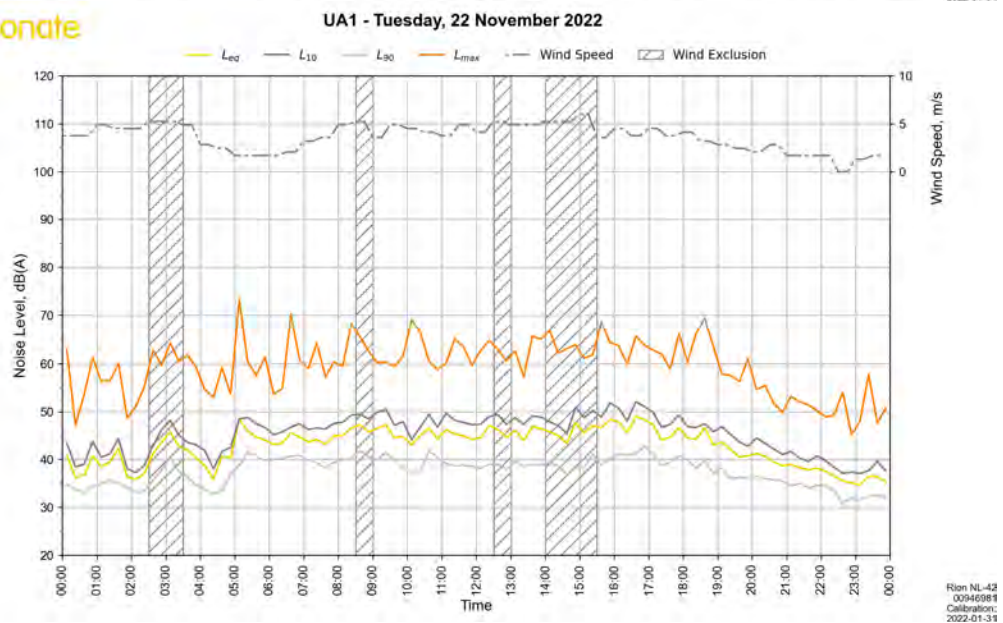
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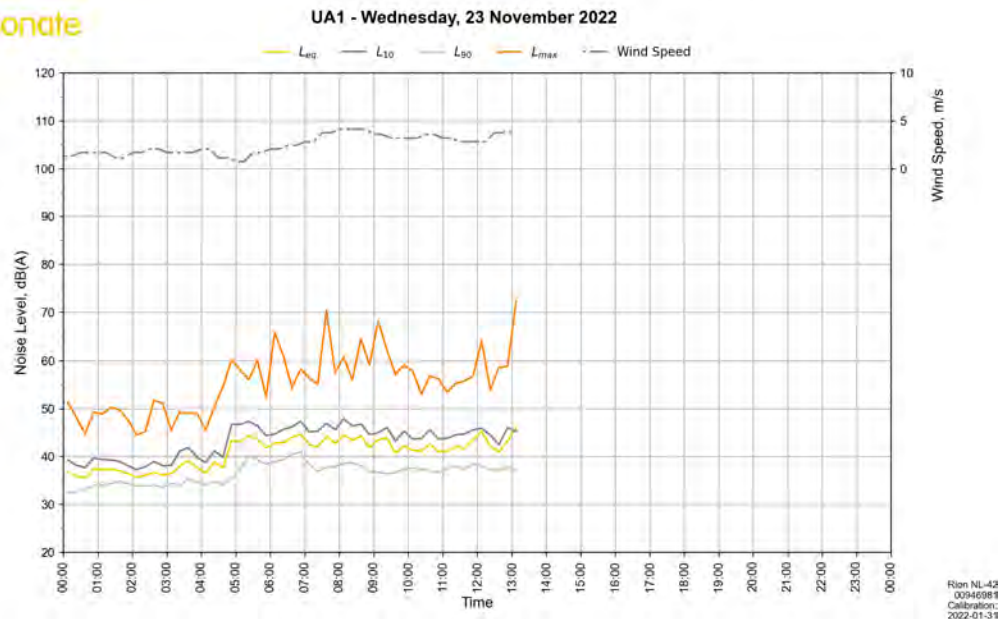
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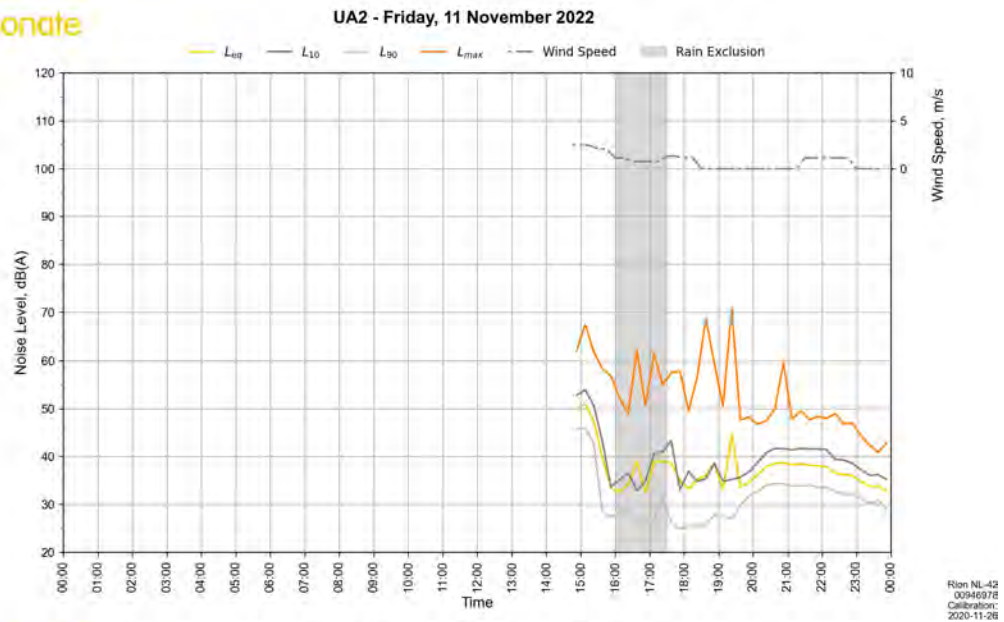
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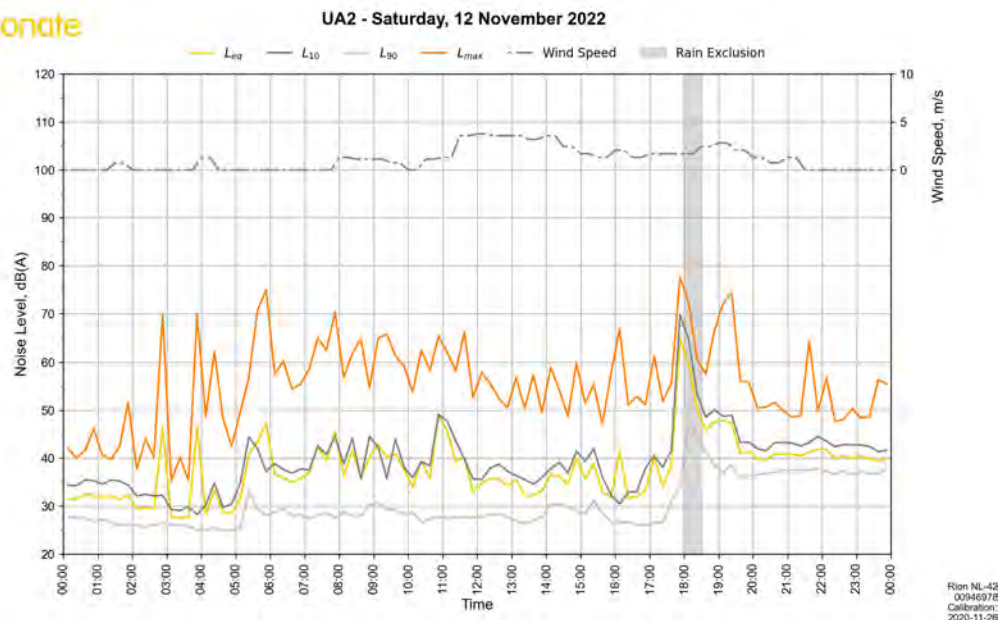
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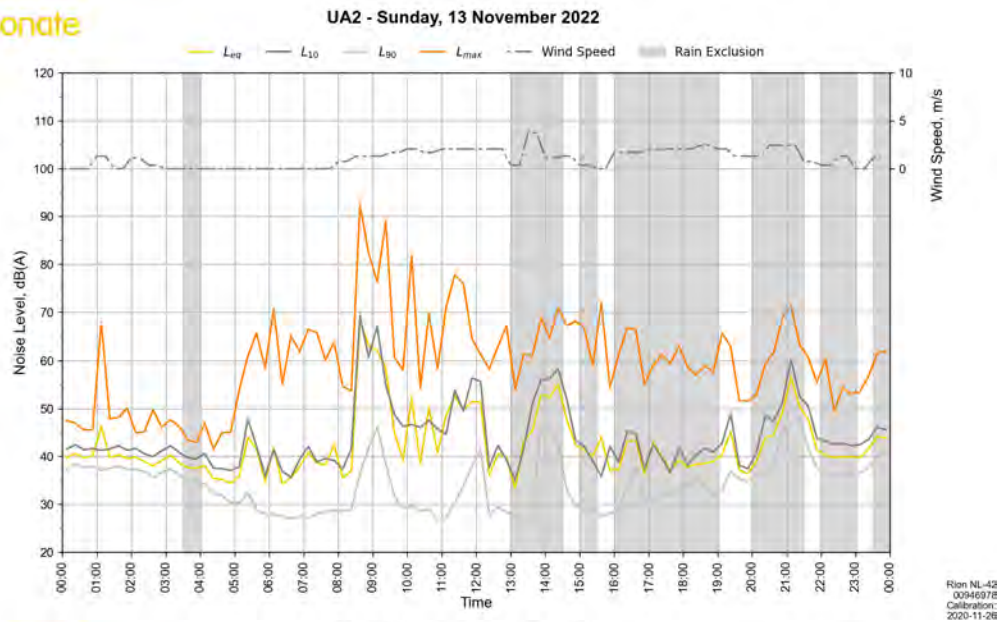
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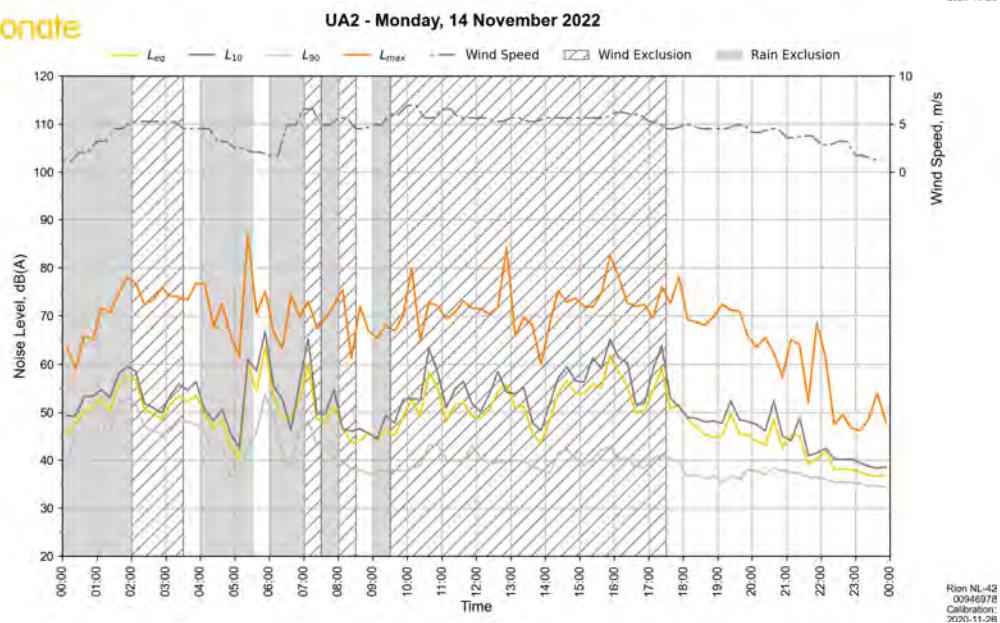
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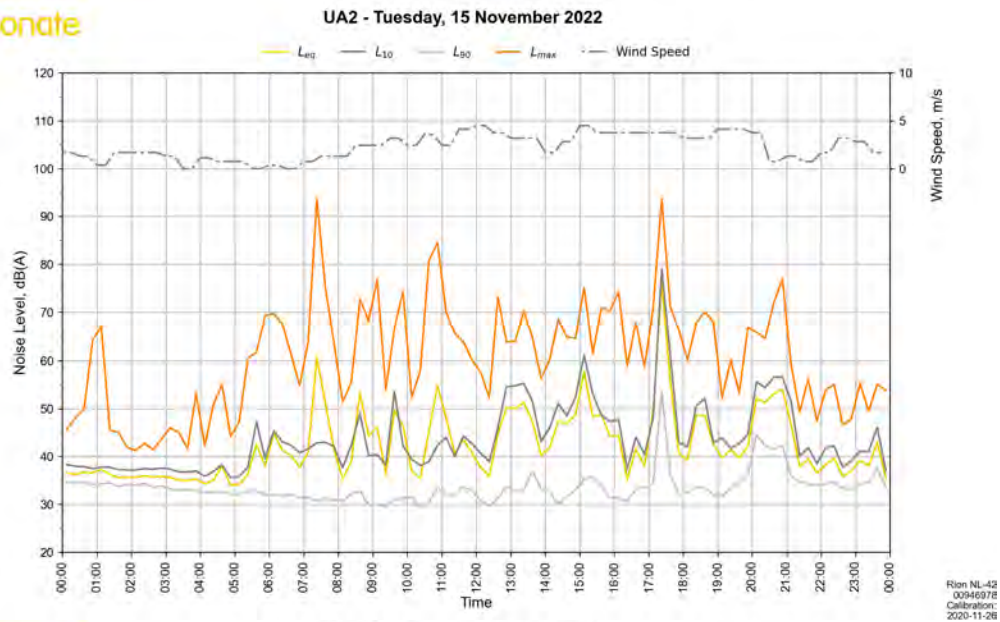
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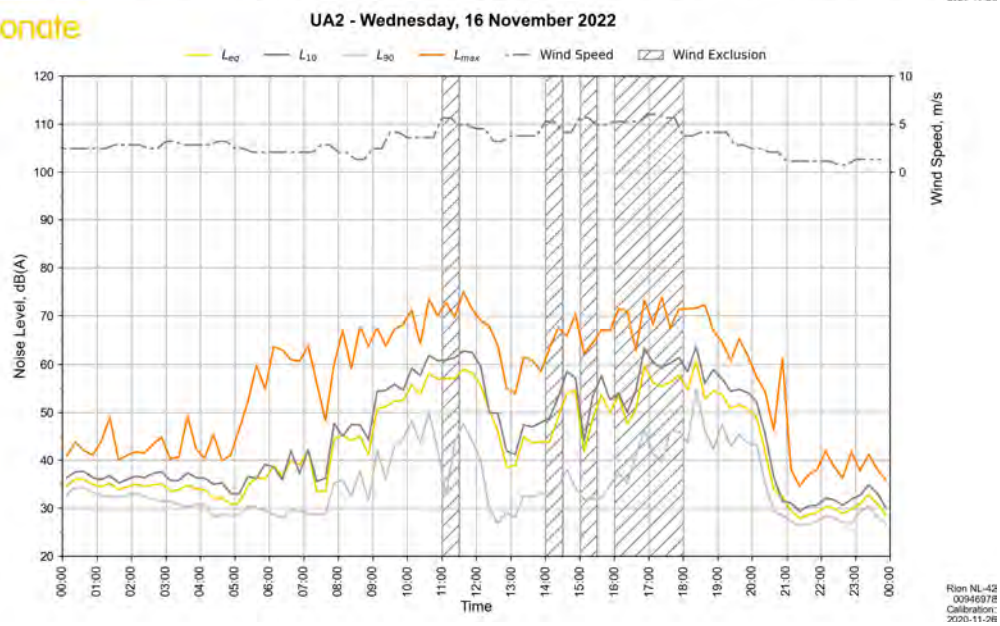
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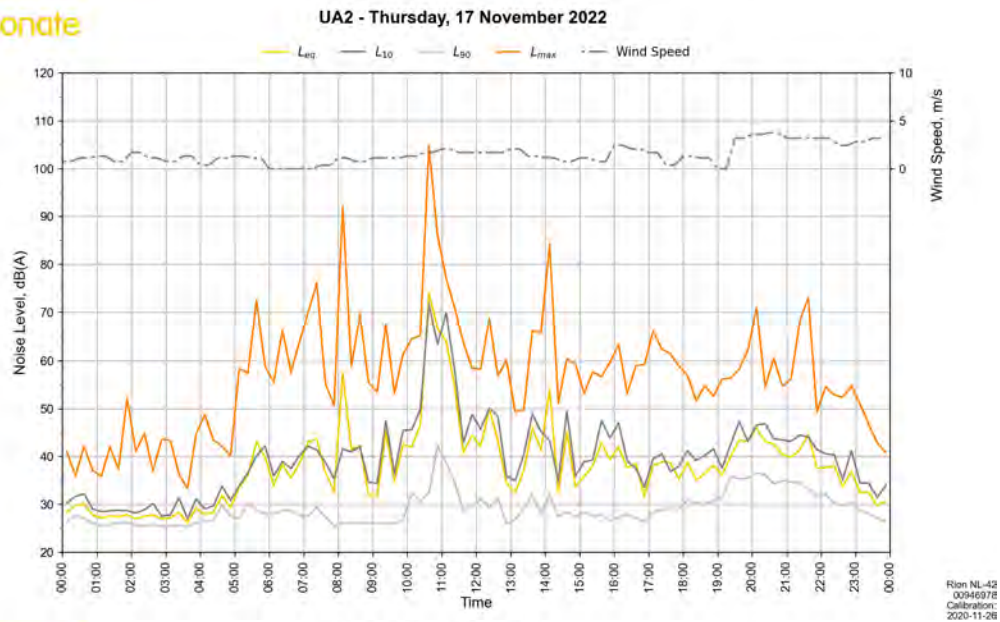
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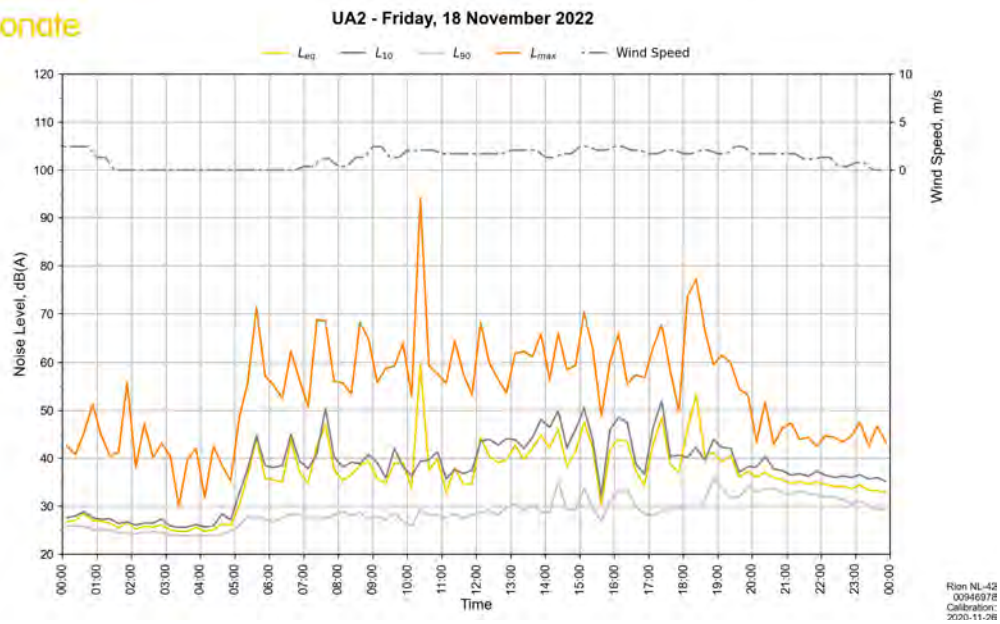
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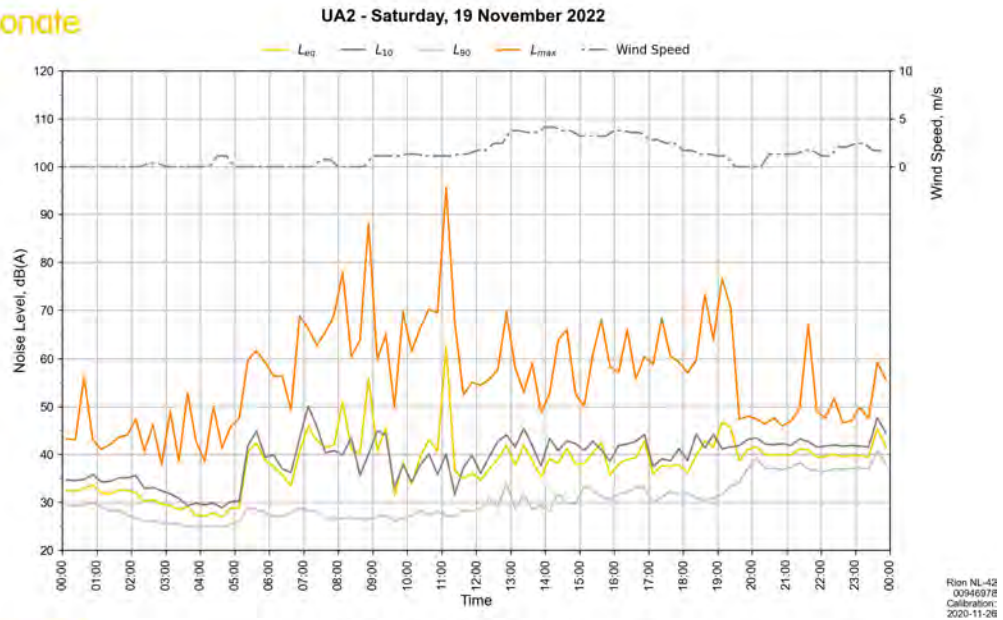
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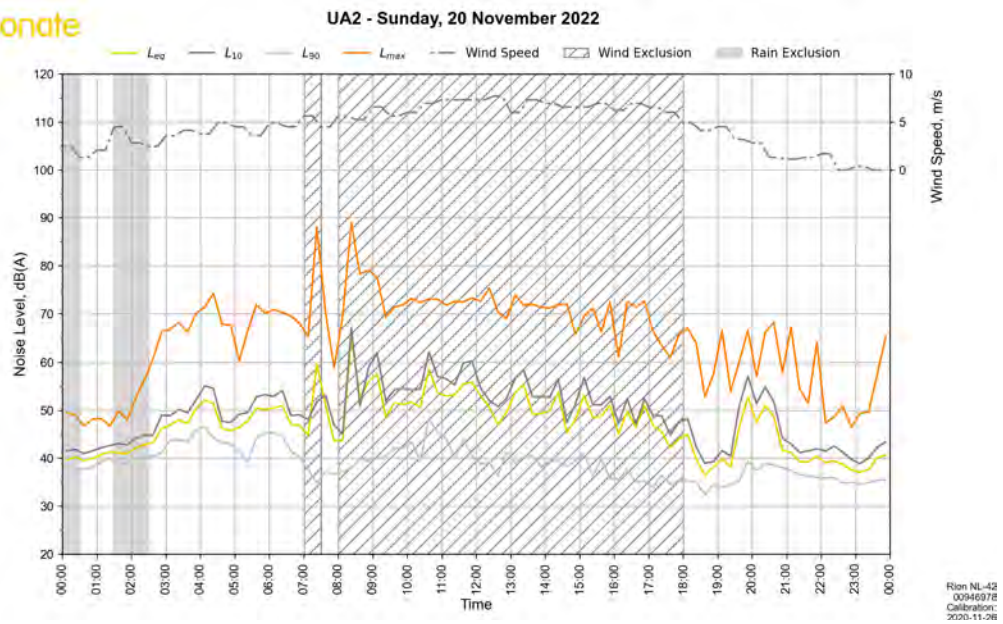
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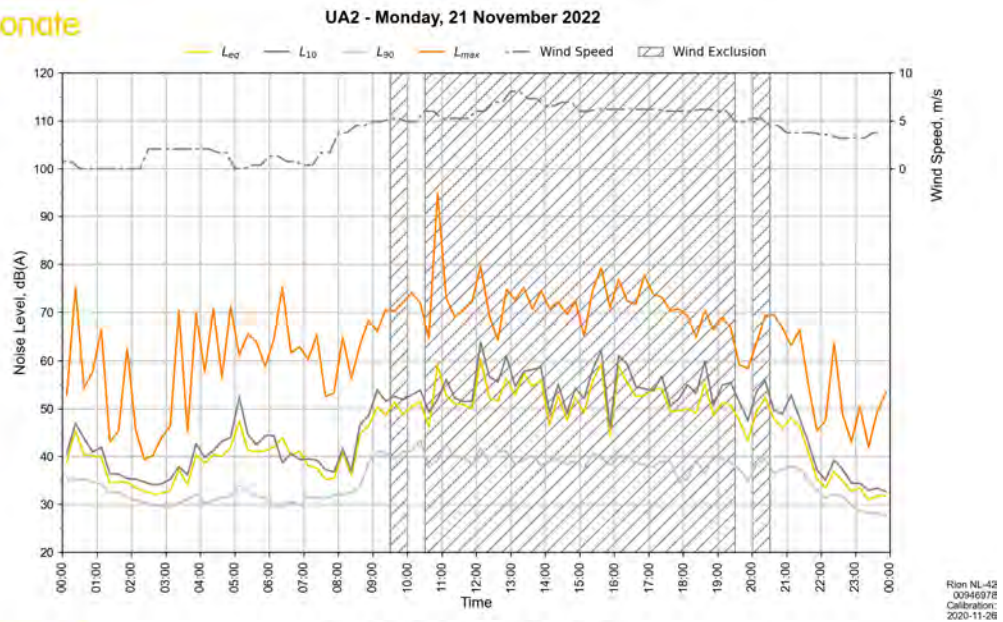
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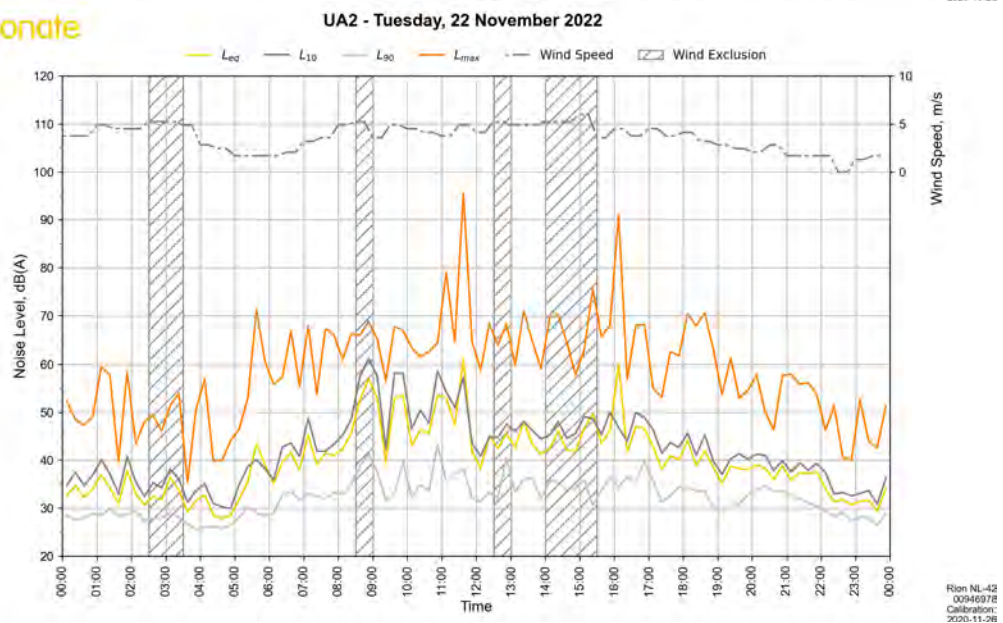
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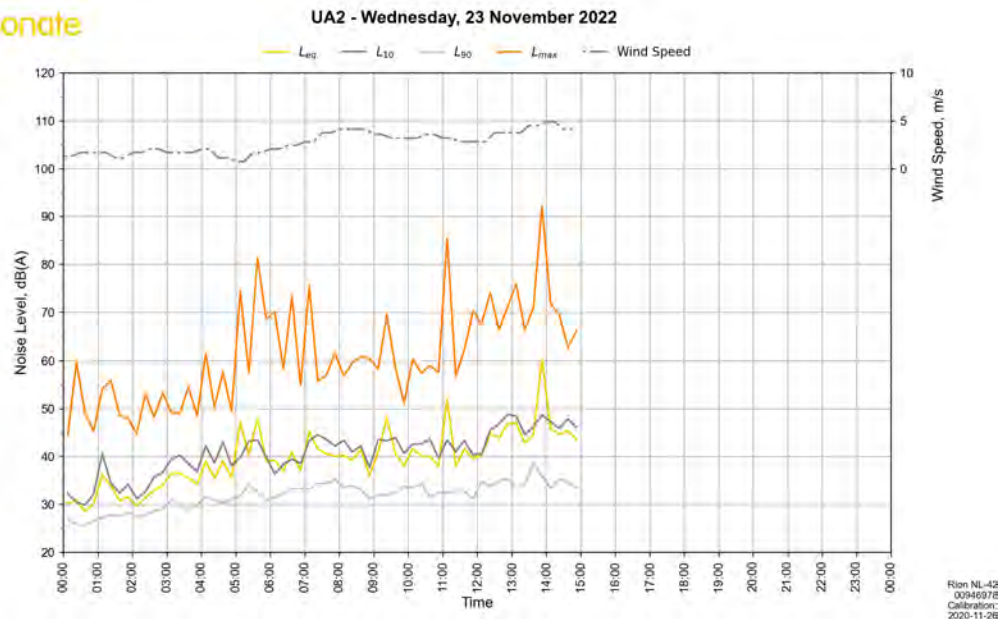
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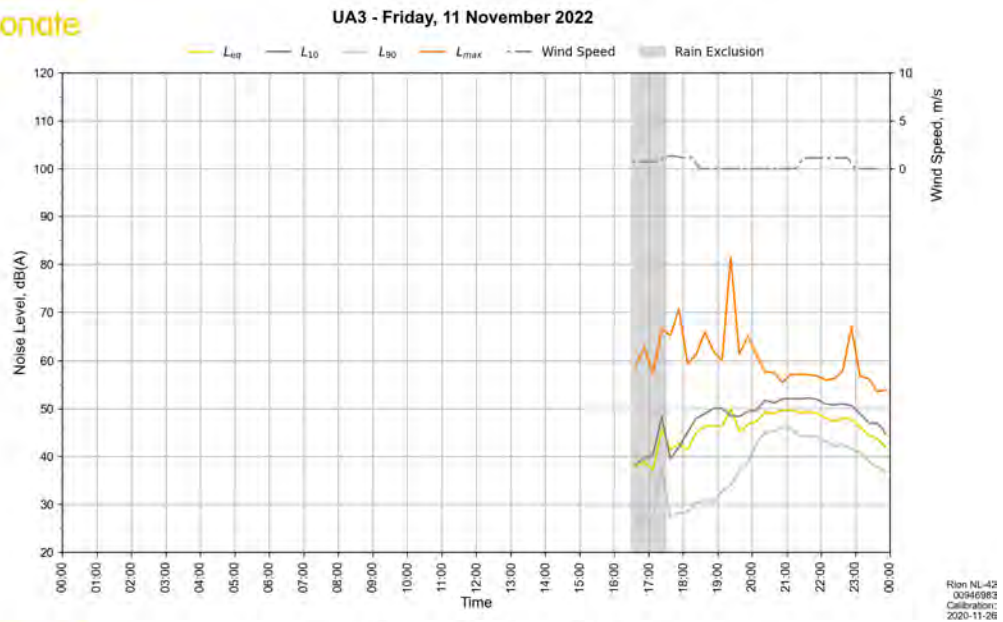
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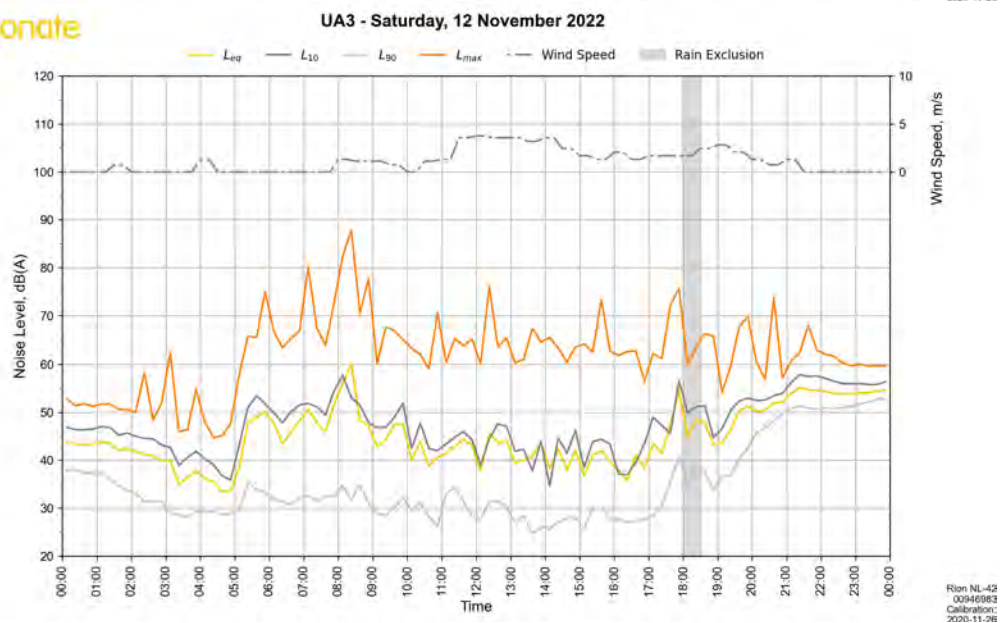
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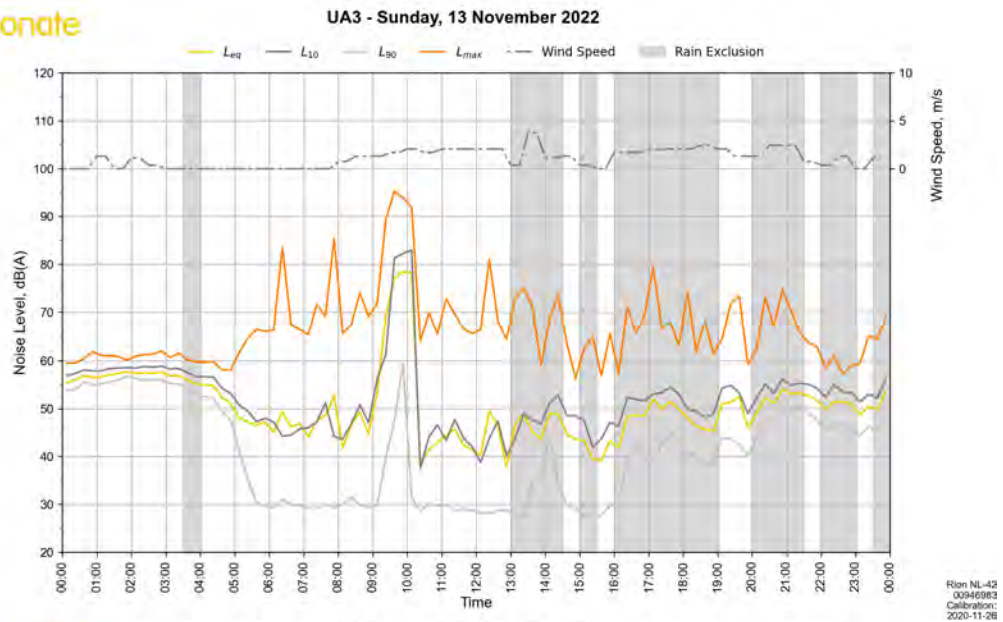
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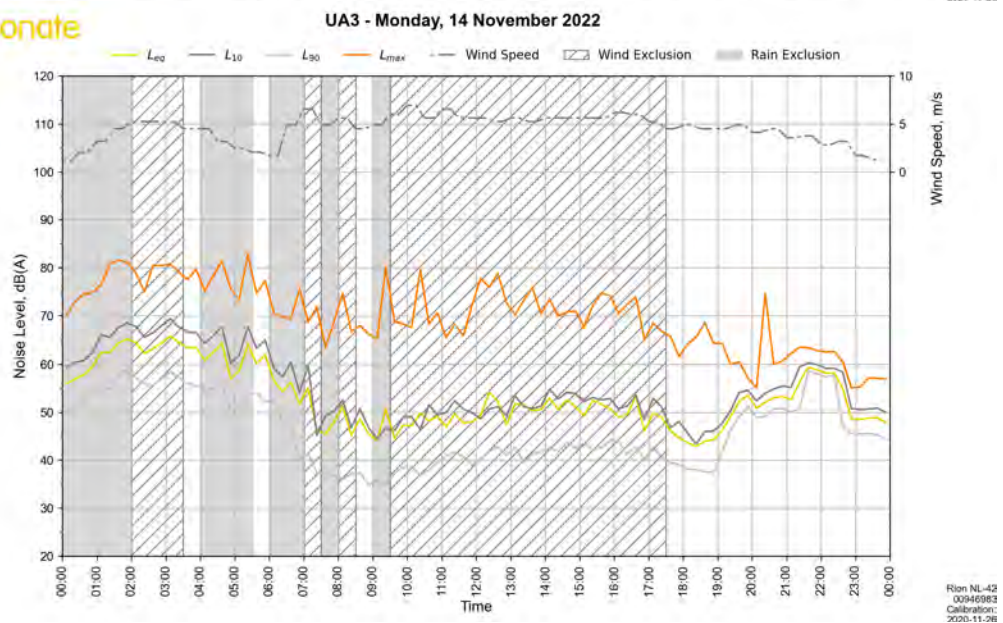
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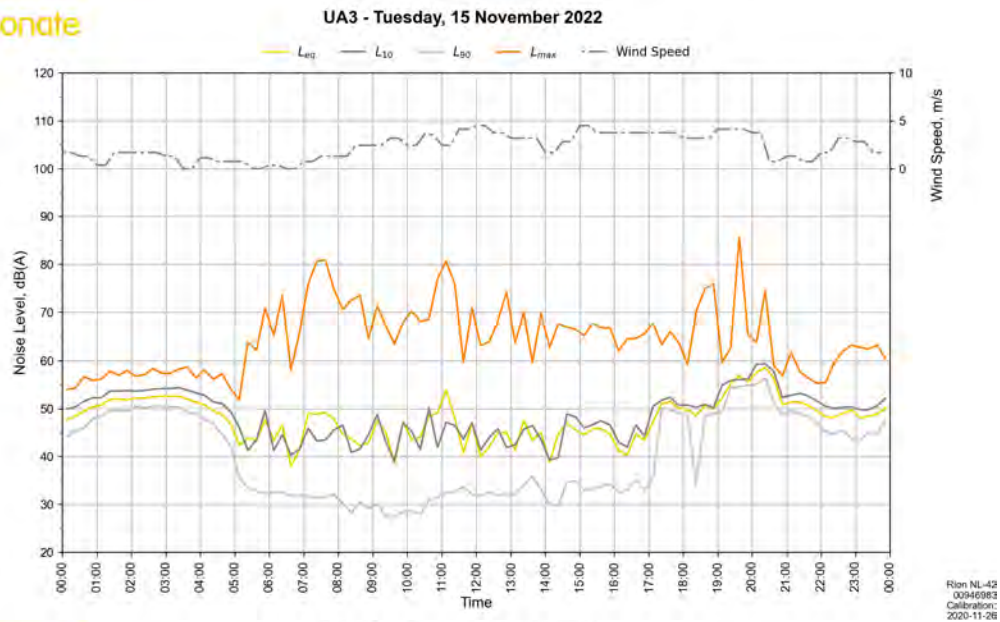
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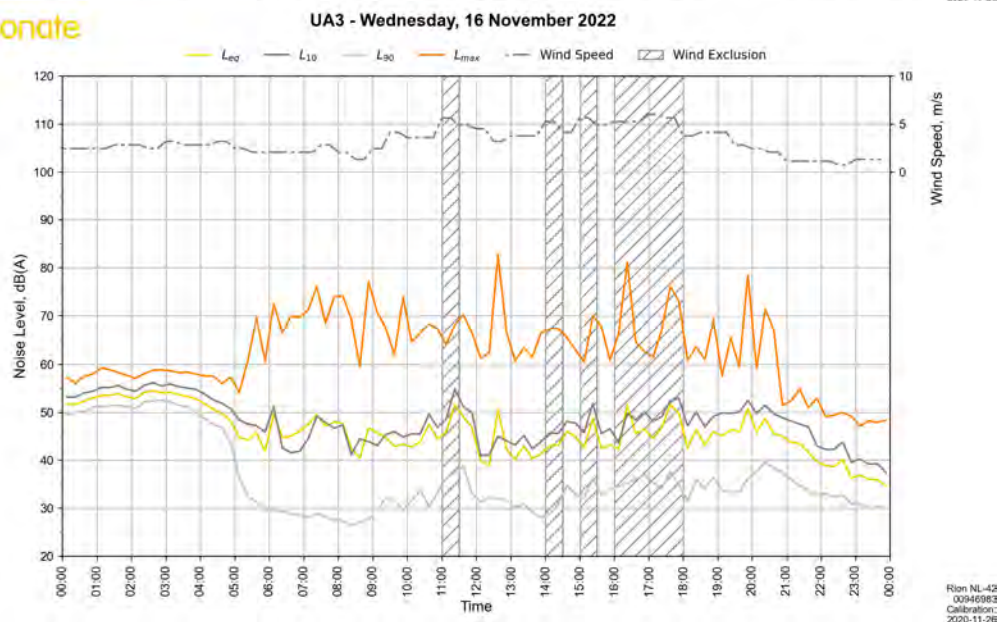
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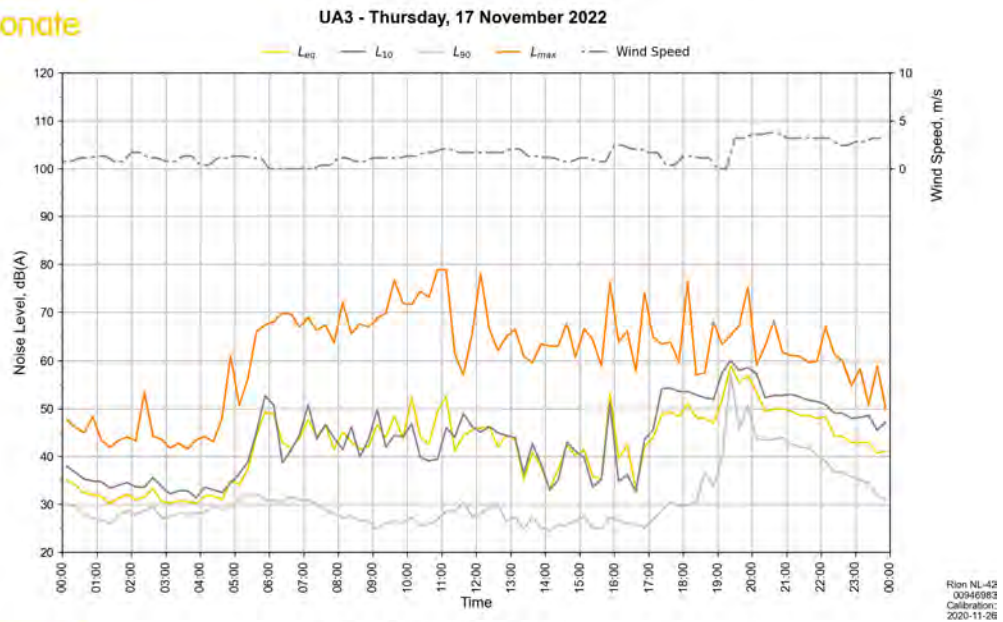
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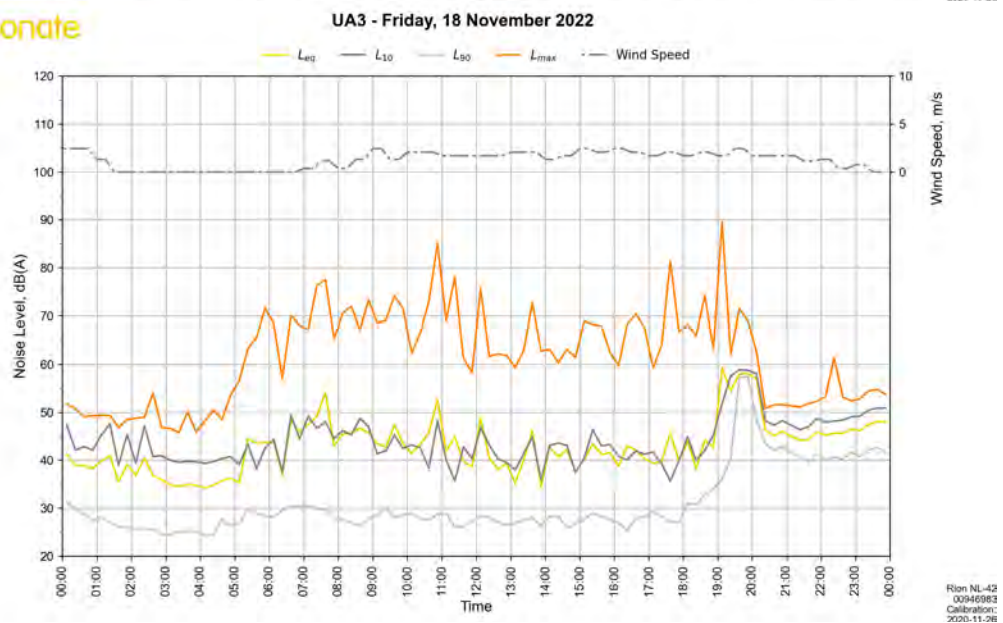
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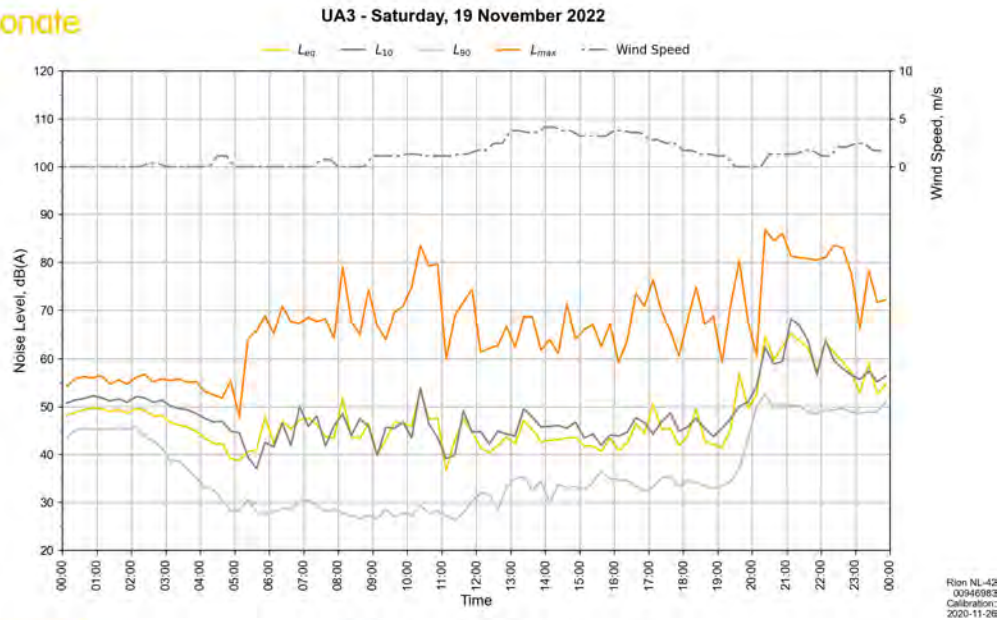
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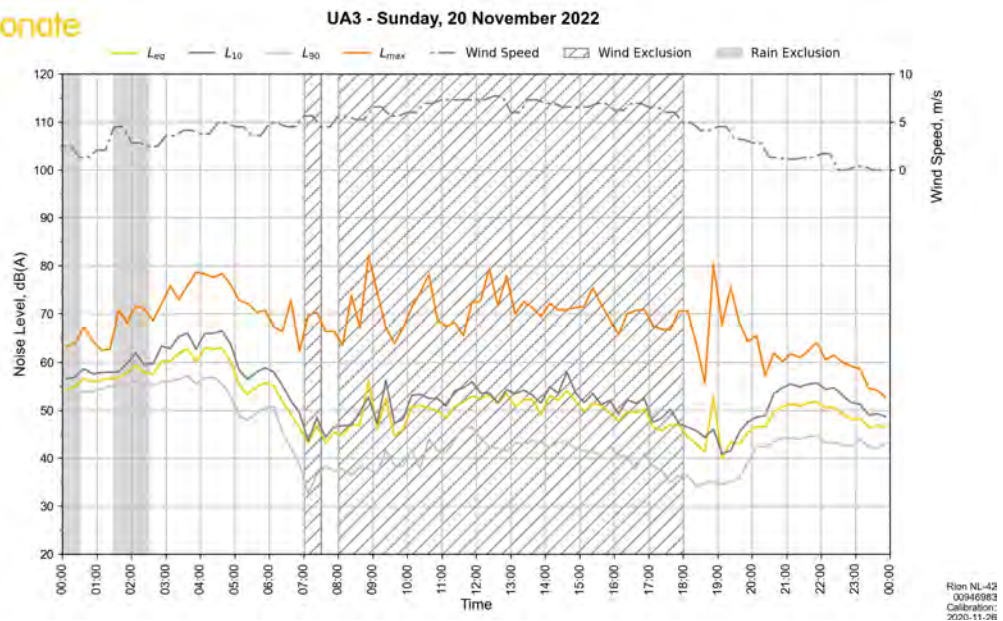
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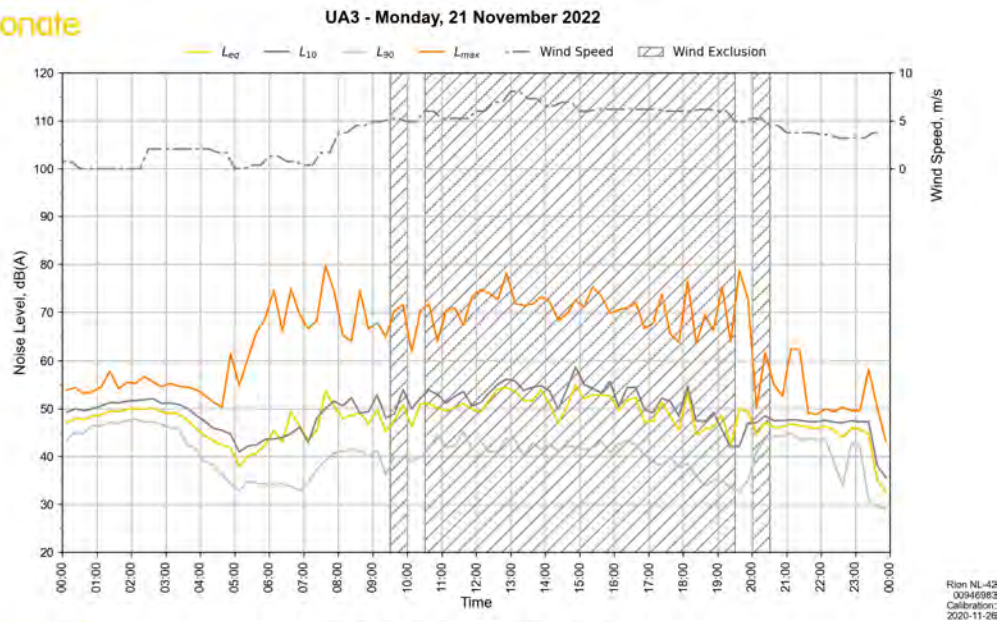
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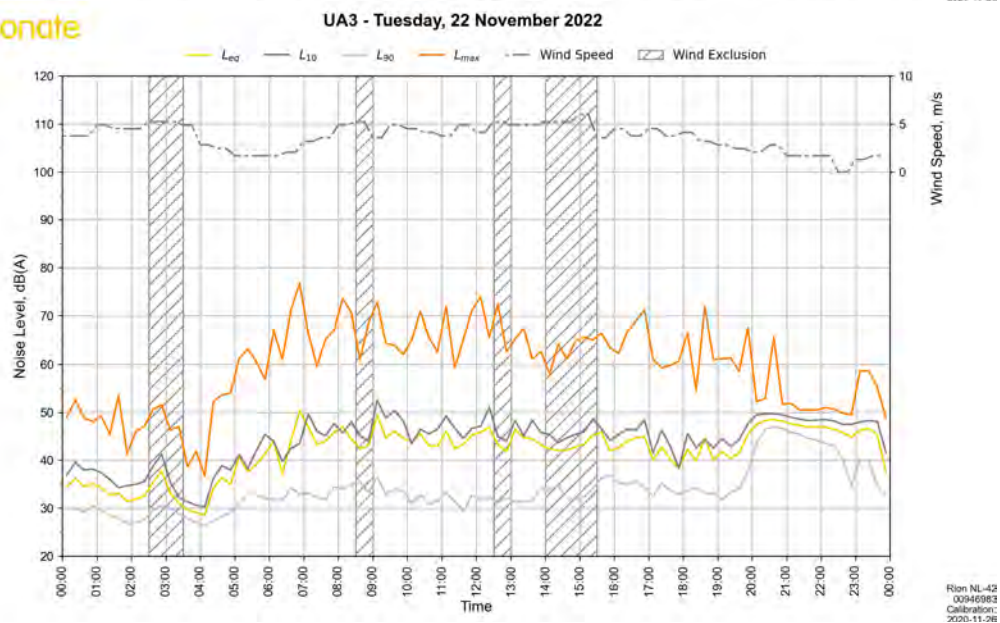
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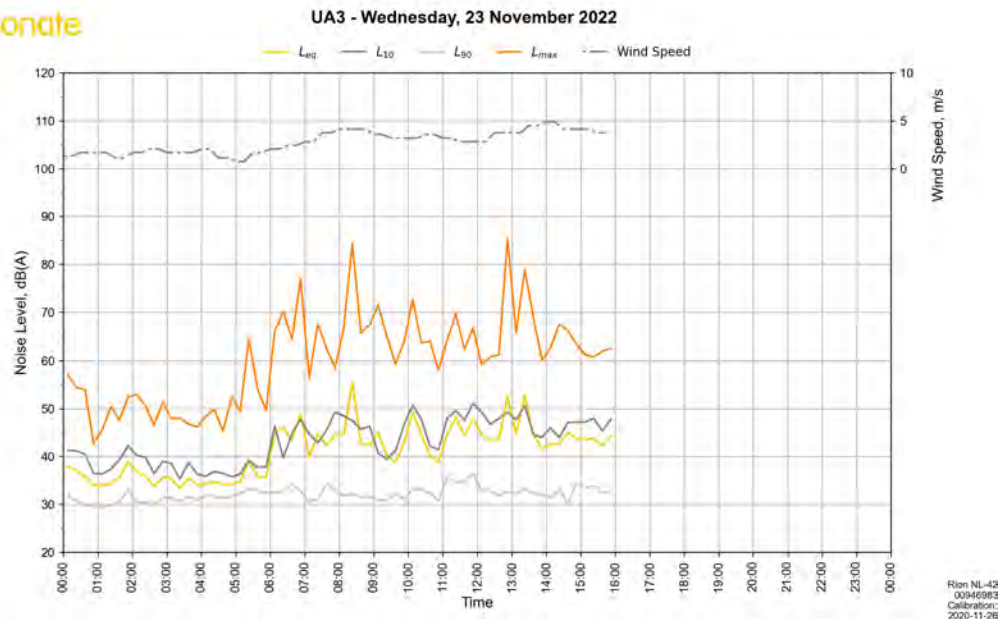
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Appendix B – Predicted construction noise levels

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ID	Type	NCA	Predicted noise level, dB(A)		Standard hours criterion, dB(A)	Out-of-Hours criteria, dB(A)			Compliance				Sleep disturbance criteria, dB(A)		Compliance Sleep disturbance	
			Leq	Lmax ¹		Day	Day	Evening	Night	Day	Day (OOH)	Evening (OOH)	Night (OOH)	Leq	Lmax impact	Leq
13	RES	NCA 1	0	8	45	40	40	38	Yes	Yes	Yes	Yes	40	52	Yes	Yes
54	RES	NCA 1	34	42	45	40	40	38	Yes	Yes	Yes	Yes	40	52	Yes	Yes
56	RES	NCA 1	0	8	45	40	40	38	Yes	Yes	Yes	Yes	40	52	Yes	Yes
57	RES	NCA 1	0	8	45	40	40	38	Yes	Yes	Yes	Yes	40	52	Yes	Yes
58	RES	NCA 1	0	8	45	40	40	38	Yes	Yes	Yes	Yes	40	52	Yes	Yes
1	RES	NCA 2	29	37	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
2	RES	NCA 2	32	40	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
3	RES	NCA 2	32	40	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
4	RES	NCA 2	32	40	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
5	RES	NCA 2	27	35	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
6	RES	NCA 2	29	37	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
7	RES	NCA 2	28	36	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
8	RES	NCA 2	29	37	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
9	RES	NCA 2	22	30	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
10	RES	NCA 2	29	37	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
11	IND	NCA 2	32	40	75	75	75	75	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a
14	RES	NCA 2	16	24	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
15	RES	NCA 2	20	28	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
18	RES	NCA 2	0	8	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
19	RES	NCA 2	30	38	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
20	RES	NCA 2	21	29	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
21	RES	NCA 2	32	40	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
23	RES	NCA 2	21	29	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
25	RES	NCA 2	27	35	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
27	RES	NCA 2	30	38	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
28	RES	NCA 2	19	27	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
30	RES	NCA 2	29	37	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
31	RES	NCA 2	26	34	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
55	RES	NCA 2	33	41	45	40	36	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
32	RES	NCA 3	13	21	45	40	39	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
34	RES	NCA 3	32	40	45	40	39	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
35	RES	NCA 3	20	28	45	40	39	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
36	RES	NCA 3	32	40	45	40	39	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
37	RES	NCA 3	31	39	45	40	39	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
38	RES	NCA 3	31	39	45	40	39	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
39	RES	NCA 3	18	26	45	40	39	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
40	RES	NCA 3	19	27	45	40	39	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
41	RES	NCA 3	27	35	45	40	39	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
42	RES	NCA 3	15	23	45	40	39	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
43	RES	NCA 3	30	38	45	40	39	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
44	RES	NCA 3	22	30	45	40	39	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
45	RES	NCA 3	15	23	45	40	39	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
46	RES	NCA 3	33	41	45	40	39	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
47	RES	NCA 3	32	40	45	40	39	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
48	RES	NCA 3	32	40	45	40	39	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
49	RES	NCA 3	16	24	45	40	39	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
50	RES	NCA 3	17	25	45	40	39	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
51	RES	NCA 3	31	39	45	40	39	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes
52	RES	NCA 3	0	8	45	40	39	35	Yes	Yes	Yes	Yes	40	52	Yes	Yes

(1) Lmax is based on LAeq + 8 dB



Muswellbrook Pumped Hydro Pty Ltd
T 02 9921 2999
F 02 9921 2552
MuswellbrookPHP@agl.com.au
ACN 661 973 477

Level 24, 200 George St
Sydney NSW 2000
Locked Bag 1837

Muswellbrook Shire Council
Attn Tanya Jolly
60-82 Bridge St
Muswellbrook NSW 2333

18 October 2023

Re: Response to Submissions relating to Development Application DA2023/78

1. Introduction

Geotechnical Investigation Development Application (DA2023/78) was lodged 11 August 2023 to Muswellbrook Shire Council (MSC) by the Muswellbrook Pumped Hydro Joint Venture (MPH) to facilitate geotechnical investigations within the lower reservoir area of the proposed Muswellbrook Pumped Hydro Energy Storage Project (the Project) which is currently subject of prefeasibility and environmental assessment.

DA2023/78 and the supporting Statement of Environmental Effects (SMEC 2023a; SoEE), was provided to adjoining landholders and publicly exhibited by MSC, with comments being accepted until 14 September 2023. Following conclusion of the public exhibition period, one objection was received by MSC. This report provides responses to the three public objections received on DA2023/78.

2. Responses to objections

The following sections provide responses to matters raised within the submissions which are relevant to the DA2023/78, with the submissions appended to this report. Information relied upon to support this report has been provided by the Muswellbrook Pumped Hydro Joint Venture, the proponent of DA2023/78 and information available within the SoEE.

1. Submission 1

i. Development application

I was elated to hear that Muswellbrook Coal shut down operations!! But then utterly enraged to hear the proposed idea of a "Hydro Scheme" to go on top of our beautiful mountain "Bells".

DA2023/78 seeks approval to facilitate geotechnical investigations to determine the suitability of the proposed pumped hydro energy storage project. DA2023/78 does not seek approval for the Project and as such is not the subject of the development application. The submitter will have the opportunity to voice concerns in relation to the Project during the assessment process for the Project.

ii. Noise and dust impacts

The noise from further work will be constant, as well will be dust.

Noise impacts were assessed in Appendix C of the SoEE and no exceedances to the NSW Department of Environment and Climate Change – Interim Construction Noise Guideline (ICNG) levels were predicted. The following best practice noise mitigation measures are proposed:

- Fixed and mobile construction plant and equipment shall be located to maximise separation distances from nearest noise and vibration sensitive receivers
- Construction plan shall be oriented away from nearest receivers where possible



- Where practical, simultaneous operation of dominant noise generating plant shall be managed to reduce noise impacts, such as operating at different times or increasing the distance between the plant
- Where possible and in compliance with occupational safety and health standards, reversing beepers on trucks would be replaced with low pitch non-tonal beepers (quackers). Alternatives to reversing beepers include the use of spotters and designing the site to reduce the need for reversing may assist in minimising the use of reversing beepers
- Ensure that all works comply with the ICNG standard daytime period's start and finish times
- Where feasible and practicable, surrounding residences shall be notified of potential construction works at least two weeks prior to the commencement of works
- Construction noise and vibration management practices are to be provided to all staff and contractors and be included during site inductions and daily tool-box talks. The tool-box talks should include as a minimum, the permitted hours of construction work, work site locations, site ingress/egress and the required noise management measures for each construction phase.

It is noted the geotechnical drilling program is expected to last for 12 weeks, hence any potential noise impacts would be temporary in nature.

iii. Dust

An assessment of the dust impacts associated with the geotechnical drilling, has been undertaken to inform this letter report, following the *Guidance on the Assessment of Dust from Demolition and Construction* published by the Institute of Air Quality Management (IAQM) in the United Kingdom (IAQM 2014).

Step 1 of the IAQM guidance specifies that a detailed construction dust assessment should be undertaken if:

- a human receptor is located within 350 m of the works boundary
- a sensitive ecological receptor is located within 50 m of the works boundary
- a human/ecological receptor is within 50 m of a route used by construction vehicles up to 500 m from a site entrance.

The proximity of human and sensitive ecological receptors has been reviewed for the Project, and the works are in compliance with each of the IAQM criteria stated above. Therefore, the risk of construction dust impacts is considered to be low, and no further assessment is required.

The following best practice mitigation measures for dust control will be considered:

- When accessing the Site along unsealed roads:
 - Maintain a speed within posted speed limits that limits dust generation behind moving vehicles. If dust plumes are observed to be above the height of the vehicle, slow down
 - Accelerate and decelerate slower than on sealed roads, to avoid wheel spinning that could generate dust.
- During construction and maintenance of the drilling cut/fill pad:
 - Limit the size of exposed material within practicable safe limits
 - During periods of hot, windy weather, spray clean water on the exposed material to limit dust generation potential.

It is noted the geotechnical drilling program is expected to last for 12 weeks, hence any potential dust impacts would be temporary in nature.

The amount of environmental damage that Australia is doing to world is very minimal, sustainability energy is a load of codswallop. Why is it that McCullys Gap has to have not only this idiotic proposed 'Hydro Scheme', but solar panels as well as the flaming windfarm at opposite ends of the valley????? Please answer that.



DA2023/78 seeks approval to undertake geotechnical investigation, in support of the Project, it is in alignment with the objectives of the Hunter-Central Coast Renewable Energy Zone (REZ) and the Hunter Regional Plan 2041.

The Project is wholly located within the Hunter-Central Coast REZ, which was formally declared as a REZ on 9 December 2022 under section 19(1) of the *Electricity Infrastructure Investment Act 2020*. The REZ will reduce carbon emissions by delivering a greater mix of renewable energy to the National Electricity Market (NEM), supporting NSW and Australia's net zero ambitions.

As provided in section 2.5.1 of the SoEE, Objective 7 of the Hunter Regional Plan 2041 is to reach net zero and increase resilience and sustainable infrastructure planning for the Upper Hunter. The shift to a net zero emissions economy will create opportunities in the energy sector, such as advances in energy technology and ongoing employment opportunities.

As such, DA2023/78 seeks approval for early works to inform the potential development of the Project to meet the objective of both State and local government policy. Council is required to assess the DA in front of them and both Council and community will have a full opportunity to comment on the larger Project should it proceed to public exhibition under the State planning framework.

3. Summary

Should further clarification be required in regard to the information provided within this report please do not hesitate to contact the under signed.

Yours Sincerely

Stuart Galway
Group Manager – Land, Approvals and Environment
0407 788 412
sgalway@agl.com.au



Submission 1



To whom it may concern

Development Application number : 2023/78

I am putting in writing my **OBJECTION** to the proposed 'Geotechnical Drilling & Minor Vegetation Clearing'

My Family has lived in McCullys Gap since the mid 1970's. We have put up with the noise and dust pollution from Muswellbrook Coal for that entire time.

I was elated to hear that Muswellbrook Coal shut down operations!! But then utterly enraged to hear the proposed idea of a 'Hydro Scheme' to go on top of our beautiful mountain 'Bells'.

So first you allowed for Bells mountain to be dug under and next to, wasn't that enough to hurt the heart of Bells? But no, now you are proposing to damage it from above as well. I could not think of a more idiotic idea.

This will destroy the integrity of our mountain, you will open it up and damage it beyond belief.

The noise from further work will be constant, as well will be dust.

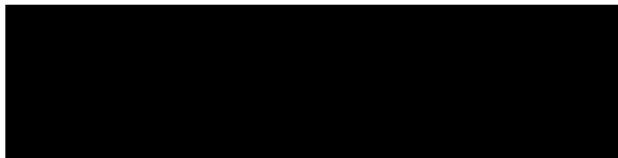
All of this should have been taken into consideration before shutting down our coal powered power stations, you do know that we are about the only country shutting these down? A lot of countries are building more! The amount of environmental damage that Australia is doing to world is very minimal, sustainable energy is a load of codswallop .

Why is it that McCullys Gap has to have not only this idiotic proposed 'Hydro Scheme', but solar panels as well as the flaming windfarm at opposite ends of the valley???? Please answer that.

I OBJECT, I OBJECT, I OBJECT, I OBJECT, I OBJECT, I OBJECT, I OBJECT, I OBJECT, I OBJECT, I OBJECT!

To any work that is detrimental to Bells Mountain and is associated with proposed Hydro Scheme on Bells Mountain!!

From a local that is greatly concerned



**10.1.3. DA 2023-86 Childcare Centre at 84 Brook Street, Muswellbrook****Attachments:**

1. Attachment A - DA 2023 86 Development Assessment Report [**10.1.3.1** - 25 pages]
2. Attachment B - DA 2023 86 Recommended Conditions of Consent [**10.1.3.2** - 14 pages]
3. Attachment C - DA 2023-86 - Proposed Plans [**10.1.3.3** - 19 pages]
4. Attachment D - DA 2023-86 - Flood Impact Assessment Report [**10.1.3.4** - 37 pages]
5. Attachment E - DA 2023-86 - Emergency Evacuation Response Plan [**10.1.3.5** - 25 pages]
6. Attachment F - DA 2023-86 Department of Planning and Environment- Water - General Terms of Approval [**10.1.3.6** - 5 pages]
7. Attachment G - DA 2023-86 Submissions [**10.1.3.7** - 5 pages]
8. Attachment H - DA 2023-86 Applicant response to Submitter concerns [**10.1.3.8** - 4 pages]

Responsible Officer: Sharon Pope - Director - Planning & Environment

Author: Tanya Alsleben (Development Planner)

Community Plan Issue: 6 - *Community Leadership*

Community Plan Goal: Collaborative and responsive leadership that meets the expectations and anticipates the needs of the community.

Community Plan Strategy: *Not Applicable*

Not applicable

PURPOSE

The report has been prepared to assist Council in the determination of DA 2023-86, involving the construction of a Childcare centre for 90 children at 84 Brook Street, Muswellbrook.

The development application has been reported to Council to determine due to the submissions received and the construction of a parking area over Possum Gully, which means the development is not fully compliant with Council's adopted Rivers and Drainage Channels Policy.

OFFICER'S RECOMMENDATION

Council approves DA 2023-86 for the development of a new Childcare Centre at Lot 1 DP 795300 (84 Brook Street Muswellbrook), subject to the recommended conditions of consent included in Attachment B.

Moved: _____ **Seconded:** _____

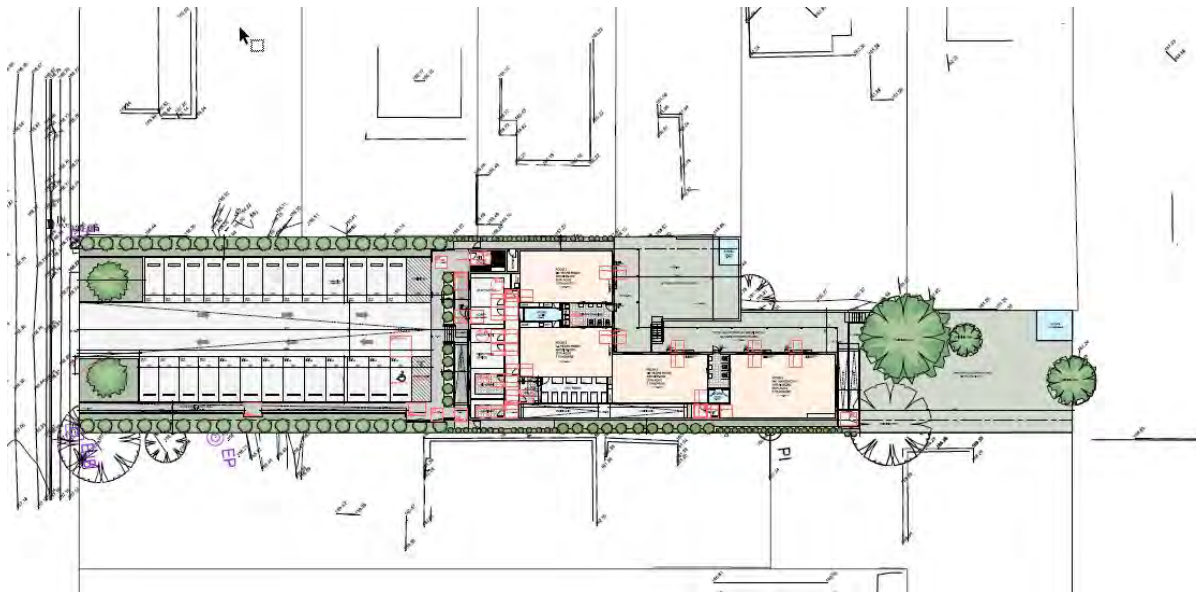


DESCRIPTION OF PROPOSAL

The proposal seeks development approval for the construction and use of a new Childcare Centre that will service a total of 90 children, specifically:

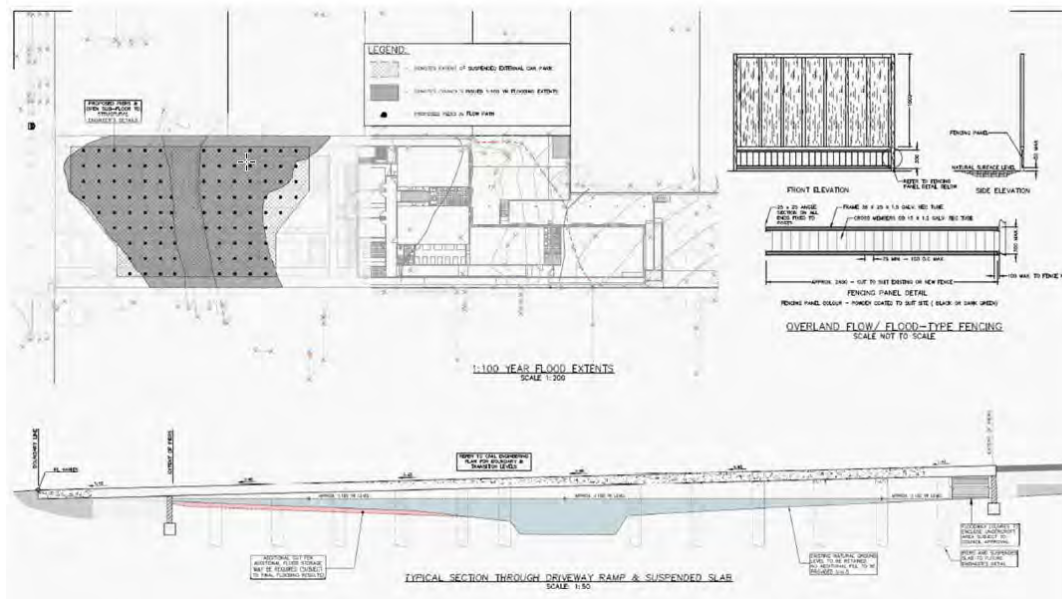
- 20 children between 0-2 years old;
- 20 children between 2-3 years old;
- 50 children between 3-6 years old;
- One (1) director; and
- One (1) cook.

The image below provides a site layout plan of the proposed facility.



The applicant has proposed building a floating car park over Possum Gully. The car park piers would be required to be engineered to withstand water pressure, and a related assessment has determined that this aspect of the development would not have any adverse impacts on flooding.

Details of the car park and Possum Gully design can be seen below and in Attachment C.



The childcare centre is to operate between 7am to 6pm Monday to Friday.

ASSESSMENT SUMMARY

The development application was accompanied by various technical documents and plans. A summary of the documents is provided below. Documents relevant to Council's consideration of key assessment issues have been included as attachments. If requested, other documentation referenced can be circulated to Councillors under separate cover for review.

- Noise Impact Assessment – This report has regard to the potential impact of noise from the facility on neighboring receptors. The report determines that noise from the facility would be compliant with relevant criteria for noise levels at the adjoining residential receptors.
- Flood Impact Assessment Report (Attachment D) – this document is attached for Council's information. While the site of the Child Care Centre is not identified as flood liable, Possum Gully intersects the site. A Flood Impact Assessment was prepared in relation to the hydrology of this waterway and relationship with the development. This study has informed the proposed design of the car park to mitigate impacts on waterflow pathways and flood storage.
- Traffic Study – A Traffic Impact Assessment reviewed the relationship of the proposed development with Council's road network and the proposed off-street car parking. The report indicated that the proposed development may be supported from a traffic impact perspective.
 - Preliminary Site Investigation Report.
 - Statement of Heritage Impact.
 - Operational Plan of Management.
 - Landscape Plan.
 - Emergency Evacuation and Response Plan (Attachment E).
 - Erosion and Sediment Control Plan.
 - Stormwater Drainage Plan.
 - Arborist Report.
 - BCA Access Report.
 - Waste Management Plan.

The proposal has been assessed against the relevant matters prescribed by s4.15 of the



Environmental Planning and Assessment Act 1979. A copy of the Assessment Report is provided in Attachment A.

A summary of the key assessment issues and findings are provided below:

- Integrated development – the proposed development involves the carrying out of work on waterfront land. This work requires a controlled activity approval from the Department of Planning and Environment Water under the provisions of the Water Management Act 1992. General Terms of approval for the development and related correspondence are attached (Attachment F).
- Possum Gully – Possum Gully is an identified waterway which connects with the Hunter River and is significant to the town's urban stormwater drainage system. A floating car park on piers has been proposed as part of the application. The flood impact assessment and accompanying information indicates that the car park design would retain the Possum Gully channel below the structure and maintain suitable storage area for water up to the 1% event flood without affecting the level of inundation of adjoining land. The proposed drainage strategy was considered and accepted by Council Engineers as part of their review of the development application. The design would limit the ability to provide riparian vegetation within the gully, and as a result, the proposal is not fully compliant with Council's adopted Rivers and Drainage Channels Policy. The variation from the Policy is supported in this instance, as the Gully becomes a fully enclosed drainage system approximately 40m west of the site (at Sowerby St) for a considerable distance to the west of the Great Northern Railway line. An At grade car parking area would:
 - be flood prone in a 1% AEP flood, placing staff, parents, and child at risk in the event of a 1% AEP flood; and
 - would result in a reduction in proposed parking by approximately 6 car parking spaces.
- The proposed development has been considered against the requirements of the State Environmental Planning Policy (SEPP) (Transport and Infrastructure) 2021 – Chapter 3 Education Establishments and Child Care Centres. Council Officers are satisfied that the proposed development would comply with all mandatory requirements of the SEPP and is compatible with the provisions of the planning guideline.
- The proposed development complies with the provisions of other relevant State Environmental Planning Policies.
- Under the *Muswellbrook Local Environmental Plan 2009*, the site is zoned R1 Residential. Development for the purposes of a 'Centre-based child care facility' is permissible with consent. The development generally complies with the provisions under the *Muswellbrook Local Environmental Plan 2009*.
- Council's Roads and Drainage Engineers have reviewed traffic and parking considerations related to the application. The proposal has been reported to Council's Traffic Committee. Comments from Council Engineers advised that the application may be supported from a traffic management perspective.
- The subject site is located within the Muswellbrook Heritage Conservation Area. The proposed development was referred to Council's Heritage Advisor who was supportive of the proposed development from a heritage impact perspective.
- Off-street car parking and traffic – the proposed development complies with the off-street car parking requirements of Section 16 of the *Muswellbrook DCP*. The proposed development would provide 25 off-street car parking spaces.
- Earthworks associated with the proposed development would exceed the Residential DCP maximum cut by 0.32m and maximum fill by 0.54m. The proposal seeks to work with the topography of the site and manage impacts to adjoining land by setting the child care centre building into the slope of the site.
- A Noise Impact Assessment submitted in relation to the proposed development indicates that noise from the facility would not exceed accepted noise standards at neighboring



properties.

COMMUNITY CONSULTATION

The proposal was publicly notified in accordance with the requirements of the Muswellbrook Community Participation Plan. Three submissions were received by Council. Redacted copies of the submissions are provided as attachment G to this report.

The submissions raise concerns with stormwater and drainage, amenity impacts, and increase in traffic. These matters have been considered through the assessment of the development application and were not considered significant or to justify refusal of the proposed development.

OPTIONS

Council may:

- A. Approve the proposed development subject to the recommended conditions of consent.
- B. Approve the proposed development subject to amended conditions of consent.
- C. Refuse the proposed development and, in doing so, provide reasons for refusal.

CONCLUSION

DA 2023-86 has been reported for determination to Council due to the number of submissions received and construction over Possum Gully. The proposed development was assessed against the provisions of Section 4.15 of the Environmental Planning and Assessment Act 1979.

Council Officers recommend that the development be approved subject to the recommended conditions outlined in Attachment B.

LEGAL IMPLICATIONS

Where the applicant is dissatisfied with the determination of the development application, they have an opportunity, under the provisions of the Environmental Planning and Assessment Act 1979, to appeal that determination through the Land and Environment Court.

**Extended
DEVELOPMENT ASSESSMENT REPORT**

Attached: Site Plan

REPORT TO: DEVELOPMENT COORDINATOR

ADDRESS:	LOT: 1 DP: 795300 84 Brook Street MUSWELLBROOK
APPLICATION No:	2023/86
PROPOSAL:	Construction of a 90 Place Child Care Centre
OWNER:	Jal Invest Co Pty Ltd
APPLICANT:	The Trustee for JAL Invest Trust 3 Kingsgrove Road Belmore NSW 2192
AUTHOR:	Tanya Alsleben
DATE LODGED:	21/07/2023
DATE OF REPORT:	13/03/2024

1. RECOMMENDATION

It is recommended that development consent be granted to DA 2023/86 for Construction of a 90 Place Child Care Centre subject to the recommended conditions of consent.

2. SITE LOCALITY AND DESCRIPTION

The subject site is Lot 1 DP 795300 and known as 84 Brook Street Muswellbrook. Access to the site is provided via Brook Street with a bridge over Possum Gully being provided to provide access to the rear of the site.

The site has a total area of approximately 2500m² and is on land zoned R1 General Residential.

Figure 1. – Site Aerial Image (Source: Spectrum)



Flood Prone Land	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Bushfire Prone Land	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Terrestrial Vegetation	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Heritage Conservation Item	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Heritage Conservation Zone	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Contaminated Land	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Mine Subsidence	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Classified Road Frontage	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Council Infrastructure within Site	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Other	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>

3. DESCRIPTION OF PROPOSAL

The proposal seeks development approval for the construction and use of a new Childcare centre that will service a total of 90 children, specifically:

- 20 children between 0-2 years old (staff assigned at 1 per 4 children, or 5 staff);
- 20 children between 2-3 years old (staff assigned at 1 per 5 children, or 4 staff);
- 50 children between 3-6 years old (staff assigned at 1 per 10 children, or 5 staff);
- One (1) director;

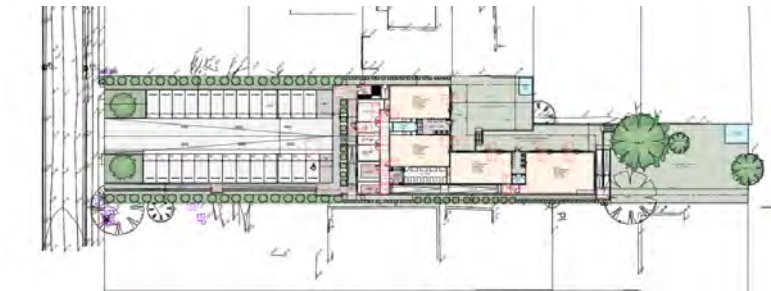
- One (1) cook

The development also provides a parking area with vehicular access via a proposed two-way driveway from Brook Street, accommodating a total of 26 car parking spaces including:

- Ten (10) parent / visitor car parking spaces including one (1) accessible space and one (1) designated emergency space for vehicles up to a B99 design vehicle;
- 16 staff car parking spaces

The childcare centre is to operate between 7am to 6pm Monday to Friday.

Figure 2. – Site Plan (Source: Applicant)



Notification Required	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Notification Dates	02/08/2023 – 23/08/2023
Number of Submissions	3
Standard Local Development	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Regionally Significant Development	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Designated Development	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Integrated Development	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>

Commented [TJ1]: Applicant has not marked as integrated

4. RELEVANT HISTORY

Previous Approvals

DA 1995-40 – On 15/06/1995, Council approved a development application for the subdivision of the subject lot into two lots.

Council's Assessing Officer could not find information indicating substantial commencement of this development and therefore the approval is considered to have lapsed.

DA 2007-332 was lodged for the erection of nine (9) townhouses. The DA was refused under delegated authority on 16 February 2009. The reasons for the original refusal relate to potential flooding impacts and adequacy of information submitted to address flooding, non-compliance with BASIX, and non-compliance with aspects of the Muswellbrook Development Control Plan (DCP) in force at the time.

DA 2012-134 was lodged for a multi-dwelling housing comprising five (5) units and a residential flat building comprising four (4) units were assessed and approved by Council at an ordinary meeting subject to the conditions of consent.

5. REFERRAL COMMENTS

Internal Referrals

The application was referred to Council's Building Surveyor, the Waste & Wastewater Section, the Roads & Drainage Section, and Council's Heritage Advisor.

Building Surveyor

No Building Code of Australia (BCA) Compliance report was provided with the application. The Officer recommended the following condition requesting the required information in the Construction Certificate stage.

➤ **Protection of External Walls and Openings**

Prior to the issue of the construction certificate, details are to be provided to the Principal Certifier demonstrating the external walls and openings exposed to the boundary are protected appropriately for the type of construction required, to maintain structural stability and avoid the spread of fire in accordance with C1P1, C1P2 and C1P8 of Volume 1 of the NCCS/BCA.

The Assessing Officer has included this in the recommended conditions of consent.

Water & Wastewater

Council's Water and Wastewater Officer reviewed the application and noted that the subject Lot has current connection to Council water and sewer services and a sewer main to the rear of the lot. The Officer reiterated that no infrastructure is permitted over Council mains and also noted that a Notice of Requirements will be required for the application to pay headworks for the additional water usage by the Childcare Centre as outlined below:

	ET/ Person	No of Person 90 Children + 16 Staff	Total ET	Entitled ET	Additional ET to be paid	Headworks Charges/ET	Total ET to be paid
Water	0.06	106	6.36 (=0.06x106)	1	5.36	\$8,839.50	\$47,379.72
Sewer	0.1	106	10.6 (=0.10x106)	1	9.6	\$6,862.80	\$65,882.88
Total Headworks Charges: \$113,262.60							

The Assessing Officer has notified the applicant in the early planning stages of the significant headworks charges.

Roads & Drainage

The application was referred to Council's Roads and Drainage team who provided detailed requirements and considerations to ensure that the construction of the childcare centre proceeds in a manner that is safe, environmentally responsible, and compliant with relevant regulations. These requirements have been summarised below:

- Footpath and Kerb and Gutter:** The Community Infrastructure (CI) comments required the need for widening of the footpath to accommodate accessibility needs, as well as kerb and gutter along Brook St. Additionally, they require the inclusion of street trees in the landscaping design to provide shade while ensuring visibility for entering and exiting traffic.
- Stormwater Drainage and Water Quality:** The stormwater management measures proposed by the applicant are satisfactory. A condition requiring an easement to be registered over Possum Gully in accordance with the requirements under the Muswellbrook DCP is requested.
- Flooding and Emergencies:** CI required the preparation of an updated emergency management plan for flooding, including drills, communication protocols, and

evacuation triggers to ensure the safety of staff and families during flood events. Flood depth markers are to be strategically located within the car park area, and electrical infrastructure must be positioned above flood levels.

4. **Impacts to Possum Gully:** CI recommended measures to minimise impacts on water quality in Possum Gully during construction. This includes implementing sediment controls and submitting a hydraulic model demonstrating no adverse impacts on upstream or downstream areas. Additionally, a bond agreement for the maintenance and stability of constructed works within Possum Gully was requested.
5. **Traffic Impacts:** Additional regulatory signage, including a no stopping zone and pedestrian warning signs were requested as approved by the Traffic Committee.
6. **Waste Collection:** Operational waste from the childcare centre is to be managed using general waste bins, which will be left roadside for collection twice per week.

Commented [TA2]: You mentioned that this needs to be discussed

These recommendations have been considered by Council's Assessing Officer and informed recommended conditions of consent.

Heritage Advisor

The subject site is located within the Muswellbrook Residential Heritage Conservation Zone and therefore the application was referred to Council's Heritage Advisor for comment. The Officer reviewed the application and noted that though the site is in a conservation area, the site contains no buildings and observed that:

"The proposed building at 84 Brook St takes a traditional form and scale. The buildings will be glimpsed from Sowerby Street and will be seen as the background to several houses that are contributory in the conservation area. The building materials palette is appropriate in the heritage context.

If the site setbacks are compliant, then I would have no heritage objection to the building."

External Referrals

DPE- Water

The application was referred to DPE Water as the development requires a controlled activity approval under Section 91 of the *Water Management Act 2000 No 92*. The Water Authority reviewed the application and provided General Terms of Approval should the application be approved (Attachment F). These have been included in the recommended conditions of consent.

6. ASSESSMENT - Section 4.15 Matters for Consideration

This report provides an assessment of the material presented in the Application against the relevant State and local planning legislation and policy.

Section 4.15(1)(a)(i) The provisions of any Environmental Planning Instrument (EPI)

A. Muswellbrook Local Environmental Plan 2009 (MLEP 2009)

Relevant Clauses applicable under the Muswellbrook Local Environmental Plan 2009 are:

Part 2 Permitted or prohibited development

Land use Zone	R1 General Residential
Proposed Use	Centre-based Child care facility
Permissibility	Permitted with Consent

Zone Objective	Complies with Objective
----------------	-------------------------

The objectives under the R1 General Residential Zone are below. The relevant objectives are highlighted:

- 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 enable sensitive infill development of other housing types.
- To allow people to carry out a reasonable range of activities from their homes, where such activities do not adversely affect the living environment of neighbours.
- To promote the principles of ecological sustainable development including energy and water efficient subdivision and housing design.
- To minimise the impact of non-residential uses and ensure these are in character and compatible with surrounding development.
- To ensure that development is carried out in a way that is compatible with the flood risk of the area.

The assessment of the proposed development indicate that it would meet the relevant objectives under the R1 General Residential Zone.

Part 4 Principal Development Standards

Relevant Clause	Control	Proposed	Compliance
4.1 Minimum subdivision lot size	600m ²	-	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
4.3 Height of buildings	8.5m	8.5m	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
4.4 Floor space ratio	0.5	0.22	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
4.6 Exception to Development Standards			<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
Other			<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA

Part 5 Miscellaneous Provisions

Relevant Clause	Compliance
5.4 Controls relating to miscellaneous uses	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
5.8 Conversion of fire alarms	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
5.10 Heritage Conservation	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA – Discussed under Heritage Advisor Comments
5.18 Intensive livestock agriculture	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
5.21 Flood planning	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA – Discussed under DCP section.
Other	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA

Part 7 Additional Local Provisions

Relevant Clause	Compliance
7.1 Terrestrial Biodiversity	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
7.3 Rural Workers Dwelling	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
7.4 Subdivision services	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
7.5 Dwellings in Rural or Conservation Zones	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
7.6 Earthworks	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Other	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA

B. State Environmental Planning Policies Relevant to Muswellbrook Shire

SEPP (Biodiversity and Conservation) 2021
Satisfactory: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Chapter 2 Vegetation in non-rural areas
This chapter aims to protect the biodiversity values of trees and other vegetation in non-rural areas of the State, and to preserve the amenity of non-rural areas of the State through the preservation of trees and other vegetation by outlining the types of clearing permitted with or without consent and relevant provisions for the same.
The proposal does not involve the clearing of any native vegetation and therefore this section of the SEPP does not need to be considered further.
Chapter 3 Koala habitat protection 2020
This Chapter applies in the Muswellbrook Shire Council local government area. This environmental planning instrument encourages the conservation and management of natural vegetation areas that provide habitat for koalas.
Under Schedule 2 of this SEPP, the Central Coast Koala Management Plan is applicable within the Muswellbrook Shire Council. This Chapter applies to land in the following land use zones:
<ul style="list-style-type: none"> (a) Zone RU1 Primary Production, (b) Zone RU2 Rural Landscape, (c) Zone RU3 Forestry.
The proposed development is located on land zoned R1 General Residential. As the proposed development is not located within the above zones, this chapter does not apply.
Chapter 4 Koala habitat protection 2021
This Chapter of the SEPP does not apply to Muswellbrook Shire Council.
The Chapters 5 to 13 are not applicable within the Muswellbrook Shire LGA.
SEPP (Building Sustainability Index: BASIX) 2004
Satisfactory: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
The proposed development is not defined as BASIX Affected Development.
SEPP (Housing) 2021
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
The proposal does not involve any affordable or diverse housing as defined under this SEPP and therefore does not need to be considered further.
SEPP (Industry and Employment) 2021
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
Chapter 2 Western Sydney employment area
Not Applicable
Chapter 3 Advertising and signage
The proposal does not involve any signage and therefore, this chapter under the SEPP does not

need to be considered further.
SEPP No 65—Design Quality of Residential Apartment Development
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
The proposal does not involve any residential apartment development and therefore, this chapter under the SEPP does not need to be considered further.
SEPP (Planning Systems) 2021
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
Chapter 2 State and regional development
The proposed development is not classified as State or regional development under this SEPP.
Chapter 3 Aboriginal land
The proposed development is not identified on the Aboriginal Land Application Map and therefore this section of the SEPP does not need to be considered further.
SEPP (Primary Production) 2021
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
The proposal does not involve any Primary Production use as defined under this SEPP and therefore does not need to be considered further.
SEPP (Resilience and Hazards (2021)
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
Chapter 2 Coastal Management
The proposed development is not located in a coastal zone and therefore this section of the SEPP is not applicable.
Chapter 3 Hazardous and offensive development
The proposal does not involve any hazardous or offensive development and will not be impacted by any such nearby development and therefore this section of the SEPP does not need to be considered further.
Chapter 4 Remediation of Land
This chapter under the SEPP requires that a consent authority must not consent to the carrying out of any development on land unless:
<ul style="list-style-type: none"> (a) <i>It has considered whether the land is contaminated, and</i> (b) <i>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</i> (c) <i>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.</i>
A review of Council records related to the site do not identify any previous approvals for activities likely to result in the contamination of the site. No visible signs of any contamination or potentially

contaminating materials were identified by Council Officers inspecting the site subject to this application.

A Preliminary Site Investigation has been prepared by GEC Geotechnical related to the site. The conclusion of this investigation suggests the site is unlikely to be subject to any contamination limiting the carrying out of the development and that no previous potentially contaminating land uses were identified in relation to the site.

The Education and Care Services National Regulation 2011 (Section 25) requires a soil assessment to be prepared under that legislation for the registration of a premises as a care service premises with the NSW State Government. The process of obtaining this approval is an added safeguard.

Having regard to the above Council Officers are satisfied that the site proposed for development is unlikely to be subject to any contamination requiring remediation under the SEPP.

SEPP (Resources and Energy) 2021

Satisfactory: ☐ Yes ☐ No ☒ NA

Chapter 2 Mining, petroleum production and extractive industries

The proposal does not involve any development outlined under this SEPP.

Chapter 3 Extractive industries in Sydney area

Not within applicable area.

SEPP (Transport and Infrastructure) 2021

Satisfactory: ☐ Yes ☐ No ☒ NA

Chapter 2 Infrastructure

The proposed development application does not involve any such development as outlined under part 2.3 of this SEPP and therefore does not need to be considered further.

Chapter 3 Educational establishments and child care facilities

The aim of this Chapter is to facilitate the effective delivery of educational establishments and early education and care facilities across the State.

This section has been assessed in detail in the Attachment B at the end of this Report and found that the development complies with the requirements of the SEPP (Infrastructure).

Chapter 4 Major infrastructure corridors

The proposal does not involve any development on the land to which this SEPP applies and therefore does not need to be considered further.

Chapter 5 Three ports—Port Botany, Port Kembla and Port of Newcastle

Not within applicable area.

Chapter 6 Moorebank Freight Intermodal Precinct

Not within applicable area.

Section 4.15(1)(a)(ii) the provisions of any draft EPI.

There are no draft EPIs relevant to the subject Application.

Section 4.15(1)(a)(iii) the provisions of any development control plan

Muswellbrook DCP 2009

Section 3 Site Analysis	
Satisfactory: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	
A site and other relevant documentation has been provided with the application.	
Section 5 Subdivision	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	
The proposal does not involve subdivision works.	
Section 6 Residential Development	
Satisfactory: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	
6.1 Built Form	
6.1.1 Context	A Site Plan has been provided in accordance with Section 3 of this DCP.
6.1.2 Front Setbacks	Control = 4.5m Proposed setback = 47.2m Complies
6.1.3 Side and Rear Setbacks	The wall height at its maximum is approximately 4.75m which would create a total setback requirement of $0.9 + (0.3m \times 1.75) = 1.425m$ The applicant has provided a setback of 1.5m from each boundary. Complies
6.1.4 Building Height and Scale	The proposed buildings will be an appropriate height and scale to the existing buildings in the locality. Complies
6.1.5 Front Fencing and Retaining Walls	No front fencing is proposed. The development proposes a maximum of 1.8m cut and retaining walls as shown below. The DCP control for retaining walls below ground is 1.5m and therefore the proposed development does not comply with the DCP requirement. The Assessing Officer notes that the development has been designed to minimise cut and fill wherever possible, however, due to the scale of the development and the preference for flat spaces for the safety of children in the childcare centre, a minor variation to the DCP standards is acceptable for the type of development proposed. The Assessing Officer supports the variation to the development standard if the retaining walls are constructed and maintained to an acceptable standard at all times. Council's retaining wall Policy applies to the development. The retaining wall policy requires suitable easements for support to be registered on land within 1m of any retaining wall located within 1m of a property Boundary. The intention of this policy is to allow access to the land benefited by the retaining wall for the

	<p>purposes of maintaining the retaining wall.</p> <p>In this case, the land benefitted by the retaining wall is the proposed site - a condition is recommended requiring maintenance of the retaining wall to comply with the objective of the retaining walls policy.</p>
6.1.6 Garages, Carports and Sheds	<p>The architectural plans provided show two storage areas on the Western boundary of the site. Council's Assessing Officer requested further information in relation to this Store area. The applicant responded to the RFI stating that the proposed Store area is an external storage space for the child care centre once it is in operation.</p> <p>The structure would be in the form of an outdoor shed which will provide the necessary security and weather protection.</p> <p>There is no information provided on the setbacks or dimensions of the shed. A condition is recommended stating that any sheds or outdoor structures are to be built in accordance with the Exempt Code SEPP.</p>
6.1.7 Dwelling Entry	No dwellings proposed.
6.1.8 Accessibility and Adaptability	<p>The proposal does not involve any multi dwelling houses, however, an access report has been provided by the applicant showing compliance with the AS Access requirements.</p> <p>Complies</p>
6.1.9 Reflective Materials	Managed by Standard Condition
6.2 Urban Landscape	
6.2.1 Usable Open Space	<p>No multi dwelling housing or residential flat buildings proposed.</p> <p>Useable open space provided as required in the Childcare Guideline.</p>
6.2.2 Carparking	<p>Discussed under Section 16 of DCP.</p> <p>Complies</p>
6.2.3 Landscaped Area	<p>Satisfactory Landscaping plan provided.</p> <p>Complies</p>
6.2.4 Landscaping	<p>Satisfactory Landscaping plan provided.</p> <p>Complies</p>
6.2.5 Dual Occupancy Housing, Multi Dwelling Housing and Secondary Dwellings	Not applicable
6.3 Environmental	
6.3.1 Topography	<p>DCP Max cut = 1.5m DCP Max fill = 1m</p> <p>Proposed Max. cut = 1.820m Proposed Max fill = 1.535m</p> <p>Does not Comply</p> <p>The subject site is a relatively sloped block. The development has been designed to minimise cut and fill wherever possible by:</p> <ul style="list-style-type: none"> ➤ reducing the building footprint ➤ raising the car parking above ground. ➤ Proposing a split-level construction <p>The proposed fill will be retained within the building envelope via a drop edge beam and therefore will not require a batter. The stormwater impacts due to the development have been considered. The assessing Officer recommends supporting a</p>

	variation to the development standard under the condition that all retaining structures are always maintained. The proposed development would be compatible with related DCP objectives. Complies with related DCP objectives
6.3.2 Solar Access	A shadow diagram has been prepared by the application showing compliance with the Solar access requirements under the DCP. Complies
6.3.3 Visual Privacy	The proposed development has been designed to ensure that privacy for the adjoining buildings will be maintained. Discussed further in SEE provided by applicant and assessed by Assessing Officer to be consistent. Complies
6.3.4 Acoustic Privacy	An acoustic report has been provided by the applicant and adequate treatments have been proposed to maximise acoustic privacy for adjoining properties. Complies
6.4 Site Operation	
6.4.1 Energy Conservation	Not BASIX affected development.
6.4.2 Stormwater Management	The applicant has provided a detailed stormwater management plan that shows that: <ul style="list-style-type: none"> ➤ The proposed car park will be raised above ground on piers. These piers will be located to not have a significant impact on the flow path of the existing waterway drainage pattern. ➤ All the stormwater created by the impermeable surfaces will be directed to stormwater pits located throughout the site and finally redirected to the Council Stormwater drainage infrastructure on the street. Council's Stormwater Engineer reviewed the plans and provided several recommendations that have been included as conditions of consent (see Roads and Drainage Comments).
6.4.3 Security, Site Facilities and Services	The section of the DCP refers to residential accommodation and therefore is not relevant to childcare facilities. The development has been designed in accordance with the Childcare Guideline which covers the requirements for childcare centres. Complies
Section 7 Village Zones	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	
Section 8 Rural and Environmental Zones	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	
Section 10 – Industrial Development	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	
Section 11 – Extractive industry	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	
Section 12 – tourist facilities and accommodation	
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	
Section 13 – Flood Prone Land	
Satisfactory: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	
The subject site is located adjacent to and over an existing gully named "Possum Gully". Council's Roads and Drainage section noted that a drainage study was carried out for Possum Gully in 2015.	

The applicant has provided a flood impact assessment and designed for flood mitigation. Council's Roads and drainage engineer reviewed the documents and provided several recommendations that have been included as conditions of consent (see Roads and Drainage Comments).

Section 14 Outdoor Signage
Satisfactory: ☐ Yes ☐ No ☒ NA

No signage is proposed as part of this application. The Assessing Officer has included a condition of consent requiring a separate DA to be lodged if any non-exempt signs are to be installed.

Section 15 Heritage Conservation
Satisfactory: ☒ Yes ☐ No ☐ NA

Discussed under Heritage Advisor comments.

Section 16 Car Parking and Access
Satisfactory: ☐ Yes ☐ No ☐ NA

Requirement = 1 space per employee, PLUS 1 space per 15 children enrolled (if provision of 3 set down/pick up areas) or 1 per 10 children.

Land Use	Scale	Rate	Spaces Required	Spaces Provided
Childcare	90 Children	1s/10child.	9	9
Centre	16 Staff	1s/staff	16	16
Total	-	-	25	25

25 Car parking spaces have been provided. **Complies.**

The proposed development provides on-site parking for two (2) designated vehicle spaces, one (1) for disabled access, and one (1) for emergency use, which fully complies with Section 18.2.1 (i) of the Muswellbrook DCP 2009.

Section 17 – sex services and restricted premises
Satisfactory: ☐ Yes ☐ No ☒ NA

Section 18 – Child Care Centres
Satisfactory: ☒ Yes ☐ No ☐ NA

Council's Assessing Officer is satisfied that the development complies with this section under the DCP.

Section 19 – Use of Public Footpaths
Satisfactory: ☐ Yes ☐ No ☒ NA

Section 20 – Erosion and Sediment Control
Satisfactory: ☒ Yes ☐ No ☐ NA

The relevant objective of this section states:

‘to demonstrate through the preparation of an Erosion and Sediment Control Plan or Strategy for developments over 250m² of disturbance that appropriate controls are planned to be installed’.

The total floor area of the proposed development is greater than 250m² and therefore requires an Erosion and Sediment Control Plan. Council Officers have included a condition of consent requiring an Erosion and Sediment control plan prior to the Issue of the Construction Certificate.

Section 21 – Contaminated land
Satisfactory: ☒ Yes ☐ No ☐ NA

Discussed Earlier in the report
Section 22 – Land use Buffers
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
Section 23 – On-Site Sewage Management
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable
The subject site is serviced by a reticulated service.
Section 24 – Waste Minimisation and Management Systems
Satisfactory: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
A waste management plan has been submitted and assessed as adequate. A condition of consent is recommended to ensure that the proposed works are carried out in accordance with the Waste Management Plan.
Recycling bins and general waste bins will be located on the ground floor and a document shredder bin located in the office area.
Section 25 – Stormwater Management
Satisfactory: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
Discussed earlier in this report.
Section 26 – Site Specific Controls
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable
Section 27 – West Denman Urban Release Area
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable
Section 28 – Muswellbrook Showground
Satisfactory: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable

Section 4.15(1)(a) (iiia) the provisions of any planning agreement

There are no planning agreements relevant to the subject Application.

Section 4.15(1)(a)(iv) the provisions of the regulations

Division 8A of the Environmental Planning and Assessment Regulation 2000 applies to the development.

Development Contributions

The cost of works for the proposed development is \$1,975,000.00. A developer contribution of \$19,750 will apply to the proposed development should the Application be approved.

Section 4.15(1)(a)(v) the provisions of any coastal zone management plan

Not applicable - The Application does not relate to a coastal area.

Section 4.15(1)(b) the likely impacts of that development

Context and Setting

The proposed development has been designed to be consistent with buildings in the surrounding area i.e. single storey-built form that is consistent with the existing low density residential character within the subject area.

Adequate landscaping has been provided to further soften the visual impact due to the development and increase privacy between the proposed development and adjoining buildings.

Potential Impact on Adjacent Properties

The potential impacts to adjoining properties due to the proposed childcare centre include traffic, noise, privacy, and visual impact. These impacts have been addressed throughout this report. Specific concerns that were raised during the exhibition period are discussed later in this report.

Public Domain

Council's CI officers have reviewed the application and recommended changes to the existing footpath to meet current standards.

A replacement to the kerb and gutter has also been requested, as well as a landscaping plan providing street trees in front of the site.

Utilities

The site is serviced by town water, sewer and electricity.

Heritage

The subject site is located within the Muswellbrook Residential Heritage Conservation Zone. The Applicant has provided a Heritage Impact Statement, and the application was referred to Council's Heritage Advisor for comment. Council Officers are satisfied that the proposed development complies with the Heritage requirements under the Muswellbrook DCP.

Flora and Fauna

The development unlikely to have a significant negative impact on flora and fauna due to its urban setting.

Waste

A waste management plan has been prepared outlining the measures proposed to minimise waste during demolition, construction and ongoing management. A bin store room has been provided to locate the Council bins for the waste created on the site.

Safety, Security & Crime Prevention

The development proposes a design that will optimise safety for children. Fencing and gates designed to comply with relevant requirements under the Australian Standards and Roads and Maritime Services Traffic Management Guidelines.

The proposal incorporates built elements, fencing and landscaping that clearly distinguishes between the public and private domain.

The proposed development incorporates an active façade that will permit casual surveillance to the common areas within the development site. The proposed facility has been designed with temperature control to avoid extremes in temperature.

Social and Economic Impact on the Locality

The approval of a childcare centre is expected to provide positive social and economic benefits to the locality.

Socially, it offers support to working parents, providing reliable childcare services and enabling greater workforce participation. This contributes to economic growth by increasing labour force engagement and productivity.

Economically, it creates job opportunities, both directly through staffing the centre and indirectly by supporting local suppliers and service providers. Moreover, having childcare services nearby enhances the appeal of the locality, potentially boosting property values and attracting new residents and businesses.

Section 4.15(1)(c) the suitability of the site for the development

Urban Context

The proposed development is compatible with surrounding land uses and site characteristics, subject to consent conditions.

Riparian Zone

Council adopted the Rivers and Drainage Channels Policy in June 2020.

Muswellbrook Shire Council is committed to ensuring the responsible and orderly management of rivers and urban drainage systems throughout the Shire and so enhance and improve them with respect to:

- a) natural environmental values;
- b) aquatic fauna habitat;
- c) water quality or availability;
- d) drainage and flood risk management;
- e) maintainability;
- f) accessibility; and
- g) visual amenity.

The Policy recommends a vegetated riparian zone (VRZ) 3m either side of an urban drainage system in a residential or business zone. Where development is unavoidable within the VRZ, it must be demonstrated that potential impacts on water quality, aquatic habitat, and riparian vegetation will be negligible and can be managed effectively.

Comment

The proposed development will cover Possum Gully and its floodway with an elevated car parking area and access driveways, making planting with riparian vegetation impractical. This means the treatment of the gully/watercourse will be critical to avoid erosion and accumulation of litter and/or rotting vegetation. Conditions of consent are proposed addressing these issues.

The variation from the Policy is supported in this instance as the Gully becomes a fully enclosed drainage system approx. 40m west of the site (at Sowerby St) for a considerable distance to the west of the Great Northern Railway line. An At grade car parking area would:

- Be flood prone in a 1% AEP flood, placing staff, parents and child at risk in the rare event of a flood; and
- Would result in a reduction in proposed parking by approx. 6 parking spaces.

Wherever possible easements for access and drainage must be created to the benefit of Council over an urban drainage system.

Comment

A condition of consent is recommended to require an easement over Possum Gully

and the adjoining floodway and is intended to give Council rights to drain water, install or maintain infrastructure, or intervene in land management matters that potentially impact on the health of the waterway. The easement is not intended to imply that Council will maintain the gully or private infrastructure, such as the proposed piers/pilings supporting the overhead carpark.

.Section 4.15(1)(d) any submissions made

The Application was notified to adjoining owners from 2/08/2023 – 23/08/2023. A notice was also placed on Council's website and Facebook page at the commencement of the notification period.

Council Officers have considered the matters raised in the submissions below and consider that the proposal may be approved subject to conditions.

Concern raised in submission	Planning Comment
Not viable due to staffing crisis in the sector	The proposed development has been assessed against the relevant assessment criteria under Section 4.15 of the Environmental Planning and Assessment Act 1979. Availability of staff is not a relevant consideration.
Concern regarding, drainage, stormwater and debris from possum gully on to adjoining properties	Conditions of consent have been imposed to ensure that the integrity of Possum Gully is not impacted. Suitable protection, reshaping and revegetation will be implemented to prevent erosion, embankment failure and impact to adjoining properties.
Management of Weeds and vegetation, request for easement in gully	A condition of consent will be imposed to ensure that the section of Possum Gully within the site is maintained at all times.
Out of character in locality	The proposed development has been assessed with regard to the character of the locality throughout this report. The Heritage Impact Statement prepared for the development notes that the design of the built form incorporates aspects generally found in this area including the use of face brick on the external walls, sheet metal for the hipped roof, double-hung sash windows and abundance of landscape at the front of the site as well as the northern and southern boundaries of the site to ensure compliance with councils' requirement. The points raised in the submission have been considered and the development has been found to be within acceptable standards and built to be sympathetic to the existing character of the locality.
Traffic congestion and lack of car parking	Adequate car parking has been provided in accordance with the requirements under the Muswellbrook DCP. The proposed development is unlikely to adversely impact the road network. The findings of the Traffic Impact Assessment were referred to and reviewed by Council's engineers and several conditions of consent

	have been imposed to minimise traffic congestion.
Overshadowing/Overlooking/Loss of Vegetation and loss of Privacy Visual Bulk of the Building	<p>A shadow diagram has been provided for the development and indicates that overshadowing is minimised.</p> <p><u>Considering only the built structure:</u></p> <p>The section of the proposed building that will be facing the adjoining property will:</p> <ul style="list-style-type: none"> ➤ be raised approximately 0.5m to 0.8m above the ground, which is within Council's DCP requirements ➤ The wall height of the building will be 3m, which is a standard residential height. ➤ Has a standard roof height that would be used for residential dwellings. ➤ Complies with the setback for residential dwellings ➤ Does not contain any windows. ➤ The section to the rear of the building will be cut into the natural ground level and be lower than if the building was built at ground level. ➤ A landscaping plan has been provided and found to be adequate in managing the visual bulk and further reducing privacy impacts on the site. <p><u>Considering the use of the structure as a childcare facility:</u></p> <ul style="list-style-type: none"> ➤ The development complies with the state legislation [SEPP (Infrastructure) 2021]. ➤ There are no windows on the Eastern side of the building to minimise privacy impacts. ➤ Outdoor play spaces have been located to the rear of the site, away from any dwellings. ➤ The outdoor area is lower than natural ground level, reducing overlooking potential. ➤ Landscaping has been provided to screen the property from adjoining dwellings. ➤ A new 1.8m Colourbond fences will be erected along the side property boundaries. ➤ The parking area has been located away from any existing residential buildings.
Increase of Noise	<p>The Acoustic Report concluded that the proposed development would be compliant with Councils acoustic requirements.</p> <p>The mitigation methods include limiting hours of construction activity via conditions. The construction activity would be like construction of a dwelling.</p>
Air quality (dust)	<p>A child care centre is not expected to create a significant dust issue – high dust levels would be unsafe for children.</p> <p>Standard conditions will be imposed to minimise impact</p>

	to air quality during construction works.
Light spill	<p>The facility will operate between 7am to 6pm Monday – Friday (excluding public holidays).</p> <p>There is no signage or illuminated structures that would be inconsistent with the locality proposed.</p> <p>Due to the above factors, the development is unlikely to create any significant light nuisance. Security lighting should be motion activated to minimise light spill – this is proposed as a condition of consent.</p>


Section 4.15(1)(e) the public interest.

It is considered that the proposal is in the public interest.

7. CONCLUSION

The proposed development has been assessed against the relevant heads of consideration of Section 4.15 of the Environmental Planning and Assessment Act 1979. As outlined above it is considered that the proposed development meets relevant planning provisions.

Accordingly, it is recommended the application be approved subject to conditions of consent.

Signed by:	
	
Tanya Alsleben	
Development Planner	
Date: 1303/2024	

**Attachment A - Assessment of Chapter 3 State Environmental Planning Policy
(Transport and Infrastructure) 2021**

Part 3.2 General	
Division 1 Consultation and Notification	
3.8 Consultation with councils—development with impacts on council-related infrastructure or services	Development not carried out on behalf of public authority Not applicable.
3.9 Consultation with councils—development with impacts on local heritage	Development not carried out on behalf of public authority. Not applicable.
3.10 Notification of councils and State Emergency Service—development on flood liable land	Council is the determining Authority.
3.11 Consideration of Planning for Bush Fire Protection	The site has not been identified as Bushfire Prone Land.
3.12 Consultation with public authorities other than councils	Development not carried out on behalf of public authority – not applicable.
3.13 Exceptions	Noted.
Division 2 Site compatibility certificates	
	Noted.
Division 3 Additional uses of State land	
	Noted, the land is not owned by the State.
Division 4 Exempt development	
	The development is not identified as exempt development.
Division 5 Complying development	
	The development is not identified as complying development.
Part 3.3 Early education and care facilities—specific development controls	
3.22 Centre-based child care facility—concurrence of Regulatory Authority required for certain development	The proposed development meets the requirements under Section 107 and 108 of the Education and Care Services National Regulations Complies
3.23 Centre-based child care facility—matters for consideration by consent authorities	Assessed in this report. Complies
3.24 Centre-based child care facility in certain zones—additional matters for consideration by consent authorities The consent authority must consider the following matters before determining a development application for development for the purpose of a centre-based child care facility on land in a prescribed zone— (a) whether the proposed development is compatible with neighbouring land uses, including its proximity to restricted premises, sex services premises or hazardous land uses,	<p>a) the proposed development is located adjoining residential buildings in all directions, a medical centre the West and Educational establishment to the North.</p> <p>b) No industrial land uses in the vicinity</p> <p>c) The proposed development is unlikely to have any health or safety risk to children, visitors or staff due to the location of the development.</p> <p>Complies</p>

(b) whether the proposed development has the potential to restrict the operation of existing industrial land uses,	
(c) whether the location of the proposed development will pose a health or safety risk to children, visitors or staff.	
3.25 Centre-based child care facility—floor space ratio	<p>The development site is subject to a maximum FSR of 0.5:1 under the Muswellbrook Local Environmental Plan 2009 Floor Space Ratio Map.</p> <p>The proposal proposes an FSR of 0.22:1.</p> <p>Complies</p>
3.26 Centre-based child care facility—non-discretionary development standards	<p>Noted.</p> <p>Complies</p>
3.27 Centre-based child care facility—development control plans	Noted
3.28 Mobile child care—exempt development	Noted. No mobile child care centre proposed.
3.29 Temporary emergency relocation of early education and child care facility—exempt development	Not relevant
3.30 Home-based child care—exempt development	Not relevant
3.31 Home-based child care—complying development	Not relevant
3.32 Out-of-school hours care at existing universities—complying development	Not relevant
3.33 Out-of-school hours care at existing TAFE establishments—complying development	Not relevant

Attachment B - Assessment against Childcare Planning guideline

Council Officers have reviewed the application and found that the childcare guideline has generally been well considered by the applicant in the provided Statement of Environmental Effects.

Design Quality Principles	
Principle 1 - Context	Complies with guideline.
Principle 2 - Built form	Complies with guideline.
Principle 3 - Adaptive learning spaces	Complies with guideline.
Principle 4 - Sustainability	Complies with guideline.
Principle 5 - Landscape	Complies with guideline.
Principle 6 - Amenity	Complies with guideline.
Principle 7 - Safety	Complies with guideline.
Matters for consideration	
3.1 Site selection and location	
Objective: To ensure that appropriate zone considerations are assessed when selecting a site.	<p>An Acoustic Report has been provided and the noise minimisation measures proposed have been found to be satisfactory.</p> <p>The setbacks proposed are compliant with the requirements of the Muswellbrook DCP.</p> <p>The building has been designed with adequate articulation and landscaping to minimise the visual amenity impacts caused by the building.</p> <p>A traffic Impact Assessment has also been provided as assessed by Council's Assessing Officer and Roads and drainage team and found to be satisfactory.</p> <p>Complies</p>
Objective: To ensure that the site selected for a proposed child care facility is suitable for the use.	<p>Complies with objective</p> <p>A contamination report and soil sampling have been done on the site to confirm that is free from contamination.</p> <p>A flood Impact Assessment and Flood Mitigation design has been prepared to minimise any flood impacts on the site as well and found to be satisfactory.</p>
Objective: To ensure that sites for child care facilities are appropriately located.	Complies with objective.
Objective: To ensure that sites for child care facilities do not incur risks from environmental, health or safety hazards	Complies with objective.
3.2 Local character, streetscape and the public domain interface	
Objective: To ensure that the child care facility is compatible with the local character and surrounding streetscape.	Complies with objective.
Objective: To ensure clear delineation between the child care facility and public space	Complies with objective.
Objective: To ensure that front fences and retaining walls respond to and	Complies with objective.

complement the context and character of the area and do not dominate the public domain.	
3.3 Building orientation, envelope, building design and accessibility	
Objective: To respond to the streetscape and site, mitigate impacts on neighbours, while optimising solar access and opportunities for shade	Complies with objective.
Objective: To ensure that the scale of the child care facility is compatible with adjoining development and the impact on adjoining buildings is minimised.	Complies with objective.
Objective: To ensure that setbacks from the boundary of a child care facility are consistent with the predominant development within the immediate context.	Complies with objective.
Objective: To ensure that buildings are designed to create safe environments for all users.	Complies with objective.
Objective: To ensure that child care facilities are designed to be accessible by all potential users.	Complies with objective. Access Report provided by applicant is satisfactory.
3.4 Landscaping	
Objective: To provide landscape design that contributes to the streetscape and amenity	<p>Council's Assessing Officer has reviewed the landscape plan provided and note:</p> <ul style="list-style-type: none"> ➤ Mainly low maintenance Australian native plants are proposed for general landscaping ➤ Fruiting citrus and stone fruit have been proposed in the "active" areas such as the children's outdoor play areas. <p>The Officer recommend including a note to clarify that the pruning of any significant overhanging caused by the trees once they mature remains is the responsibility of the person benefiting from the consent for the child care centre.</p>
3.5 Visual and acoustic privacy	
Objective: To protect the privacy and security of children attending the facility.	Complies with objective
Objective: To minimise impacts on privacy of adjoining properties	Complies with objective
Objective: To minimise the impact of child care facilities on the acoustic privacy of neighbouring residential developments.	Complies with objective
3.6 Noise and air pollution	
Objective: To ensure that outside noise levels on the facility are minimised to acceptable levels	Complies with objective. Noise Impact Assessment provided and found to be satisfactory.
Objective: To ensure air quality is acceptable where child care facilities are proposed close to external sources of air pollution such as major roads and industrial development	Complies with objective.
3.7 Hours of operation	

Objective: To minimise the impact of the child care facility on the amenity of neighbouring residential developments.	The child care facility is to operate between 7am to 6pm Monday to Friday. Complies
3.8 Traffic, parking and pedestrian circulation	
Objective: To provide parking that satisfies the needs of users and the demand generated by the centre and to minimise conflicts between pedestrians and vehicles.	Complies with objective
Objective: To provide vehicle access from the street in a safe environment that does not disrupt traffic flows	Complies with objective
Objective: To provide a safe and connected environment for pedestrians both on and around the site	Complies with objective
4. Applying the National Regulations to development proposals	
4.1 Indoor space requirements	Min. unencumbered floor space requirement per child = 3.25 Floor space requirement for 20 spaces = 65m ² Floor space requirement for 30 spaces = 97.5m ² Complies.
4.2 Laundry and hygiene facilities	The facilities have been designed to comply with the regulation. The Assessing Officer recommends including a condition requiring that the facility must comply with this requirement at all times.
4.3 Toilet and hygiene facilities	As above.
4.4 Ventilation and natural light	Complies.
4.5 Administrative space	Adequate space for administrative tasks being conducted on site are proposed within the office, staff and meeting rooms.
4.6 Nappy change facilities	Complies.
4.7 Premises designed to facilitate supervision	The proposed layout ensure that hidden corners are avoided and that supervision views are maximised throughout the development.
4.8 Emergency and evacuation procedures	An Emergency and Evacuation Plan to be requested as part of the conditions of consent.
B. External physical environment	
4.9 Outdoor space requirements	The proposal provides 7.25m ² of unencumbered outdoor play space per child. The play space has been calculated in accordance with the Guideline. Exploration and leaning within the outdoor play area will be maximised with the use of facilities such as the outdoor play equipment.
4.10 Natural Environment	Complies
4.11 Shade	Appropriate natural and built shade structures has been incorporated into the design of the child care facility that will contribute towards protecting children from overexposure to ultraviolet radiation from the sun.
4.12 Fencing	Complies
4.13 Soil Assessment	The applicant has noted that this will be required to be provided at the licensing stage. The applicant has done a preliminary site

	investigation that did not identify any concerns on the site. A deferred commencement condition requiring soil sampling to be carried out on the site is recommended.
C. Best practice example	Noted
D. National Quality Framework Assessment Checklist	Condition of consent imposed to Comply with NQFA.

Recommended Conditions of Consent

IDENTIFICATION OF APPROVED PLANS

(1) Approved Plans and Supporting Documents

Development must be carried out in accordance with the following approved plans and supporting documentation (stamped by Council), except where the conditions of this consent expressly require otherwise.

Pln. No.	Rev. No.	Plan Title.	Drawn by.	Dated.
A000	A	Cover Page	Janssen Designs	20/07/2022
A001	A	Calculations Page/ LEP Maps	Janssen Designs	20/07/2022
A002	A	Site Context Plan	Janssen Designs	20/07/2022
A003	A	Site Analysis Plan	Janssen Designs	20/07/2022
A004	A	Site Plan	Janssen Designs	20/07/2022
A005	A	Ground Floor Plan A	Janssen Designs	20/07/2022
A006	A	Ground Floor Plan B	Janssen Designs	20/07/2022
A007	A	Roof Plan	Janssen Designs	20/07/2022
A008	A	Elevations	Janssen Designs	20/07/2022
A009	A	Sections	Janssen Designs	20/07/2022
A0010	A	Perspective Images	Janssen Designs	20/07/2022
A0011	A	Perspective Images	Janssen Designs	20/07/2022
A0012	A	Shadow Diagrams	Janssen Designs	20/07/2022
A0013	A	Shadow Diagram	Janssen Designs	20/07/2022
A0014	A	Covered Outdoor Area Diagram	Janssen Designs	20/07/2022
A0015	A	Emergency Evacuation Diagram	Janssen Designs	20/07/2022
A0016	A	Cut and Fill Diagram	Janssen Designs	20/07/2022
A0017	A	Kitchen Detail Plan	Janssen Designs	20/07/2022
A0018	A	Colour and Finishes Diagram	Janssen Designs	20/07/2022

Document Title.	Ver. No.	Prepared By.	Dated.
Acoustic Report	1	Building Services Engineers	01/12/2022
Arborist's Report	-	Hunter Horticultural Services	07/12/2022
Flood Mitigation Design	A	Capital Engineering Solutions	04/05/2023
Flood Impact Assessment Report	A	Capital Engineering Solutions	17/05/2023
Site Emergency Evacuation/ Response Plan	1	ING Consulting Engineers Pty Ltd	24/05/2023
Traffic Study	B	McLaren Traffic Engineering and Road Safety Consultants	29/06/2023
Operational Plan of Management	-	Janssen Designs	July 2023
Access Report	A	Vista Access Architects Pty	20/07/2022

		Ltd	
Landscape Plan	C	Outside Design Group	18/07/2023
Statement of Heritage Impact	D	Edwards Heritage Consultants Pty Ltd	17/07/2023
Statement of Environmental Effects	Final	Think Planners	19/07/2023
Erosion and Sediment Control Plan	B	ING Consulting Engineers Pty Ltd	28/10/2023
Site Analysis and DRAINS Modelling	B	ING Consulting Engineers Pty Ltd	28/10/2023
Stormwater Drainage Plan	B	ING Consulting Engineers Pty Ltd	28/10/2023
Ground Flood/Site Plan	B	ING Consulting Engineers Pty Ltd	28/10/2023
Ground Flood/Site Plan 2	B	ING Consulting Engineers Pty Ltd	28/10/2023
Water Sensitive Urban Design	B	ING Consulting Engineers Pty Ltd	28/10/2023
Notes and Details	B	ING Consulting Engineers Pty Ltd	28/10/2023
Notes and Details 2	B	ING Consulting Engineers Pty Ltd	28/10/2023
Preliminary Site Investigation Report	-	CEC Geotechnical Pty Ltd	06/03/2023

In the event of any inconsistency between the approved plans and the supporting documentation, the approved plans prevail. In the event of any inconsistency between the approved plans and a condition of this consent, the condition prevails.

Note: an inconsistency occurs between an approved plan and supporting documentation or between an approved plan and a condition when it is not possible to comply with both at the relevant time.

Reason: To ensure all parties are aware of the approved plans and supporting documentation that applies to the development

(2) General Terms of Approval

The development is to be carried out in accordance with the General Terms of Approval issued by the following approval bodies and referenced below:

Department of Planning and Environment – Water, General Terms of Approval Reference No IDAS-2023-10508, dated 7 September 2023.

These General Terms of Approval have been stamped with Council's Approval Stamp and form part of this Notice of Determination.

Reason: Prescribed under section 4.46 of the Environmental Planning and Assessment Act 1979.

OPERATIONAL CONDITIONS IMPOSED UNDER THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT AND REGULATIONS AND OTHER RELEVANT LEGISLATION

(3) Building Code of Australia

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

(4) Access to Premises Standard

The building shall comply with the requirements of the *Commonwealth Disability (Access to Premise Standard) 2010*.

ANCILLARY MATTERS TO BE COMPLETED PRIOR TO THE ISSUE OF THE CONSTRUCTION CERTIFICATE

(5) Construction Certificate Requirement

No works shall commence on-site until a Construction Certificate has been issued for either part or all of the works to be undertaken. If a Construction Certificate is issued for part of the approved works, it must relate to all works being undertaken.

Note: a construction certificate issued by an Accredited Certifying Authority must be provided to Council at least 48 hours prior to the commencement of any earthworks, engineering or building work on the site.

(6) Controlled Activity Permit

Prior to the issue of a Construction Certificate the person acting with this consent is to obtain a Controlled Activity Permit for the carrying out of work on waterfront land from the Department of Planning and Environment – Water.

A copy of the Controlled Activity Permit is to be submitted to the Certifying Authority with any Construction Certificate application.

(7) Landscape Plan

Prior to the issue of a Construction Certificate an updated landscape plan is to be submitted to Council for approval.

The updated landscaping plan is to redesign shrub/tree planting currently shown on the submitted landscape plan from within the Possum Gully drainage channel. Council will not permit the planting of vegetation within the channel that may disrupt the flow of water within the channel.

Documentary evidence is to be provided to the Certifying Authority confirming that this condition has been complied with. The updated approved landscape plan is to be complied with through the carrying out of the development.

(8) Section 68 Local Government Act Approval

Prior to the issue of a Construction Certificate, it shall be necessary for the applicant to obtain a Section 68 Local Government Act approval from Council for all stormwater work related to the development application.

Any Section 68 application is to be accompanied by:

- i) **Stormwater plan** A detailed stormwater management plan. The stormwater management plan is to be generally in accordance with the approved plan accompanying this application and the following:
 - a) Discharge locations for stormwater into possum gully should be located above the 1 year ARI event.
 - b) Stormwater management system is to include stormwater quality control devices in accordance with the provisions of Muswellbrook Development Control Plan.
 - c) Plan is to include information related to the operational maintenance of the stormwater management system.
- ii) **Channel Stabilisation Plan** – a suitably qualified civil engineer is to prepare a channel stabilisation and erosion and sediment control plan for Possum Gully and its embankment to be located below the car park. This plan shall have regard to:
 - a) The stability of the embankment and channel – it may be necessary for a geotechnical report to be prepared to inform this issue and the preparation of the plan.
 - b) The impact that erosion on the sub-carpark drainage channel and embankment
 - c) The loss of stabilising vegetation within the channel because of the development.
 - d) Impact of water flows and the velocity of water flows on the erosion of the channel below the car park.
 - e) Requirements of the Department of Planning and Environment – Water and any related controlled activity approval.

The plan should propose measures to control erosion and manage the accumulation of rubbish and vegetation washed down from higher in the catchment, in the area below the carpark. Measures put forward to manage the stabilisation of the channel should be in accordance with relevant Australian Standards and industry best practice and may comprise the lining of the channel and embankment areas with one or a combination geo-mesh, concrete or alternate non-eroding structure informed by related engineering advice.

Details demonstrating that this condition has been complied with and a related Section 68 permit obtained are to be provided to the Principle Certifying Authority. All stormwater works are to be installed in accordance with the Section 68 permit and approved stormwater management plan.

(9) Potential Flood Damage to Structures

An assessment, report and certification by a qualified practising Engineer stating that all structures have been designed to withstand the flood pressures, including debris and buoyancy forces, imposed in the event of a 1% AEP flood and that structures will not sustain unacceptable damage from the impact of floodwater and debris is to be submitted to the Certifying Authority for approval with the Construction Certificate.

(10) Electrical Fittings for flood affected development

Electrical and mechanical equipment is to be installed in accordance with the requirements of Section 13 of the Muswellbrook Development Control Plan 2009. Prior to the issue of a Construction Certificate documentary evidence is to be provided to the Certifying Authority to demonstrate the following:

- a) Main Power Supply - subject to approval of the relevant energy authority the incoming main commercial power service equipment, including all metering equipment, shall be located 500mm above the 1% AEP flood level. Main power supply shall be designed so that it can be easily disconnected from the development.
- b) Wiring - all wiring, power outlets, switches, etc. should, to the maximum extent possible, be located 500mm above the 1% AEP flood (the Flood Planning Level). All electrical wiring installed below the Flood Planning Level shall be designed for continuous submergence in water and should contain no fibrous components. Only submersible type splices should be used below the Flood Planning Level. All conduits located below the Flood Planning Level are to be installed in a manner that allows them to self-drain if subjected to flooding.
- c) Equipment - all equipment installed below or partially below the Flood Planning Level is to be capable of disconnection by a single plug and socket assembly.

(11) Traffic Regulatory Signage Plan

Prior to the issue of a Construction Certificate the person acting with this consent shall submit a Traffic Regulatory Signage Plan to Council for approval from Council's Community Infrastructure Roads and Drainage Division. The Traffic and Regulatory Signage Plan shall detail the following regulatory signage and traffic conditions:

- a) No stopping zone across the frontage of the site for Weekdays between 6:00am – 6:00pm
- b) Additional pedestrian crossing warning signs x 2

Documentary evidence demonstrating compliance with this requirement is to be provided to the Certifying Authority prior to the issue of a Construction Certificate. Relevant regulatory signage is to be installed as part of the carrying out of this development.

(12) Off-street Car Parking

A total of twenty-five (25) off-street car-parking spaces including one (1) car parking space for use by persons with a disability, together with access driveways, shall be constructed, paved, line marked and signposted in accordance with the approved development plans, appropriate Australian Standards and industry best practice as appropriate.

The plans shall also nominate the allocation of parking spaces for specific purposes as required by conditions of this consent. A certificate prepared and certified by an appropriately qualified and practising Civil Engineer for the construction of these areas in accordance with this requirement shall be submitted to the Certifying Authority for

approval with the Construction Certificate

(13) Protection of External Walls and Openings

Prior to the issue of the Construction Certificate, details are to be provided to the Principal Certifier demonstrating the external walls and openings exposed to the boundary are protected appropriately for the type of construction required, to maintain structural stability and avoid the spread of fire in accordance with C1P1, C1P2 and C1P8 of Volume 1 of the NCCS/BCA

(14) Notice of Requirements

A 'Notice of Requirements' under the Water Management Act 2000 must be obtained, prior to any Construction Certificate application, detailing water and sewer extensions to be built and charges to be paid by the applicant. Any charges identified in the 'Notice of Requirements' as requiring payment at construction certificate stage are to be paid prior to release of a Construction Certificate.

Any Notice of Requirements will require the payment of water and sewer headworks contributions prior to the issue of a Compliance Certificate. Water and sewer headworks contributions applicable under Council's current fees and charges for the development are specified the table below:

	ET/ Person	No of Person 90 Children + 16 Staff	Total ET	Entitled ET	Additional ET to be paid	Headworks Charges/ET	Total ET to be paid
Water	0.06	106	6.36 (=0.06x106)	1	5.36	\$8,839.50	\$47,379.72
Sewer	0.1	106	10.6 (=0.10x106)	1	9.6	\$6,862.80	\$65,882.88
Total Headworks Charges: \$113,262.60							

The contributions payable are subject to annual adjustments in accordance with Council's Fees and Charges and the Consumer Price Index. The contributions paid in relation to this approval shall be the contributions applicable under Council's Fees and Charges at the time of any application for a Compliance Certificate.

Details demonstrating compliance with any requirements for works by Muswellbrook Shire Council Water & Waste Department are to be provided with the Construction Certificate application.

The final compliance certificate must be submitted to the Certifying Authority prior to release of the Subdivision or Occupation Certificate.

(15) Waste Management Plan

An updated Waste Management Plan is to be submitted with the Construction Certificate with information relevant to Muswellbrook. The plans should include, but not be limited to:

- a) the estimated volume of waste and method of disposal for the construction and operation phases of the development,
- b) all landfill removed from the site,

- c) haulage routes,
- d) design of on-site wind proof waste storage and recycling area, and
- e) administrative arrangements for waste and recycling management during the construction process.

The Plan must clearly differentiate between Waste management during the demolition and construction phase and ongoing waste management pertaining to the use of the site.

(16) Section 7.12 Contributions

Pursuant to section 4.17(1) of the Environmental Planning and Assessment Act 1979, and the Muswellbrook Shire Council Section 94A Development Contributions Plan 2010, a contribution of \$19,750.00 shall be paid to Muswellbrook Shire Council.

The amount to be paid is to be adjusted at the time of the actual payment, in accordance with the provisions of the Muswellbrook Shire Council Section 94A Development Contributions Plan 2010. The contribution is to be paid prior to the issue of the Construction Certificate.

(17) Fit-out to be in accordance with relevant legislation and standards

Prior to the issue of a Construction Certificate the applicant shall submit detailed design plans to the Principle Certifying Authority demonstrating that the fit out of the food handling areas would comply with the requirements of Food Act 2003, Food Regulation 2015 and Australian Standards relevant design construction and fit out of food premises (AS4674)

(18) Liquid Trade Waste Agreement

Unless otherwise agreed to by Council in writing prior to the issue of a Construction Certificate, an application for a Section 68 Approval for Sewage Works and a Commercial Liquid Trade Waste application is to be completed, signed by the property owner and submitted to Council for approval along with relevant documentation, including hydraulic plans, relating to the construction of the required liquid trade waste infrastructure at the site.

Documentary evidence is to be provided to the Principle Certifying Authority confirming that a Liquid Trade Waste application has been lodged with Council prior to the issue of a Construction Certificate.

CONDITIONS THAT MUST BE ADDRESSED PRIOR TO COMMENCEMENT

(19) Stabilised access

Unless a suitable existing site access is utilised, stabilised site access consisting of at least 200mm of aggregate at 30–60mm in size and a minimum of 3m in width must be provided from the road edge to the front of the building being constructed prior to the commencement of work. The stabilised access must be fully maintained and removed from the site when a permanent driveway has been constructed.

(20) Site Facilities

- (a) If the development involves building work or demolition work, the work site must be fully enclosed by a temporary security fence (or hoarding) before work commences.
- (b) A minimum width of 1.2m must be provided between the work site and the edge of the roadway to facilitate the safe movement of pedestrians.
- (c) Any such hoarding or fence is to be removed when the work has been completed.
- (d) A garbage receptacle fitted with a tight-fitting lid is to be provided for disposal of all food scraps and papers from the work site prior to building work commencing, and must be maintained and serviced for the duration of the work.
- (e) Toilet facilities must be provided on the work site at the rate of one toilet for every 20 persons or part of 20 persons employed at the work site.
- (f) Each toilet provided must:
 - be a standard flushing toilet, connected to a public sewer, or
 - if connection to a public sewer is not available, to an on-site effluent disposal system approved by the council, or
 - an approved temporary chemical closet.
- (g) The provision of toilet facilities must be completed before any other work is commenced.
- (h) A person having the benefit of this certificate who causes an excavation that extends below the level of the base of the footings of a building on an adjoining allotment of land must at their own expense and where necessary:
 - protect and support the building from damage, and
 - If necessary, underpin and support the building in accordance with the details prepared by a professional engineer.
- (i) A person having the benefit of this certificate who causes the excavation must, at least 7 days before commencing this work, give notice of intention to do so to the owner of the adjoining allotment of land and provide particulars of the proposed work.
- (j) Erosion and sediment controls must be provided in accordance with the details shown on the approved plans, prior to the disturbance of any soil on the work site.

(21) Site Sign

A sign must be erected in a prominent position on any work site on which work involved in the erection or demolition of a building is being carried out:

- (a) stating that unauthorised entry to the work site is prohibited,
- (b) showing the name of the principal contractor (or person in charge of the work site), and a telephone number at which that person may be contacted at any time for business purposes and outside working hours, and
- (c) showing the name, address and telephone number of the Principal Certifying Authority for the work.

Any such sign must be maintained while building work or demolition work is being carried out but must be removed when the work has been completed.

This condition does not apply to building works being carried out inside an existing building.

(22) Water Meter

A water meter issued and installed by Muswellbrook Shire Council must be connected to the town's reticulated water supply prior to any commencement.

(23) Damage to Public Infrastructure

The applicant shall bear the cost of all restoration works to Council property damaged during construction of the development. The applicant shall submit to Council, in writing and/or photographic record, evidence of any existing damage to Council property before commencement of work.

Note: This documentation will be used to resolve any dispute over damage to infrastructure. If no documentation is received prior to commencement of work, it will be assumed that the infrastructure was undamaged, and the applicant will be required to restore all damaged infrastructure at their expense.

(24) Section 138 Approval

Prior to the commencement of any works on Council's Road Reserve, a permit for the work must be obtained from Council, under Section 138 of the Roads Act 1993.

CONDITIONS THAT MUST BE COMPLIED WITH DURING DEMOLITION AND BUILDING WORK

(25) Mandatory Inspections under Section 68 Local Government Act 1993

The person acting with this consent shall ensure that all mandatory sewer, water, and stormwater inspections are carried out by Council at the relevant stages of construction in accordance with any Section 68 approval issued for the development.

Note: a minimum notice of 48 hours is required when booking an inspection.
Inspection fees will be charged in accordance with Council's adopted fees and charges and must be paid prior to the issue of the Construction Certificate.

(26) Cost of Work on Council Property

The applicant shall bear the cost of all works associated with the development that occurs on Council's property.

(27) Construction Hours

- (a) Subject to this clause, building construction is to be carried out during the following hours:
 - i. between Monday to Friday (inclusive)—7.00am to 6.00pm
 - ii. on a Saturday—8.00am to 1.00pm
- (b) Building construction must not be carried out on a Sunday or a public holidays.
- (c) Demolition works and excavation works must only be carried out between Monday to Friday (inclusive) between 8.00am and 5.00pm.
- (d) The builder and excavator must display, on-site, their 24-hour contact telephone numbers, which are to be clearly visible and legible from any public place adjoining the site.

(28) Erosion and Sediment Controls

The approved Sediment & Erosion controls shall be reinstated daily prior to workers leaving the site where modified at any time. Any sediment that escapes from the allotment shall be cleaned, collected and disposed of to Council's waste management facility or the sediment shall be returned to the subject allotment on a daily basis.

CONDITIONS WHICH MUST BE COMPLIED WITH PRIOR TO THE ISSUE OF THE OCCUPATION CERTIFICATE

(29) Occupation

The building is not to be used or occupied until a final inspection has been carried out and an occupation certificate has been obtained from the Principal Certifying Authority.

(30) Boundary Fencing Installation

Prior to the issue of an Occupation Certificate boundary fencing is to be installed in accordance with the approved plans.

Boundary fencing, other than fencing adjoining Possum Gully, is to comprise a 1.8m colorbond fence at all locations identified by the approved plans and is to be installed at full cost to the person acting with this development consent.

(31) Fencing adjacent Possum Gully

Prior to the issue of an Occupation Certificate the person acting with this consent is to install safety fencing along the edge of the raised car park area where it adjoins any drop of more than 600mm to natural ground level and Possum Gully. The fencing is to be installed in accordance with the fencing panel detail included in the drawing titled FL010. All fencing installed with this requirement is to include the 300mm open panel to ensure this fencing does not interrupt any drainage flow.

(32) Final Compliance Certificate for Water Supply and Sewerage Works

The final compliance certificate for water supply works is to be obtained from Muswellbrook Shire Council Water & Waste Department and a copy must be submitted to the Principal Certifying Authority prior to release of any Occupation Certificate.

(33) Connection to Sewer

The premises shall be connected to the sewer system in accordance with the Australian Standard 3500. A works as executed plan on Council's approved form is to be submitted to Council within seven (7) days following the final drainage inspection and prior to any Occupation Certificate being issued.

A works as executed plan on Council's approved form is to be submitted to Council within seven (7) days following the final drainage inspection and prior to any Occupation Certificate being issued.

(34) Car Parking and Access Requirements

All required parking areas, loading bays, driveways, internal access ways, vehicular

ramps and turning areas shall fully constructed, sealed, line marked, sign posted, numbered and in accordance with the consent prior to the release of the Occupation Certificate.

(35) Landscaping

Prior to the issue of any Occupation Certificate landscaping is to be installed at the site in accordance with the approved Landscape Plan, the requirements of this consent or as otherwise directed by Council in writing.

(36) Kerb & Gutter Restoration

Prior to the issue of an Occupation Certificate the person acting with this consent is to ensure all damaged kerb and gutter along the sites Brook Street frontage is replaced to a standard consistent with Council's Footpath, Kerb & Guttering Policy (F10/1), any S138 approval and the profile on the approved plans.

(37) Construction of Waste Storage Areas

Prior to issue of any Occupation Certificate the bin storage area is to be constructed in accordance with the approved plans and requirements of this condition or as otherwise specified by Council in writing.

In addition to the design information included on the approved plans the bin storage area is to be constructed in accordance with the following:

- All internal walls of this enclosure are to have a smooth service and the enclosure is to coved flood/wall intersection.
- The floor is to be graded toward the centre of the enclosure to prevent the escape of waste.
- A tap is to be in close proximity to the waste storage area.

(38) Education and care service policies and procedures

Policies and procedures are to be prepared for the operation of the premises in accordance with the requirements of Section 168 of the Education and Care Services National Regulations.

Prior to the issue of an Occupation Certificate an emergency and evacuation policy and procedure are to be prepared in relation to the proposed facility in accordance with the requirements of Clauses 97 and 168 of the Education and Car Services National Regulations and industry best practice.

These documents are to be provided to the Principle Certifying Authority prior to or with any application for an Occupation Certificate and should be provided to Council for its information.

(39) Flood Evacuation Plan

Prior to the issue of a Final Occupation Certificate an updated Emergency Management Plan shall be submitted to Council and approved by Council for approval by Council's Chief Engineer. The updated plan shall detail:

- a) Regular drills to communicate evacuation triggers or strategies to avoid the opening of the child care centre during periods where it is or is likely to be unsuitable to operate.

- b) Strategies to communicate in advance with parents and guardians around impending or the arrival of weather conditions limiting the operation of the premises in line with the Plan.

Documentation demonstrating compliance with this requirement is to be provided to the Certifying Authority.

(40) Traffic Regulatory Signage

Prior to the issue of an Occupation Certificate the person acting with this consent is to install all traffic regulatory detailed on the approved Traffic Regulatory Signage Plan in line with the related conditions of consent and Section 138 permit related to the works.

(41) Food Shop Registration Requirement

Prior to the issue of an Occupation Certificate, the food premises must be registered with Council's Environmental Health section accordance with the Food Safety Standards, prior to commencement of food business operations.

Upon completion of the work and prior to the issuing of an occupation certificate, the premises must be inspected by Council's Environmental Health Officer to ascertain compliance with relevant construction requirements and Food Safety Standards. Prior to the issue of an Occupation Certificate documentary evidence is to be provided to the Principle Certifying Authority that the premises has been inspected by Council's Environmental Health Officer and that this Officer was satisfied that premises fit out was achieved the relevant construction and food safety requirements.

CONDITIONS RELATED TO THE ESTABLISHMENT OF STORMWATER DRAINAGE EASEMENT

(42) Registration of Easement for Drainage

An easement is to be registered over the waterway/stormwater drain located on the land in favour of Council. The terms of any easement should include:

- A restriction on the carrying out of works or the installation of structures in the easement without Council approval.
- Provide Council with the authority to enter the land to carry out the works associated with the management of the stormwater system.
- The easement is to encompass the entirety of the stormwater drain to the satisfaction of Council Community Infrastructure Officers

Council Community Infrastructure Engineers shall participate in processes related to the establishment of the easement. Documentary evidence demonstrating that the process of easement registration has commenced with Council's Community Infrastructure Department is to be submitted to the Certifying Authority prior to the issue of the Occupation Certificate.

CONDITIONS THAT MUST BE COMPLIED WITH AT ALL TIMES

(43) Stormwater Disposal

All stormwater from the development including all hardstand areas and overflows from rainwater tanks is to be collected and disposed of in accordance with the approved Stormwater Management Plan.

All stormwater infrastructure including drains, pits and stormwater treatment devices are to be maintained at all times.

(44) Managment of Possum Gully waterway

The area beneath the elevated parking area is to be maintained in a clean and tidy state at all times to avoid the accumulation of rubbish and dead vegetation which would pose a fire risk or attract pest and vermin.

(45) Hours of Operation

The child care centre may operate only between 7:00am to 6:00pm Monday – Friday (excluding public holidays). Upon expiry of the permitted hours, child care services shall immediately cease.

Staff may be on-site outside these times for cleaning, maintenance, site/class preparation, staff meetings and meetings with parents provided any activities that may generate noise occur inside the budlings only.

(46) Maintenance of Retaining Wall

All retaining walls approved under this DA are to be designed and maintained at all times as complying with Australian Standard AS4678 “*Earth Retaining Structures*”

(47) Smoking

The operator of the development shall ensure that it complies with the relevant requirements of the Smoke Free Environment Legislation.

(48) Illumination of Signage

Signs A, B and D marked on the approved signage location plan may be illuminated with up and/or down lighting.

All up and down lighting should be installed and managed so to minimise any light spill onto neighbouring properties.

The lighting of internally facing signs D and B shall be fitted with a timing device and the illumination of these signs is to cease every evening 8:00pm and is not to resume until 6:00am the following day.

(49) Outdoor lighting

Outdoor lighting shall be designed to be directed away windows on adjoining residential properties.

Outdoor lighting shall only be operated during the Child Care Centre opening hours.

Outdoor security lighting shall operate on a motion detection setting, with lights turning off after a maximum of 2 minutes if no further motion is detected.

(50) Landscaping

The landscaped area of the development is to be maintained at all times in accordance with the approved landscape plan or as otherwise approved by Council in writing.

(51) Maximum centre capacity

Unless otherwise approved by Council in writing the maximum number of children permitted to attend the child care centre at any one time shall be 90.

(52) Trade Waste

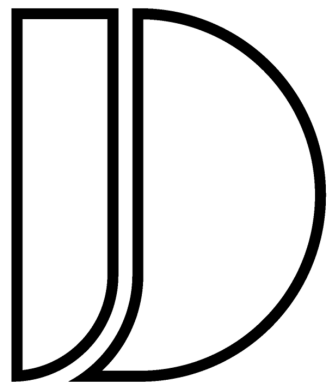
At all times liquid trade waste from the premises shall be disposed of in accordance with the requirements of the trade waste agreement between the owner of the premises and Muswellbrook Shire Council.

84 Brook Street, Muswellbrook

Proposed Child Care Centre

DRAWING SCHEDULE:

- A000 - COVER PAGE
- A001 - CALCULATIONS PAGE / LEP MAPS
- A002 - SITE CONTEXT PLAN
- A003 - SITE ANALYSIS PLAN
- A004 - SITE PLAN
- A005 - GROUND FLOOR PLAN A
- A006 - GROUND FLOOR PLAN B
- A007 - ROOF PLAN
- A008 - ELEVATIONS
- A009 - SECTIONS
- A010 - PERSPECTIVE IMAGES
- A011 - PERSPECTIVE IMAGES
- A012 - SHADOW DIAGRAMS
- A013 - SHADOW DIAGRAM
- A014 - COVERED OUTDOOR AREA DIAGRAM
- A015 - EMERGENCY EVACUATION DIAGRAM
- A016 - CUT AND FILL DIAGRAM
- A017 - KITCHEN DETAIL PLAN
- A018 - COLOUR AND FINISHES DIAGRAM



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info@janssendedesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636
Nominated Architect: Jake Janssen NSW ARB 11575

3.7.5.5 REQUIREMENTS FOR SMOKE ALARMS

- (A) SMOKE ALARMS MUST BE INSTALLED IN -
- (I) CLASS 1A BUILDINGS IN ACCORDANCE WITH 3.7.2.3; AND
- (II) CLASS 1B BUILDINGS IN ACCORDANCE WITH 3.7.2.4.
- (B) SMOKE ALARMS MUST COMPLY WITH AS 3786.
- (C) SMOKE ALARMS MUST BE CONNECTED TO THE CONSUMER MAINS POWER WHERE CONSUMER POWER IS SUPPLIED TO THE BUILDING.

3.8.5.2 VENTILATION REQUIREMENTS

VENTILATION MUST BE PROVIDED TO A HABITABLE ROOM, SANITARY COMPARTMENT, BATHROOM, SHOWER ROOM, LAUNDRY AND ANY OTHER ROOM OCCUPIED BY A PERSON FOR ANY PURPOSE BY ANY OF THE FOLLOWING MEANS:

- (A) PERMANENT OPENINGS, WINDOWS, DOORS OR OTHER DEVICES WHICH CAN BE OPENED -
- (I) WITH AN AGGREGATE OPENING OR OPENABLE SIZE NOT LESS THAN 5% OF THE FLOOR AREA OF THE ROOM REQUIRED TO BE VENTILATED; AND
- (II) OPEN TO -
- (A) A SUITABLY SIZED COURT, OR SPACE OPEN TO THE SKY; OR
- (B) AN OPEN VERANDAH, CARPORT, OR THE LIKE; OR
- (C) AN ADJOINING ROOM IN ACCORDANCE WITH (B).
- (B) NATURAL VENTILATION TO A ROOM MAY COME THROUGH A WINDOW, OPENING, VENTILATING DOOR OR OTHER DEVICE FROM AN ADJOINING ROOM (INCLUDING AN ENCLOSED VERANDAH) IF -
- (I) THE ROOM TO BE VENTILATED OR THE ADJOINING ROOM IS NOT A SANITARY COMPARTMENT; AND
- (II) THE WINDOW, OPENING, DOOR OR OTHER DEVICE HAS A VENTILATING AREA OF NOT LESS THAN 5% OF THE FLOOR AREA OF THE ROOM TO BE VENTILATED; AND
- (III) THE ADJOINING ROOM HAS A WINDOW, OPENING, DOOR OR OTHER DEVICE WITH A VENTILATING AREA OF NOT LESS THAN 5% OF THE COMBINED FLOOR AREAS OF BOTH ROOMS; AND
- (IV) THE VENTILATING AREAS SPECIFIED MAY BE REDUCED AS APPROPRIATE IF DIRECT NATURAL VENTILATION IS PROVIDED FROM ANOTHER SOURCE.

GENERAL NOTES

- CONTRACTOR MUST VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK OR PREPARING SHOP DRAWINGS. DO NOT SCALE FROM DRAWINGS.
- ALL BUILDING WORKS SHALL BE IN ACCORDANCE WITH THE RELEVANT NATIONAL CONSTRUCTION CODE (NCC), BUILDING CODE OF AUSTRALIA (BCA), RELEVANT AUSTRALIAN STANDARDS (AS), INCLUDING AMENDMENTS AND THE REQUIREMENTS OF COUNCIL AND PRIVATE CERTIFIERS (PC) AND OTHER AUTHORITIES HAVING JURISDICTION.
- THE ARCHITECTURAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT CONSULTANT DRAWINGS AND REPORTS FOR COORDINATION AND INFORMATION.
- THRESHOLDS AND DOORWAYS ARE FLUSH FOR WHEELCHAIR ACCESS IN ACCORDANCE WITH AS1428.1 DESIGN FOR ACCESS AND MOBILITY. REFER TO ACCESS CONSULTANT REPORT FOR DISPENSATIONS AND POTENTIAL PERFORMANCE SOLUTION PROPOSED.
- DRAWINGS ARE NOT COORDINATED BY JANSSEN DESIGNS. CONDITIONS AND DOCUMENTS NEED TO BE COORDINATED AND CHECKED TO CONFIRM THEY SATISFY THE AUSTRALIAN STANDARDS. SPECIALIST DISABILITY ACCOMMODATION, DESIGN FOR DISABILITY ACCOMMODATION, DEVELOPMENT APPLICATION REQUIREMENTS, THE NCC, BCA CODES AND CONTROLS THAT APPLY TO THIS PROJECT, A COORDINATED CONSTRUCTION SET MAY VARY FROM THE PRODUCED DRAWINGS. JANSSEN DESIGNS DOES NOT ACCEPT ANY LIABILITY, DIRECT OR INDIRECT, FOR ANY LOSS LIABILITY OR LOSS SUFFERED OR INCURRED BY ANY PERSON OR THIRD PARTY PLACING ANY RELIANCE ON THE SERVICES OR DOCUMENTS OR ADVICE ARISING IN CONNECTION WITH THE SERVICE.
- ALL STRUCTURAL ELEMENTS ARE SHOWN INDICATIVELY AND ARE TO BE CONFIRMED WITH THE DESIGN, DETAIL AND SPECIFICATION OF THE STRUCTURAL ENGINEER.
- ALL STRUCTURAL FRAMING, LOADING, BEARING, RETAINING AND FIXING OF ELEMENTS ARE TO THE DESIGN, DETAIL AND SPECIFICATION OF THE STRUCTURAL ENGINEER.
- ALL SERVICES ELEMENTS INCLUDING HYDRAULICS, ELECTRICAL, MECHANICAL, FIRE AND COMMUNICATION SERVICES SHOWN ARE INDICATIVE ONLY. REFER TO SERVICES CONSULTANT SEPARATE DOCUMENTATION AND SPECIFICATION FOR DETAILED DESIGN.
- ANY DISCREPANCIES BETWEEN ARCHITECTURAL CONSULTANT DOCUMENTATION ARE TO BE REPORTED TO THE ARCHITECT IMMEDIATELY FOR CLARIFICATION.
- ALL CONCRETE AND METALWORK ITEMS, SUCH AS SHOP DRAWINGS, TO BE ORGANISED AND REVIEWED BY THE CLIENT.
- ALL SITE AND BUILDING GRID SET-OUT IS TO BE CONDUCTED AND VERIFIED BY A REGISTERED SURVEYOR BEFORE COMMENCEMENT OF CONSTRUCTION WITH ANY DISCREPANCIES NOTIFIED TO THE CLIENT FOR CLARIFICATION.
- INTERIOR LIGHTING SYSTEMS THROUGHOUT IS TO COMPLY WITH AS 1680 (AS REQUIRED BY BCA C3.8.4.3 CLASS 1 & 10 BUILDINGS AND CF4.1, F4.2, F4.3, F4.4 FOR CLASS 2 TO 9 BUILDINGS)
- ALL SANITARY COMPARTMENTS ARE TO BE CONSTRUCTED TO COMPLY WITH BCA PART 3 C3.8.3.3 FOR CLASS 1 & 10 BUILDINGS AND CF2.58 FOR CLASS 2 TO 9 BUILDINGS.
- ALL BALUSTRADES (IF REQUIRED) HEIGHTS AND DESIGN SHALL BE IN ACCORDANCE WITH AS 1170 PART 1 (AS REQUIRED BY BCA PART 3 C3.9.2.3 FOR CLASS 1 & 10 BUILDINGS AND BCA PART D CL D2.16 FOR CLASS 2 TO 9 BUILDINGS)
- ALL ALUMINIUM FRAMED GLAZING TO COMPLY WITH AS 1288, AS 2208.
- TERMITE CONTROL KORDON TERMITE BARRIER IS TO BE USED AS A BUILDING PERIMETER AND SERVICE PENETRATION TERMITE PROTECTION SYSTEM (AS 3660.1 - 2000). IT IS TO BE INSTALLED BY A MANUFACTURER'S ACCREDITED INSTALLER. AS PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, THE BUILDER IS TO PROVIDE ALL RELEVANT SLAB OR CONSTRUCTION DETAILS TO THE ACCREDITED INSTALLER FOR PRICING ETC. THE BUILDER IS TO TREAT THE BUILDINGS TERMITE PROTECTION AS PART OF THE BUILDING PROCESS AND THEREFORE INCLUDED IN THE CONSTRUCTION PROGRAM.

AMENDMENTS		
DATE	DESCRIPTION	DATE

Project Title:
Proposed Child Care
Centre

DRAWING TITLE:
Cover Page

ADDRESS:
84 Brook Street,
Muswellbrook

CLIENT DETAILS:
JAL Invest Co Pty Ltd

LOCAL GOVERNMENT AREA:
Muswellbrook Council

Issue For DA	Issue: A	Scale: 1:100	Drawing #: A000	Project #: 10186
207/2022				

COMPLIANCE TABLE

TOTAL SITE AREA	2,495.00m2 (BY CALC)
MAX. REQUIRED FLOOR SPACE RATIO	0.5:1 1,247.50m2
PROPOSED FLOOR SPACE RATIO	555m2 0.22:1 - COMPLIES

CHILDCARE

NUMBER OF CHILDREN:

- 0-2 YEARS - 20 PLACES
- 2-3 YEARS - 20 PLACES
- 3-6 YEARS - 50 PLACES

TOTAL - 90 PLACES

NUMBER OF TEACHERS:

- 0-2 YEARS - 5 TEACHERS @ 1:4 RATIO
- 2-3 YEARS - 4 TEACHERS @ 1:5 RATIO
- 3-6 YEARS - 5 TEACHERS @ 1:10 RATIO

INDOOR PLAY AREA:

- 0-2 YEARS - 66.3m2 @ 3.315m2 / KID - COMPLIES
- 2-3 YEARS - 69.4m2 @ 3.470m2 / KID - COMPLIES
- 3-6 YEARS - 166.1m2 @ 3.322m2 / KID - COMPLIES

OUTDOOR PLAY AREA:

TOTAL AREA - 641m2 @ 7.122m2 / KID - COMPLIES

PARKING

MINIMUM REQUIRED	1 CARSPACE PER STAFF - 14
1 X DIRECTOR	1 CARSPACE
1 X COOK	1 CARSPACE
	1 CARSPACE PER 10 CHILDREN - 9
TOTAL PARKING SPACES PROPOSED	26 CARSPACES - COMPLIES
VISITOR SPACES	9 CARSPACES
STAFF SPACES	16 CARSPACES
EMERGENCY BAY	1 CARSPACE

ZONE - R1 GENERAL RESIDENTIAL



FLOOR SPACE RATIO - 0.5:1



MAXIMUM BUILDING HEIGHT - 8.5M

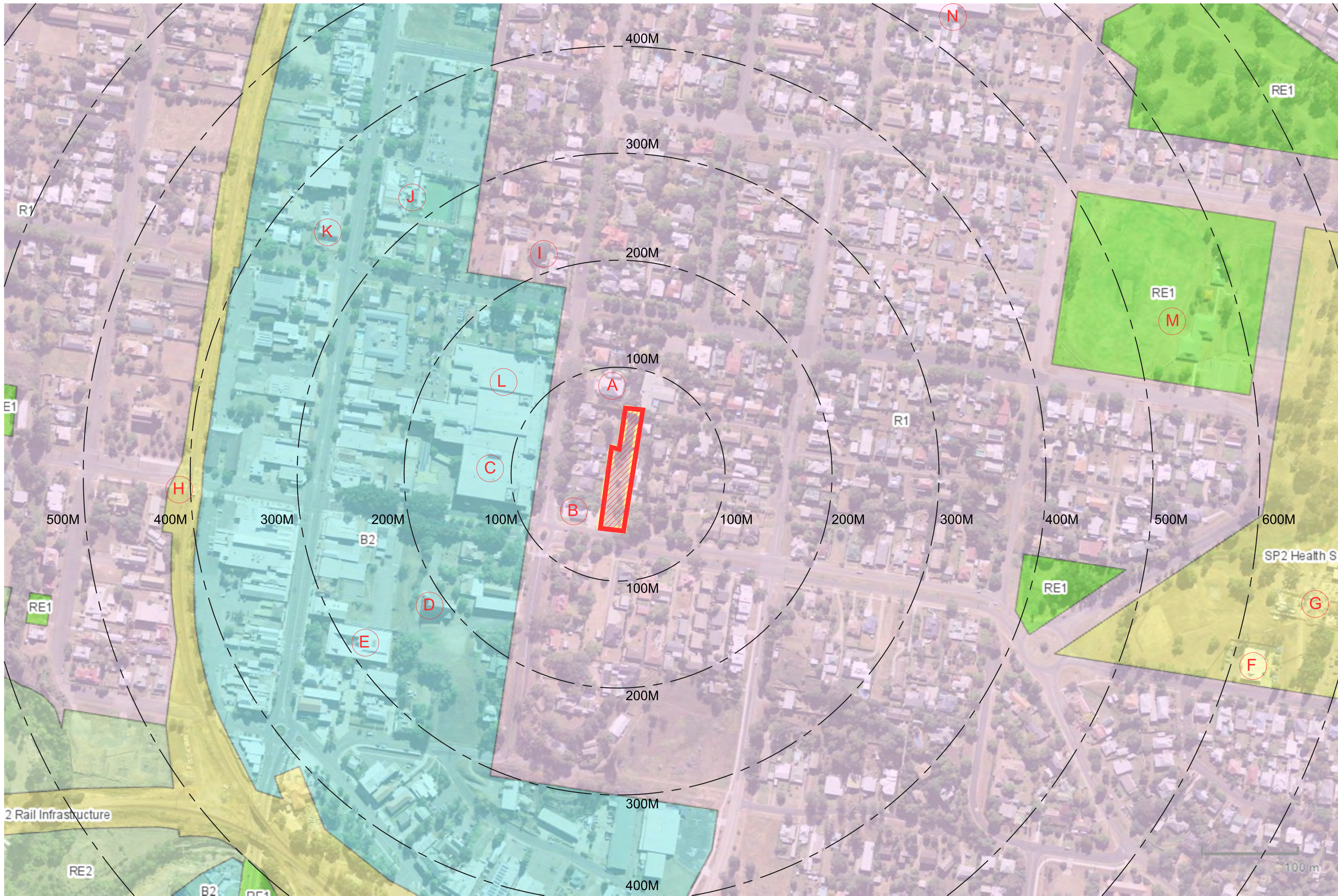


HERITAGE - RESIDENTIAL AREA CONSERVATION AREA | LOCAL SIGNIFICANCE



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 **SITE CONTEXT PLAN -**
N.T.S.



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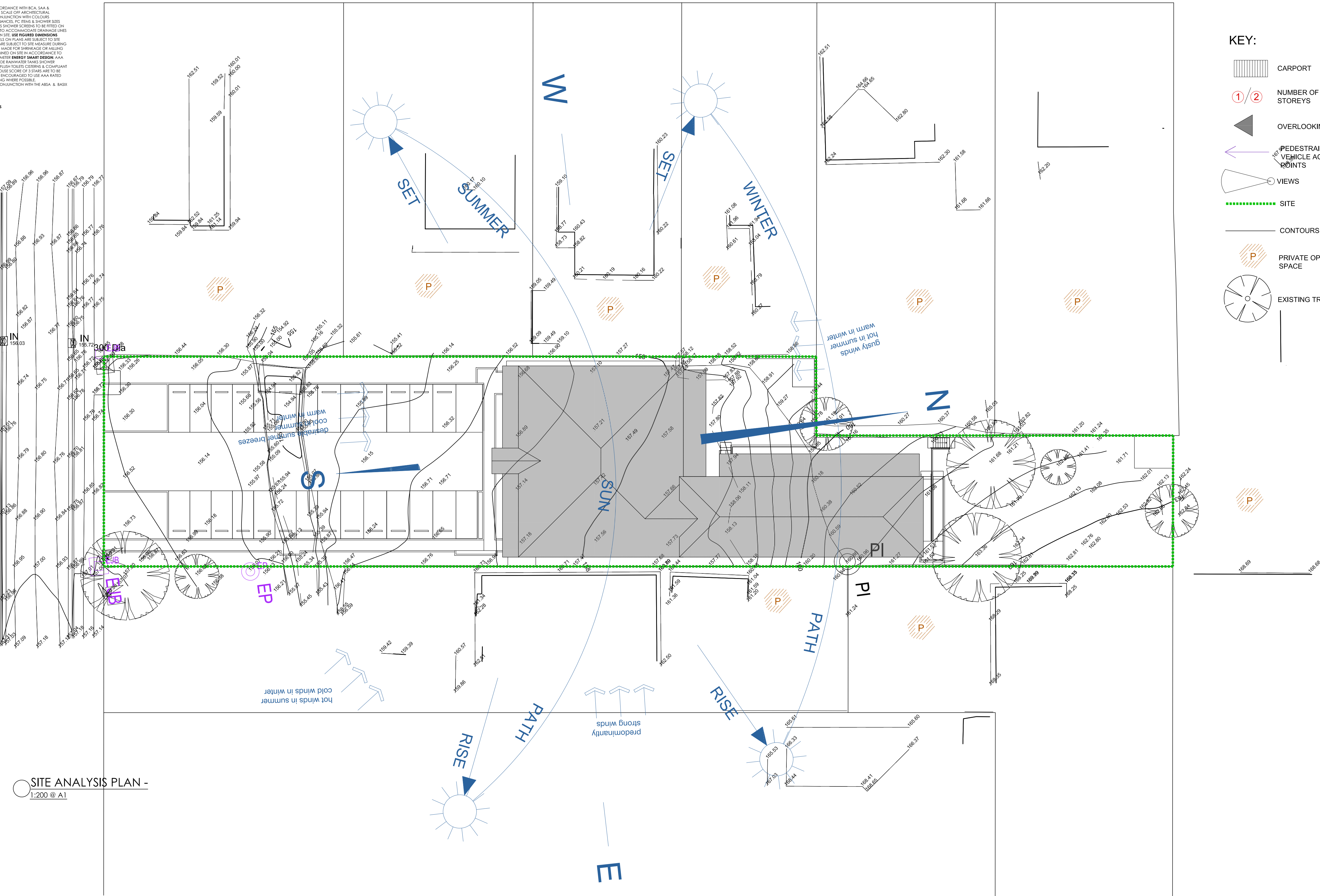
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Nominated Architect: Jake Janssen NSW ARB 11575

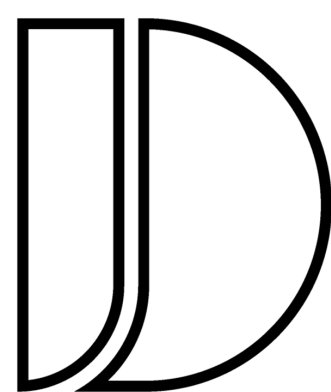
AMENDMENTS			Project Title: Proposed Child Care Centre	DRAWING TITLE: Site Context Plan	CLIENT DETAILS: JAL Invest Co Pty Ltd
ISSUE	DESCRIPTION	DATE			

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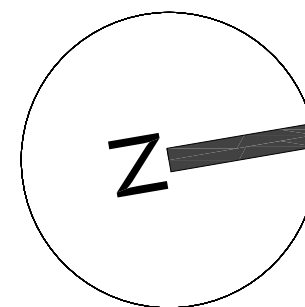


SITE ANALYSIS PLAN -
1:200 @ A1



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Nominated Architect: Jake Janssen NSW ARB 11575



AMENDMENTS		
DATE	DESCRIPTION	DATE

Project Title:
Proposed Child Care
Centre

DRAWING TITLE:
Site Analysis Plan

ADDRESS:
84 Brook Street,
Muswellbrook

CLIENT DETAILS:
JAL Invest Co Pty Ltd

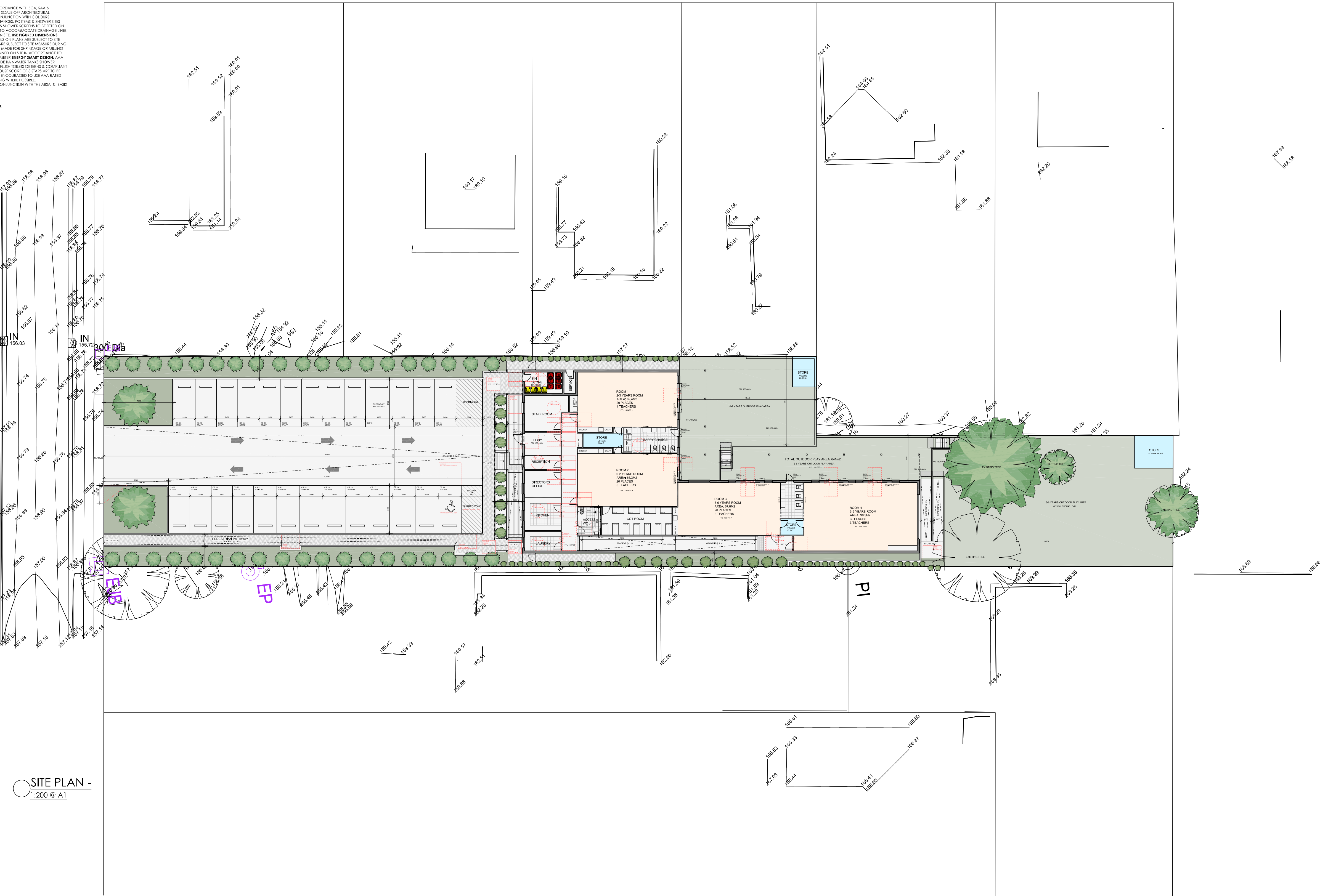
LOCAL GOVERNMENT AREA:
Muswellbrook Council

<u>Issue For:</u> DA		<u>Issue:</u> A	
<u>Date:</u> 20.7.2022	<u>Scale:</u> 1:100	<u>Drawing #:</u> A003	<u>Project #:</u> 10186

Date:
20.7.2022

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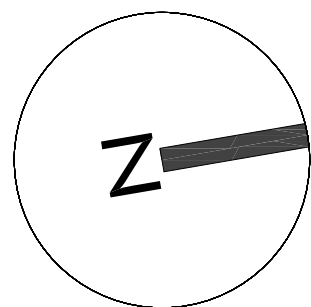


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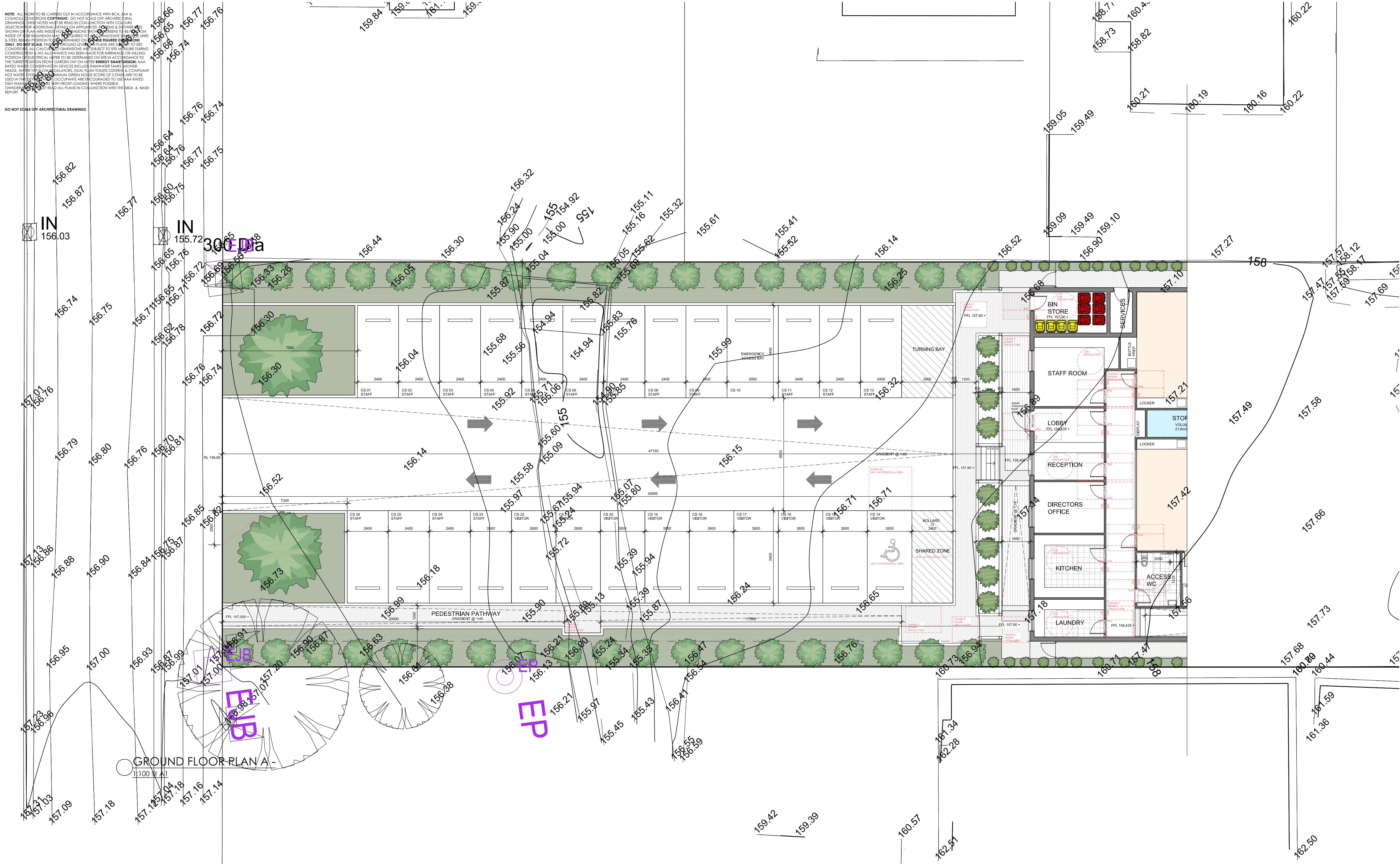
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info@janssendedesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636

Nominated Architect: Jake Janssen NSW ARB 11575



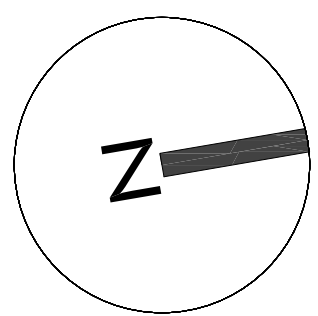
AMENDMENTS			Project Title: Proposed Child Care Centre	DRAWING TITLE: Site Plan	CLIENT DETAILS: JAL Invest Co Pty Ltd		
DATE	DESCRIPTION	DATE					
LOCAL GOVERNMENT AREA: Muswellbrook Council			Address: 84 Brook Street, Muswellbrook	Issue For: DA	Issue: A	Drawing #: A004	Project #: 10186





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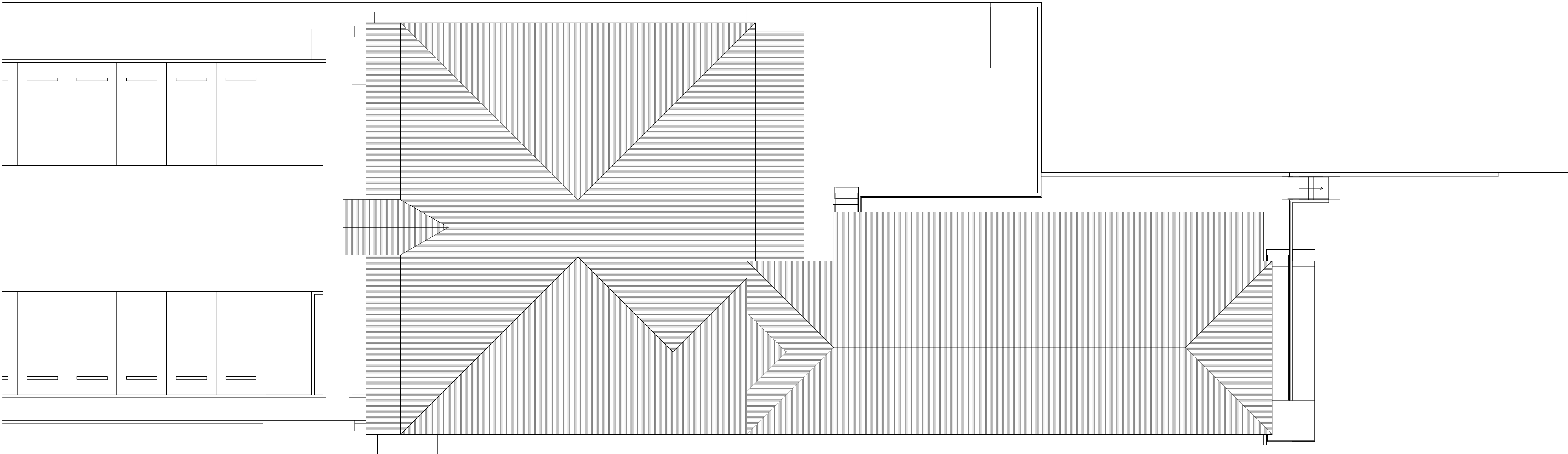
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Nominated Architect: Jake Janssen NSW ARB 11575



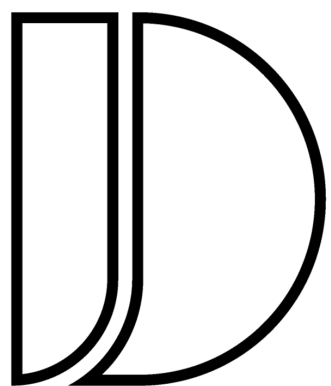
AMENDMENTS			Project Title: Proposed Child Care Centre	DRAWING TITLE: Ground Floor Plan A	CLIENT DETAILS: JAL Invest Co Pty Ltd
ISSUE	DESCRIPTION	DATE			
			Address: 84 Brook Street, Muswellbrook	LOCAL GOVERNMENT AREA: Muswellbrook Council	Project #: 10186
			Issue For: CPL		
			Issue: A		
			Date: 207/2022		
			Scale: 1:100		
			Drawing #: A005		

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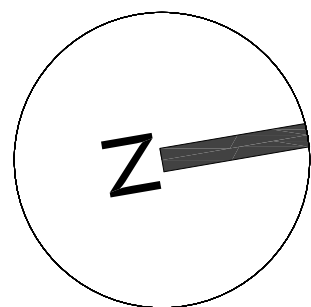


ROOF PLAN -
1:100 @ A1



JANSSSEN
DESIGNS

Info@janssendedesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636
Nominated Architect: Jake Janssen NSW ARB 11575



AMENDMENTS		
ISSUE	DESCRIPTION	DATE

Project Title:
Proposed Child Care
Centre

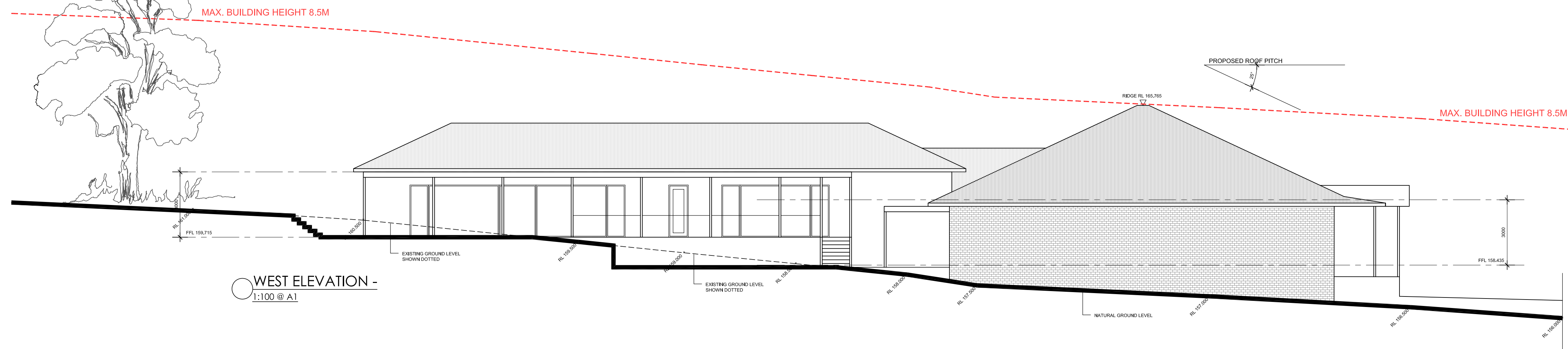
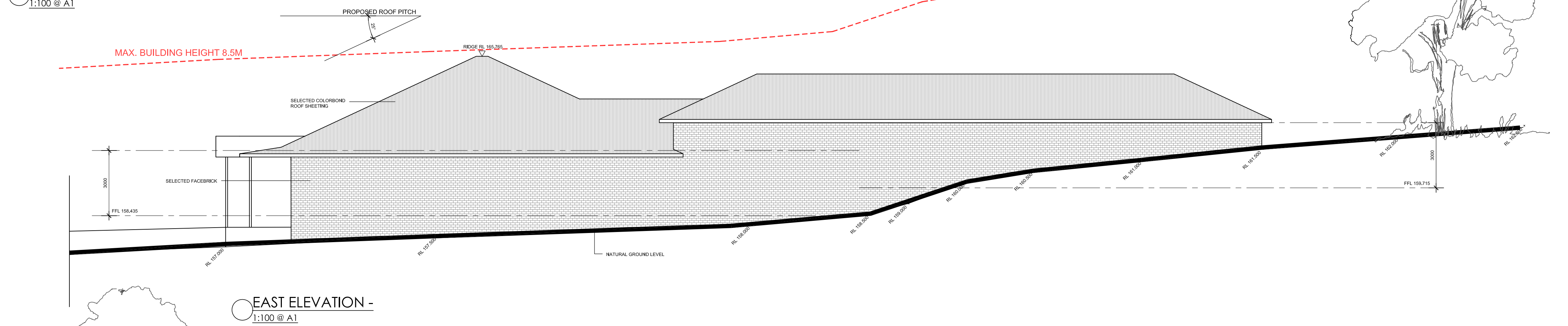
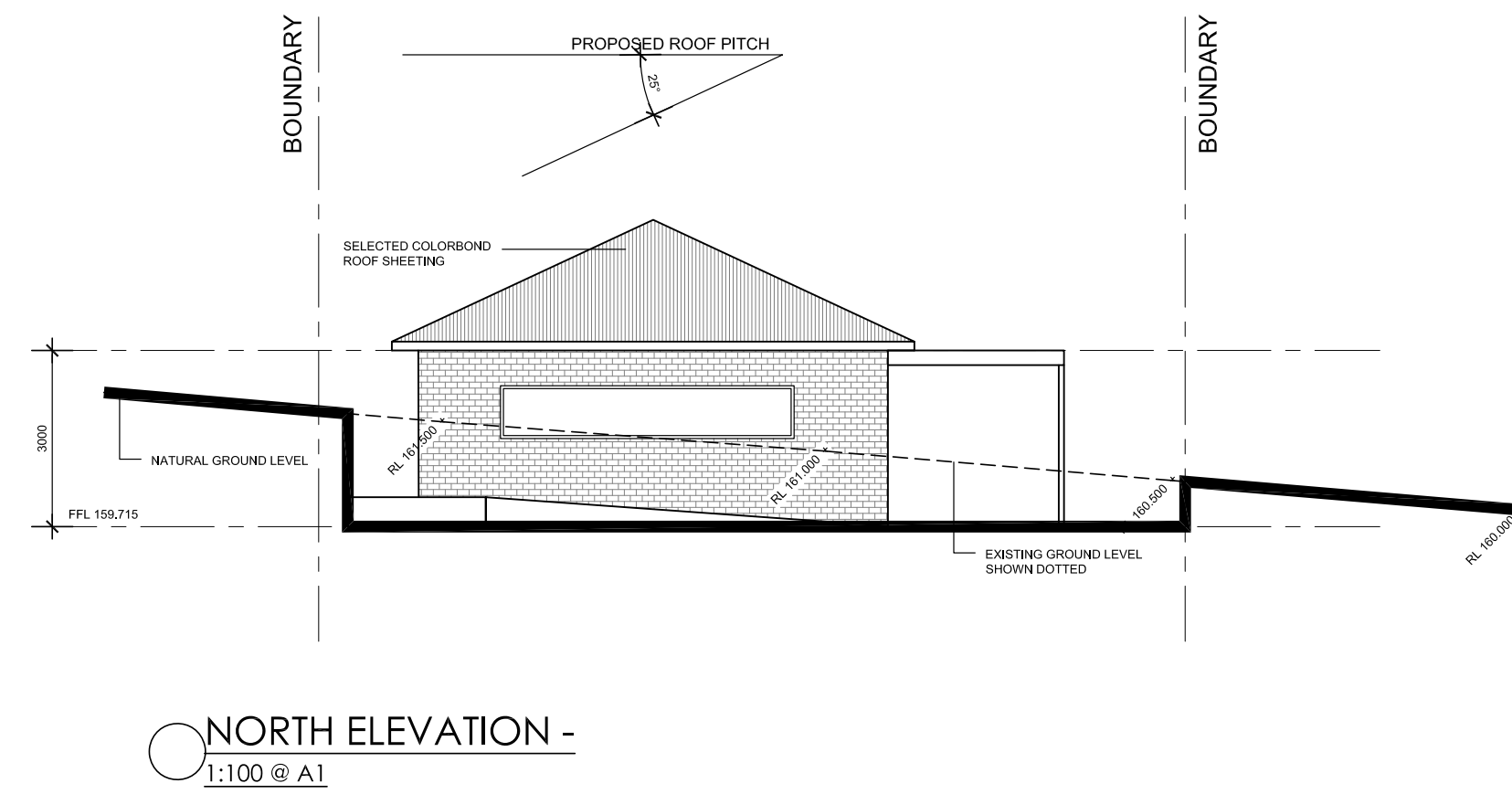
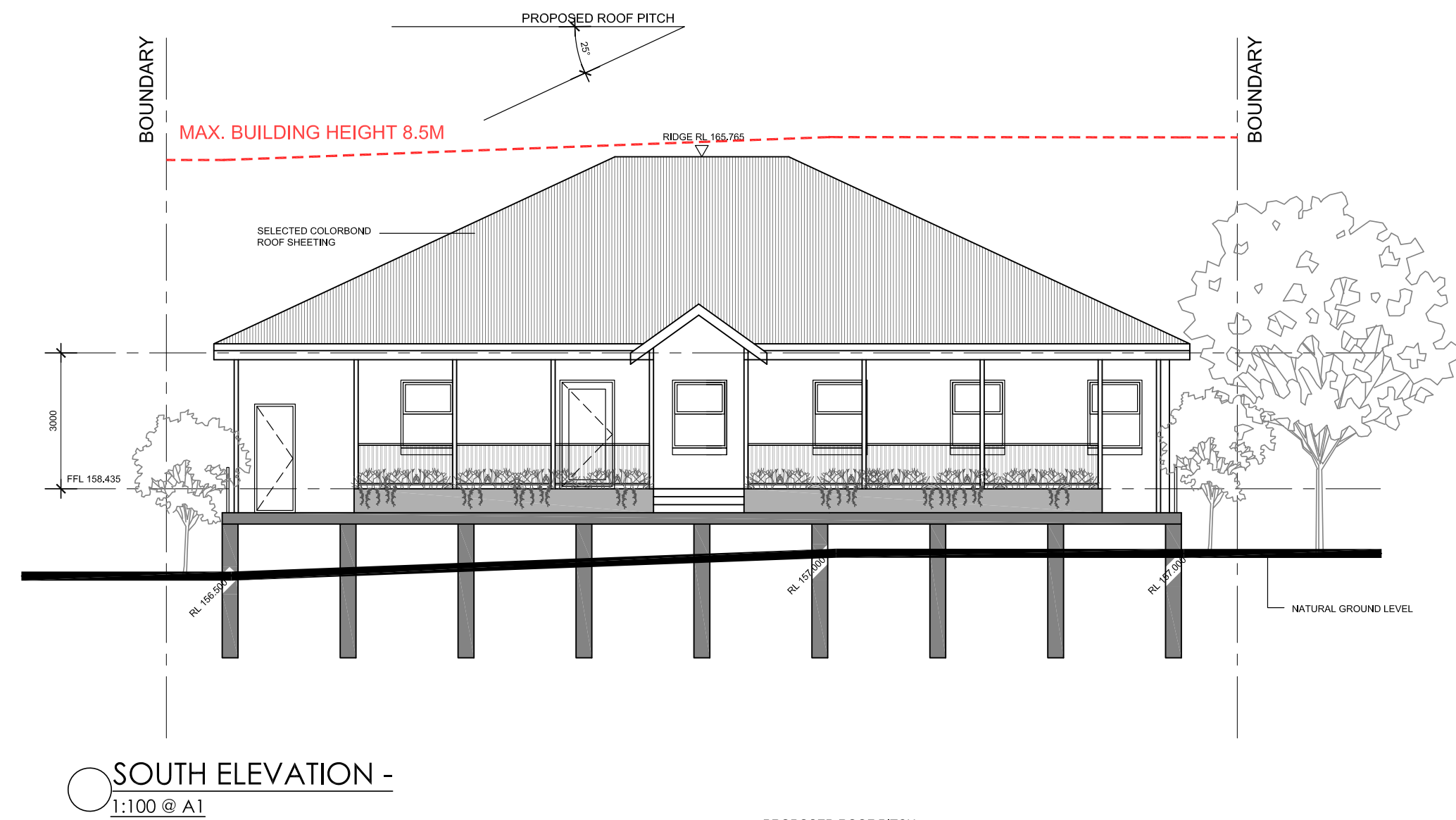
DRAWING TITLE:
Roof Plan

ADDRESS:
84 Brook Street,
Muswellbrook

CLIENT DETAILS:
JAL Invest Co Pty Ltd

LOCAL GOVERNMENT AREA:
Muswellbrook Council

Issue For: DA	Issue: A	Project #: 10186
Date: 20/7/2022	Scale: 1:100	Drawing #: A/007



JANSSSEN
DESIGNS

info@janssendedesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636
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DO NOT SCALE OFF ARCHITECTURAL DRAWINGS

AMENDMENTS		
DATE	DESCRIPTION	DATE

Project Title:
Proposed Child Care
Centre

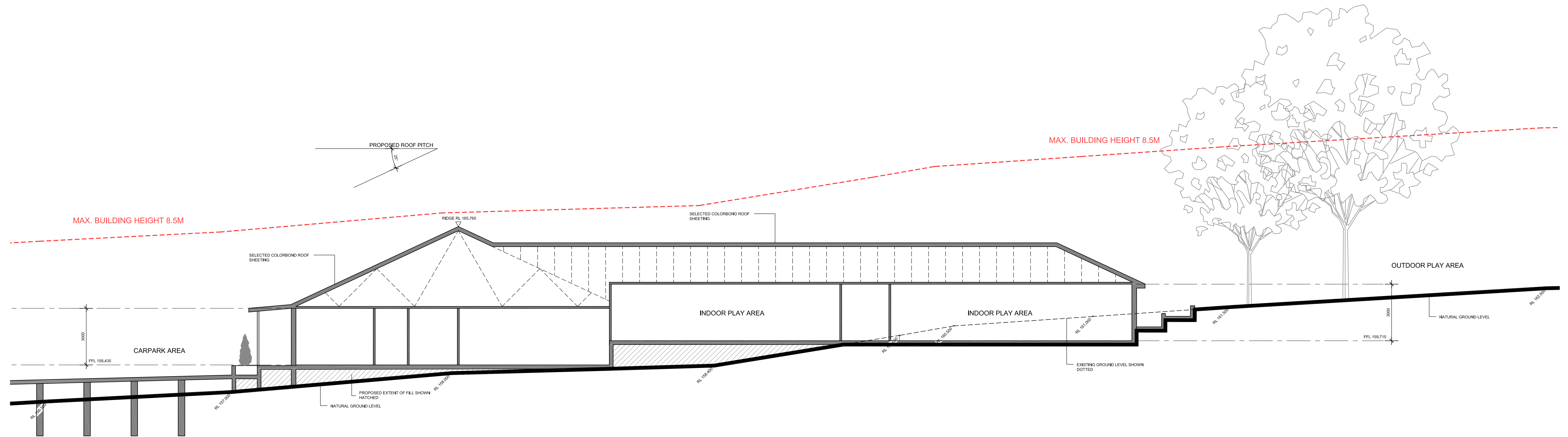
DRAWING TITLE:
Elevations

ADDRESS:
84 Brook Street,
Muswellbrook

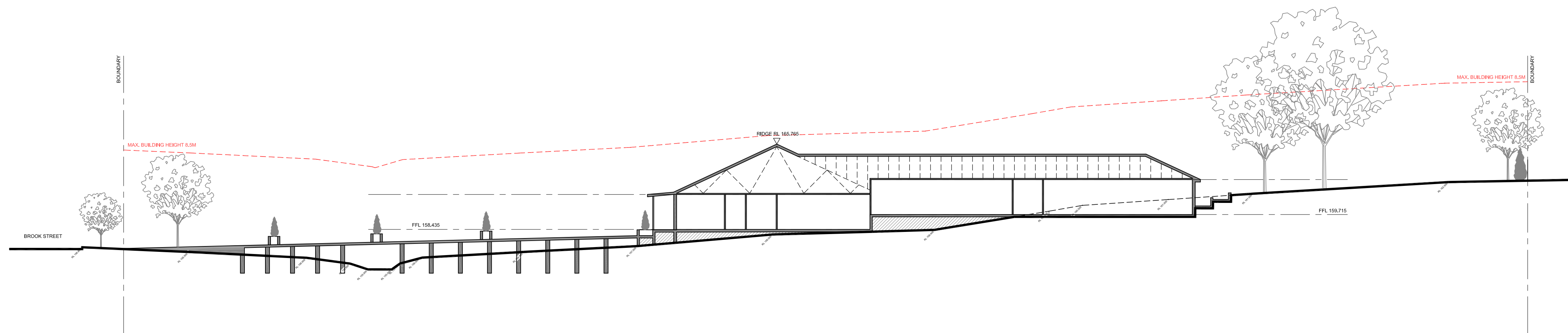
CLIENT DETAILS:
JAL Invest Co Pty Ltd

LOCAL GOVERNMENT AREA:
Muswellbrook Council

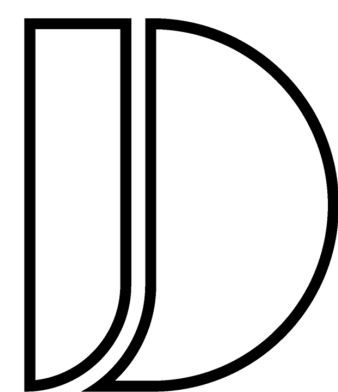
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DA	A	A	A
Date:	Scale:	Drawing #:	Project #:
20/7/2022	1:100	A208	10186



SECTION A-A -
1:100 @ A1



SECTION A-A -
1:200 @ A1



JANSSEN
DESIGNS

Info@janssendedesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636
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DO NOT SCALE OFF ARCHITECTURAL DRAWINGS

AMENDMENTS		
ISS#	DESCRIPTION	DATE

Project Title:
Proposed Child Care
Centre

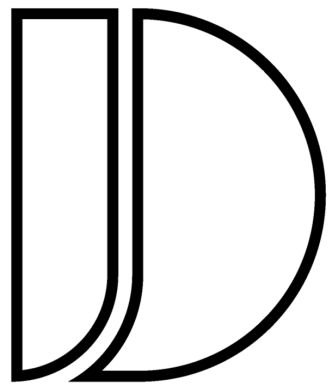
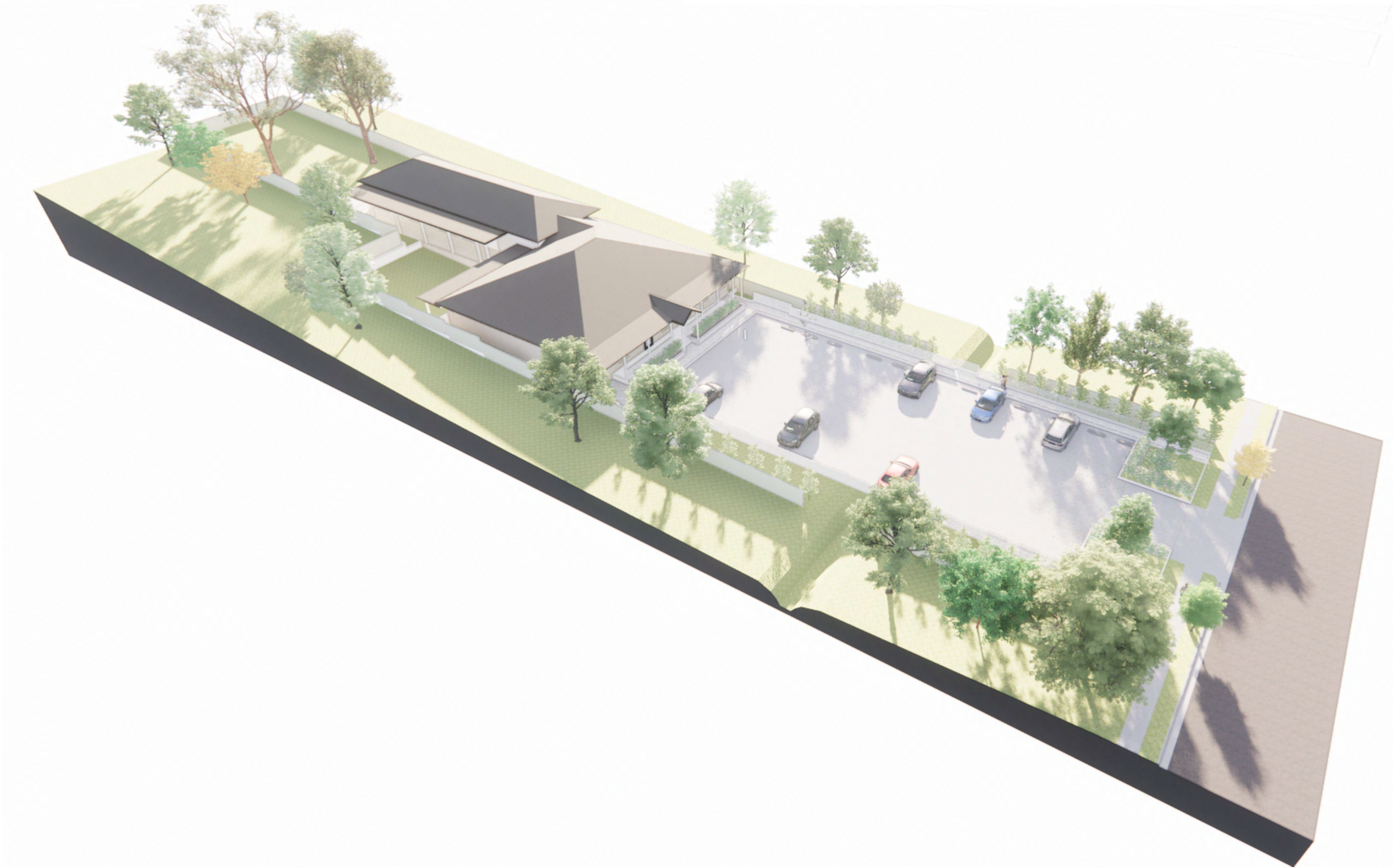
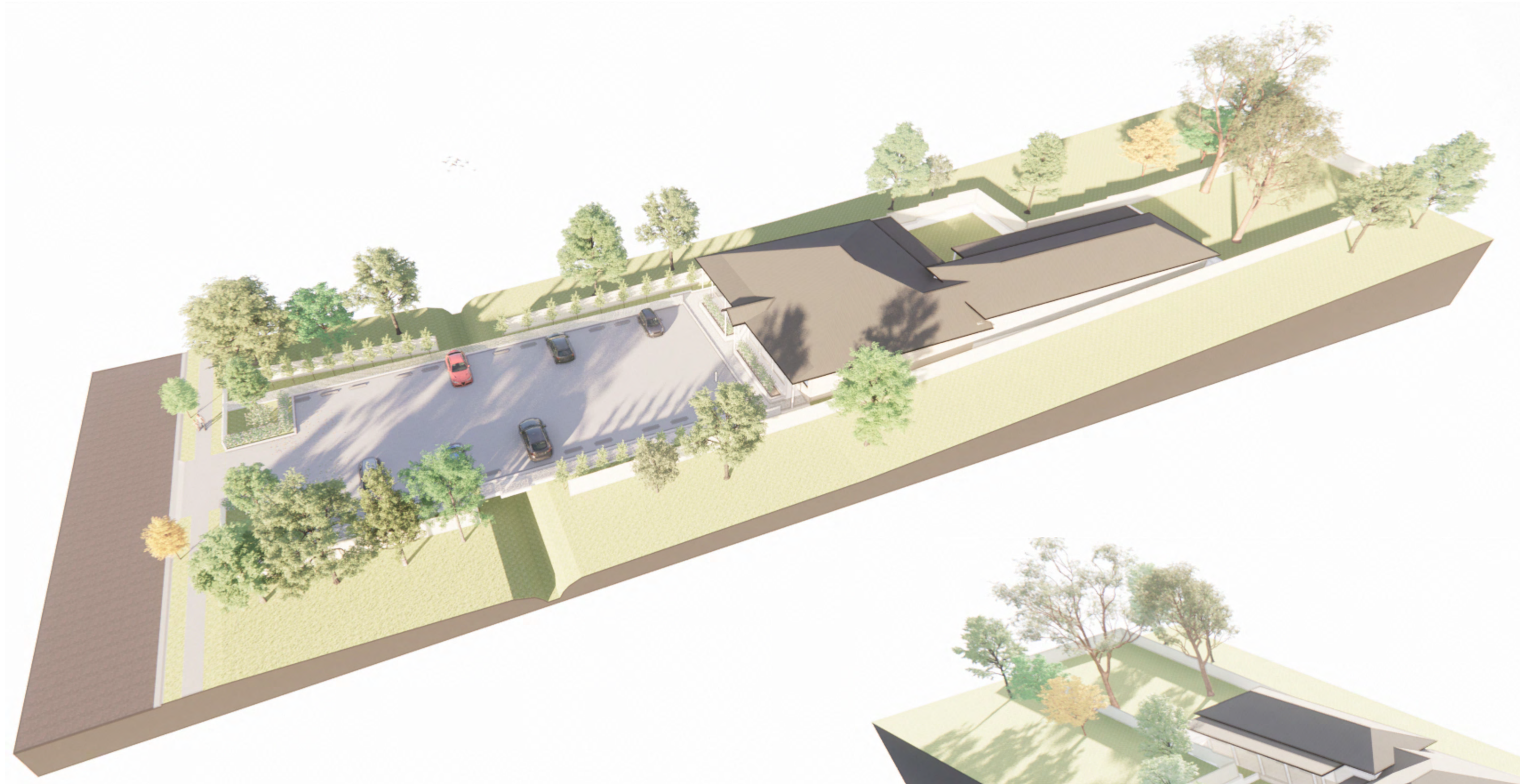
DRAWING TITLE:
Sections

ADDRESS:
84 Brook Street,
Muswellbrook

CLIENT DETAILS:
JAL Invest Co Pty Ltd

LOCAL GOVERNMENT AREA:
Muswellbrook Council

Issue For:		Issue:	
DA	A	A	A
Date: 20/7/2022	Scale: 1:100	Drawing #: A009	Project #: 10186



JANSSSEN
DESIGNS

info@janssendedesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636
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AMENDMENTS		
ISSUE	DESCRIPTION	DATE

Project Title:
Proposed Child Care
Centre

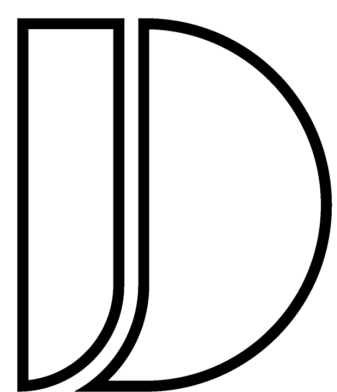
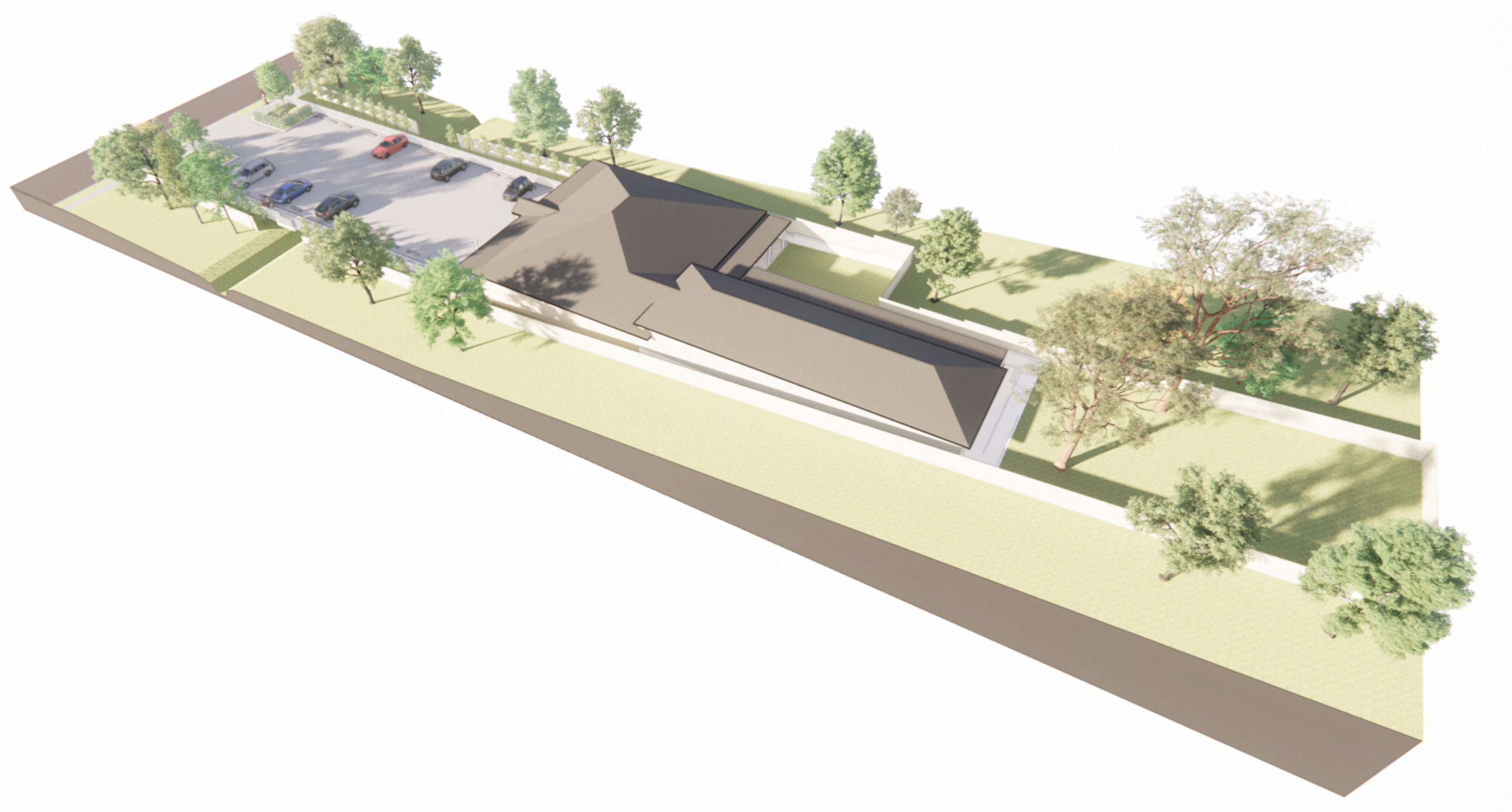
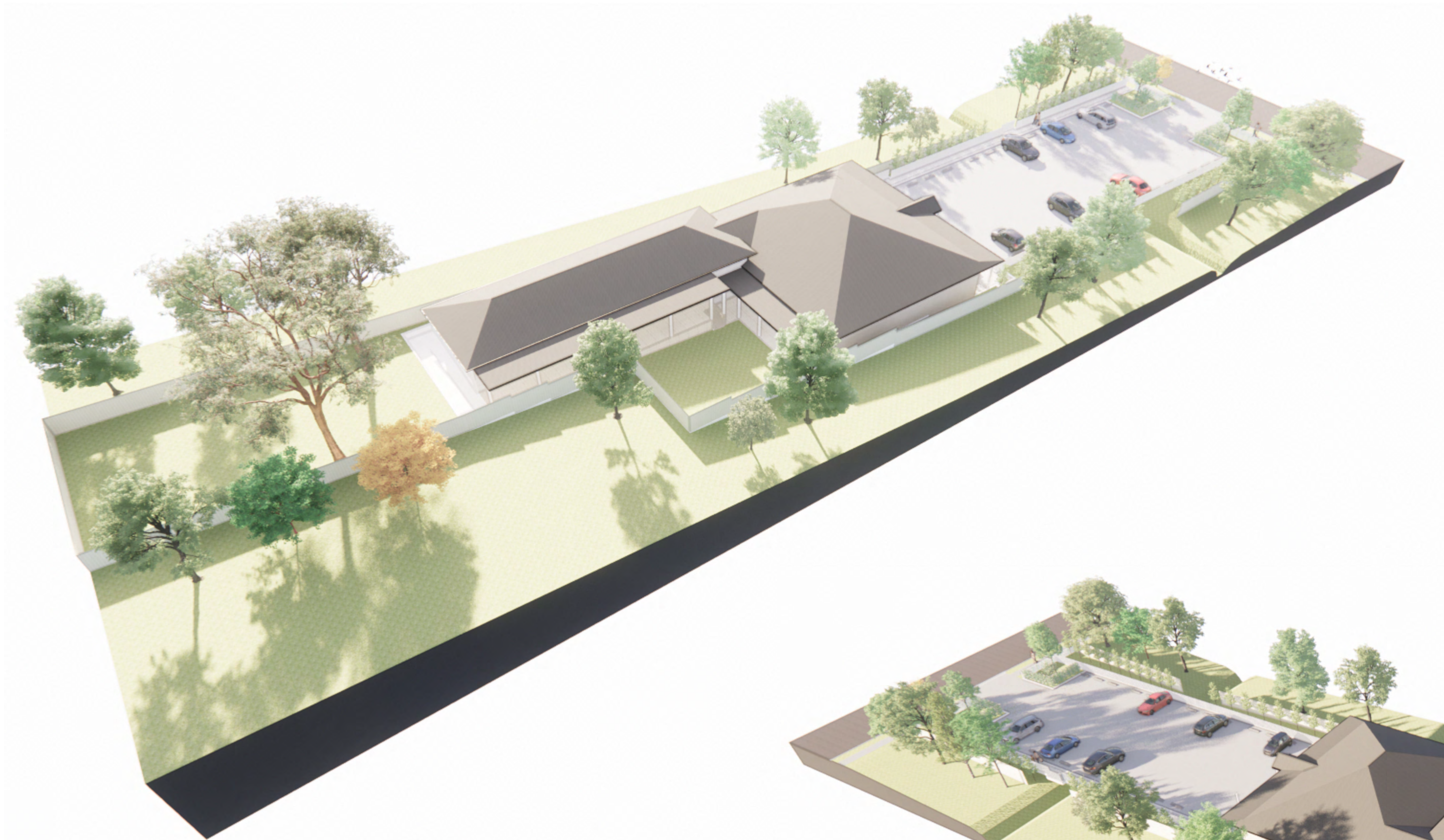
DRAWING TITLE:
Perspective Images

ADDRESS:
84 Brook Street,
Muswellbrook

CLIENT DETAILS:
JAL Invest Co Pty Ltd

LOCAL GOVERNMENT AREA:
Muswellbrook Council

Issue For: DA	Issue: A
Date: 20/7/2022	Scale: 1:100
Drawing #: A010	Project #: 10186



JANSSSEN
DESIGNS

Info@janssendedesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636
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AMENDMENTS		
ISSUE	DESCRIPTION	DATE

Project Title:
Proposed Child Care
Centre

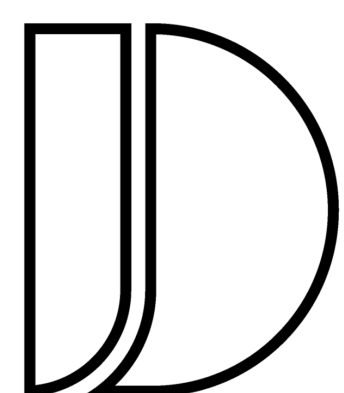
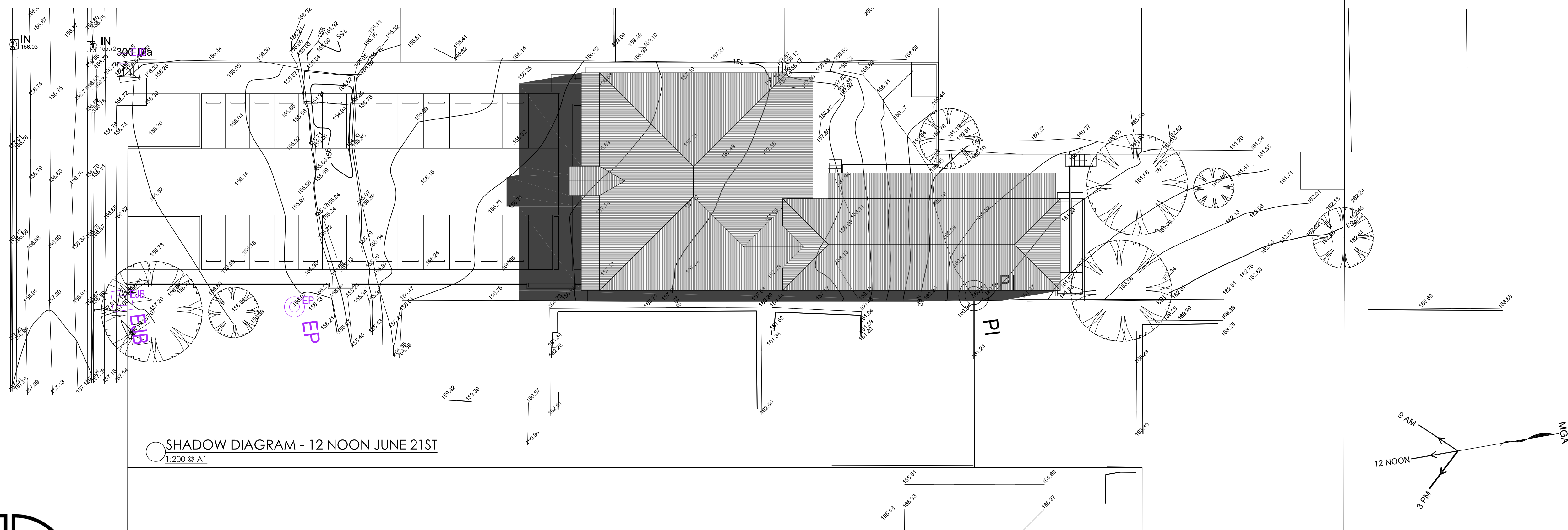
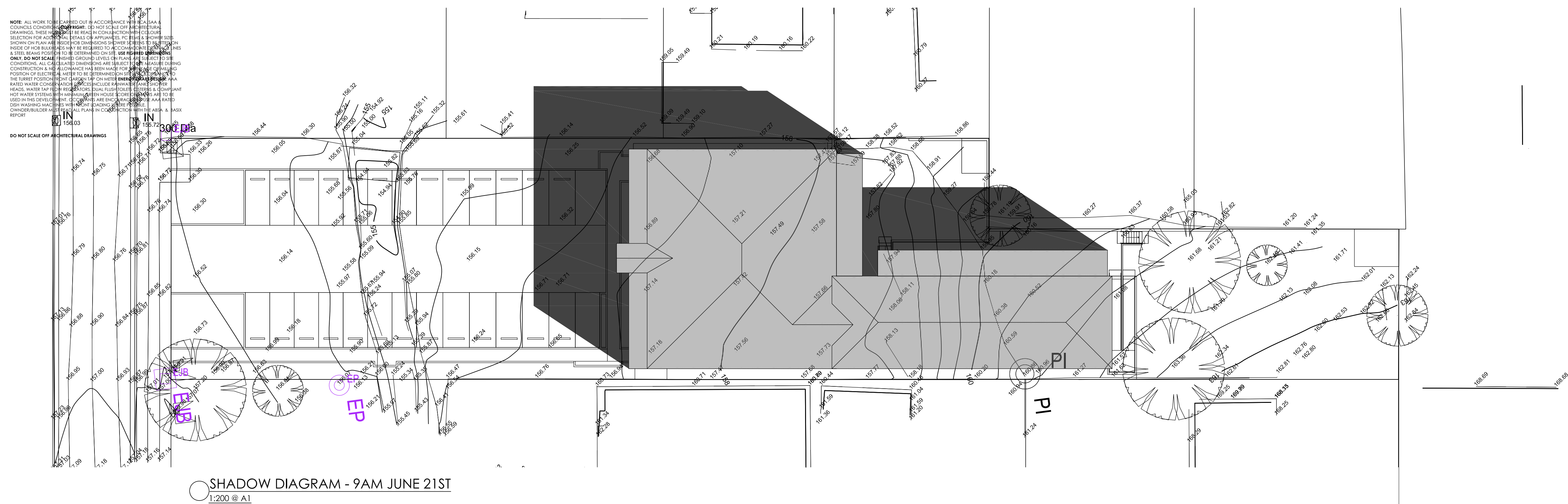
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Perspective Images

ADDRESS:
84 Brook Street,
Muswellbrook

CLIENT DETAILS:
JAL Invest Co Pty Ltd

LOCAL GOVERNMENT AREA:
Muswellbrook Council

Issue For		Issue:	
DA	A	A	A
Date:	Scale:	Drawing #:	Project #:
20.7.2022	1:100	A011	10186



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DESIGNS

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Nominated Architect: Jake Janssen NSW ARB 11575

Nominated Architect: Jake Janssen NSW ARB 11575

[illegible]

— Project Title:
— Proposed Child Care
— Centre

DRAWING TITLE:
Shadow Diagrams

ADDRESS:
84 Brook Street,
Muswellbrook

CLIENT DETAILS:
JAL Invest Co Pty Ltd

LOCAL GOVERNMENT AREA:
Muswellbrook Council

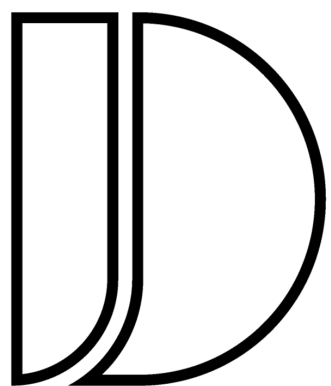
<u>Issue For:</u> DA	<u>Issue:</u> A		
<u>Date:</u> 20.7.2022	<u>Scale:</u> 1:200	<u>Drawing #:</u> A012	<u>Project #:</u> 10186

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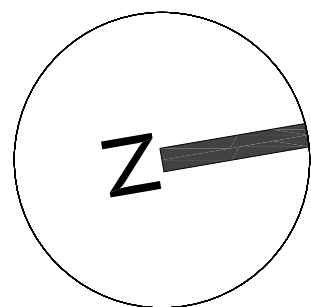


SHADOW DIAGRAM - 3PM JUNE 21ST
1:200 @ A1



JANSSEN
DESIGNS

info@janssendedesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636
Nominated Architect: Jake Janssen NSW ARB 11575



AMENDMENTS		
DATE	DESCRIPTION	DATE

Project Title:
Proposed Child Care
Centre

DRAWING TITLE:
Shadow Diagram

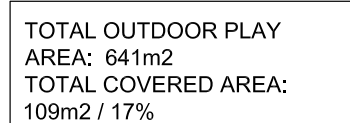
ADDRESS:
84 Brook Street,
Muswellbrook

CLIENT DETAILS:
JAL Invest Co Pty Ltd

LOCAL GOVERNMENT AREA:
Muswellbrook Council


<u>Issue For:</u>		<u>Issue:</u>	
DA		A	
<u>Date:</u>	<u>Scale:</u>	<u>Drawing #:</u>	<u>Project #:</u>
20.7.2022	1:200	A013	10186


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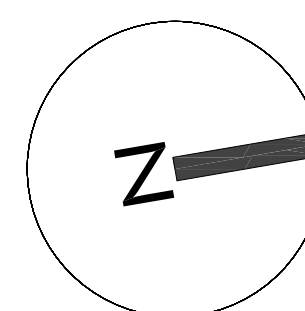


COVERED AREA DIAGRAM
1:100 @ A1



 HATCHED AREA IDENTIFIES OUTDOOR PLAY SPACE

 HATCHED AREA IDENTIFIES EXTENT OF COVERED OUTDOOR PLAY SPACE



AMENDMENTS			<div>Project Title: Proposed Child Care Centre</div>	<div>DRAWING TITLE: Covered Outdoor Play Area Diagram</div>	<div>CLIENT DETAILS: JAL Invest Co Pty Ltd</div>
BRIEF	DESCRIPTION	DATE			
			<div>ADDRESS: 84 Brook Street, Muswellbrook</div>	<div>LOCAL GOVERNMENT AREA: Muswellbrook Council</div>	
			<div>Issue For: DA</div>	<div>Issue: A</div>	
<div>Date: 23/2/2022</div>			<div>Scale: 1:100</div>	<div>Drawing #: 4014</div>	<div>Project #: 10186</div>

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DO NOT SCALE OFF ARCHITECTURAL DRAWINGS

EMERGENCY PROCEDURES

R

Remove

Anyone in immediate danger

A

Alert others & raise the alarm

Advise all occupants, Contact Emergency Services, Contact Chief Warden

C

Contain

The emergency to an area

E

Evacuate

To a safer place

IN AN EMERGENCY

P

POLICE

FIRE

+

AMBULANCE

DIAL

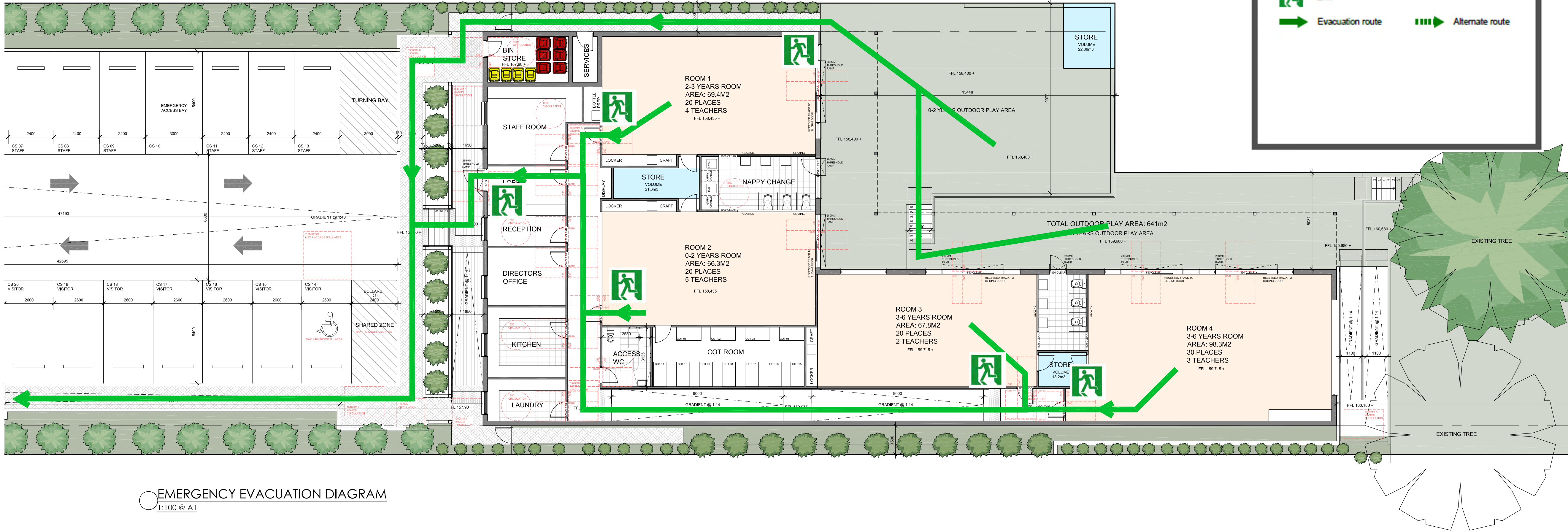
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LEGEND

Exit

Evacuation route

Alternate route



JANSSEN

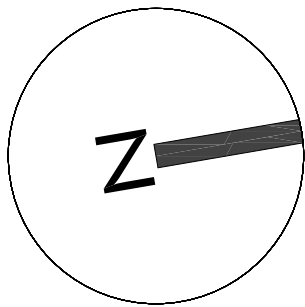
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info@janssendedesigns.com.au

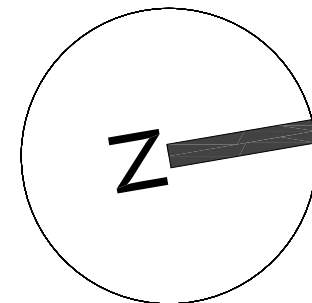
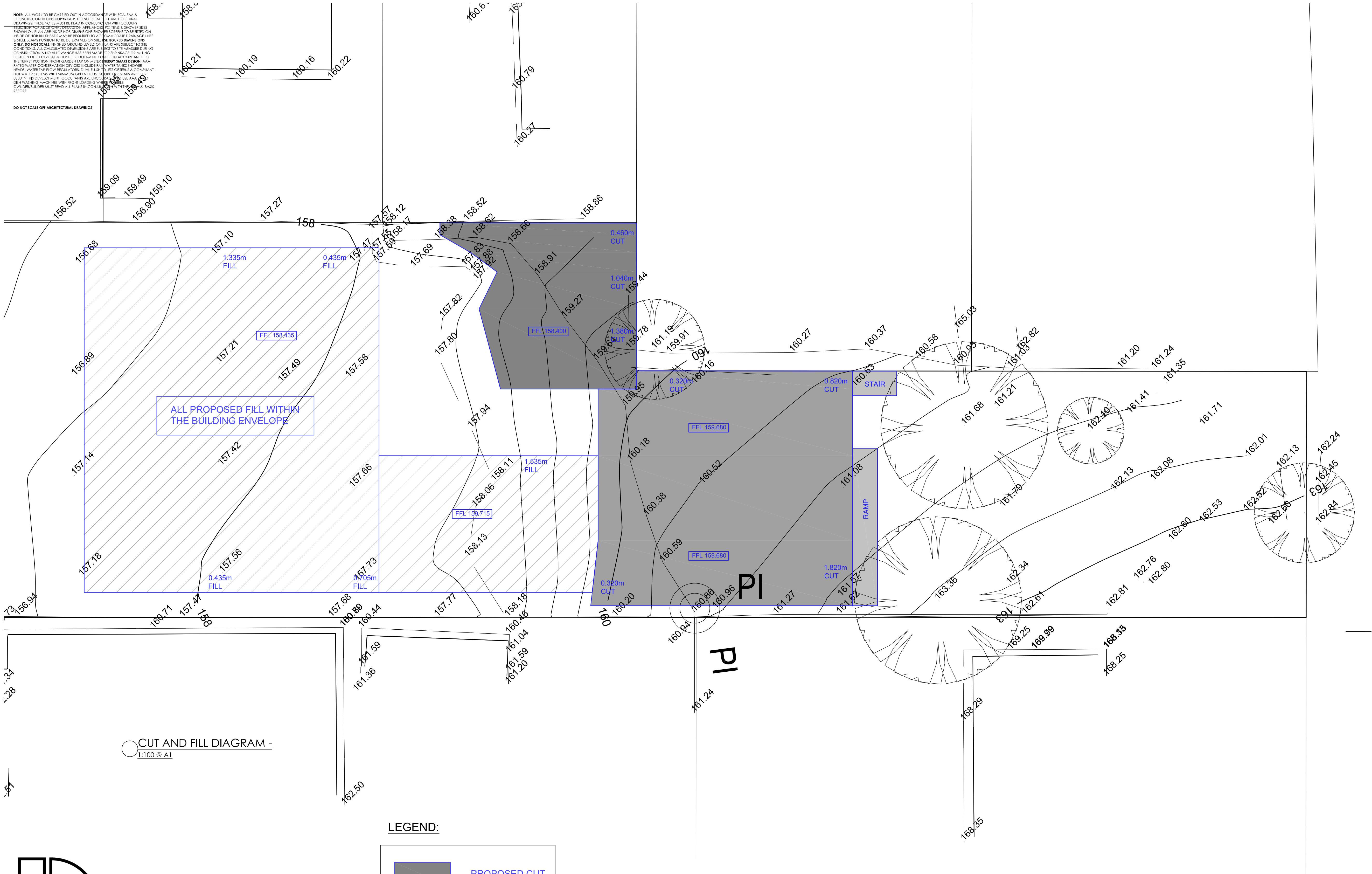
PO Box 41, Kenthurst 2156

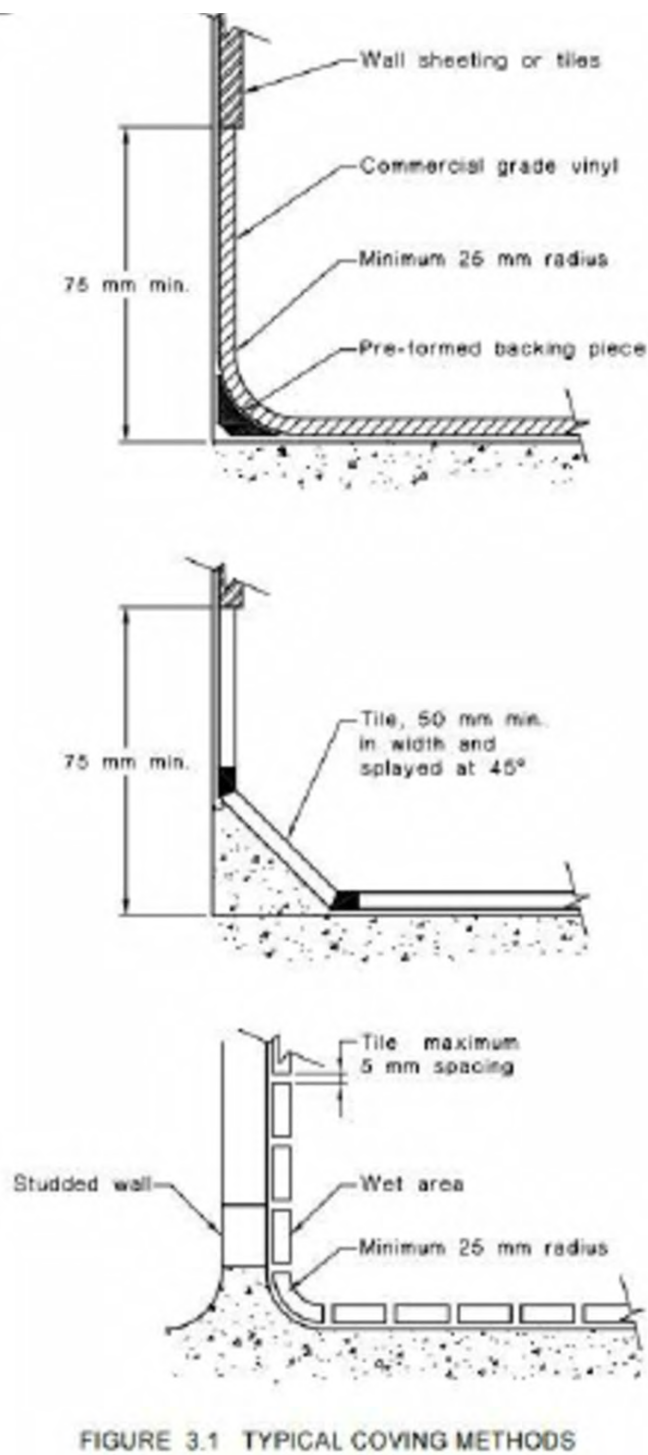
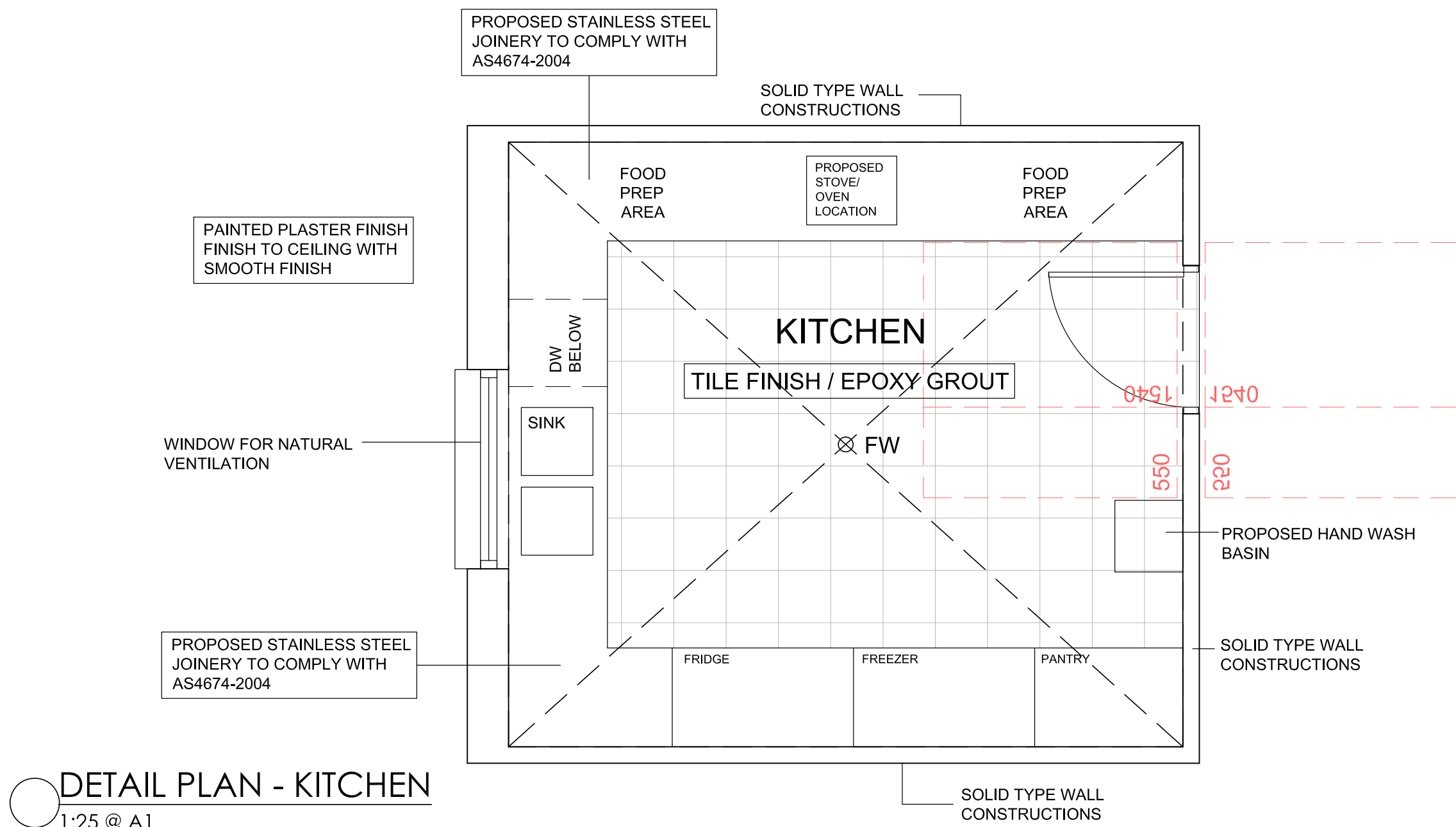
m: 0423 216 636

Nominated Architect: Jake Janssen NSW ARB 11575



AMENDMENTS			Project Title:	DRAWING TITLE:	CLIENT DETAILS:		
ISS#	DESCRIPTION	DATE					
			Proposed Child Care Centre	Emergency Evacuation Diagram	JAL Invest Co Pty Ltd		
			ADDRESS:	LOCAL GOVERNMENT AREA:			
Muswellbrook Council							
			84 Brook Street, Muswellbrook	Issue For:		Issue:	
				DA	2		
			Date:	Scale:	Drawing #:	Project #:	
			20/07/2022	1:100	A015	10186	





COVING DETAILS



AS4674-2004 2.6 LIGHTING

2.6.1 GENERAL REQUIREMENTS

ALL FOOD PREMISES SHALL HAVE NATURAL OR ARTIFICIAL LIGHTING IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUILDING CODE OF AUSTRALIA (BCA), WITH THE FOLLOWING EXCEPTIONS:

A. WHERE NATURAL LIGHTING IS PROVIDED THE LIGHTING SHALL ALSO COMPLY BE EQUIVALENT TO THE LEVELS FOR ARTIFICIAL LIGHTING.

B. WHERE ARTIFICIAL LIGHTING IS PROVIDED THE LIGHTING SHALL ALSO COMPLY WITH THE REQUIREMENTS OF AS1680.1 AND AS/NZS1680.2.4

SUBDUED LIGHTING MAY BE PROVIDED IN DINING AND DRINKING AREAS, PROVIDED THAT THERE IS LIGHT AVAILABLE THAT COMPLIES WITH THE ABOVE REQUIREMENTS DURING CLEANING AND INSPECTION OPERATIONS.

THE EXPOSED SURFACE OF ALL CONDUITS INSTALLED ON THE SURFACE OF WALLS OR CEILINGS SHALL BE SMOOTH.

2.6.2 LIGHT FITTINGS

IN AREAS WHERE OPEN FOOD IS HANDLED OR STORED, LIGHT FITTINGS SHALL BE -

A. DESIGNED AND CONSTRUCTED TO PREVENT CONTAMINATION OF FOOD SHOULD THE GLOBE OR TUBE SHATTER; AND

B. FREE FROM ANY FEATURES THAT WOULD HARBOUR DIRT, DUST OR INSECTS OR MAKE THE FITTING DIFFICULT TO CLEAN.

LIGHT FITTINGS, WHETHER INTENDED TO PROVIDE LIGHT OR HEAT, THAT ARE PART OF EQUIPMENT USED TO PROCESS OR DISPLAY OPEN FOOD SHALL COMPLY WITH THE REQUIREMENTS FOR LIGHT FITTINGS ABOVE.

2.5 VENTILATION

2.5.1 GENERAL REQUIREMENTS

ALL FOOD PREMISES SHALL HAVE EITHER NATURAL OR MECHANICAL VENTILATION IN ACCORDANCE WITH THE BUILDING CODE OF AUSTRALIA.

EQUIPMENT INSTALLED IN AREAS OF THE PREMISES, AFTER THE MECHANICAL EXHAUST VENTILATION SYSTEM HAS BEEN DESIGNED AND INSTALLED IN THAT AREA, SHALL NOT BE LOCATED SO AS TO IMPAIR THE EFFICIENCY OF THE MECHANICAL EXHAUST VENTILATION OR OF NATURAL VENTILATION.

2.5.2 MECHANICAL VENTILATION AND FILTRATION

IN ADDITION TO THE REQUIREMENTS OF AS/NZS 1668.1 AND AS 1668.2, AN EXTRACTION SYSTEM SHALL BE PROVIDED WHERE THERE IS ANY DISHWASHER AND OTHER WASHING AND SANITIZING EQUIPMENT THAT VENTS STEAM INTO THE AREA TO THE EXTENT THAT THERE IS, OR IS LIKELY TO BE, CONDENSATION ON WALLS AND CEILINGS.

NOTE: ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH BCA, AS, SAA & CONSULTABLE CONDITIONS CONTRACT. DO NOT SCALE OFF ARCHITECTURAL DRAWINGS. THESE NOTES MUST BE READ IN CONJUNCTION WITH COLOURS. SELECTION FOR ADDITIONAL DETAILS ON APPLIANCES, FC TRIMS & SHOWER BARS SHOWN ON PLAN ARE INSET. HOB DIMENSIONS SHOWN SCREENS TO BE FITTED ON INSIDE OF HOB BURNERS. MAY BE REQUIRED TO ACCOMMODATE DRAINAGE. DIMENSIONS ONLY. DO NOT SCALE. FINISHED GROUND LEVELS ON PLANS ARE SUBJECT TO SITE CONDITIONS. ALL CALCULATED DIMENSIONS ARE SUBJECT TO SITE ANALYSIS DURING CONSTRUCTION & NO ALLOWANCE HAS BEEN MADE FOR SHRINKAGE OR WALLING POSITION OF ELECTRICAL WIRING TO BE DETERMINED ON SITE IN ACCORDANCE TO THE TURNED POSITION FROM GARDEN TAP ON WETTER. PROJECT SMART DESIGN. AAA RATED WATER CONSERVATION DEVICES INCLUDE: RAINWATER TANKS, SHOWER HEADS, WATER TAP FLOW REGULATORS, DUAL FLUSH TOILETS, CISTERN & COMPANION KEY WATER SYSTEMS WITH MINIMUM GREEN HOUSE SCORE OF 3. STAND ARE TO BE USED IN THIS DEVELOPMENT. OCCUPANTS ARE ENCOURAGED TO USE AAA RATED DSH WASHING MACHINES WITH FRONT LOADING WHERE POSSIBLE. OWNER/BUILDER MUST READ ALL PLANS IN CONJUNCTION WITH THE ABA & BASIS REPORT.

DO NOT SCALE OFF ARCHITECTURAL DRAWINGS

GENERAL FOOD TO BE PROVIDED AS PER 'CARING FOR CHILDREN - BIRTH TO 5 YEARS (FOOD, NUTRITION AND LEARNING EXPERIENCES)

Table 3 – Daily food amounts for children (2 to 5 years)¹.

Food Group and Serve Sizes	Minimum number of serves while in care for 0 hours	Comments
Vegetables and legumes/beans Each of the following foods is one serve: ½ cup cooked vegetables ½ cup cooked dried, canned beans, peas or lentils 1 cup salad vegetables ½ medium potato or sweet potato 1 medium tomato	2	<ul style="list-style-type: none">Include different types and colours.Fresh, frozen and canned varieties can be used.Choose canned varieties with no added salt.
Fruit Each of the following foods is one serve: 1 medium (150g) piece of fruit e.g. apple, banana, orange or pear 2 small apricots, kiwi fruits or plums 1 cup dried or canned fruit (no added sugar) 30g dried fruit e.g. 4 dried apricot halves	1	<ul style="list-style-type: none">Serve fresh fruit rather than juice.
Wholegrain cereal foods and breads Each of the following foods is one serve: 1 slice of bread ½ a bread roll ½ cup wheat cereal flakes ½ cup cooked rice ½ cup cooked pasta 3 crispbread biscuits 1 crumpet 1 English muffin 1 sconce	2	<ul style="list-style-type: none">Include a variety – breads, cereals, rice, pasta, noodles, polenta, couscous, oats, quinoa and barley.Choose wholegrain or wholemeal varieties and when available varieties with added iron.

Lean meat and poultry, fish, eggs, tofu, seeds and legumes Each of the following foods is one serve: 65g cooked lean meats - beef, lamb, veal, pork, goat, kangaroo (90-100g raw) 80g cooked lean poultry or turkey (100g raw) 100g cooked fish (115g raw) 1 small can fish 2 large eggs 1 cup cooked or canned legumes/beans 170g tofu	¾	<ul style="list-style-type: none">Trim fat from meat where possible.
Milk, yoghurt, cheese and alternatives Each of the following foods is one serve: 1 cup milk 2 slices of cheese (40g) 200g yoghurt 120g ricotta cheese 1 cup soy milk with at least 100mg of added calcium per 100ml	1	<ul style="list-style-type: none">Serving milk at morning and afternoon tea may be an easy and reliable way to meet this requirement.Choose mostly reduced fat varieties.

Note: If a child is in care for more than eight hours extra meals and/or midmeals (i.e. breakfast or late afternoon tea) should be provided.

CHILD CARE CENTRE KITCHEN

THE PREMISES ARE TO BE CONSTRUCTED AND FITTED OUT STRICTLY IN ACCORDANCE WITH THE AUSTRALIAN/NEW ZEALAND FOOD SAFETY STANDARDS CODE 3.2.3 'FOOD PREMISES & EQUIPMENT' AND AUSTRALIAN STANDARD 4674.2004 DESIGN, CONSTRUCTION & FIT OUT OF FOOD PREMISES.

FITOUT OF FOOD PREPARATION AREA

A RIGID SMOOTH FACED IMPERVIOUS CEILING SHALL BE PROVIDED OVER THE FOOD PREPARATION, COOKING AND SERVING AREAS. THE SURFACE FINISH SHALL BE FREE OF OPEN JOINTS, CRACKS, CREVICES OR OPENINGS WITH INTERSECTION OF THE WALLS AND CEILING BEING TIGHT JOINTED, SEALED AND DUSTPROOF.

THE CEILING SHALL BE PAINTED WITH A LIGHT COLOURED WASHABLE PAINT.

ALL FLUORESCENT LIGHT FITTINGS SHALL BE FITTED WITH A SMOOTH FACED DIFFUSER. LIGHTING SHALL BE EITHER:
* RECESSED SO THAT THE DIFFUSER IS FLUSH WITH THE CEILING OR
* DESIGNED TO ENSURE THAT NO HORIZONTAL SURFACE EXISTS WHICH WOULD ALLOW DUST & GREASE TO ACCUMULATE.

THE FLOOR IS TO BE CONSTRUCTED OF CONCRETE OR OTHER MATERIAL IMPERVIOUS TO MOISTURE, FINISHED TO A SMOOTH TROWELLED FINISH, COVED AT THE INTERSECTIONS WITH THE WALLS AND GRADED AND DRAINED TO APPROVED SEWERAGE CONNECTIONS.

COVING IS TO BE PROVIDED BETWEEN ALL WALLS AND THE FLOOR AND BETWEEN THE FLOOR AND ALL FITTINGS. THIS CAN BE ACHIEVED BY COVING TILES, CEMENT RENDER, OR BY TURNING VINYL FLOORING UP THE WALLS. IN THIS CASE A FILLET OR BACKING PIECE IS REQUIRED TO SUPPORT THE COVE.

FLOOR TO BE CONSTRUCTED OF MATERIAL IMPERVIOUS TO WATER, NON SLIP AND GRADED AND DRAINED TO FLOOR WASTE.

THE WALLS IN THE KITCHEN ARE TO BE TILED WITH CLOSE JOINTED, GLAZED TILES OF A LIGHT COLOUR TO A HEIGHT OF 450MM ABOVE ALL SINKS, TUBS, DRAINING BOARDS, WASH HAND BASINS AND PREPARATION BENCHES.

ALL WALLS WHERE NOT TILED SHALL BE CEMENT RENDERED TO A SMOOTH SURFACE AND PAINTED WITH A LIGHT COLOURED WASHABLE PAINT.

REFRIGERATION, FROZEN FOOD CABINETS, COOKING APPLIANCES, EQUIPMENT, FITTINGS, CUPBOARDS AND CABINETS ARE TO BE SUPPORTED ON ONE OF THE FOLLOWING SYSTEMS:
* WHEELS OR COASTERS WHICH ALLOW THE FULLY LOADED FITTING TO BE EASILY MOVED.
* LEGS WHICH PROVIDE A MIN. 150MM CLEARANCE FROM THE FLOOR TO THE UNDERSIDE OF THE FITTING.

ALL SHELVING TO BE INSTALLED ON APPROVED METAL BRACKETS KEPT AT LEAST 25MM CLEAR OF WALL.

FOOD PREPARATION BENCHES SHALL BE CONSTRUCTED OF STAINLESS STEEL.

THE TOP AND EXPOSED EDGES OF ALL BENCHES, COUNTERS AND SHELVING TO FINISHED IN A SMOOTH AND NON-ABSORBENT MATERIAL FREE OF JOINT.

ALL SERVICE PIPES, CONDENSATE PIPES AND ELECTRICAL CONDUITS MUST BE SEALED INTO THE WALLS, FLOORS OR PLINTHS.

A FREESTANDING WASH HAND BASIN IS TO BE PROVIDED IN AN APPROVED POSITION IN THE KITCHEN/FOOD PREPARATION AREA CONNECTED TO BOTH HOT AND COLD WATER AT A MINIMUM TEMPERATURE OF 40°C THROUGH A SINGLE OUTLET, AS REQUIRED BY CLAUSE 14(1) AND (2) OF THE AUSTRALIAN NEW ZEALAND FOOD STANDARDS CODE FOOD SAFETY STANDARD 3.2.3 PROVIDE AND MAINTAIN DISPENSABLE SOAP AND SINGLE USE TOWELS OR OTHER SUITABLE HAND DRYING FACILITIES NEAR THE WASH HAND BASIN.

ALL OPENINGS IN THE WALLS, FLOOR AND CEILING AND ALL EXTERNAL DOORS AND WINDOWS MUST BE VERMIN PROOF.

ALL WINDOWS AND DOORS TO THE EXTERNAL AIR ARE TO BE PROVIDED WITH FLY SCREENS.

A KITCHEN EXHAUST HOOD IS TO BE PROVIDED ABOVE ALL APPLIANCES OF HEATING CAPACITY GREATER THAN 8KW IN ACCORDANCE WITH AS 1668 PART 2. A TEST CERTIFICATE SHALL BE SUBMITTED TO THE PRINCIPAL CERTIFYING AUTHORITY WITH AN APPLICATION FOR AN OCCUPATION CERTIFICATE.

THE DOORS OF THE AIR-LOCK AND SANITARY COMPARTMENTS MUST BE CLOSE FITTING AND SELF CLOSING.

A LIQUID SOAP DISPENSER AND PAPER TOWEL DISPENSER MUST BE PROVIDED ABOVE OR ADJACENT TO THE HAND BASIN.

WASHING FACILITIES MUST BE PROVIDED AND COMPLY WITH THE FOOD PREMISES CODE.

NOT LESS THAN 100 LUX OF LIGHT TO BE AVAILABLE ON ALL SURFACES WHERE FOOD IS PREPARED, OR UTENSILS ARE WASHED AND STERILIZED IN ACCORDANCE WITH AS 1680.

AMENDMENTS			Project Title:	DRAWING TITLE:	CLIENT DETAILS:
DATE	DESCRIPTION	DATE			
			Proposed Child Care Centre	Kitchen Detail Plan	JAL Invest Co Pty Ltd
			ADDRESS:	84 Brook Street, Muswellbrook	LOCAL GOVERNMENT AREA: Muswellbrook Council
			DATE: 20/7/2022	Issue For: DA	Issue: A
			Scale: 1:100	Drawing #: A017	Project #: 10186

84 Brook Street, Muswellbrook

PROPOSED CHILDCARE CENTRE COLOUR AND FINISHES SCHEDULE

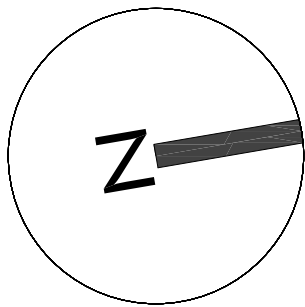




JANSEN
DESIGNS

info@janssendedesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636
Nominated Architect: Jake Janssen NSW ARB 11575

- FINISHES SCHEDULE TABLE:**
- BRICK WORK** - FBI - PGH BRICKS - NATURALS 'FROST' OR EQUAL TO.
- WINDOW FRAMES** - ALUMINIUM FRAMES WITH MONUMENT COLORBOND FINISH OR EQUAL TO.
- ROOF SHEETING** - WOODLAND GREY COLORBOND FINISH OR EQUAL TO.
- FASCIA** - COLORBOND FINISH WITH 'MONUMENT' COLOUR OR EQUAL TO.
- DRIVEWAY** - NATURAL CONCRETE FINISH OR EQ



AMENDMENTS			Project Title:	Drawing Title:	Client Details:	
ISSUE	DESCRIPTION	DATE			JAL Invest Co Pty Ltd	
			Proposed Child Care Centre	Colour and Finishes Schedule	LOCAL GOVERNMENT AREA:	
					Muswellbrook Council	
					ADDRESS:	
					84 Brook Street, Muswellbrook	
					Issue For: DA	
Date: 20.7.2022		Scale: 1:100	Drawing #:	Project #:	A	
					A018	
					10182	

FLOOD IMPACT ASSESSMENT REPORT

Client — JAL Invest Co Pty Ltd
Project Title — 84 Brook Street, Muswellbrook NSW
Project No. — SW23077
Date Issued — 17/05/2023

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Revision	Issue	Status	Release Date	Approved by:
A	For Approval	Final	17.05.2023	Paul El-Bayeh

Limitations

The sole purpose of this report and the associated services performed by Capital Engineering Consultants Pty Ltd is to provide an assessment of the public drainage system at the subject site in accordance with the scope of services set out in the contract / quotation between Capital Engineering Consultants Pty Ltd and JAL Invest Co Pty Ltd. That scope of works and services were defined by the requests of the Client, by the time and budgetary constraints imposed by the Client, and by the availability of access to the site.

Capital Engineering Consultants Pty Ltd derived the data in this report primarily from a number of sources which included site inspections, correspondence regarding the proposal, examination of records in the public domain, interviews with individuals with information about the site or the project, and field explorations conducted on the dates indicated. The passage of time, manifestation of latent conditions or impacts of future events may require further examination / exploration of the site and subsequent data analyses, together with a re-evaluation of the findings, observations and conclusions expressed in this report.

In preparing this report, Capital Engineering Consultants Pty Ltd may have relied upon and presumed accurate certain information (or absence thereof) relative to the site. Except as otherwise stated in the report, Capital Engineering Consultants Pty Ltd has not attempted to verify the accuracy of completeness of any such information (including for example survey data supplied by others).

The findings, observations and conclusions expressed by Capital Engineering Consultants Pty Ltd in this report are not and should not be considered an opinion concerning the completeness and accuracy of information supplied by others. No warranty or guarantee, whether express or implied, is made with respect to the data reported or to the findings, observations and conclusions expressed in this report. Further, such data, findings and conclusions are based solely upon site conditions, information and drawings supplied by the Client etc. in existence at the time of the investigation.

This report has been prepared on behalf of and for the exclusive use of the Client and is subject to and issued in connection with the provisions of the agreement between Capital Engineering Consultants Pty Ltd and the Client. Capital Engineering Consultants Pty Ltd accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this report by any third party.

CAPITAL ENGINEERING CONSULTANTS

Prepared By:

m.wahbe

Mr Mathew Wahbe
B.E.Hons (Civil), MIEAust. P.Eng.
Civil Engineer

Reviewed and Approved:

P. El-Bayeh

Mr Paul El- Bayeh
B.E (Civil), M.E., FIEAust CPEng No. 3132148, NER, RPEQ
Senior Civil Engineer | Director

1. Introduction

1.1 Overview

A development application has been prepared to be assessed by Muswellbrook Shire Council for a proposed Childcare Center development at No. 84 Brook Street, Muswellbrook, NSW. Council has indicated that the site is affected by Flooding in the 1% AEP Storm Event and will require a detailed Flood Impact Assessment prior to the issue of a Development Consent.

Capital Engineering Consultants (CEC) have been commissioned to assess Council's Floodplain Development requirements and provide a Flood Impact Assessment in compliance with all Council codes, policies and established industry best practices.

1.2 Project Objectives and Scope of Works

CEC have been engaged by the client, to carry out the following scope and objectives to support the proposed construction certificate:

1. Review supplied documents and layouts;
2. Address the requirements of Council's relevant guidelines and DCP;
3. Review MSC's supplied TUFLOW hydrological model of council's existing drainage system;
4. Prepare a detailed site-specific TUFLOW flood model for submission; and
5. Propose flood mitigation measures for implementation.

2. Background Information & Site Description

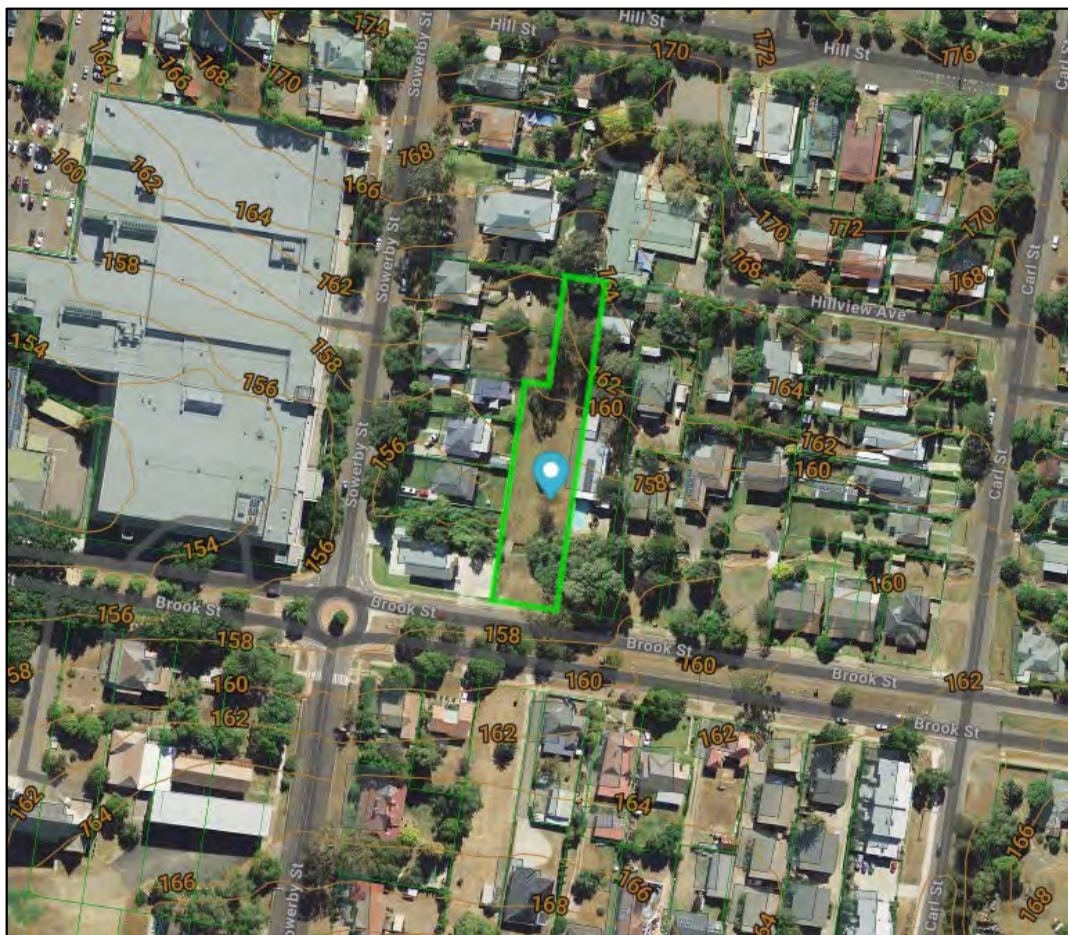
2.1 Site Description and Location

Refer to Table 1 and Figure 1 below for the existing site description summary:

Table 1: Site Description Summary

Summary	Site Description
Address	84 Brook Street, Muswellbrook NSW
Lot/DP	Lot 1 DP795300
Site Area	2502 Sq.m (By Title)
Land Zoning	R1
Catchment Area	Possum Gully Catchment Stormwater Drainage Study (SMEC)

Figure 1: Site Locality Plan



Source: Mecone Mosaic, SixMAPs NSW (2023)

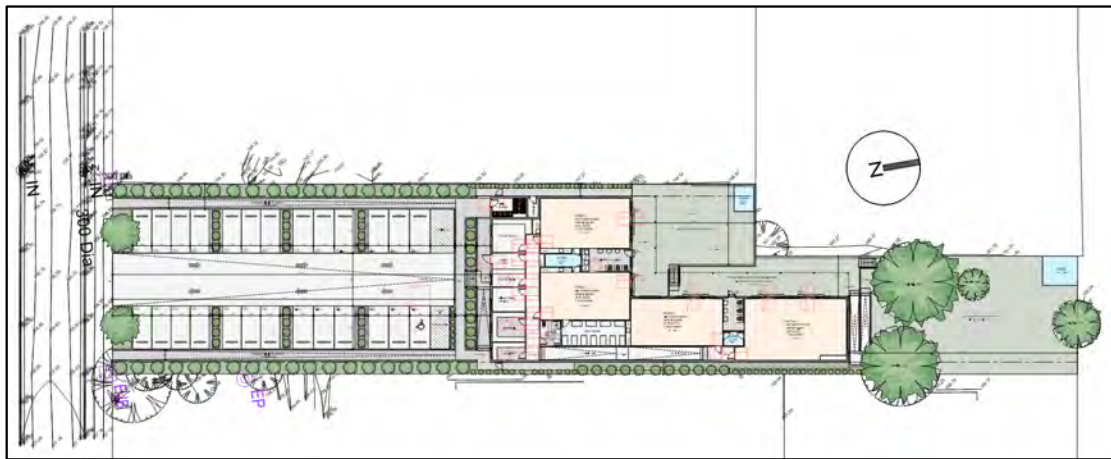
The subject property is located on Brook Street in Muswellbrook. The site is currently vacant. The property adjoins residential lots to the North, East and West. A natural water-course, formally identified as "Possum Gully" traverses through the southern end of the site in a Westerly direction.

2.2 Proposed Development

The architectural plans provided by Janssen Design (Appendix 2) indicate the following design intent as part of the development application:

- Construction of a Childcare Center Development located on the Northern End of the Site; and
- Construction of a Carpark and Associated Civil Works.

Figure 2: Proposed Site & Ground Floor Layout

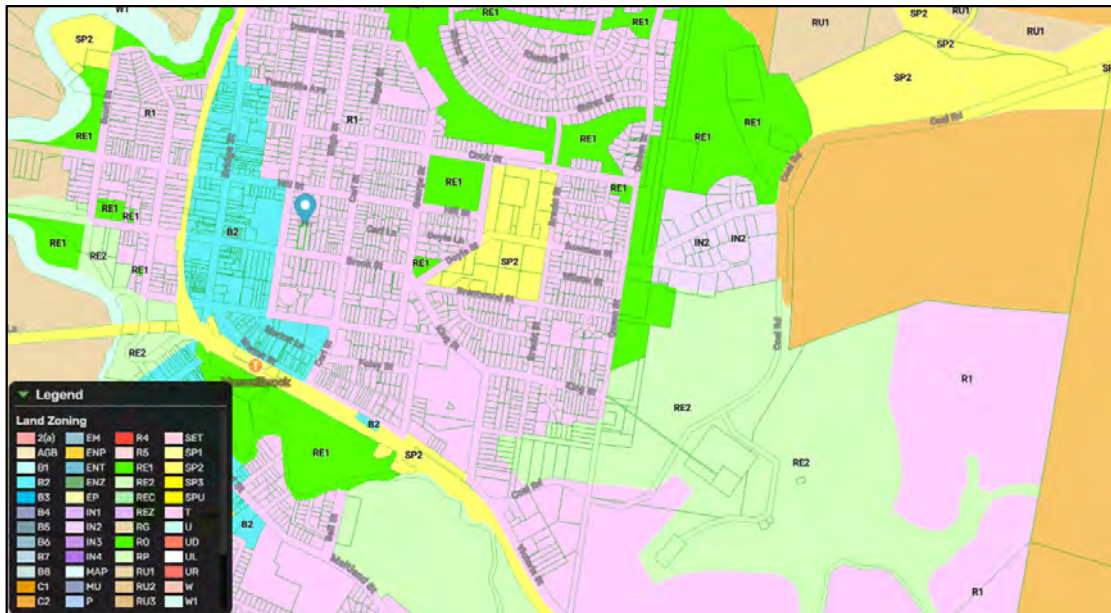


Source: Janssen Designs (2023)

2.3 Catchment Description

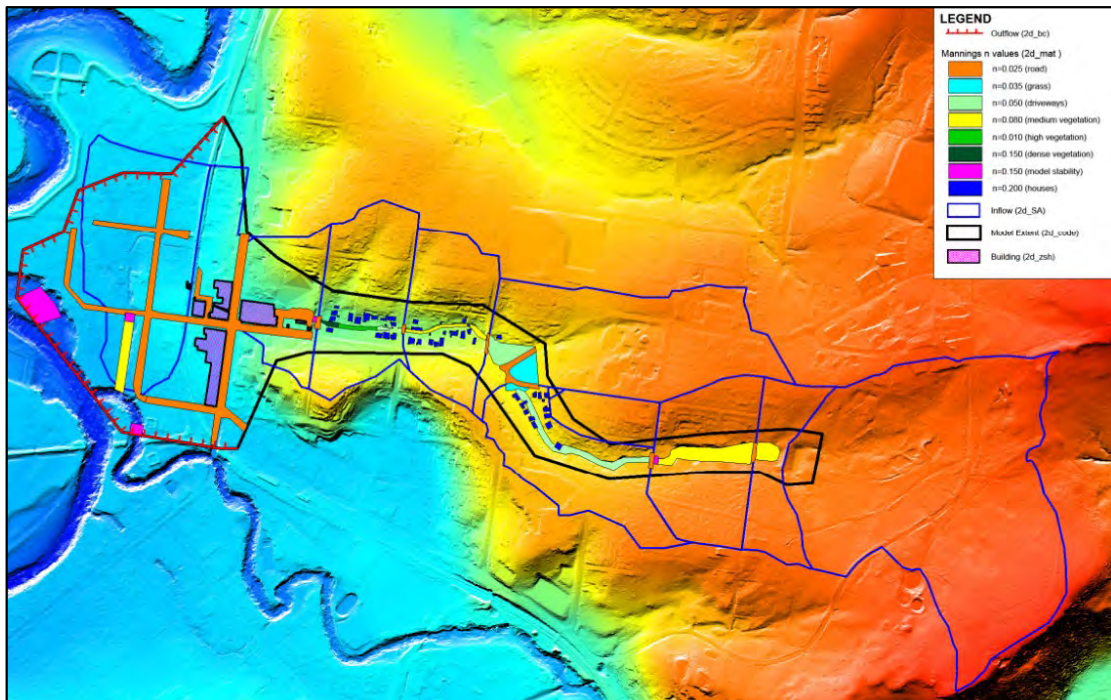
The catchment contributing to the site has been generally characterized as low density residential and rural lots.

Figure 3: Land Zoning Map



Source: Mecone Mosaic (2023)

Figure 4: Sub-Catchments & Contour Plan



Source: Possum Gully Flood Study (SMEC, 2015)

2.4 Council's Requirements

The following Council requirements as outlined in Section 13 – Flood Prone Land of the Muswellbrook Shire Development Control Plan 2009 (MSDCP) have been considered for this assessment:

A range of non residential uses are permitted in the flood affected areas. These are listed in the Muswellbrook Local Environmental Plan as amended:

- a) Floor levels for non residential uses, excluding habitable areas, may be permitted below flood level provided the development is in accordance with the principles outlined in Section 13.1.*
- b) The floor level of all habitable areas of proposed development shall be at least 0.5m above the 1% AEP flood level except in the case of change of use of an existing building.*
- c) The development will not result in increased flood hazard or flood damage to other properties or increase afflux by more than 0.1 metres.*
- d) The construction methods and materials for that part of the development below the 1% AEP flood level shall conform with the flood proofing code, Section 13.8.*
- e) The proposed development can withstand the force of flowing floodwaters, including debris and buoyancy forces.*
- f) Provision shall be made for the safe storage and/or timely removal of goods, materials, plant and equipment in the event of a flood.*
- g) A report be provided by a suitable qualified consulting engineer stating that the requirements outlined in (d) and (e) above have been incorporated in the design of the development.*

An evacuation plan for users of the development is prepared (to the satisfaction of Council) and maintained throughout the life of the development.

3. Hydrology Modelling

3.1 Overview

Tuflow (Version 10-AF 2020) was used for the local catchment simulation as detailed in ARR 1987. Using intensity frequency duration from the Bureau of Meteorology, design rainfalls were applied to the hydrological model to determine the design runoff hydrographs.

3.2 Hydrology Setup

The Tuflow Model used for analysis was supplied by Muswellbrook Shire Council on the 3rd of March 2023. Modifications were applied to the model as detailed in Section(s) 3.3 below.

3.3 Blockage

In order to provide the most conservative flood levels and hazards across the site and surrounding areas, all existing pits, pipes and culverts were assumed to be fully blocked. These factors have been directly applied to all pits & nodes within the hydrological model (0 = no blockage, 1 = full blockage):

Table 2: Pit Inlet Blockage Factors

Structure/Node Type	Typical Blockage Factor	Adopted Blockage Factor
On-grade Pit (Grate + Lintel)	0.2	1.0
Sag- Pit (Grate + Lintel)	0.5	1.0
On Grade (Grate Only)	0.35	1.0
Sag- Pit (Grate Only)	0.75	1.0
Sealed Junction Pit	N/A	1.0
Field Inlet Pit (Sag)	N/A	1.0

The adopted strategy provides conservative flood levels across the site for the purposes of flood planning and observation of flooding behavior.

4. Hydraulic Modelling

4.1 Overview

Two-dimensional (2D) hydraulic modelling was carried out to determine the flood behavior in the study area. Tuflow (Version 10-AF 2020) was used to model the hydraulic flooding behavior.

A minimum 2D Grid Size of 1.0m x 1.0m was adopted for modelling proposes to provide accurate flooding behavior within the subject site and immediately upstream and downstream. The terrain was derived using both the detailed site survey and LiDAR survey data:

The following manning's 'n' factors were adopted for both the pre and post development modelling scenarios in accordance with current accepted Engineering practice

Table 3: Manning's 'n' Factors for 2D Modelling

Land Use Zone	Manning's 'n' Factor
Waterbody	0.015
Roadways	0.025
Short Grass, Some Weeds	0.035
Long Grass, Heavy Weeds	0.045
Light Vegetation Including Trees	0.06
Dense Vegetation Including Trees / Urban	0.08
Buildings	0.2
Stability Roughness And Highly Dense	0.15
Reduced Manning's With Driveways	0.05
Thick Vegetation Including Trees	0.1
Concrete Channel	0.013
Shotcrete Channel	0.018

4.2 Blockages

The area of the proposed open-type piers within the site were modelled as complete blockages to prevent the passage of flood-waters. In order to reduce the change of erroneous results, the car-park concrete lid was purposely omitted from the model. Minute details, such as staircases, have purposely been omitted from the model to minimise the potential for errors in the 2D grid.

4.3 In-Ground Pit and Pipe Network

As detailed in Section 3.3, in-ground pit and pipe assets have been purposely omitted from the flood model to provide conservative flood estimates. Similarly, this provides a modelling approach which is not sensitive to unintended blockages or obstructions which is appropriate given the intended usage of the site.

5. Modelling Results

5.1 Overview

Design flood modelling was undertaken in TUFLOW for the 1% AEP and PMF Storm Design flood events. Detailed mapping outputs are provided in Appendix 3, 4 and 5 respectively.

5.2 Flood Impacts

As there is no proposed diversion of flood-waters, the flood behavior and hence, the flood impacts on upstream and receiving properties is minimal in terms of depth, velocity and hazard. It is noted that the maximum external afflux upstream of the site is limited to 100mm in accordance with Council's guidelines.

Whilst there is a minor afflux within the site due to the addition of the suspended driveway area, this afflux does not pose any additional flood risk as it is located beneath the suspended driveway structure.

5.3 Floor Levels & Freeboard

The Flood Planning Level (FPL) varies because of the gradient across the site. A freeboard of 500mm has been adopted for habitable areas in accordance with accepted Engineering Practice. The table below summarises the flood levels along the upstream boundary of the site immediately adjacent to the suspended car-parking area.

Table 4: Peak Flood Levels and Adopted Flood Planning Level

Flood Planning Area	Modelled Peak Flood Level	Freeboard (mm)	Minimum Finished Floor Level (FPL)
Habitable Areas	R.L. 156.61	500	R.L. 157.11
Non-Habitable Areas	R.L. 156.61	150	R.L. 156.76

5.4 Evacuation

The peak 1% AEP Flood Level measured at the upstream boundary adjacent to the proposed development is **R.L. 156.61m** which is 1820mm lower than the proposed Ground Floor Level of **R.L. 158.43m**. There is no identified flooding within the footpath or road reserve within the vicinity of the proposed Ground Floor and Carparking Extents, indicating that it is both flood-free and safe for all occupants to evacuate the site via the proposed entrances.

The peak PMF Flood Level measured at the upstream boundary adjacent to the proposed development is **R.L. 158.35m** which is 80mm lower than the proposed Ground Floor Level of **R.L. 158.43m**. As such, occupants may safely shelter-in-place within the proposed structure during a catastrophic flood event.

Due to the depth and velocity of flooding, evacuation on foot or via motor vehicle motor vehicle would not be possible in a safe manner. As such, it is not recommended to evacuate the development via *unless* under strict direction from Emergency Services Personnel.

It is recommended that a **shelter-in-place** strategy and management plan is adopted for the site, specifically for practicality reasons due to the proposed use as a Childcare Center to prevent the need to relocate children outside of the established premises.

5.5 Mitigation Measures

The following mitigation measures are recommended to flood-proof the development and mitigate any affects to neighboring or downstream properties:

- Adopting a minimum floor level of RL 158.43 for all habitable areas (**Reason:** to provide min. 500mm of Freeboard to the proposed development and provide a safe refuge at or above the PMF Level to suit the intended Child Care Center usage);
- Fencing, sign-marking & restricting access to the flow path area using flood-type fencing and gating approved by Muswellbrook Shire Council; (**Reason:** to ensure safety of occupants and provision of flood storage for the development)
- Adopting a Shelter-in-place Management Plan to suit the final usage of the development;
- Ensuring that all external power-points, air-conditioning units & hot-water systems are located at least 500mm above the adjacent 1% AEP Flood Level; and

A detailed Flood Mitigation Plan is provided in **Appendix 6** to provide further clarity on the intended works.

6. Flood Risk Management Plan

6.1 Overview

This section of the report outlines and discusses the measures to mitigate the flooding impacts on the proposed development and its users. These measures are specific to the site and compliment the floodplain risk management plan prepared by Council, which addresses issues such as evacuation from the precinct during flood events.

The purpose of this plan is:

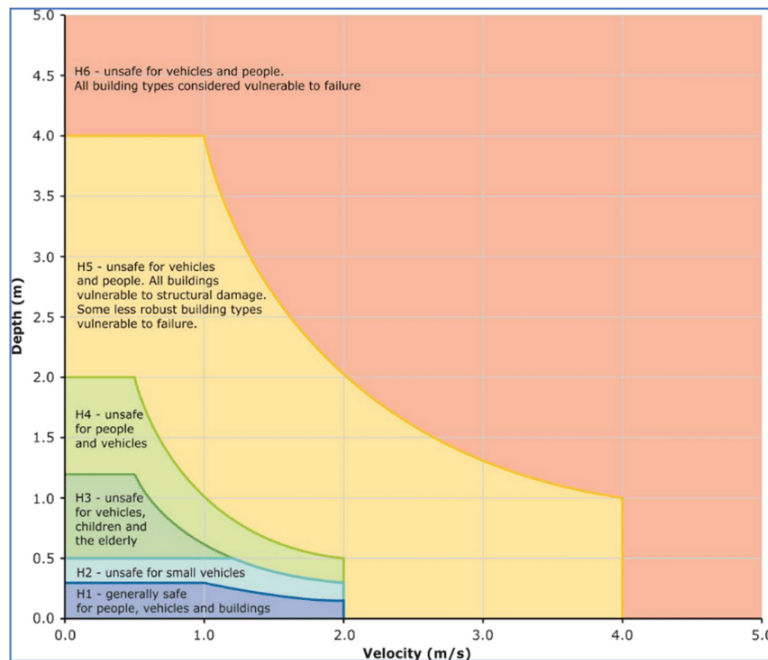
- To address existing, future and continuing flood risks on the site;
- To establish a program for the implementation of the plan; and
- To allow the stakeholders of the site to adopt this plan.

6.2 Australian Rainfall & Run-off 2019 (ARR2019)

6.2.1 General Flood Hazard Curves

When dealing with specific floodplain management or emergency management analysis there may be a clear need to use specific thresholds. However, particularly in a preliminary assessment of risks or as part of a constraints analysis such as might be applied as part of a strategic floodplain management assessment, there is also an acknowledged need for a combined set of hazard vulnerability curves, which can be used as a general classification of flood hazard on a floodplain. A suggested set of curves based on the referenced thresholds presented above is provided in the figure below:

Figure 5: Combined Flood Hazard Curves (ARR2019)



The combined flood hazard curves presented in Figure 7 set hazard thresholds that relate to the vulnerability of the community when interacting with floodwaters. The combined curves are divided into hazard classifications that relate to specific vulnerability thresholds as described in the table below.

Table 5: Combined Hazard Curves – Vulnerability Thresholds

Hazard Vulnerability Classification	Modelled Peak Flood Level
H1	Generally safe for vehicles, people and buildings.
H2	Unsafe for small vehicles
H3	Unsafe for vehicles, children and the elderly.
H4	Unsafe for vehicles and people.
H5	Unsafe for vehicles and people. All buildings vulnerable to structural damage. Some less robust buildings subject to failure.
H6	Unsafe for vehicles and people. All building types considered vulnerable to failure.

Table 6: Combined Hazard Curves – Vulnerability Thresholds Classified Limits

Hazard Vulnerability Classification	Classification Limit (D and V in combination)	Limiting Still Water Depth (D)	Limiting Velocity (V)
H1	$D \cdot V < 0.3$	0.3	2.0
H2	$D \cdot V < 0.6$	0.5	2.0
H3	$D \cdot V < 0.6$	1.2	2.0
H4	$D \cdot V < 1.0$	2.0	2.0
H5	$D \cdot V < 4.0$	4.0	4.0
H6	$D \cdot V > 4.0$	-	-

Importantly, the vulnerability thresholds identified in the flood hazard curves described above can be applied to the best description of flood behavior available for a subject site. In this regard, the hazard curves can be applied equally to flood behavior estimates from measured data, simpler 1D numerical modelling approaches, through to complex 2D model estimates with the level of accuracy and uncertainty of the flood hazard estimate linked to the method used to derive the flood behavior estimate.

6.2.2 Isolation, Effective Warning Time, Rate of Rise and Time of Day

The effective warning time available to respond to a flood event, the rate of rise of floodwaters, the time of day a flood occurs, and isolation from safety by floodwaters and impassable terrain are all factors that may increase the potential for people to be exposed to hazardous flood situations. These factors are important considerations that influence the vulnerability of communities to flooding and are important considerations in managing flood risk.

6.2.2.1 Isolation

As outlined in AEM Handbook 7 (AEMI, 2014), flooding can isolate parts of the landscape and cut-off evacuation routes to flood-free land. This can result in dangerous situations, because people may see the need to cross floodwaters to access services, employment or family members. Many flood fatalities result from the interactions of people, often in vehicles, with floodwaters. Any situation that increases people's need to cross floodwaters increases the likelihood of an injury or fatality.

AEM Handbook 7 recommends that the floodplain be classified by precinct or community based on flood emergency response categories. This classification is separate to the quantification of hazard outlined in this guideline and is addressed in the complementary Technical Flood Risk Management Guideline on Flood Emergency Response Classification of the Floodplain.

6.2.2.2 Effective Warning Time

As outlined in of AEM Handbook 7, effective warning time is the time available for people to undertake appropriate actions, such as lifting or transporting belongings and evacuating. Lack of effective warning time can increase the potential for the exposure of people to hazardous flood situations. In contrast, having plenty of effective warning time provides the opportunity to reduce the exposure of people and their property to hazardous flood situations.

6.2.2.3 Rate of Rise

Rate of rise of floodwaters is discussed in AEM Handbook 7. A rapid rate of rise can lead to people evacuating being overtaken or cut off by rising floodwaters. It is often associated with high velocities but it can be an issue if access routes are affected by flooding.

6.2.2.4 Time of Day

The time of day influences where people are and what they are doing. This can influence their ability to receive any flood warnings and respond to a flood threat. Inability to receive and respond to a warning can increase the potential for people to be exposed to hazardous flood situations

6.3 Existing, Future and Continuing Risks

As outlined earlier in the report, the site is located within flood prone land. The site is affected by the overland flooding. The flood study shows flooding entering the car-parking area via the Eastern boundary from Possum Gully. It should be noted that the proposed development is consistent with Council's land use objectives.

The continuing flood risk on the site is insignificant as ample freeboard has been provided to both the 1% AEP and PMF Flood Events, with the ground floor levels and above being completely flood-free. As

such, the proposed development does not result in an unacceptable increase in risk to human life during an extreme flood event exceeding the 1% AEP.

Triggers for a likely flood emergency may come in the form of:-

- The Bureau of Meteorology issuing a flood warning;
- The Bureau of Meteorology issuing a Severe Weather Warning or a Severe Thunderstorm Warning indicating a likelihood of a flash flooding;
- The State Emergency Service issuing a Flood Bulletin;
- Rising floodwaters; and
- Heavy rainfall.

These triggers do not mean that the business should cease immediately but are important for the assigned warden/deputy to:-

- Keep watch on the flood levels along Possum Gully and the surrounding areas in the vicinity of the site;
- Inform the site users of these triggers; and
- Listen to the local media for update and advice.

It is recommended that flood compatible materials are used on the ground floor levels where subject to high flows to minimise the cost of the damage during rare flood events (i.e. PMF). The structural engineer should certify the building structure is able to withstand the shear forces of the floodwaters up to the flood level in a 100-year ARI plus 0.5m and up to the PMF level.

The development does not increase the potential flood affectation on other properties. Perimeter fencing is to be constructed in a manner that does not affect the direction and the velocity of the floodwaters. It is recommended to install fencing that allows the flow to pass through without obstruction. A structural engineer's certificate is required to confirm that the proposed fence and footings can withstand the shear forces of floodwaters.

The additional economic and social costs, which may arise from damage to property as a result of flooding, can be fully managed by the stakeholders of the site. During a 1% AEP flood event and PMF events, the ground floor level provides shelter to humans free from flooding up to and including the PMF flood event. Evacuation from the development can occur after the flood levels have recessed to levels where Brook Street can be reused to exit the area.

A risk management policy should be adopted and implemented by the operators of the development, which increases the awareness of the stakeholders and the users of the site to the flooding issues and outlines the procedures of control and evacuation from the site in flooding events. The NSW SES Community Flood Safe Guides should be printed and made available within the premises.

6.4 Preparation for a Flood Emergency

In preparation for a flood emergency, the following should be done:-

- Ensure all occupants and visitors are aware of the flooding situation and that isolation and confinement to ground floor of the building is a real possibility;
- Encourage occupants and visitors to participate in the development, implementation and review of future flood risk management plans;
- Keep an up-to-date list of emergency contact numbers in a prominent location;
- Incorporate flood awareness;
- Assess the capability of the Site to provide short term catering for the persons evacuated to ground floor;
- Identify those systems which can be shut down in the event of a flood emergency;
- Establish the ground floor as the meeting point when a flood emergency is called; and
- Prepare coloured notices of reasonable size that inform persons within the site of the procedures if a flooding above the 100-year ARI flood event occurs and a flood emergency is called as outlined in the following section.

6.5 Actions in the likelihood or during a Flood

The following actions should be listed on the notice to be displayed on site at key locations.

- Occupants to monitor the likelihood of a flood, heavy rainfall and/or if a flood is occurring;
- If the flash flooding occurs much faster and it is not safe to evacuate, i.e. the flood levels are rising too quickly in Possum Gully and there is a possibility of the outdoor car-parking area becoming inundated, vacate and clear the car-park and elevate everyone with their personal items to the ground floor. Site evacuation should not occur if the flood levels are approaching the carpark level or are entering the site from Brook Street. Flood depth of 150mm or higher could potentially destabilise small vehicles;
- Try as much as practical to seal doors and openings for bin rooms etc. to minimise the damage to property and equipment;
- Move any hazardous material (if any) to the ground floor in a suitable area which is not accessible by children (e.g. an outdoor store) to avoid it getting washed by the floodwaters;
- Contact the emergency services on 000 and the SES on 132500 alerting them to the situation;

- Continue to monitor the local radio stations, generally the ABC, to keep updated on any flooding;
- Shut down computers and all non-essential equipment;
- Maintain a watch on the flood levels in Possum Gully and Brook Street;
- Maintain contact with the emergency services;
- Do not permit anyone to leave the site by foot or vehicle;
- Keep everyone to the confines of the Ground Floor Level at all times;
- Have all personnel maintain a calm outlook;
- In the event of a medical emergency, contact the emergency services by phone 000 and advise them of the need for assisting and follow their instructions;
- Further shut down all system not required; and
- Always maintain an ongoing count of persons and report any missing.

Table 7: Flood Warning Actions (Water levels taken in Aldgate St Road Reserve)

Flood Level (m AHD)	Approx. Depth (mm)	Flood Warning Trigger Action
≥155.75	≥500mm	<ul style="list-style-type: none"> • Monitor the flood level and time the rate of rise of the flood level
<156.25	<1000mm	<ul style="list-style-type: none"> • Warn occupants of possible need to shelter-in-place • Monitor the flood level and the time the rate of rise of the flood level
<156.75	<1500mm	<ul style="list-style-type: none"> • Close driveway and evacuate visitors from above-ground car-parking level to ground floor level • Implement shelter-in-place protocol for Childcare Center staff and occupants
>157.00	>1750mm	<ul style="list-style-type: none"> • Continue monitoring • Continue sheltering in-place for Childcare Center • All other occupants await instructions from Emergency Services for evacuation (if deemed safe and necessary by response personnel) and remain at or above the ground floor level

6.6 Other Sources of Flood Information

6.6.1 Observation of local rainfall or flood water

An important indication of likely imminent flood activity would be intense local rainfall.

6.6.2 The Bureau of Meteorology

The Bureau of Meteorology does not prepare flood predictions for the Possum Gully Catchment Area but does issue Severe Thunderstorm Warnings and Severe Weather Warnings.

Severe Thunderstorm Warnings are issued together with maps indicating the current location and predicted path of thunderstorms. Severe Weather Warnings are for severe weather not related to thunderstorms, cyclones or fire, such as “east coast lows” or other causes of intense rainfall or storm surge. These warnings are available at <http://www.bom.gov.au/nsw/warnings/>.

6.6.3 The NSW SES

The local SES unit is Muswellbrook Shire. The applicable region operates a Facebook page for informing members of the public (<https://www.facebook.com/NSWSESMBK>).

The SES issues Local Flood Advices. These are issued on the basis of localised valley watch information for locations for which the BoM does not issue Flood Warnings. They normally predict which class of flooding (minor, moderate or major) will occur, and must not contradict any Flood Warnings provided by the BoM for gauges on the same river. Local Flood Advices are to be clearly identified as being issued by the SES. For the subject area, no Flood Warning Plan has been prepared to date by the NSW SES.

7. Discussion

This section of the report provides a review of the results and discusses Council's requirements as stated in the DCP.

1. The proposed development does not have any adverse impacts on the flooding elsewhere in the floodplain.
2. Occupants at an elevated risk (i.e. children) are isolated from any flood risk exposure.
3. The proposed floor levels comply with the Flood Planning Level (FPL). Reference is made to the architectural plans for details.
4. Adequate provision for on-site refuge is possible up to and including the PMF Storm Event for the intended usages of the development;
5. The requirements of the DCP are implemented.

In our opinion, the proposed buildings footprints do not displace floodwaters in such a manner to impact on the flooding behavior in terms of loss of flood storage, increase in velocity and risk.

8. Conclusion

A detailed investigation on the flooding behavior has been undertaken in the vicinity of the proposed development at 84 Brook Street, Muswellbrook NSW. Using a combined 1D/2D model, the study determined the flood behavior for the 1% AEP Storm Event.

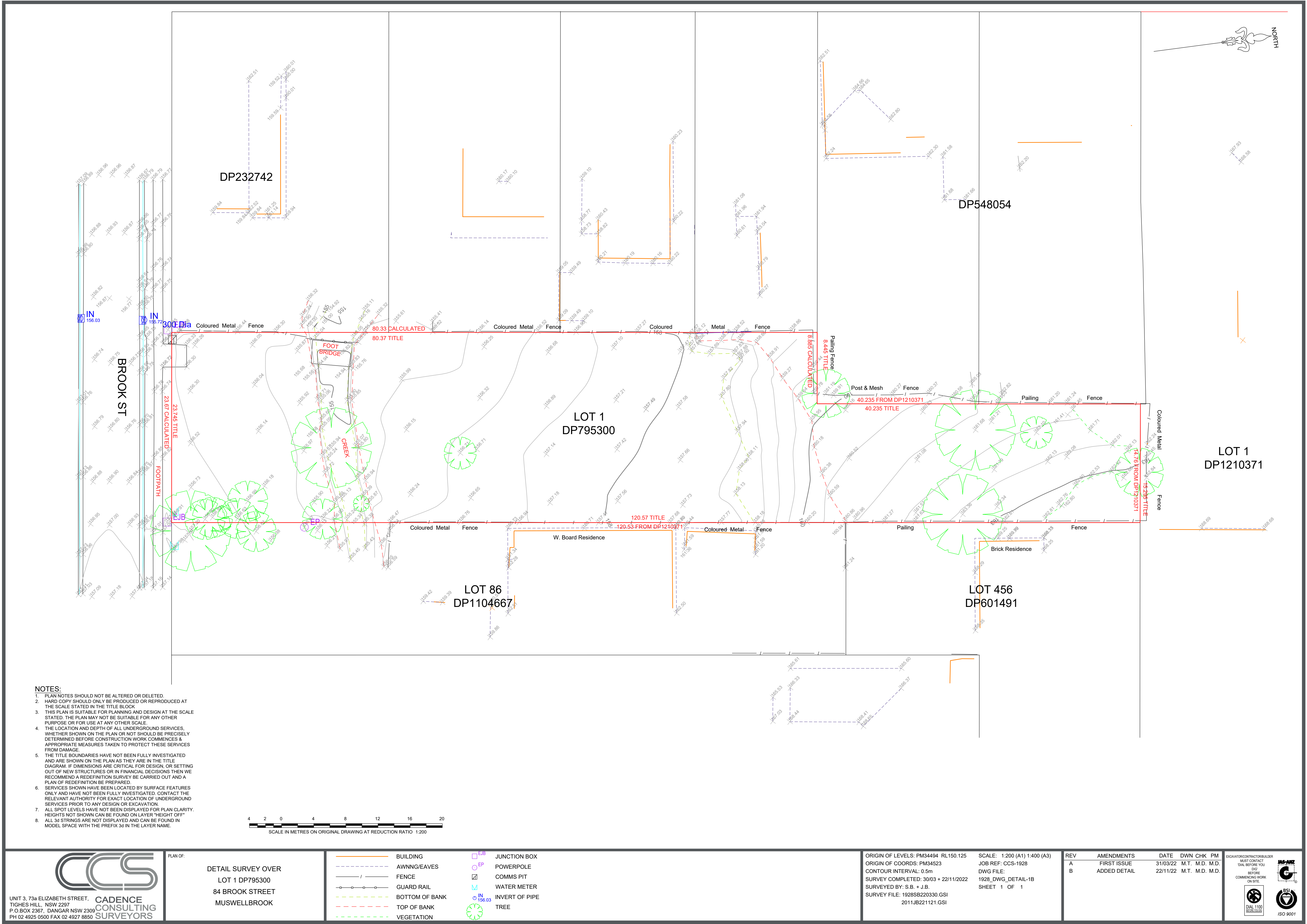
The primary flood characteristics reported for the design events considered include depths, levels, velocities and impact. The impact of the proposed development was assessed and was found to be inconsequential.

The study addresses Council's requirements as per the DCP. In our opinion, Council should allow the development in its current proposal

Appendix 1

Detailed Site Survey

Cadence Consulting Surveyors



Appendix 2

Architectural Plans

Janssen Designs

84 Brook Street, Muswellbrook

Proposed Child Care Centre

DRAWING SCHEDULE:

- A000 - COVER PAGE
- A001 - CALCULATIONS PAGE / LEP MAPS
- A002 - SITE CONTEXT PLAN
- A003 - SITE ANALYSIS PLAN
- A004 - SITE PLAN
- A005 - BASEMENT PLAN
- A006 - GROUND FLOOR PLAN
- A007 - FIRST FLOOR PLAN
- A008 - ROOF PLAN
- A009 - SOUTH & EAST ELEVATIONS
- A010 - NORTH & WEST ELEVATIONS
- A011 - SECTION
- A012 - MAXIMUM BUILDING HEIGHT DIAGRAM
- A013 - PERSPECTIVES 1 & 2
- A014 - PERSPECTIVES 3 & 4
- A015 - PERSPECTIVES 5 & 6 - LODGES ROAD
- A016 - PERSPECTIVES 7,8 & 9 - OPA & INTERNAL CORRIDOR
- A017 - ACOUSTIC DETAILS - GROUND FLOOR
- A018 - ACOUSTIC DETAILS - FIRST FLOOR
- A019 - SHADOW DIAGRAMS - 9AM & 12 NOON
- A020 - SHADOW DIAGRAMS - 3PM
- A021 - COVERED OUTDOOR AREA DIAGRAM & OPA CALCULATION - GROUND FLOOR
- A022 - COVERED OUTDOOR AREA DIAGRAM & OPA CALCULATION - FIRST FLOOR
- A023 - EMERGENCY EVACUATION PLAN - GROUND FLOOR
- A024 - EMERGENCY EVACUATION PLAN - FIRST FLOOR
- A025 - COLOUR AND FINISHES SCHEDULE



3.7.5.5 REQUIREMENTS FOR SMOKE ALARMS

- (A) SMOKE ALARMS MUST BE INSTALLED IN -
- (I) CLASS 1A BUILDINGS IN ACCORDANCE WITH 3.7.2.3; AND
- (II) CLASS 1B BUILDINGS IN ACCORDANCE WITH 3.7.2.4;
- (B) SMOKE ALARMS MUST COMPLY WITH AS 3786;
- (C) SMOKE ALARMS MUST BE CONNECTED TO THE CONSUMER MAINS POWER WHERE CONSUMER POWER IS SUPPLIED TO THE BUILDING.

3.8.5.2 VENTILATION REQUIREMENTS

VENTILATION MUST BE PROVIDED TO A HABITABLE ROOM, SANITARY COMPARTMENT, BATHROOM, SHOWER ROOM, LAUNDRY AND ANY OTHER ROOM OCCUPIED BY A PERSON FOR ANY PURPOSE BY ANY OF THE FOLLOWING MEANS:

- (A) PERMANENT OPENINGS, WINDOWS, DOORS OR OTHER DEVICES WHICH CAN BE OPENED -
- (I) WITH AN AGGREGATE OPENING OR OPENABLE SIZE NOT LESS THAN 5% OF THE FLOOR AREA OF THE ROOM REQUIRED TO BE VENTILATED; AND
- (II) OPEN TO -
- (A) A SUITABLY SIZED COURT, OR SPACE OPEN TO THE SKY; OR
- (B) AN OPEN VERANDAH, CARPORT, OR THE LIKE; OR
- (C) AN ADJOINING ROOM IN ACCORDANCE WITH (B).
- (B) NATURAL VENTILATION TO A ROOM MAY COME THROUGH A WINDOW, OPENING, VENTILATING DOOR OR OTHER DEVICE FROM AN ADJOINING ROOM (INCLUDING AN ENCLOSED VERANDAH) IF -
- (I) THE ROOM TO BE VENTILATED OR THE ADJOINING ROOM IS NOT A SANITARY COMPARTMENT; AND
- (II) THE WINDOW, OPENING, DOOR OR OTHER DEVICE HAS A VENTILATING AREA OF NOT LESS THAN 5% OF THE FLOOR AREA OF THE ROOM TO BE VENTILATED; AND
- (III) THE ADJOINING ROOM HAS A WINDOW, OPENING, DOOR OR OTHER DEVICE WITH A VENTILATING AREA OF NOT LESS THAN 5% OF THE COMBINED FLOOR AREAS OF BOTH ROOMS; AND
- (IV) THE VENTILATING AREAS SPECIFIED MAY BE REDUCED AS APPROPRIATE IF DIRECT NATURAL VENTILATION IS PROVIDED FROM ANOTHER SOURCE.

GENERAL NOTES

- CONTRACTOR MUST VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK OR PREPARING SHOP DRAWINGS. DO NOT SCALE FROM DRAWINGS.
- ALL BUILDING WORKS SHALL BE IN ACCORDANCE WITH THE RELEVANT NATIONAL CONSTRUCTION CODE (NCC), BUILDING CODE OF AUSTRALIA (BCA), RELEVANT AUSTRALIAN STANDARDS (AS), INCLUDING AMENDMENTS AND THE REQUIREMENTS OF COUNCIL AND PRIVATE CERTIFIERS (PC) AND OTHER AUTHORITIES HAVING JURISDICTION.
- THE ARCHITECTURAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT CONSULTANT DRAWINGS AND REPORTS FOR COORDINATION AND INFORMATION.
- THRESHOLDS AND DOORWAYS ARE FLUSH FOR WHEELCHAIR ACCESS IN ACCORDANCE WITH AS1428.1 DESIGN FOR ACCESS AND MOBILITY. REFER TO ACCESS CONSULTANT REPORT FOR DISPENSATIONS AND POTENTIAL PERFORMANCE SOLUTION PROPOSED.
- DRAWINGS ARE NOT COORDINATED BY JANSSEN DESIGNS. CONDITIONS AND DOCUMENTS NEED TO BE COORDINATED AND CHECKED TO CONFIRM THEY SATISFY THE AUSTRALIAN STANDARDS, SPECIALIST DISABILITY ACCOMMODATION, DESIGN FOR DISABILITY ACCOMMODATION, DEVELOPMENT APPLICATION REQUIREMENTS, THE NCC, BCA CODES AND CONTROLS THAT APPLY TO THIS PROJECT, A COORDINATED CONSTRUCTION SET MAY VARY FROM THE PRODUCED DRAWINGS. JANSSEN DESIGNS DOES NOT ACCEPT ANY LIABILITY, DIRECT OR INDIRECT, FOR ANY LOSS LIABILITY OR LOSS SUFFERED OR INCURRED BY ANY PERSON OR THIRD PARTY PLACING ANY RELIANCE ON THE SERVICES OR DOCUMENTS OR ADVICE ARISING IN CONNECTION WITH THE SERVICE.
- ALL STRUCTURAL ELEMENTS ARE SHOWN INDICATIVELY AND ARE TO BE CONFIRMED WITH THE DESIGN, DETAIL AND SPECIFICATION OF THE STRUCTURAL ENGINEER.
- ALL STRUCTURAL FRAMING, LOADING, BEARING, RETAINING AND FIXING OF ELEMENTS ARE TO THE DESIGN, DETAIL AND SPECIFICATION OF THE STRUCTURAL ENGINEER.
- ALL SERVICES ELEMENTS INCLUDING HYDRAULICS, ELECTRICAL, MECHANICAL, FIRE AND COMMUNICATION SERVICES SHOWN ARE INDICATIVE ONLY. REFER TO SERVICES CONSULTANT SEPARATE DOCUMENTATION AND SPECIFICATION FOR DETAILED DESIGN.
- ANY DISCREPANCIES BETWEEN ARCHITECTURAL CONSULTANT DOCUMENTATION ARE TO BE REPORTED TO THE ARCHITECT IMMEDIATELY FOR CLARIFICATION.
- ALL CONCRETE AND METALWORK ITEMS, SUCH AS SHOP DRAWINGS, TO BE ORGANISED AND REVIEWED BY THE CLIENT.
- ALL SITE AND BUILDING GRID SET-OUT IS TO BE CONDUCTED AND VERIFIED BY A REGISTERED SURVEYOR BEFORE COMMENCEMENT OF CONSTRUCTION WITH ANY DISCREPANCIES NOTIFIED TO THE CLIENT FOR CLARIFICATION.
- INTERIOR LIGHTING SYSTEMS THROUGHOUT IS TO COMPLY WITH AS 1680 (AS REQUIRED BY BCA C3.8.4.3 CLASS 1 & 10 BUILDINGS AND CF4.1.1, F4.2, F4.3, F4.4 FOR CLASS 2 TO 9 BUILDINGS)
- ALL SANITARY COMPARTMENTS ARE TO BE CONSTRUCTED TO COMPLY WITH BCA PART 3 C3.8.3.3 FOR CLASS 1 & 10 BUILDINGS AND CF2.58 FOR CLASS 2 TO 9 BUILDINGS.
- ALL BALUSTRADES (IF REQUIRED) HEIGHTS AND DESIGN SHALL BE IN ACCORDANCE WITH AS 1170 PART 1 (AS REQUIRED BY BCA PART 3 C3.9.2.3 FOR CLASS 1 & 10 BUILDINGS AND BCA PART D CL D2.16 FOR CLASS 2 TO 9 BUILDINGS)
- ALL ALUMINIUM FRAMED GLAZING TO COMPLY WITH AS 1288, AS 2208.
- TERMITE CONTROL KORDON TERMITE BARRIER IS TO BE USED AS A BUILDING PERIMETER AND SERVICE PENETRATION TERMITE PROTECTION SYSTEM (AS 3660.1 - 2000). IT IS TO BE INSTALLED BY A MANUFACTURER'S ACCREDITED INSTALLER. AS PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, THE BUILDER IS TO PROVIDE ALL RELEVANT SLAB OR CONSTRUCTION DETAILS TO THE ACCREDITED INSTALLER FOR PRICING ETC. THE BUILDER IS TO TREAT THE BUILDINGS TERMITE PROTECTION AS PART OF THE BUILDING PROCESS AND THEREFORE INCLUDED IN THE CONSTRUCTION PROGRAM.

AMENDMENTS			Project Title: Proposed Child Care Centre	DRAWING TITLE: Cover Page	CLIENT DETAILS: JAL Invest Co Pty Ltd
ISSUE	DESCRIPTION	DATE			
LOCAL GOVERNMENT AREA:			84 Brook Street, Muswellbrook	ADDRESS: 84 Brook Street, Muswellbrook	MUSWELLBROOK COUNCIL
Muswellbrook Council					
Issue For:			Issue:		
DA			A		
Date: 20.7.2022			Scale: 1:100		
			Drawing #: A000		
			Project #: 10186		

COMPLIANCE TABLE

TOTAL SITE AREA	2,495.00m2 (BY CALC)
MAX. REQUIRED FLOOR SPACE RATIO	0.5:1 1,247.50m2
PROPOSED FLOOR SPACE RATIO	555m2 22.2:1 - COMPLIES

CHILDCARE

NUMBER OF CHILDREN:

- 0-2 YEARS - 20 PLACES
- 2-3 YEARS - 20 PLACES
- 3-6 YEARS - 50 PLACES

TOTAL - 90 PLACES

NUMBER OF TEACHERS:

- 0-2 YEARS - 5 TEACHERS @ 1:4 RATIO
- 2-3 YEARS - 4 TEACHERS @ 1:5 RATIO
- 3-6 YEARS - 5 TEACHERS @ 1:10 RATIO

INDOOR PLAY AREA:

- 0-2 YEARS - 66.3m2 @ 3.25m2 / KID
- 2-3 YEARS - 69.4m2 @ 3.25m2 / KID
- 3-6 YEARS - 166.1m2 @ 3.25m2 / KID

OUTDOOR PLAY AREA:

TOTAL AREA - 641m2 @ 7m2 / KID

PARKING

MINIMUM REQUIRED	1 CARSPACE PER STAFF - 14
1 X DIRECTOR	1 CARSPACE
1 X COOK	1 CARSPACE
1 X LOADING BAY	1 CARSPACE
TOTAL PARKING SPACES PROPOSED	1 CARSPACE PER 10 CHILDREN - 9
VISITOR SPACES	26 CARSPACES - COMPLIES
STAFF SPACES	9 CARSPACES
	17 CARSPACES

ZONE - R1 GENERAL RESIDENTIAL



FLOOR SPACE RATIO - 0.5:1



MAXIMUM BUILDING HEIGHT - 8.5M

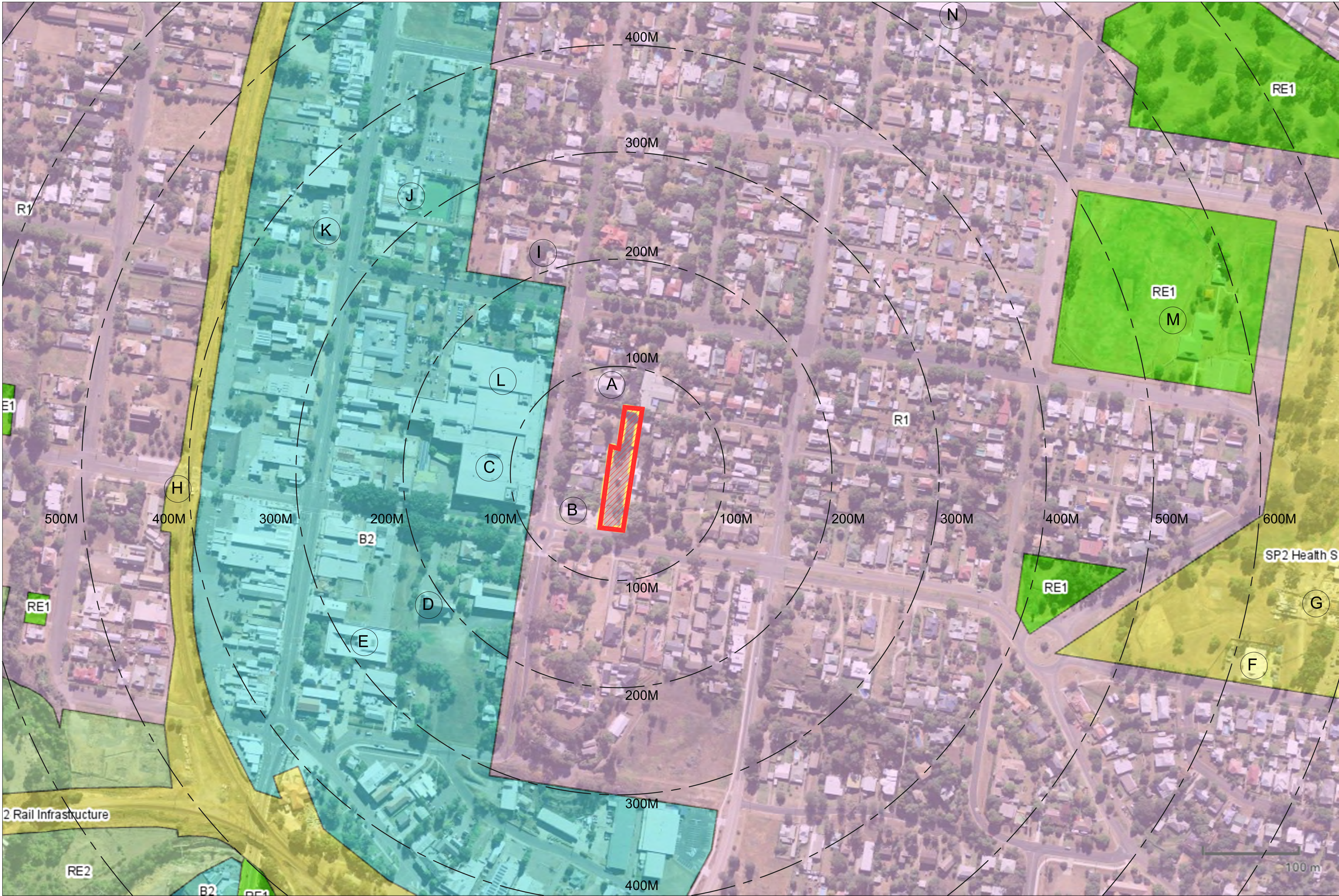


HERITAGE - RESIDENTIAL AREA CONSERVATION AREA | LOCAL SIGNIFICANCE



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DO NOT SCALE OFF ARCHITECTURAL DRAWINGS



SITE CONTEXT PLAN -
N.T.S.



JANSSEN

DESIGNS

info@janssendedesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636

Nominated Architect: Jake Janssen NSW ARB 11575

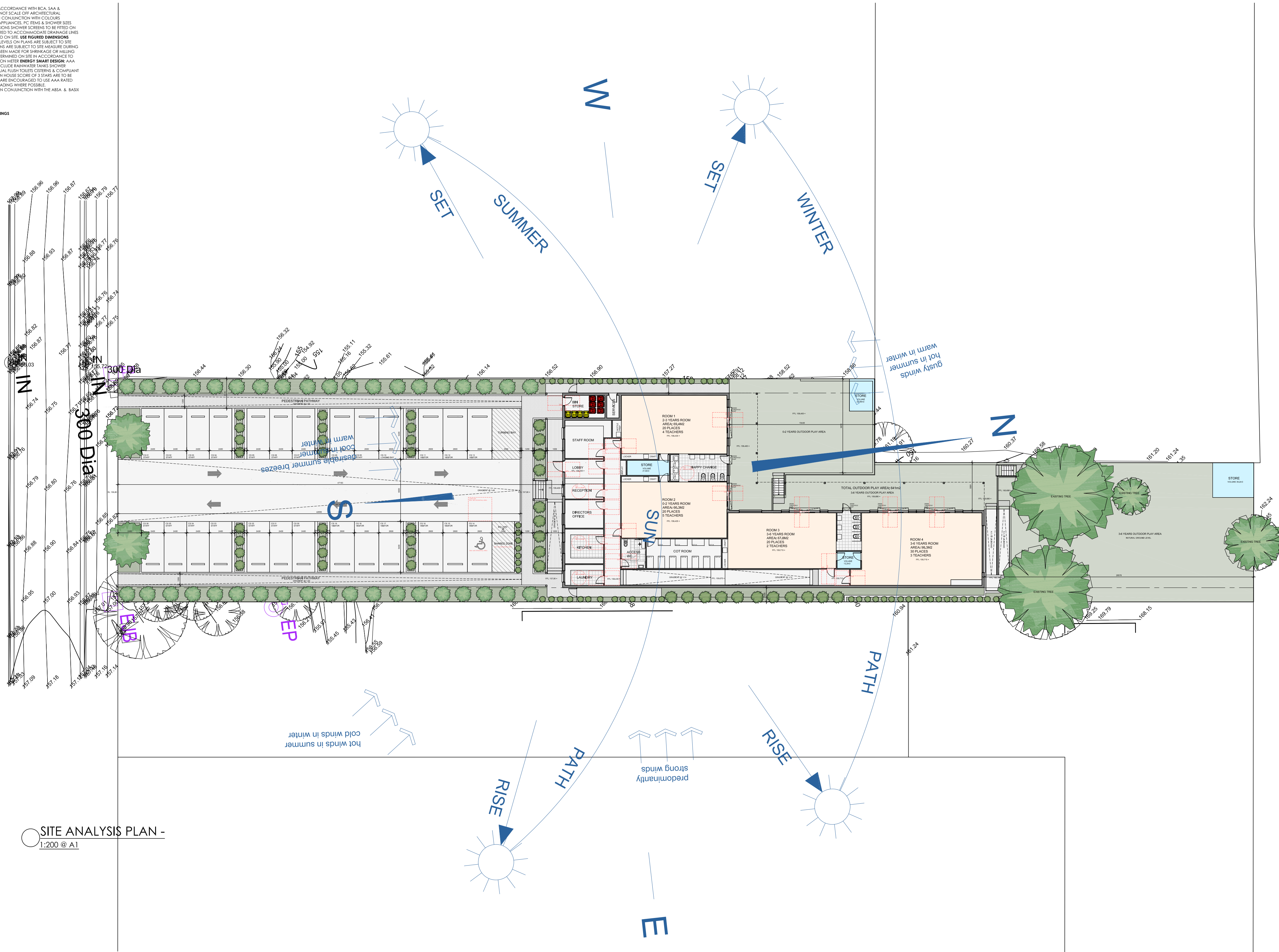
LANDMARKS

- A - MUSWELLBROOK PRESCHOOL KINDERGARTEN
- B - HUNTER MEDICAL PRACTISE
- C - WOOLWORTHS
- D - ST JAMES MUSWELLBROOK CHURCH
- E - MUSWELLBROOK COURTHOUSE
- F - GOODSTART EARLY LEARNING MUSWELLBROOK
- G - MUSWELLBROOK HOSPITAL
- H - NEW ENGLAND HIGHWAY
- I - PACIFIC BROOK CHRISTIAN SCHOOL
- J - MUSWELLBROOK BOWLING CLUB
- K - SHELL COLE EXPRESS
- L - BIG W
- M - STAN THEISS CENTRE
- N - MUSWELLBROOK PUBLIC SCHOOL

AMENDMENTS			Project Title: Proposed Child Care Centre	DRAWING TITLE: Site Context Plan	CLIENT DETAILS: JAL Invest Co Pty Ltd	
DATE	DESCRIPTION	DATE				
LOCAL GOVERNMENT AREA:			ADDRESS: 84 Brook Street, Muswellbrook	Issue For: DA	Issue: A	Project #: 10186
Muswellbrook Council						
Date: 20/7/2022						
Scale: 1:100						
Drawing #: A000						

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KEY:

CARPORT

1/2 NUMBER OF STOREYS

OVERLOOKING

PEDESTRIANS & VEHICLE ACCESS POINTS

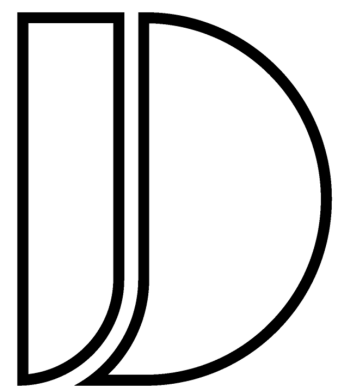
VIEWS

SITE

CONTOURS

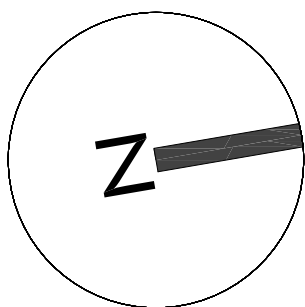
PRIVATE OPEN SPACE

EXISTING TREES



JANSSSEN
DESIGNS

info@janssendedesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636
Nominated Architect: Jake Janssen NSW ARB 11575



AMENDMENTS		
DATE	DESCRIPTION	DATE

Project Title:
Proposed Child Care
Centre

DRAWING TITLE:
Site Analysis Plan

ADDRESS:
84 Brook Street,
Muswellbrook

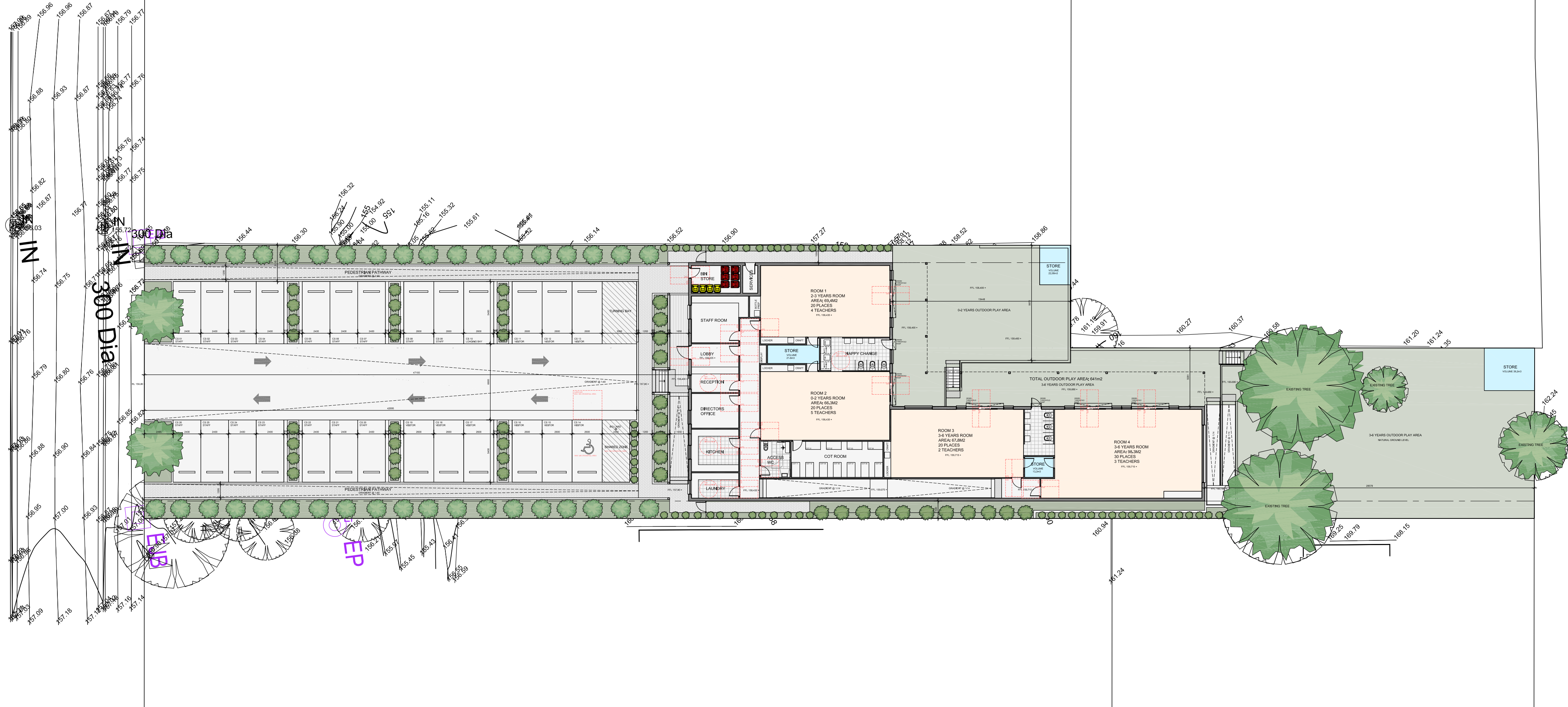
CLIENT DETAILS:
JAL Invest Co Pty Ltd

LOCAL GOVERNMENT AREA:
Muswellbrook Council

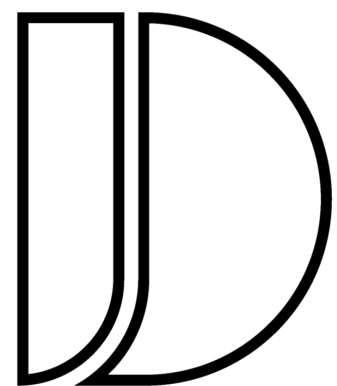
Issue For	Issue	Scale	Drawing #	Project #
DA	A	1:100	A000	10186
Date:	20.7.2022			

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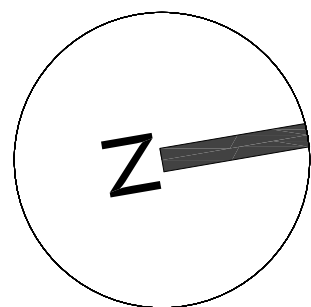


SITE PLAN -
1:200 @ A1



JANSSSEN
DESIGNS

info@janssendedesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636
Nominated Architect: Jake Janssen NSW ARB 11575



AMENDMENTS		
DATE	DESCRIPTION	DATE

Project Title:
Proposed Child Care
Centre

DRAWING TITLE:
Site Plan

ADDRESS:
84 Brook Street,
Muswellbrook

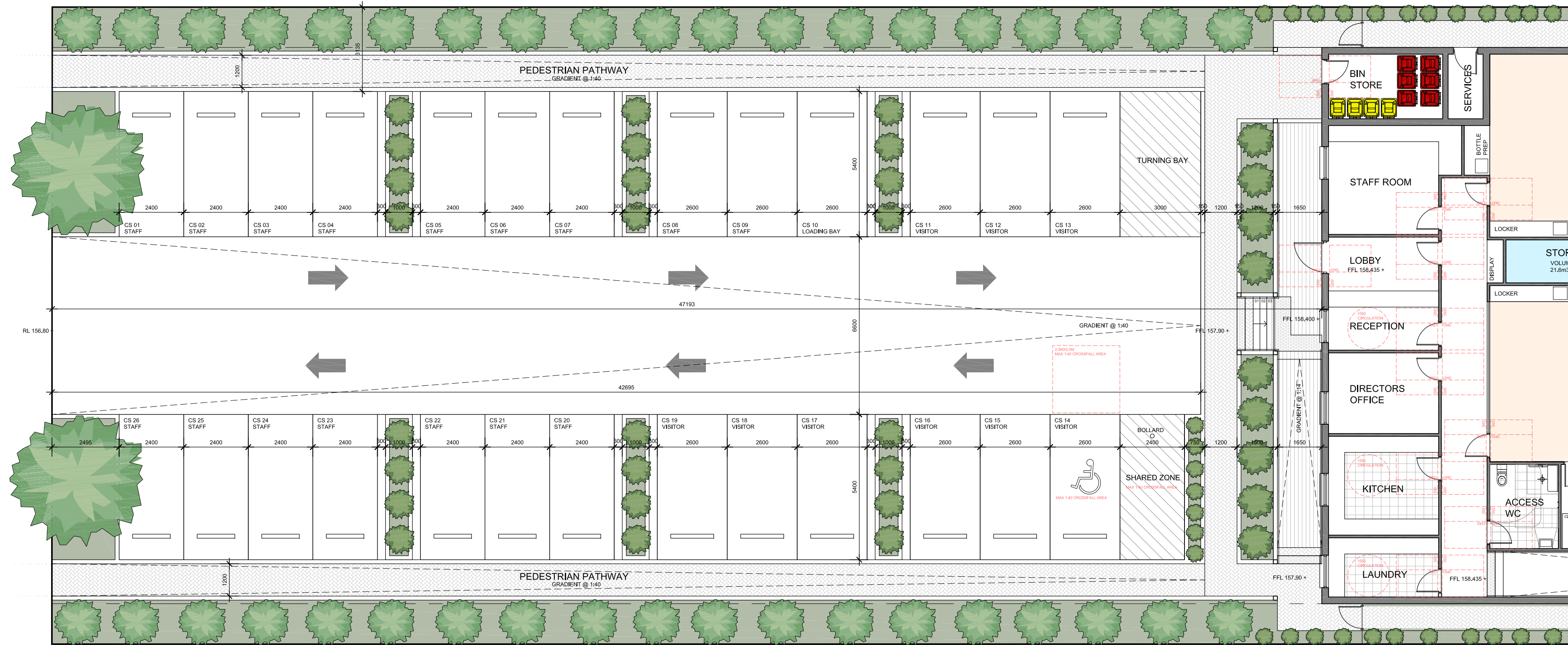
CLIENT DETAILS:
JAL Invest Co Pty Ltd

LOCAL GOVERNMENT AREA:
Muswellbrook Council

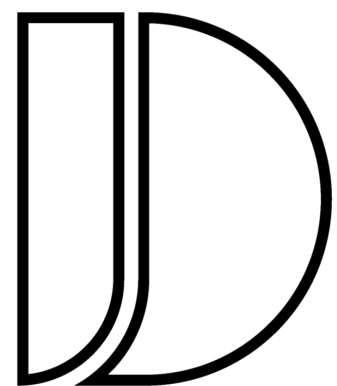
Issue For:	Issue:	Project #:
DA	A	10186
Date:	Scale:	Drawing #:
20.7.2022	1:100	A200

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GROUND FLOOR PLAN A -
1:100 @ A1



JANSSEN
DESIGNS

info@janssendedesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636
Nominated Architect: Jake Janssen NSW ARB 11575

AMENDMENTS		
ISSUE	DESCRIPTION	DATE

Project Title:
Proposed Child Care
Centre

DRAWING TITLE:
Ground Floor Plan A

ADDRESS:
84 Brook Street,
Muswellbrook

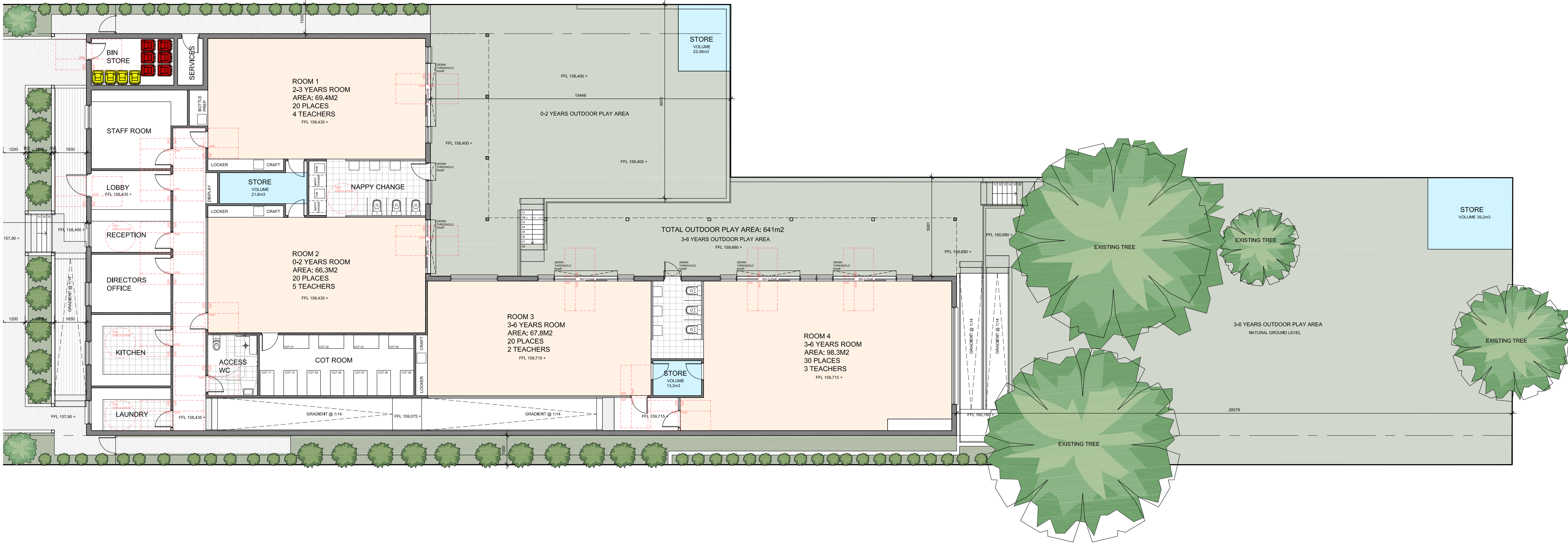
CLIENT DETAILS:
JAL Invest Co Pty Ltd

LOCAL GOVERNMENT AREA:
Muswellbrook Council

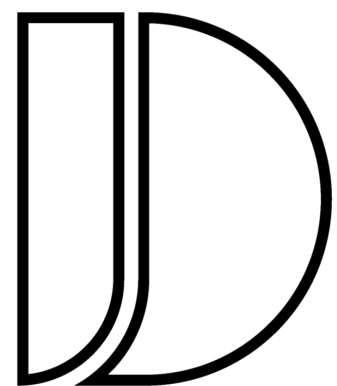
<u>Issue For:</u> DA		<u>Issue:</u> A	
<u>Date:</u> 20.7.2022	<u>Scale:</u> 1:100	<u>Drawing #:</u> A000	<u>Project #:</u> 10186

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GROUND FLOOR PLAN B -
1:100 @ A1



JANSSSEN
DESIGNS

info@janssendedesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636
Nominated Architect: Jake Janssen NSW ARB 11575

AMENDMENTS		
ISSUE	DESCRIPTION	DATE

Project Title:
Proposed Child Care
Centre

DRAWING TITLE:
Ground Floor Plan B

ADDRESS:
84 Brook Street,
Muswellbrook

CLIENT DETAILS:
JAL Invest Co Pty Ltd

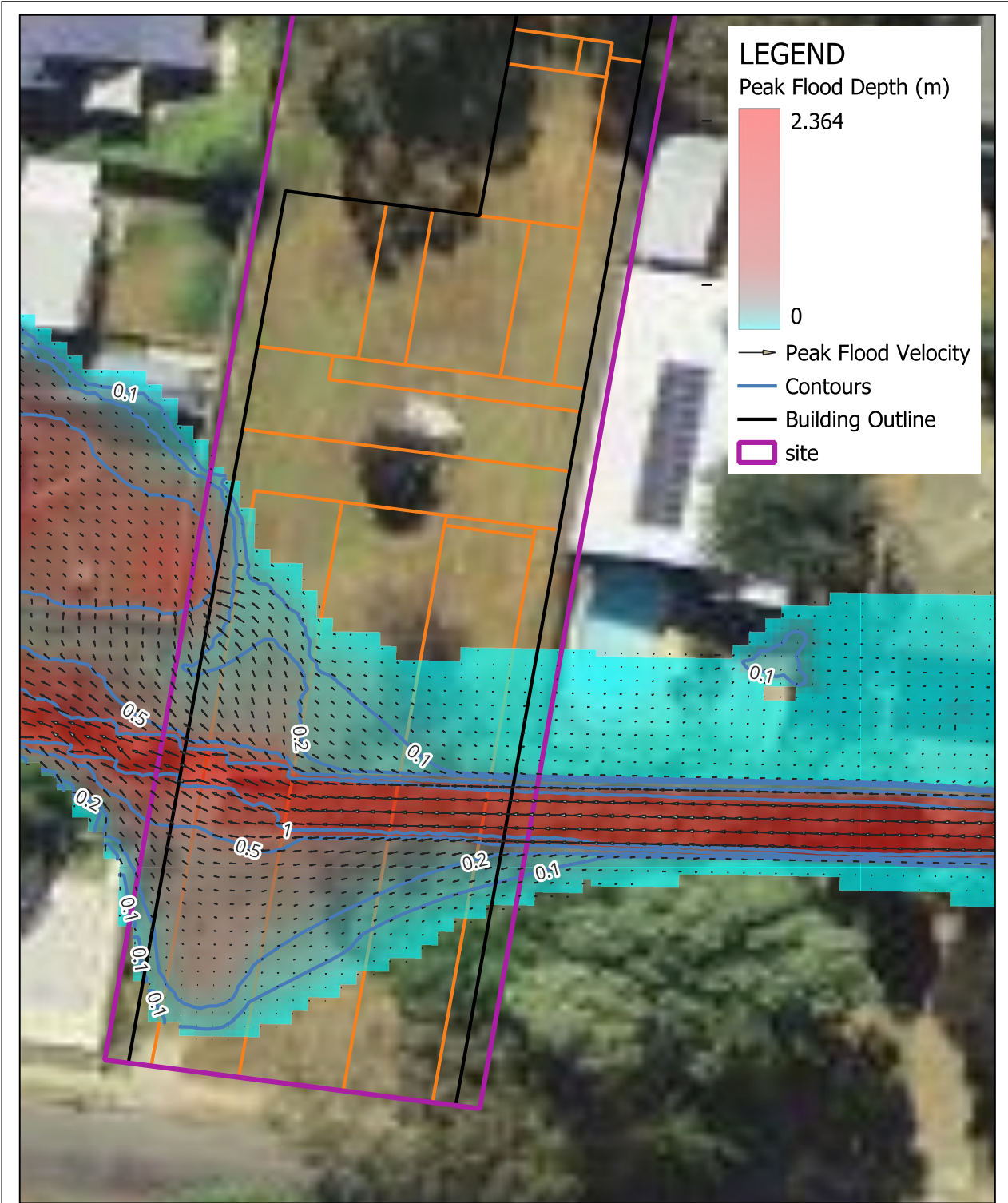
LOCAL GOVERNMENT AREA:
Muswellbrook Council

Issue For: DA	Issue: A	Project #: 10182
Date: 20.7.2022	Scale: 1:100	Drawing #: A200

Appendix 3

Flood Mapping (TUFLOW)

Capital Engineering Consultants



Title
84 Brook Street Flood Impact Assessment
Existing 1% AEP Modelled Pre-development Peak Flood Conditions

Figure:
3-1

Rev
A

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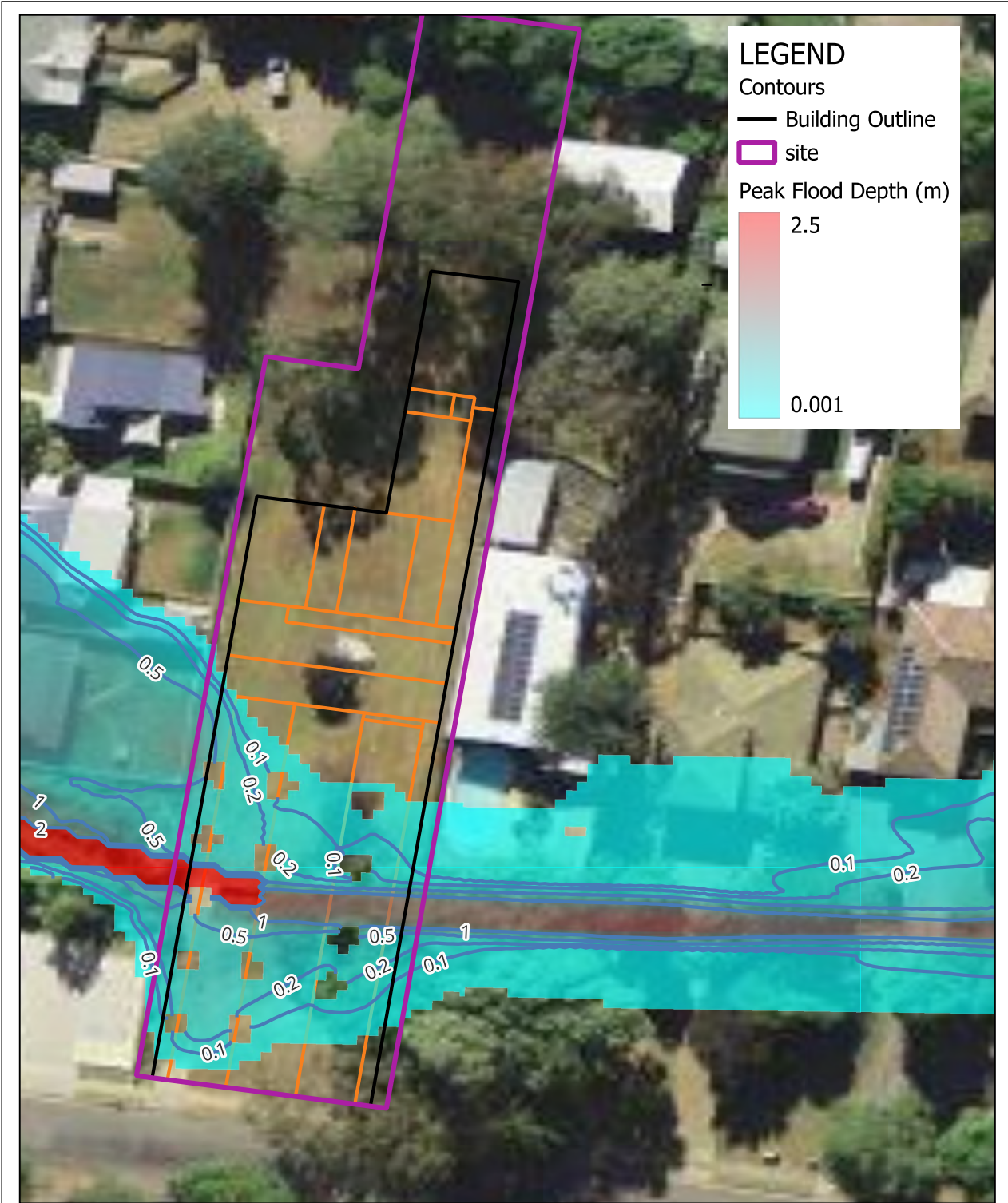


Capital Engineering Consultants

9630 0121

8 Buller Street, North Parramatta

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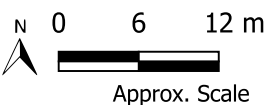


Title
84 Brook Street Flood Impact Assessment
Existing 1% AEP Modelled Post-development Peak Flood Conditions

Figure:
3-2

Rev
A

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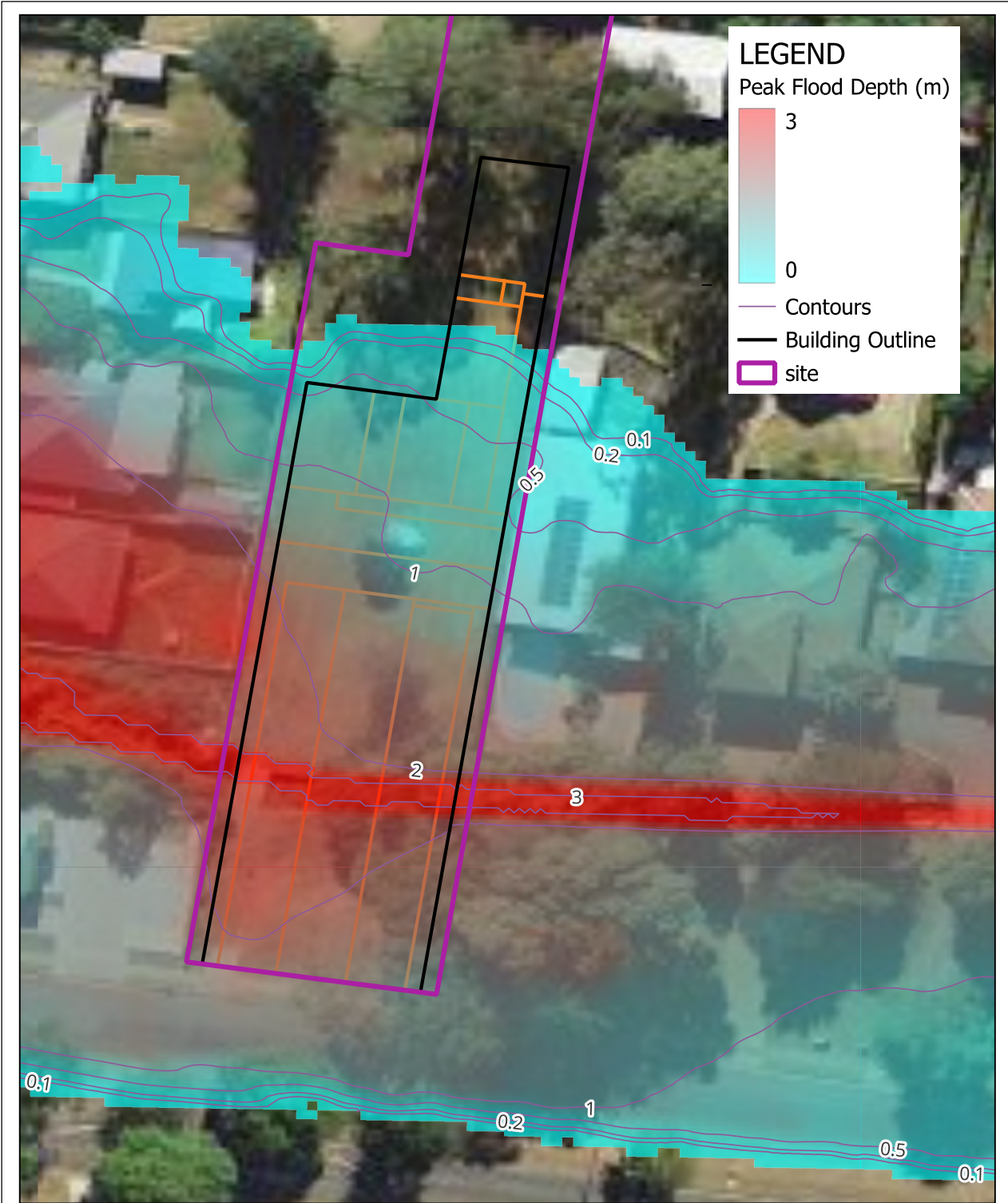


Capital Engineering Consultants

9630 0121

8 Buller Street, North Parramatta

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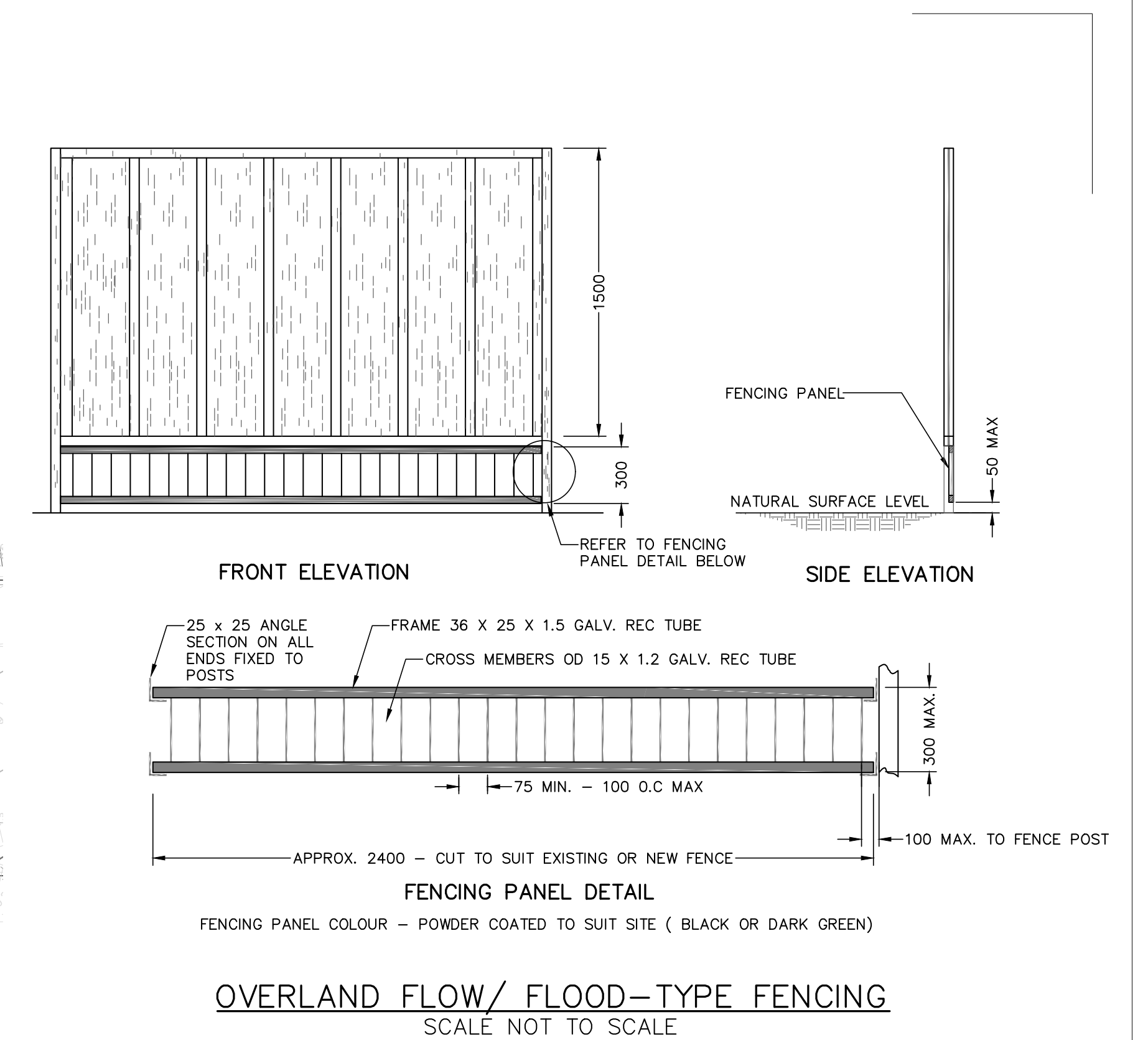


<p>Title</p> <p>84 Brook Street Flood Impact Assessment</p> <p>PMF Modelled Peak Flood Conditions</p>	<p>Figure:</p> <p>3-3</p>	<p>Rev</p> <p>A</p>
<p>CEC endeavours to ensure that the information provided in this map is correct at the time of publication. CEC does not warrant, guarantee or make representations regarding the currency and accuracy of information contained in this map.</p>	<p>N 0 6 12 m</p> <p>Approx. Scale</p>	<p>Capital Engineering Consultants</p> <p>9630 0121</p> <p>8 Buller Street, North Parramatta</p>
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Appendix 4

Flood Mitigation Plan

Capital Engineering Consultants



Capital
Engineering
Consultants


A	FOR CO-ORDINATION	M.W.	M.W.	04/05/2023	
Rev	Description	By	Chk	Date	



JANSSEN
DESIGNS



Engineers Australia

North	Project Number SW23077	Revision
	Drawing Number FL010	A

CONTACT DETAILS

8 Buller Street,
North Parramatta NSW 2151
(02) 9630 0121
info@cec-au.com

ING CONSULTING ENGINEERS PTY LTD

ABN: 80129113293



SITE EMERGENCY EVACUATION / RESPONSE PLAN

Prepared for JAL Invest Co. Pty Ltd
at 84 Brook Street (Lot 1, DP795300) Muswellbrook NSW 2333

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Version	Status	Date	Author	Sign	Reviewer	Sign
1	Final	24/05/2023	N Evans	<i>S. L. L.</i>	K. Ng	<i>K. Ng</i>

84 Brook Street Muswellbrook NSW 2333 – Emergency Response Plan

1

1. Background

The subject site is currently vacant and is generally rectangular in shape with a total site area of 2,495m². See location plan in Figure 1 below.



Figure 1 – Location Plan of Subject Property

The land falls gently from the north to the south, ranging from RL162.80m AHD at the north-eastern corner to the south of the site, to RL156.68m AHD at the south-western corner.

The proposal involves construction of a single storey 90 place Child Care Centre, 14 educators and 2 support staff, and parking facilities with 26 car parking spaces.

a. Flooding

Based on Muswellbrook Council's pre-DA Notes of Meeting (held on 5 September 2022) to Janssen Group Pty Ltd, Council Engineers were concerned that the piping of the waterway could create a bottleneck for stormwater during heavy rain events and lead to increased upstream flooding. Any Possum Gully crossing design should be informed by flood modelling prepared by an appropriately qualified hydraulic engineer and have regard to the related flooding controls in the Muswellbrook Shire Council Development Control Plan 2009. Consideration of the crossing of Possum

2

84 Brook Street Muswellbrook NSW 2333 – Emergency Response Plan

Gully should also be given by ensuring appropriate flood free access and emergency evacuation route suitable for the clients and staff of the centre, as in accordance with Council's Floodplain Development Manual, the proposed Child Care Centre is considered as "sensitive land use" and as such, consideration needs to be given to flood events greater than the 1% AEP flood i.e. the Probable Maximum Flood (PMF).

The flood modelling and assessment was subsequently completed by Capital Engineering Consultants on 17 May 2023, with the following levels established :

(a) 1% AEP Flood Level : RL156.61

(b) **PMF level : RL158.35m AHD.**

As part of the proposed works, the existing creek (that bisects the site as shown in the survey plan in Appendix A, is to be straddled over to provide site access and car parking facilities for the Centre, whilst the main building structure (single storey) has been designed towards the rear of the site on higher grounds and which has a function of looking to minimise impacts on the Heritage Conservation Area

b. Site Specific Considerations

Current NSW Government legislation requires flood free access and floor levels of the proposed building to be established at a level greater than the 1% AEP flood level, with a minimum of 500mm freeboard.

The site is to accommodate a Child Care facility, and in accordance with Council's Floodplain Development Manual, the Centre is considered as "sensitive land use" and as such, consideration needs to be given to flood events greater than the 1% AEP flood i.e. the Probable Maximum Flood (PMF). There is an existing creek that traverses the site from the east to the west, and the proposed design for the Child Care Centre is to ensure appropriate flood free access and emergency evacuation route for users of this Centre.

Taking these into consideration, Janssen Designs, with the input of the respective Consultants, have designed the Centre accordingly. Please see Figures 2 & 3 for the proposal development, and Appendix C for the full set of Plans.

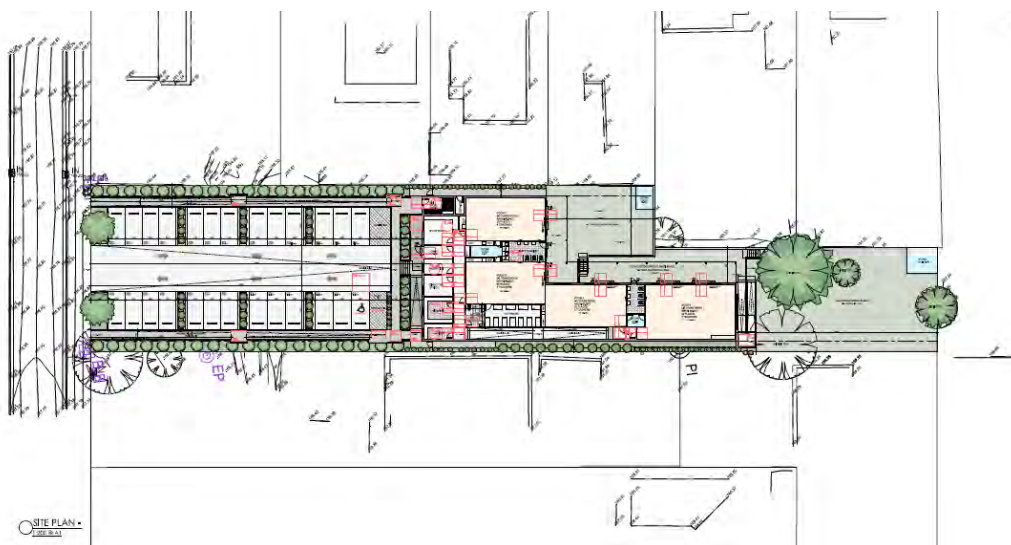


Figure 2 – Site Plan

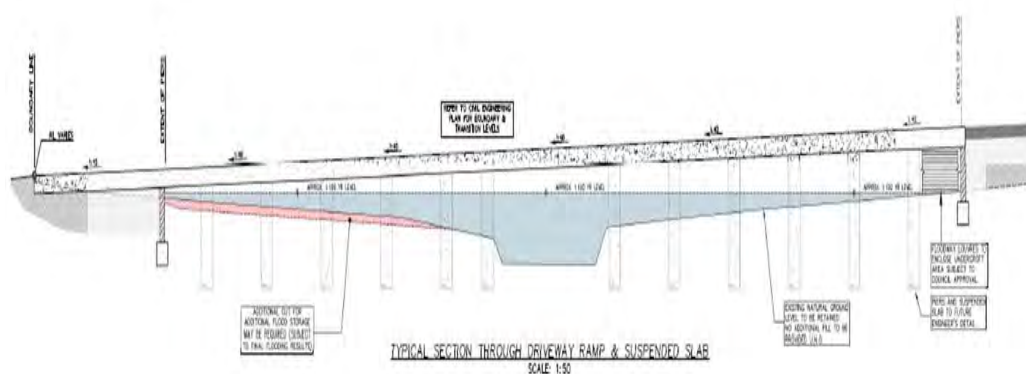


Figure 3 – Bridging Over of Existing Creek / Gully Section

2. Floodplain Matrix Planning Considerations.

For an effective flood management plan, the following needs to be considered :

- All water sensitive instruments such as hot water heaters are to be located above the 1% AEP Level.
- No permanent solid structure is to be constructed at the front boundary, as well as on the eastern and southern boundaries of the proposed development.
- All proposed fence located in the flow path along the eastern and western common boundaries must be of open type (pool type) fencing to allow for overland flow to escape, and proposed fencing must be approved by Council.
- The bottom of the electricity meter box should be set at or above the PMF level. Where this is not practical the meter box needs to be waterproofed and sealed from floodwaters.
- The proposed habitable ground floor level is designed at RL158.435m AHD, which is 1,825mm above the 1% AEP Flood Level.
- Reliable access for occupants of the buildings is required from the site to an area of refuge above the PMF level, either on site (example second storey) or off site. However, as there is a strong probability that the occupants will not receive a Bureau of Meteorology warning via local media, the more likely scenario is vertical evacuation to the higher floors of the development or stay-in-place. In this regard, an emergency refuge area must be set above the PMF level of **RL158.35m AHD**. The proposed design habitable floor level of the Centre is a minimum of RL158.435m AHD, which is 85mm higher than the established PMF level. Higher areas located at the rear of the building (Play Room 3) have been designed for RL159.715m AHD which is 1,365mm higher than the PMF Level, This area can be used if higher grounds are required.

Flood Management and Site Emergency Evacuation Plan

- Under the NSW SES (Cessnock) Local Flood Plan, all Childcare Centres are to be contacted by the NSW SES in the event of possible flooding or isolation. Under circumstances when early evacuation is not possible, and at the advice of the NSW SES, an Emergency flood refuge area for the purpose of escaping flood waters and waiting for the waters to recede or emergency evacuation is to be provided, and must be set a minimum level of **RL158.35m AHD**. It is anticipated that this area will be within the main building itself on the ground floor (Evacuation Room) of the proposed Child Care Centre and will contain facilities such as toilets, potable water, radio, fresh batteries, portable TV, land line and mobile telephones.

As a guide, Sydney of City Council DCP requires 0.25sqm per person (child & staff) for the evacuation area. Based on this and with 106 people, an unencumbered area of 67.8m² (Play Room 3) for 106 people which equates to 0.64m² per person.

- The Emergency Flood Refuge area must also contain the updated dossier of all

5

84 Brook Street Muswellbrook NSW 2333 – Emergency Response Plan

staff, student and Parent /Guardians information. This is for the purpose of making contact during times when evacuation is required. A communication distribution plan needs to be prepared by the Centre that enables rapid notification be made during evacuation. This may take the form of parents/guardians being contacted, who in turn pass on the emergency notification to others.

- Emergency evacuation signage during times of flooding must be placed at all accessible locations, and must distinguish flood evacuation from other emergency evacuations. Please see Figure 4 below.

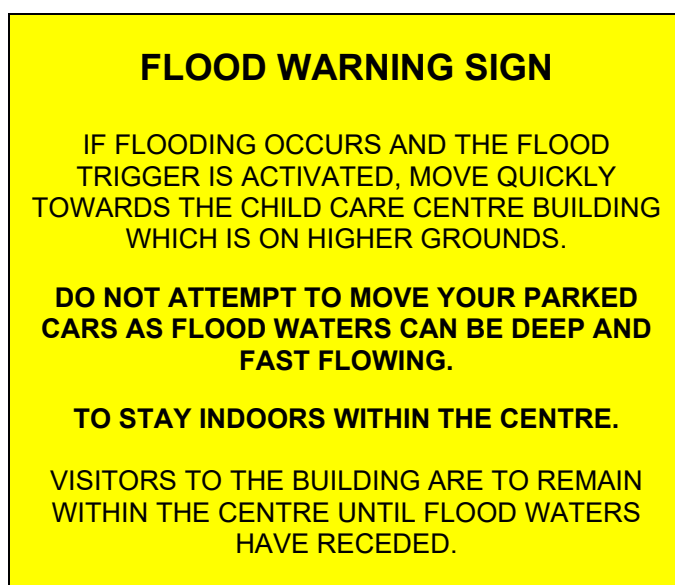


Figure 4 – Flood Warning Sign

- To accompany the Flood Warning Sign, an evacuation route diagram showing the point of assembly, the location of the Flood Emergency refuge area and Trigger Points will be required. Printed in colour, this Flood Warning Sign needs to be permanently displayed at all conspicuous points in the Centre. Please see Figure 5 in Appendix B.
- An assembly point for storms and flood events needs to be identified and designated, with the appropriate training provided to distinguish this location from other Emergency Assembly point locations.
- Trained Personnel must be familiar with:
 - Evacuation policy prepared by the Child Centre
 - NSW SES Local Area website for their FloodSafe plan
 - Potential flood areas in the locality
 - The nearest high grounds and line of retreat
 - Storm / flood assembly points.

During Heavy Storm Events

Under the NSW SES (Muswellbrook) Local Flood Plan, all Child Care Centres are to be contacted by the NSW SES in the event of possible flooding or isolation.

When notified the Childcare Centres should:

- Liaise with the NSW SES Local Unit and arrange for the early release of children whose travel arrangements are likely to be disrupted by flooding and/or road closures.
- Assist with coordinating the evacuation of preschools and Child Care Centres.

Under unforeseen circumstances when early evacuation is not possible, and at the advice of the NSW SES, then the following should be carried out :

- All personnel and children must be moved into the building and remain indoors until the storm passes.
- A head count must be made and checked at the pre-arranged assembly point. The *Trained* personnel are to decide on whether full evacuation off site or localised evacuation (vertical movement) into Emergency area is appropriate.
- Listen to radio and TV for instructions and bulletins.
- A Trigger Point is a pre-determined and agreed “action point” to correspond with the various stages of flooding. Two Trigger Points to be considered are:
 1. The 1st Trigger Point is when the creek under the bridged over the parking facilities fronting Brook Street overflows or when flood waters start to enter the car parking area from the western boundary, all children and staff must remain in the Centre building until the flood subsides.
 2. The 2nd Trigger Point is when flood waters have already entered the car parking area and is reaching the tiled pathway.

A senior staff member with knowledge in the Flood Management Plan is to assess whether the Trigger Points have been reached, and to activate the plan accordingly.

On activation of the 2nd Trigger Point, the following action needs to be carried out:

- Collect canned food, water containers, emergency lighting, candles, clothing, first aid kit, medicines, money and identification.
- Conduct another head count.
- Designated trained staff is to contact emergency services and seek advice on effective warning time and rescue.
- All occupants are to move into the Refuge Area and remain there till rescue arrives.
- If safe to do so, collect games/carry out activities for the children to keep them distracted whilst in the refuge area till rescue arrives.

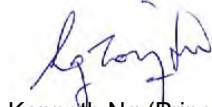
During Flooding Situations

- Stay tuned to local radio for updates of the situation and further advice.
- Don't allow children to play in, or near flood waters (remain in refuge area)
- Avoid entering floodwaters.
- Do not use gas or electrical appliances which may have been damaged by the flood waters until they have been tested and proven that it is safe to do so by a competent person.
- If floodwaters have entered the car park, do not attempt to move parked vehicles.
- If a staff member or child becomes seriously ill during a flood, call '000' or the SES number 132 500.
- Wait for further instructions or as directed by the SES or the Police.

This plan is to be reviewed no longer than every 5 years, or as appropriate when required.

Signed for and on behalf of

ING CONSULTING ENGINEERS PTY LTD

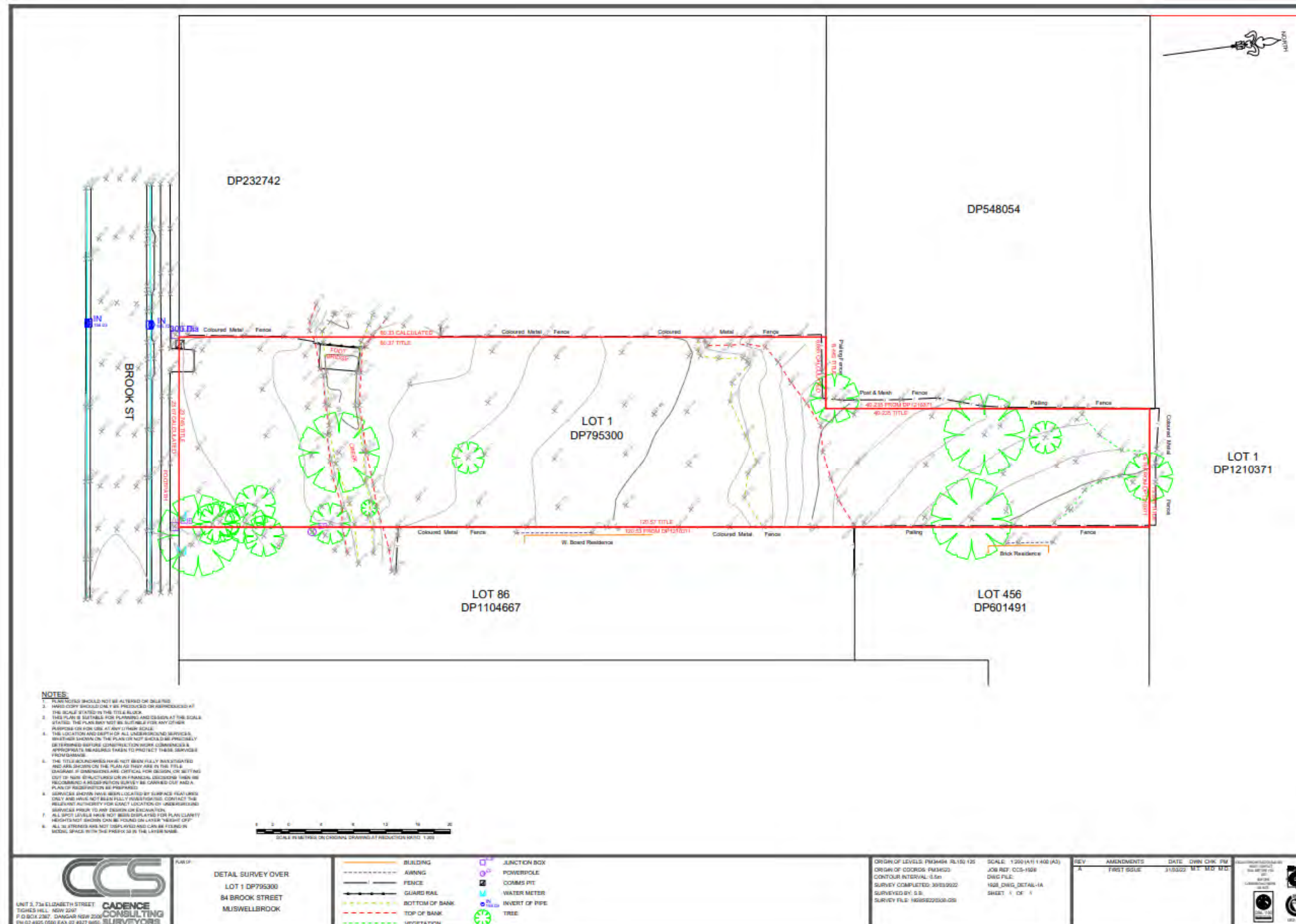


Kenneth Ng (Principal)
MIEAust CPEng NER APEC Engineer
IntPE(Aus) RPEQ
Registered Certifier (Hydraulic (stormwater),
Road & Drainage and Stormwater)
Registered Design Practitioner (Drainage and Civil
Engineering) & Professional Engineer (Civil)
NSW Fair Trading

Appendix A

Survey Plan Prepared by Cadence Consulting Surveyors

Survey Plan

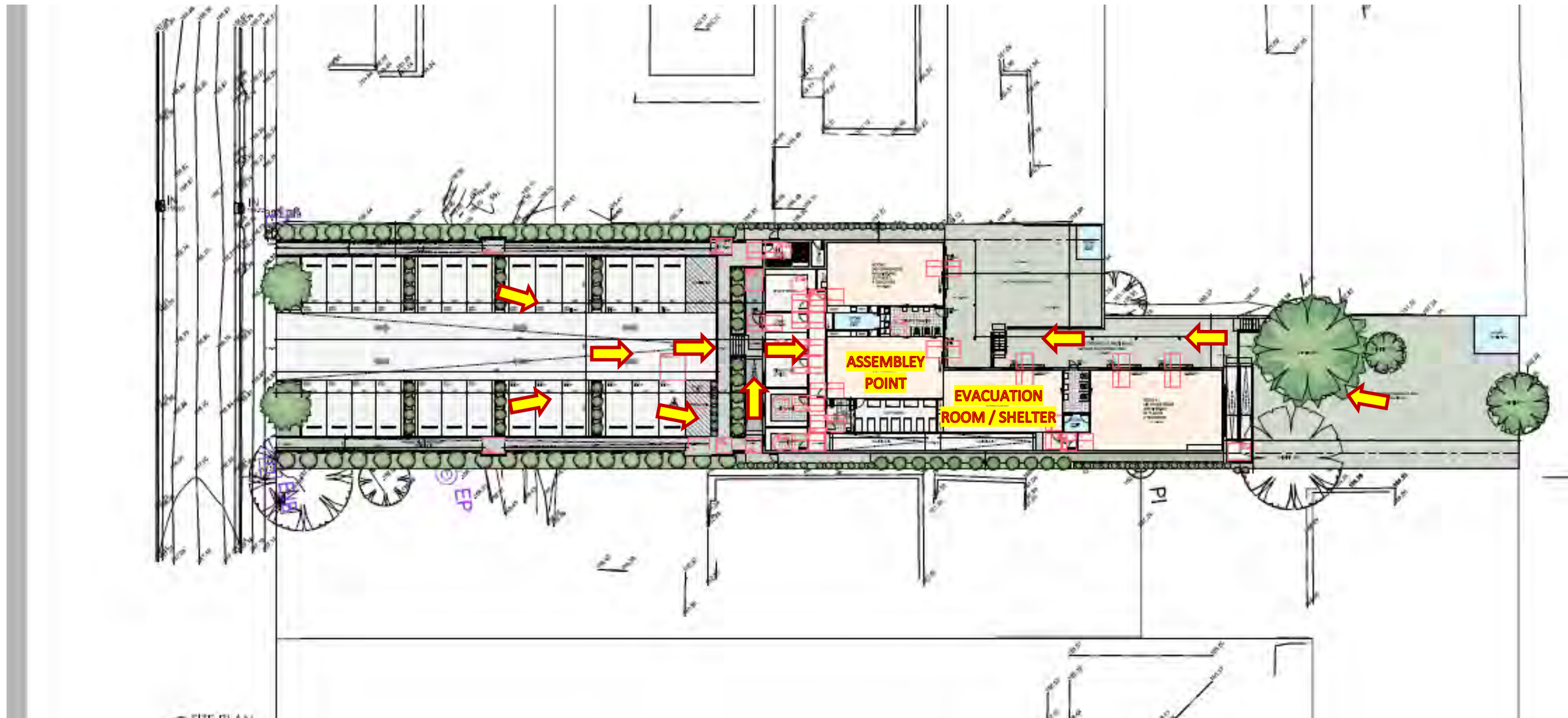


84 Brook Street Muswellbrook NSW 2333 – Emergency Response Plan

Appendix B

Emergency Evacuation Route

84 Brook Street Muswellbrook NSW 2333 – Flood Evacuation Route



Evacuation Route 

Appendix C

Proposed Child Care Centre Plans Prepared by Janssen Designs

84 Brook Street, Muswellbrook

Proposed Child Care Centre

DRAWING SCHEDULE:

- A000 - COVER PAGE
- A001 - CALCULATIONS PAGE / LEP MAPS
- A002 - SITE CONTEXT PLAN
- A003 - SITE ANALYSIS PLAN
- A004 - SITE PLAN
- A005 - BASEMENT PLAN
- A006 - GROUND FLOOR PLAN
- A007 - FIRST FLOOR PLAN
- A008 - ROOF PLAN
- A009 - SOUTH & EAST ELEVATIONS
- A010 - NORTH & WEST ELEVATIONS
- A011 - SECTION
- A012 - MAXIMUM BUILDING HEIGHT DIAGRAM
- A013 - PERSPECTIVES 1 & 2
- A014 - PERSPECTIVES 3 & 4
- A015 - PERSPECTIVES 5 & 6 - LODGES ROAD
- A016 - PERSPECTIVES 7,8 & 9 - OPA & INTERNAL CORRIDOR
- A017 - ACOUSTIC DETAILS - GROUND FLOOR
- A018 - ACOUSTIC DETAILS - FIRST FLOOR
- A019 - SHADOW DIAGRAMS - 9AM & 12 NOON
- A020 - SHADOW DIAGRAMS - 3PM
- A021 - COVERED OUTDOOR AREA DIAGRAM & OPA CALCULATION - GROUND FLOOR
- A022 - COVERED OUTDOOR AREA DIAGRAM & OPA CALCULATION - FIRST FLOOR
- A023 - EMERGENCY EVACUATION PLAN - GROUND FLOOR
- A024 - EMERGENCY EVACUATION PLAN - FIRST FLOOR
- A025 - COLOUR AND FINISHES SCHEDULE

3.7.5.5 REQUIREMENTS FOR SMOKE ALARMS

- (A) SMOKE ALARMS MUST BE INSTALLED IN -
- (I) CLASS 1A BUILDINGS IN ACCORDANCE WITH 3.7.2.3; AND
- (II) CLASS 1B BUILDINGS IN ACCORDANCE WITH 3.7.2.4;
- (B) SMOKE ALARMS MUST COMPLY WITH AS 3786;
- (C) SMOKE ALARMS MUST BE CONNECTED TO THE CONSUMER MAINS POWER WHERE CONSUMER POWER IS SUPPLIED TO THE BUILDING.

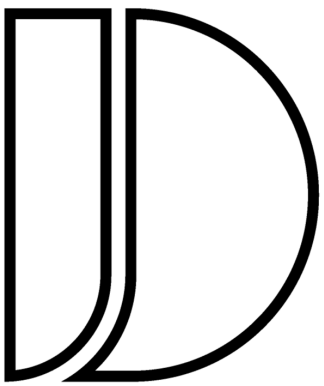
3.8.5.2 VENTILATION REQUIREMENTS

VENTILATION MUST BE PROVIDED TO A HABITABLE ROOM, SANITARY COMPARTMENT, BATHROOM, SHOWER ROOM, LAUNDRY AND ANY OTHER ROOM OCCUPIED BY A PERSON FOR ANY PURPOSE BY ANY OF THE FOLLOWING MEANS:

- (A) PERMANENT OPENINGS, WINDOWS, DOORS OR OTHER DEVICES WHICH CAN BE OPENED -
- (I) WITH AN AGGREGATE OPENING OR OPENABLE SIZE NOT LESS THAN 5% OF THE FLOOR AREA OF THE ROOM REQUIRED TO BE VENTILATED; AND
- (II) OPEN TO -
- (A) A SUITABLY SIZED COURT, OR SPACE OPEN TO THE SKY; OR
- (B) AN OPEN VERANDAH, CARPORT, OR THE LIKE; OR
- (C) AN ADJOINING ROOM IN ACCORDANCE WITH (B).
- (B) NATURAL VENTILATION TO A ROOM MAY COME THROUGH A WINDOW, OPENING, VENTILATING DOOR OR OTHER DEVICE FROM AN ADJOINING ROOM (INCLUDING AN ENCLOSED VERANDAH) IF -
- (I) THE ROOM TO BE VENTILATED OR THE ADJOINING ROOM IS NOT A SANITARY COMPARTMENT; AND
- (II) THE WINDOW, OPENING, DOOR OR OTHER DEVICE HAS A VENTILATING AREA OF NOT LESS THAN 5% OF THE FLOOR AREA OF THE ROOM TO BE VENTILATED; AND
- (III) THE ADJOINING ROOM HAS A WINDOW, OPENING, DOOR OR OTHER DEVICE WITH A VENTILATING AREA OF NOT LESS THAN 5% OF THE COMBINED FLOOR AREAS OF BOTH ROOMS; AND
- (IV) THE VENTILATING AREAS SPECIFIED MAY BE REDUCED AS APPROPRIATE IF DIRECT NATURAL VENTILATION IS PROVIDED FROM ANOTHER SOURCE.

GENERAL NOTES

- CONTRACTOR MUST VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK OR PREPARING SHOP DRAWINGS. DO NOT SCALE FROM DRAWINGS.
- ALL BUILDING WORKS SHALL BE IN ACCORDANCE WITH THE RELEVANT NATIONAL CONSTRUCTION CODE (NCC), BUILDING CODE OF AUSTRALIA (BCA), RELEVANT AUSTRALIAN STANDARDS (AS), INCLUDING AMENDMENTS AND THE REQUIREMENTS OF COUNCIL AND PRIVATE CERTIFIERS (PC) AND OTHER AUTHORITIES HAVING JURISDICTION.
- THE ARCHITECTURAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT CONSULTANT DRAWINGS AND REPORTS FOR COORDINATION AND INFORMATION.
- THRESHOLDS AND DOORWAYS ARE FLUSH FOR WHEELCHAIR ACCESS IN ACCORDANCE WITH AS1428.1 DESIGN FOR ACCESS AND MOBILITY. REFER TO ACCESS CONSULTANT REPORT FOR DISPENSATIONS AND POTENTIAL PERFORMANCE SOLUTION PROPOSED.
- DRAWINGS ARE NOT COORDINATED BY JANSSEN DESIGNS. CONDITIONS AND DOCUMENTS NEED TO BE COORDINATED AND CHECKED TO CONFIRM THEY SATISFY THE AUSTRALIAN STANDARDS, SPECIALIST DISABILITY ACCOMMODATION, DESIGN FOR DISABILITY ACCOMMODATION, DEVELOPMENT APPLICATION REQUIREMENTS, THE NCC, BCA CODES AND CONTROLS THAT APPLY TO THIS PROJECT. A COORDINATED CONSTRUCTION SET MAY VARY FROM THE PRODUCED DRAWINGS. JANSSEN DESIGNS DOES NOT ACCEPT ANY LIABILITY, DIRECT OR INDIRECT, FOR ANY LOSS LIABILITY OR LOSS SUFFERED OR INCURRED BY ANY PERSON OR THIRD PARTY PLACING ANY RELIANCE ON THE SERVICES OR DOCUMENTS OR ADVICE ARISING IN CONNECTION WITH THE SERVICE.
- ALL STRUCTURAL ELEMENTS ARE SHOWN INDICATIVELY AND ARE TO BE CONFIRMED WITH THE DESIGN, DETAIL AND SPECIFICATION OF THE STRUCTURAL ENGINEER.
- ALL STRUCTURAL FRAMING, LOADING, BEARING, RETAINING AND FIXING OF ELEMENTS ARE TO THE DESIGN, DETAIL AND SPECIFICATION OF THE STRUCTURAL ENGINEER.
- ALL SERVICES ELEMENTS INCLUDING HYDRAULICS, ELECTRICAL, MECHANICAL, FIRE AND COMMUNICATION SERVICES SHOWN ARE INDICATIVE ONLY. REFER TO SERVICES CONSULTANT SEPARATE DOCUMENTATION AND SPECIFICATION FOR DETAILED DESIGN.
- ANY DISCREPANCIES BETWEEN ARCHITECTURAL CONSULTANT DOCUMENTATION ARE TO BE REPORTED TO THE ARCHITECT IMMEDIATELY FOR CLARIFICATION.
- ALL CONCRETE AND METALWORK ITEMS, SUCH AS SHOP DRAWINGS, TO BE ORGANISED AND REVIEWED BY THE CLIENT.
- ALL SITE AND BUILDING GRID SET-OUT IS TO BE CONDUCTED AND VERIFIED BY A REGISTERED SURVEYOR BEFORE COMMENCEMENT OF CONSTRUCTION WITH ANY DISCREPANCIES NOTIFIED TO THE CLIENT FOR CLARIFICATION.
- INTERIOR LIGHTING SYSTEMS THROUGHOUT IS TO COMPLY WITH AS 1680 (AS REQUIRED BY BCA C3.8.4.3 CLASS 1 & 10 BUILDINGS AND CF4.1, F4.2, F4.3, F4.4 FOR CLASS 2 TO 9 BUILDINGS)
- ALL SANITARY COMPARTMENTS ARE TO BE CONSTRUCTED TO COMPLY WITH BCA PART 3 C3.8.3.3 FOR CLASS 1 & 10 BUILDINGS AND CF2.58 FOR CLASS 2 TO 9 BUILDINGS.
- ALL BALUSTRADES (IF REQUIRED) HEIGHTS AND DESIGN SHALL BE IN ACCORDANCE WITH AS 1170 PART 1 (AS REQUIRED BY BCA PART 3 C3.9.2.3 FOR CLASS 1 & 10 BUILDINGS AND BCA PART D CL D2.16 FOR CLASS 2 TO 9 BUILDINGS)
- ALL ALUMINIUM FRAMED GLAZING TO COMPLY WITH AS 1288, AS 2208.
- TERMITE CONTROL KORDON TERMITE BARRIER IS TO BE USED AS A BUILDING PERIMETER AND SERVICE PENETRATION TERMITE PROTECTION SYSTEM (AS 3660.1 - 2000). IT IS TO BE INSTALLED BY A MANUFACTURER'S ACCREDITED INSTALLER. AS PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, THE BUILDER IS TO PROVIDE ALL RELEVANT SLAB OR CONSTRUCTION DETAILS TO THE ACCREDITED INSTALLER FOR PRICING ETC. THE BUILDER IS TO TREAT THE BUILDINGS TERMITE PROTECTION AS PART OF THE BUILDING PROCESS AND THEREFORE INCLUDED IN THE CONSTRUCTION PROGRAM.



JANSSEN
DESIGNS

info@janssendedesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636
Nominated Architect: Jake Janssen NSW ARB 11575

AMENDMENTS		
DATE	DESCRIPTION	DATE

Project Title:
Proposed Child Care
Centre

DRAWING TITLE:
Cover Page

ADDRESS:
84 Brook Street,
Muswellbrook

CLIENT DETAILS:
JAL Invest Co Pty Ltd

LOCAL GOVERNMENT AREA:
Muswellbrook Council

Issue For DA	Issue A	Scale: 1:100	Drawing #: A000	Project #: 10186
207/2022				

COMPLIANCE TABLE

TOTAL SITE AREA	2,495.00m2 (BY CALC)
MAX. REQUIRED FLOOR SPACE RATIO	0.5:1 1,247.50m2
PROPOSED FLOOR SPACE RATIO	555m2 22.2:1 - COMPLIES

CHILDCARE

NUMBER OF CHILDREN:

- 0-2 YEARS - 20 PLACES
- 2-3 YEARS - 20 PLACES
- 3-6 YEARS - 50 PLACES

TOTAL - 90 PLACES

NUMBER OF TEACHERS:

- 0-2 YEARS - 5 TEACHERS @ 1:4 RATIO
- 2-3 YEARS - 4 TEACHERS @ 1:5 RATIO
- 3-6 YEARS - 5 TEACHERS @ 1:10 RATIO

INDOOR PLAY AREA:

- 0-2 YEARS - 66.3m2 @ 3.25m2 / KID
- 2-3 YEARS - 69.4m2 @ 3.25m2 / KID
- 3-6 YEARS - 166.1m2 @ 3.25m2 / KID

OUTDOOR PLAY AREA:

TOTAL AREA - 641m2 @ 7m2 / KID

PARKING

MINIMUM REQUIRED	1 CARSPACE PER STAFF - 14
1 X DIRECTOR	1 CARSPACE
1 X COOK	1 CARSPACE
1 X LOADING BAY	1 CARSPACE
TOTAL PARKING SPACES PROPOSED	1 CARSPACE PER 10 CHILDREN - 9
VISITOR SPACES	26 CARSPACES - COMPLIES
STAFF SPACES	9 CARSPACES
	17 CARSPACES

ZONE - R1 GENERAL RESIDENTIAL



FLOOR SPACE RATIO - 0.5:1



MAXIMUM BUILDING HEIGHT - 8.5M

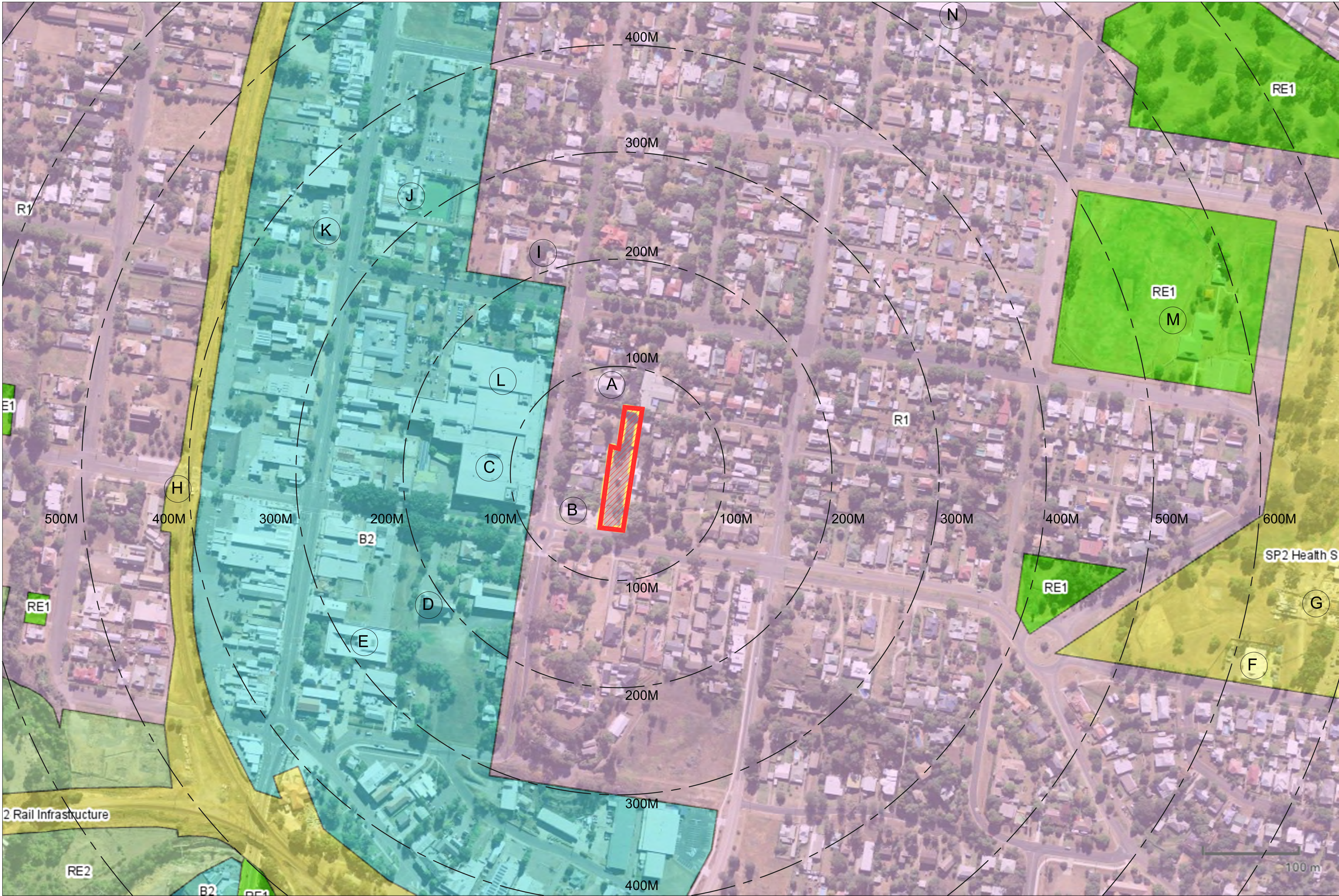


HERITAGE - RESIDENTIAL AREA CONSERVATION AREA | LOCAL SIGNIFICANCE



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DO NOT SCALE OFF ARCHITECTURAL DRAWINGS



SITE CONTEXT PLAN -
N.T.S.

LANDMARKS

- A - MUSWELLBROOK PRESCHOOL KINDERGARTEN
- B - HUNTER MEDICAL PRACTISE
- C - WOOLWORTHS
- D - ST JAMES MUSWELLBROOK CHURCH
- E - MUSWELLBROOK COURTHOUSE
- F - GOODSTART EARLY LEARNING MUSWELLBROOK
- G - MUSWELLBROOK HOSPITAL
- H - NEW ENGLAND HIGHWAY
- I - PACIFIC BROOK CHRISTIAN SCHOOL
- J - MUSWELLBROOK BOWLING CLUB
- K - SHELL COLE EXPRESS
- L - BIG W
- M - STAN THEISS CENTRE
- N - MUSWELLBROOK PUBLIC SCHOOL



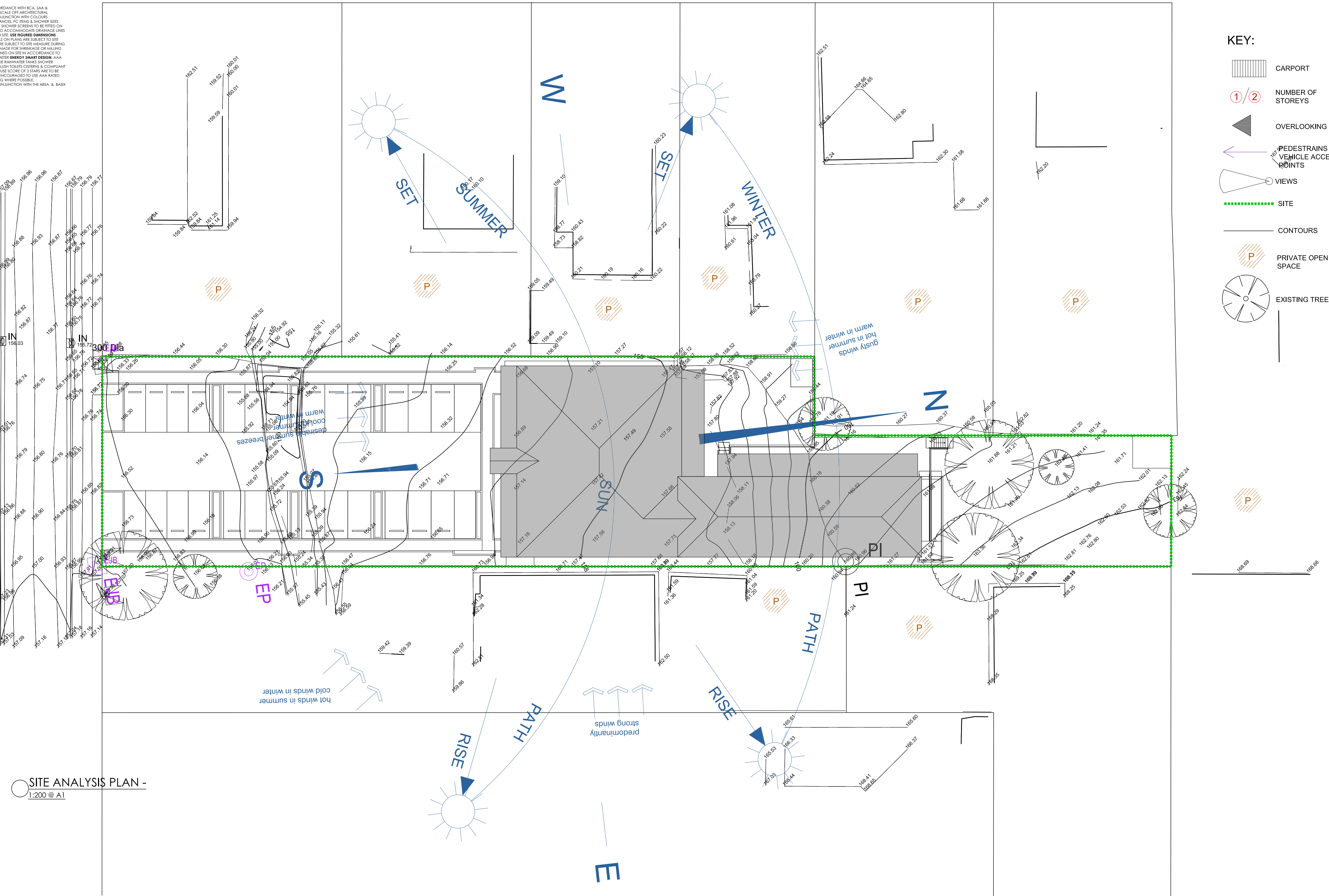
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DESIGNS

info@janssendedesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636
Nominated Architect: Jake Janssen NSW ARB 11575

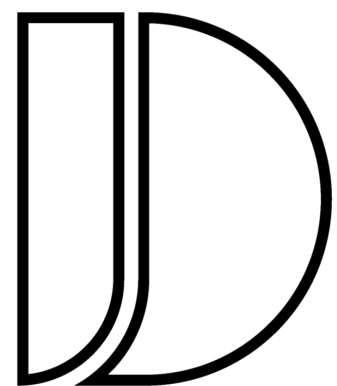
AMENDMENTS			Project Title: Proposed Child Care Centre	DRAWING TITLE: Site Context Plan	CLIENT DETAILS: JAL Invest Co Pty Ltd		
ISSUE	DESCRIPTION	DATE					
LOCAL GOVERNMENT AREA:			ADDRESS: 84 Brook Street, Muswellbrook	Issue For: DA	Issue: A	Project #: 10186	
Muswellbrook Council							
Date: 20/7/2022			Scale: 1:100			Drawing #: A000	

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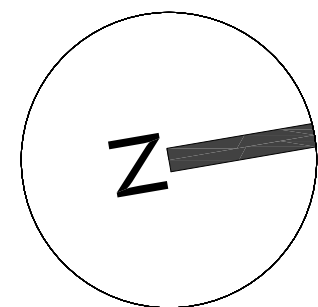


SITE ANALYSIS PLAN -
1:200 @ A1



JANSSSEN
DESIGNS

info@janssendedesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636
Nominated Architect: Jake Janssen NSW ARB 11575



AMENDMENTS		
DATE	DESCRIPTION	DATE

Project Title:
Proposed Child Care
Centre

DRAWING TITLE:
Site Analysis Plan

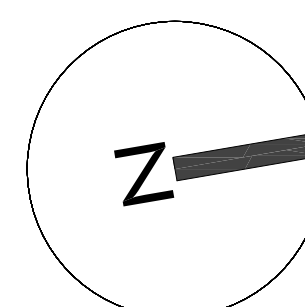
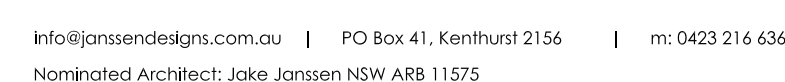
ADDRESS:
84 Brook Street,
Muswellbrook

CLIENT DETAILS:
JAL Invest Co Pty Ltd

LOCAL GOVERNMENT AREA:
Muswellbrook Council

<u>Issue For:</u> DA		<u>Issue:</u> A	
<u>Date:</u> 20.7.2022	<u>Scale:</u> 1:100	<u>Drawing #:</u> A000	<u>Project #:</u> 10186

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— Project Title:

— Proposed Child Care

— Centre

DRAWING TITLE:
Site Plan

ADDRESS:
84 Brook Street,
Muswellbrook

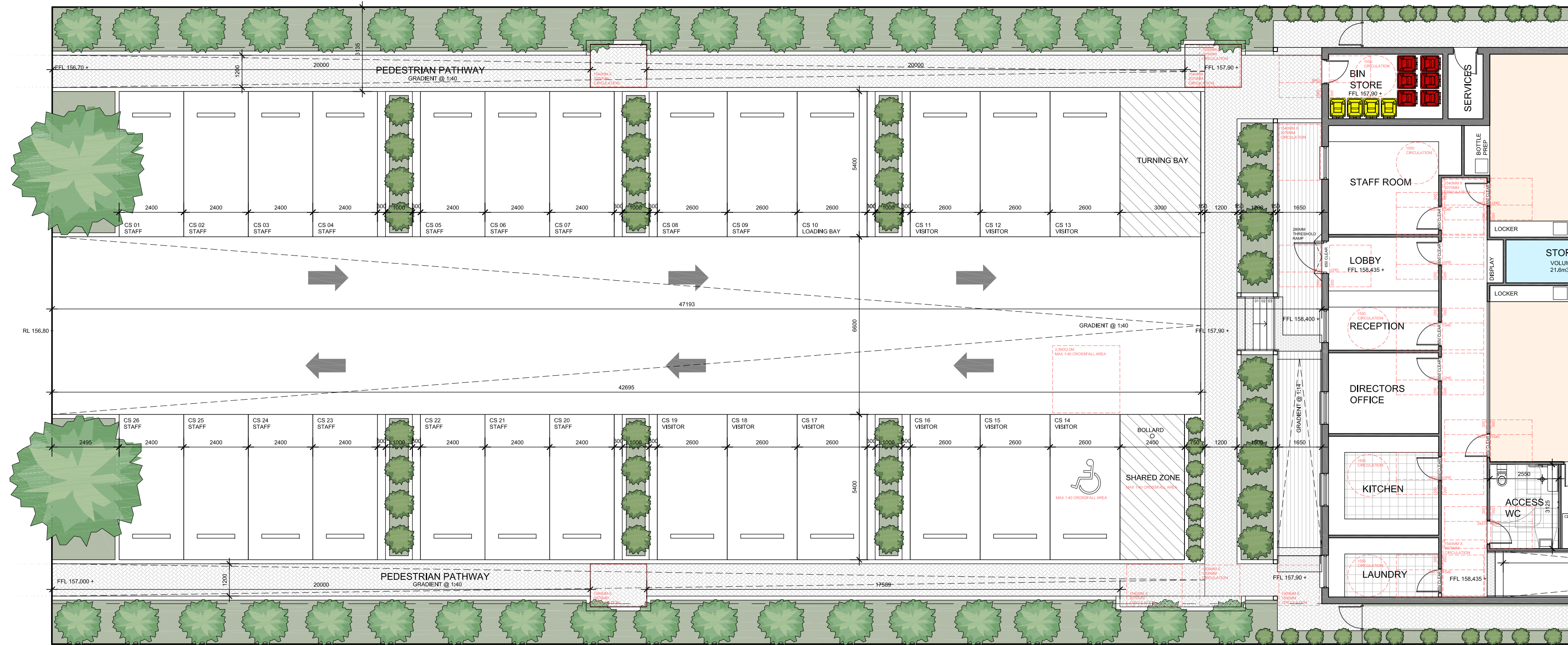
CLIENT DETAILS:
JAL Invest Co Pty Ltd

LOCAL GOVERNMENT AREA:
Muswellbrook Council

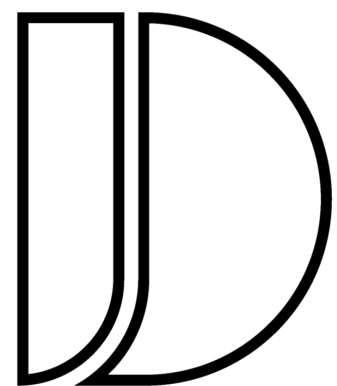
Issue For: DA		Issue: A	
Date: 20.7.2022	Scale: 1:100	Drawing #: A000	Project #: 10184

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GROUND FLOOR PLAN A -
1:100 @ A1



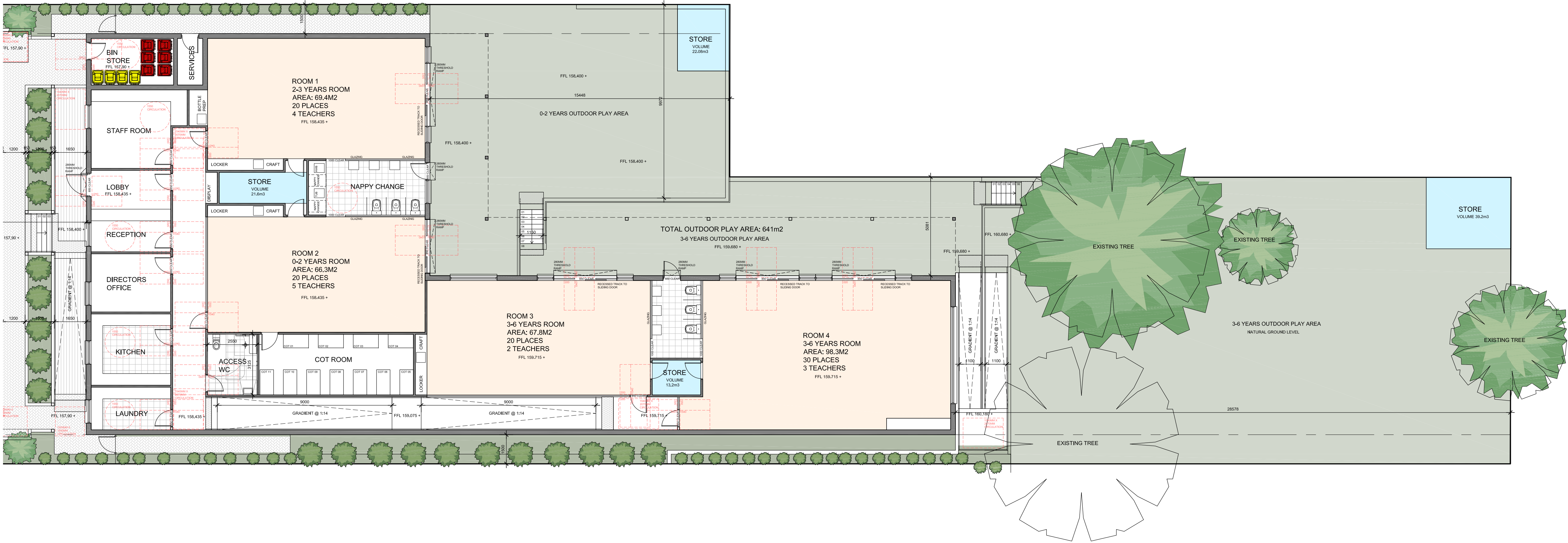
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DESIGNS

info@janssendedesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636
Nominated Architect: Jake Janssen NSW ARB 11575

AMENDMENTS			Project Title:	DRAWING TITLE:	CLIENT DETAILS:
ISSUE	DESCRIPTION	DATE			
			Proposed Child Care Centre	Ground Floor Plan A	JAL Invest Co Pty Ltd
			ADDRESS:	LOCAL GOVERNMENT AREA:	Muswellbrook Council
			84 Brook Street, Muswellbrook	Issue For:	Issue:
			Date:	Scale:	Drawing #:
			20.7.2022	1:100	Project #:
				A000	10156

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GROUND FLOOR PLAN B -
1:100 @ A1

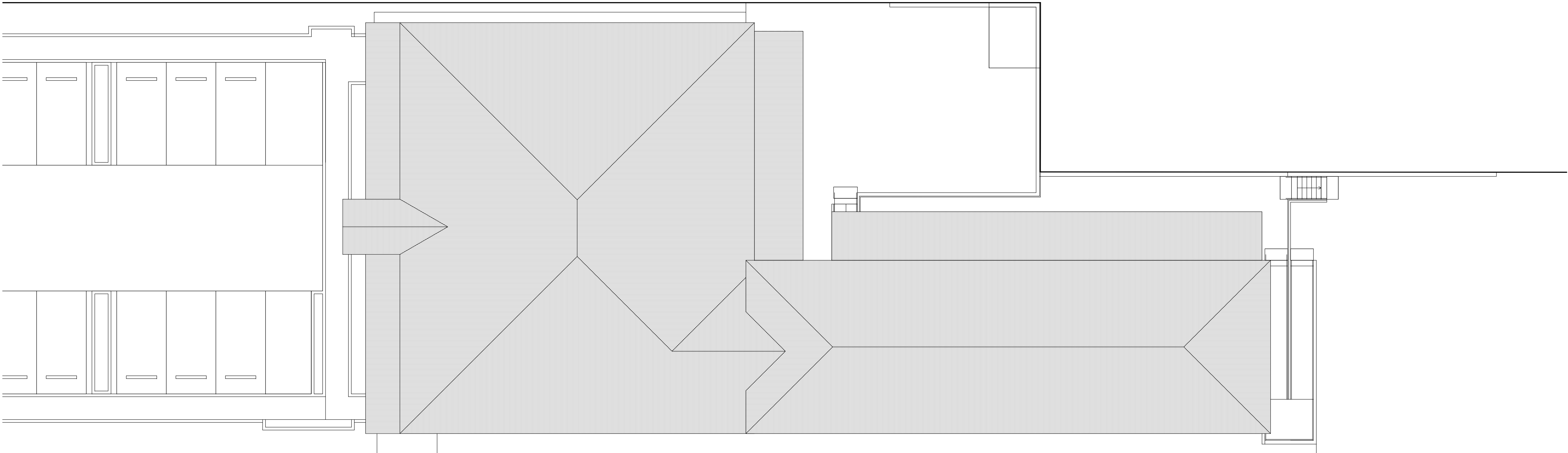
**JANSEN
DESIGNS**

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Nominated Architect: Jake Janssen NSW ARB 11575

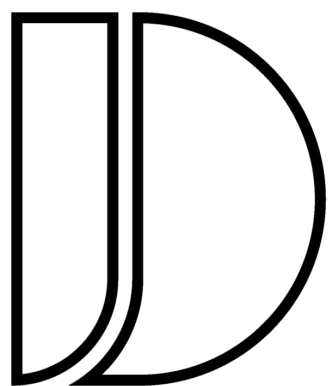
AMENDMENTS			Project Title: Proposed Child Care Centre	DRAWING TITLE: Ground Floor Plan B	CLIENT DETAILS: JAL Invest Co Pty Ltd
ISSUE	DESCRIPTION	DATE			
LOCAL GOVERNMENT AREA:			Address: 84 Brook Street, Muswellbrook	Project Details:	
Muswellbrook Council					
			Issue For:	Issue:	
			DA	A	
			Date:	Scale:	Drawing #:
			20.7.2022	1:100	A200
					Project #:
					10186

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DO NOT SCALE OFF ARCHITECTURAL DRAWINGS



ROOF PLAN -
1:100 @ A1



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Nominated Architect: Jake Janssen NSW ARB 11575

AMENDMENTS		
ISS#	DESCRIPTION	DATE

Project Title:
Proposed Child Care
Centre

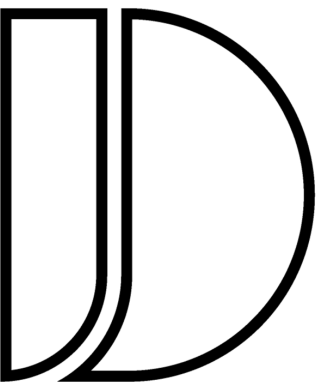
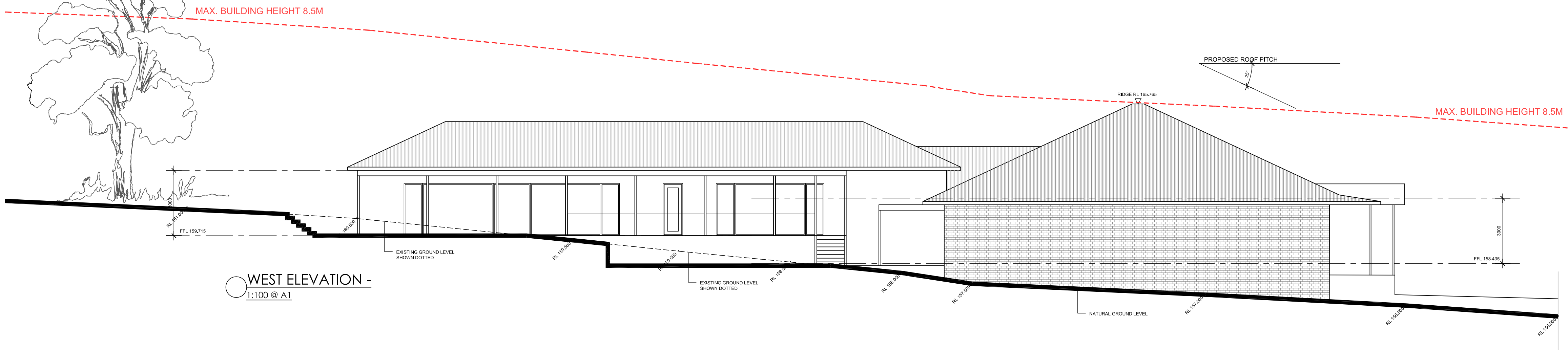
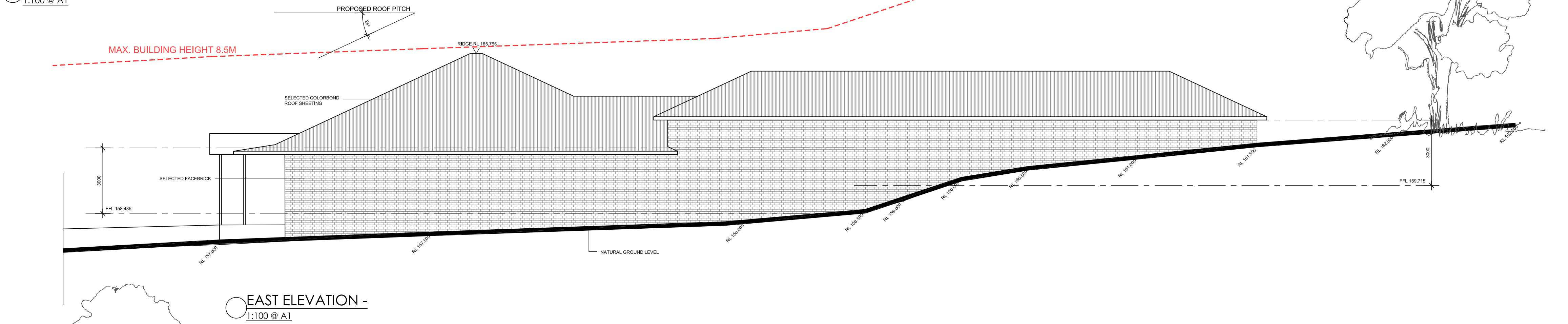
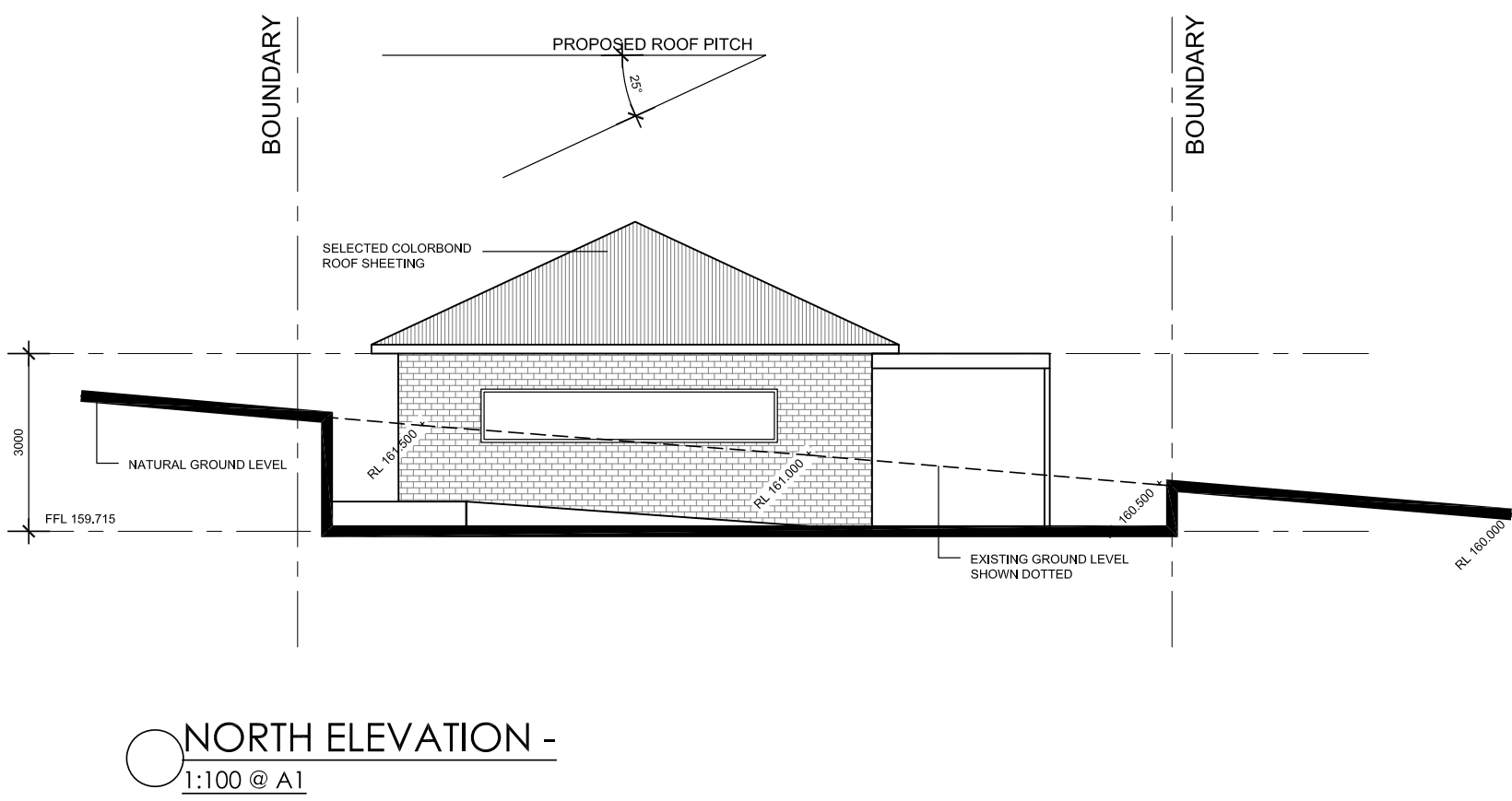
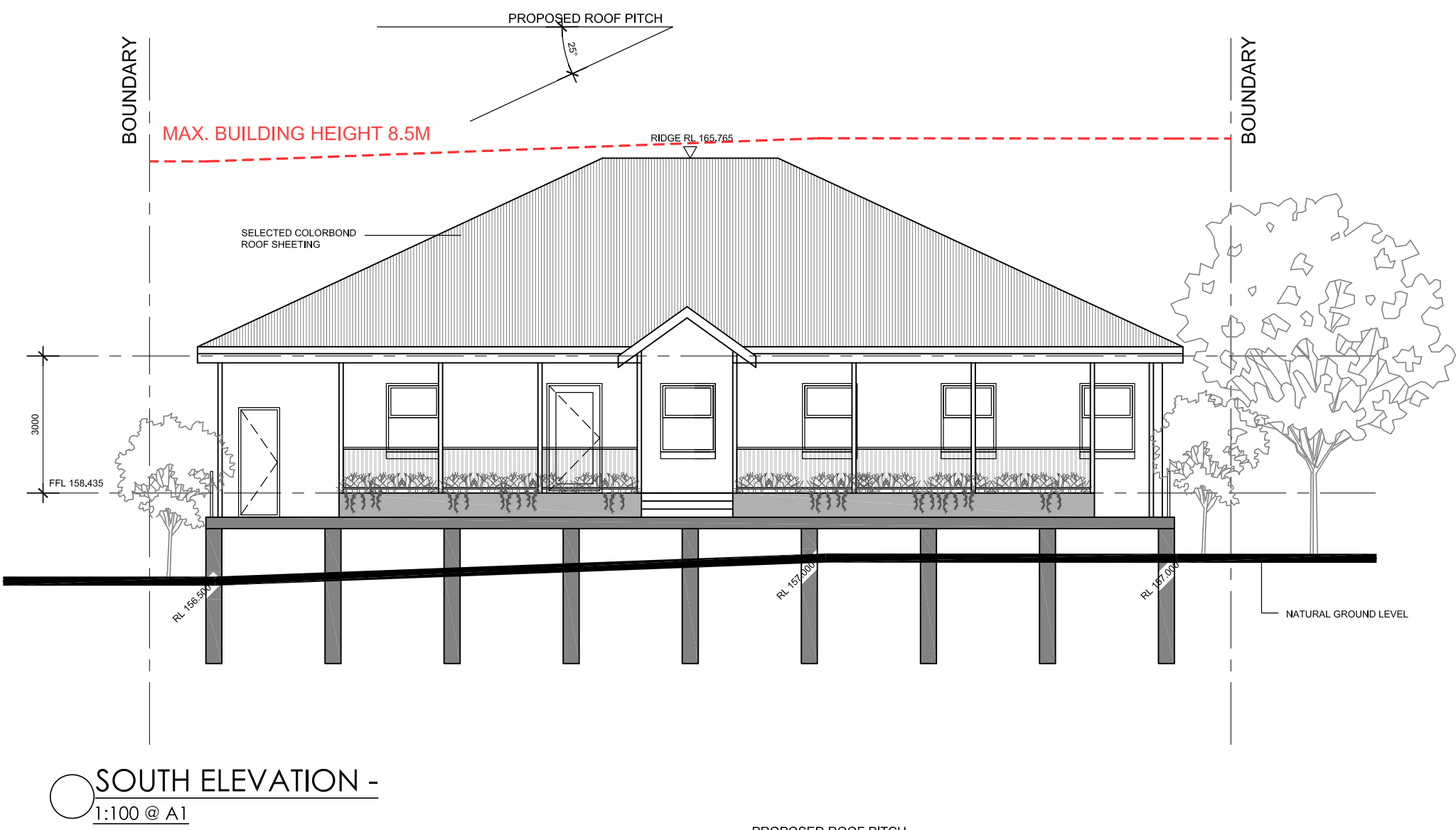
DRAWING TITLE:
Roof Plan

ADDRESS:
84 Brook Street,
Muswellbrook

CLIENT DETAILS:
JAL Invest Co Pty Ltd

LOCAL GOVERNMENT AREA:
Muswellbrook Council

Issue For: DA	Issue: A	Project #: 10186
Date: 20.7.2022	Scale: 1:100	Drawing #: A200



JANSSEN
DESIGNS

info@janssendedesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636
Nominated Architect: Jake Janssen NSW ARB 11575

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DO NOT SCALE OFF ARCHITECTURAL DRAWINGS

AMENDMENTS		
DATE	DESCRIPTION	DATE

Project Title:
Proposed Child Care
Centre

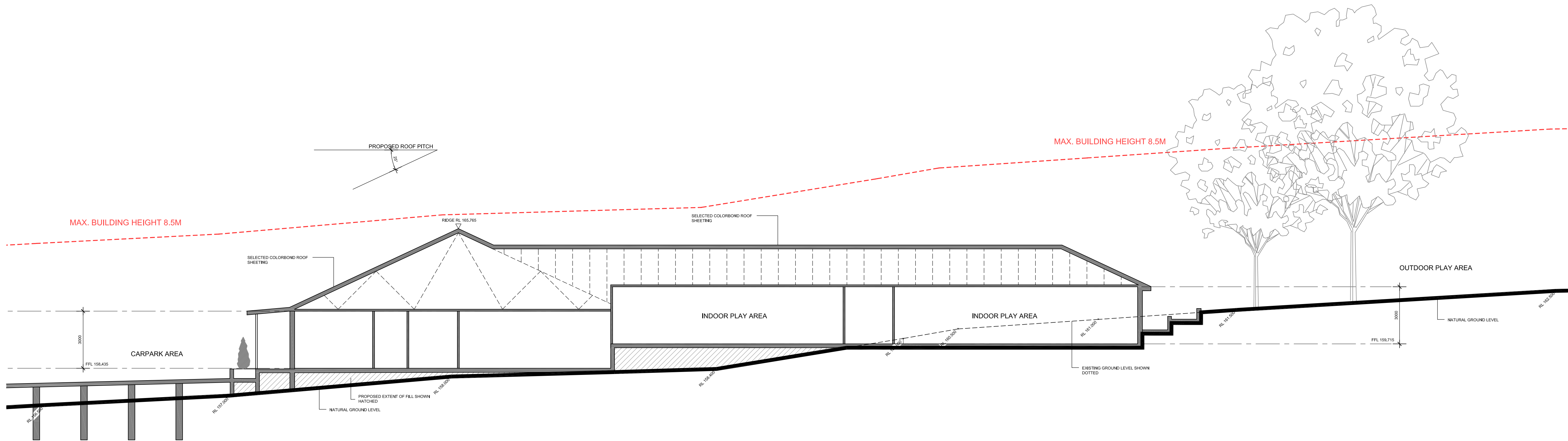
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Section A

ADDRESS:
84 Brook Street,
Muswellbrook

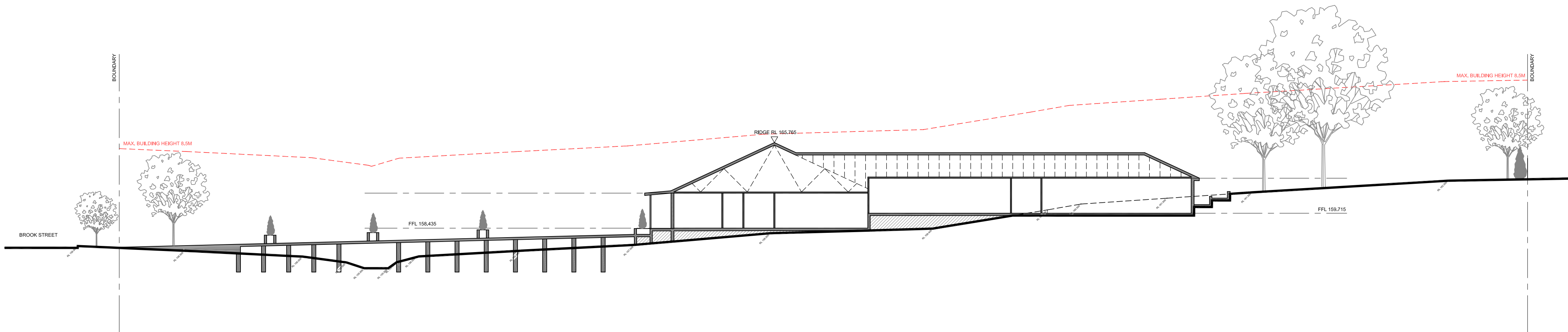
CLIENT DETAILS:
JAL Invest Co Pty Ltd

LOCAL GOVERNMENT AREA:
Muswellbrook Council

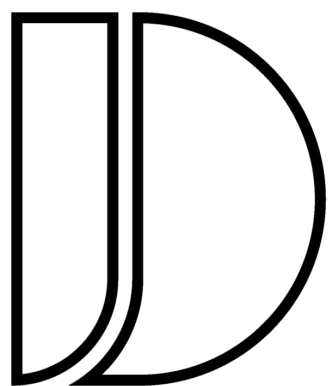
Issue For:	Issue:
DA	A
Date: 20/02/2022	Scale: 1:100
Drawing #: A200	Project #: 10182



SECTION A-A -
1:100 @ A1



SECTION A-A -
1:200 @ A1



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Info@janssendedesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636
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AMENDMENTS		
ISSUE	DESCRIPTION	DATE

Project Title:
Proposed Child Care
Centre

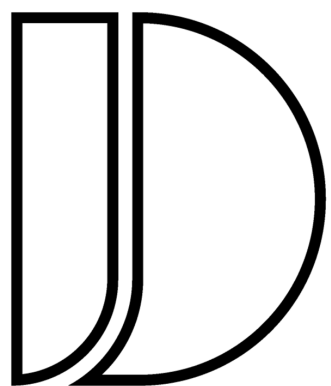
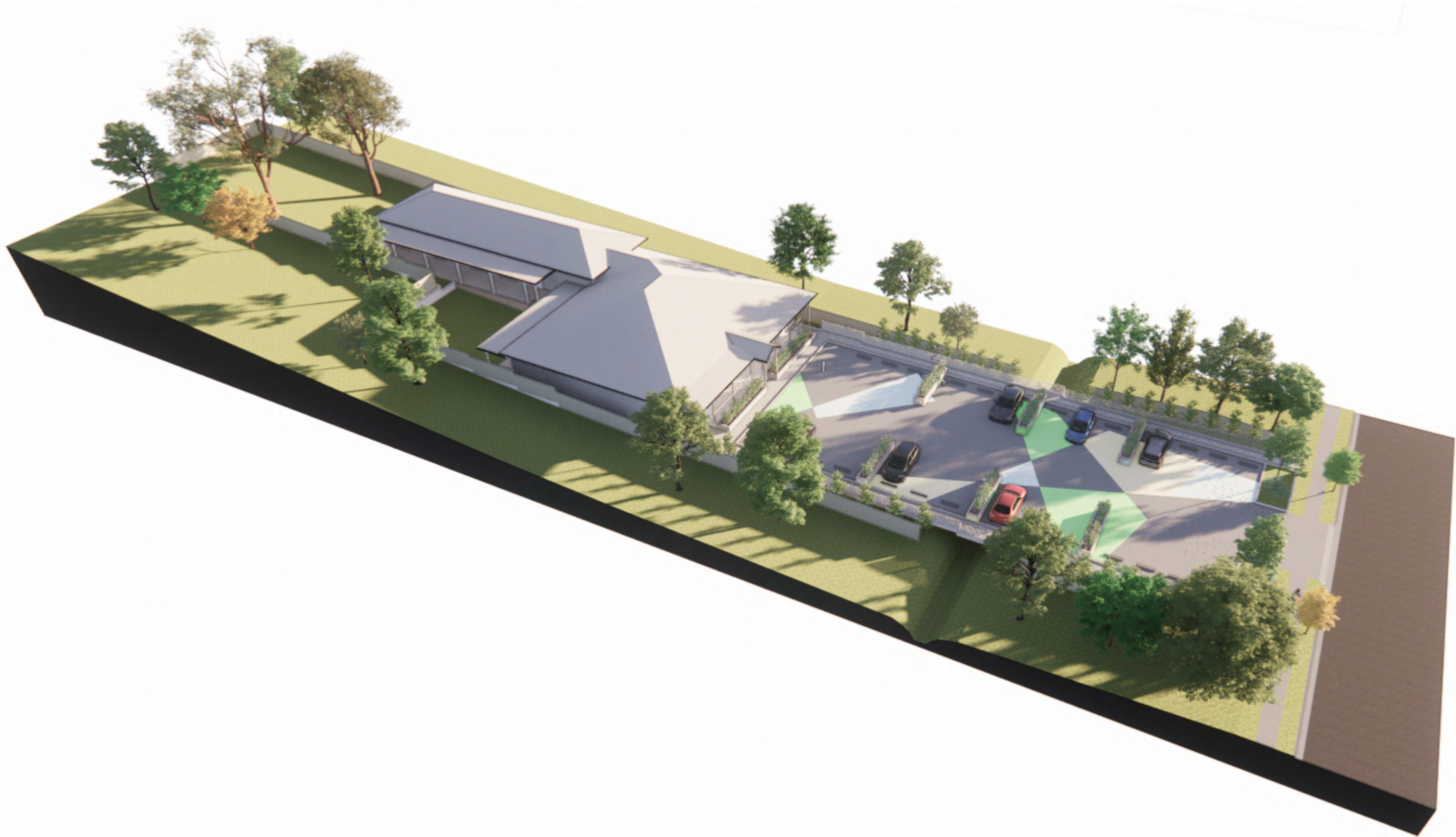
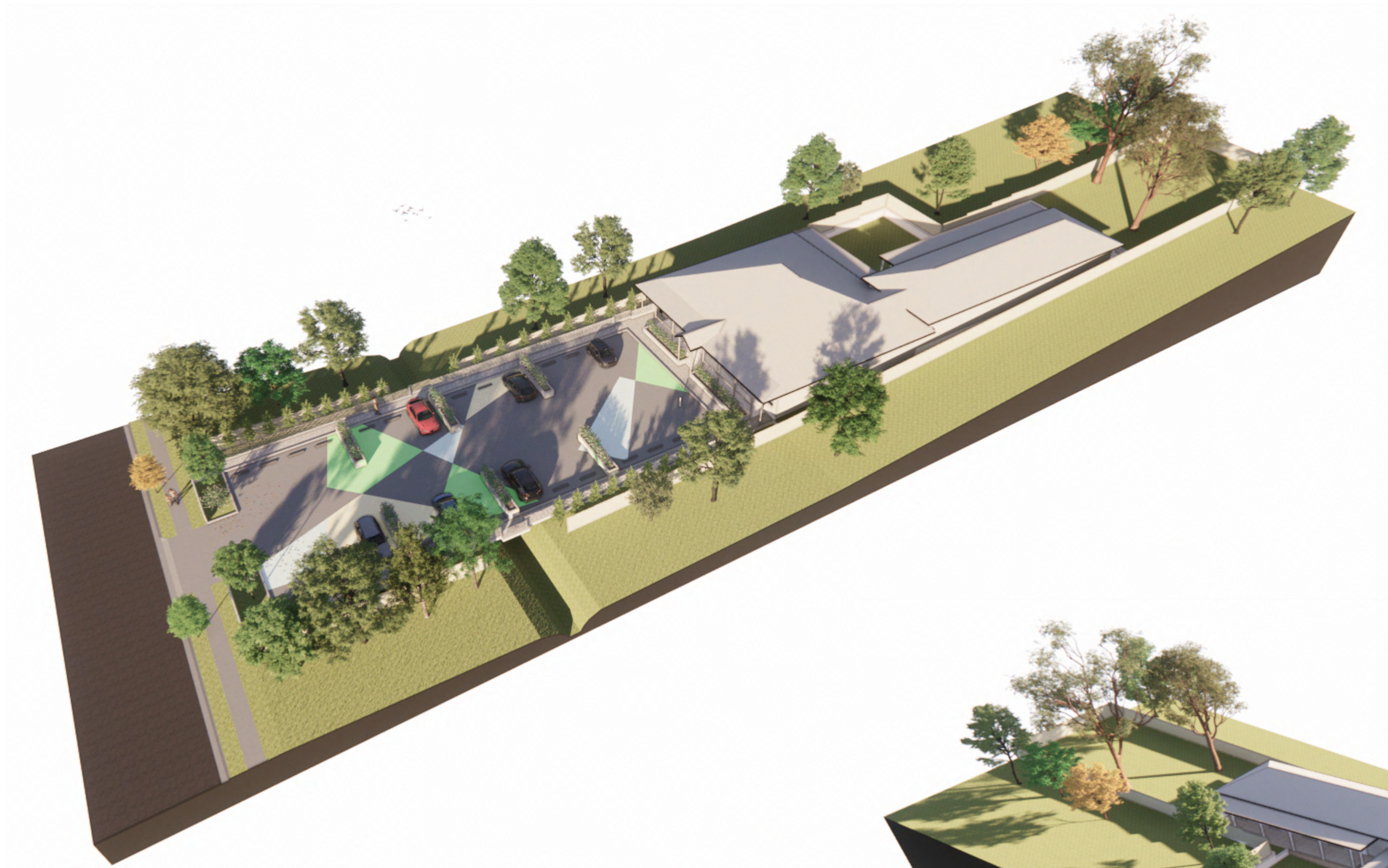
DRAWING TITLE:
Section A

ADDRESS:
84 Brook Street,
Muswellbrook

CLIENT DETAILS:
JAL Invest Co Pty Ltd

LOCAL GOVERNMENT AREA:
Muswellbrook Council

Issue For:		Issue:	
DA	A		
Date:	Scale:	Drawing #:	Project #:
20/7/2022	1:100	A/000	10182



JANSSSEN
DESIGNS

Info@janssendedesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636
Nominated Architect: Jake Janssen NSW ARB 11575

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DO NOT SCALE OFF ARCHITECTURAL DRAWINGS

AMENDMENTS		
ISSUE	DESCRIPTION	DATE

Project Title:
Proposed Child Care
Centre

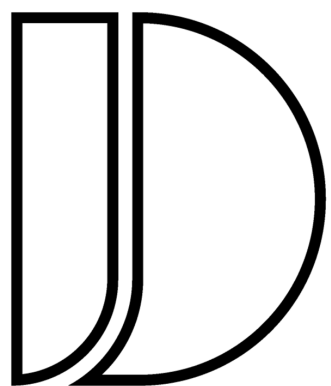
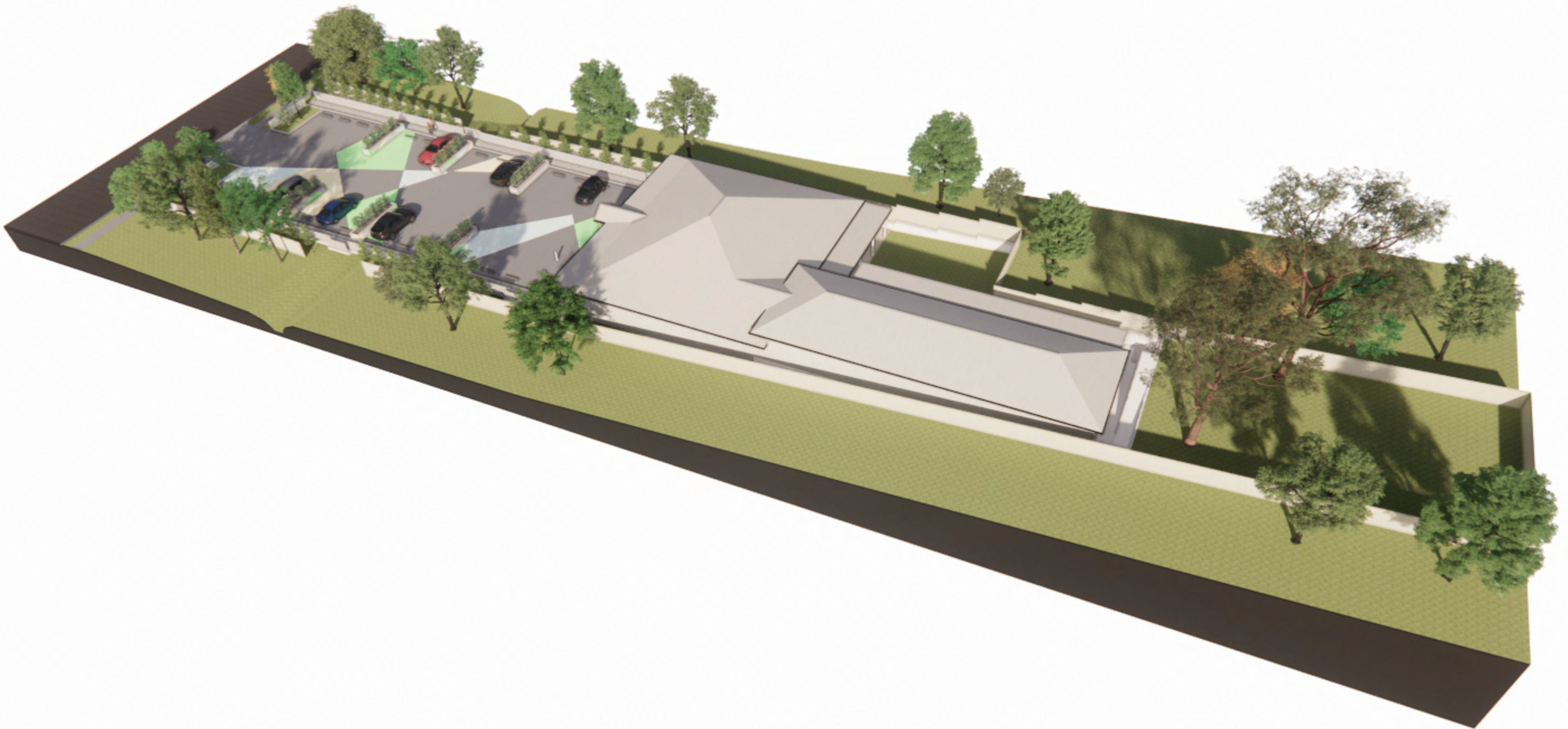
DRAWING TITLE:
Perspective Images

ADDRESS:
84 Brook Street,
Muswellbrook

CLIENT DETAILS:
JAL Invest Co Pty Ltd

LOCAL GOVERNMENT AREA:
Muswellbrook Council

Issue For: DA	Issue: A
Date: 20/7/2022	Scale: 1:100
Drawing #: A000	Project #: 10186



JANSSSEN
DESIGNS

info@janssendedesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636
Nominated Architect: Jake Janssen NSW ARB 11575

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DO NOT SCALE OFF ARCHITECTURAL DRAWINGS

AMENDMENTS		
ISS#	DESCRIPTION	DATE

Project Title:
Proposed Child Care
Centre

DRAWING TITLE:
Perspective Images

ADDRESS:
84 Brook Street,
Muswellbrook

CLIENT DETAILS:
JAL Invest Co Pty Ltd

LOCAL GOVERNMENT AREA:
Muswellbrook Council

Issue For: DA	Issue: A
Date: 20.7.2022	Scale: 1:100
Drawing #: A000	Project #: 10182

Department of Planning and Environment



Contact: Department of Planning and Environment-Water
Phone: 1300081047
Email: waterlicensing.servicedesk@dpie.nsw.gov.au

Our ref: IDAS-2023-10508
Your ref: DA 2023-86

7 September 2023

The General Manager
MUSWELLBROOK SHIRE COUNCIL
Campbell's Corner 60-82 Bridge Street, MUSWELLBROOK NSW 2333

Attention: Tanya Jolly

Uploaded to the ePlanning Portal

Dear Sir/Madam

Re: IDAS-2023-10508 - Integrated Development Referral – General Terms of Approval
Dev Ref: DA 2023-86
Description: Construction of a 90 Place Child Care Centre
Location: Lot 1, DP795300, 84 BROOK STREET MUSWELLBROOK 2333

I refer to your recent referral regarding an integrated Development Application (DA) proposed for the above location. Attached, please find Department of Planning and Environment-Water's General Terms of Approval (GTA) for part of the proposed development requiring a Controlled Activity approval under the *Water Management Act 2000* (WM Act), as detailed in the subject DA.

Please note Council's statutory obligations under section 4.46 of the *Environmental Planning and Assessment Act 1979* (EPA Act) which requires consent, granted by a consent authority, to be consistent with the general terms of any approval proposed to be granted by the approval body.

If the proposed development is approved by Council, the department requests these GTA be included (in their entirety) in Council's development consent. Please also note the department requests notification:

- if any plans or documents are amended and these amendments significantly change the proposed development or result in additional works or activities (i) in the bed of any river, lake or estuary; (ii) on the banks of any river lake or estuary, (iii) on land within 40 metres of the highest bank of a river lake or estuary; or (iv) any excavation which interferes with an aquifer.

The Department of Planning and Environment-Water will ascertain from the notification if the amended plans require review of or variation/s to the GTA. This requirement applies even if the amendment is part of Council's proposed consent conditions and do not appear in the original documentation.

- if Council receives an application under s4.46 of the EPA Act to modify the development consent and the modifications change the proposed work or activities described in the original DA.
- of any legal challenge to the consent.

As the proposed work or activity cannot commence before the applicant applies for and obtains an approval, the department recommends the following condition be included in the development consent:

The attached GTA issued by the Department of Planning and Environment-Water do not constitute an approval under the *Water Management Act 2000*. The development consent holder must apply to the department for a Controlled Activity approval after consent has been issued by Council and before the commencement of any work or activity.

A completed application must be submitted to the department together with any required plans, documents, application fee and proof of Council's development consent. Finalisation of an approval can take up to eight (8) weeks from the date the application and all required supporting documentation is received.

Applications for controlled activity approval should be made to the department, by lodgement of a Controlled Activity Approval – New approval application on the NSW Planning Portal at:
<https://www.planningportal.nsw.gov.au/>

The Department of Planning and Environment-Water requests that Council provide a copy of this letter to the development consent holder.

The Department of Planning and Environment-Water also requests a copy of the determination for this development application be provided by Council as required under section 4.47(6) the EPA Act.

Yours Sincerely



For
Patrick Pahlow
Team Leader
Licensing and Approvals
Department of Planning and Environment-Water



General Terms of Approval

for proposed development requiring approval under s89, 90 or 91 of the Water Management Act 2000

Reference Number:	IDAS-2023-10508
Issue date of GTA:	7 September 2023
Type of Approval:	Controlled Activity
Location of work/activity:	Lot 1, DP795300, 84 BROOK STREET MUSWELLBROOK 2333
Waterfront Land:	Possum Creek
DA Number:	DA 2023-86
LGA:	MUSWELLBROOK

The GTA issued by Department of Planning and Environment-Water do not constitute an approval under the *Water Management Act 2000*. The development consent holder must apply to the Department of Planning and Environment-Water for the relevant approval **after development consent** has been issued by Council **and before** the commencement of any work or activity.

Condition Number	Details
------------------	---------

- | | |
|---------|---|
| TC-G001 | Before commencing any proposed controlled activity on waterfront land, an application must be submitted to Department of Planning and Environment-Water, and obtained, for a controlled activity approval under the Water Management Act 2000. |
| TC-G004 | <p>A. This General Terms of Approval (GTA) only applies to the proposed controlled activity described in the plans and associated documents found in Schedule 1, relating to Development Application DA 2023-86 provided by Council to Department of Planning and Environment-Water.</p> <p>B. Any amendments or modifications to the proposed controlled activity may render the GTA invalid. If the proposed controlled activity is amended or modified, Department of Planning and Environment-Water, must be notified in writing to determine if any variations to the GTA will be required.</p> |
| TC-G005 | <p>A. The application for a controlled activity approval must include the following plan(s):</p> <ul style="list-style-type: none">• Site plans• Construction streamworks plans• Erosion and sediment control plans• Construction detailed drainage plans• Construction stormwater drainage outlet plan• Landscape plan <p>B. The plan(s) must be prepared in accordance with Department of Planning and Environment-Water's guidelines located on the website https://www.dpie.nsw.gov.au/water/licensing-and-trade/approvals/controlled-activity-approvals/what/guidelines</p> |
| TC-G006 | <p>A. A security deposit must be provided, if required by Department of Planning and Environment-Water.</p> <p>B. The deposit must be:</p> <ul style="list-style-type: none">• a bank guarantee, cash deposit or equivalent, and• equal to the amount required by Department of Planning and Environment-Water for that controlled activity approval. |



General Terms of Approval

for proposed development requiring approval under s89, 90 or 91 of the Water Management Act 2000

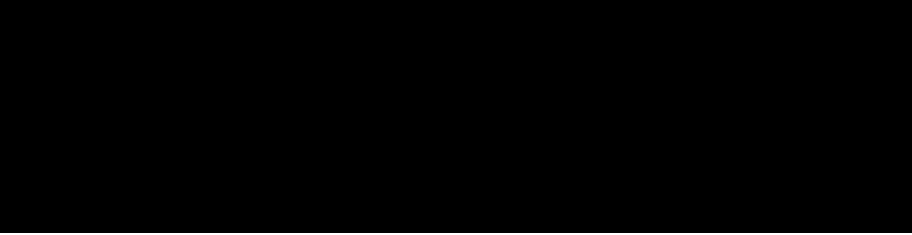
SCHEDULE 1

The plans and associated documentation listed in this schedule are referred to in general terms of approval (GTA) issued by Department of Planning and Environment-Water for integrated development associated with IDAS-2023-10508 as provided by Council:

Preliminary site investigation report, prepared by CEC Geotechnical dated 6 March 2023

Statement of environmental effects, prepared by Think Planners dated 19 July 2023

Civil Plans, Sheet No. 39111-02/6/A - 39111-06/6/A prepared by ING Consulting Engineers dated 23 May 2023



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To the general manager, I have read the development application for a childcare centre to be built in brook Street as well as another application for a centre in Bridge Street.

Whilst these seem like amazing opportunities for the town. They are not viable due to the immense staffing crisis facing the early childcare sector. In Muswellbrook St. Nicholas centre can only currently open half of the centre due to the inability to recruit educators , EduKare are struggling to fill both centres in Muswellbrook Goodstart struggle to get new educators. So, I request you look at the crisis before approving these applications.



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Concern/Objection Letter Proposed Development

Construction of a Child Care Centre

Premises: Lot: 1 DP: 795300 – 84 Brook Street Muswellbrook NSW 2333

Development Application Number: 2023/86

Applicant: THE TRUSTEE FOR JAL INVEST TRUST

We live at [REDACTED] and are next door to the proposed development. I have serious medical issues and the proposed building may impact on them. We have the following concerns and would like a response:

- **Out of Character:** The proposals must respect and reflect the neighbourhood character through the design response and Muswellbrook Council has specified a preferred character for this area. Common neighbourhood characteristics that will need to be taken into consideration in the proposal may include:
 - Lot size and shape
 - Topography
 - Streetscape
 - Front setbacks
 - Side and rear setbacks
 - Architectural style
 - Roof form and eaves
 - Landscaping
 - Front fence
 - Building form and Height
 - Building materials
 - Location of car parking
 - Location and size of private open space
 - Driveways
 - Responding to landform

- **Traffic Congestion/lack of car parking**

- The is limited street parking and we have had previously cars block our driveway and leave their cars there for long periods of time.
- Can Traffic assess the property safely without causing obstructions or other traffic Hazards?
- With the extra traffic the Child Care generates be safely and conveniently accommodated by the existing street networks
- Will the off-street parking be adequate to accommodate the addition traffic to the area?

- **Overshadowing/Overlooking/Loss of Vegetation and Loss of Privacy**

- The building is gong to be over 8 metres tall this overshadows our property and will cause loss of daylight.
- There will be loss of Privacy and proposed fencing does not take this into consideration. Will there be additional Vegetation planted or fence extension to ensure our privacy

- **Visual Bulk of the Building**

- How is the Fencing In accordance with the proposal there is a front and side fence, we would like to continue this on our property - i.e., erect a gate, side and front fence on our property. This will ensure the public cannot access our property and help keep children/parents from trespassing or parking in our front yard or blocking our driveway. Our fencing will keep in accordance with the surrounding properties such as Number 81, 81,83, and 85 Brook Street. Is the Applicant of 84 Brook Street willing to pay for the fencing?
- Will the Vegetation be retained in order to reduce noise and visual intrusion of [REDACTED]?
- 84 Brook Street will overlook our property into our home and yard what is proposed to ensure our privacy.
- Is the any replanting of trees, bushes, Shade Cloth, fence extensions etc?

- **Drainage**

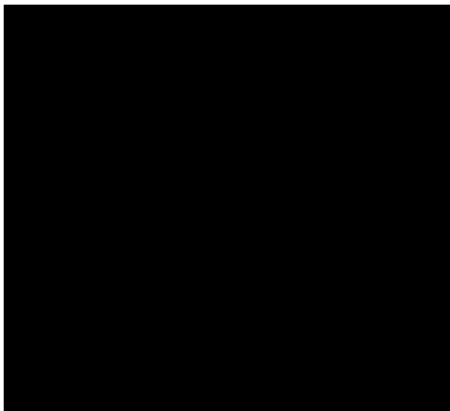
- The plan shows the development is going to reclaim possum Gully and install concrete drainage. This is not in accordance with the

Council plan to replant Possum Gully as previous information from the Council explained.

- How is this going to affect our current flow of water.
- Is there an environmental assessment of the area and how this development going to affect the properties in the area?
- If the is the case will the council or the developer put permanent concrete drainage through the properties on Brook Street where Possum Gully intersects the properties

- **Increase of Noise, Dust and light pollution**

- As you may be aware Noise, dust and light pollution can cause significant loss of comfort and wellbeing.
- What is being done to mitigate these issues both short term during construction and long term when the Child Care Centre is up and running.
- Is there a site storm water detention system being put in? In heavy rains Possum Gully does flood.



Tanya Jolly

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Dear General Manager,

I have a very concerning objection about the possum gully and the carpark on top and around it, as you know the drained goes underneath it and possum gully is uncovered at our property at [REDACTED]. The concern is that possum gully runs from upper wards down to 84 brook and to our property, and it is one of the major drainage in this area, Possum Gully also goes under the Sowerby street, under the market place and drains out to the Hunter River. The weeds and vegetation in the possum Gully at our place is already very bad, and needs urgent attention and we have put forward an easement request to council about it and awaiting the answer for it. If the it rains heavy and construction over the gully can block the water and debris and it can over flow and also can lead to excessive flow in the gully at our property and similar issues other properties are facing as well. I am pretty sure the other properties owner would have approach you with the same issue and if they haven't they should.

I have no issue for the child care to be built, rather well come it, its good for the town and as neighbours I support this business.

But Possum Gully is an issue and I am very worried that with this built water can over flow and damage my property and business and we are very busy medical practice and even getting more busy as more Doctors are joining and it can effect our business.

So my advise is that council should put big pipes as they have done at 98 brook street and whole gully should be covered in the same way, or at least our property or couple of properties on the side of 84 brook street should be done , by the council.

This is a very genuine concern from my side and council should consider is seriously.

1st September 2023

Muswellbrook Shire Council
60-82 Bridge Street,
Muswellbrook NSW 2333

Attention: Tanya Alsleben

Dear Madam,

Re: Response to additional information request
Address: 84 Brook Street, Muswellbrook NSW 2333
Application No: DA 2023-86

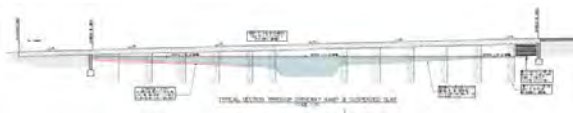
Dear Madam

We refer to the additional information request dated 31st August 2023 regarding Development Lodgement, we hereby would like to submit the requested documents and detailed response as below:

1	Description	Response
<u>Miscellaneous Email 1</u>		
1	Child care staffing issues	<p>It is our understanding that the staffing issues are an operational matter and not a compliance/development application matter and should have not have any bearing on the application.</p> <p>In saying that, we would still like to address the comment.</p> <p>The issue staffing issues that the other centres are potentially having is not a concern from our perspective. There could be many factors that contribute to this including their operations, recruitment, workplace as well as other factors.</p> <p>We have engaged with agents and brokers to find child care operators, both local and national organisations, who are able to attract staff for the centre.</p>
<u>Miscellaneous Email 2</u>		
1	Out of Character	<p>The proposed development takes into consideration all factors relating to the streetscape and character of the surrounding areas. The building is set up in line with neighbouring properties as per the Site Plan on Page 5 of the Architectural Plans.</p> <p>The proposed development has no heritage significance but is located within Muswellbrook Residential Heritage Conservation Area (C2). We undertook a Heritage Impact</p>

1

	<p>Statement for the development which notes that the design of the built form incorporates aspects generally found in this area including the use of face brick on the external walls, sheet metal for the hipped roof, double-hung sash windows and abundance of landscape at the front of the site as well as the northern and southern boundaries of the site to ensure compliance with councils requirement.</p>
2. Traffic congestion/lack of car parking	<p>We have designed the onsite carpark to accommodate the required parking for staff, visitors and loading bay as per the Muswellbrook DCP. We have provided a total of 26 car spots (16 staff, 9 visitors & 1 loading bay). Consequently, there will be no requirement for any customers or staff to be parking on the street.</p> <p>A Traffic Study has been undertaken and accompanies the development application. The Traffic Study includes the study of all traffic data in the surrounding and concluded that there was no adverse impact on the traffic generated consequent of the development as shown below and on Page 17 of the report.</p> <p>5 CONCLUSION</p> <p>In view of the foregoing, the subject Child Care Centre proposal at 84 Brook Street, Muswellbrook (as depicted in Annexure A) is fully supportable in terms of its traffic and parking impacts. The following outcomes of this traffic impact assessment are relevant to note:</p> <ul style="list-style-type: none"> a) The proposal includes the provision of a total of 26 car parking spaces within a proposed at-grade carpark, comprised of 16 for staff use, 9 for parent / visitor use and one (1) for emergency use, satisfying the relevant controls applicable to the development, including Council's DCP requirements. An accessible parking space is also included as part of the nine (9) parent / visitor car parking spaces. b) Council's DCP does not require the provision of bicycle and motorcycle parking facilities. As such nil (0) bicycle / motorcycle parking spaces have been provided, satisfying DCP requirements. c) The parking areas of the site have been assessed against the relevant sections of AS2890.1:2004 and AS2890.6:2022 and have been found to satisfy the objectives of each standard. Swept path testing has been undertaken and the results are reproduced within Annexure F. d) The traffic generation of the proposed development has been estimated to be some 72 trips in the AM peak period (36 in, 36 out) and 63 trips in the PM peak period (32 in, 31 out). The impacts of the traffic generation have been modelled using SIDRA INTERSECTION 9.1, indicating that there will be no adverse impact to the performance of the intersections as a result of the generated traffic.
3. Overshadowing/Overlooking/Loss of Vegetation and Loss of Privacy	<p>The proposed development has taken into consideration the overshadowing of neighbouring properties. The Shadow Diagram on Page 13 & 14 identifies areas which has overshadowing at 9am, 12pm and 3pm. As per the DCP 6.3.2 Solar Access requirements, the proposed development does not reduce the solar access for any neighbouring properties to less than 4 hours between 9am and 3pm.</p> <p>The proposed development indicates that there is a continuing fence line along all boundaries in line with the topography of the site to ensure privacy for neighbouring properties.</p> <p>The associated Arborist Report identifies 6 trees within the site. It is proposed that 4 out of the 6 trees be</p>

	<p>removed due to being structurally unsafe along with other factors. We have included deep soil planting at the front garden beds and along the northern and southern boundaries to compensate any vegetation loss and provide additional acoustic barriers as a result of the development.</p>
4. Visual Bulk of the Building	<p>The proposed development has noted fencing along the northern and southern boundaries in line with the topography of the site.</p> <p>The Landscape Plan provided has allowed for an oversized garden bed at the front of the property along with additional landscape areas along the northern and southern boundaries of the site.</p> <p>The proposed development will be in character with the area, as described in the Heritage Impact Statement.</p>
5. Drainage/Possum Gully	<p>The proposed development takes into consideration the floor impact of Possum Gully and the surrounding neighbours. The proposed carpark area is design to be an overland carpark which cantilevers over Possum Gully as per the below design.</p>  <p>Further, we have undertaken a Flood Impact Assessment Report by independent expert engineers which considered the 1% AEP Storm Event along with the PMF level requirements. It was found that the proposed design of the carpark had no impact on the water flow of Possum Gully and is situated above both the 1% AEP and PMF levels based on the floor data provided by Muswellbrook Council.</p> <p>There will be no concrete encased drainage system in Possum Gully on the proposed site.</p>
6. Increase of Noise, Dust and Light Pollution	<p>The proposed development has an associated Acoustic Report which concluded that the proposed development would be compliant with Councils acoustic requirements.</p> <p>The mitigation methods during construction is conditioned by Council once the proposal is approved and construction is underway. The construction should be have any material difference in impact to any other dwelling construction.</p>

Miscellaneous Email 3	
<p>1. Concerns relating to Possum Gully and the displacement water during storms</p>	<p>As per the point above, the proposed development has taken into consideration of the impact of Possum Gully and designed the carpark to be compliant with 1% AEP Storm Event along with the PMF level requirements. Further, the Flood Study extracted TUFLOW data provided by Council and concluded that the “proposed development does not have any adverse impacts on the flooding elsewhere in the floorplan” and it “do not displace floodwaters in such a manner to impact on the flooding behaviour in terms of loss flood storage, increase in velocity and risk” as shown on Page 20 of the report and extracted attached.</p> <p>We note that these reports are from independent expert engineers.</p> <p>7. Discussion</p> <p>This section of the report provides a review of the results and discusses Council's requirements as stated in the DCP.</p> <ol style="list-style-type: none"> 1. The proposed development does not have any adverse impacts on the flooding elsewhere in the floodplain. 2. Occupants at an elevated risk (i.e. children) are isolated from any flood risk exposure. 3. The proposed floor levels comply with the Flood Planning Level (FPL). Reference is made to the architectural plans for details. 4. Adequate provision for on-site refuge is possible up to and including the PMF Storm Event for the intended usages of the development. 5. The requirements of the DCP are implemented. <p>In our opinion, the proposed buildings footprints do not displace floodwaters in such a manner to impact on the flooding behavior in terms of loss of flood storage, increase in velocity and risk.</p> <p>8. Conclusion</p> <p>A detailed investigation on the flooding behavior has been undertaken in the vicinity of the proposed development at 84 Brook Street, Muswellbrook NSW. Using a combined 1D/2D model, the study determined the flood behavior for the 1% AEP Storm Event.</p> <p>The primary flood characteristics reported for the design events considered include depths, levels, velocities and impact. The impact of the proposed development was assessed and was found to be inconsequential.</p> <p>The study addresses Council's requirements as per the DCP. In our opinion, Council should allow the development in its current proposal.</p>

We look forward council to expedite the process of assessment and development approval at your earliest.
I can be contacted on 0414 080 848 should you require anything further or to discuss this matter.

Kind Regards,



Lay Heng Lech
Director
JAL Invest Co Pty Ltd

**10.1.4. DA 2022-124 - Community Facility Shed - 17-19 Maitland Street****Attachments:**

1. Attachment A - Section 4.15 Assessment Report [10.1.4.1 - 18 pages]
2. Attachment B - recommended conditions of consent [10.1.4.2 - 8 pages]
3. Attachment C - Proposed Site Plan [10.1.4.3 - 1 page]
4. Attachment D - Proposed Shed Plans [10.1.4.4 - 4 pages]
5. Attachment E - Request for s.8.2 Review [10.1.4.5 - 5 pages]
6. Attachment F -Statement from Wannaruah LALC in support of s 8.2 review [10.1.4.6 - 2 pages]

Responsible Officer: Sharon Pope - Director - Planning & Environment

Author: Hamish McTaggart (Development Co-Ordinator)

Community Plan Issue: Not Applicable

Community Plan Goal: Not Applicable

Community Plan Strategy: Not Applicable

Not applicable

PURPOSE

This report has been prepared to assist Council in the Determination of a Section 8.2 Review application for DA 2022/124 for the construction of a shed for a community facility at 17-19 Maitland Street, Wanaruah Local Aboriginal Land Council (Lot 11 DP 552780).

Council determined DA 2022/124 at its 27 February 2024 Ordinary Council Meeting.

In determining the application, Council imposed conditions of consent related to the construction of a formalised sealed car park. The s8.2 application requests that Council reviews this aspect of its determination.

OFFICER'S RECOMMENDATION

Council supports the Section 8.2 Review by amending its determination of DA 2022/124 and granting development consent to this application subject to the recommended conditions of consent included in Attachment B.

Moved: _____ **Seconded:** _____

SECTION 8.2 REVIEW CONSIDERATIONS

An application has been lodged requesting Council to review the determination of DA 2022/124 pursuant to Section 8.2 of the *Environmental Planning and Assessment Act 1979* (see Attachments E & F). This section of the Act requires that, on such an application being made, Council is to review the determination of the application concerned, and either:

- a) Confirm the previous determination of the application, or
- b) Change the determination for the development concerned.



The applicant has requested that Council review the conditions imposed on the development related to off-street car parking.

In its determination of the development application, Council required the construction of fifteen (15) fully sealed and line marked car parking spaces in accordance with related Australian Standards. The Applicant requests that Council permit a variation to the Development Control Plan (DCP) standards to allow the development to have a gravel off-street car parking area.

The applicant and Wanaruah Local Aboriginal Land Council have provided additional statements in support of this Section 8.2 Review and DCP variation. These statements have been included as attachments for Council's information. These documents highlight the community orientated nature of the development and the dual utility of a gravel base car park for conducting cultural ceremonies as opposed to a more artificial sealed car park area.

Section 4.15(3A)(b) of the *Environmental Planning and Assessment Act 1979* requires consent authorities reviewing a variation to a DCP standard to:

'be flexible in applying those provisions and allow reasonable alternative solutions that achieve the objects of those standards for dealing with that aspect of the development'.

A review of the development application against related DCP objectives has been undertaken and Council officers support the variation of the DCP standard. Commentary related to the consideration of the DCP objectives can be seen in the assessment summary and Section 4.15 Assessment Report attached (see Attachment A).

In reviewing the request to vary the off-street car parking requirement, Council Officers have noted that:

- The development relates to an existing community facility, which currently provides no off-street car parking. A gravel parking area would represent an overall improvement to the provision of off-street parking at this site.
- The proposed shed would be used in conjunction with the existing community facility. The shed and its proposed use to hold related cultural and educational workshops is not anticipated to significantly change traffic conditions and demand for parking in relation to the site.
- The off-street parking is located at the rear of the site and would limit its visibility and any perceived related visual impact on the streetscape.
- To ensure a gravel base car park would not impact on the road network and that accessible parking would be provided, Council Officers have recommended conditions requiring the provision of an accessible car park (proposed condition 9), the upgrade of the site's vehicle crossover, and sealing to a distance of 3m within the property boundary (proposed condition 25).
- A properly constructed gravel car park can be maintained to limit dust generation where traffic speeds are low, as will be the case for this development.

Council regularly provides a level of flexibility in the application of the off-street car parking requirements under the Muswellbrook DCP, particularly in circumstances where development applications involve community uses and existing premises in commercial zoned areas. Recent examples of prominent/related instances where Council has applied flexibility in its application of off-street car park requirements include (this list is a list of prominent examples and not an exhaustive list of all related DCP variations; it is also noted that each application possesses their own unique circumstances which have informed related DCP variations):

- **DA 2019/16** - Denman Heritage Village – determined 22 December 2020 – approved with a requirement for one (1) accessible parking space. A variation was approved to not



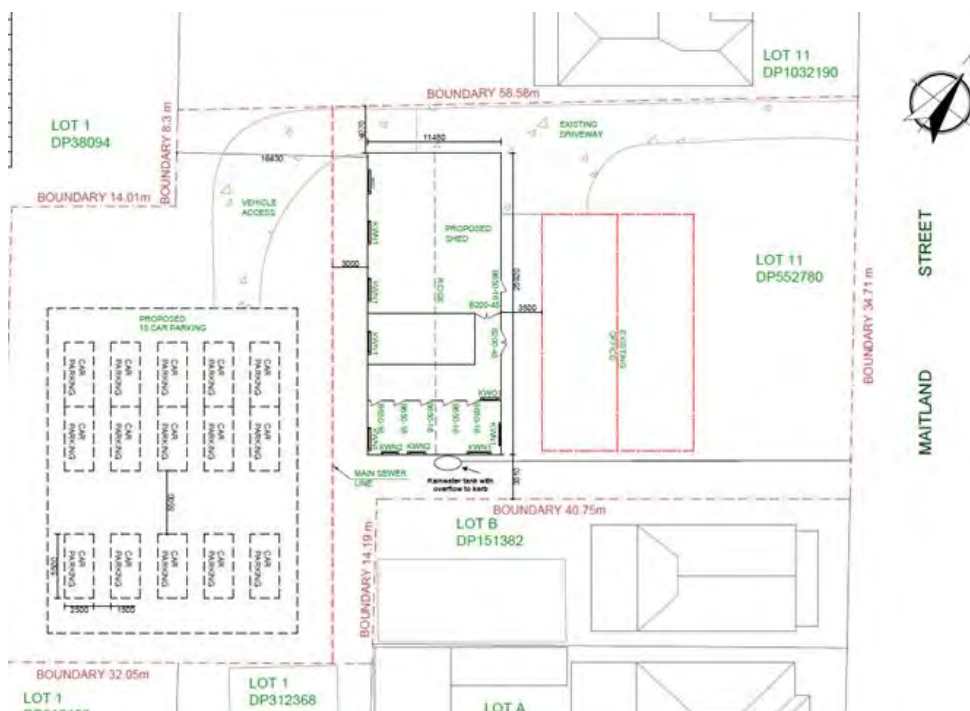
require construction of a further five (5) parking spaces. Parking in the area has a gravel construction standard.

- **DA 2019/88** - Establishment of Council Chambers at Campbells Corner Muswellbrook – determined 2 December 2019 – the development application proposed no additional off-street car parking. The application was a unique variation to the Development Control Plan. The application proposed a car parking strategy whereby individuals employed at the facility would park in overflow car parking spaces established along Hunter Terrace.
- **DA 2020/82** Muswellbrook Royal Hotel alterations and beer garden – 27 July 2021 – the application removed existing off-street car parking. The determination required the payment of a contribution to Council related to off-street car parking in the area.
- **DA 2021/35** - Community Centre 5 Jersey Place Muswellbrook – determined 5 April 2022 under delegated authority – relates to the expansion of an existing facility operated by Upper Hunter Community Services. The application proposes three (3) off-street parking spaces, which represents a seven (7) space shortfall to the total number required by the DCP.
- **DA 2021/121** - determined 19 January 2022 under delegated authority – extension to Crossfit Gym at Muswellbrook Showground, permitted with a variation to the Muswellbrook DCP to permit the development to progress with a gravel base car park.
- **DA 2021/158** - change of use health service facility 79 Brook St, involved the change of use of a residential property to a new health consulting room – Section 8.2 Review determined by Council 20 December 2022 – approved the application with a one (1) space variation of the DCP requirement.

DESCRIPTION OF THE PROPOSED DEVELOPMENT

The proposed development involves the construction of a new Colourbond shed to be used for cultural development activities run at the site as part of the Wanaruah Local Aboriginal Land Council community engagement and cultural development initiatives.

A site plan has been included below (and Attachment C) which illustrates the shed size and location at the proposed site.





The site plan includes a general car parking arrangement. The applicant has not proposed to construct this car parking area as a formal car parking area in accordance with the Australian Standard and Muswellbrook DCP 2009 requirements, and requests that Council instead considers approval of an informal gravel base parking area.

ASSESSMENT SUMMARY

Council Officers have assessed the proposal under Section 4.15 of the Environmental Planning and Assessment Act 1979 (see Attachment A). Key section 4.15 assessment issues and findings are:

- The proposed development is permissible with consent under the provisions of the Muswellbrook LEP 2009 as alterations and additions to a community facility and is compatible with all other relevant assessment provisions of the Muswellbrook LEP 2009.
- The proposed development is compatible with the requirements of relevant State Environmental Planning Policies.
- The proposed development was referred to Council Community Infrastructure Engineers and Building Surveyors. Their comments and requirements have informed the recommended conditions of consent.
- The subject site is identified as flood liable and is affected by the 1% AEP Flood. A Flood Impact Assessment has been prepared in relation to the development. The Flood Impact Assessment has been reviewed by Council Officers in context with the flood planning sections of the Muswellbrook LEP 2009 and DCP and are satisfied that the proposal would comply with these requirements, provided it is carried out in accordance with that document and the recommended conditions of consent.
- The development application requests a variation to off-street car parking requirements. The Development Control Plan requires fifteen (15) fully constructed and formed off-street car parking spaces. The applicant has demonstrated that there is sufficient space on the site for the informal parking of over 15 vehicles and has requested that the application be permitted with a semi-formal gravel parking area. Council Officers have recommended that the variation of the Development Control Plan be supported.
- The rear of the site subject to this development application is intersected by an open top stormwater drainage channel which forms part of Council's urban stormwater drainage system. Section 25 of Council's Development Control Plan and the Rivers and Stormwater Drainage Policy require conditions related to the registration of easements over Council stormwater drainage assets. Related conditions have been included in the recommended conditions of consent.
- The proposed development would be in accordance with all other relevant requirements of the Muswellbrook Development Control Plan.
- The proposed development is considered unlikely to have a significant adverse environmental impact.

COMMUNITY CONSULTATION

The proposed development was publicly notified on two occasions. The initial notification was completed between 21 November 2022 and 8 December 2022. No submissions were received.

Following the receipt of revised plans, the proposed development was re-notified between 10 November 2023 to 30 November 2023. No submissions were received.

This Section 8.2 Review application did not require additional neighbour notification.

OPTIONS

Council may:



- A. Change its determination of DA 2022/124 and determine the application subject to the recommended conditions of consent or alternative amended conditions put forward by Council.
- B. Confirm its 27 February determination of the development application.

CONCLUSION

Council Officers recommend that Council determines this Section 8.2 application by amending its determination and granting development consent to the application, subject to conditions of consent included in Attachment B, which enable the development to progress subject to a requirement for a gravel constructed car parking, one (1) sealed accessible parking space, and the installation of a new sealed vehicle crossover and driveway to a depth of 3m from the property boundary.

LEGAL IMPLICATIONS

Where the applicant is dissatisfied with the determination of the development application, they have an opportunity, under the provisions of the Environmental Planning and Assessment Act 1979, to appeal that determination at the Land and Environment Court.

DEVELOPMENT ASSESSMENT REPORT

ADDRESS:	LOT: 11 DP: 552780 17-19 Maitland Street MUSWELLBROOK
APPLICATION No:	2022/124
PROPOSAL:	Shed for Community Facility
OWNER:	Wanaruah Local Aboriginal Land Council
APPLICANT:	Hunter Valley Sheds N More Pty Ltd Unit 4 1 Shipley Drive RUTHERFORD NSW 2320
AUTHOR:	Hamish McTaggart
DATE LODGED:	10/11/2022
DATE OF REPORT:	14/02/2024

1. RECOMMENDATION

It is recommended that development consent be granted to DA 2022/124 for a Shed to be used as a Community Facility, subject to the recommended conditions of consent.

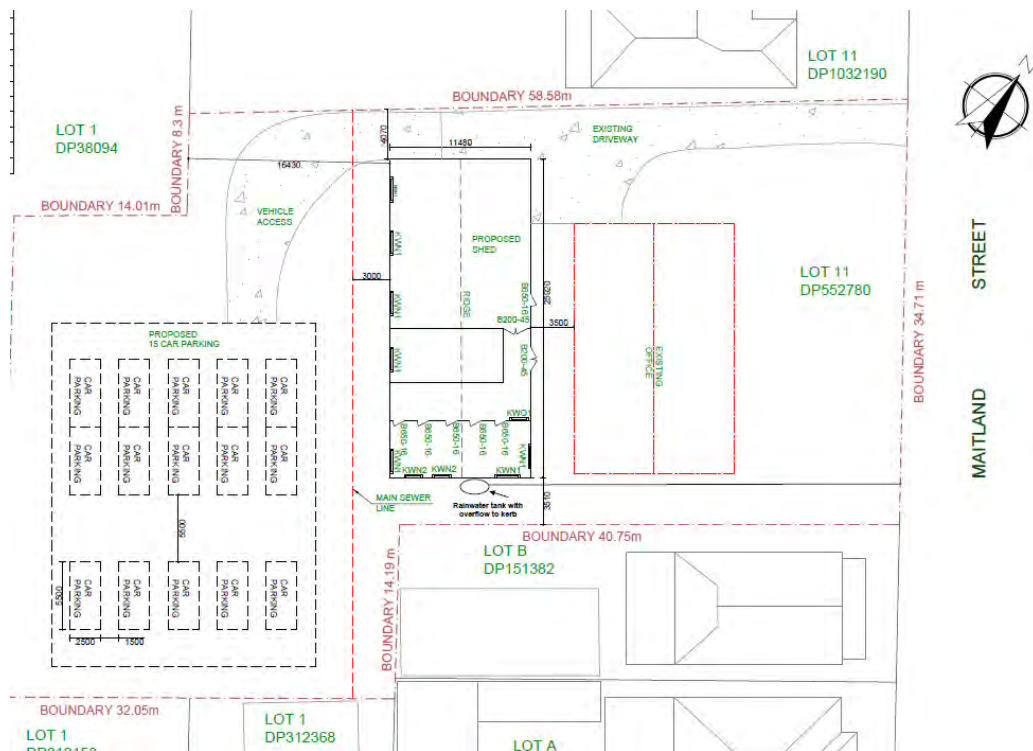
2. SITE LOCALITY AND DESCRIPTION

The proposed development relates to 17-19 Maitland Street Muswellbrook (Lot 11 DP 552780).

The site subject to this development application is:

- zoned E3 productivity support under the Muswellbrook LEP 2009 (MLEP 2009)
- Adjoins land also zoned E3 Productivity support to the north-west, north-east and south-east.
- Adjoins land zoned R1 General Residential to the south-west fronting Jordon Street.
- Has frontage and vehicle access via Maitland. Maitland Street is part of the New England Highway which is a classified State Road.
- The land is identified as flood liable and impacted by the 1% AEP flood event by the Muswellbrook Flood Risk Management Study and Plan 2018.
- The south-eastern part of the site includes a drainage area which conveys water from properties and road areas south of the site toward a discharge point into the Hunter River. The drainage channel at the site is not piped and is an open channel and includes overgrown vegetation and debris at locations. The Assessing Officer does not have any information related to Council's maintenance of the channel. The drainage area is identified as a stormwater line on Council's GIS mapping system and is not identified as a waterway on the NSW State Government waterways mapping.
- A sewer main intersects the subject site. The proposed development is clear of this infrastructure.
- The site is currently being used by the Wanaruah Local Aboriginal Council as offices and a community facility.
- A search of Council's electronic record keeping system did not identify a development application related to the establishment of this use of the site. A search of electronic property ownership records indicated that the property had been purchased by its current owners in 1992.
- The use is permitted in the zone.

An aerial image identifying the subject site has been included below



The details of shed and parking spacing proposed include:

- Shed width 11.48m, shed length 25.92m, total area = 297.56m² (the total area of the site is 2,806.785m²).
- The proposed shed would have a 3m eave height and 5.090m apex.
- The proposed shed would be located behind the building line of the Wanaruah Local Land Council building and setback 3.5m from this structure.
- The proposed shed would have a 3m setback from the Council sewer main that intersects the site.
- The proposed shed would be setback 3.51m and 4.07m from the side boundaries and 16.43m from the nearest point of the rear boundary.
- The proposed plans have identified an indicative parking area to accommodate up to 15 vehicles. The applicant has not proposed the construction of a formal car parking area in accordance with the Australian Standard and MDCP 2009 requirements, but requests that Council permit the establishment of an informal gravel base parking area. This would be a variation to MDCP 2009 requirements and is discussed under the Section 16 car parking and access heading of this report.

4. REFERRAL COMMENTS

External Referrals

The proposed development did not require any referrals to external Government Agencies to inform this assessment.

Internal Referrals

CI – Roads and Drainage

- Stormwater/drainage - It was requested that conditions be imposed to require an easement to be obtained per provisions within Council's Stormwater and Drainage DCP Section and Rivers and Drainage Policy. Council Engineers advised that it would be acceptable for an Occupation Certificate to be issued at the time that the applicant had commenced the process of registering an easement given the anticipated administrative timeframe for processing any easement.
- Parking – Engineers are supportive of the variation of Council's parking DCP to not require a fully sealed car park in line with relevant Australian Standards. A more detailed merit consideration of this DCP variation has been included under the DCP section of this report. A gravel-based parking area is to be constructed at the rear of the site as an alternative.
- The flood impact assessment submitted was compatible with DCP requirements. Advice was provided to ensure the structure remained in accordance with construction requirements for structures on flood liable land.

CI – Water and Waste

The initial location of the shed was rejected as the structure was over a Council sewerage main which intersects the property.

The location of the proposed shed was moved 3m clear of the sewerage main. Council Water and Waste Engineers raise no objection to the proposal, although it is noted that the shed location conflicts with the internal sewer inspection shaft. Council Officers and the related Australian standard require all private sewer connections to be installed with an inspection shaft to inspect sewer blockages and determine whether a blockage is within the Council or private sewerage pipework.

A condition is recommended to require the location of the inspection shaft to be relocated outside of the shed footprint and remain accessible.

Building Surveyor

Council's Building Surveyor recommended conditions of consent related to demonstrating compliance with fire safety setbacks and accessibility requirements at the time a Construction Certificate is applied for.

These requirements have been incorporated into the recommended conditions of consent.

5. ASSESSMENT - Section 4.15 Matters for Consideration

This report provides an assessment of the material presented in the Application against the relevant State and local planning legislation and policy.

Section 4.15(1)(a)(i) The provisions of any Environmental Planning Instrument (EPI)

A. Muswellbrook Local Environmental Plan 2009 (MLEP 2009)

Relevant Clauses applicable under the Muswellbrook Local Environmental Plan 2009 are:

Part 2 Permitted or prohibited development

Land use Zone	E3 Productivity Support
Proposed Use	Community facility
Permissibility	Permitted with Consent
Zone Objective	Complies with Objective

The objectives under the E3 Productivity Support Zone are as follows:

- To provide a range of facilities and services, light industries, warehouses and offices.
- To provide for land uses that are compatible with, but do not compete with, land uses in surrounding local and commercial centres.
- To maintain the economic viability of local and commercial centres by limiting certain retail and commercial activity.
- To provide for land uses that meet the needs of the community, businesses and industries but that are not suited to locations in other employment zones.
- To provide opportunities for new and emerging light industries.
- To enable other land uses that provide facilities and services to meet the day to day needs of workers, to sell goods of a large size, weight or quantity or to sell goods manufactured on-site.
- To ensure that development is arranged and carried out in a way that does not intrude on the amenity of adjoining residential areas.

The proposed development is generally in accordance with the land use zone objectives as it would support the carrying out the continued administrative, cultural and educational operations of the Wanaruah Local Aboriginal Land Council at the site.

Part 4 Principal Development Standards

Relevant Clause	Control	Proposed	Compliance
4.1 Minimum subdivision lot size		The proposal does not involve the subdivision of land.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
4.3 Height of buildings	13m	5.09m	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
4.4 Floor space ratio	2:1	The site area 2,806m ² the floor area of the proposed shed is 297m ² . The proposed shed and existing building located on the site comply with the maximum FSR for the site.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
4.6 Exception to Development Standards		The proposal does not involve a variation to a development standard.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA

Part 5 Miscellaneous Provisions

Relevant Clause	Compliance
5.21 Flood planning	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p>The site subject to this development application is identified as flood liable by the Muswellbrook Flood Risk Management Plan and Study 2018 and is impacted by the 1% AEP event.</p> <p>This Clause applies to the determination of development on flood liable land. Prior to determining a development application to which this clause applies a consent authority is to be satisfied that the development -</p> <ul style="list-style-type: none"> (a) is compatible with the flood function and behaviour on the land, and (b) will not adversely affect flood behaviour in a way that results in detrimental increases in the potential flood affectation of other development or properties, and (c) will not adversely affect the safe occupation and efficient evacuation of people or exceed the capacity of existing evacuation routes for the surrounding area in the event of a flood, and (d) incorporates appropriate measures to manage risk to life in the event of a flood, and

	<p><i>(e) will not adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.</i></p> <p>Council Officers have had regard to the above assessment criteria when assessing the proposed development in context with the more detailed flood impact assessment provisions established through Section 13 of the Muswellbrook DCP.</p> <p>A Flood Impact Assessment prepared by an engineer was lodged with the application.</p> <p>This assessment sets out structural design measures to be adhered to through the construction of the development to ensure the structure is structurally adequate to withstand flood loads and recommends the preparation of a Flood Evacuation Plan for the site.</p> <p>Council Officers are satisfied that the proposed development would be in accordance with the relevant flood risk management requirements where the recommendations of this assessment are adhered to through the carrying out of the development.</p>
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Part 6 Urban Release Area

NA

Part 7 Additional Local Provisions

Relevant Clause	Compliance
7.1 Terrestrial biodiversity	The land subject to this development application is not identified as 'biodiversity' by the relevant map. Accordingly, the provisions of this part do not require further consideration in relation to the development application. Not Relevant
7.6 Earthworks	<p>The proposed development would involve the carrying out of earthworks and accordingly, this Clause is a relevant consideration.</p> <p>Council Officers are satisfied that the proposed development would be compatible with the requirements of this Clause where earthworks are carried out in accordance with the recommended conditions of consent. Complies</p>

B. State Environmental Planning Policies Relevant to Muswellbrook Shire

SEPP (Biodiversity and Conservation) 2021
<p>Satisfactory: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><u>Chapter 2 Vegetation in non-rural areas</u></p> <p>The provisions of this Chapter do not impose requirements relevant to the assessment of this development application.</p> <p>Council has not adopted a Development Control Plan which would require a person to obtain a permit to clear native vegetation. Accordingly, no permit under the related provisions is required in relation to the proposed development.</p>

Furthermore, the proposal would not involve disturbance of any significant area of native vegetation.

Complies

Chapter 3 Koala habitat protection 2020

This Chapter applies in the Muswellbrook Shire Council local government area. This environmental planning instrument encourages the conservation and management of natural vegetation areas that provide habitat for koalas, that are zoned:

- (a) Zone RU1 Primary Production,
- (b) Zone RU2 Rural Landscape,
- (c) Zone RU3 Forestry.

The proposed development is located on land zoned E3 Productivity Support. As the proposed development is not located within the above zones, the provisions of this Chapter related to koala habitat protection do not require further consideration.

Complies

Chapter 4 Koala habitat protection 2021

The provisions of this Chapter apply to land that is subject to an approved koala plan of management. The site is not subject to such a plan of management. Accordingly the provisions of this Chapter do not apply to the proposed development.

Complies

SEPP (Resilience and Hazards (2021))

Chapter 4 Remediation of Land

This chapter under the SEPP requires that 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*
- (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.*

Council Officers are satisfied that the subject site is unlikely to have historically been used for activities that may have potentially caused the site to be subject to contamination requiring remediation as part of this development.

In forming this view Council Officers have:

- Recognised that the site has most recently been used by the Wanaruah Land Council as an administration, cultural and educational centre for a number of years. This type of use of the site is unlikely to have involved any activity with the potential to cause site contamination.
- The site would continue to be used for this purpose as part of the proposed development.
- When inspecting the site Council Officers did not observe any visual evidence which suggested the site may have been impacted by contamination.

In view of the above Council Officers are satisfied that the proposed development may proceed without the need for further assessment of the SEPP provisions.
Complies
SEPP (Transport and Infrastructure) 2021
<p>The subject site fronts a classified State Road.</p> <p>Clause 2.119 includes provisions that require consideration by a consent authority prior to granting development consent to development with frontage to a classified State Road. These provisions are referenced below.</p> <p><i>(a) where practicable and safe, vehicular access to the land is provided by a road other than the classified road, and</i></p> <p><i>(b) the safety, efficiency and ongoing operation of the classified road will not be adversely affected by the development as a result of—</i></p> <p><i>(i) the design of the vehicular access to the land, or</i></p> <p><i>(ii) the emission of smoke or dust from the development, or</i></p> <p><i>(iii) the nature, volume or frequency of vehicles using the classified road to gain access to the land, and</i></p> <p><i>(c) the development is of a type that is not sensitive to traffic noise or vehicle emissions, or is appropriately located and designed, or includes measures, to ameliorate potential traffic noise or vehicle emissions within the site of the development arising from the adjacent classified road.</i></p> <p>In relation to these assessment provisions Council have noted the following:</p> <ul style="list-style-type: none"> - the site has an existing access to the New England Highway classified state road. - The proposed development does not involve a new connection to the classified State Road which would require referral to Transport for NSW for concurrence through the Roads Act 1993 - Council Engineers have reviewed the proposed development and the existing access arrangement and made recommendations related to ensuring the maintenance of the site access. - The proposed development would not be sensitive to road noise or vehicle emissions. - The proposed development is not traffic generating development within the meaning of Clause 2.122 which would require concurrence from transport for NSW. <p>In view of the above considerations Council Officers are satisfied that the proposed development is in accordance with the relevant SEPP requirements.</p> <p>Complies</p>

Section 4.15(1)(a)(ii) the provisions of any draft EPI.

There are no draft EPIs relevant to the Development Application.

Section 4.15(1)(a)(iii) the provisions of any development control plan

Muswellbrook DCP 2009

Section 3 – Site Analysis

This Section of the DCP puts forward matters to be considered by a proponent through the design of a development application and the preparation of accompanying documentation.

Council Officers are satisfied that the proponent has adequately considered the provisions of this Section and prepared the documentation accompanying the development application in accordance with the requirements of this Section.

Section 9 – Local Centre Development

This Section of the DCP relates to development in the former Local Centre land use zone – this land use zone has been transitioned into the new commercial land use zones which include the E3 Productivity Support zone and is thereby relevant to the proposed development.

The table below examines the provisions of this Section of the DCP in context with the proposed development.

MUSWELLBROOK SHIRE COUNCIL DCP SECTION 9 LOCAL CENTRE DEVELOPMENT		
DCP REQUIREMENTS	COMPLIES	PLANNING COMMENT
9.1.1 Built Form (i) The design of new buildings should reflect and enhance the existing character of local centres. (refer to section 15 of this DCP for further guidance on development in the Bridge Street area) (ii) Building design should relate to its retail/commercial/office function. (iii) Building materials should be of high quality and harmonise with surrounding development. The use of reflective materials is discouraged. Materials and colours should not dominate the streetscape. (iv) Awnings should be designed to integrate with the architecture of the building façade and provide for continuous shelter for pedestrians. Awnings should follow consistent heights above the footpath with a minimum height to the underside of the awning of 3.2 metres (v) Building facades should relate to the context of buildings in the area to achieve continuity and harmony. The continuity of commercial frontages should not be broken by parking areas, service and delivery areas etc. (vi) Buildings should provide for 'activated street frontages' by incorporating active uses at street level including cafes and other retail activities. (vii) Blank building facades to streets or public places are to be avoided. (viii) The placement of windows should provide visual interest and variation to the building façade and relate to those of adjacent buildings. (ix) Building designs should allow for passive surveillance of public places and streets. (ix) Building entrances should be well defined and well lit. (x) New residential development shall be located above street level. (xi) Incorporate areas for future signage into the building design.	Yes	<p>The proposed development is compatible with the requirements of this Section of the Muswellbrook DCP. This view has been formed based on the following considerations:</p> <ul style="list-style-type: none"> ➤ The proposed development would be setback behind the building line of the existing Wannaruah Local Aboriginal Land Council administration building. This building would obscure the balance of the structure when viewed from the streetscape. Council Officers are satisfied that the proposed development would not have any substantive impact on the streetscape. ➤ The proposed colorbond shed would not utilise highly reflective materials. The shed profile and building materials used would be comparable to a modern residential shed. ➤ An active street frontage would be maintained at the existing administration building as part of this development application.
9.1.2 Height of Buildings (i) Building heights comply with the building height limits prescribed by Muswellbrook LEP 2009. (ii) The height of buildings should be consistent with the character of the area, and include roof parapets where that is a	Yes	<p>The proposed development would comply with the requirements of this section of the DCP. This view has been formed based on the observations below:</p> <ul style="list-style-type: none"> ➤ The height of the proposed development would not exceed the

<p>characteristic in the surrounding streetscape.</p> <p>(iii) The height of buildings should not result in unreasonable overshadowing or compromise the privacy of adjoining properties.</p>		<p>maximum building height for the land specified by the Muswellbrook LEP 2009.</p> <p>➤ When considered in context with the bulk height and scale of commercial buildings in the E3 Productivity Support locality the height and scale would be generally compatible with the scale of commercial development in that locality. The automotive retail and mechanical sheds north of the site at 5-11 Maitland St, the retail premises at 27-29 Maitland Street and the service stations located in the general area are similar in scale and height.</p>
<p>9.1.3 Setbacks</p> <p>(i) The front of buildings should be aligned to provide a continuous street frontage.</p> <p>(ii) In some cases, front setbacks should allow for street landscaping and footpath widening where necessary.</p> <p>(iii) New development should respect the setbacks of other buildings along the streetscape.</p> <p>(iv) Separation fencing is provided between development land and any rail corridor.</p> <p>(v) (Not included Relates to Rail Corridor Development)</p>	Yes	<p>The proposed structure would be located behind the building line of the existing community facility premises. Accordingly, the proposal would not alter the existing front setback or the way the site related to this DCP control.</p>
<p>9.1.4 Accessibility</p> <p>This Section of the DCP requires new commercial developments to be designed and constructed in a manner which comply with the relevant accessibility standard.</p>	Yes	<p>The proposed development would be required to comply with the requirements of this Section.</p> <p>Conditions of consent related to achieving compliance with the Building Code of Australia and accessibility requirements are recommended.</p>
<p>9.2.1 Urban Landscaping</p> <p>(i) Where appropriate, landscaping should be incorporated into building design to enhance the character of the streetscape and the amenity of buildings and public places.</p> <p>(ii) Landscaping should reflect the size and height of buildings and should be consistent with the character of the area.</p> <p>(iii) Landscaping should be used to soften the impact of hard surfaces where necessary.</p> <p>(iv) Where landscaping is proposed to be incorporated into a new development, a landscape plan detailing hard and soft landscaping works should be submitted with the development application</p>	Yes	<p>The proposed development would be located behind the building line of the existing commercial premises. The proposal would not alter landscaping adjacent the streetscape. A landscape plan has therefore not been required under this Section of the DCP.</p>

9.2.2 Car Parking	See Commentary under Section 16 DCP heading	<p>The DCP requires the provision of sealed vehicle car parking and accessible parking.</p> <p>The applicant has requested a variation of this requirement as part of the proposed development. This is discussed under the Section 16 Parking and Access of the DCP. The assessment is supportive of the variation of the DCP and views that the proposal would remain consistent with the related DCP objectives.</p>
9.2.3 Outdoor Eating Areas	NA	
9.2.4 Signage and Advertising	NA	

Section 13 Floodplain Management

Relevant section 13.6 provisions related to the carrying out of development have been considered and commented on below.

<u>MUSWELLBROOK SHIRE COUNCIL DCP SECTION 9 LOCAL CENTRE DEVELOPMENT</u>		
<u>DCP REQUIREMENTS</u>	<u>COMPLIES</u>	<u>PLANNING COMMENT</u>
13.6.1 compliance with floodplain manual	Yes	A development which addresses relevant DCP and LEP provisions would be in accordance with the flood plain manual requirements.
13.6.2 fences Fences to be designed to not entrap debris	NA	The proposed development does not involve any new fences.
13.6.3 Fill	NA	<p>This section requires applications involving fill within the floodplain to be accompanied by a flood impact assessment.</p> <p>The proposed development does not involve any substantive fill or earthworks. Accordingly, the provisions of this control do not impact the assessment of the development application.</p> <p>The above notwithstanding a flood impact assessment has been prepared in relation to the proposed development. This report is supportive of the proposal.</p>
13.6.4 flood planning levels for new development - Brownfield commercial development to be constructed at 1% AEP flood level unless demonstrated that it would be impractical.	Yes	<p>The flood DCP does not include provisions specific floor height provisions for community facility development.</p> <p>Reviewing the types of activities referenced in the section flood controls related to commercial brownfield development were viewed to have the most relevance to the proposed development.</p> <p>The floor level of this proposed development has not been designed to achieve the 1% AEP flood level. Council Officers have accepted that</p>

Unsealed electrical installations to be located above 1% AEP flood level.		<p>it would be impractical to site the structure above the 1% AEP Flood level. as:</p> <ul style="list-style-type: none"> - The proposed development is an addition to an existing premises. - Significant earthworks or building alterations would be required to increase the floor height which may have additional environmental impacts. - The proposed use of the structure means it is unlikely to be permanently occupied. - A flood impact assessment has been prepared in relation to the proposal which is supportive of the proposed floor height. <p>While the site has an existing power board and electrical connection. A condition would be included in the recommended consent to ensure any new electrical infrastructure is located above the flood level.</p>
13.6.5 floor heights for dwelling alterations	NA	
13.6.6 construction methods for development below flood height	Yes	The proposed structure would be designed to withstand flood forces in accordance with the requirements of this Section of the DCP and in line with the recommendations of the Flood Impact Assessment.
13.6.7 and 13.6.8 Evacuation Planning	Yes	The Flood Impact Assessment has put forward recommendations related to a flood evacuation plan. The preparation of a plan in line with those recommendations and the provisions of this Section of the DCP would be required as a condition of consent.

Section 16 Car Parking and Access

This section sets the minimum standards for off-street car parking and the rate which parking is to be provided to certain types of development.

Off-street car parking required for community facility developments:

1 space per 20m² of floor area.

This Section of the DCP would require the construction of a fully sealed and line marked 15 space off-street car park to service the proposed 297.56m² shed.

In the Statement of Environmental Effects accompanying the development application the applicant has requested that Council consider varying this car parking control.

The applicant has put forward this request for reasoning related to:

- The proposal relates to an existing facility and would not significantly alter the use or demand for parking. The facility currently has no constructed off-street parking.
- The premises has limited patronage and the number of parking spaces required to comply with the DCP exceeds expected parking demand related to the facility and proposed addition.

- The applicant has provided plans to demonstrate that an area capable of accommodating up to 15 vehicles is available at the site in an informal parking arrangement. The applicant has indicated that they would accept a requirement to provide a gravel base course area in this area to provide a space more suited to use for informal parking.
- A number of patrons who attend the facility and cultural groups to be run from the shed would likely walk to the site or in the case of children be dropped at the premises to attend.

The applicant also advises:

- On occasion the premises would host school holiday programmes for students. The typical arrival for these programmes is expected to be parent drop off and collection at the start and end, Meaning long term parking for participants is not required. On street drop off and temporary parking is available and within the proposed unformalised off-street parking.
- Adult orientated events are anticipated to attract up to a maximum of ten (10) participants. The proposed plans have demonstrated that an informal area capable of accommodating up to fifteen (15) vehicles is available on-site.

In determining a development application which seeks the variation of a DCP control Council is required to have regard to the DCP objectives that relate to that Plan.

DCP objectives related to parking rates are:

- a) *To ensure adequate provision of off-street parking to maintain the existing levels of service and safety of the road network.*
- b) *To ensure a consistent and equitable basis for the assessment of parking provisions.*

Objectives related to parking design are:

- a) *To ensure that the design of on site car parking is provided to an acceptable standard.*
- b) *To ensure the convenient use and operation of car parking facilities.*

Council Officers have completed a merit assessment of the requested DCP variation in context with the DCP objective and recorded key assessment findings below:

- The proposed development relates to an existing community facility. The existing facility does not include any formalised off-street car parking.
- Council Officers are not aware of any parking issues related to the existing facility.
- The purpose of the proposed development is to establish a space that would allow the existing facility to hold cultural and educational programmes. The use of the structure will generate event/class specific traffic and would have limited everyday traffic.
- The proposal involves an addition to a community facility. The operation of this facility has positive community outcomes.
- Council Officers consider that the DCP provision of one (1) vehicle parking space per 20m² floor area to be a DCP control more closely related to regular staff and customer parking rather than an event orientated development.
- In their submission the applicant has proposed providing a level and gravel sealed informal parking area at the rear of the development with an area adequate to provide informal parking for up to fifteen (15) vehicles.

- Council Officers have inspected the site and are satisfied that there is a suitable space at the rear of the site to accommodate this number of off-street parking spaces.

Council Officers consider that the provision of an area to accommodate fifteen (15) informal off-street car parking would provide a space sufficient to accommodate the typical parking demands associated with events held at the proposed facility.

The standard requirement for car parking areas is for the car park to be fully constructed, sealed and line marked in accordance with AS 1742. In this instance, Council Officers view that it may be viewed favourably given:

- There are a number of community or event orientated facilities in the Shire supported by informal parking arrangements that do not strictly comply with the DCP. Examples include the Muswellbrook Showground, Racecourse and modest community support services approved at sites with limited off-street parking.
 - The parking area available would achieve car parking rate requirements set under the DCP and exceed typical programme anticipated demand.
 - While anticipated parking demand would be catered for – the informal parking would enable additional informal parking on adjoining grassed areas within the site.
 - The parking and any additional overflow parking would not have an adverse visual impact.
 - The establishment of a gravel parking area would be an improvement to the overall available parking at the site..
 - As a consequence of the sites long driveway access it is unlikely that vehicle movements would cause gravel from the parking area to be transported onto the New England Highway.
- To comply with minimum Accessibility requirements of the DCP and Building Code of Australia an accessible car parking space would be required as a condition of consent. The applicant has acknowledged this in their submission.

Having had regard to the DCP objectives and the findings above Council Officers are satisfied that the variation of Council's DCP related to the standard design and construction of the off-street car park may be varied subject to conditions related to:

- The provision of an accessible parking space and accessible path of travel to the building.
- Establishment of gravel hardstand informal parking space with an area of 200m2. It was viewed that the 200m2 informal parking area.

Section 20 Erosion and Sediment Control

The disturbance area of the proposed development exceeds the minimum area for which an erosion and sediment control plan would be required under the DCP. A recommended condition of consent has been put forward to require the preparation of to an erosion and sediment control plan prior to the issue of a Construction Certificate.

Section 25 Stormwater Management

Stormwater runoff related to the roofed area of the proposed development would be collected and managed via a water tank with overflow connected to the street.

Section 25.2.2 of the DCP requires development sites which include stormwater infrastructure that forms part of Council's urban drainage system to register an easement in favour of Council over the drainage infrastructure.

The site subject to this development application includes a drainage channel that is part of Council's stormwater network. A condition of consent is proposed in line with the requirements of the DCP and Stormwater Drainage Policy.

Section 4.15(1)(a)(iiia) the provisions of any planning agreement

There are no planning agreements relevant to the subject Application.

Section 4.15(1)(a)(iv) the provisions of the regulations

Division 8A of the Environmental Planning and Assessment Regulation 2000 applies to the development.

Development Contributions

The cost of works for the proposed development is \$182,720.00. A developer contribution of *0.5% of the total development cost will apply to the proposed development. The total value of this contribution would be \$913.60.*

Section 4.15(1)(a)(v) the provisions of any coastal zone management plan

Not applicable - The Application does not relate to a coastal area.

Section 4.15(1)(b) the likely impacts of that development

Context and Setting

The proposed development would be located behind the building line of the existing community facility administration building. The height of this building and its gable ended roof would obscure the structure when viewed from the streetscape. Furthermore, the height bulk and scale of the proposed shed is not considered to be out of context with the scale of other structures in the general locality and within the E3 Productivity Support land use zone.

Council Officers are satisfied that the proposed development would not have a significant adverse impact on the local context and setting.

Access, Transport and Traffic

Traffic, parking and access considerations have been discussed through this report and in particular under the DCP Parking and Access heading.

Utilities

The proposed development would not have a significant impact on utility services.

The proposed shed would be sited clear of Council's sewer main. The installation of the shed over internal sewer pipework does not present a problem for Council provided the boundary shaft is sited outside of the shed's footprint a recommended condition of consent has been put forward to require the applicant to demonstrate that the boundary shaft is located outside the shed footprint or would be relocated prior to the issue of a Construction Certificate.

Existing utility services provided to the premises would be extended to service the proposed shed.

Natural and Technological Hazards

The subject site is identified as flood liable. A flood impact assessment has been prepared in relation to the proposed development by a suitably qualified engineer. Council Officers are satisfied that where the proposed shed is constructed in accordance with the recommendations of this report the structure and land use would not be incompatible with risks associated with this site hazard.

With the exception of the flood hazard commented on above the site is not impacted by any other natural or technological hazards that may affect the carrying out of the development.

Social and Economic Impact on the Locality

The proposed development would have a positive social and economic impact. It would expand the range of cultural and educational activities that may be offered at the Wanaruah Local Aboriginal Land Council. This would in turn have a positive social and economic impact for patrons of the facility and events offered, the community generally and service providers that provide or support the cultural and educational programmes offered.

Section 4.15(1)(c) the suitability of the site for the development

The proposed development is compatible with surrounding land uses and site characteristics, subject to consent conditions.

Section 4.15(1)(d) any submissions made

The Application was notified to adjoining owners from 21 November 2022 to 8 December 2022. A notice was placed on Council's website and via its social media platform. No submissions were received during the notification period.

The development application was renotified following the receipt of amended plans and information between the 10 November 2023 and the 30 November 2023. No submissions were received during this notification period.


Section 4.15(1)(e) the public interest.

The proposed development is a type of development permissible with consent and which would conform with the provisions of the Muswellbrook LEP 2009. The proposal would be inconsistent with Muswellbrook DCP provisions related to the provision of off-street car parking. However, after a merit based assessment Council Officers are satisfied that the proposal remains consistent with related DCP objectives and may be accepted as a variation to the off-street car parking requirements. The proposal would be compatible with other DCP provisions, The proposal would not have any significant adverse environmental impact.

In view of the above considerations Council Officers are satisfied that the proposed development would be compatible with the public interest.

6. CONCLUSION

It is recommended the application be approved subject to conditions of consent.

Signed by:	Reviewed by:
	
Hamish McTaggart	
Development Coordinator	
Date: 9/02/2024	

IDENTIFICATION OF APPROVED PLANS

1) Approved Plans and Supporting Documents

Development must be carried out in accordance with the following approved plans and supporting documentation (stamped by Council), except where the conditions of this consent expressly require otherwise.

Pln. No.	Rev. No.	Plan Title.	Drawn by.	Dated.
NA	4	Site Plan S1	Hunter Valley Sheds 'n' more	03/04/2023
NA	4	Site Plan S2	Hunter Valley Sheds 'n' more	03/04/2023
MUBRK1-17317	A	General Arrangement	Ranbuild	NA
MUBRK1-17317	A	General Arrangement	Ranbuild	NA
260720231200	4	Site Plan	Hunter Valley Sheds 'n' more	26/07/2023

Note: the proposed 15 car parking spaces shown on the plan identified as Plan Number 260720231200 – Site Plan (Hunter Valley Sheds 'N' More) shows an indicative parking area only. The establishment of a gravel hardstand parking area is subject to additional conditions of consent.

Document Title.	Ver. No.	Prepared By.	Dated.
Flood Impact Assessment	B	RHM Consulting Engineers	22 January 2024

In the event of any inconsistency between the approved plans and the supporting documentation, the approved plans prevail. In the event of any inconsistency between the approved plans and a condition of this consent, the condition prevails.

Note: an inconsistency occurs between an approved plan and supporting documentation or between an approved plan and a condition when it is not possible to comply with both at the relevant time.

Reason: To ensure all parties are aware of the approved plans and supporting documentation that applies to the development

OPERATIONAL CONDITIONS IMPOSED UNDER THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT AND REGULATIONS AND OTHER RELEVANT LEGISLATION
--

2) Building Code of Australia

Where the carrying out of the development involves the carrying out of building work within the meaning of the Environmental Planning and Assessment Act 1979 that building work must be carried out in accordance with the provisions of the Building Code of Australia.

3) Access to Premises Standard

The building shall comply with the requirements of the *Commonwealth Disability (Access to Premise Standard) 2010*.

ANCILLARY MATTERS TO BE COMPLETED PRIOR TO THE ISSUE OF THE CONSTRUCTION CERTIFICATE

4) Requirement for a Construction Certificate

No works shall commence on site until such time as a Construction Certificate has been issued for either part or all of the works. If a certificate is issued for part of the works, it must cover the works being undertaken onsite.

Note: A Construction Certificate issued by an Accredited Certifying Authority must be deposited with Council at least 48 hours prior to the commencement of any earthworks, engineering or building work on the site.

5) Survey Report

A survey report signed and dated (including contact details) by the registered land surveyor must be provided to the Principal Certifier prior to the issue of the Construction Certificate. The survey shall confirm the location of the building/structure in relation to all boundaries in relation to applying the correct considerations for fire separation.

6) Access to Premises for People with a disability

Prior to the issue of the Construction Certificate details are to be submitted to the Principal Certifier demonstrating the building will be accessible and comply with the NCCS – BCA Volume 1 and Australian Standards.

This includes, but is not limited to the submission of plans demonstrating compliance with D1P1, D1P2 and F4P1 of the BCA.

7) Potential Flood Damage to Buildings

An assessment, report and certification by a qualified practising Engineer stating that the structure has been designed to withstand the flood pressures, including debris and buoyancy forces, imposed in the event of a 1% AEP flood and that the structure will not sustain unacceptable damage from the impact of floodwater and debris is to be submitted to the Certifying Authority for approval with the Construction Certificate.

8) Sewer Boundary Shaft

Prior to the issue of a Construction Certificate the person acting with this consent is to either:

- a) demonstrate to the satisfaction of the consent authority that the sewer boundary shaft is located outside the footprint of the development. Council Certifiers would accept a report signed by a surveyor confirming the structure will not be located over the sewer boundary inspection shaft as suitable documentary evidence demonstrating compliance with this requirement.
- b) Submit plans detailing the relocation of the inspection shaft to a location outside the

building footprint as part of the development.

9) Parking Area

A gravel hardstand parking area is to be installed to service the development. Prior to the issue of a Construction Certificate an updated car parking plan is to be prepared detailed the location and construction of parking spaces generally in accordance with the approved plans and subject to the following (the requirements below take precedence over any inconsistency in the approved plans):

- a) The parking hardstand and manoeuvring areas are to be formed and compacted with gravel/dust using DGB20 gravel as a minimum base course.
- b) The gravel hardstand areas (excluding the driveway vehicle access) shall be setback a minimum of 5m from any adjoining property.
- c) The gravel hardstand area is to be provided with a connection point to the vehicle access driveway.
- d) The gravel hardstand areas are to be setback a minimum of 5m from the high bank of the open stormwater drain which runs parallel to the rear boundary of the subject site.
- e) The gravel hardstand area should comprise a minimum area of 200m².
- f) In addition to the gravel parking hardstand area (1) accessible parking space to be installed to comply with the accessibility requirements of the Building Code of Australia and Access to Premises Standard. This parking space is to be shown on the submitted car parking plan. To achieve compliance with the Building Code of Australia it will be necessary for the accessible parking space to be fully constructed, sealed, line marked, and accessible path of travel provided to the building in accordance with relevant Australian Standards.

10) Electrical Fittings for flood affected development

Electrical and mechanical equipment is to be installed in accordance with the requirements of Section 13 of the Muswellbrook Development Control Plan 2009. Prior to the issue of a Construction Certificate documentary evidence is to be provided to the Certifying Authority to demonstrate the following:

- a) **Main Power Supply** - subject to approval of the relevant energy authority the incoming main commercial power service equipment, including all metering equipment, shall be located 500mm above the 1% AEP flood level. Main power supply shall be designed so that it can be easily disconnected from the development.
- b) **Wiring** - all wiring, power outlets, switches, etc. should, to the maximum extent possible, be located 500mm above the 1% AEP flood (the Flood Planning Level). All electrical wiring installed below the Flood Planning Level shall be designed for continuous submergence in water and should contain no fibrous components. Only submersible type splices should be used below the Flood Planning Level. All conduits located below the Flood Planning Level are to be installed in a manner that allows them to self-drain if subjected to flooding.
- c) **Equipment** - all equipment installed below or partially below the Flood Planning

Level is to be capable of disconnection by a single plug and socket assembly.

The 1% AEP flood height for the site has been determined as 144.94m AHD.

11) Section 7.12 Contributions

Pursuant to section 4.17(1) of the Environmental Planning and Assessment Act 1979, and the Muswellbrook Shire Council Section 94A Development Contributions Plan 2010, a contribution of \$913.60 shall be paid to Muswellbrook Shire Council.

The amount to be paid is to be adjusted at the time of the actual payment, in accordance with the provisions of the Muswellbrook Shire Council Section 94A Development Contributions Plan 2010. The contribution is to be paid prior to the issue of the Construction Certificate.

12) Sediment and Erosion Control Plan

Before the issue of a construction certificate, the applicant is to ensure that an erosion and sediment control plan is prepared in accordance with the following documents before it is provided to and approved by the certifier:

- Council's development control plan,
- the guidelines set out in the NSW Department of Housing manual 'Managing Urban Stormwater: Soils and Construction Certificate' (the Blue Book), and
- the 'Do it Right On-Site, Soil and Water Management for the Construction Industry' (Southern Sydney Regional Organisation of Councils and the Natural Heritage Trust).
- Ensure the erosion and sediment control plan includes measures to prevent material related to works carried out as part of the development from entering Council's stormwater drainage infrastructure located at the rear of the development site.

The applicant must ensure the erosion and sediment control plan is always kept onsite during site works and construction.

13) Landscaping Plan

A landscape plan prepared by a suitably qualified person is to be submitted to the Certifying Authority with any application for a Construction Certificate. The landscape plan is to propose landscape forward of the building line to soften and mask the north-eastern shed wall where extends beyond the northern-western elevation of the existing building and is visible at the streetscape.

Landscaping detailed in this plan is to be put in place through the carrying out of the development and maintained at all times.

CONDITIONS THAT MUST BE ADDRESSED PRIOR TO COMMENCEMENT
--

14) Site Sign

A sign must be erected in a prominent position on any work site on which work involved in the erection or demolition of a building is being carried out:

- (1) stating that unauthorised entry to the work site is prohibited;

- (2) showing the name of the principal contractor (or person in charge of the work site), and a telephone number at which that person may be contacted at any time for business purposes and outside working hours; and
- (3) showing the name, address and telephone number of the Principal Certifying Authority for the work.

Any such sign must be maintained while building work or demolition work is being carried out but must be removed when the work has been completed.

This condition does not apply to building works being carried out inside an existing building.

15) Site Facilities

- (a) If the development involves building work or demolition work, the work site must be fully enclosed by a temporary security fence (or hoarding) before work commences.
- (b) A minimum width of 1.2m must be provided between the work site and the edge of the roadway so as to facilitate the safe movement of pedestrians.
- (c) Any such hoarding or fence is to be removed when the work has been completed.
- (d) A garbage receptacle fitted with a tight-fitting lid for the reception of all food scraps and papers from the work site must be provided prior to building work commencing and must be maintained and serviced for the duration of the work.
- (e) Toilet facilities must be provided on the work site at the rate of one toilet for every 20 persons or part of 20 persons employed at the work site.
- (f) Each toilet provided must:
 - be a standard flushing toilet, connected to a public sewer, or
 - if connection to a public sewer is not available, to an on-site effluent disposal system approved by the council, or
 - an approved temporary chemical closet.
- (g) The provision of toilet facilities must be completed before any other work is commenced.
- (h) A person having the benefit of this certificate who causes an excavation that extends below the level of the base of the footings of a building on an adjoining allotment of land must at their own expense and where necessary:
 - protect and support the building from damage, and
 - If necessary, underpin and support the building in accordance with the details prepared by a professional engineer.
- (i) A person having the benefit of this certificate who causes the excavation must, at least 7 days before commencing this work, give notice of intention to do so to the owner of the adjoining allotment of land and provide particulars of the proposed work.
- (j) Erosion and sediment controls must be provided in accordance with the details shown on the approved plans, prior to the disturbance of any soil on the work site.

CONDITIONS THAT MUST BE COMPLIED WITH DURING DEMOLITION AND BUILDING WORK
--

16) Construction Hours

- (a) Subject to this clause, building construction is to be carried out during the following hours:
 - i. between Monday to Friday (inclusive)—7.00am to 6.00pm
 - j. on a Saturday—8.00am to 1.00pm
- (1) Building construction must not be carried out on a Sunday or a public holidays.
- (2) Demolition works and excavation works must only be carried out between Monday to Friday (inclusive) between 8.00am and 5.00pm.
- (3) The builder and excavator must display, on-site, their 24-hour contact telephone numbers, which are to be clearly visible and legible from any public place adjoining the site.

17) Site Waste Minimisation

Throughout the carrying out of building works the person acting with this consent shall take reasonable steps to minimise waste from the carrying-out of the development in accordance with the following objectives of Chapter 24 Waste Minimisation and Management of Council's Development Control Plan.

- Optimise adaptive reuse opportunities of existing building/structures.
- Maximise reuse and recycling of materials.
- Minimise waste generation.
- Ensure appropriate storage and collection of waste.
- Minimise environmental impacts associated with waste management.
- Avoid illegal dumping.
- Promote improved project management.

18) Damage to Public Infrastructure

The applicant shall bear the cost of all restoration works to Council property damaged during the course of this development. The applicant shall submit in writing and/or photographic record, of any existing damage to Council property before commencement of work.

Note: This documentation will be used to resolve any dispute over damage to infrastructure. If no documentation is received prior to commencement of work it will be assumed that the infrastructure was undamaged and the applicant will be required to restore all damaged infrastructure at their expense.

19) Materials

In accordance with the provisions of the Muswellbrook Development Control Plan the external cladding of the building shall be constructed from non-reflective metal cladding. Plain zincalume or reflective white sheet metal cladding is not to be used without the prior written approval from Council.

20) Prohibition on Use of Pavements

Building materials and equipment must be stored wholly within the work site, unless prior written approval has been obtained from council. Equipment must not be operated on the footpath or roadway, unless prior written approval has been obtained from council.

21) Mandatory Council inspections

During the carrying out of building works the person acting with this consent shall ensure that all mandatory stage inspections specified by any approvals issued under Section 68 of the Local Government Act 1993 or Section 138 of the Roads Act 1993 are carried out by Council at the relevant stage of works specified by any such approval.

CONDITIONS WHICH MUST BE COMPLIED WITH PRIOR TO THE ISSUE OF THE OCCUPATION CERTIFICATE
--

22) Occupation

The building is not to be used or occupied until a final inspection has been carried out and an occupation certificate has been obtained from the Principal Certifying Authority.

23) Car parking

Prior to the issue of an Occupation Certificate, all off-street car parking areas are to be constructed in accordance with the requirements of this consent and the plan endorsed by the Certifying Authority with the Construction Certificate.

Where that plan includes an accessible parking space that parking space is to be fully constructed, sealed and line marked in accordance with the relevant Australian Standards.

24) Flood Evacuation Plan

Prior to the issue of an Occupation Certificate, a Flood Evacuation Plan is to be prepared in relation to the development. The evacuation plan is to be submitted to and endorsed in Council Community Infrastructure Department's Chief Engineer and endorsed in writing. The Flood Evacuation Plan shall:

- a) Be prepared by a suitably qualified hydraulic engineer or flood risk expert.
- b) Have regard to related provisions set out in the Section 13 of Muswellbrook Development Control Plan.
- c) Be generally in accordance with the submitted Flood Impact Report.

Documentary evidence demonstrating that the Flood Evacuation Plan has been submitted to and endorsed by Council is to be provided to the Certifying Authority with the Occupation Certificate application.

The approved Flood Evacuation Plan is to be adhered at all times by the person acting with this consent.

25) Driveway Entry Upgrade

Prior to the issue of an Occupation Certificate a sealed vehicle driveway crossover and layback is to be installed at the sites New England Highway access in line Council's Footpaths Kerbs and Guttering Policy (F10/1). In addition to the design requirements of that policy the concrete crossover is to extend 3m into the property from its New England Highway property boundary.

In accordance with that Policy and the Roads Act 1993, a Section 138 permit must be obtained from Council prior to the installation of a new driveway and the carrying out of any works within the road reserve. Where you are interested in seeking approval for a secondary access it is recommended that you contact Council's Community Infrastructure Department on 6549 3700 at your earliest convenience to obtain their requirements for any new vehicle access.

CONDITIONS RELATED TO THE ESTABLISHMENT OF A STORMWATER EASEMENT

26) Council Easement

An easement is to be registered over the waterway/stormwater drain located on the land in favour of Council. The terms of any easement should include:

- A restriction on the carrying out of works or the installation of structures in the easement.
- Provide Council with the authority to enter the land to carry out the works associated with the management of the stormwater system.
- The easement is to encompass the entirety of the stormwater drain to the satisfaction of Council Community Infrastructure Officers

Council Community Infrastructure Engineers shall participate in processes related to the establishment of the easement.

Documentary evidence demonstrating that the process of easement registration has commenced with Council's Community Infrastructure Department is to be submitted to the Certifying Authority prior to the issue of an Occupation Certificate.

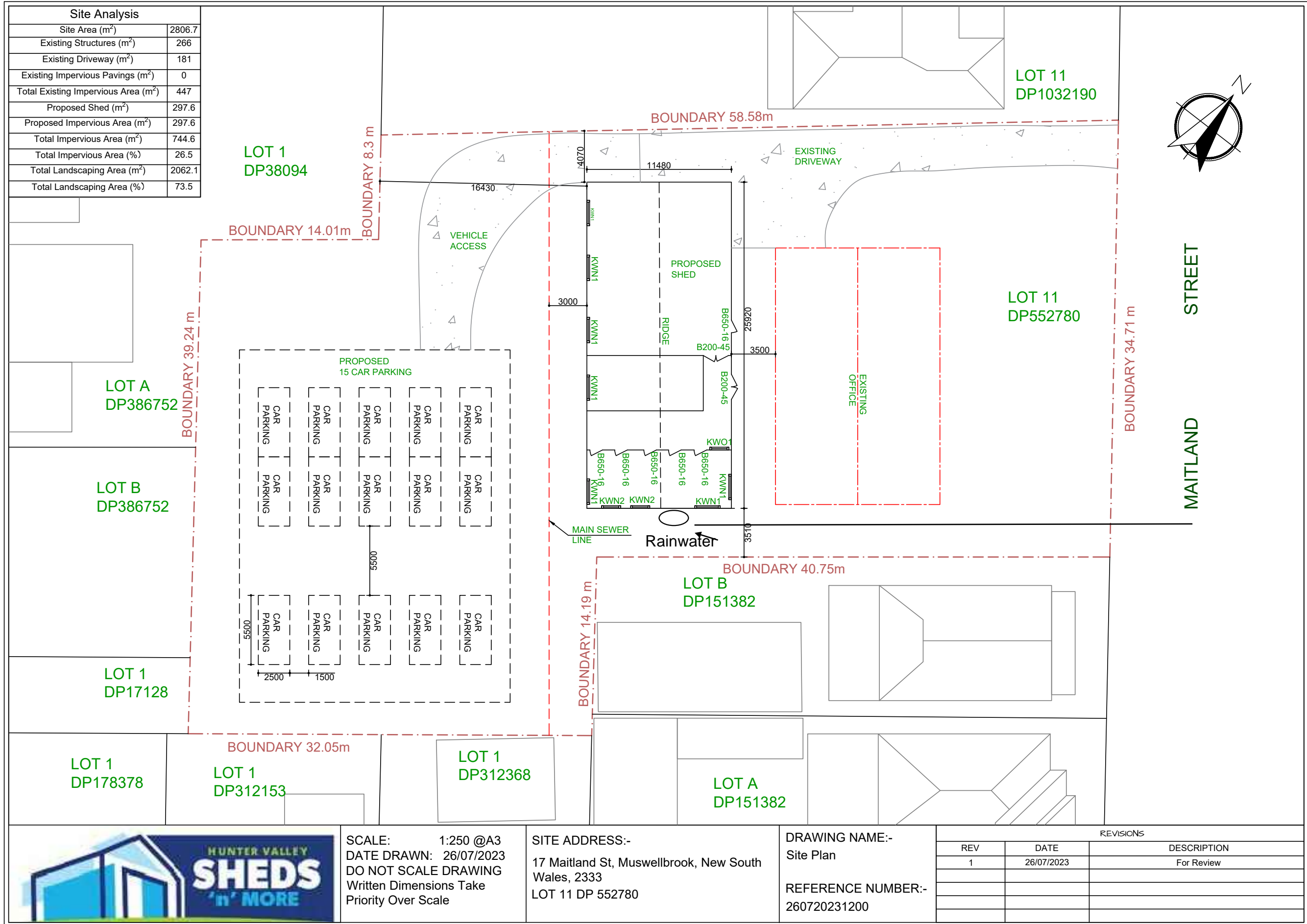
CONDITIONS THAT MUST BE COMPLIED WITH AT ALL TIMES

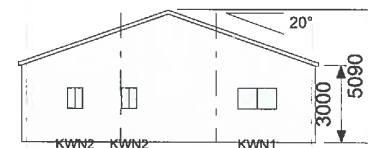
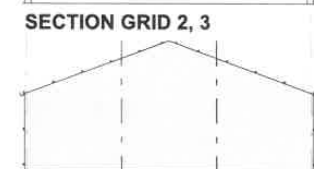
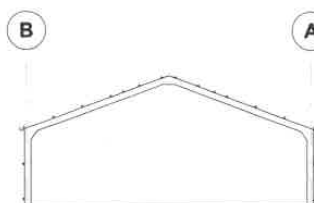
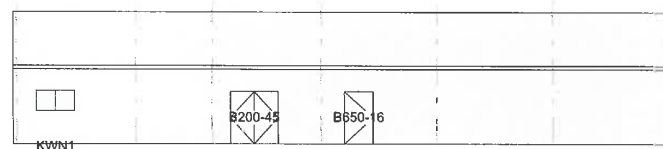
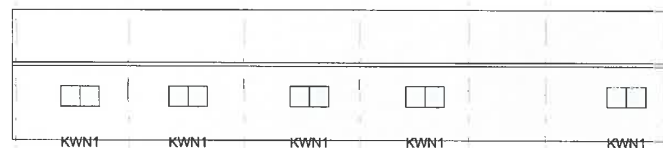
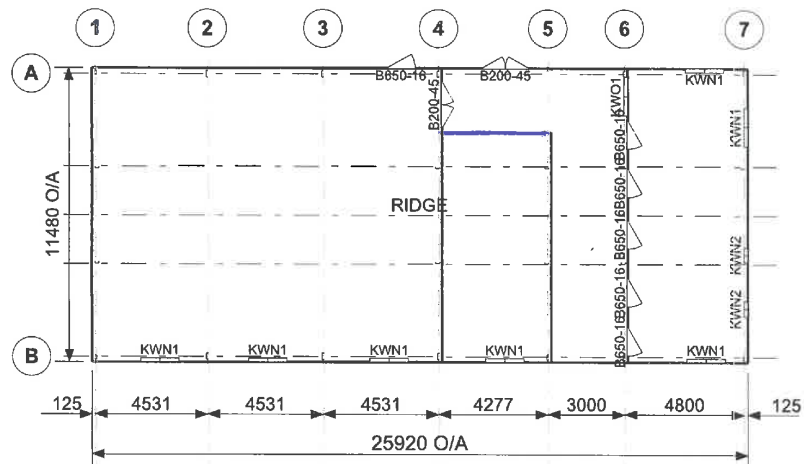
27) Stormwater Disposal

All stormwater from the development including all hard standings and overflows from rainwater tanks is to be collected and disposed of via a water tank with an overflow outlet piped to Council's kerb and gutter.

28) Hours of Operation

The operating hours of the premises are to remain unchanged and in accordance with the hours of operation approved by Council under previous development applications for the site unless otherwise approved by Council in writing.





Cont. on page 2

CLADDING			
ITEM	PROFILE (min)	FINISH	COLOUR
ROOF	CUSTOM ORB 0.42 BMT	CB	SM
WALLS	TRIMDEK 0.35 BMT	CB	SM
CORNERS	-	CB	SM
BARGE	-	CB	SM
GUTTER	SHEERLINE	CB	SM
DOWNPIPE	100x75	CB	SM

0.35bmt=0.40tct; 0.42bmt=0.47tct; 0.48bmt=0.53tct

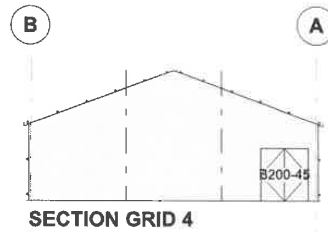
ACCESSORY SCHEDULE & LEGEND		
QTY	MARK	DESCRIPTION
6	B650-16	Larnec Door & Frame Kit, 650/37W, Std. 2040 x 1100 C/Bond
2	B200-45	Larnec Door & Frame Kit, 650/37D, double 2040 x 2/920 C/Bond (BG)
1	KWO1	900x1500 Window Opening (BG). Window must be fitted
7	KWN1	AMI - Reg A & B, 790x1505 CLR + FG Fly Screen, Window Kit (BG)
2	KWN2	AMI - Reg A & B, 790x589 CLR P/Vent + FG Fly Screen, Window Kit (BG)

ARCHITECTURAL DRAWING ONLY, NOT FOR CONSTRUCTION USE

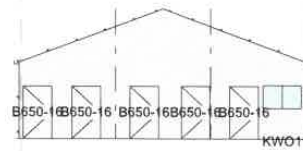
CLIENT	Wanaruah Local Aboriginal Land Council		
SITE	19 MAITLAND STREET, MUSWELLBROOK NSW 2333		
BUILDING	BIG G 11480 SPAN x 3000 EAVE x 25920 LONG		
TITLE	GENERAL ARRANGEMENT		
SCALE A4 SHEET 1:250	DRAWING NUMBER MUBRK1-17317	REV A	PAGE 1/2



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SECTION GRID 4



SECTION GRID 6

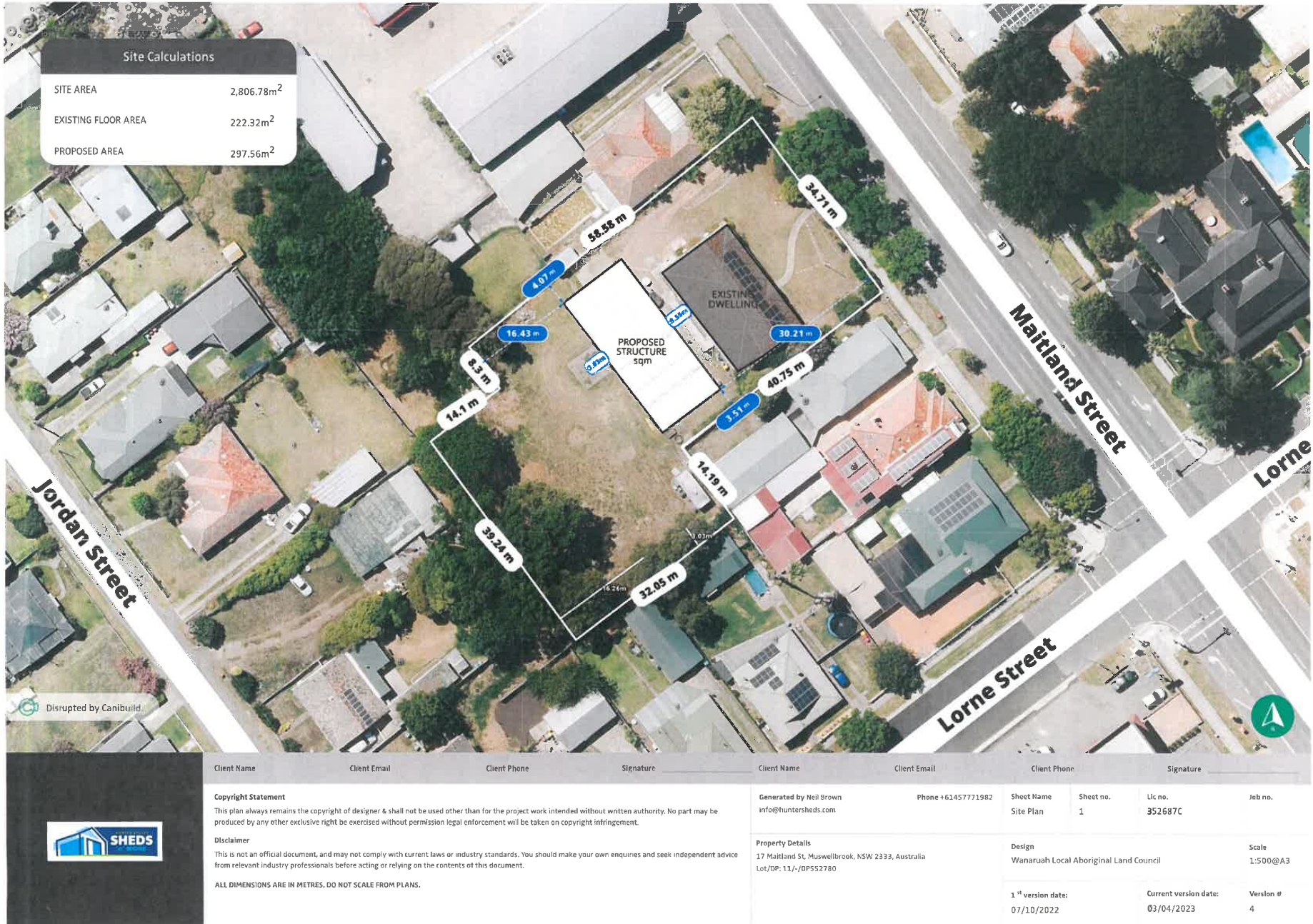
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Hunter Valley Sheds n More Pty Ltd
ABN: 84 640 303 064
Unit 4, 1 Shipley Drive
Rutherford NSW 2320

02 4934 6636
02 6541 3176
info@huntersheds.com
www.huntersheds.info

11 March 2024

SECTION 8.2 REVIEW OF DETERMINATION

Development Application 124/2022 for Community Facility

Lot: 11 DP: 552780 17 Maitland Street Muswellbrook

Background

The Development Application for the construction of a new building for use as a community facility at Lot 11 DP 552780, 17 Maitland Street Muswellbrook was lodged with Council on 11 November 2022 by Hunter Valley Sheds n More. The application DA124/2022 was assessed by Council Officers and reported to a Council Meeting for determination on 27 February 2024. The application was recommended for Approval by Council Officers subject to conditions.

Environmental Planning and Assessment Act 1979

Section 8.2 of the Environmental Planning and Assessment Act 1979 has provisions for the review of a determination as follows:

(1) The following determinations or decisions of a consent authority under Part 4 are subject to review under this Division—

- (a) the determination of an application for development consent by a council, by a local planning panel, by a Sydney district or regional planning panel or by any person acting as delegate of the Minister (other than the Independent Planning Commission or the Planning Secretary),*
- (b) the determination of an application for the modification of a development consent by a council, by a local planning panel, by a Sydney district or regional planning panel or by any*



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*person acting as delegate of the Minister (other than the Independent Planning Commission or the Planning Secretary),
(c) the decision of a council to reject and not determine an application for development consent.*

This development application was determined by Council and the review of the determination is made in accordance with the provisions of Section 8.2(1)(a).

In accordance with the provisions of Section 8.2(6) this Review of Determination must be undertaken by Council and not by a delegate of Council.

(6) The review of a determination or decision made by a council is to be conducted by the council and not by a delegate of the council.

Reasons for Review

The report by Council staff made a recommendation for the application to be approved subject to conditions of consent. Condition 9 of the recommended conditions of consent details the provision of a hardstand gravel car park at the rear of the site as follows:

9) Parking Area

A gravel hardstand parking area is to be installed to service the development. Prior to the issue of a Construction Certificate an updated car parking plan is to be prepared detailed the location and construction of parking spaces generally in accordance with the approved plans and subject to the following (the requirements below take precedence over any inconsistency in the approved plans):

a) The parking hardstand and manoeuvring areas are to be formed and compacted with gravel/dust using DGB20 gravel as a minimum base course.

b) The gravel hardstand areas (excluding the driveway vehicle access) shall be setback a minimum of 5m from any adjoining property.



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c) The gravel hardstand area is to be provided with a connection point to the vehicle access driveway.

d) The gravel hardstand areas are to be setback a minimum of 5m from the high bank of the open stormwater drain which runs parallel to the rear boundary of the subject site.

e) The gravel hardstand area should comprise a minimum area of 200m².

f) In addition to the gravel parking hardstand area (1) accessible parking space to be installed to comply with the accessibility requirements of the Building Code of Australia and Access to Premises Standard. This parking space is to be shown on the submitted car parking plan. To achieve compliance with the Building Code of Australia it will be necessary for the accessible parking space to be fully constructed, sealed, line marked, and accessible path of travel provided to the building in accordance with relevant Australian Standards.

At the Council Meeting Councilors moved an amended motion as follows:

Council APPROVES:

1. Development Application DA 2022/124 for the construction of a shed for a community facility at 17-19 Maitland Street, Muswellbrook, Wanaruah Local Aboriginal Land Council (Lot 11 DP 552780), subject to the recommended conditions of consent included in Attachment B and subject to the following amendments:

2. Update recommended condition 9 as follows:

Prior to the issue of a Construction Certificate a car parking plan is to be prepared by a suitably qualified person submitted to and approved by Council and documentary evidence provided to the Certifying Authority confirming that approval. The car parking plan shall include the detailed design of a car park comprising fourteen (14) car parking spaces together with one (1) accessible parking space (total 15), together with, in accordance with the manoeuvring areas, access ways, and turning areas, to be fully sealed and line marked in accordance with AS.2890.1 2004 Parking Facilities and the relevant provisions of AS1428.1 and AS1428.4. The car parking plan is to be accompanied by a stormwater management plan prepared by an appropriately qualified engineer detailing the



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stormwater management of all additional proposed hardstand and impervious areas related to the car park. This stormwater management plan is to accompany any Section 68 permit for the drainage of stormwater submitted under related conditions of consent.

3. Include an additional condition to require that a landscape plan is prepared and submitted for approval to soften and mask the shed that is visible to the front of the building.

The amended motion was adopted and the application was determined subject to the amended conditions put forward in the amended motion.

Condition 9 was amended to require the provision of a fully sealed and line marked car park area at the rear of the site, rather than the gravel hardstand as recommended by Council Officers.

The Community Facility will provide an additional space for the sites occupants Wanaruah Local Aboriginal Land Council to provide services to the Aboriginal Community by way of workshops, traditional ceremonies and a storage space for Aboriginal Artefacts.

Advice from D Douglas CEO of Wanaruah Local Aboriginal Land Council provides that a sealed hardstand area would not be suitable for the intended use of the community facility. The car park area will be used on occasion for culturally significant ceremonies, the sealing of this space would impact on the cultural respect, connection to land and cultural continuity that is provided in these ceremonies.

The Wanaruah Local Aboriginal Land Council is committed to providing their community with cultural ceremonies that have an intense spiritual and symbolic significance. Performing these ceremonies on a natural surface is one way that the Wanaruah Local Aboriginal Land Council can ensure that these ceremonies are conducted in a respectful manner that aligns with traditional practices. Performing these ceremonies on a natural surface reinforces the importance of cultural heritage and honors these vales for present and future generations.



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The Aboriginal people have a strong connection to land and the sealing of this space would create an artificial surface that disrupts this connection. A natural gravel hardstand would provide both a suitable space for the parking of vehicles, whilst also ensuring participants have a deep connection to the land and are able to feel grounded throughout the ceremony.

The provision of a hardstand sealed parking area at the rear of the site is not suitable for the intended use and will not support the ongoing use of the site by Wanaruah Local Aboriginal Land Council. The sealed hard stand is not culturally acceptable and will not contribute to the cultural continuity, cultural respect and connection to the land of the users of the site.

On this basis it is respectfully requested that Muswellbrook Shire Council review of the determination in accordance with Section 8.2 of the *Environmental Planning and Assessment Act 1979*.



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05th March 2024

Derek Finigan
General Manager
Muswellbrook Shire Council

We are concerned about the decision made by Council on Tuesday 27th February 2024 regarding the DA 2022-124 Community Facility Shed 17-19 Maitland Street Muswellbrook NSW 2333.

2. Update recommended condition 9 as follows:

Prior to the issue of a Construction Certificate a car parking plan is to be prepared by a suitably qualified person submitted to and approved by Council and documentary evidence provided to the Certifying Authority confirming that approval. The car parking plan shall include the detailed design of a car park comprising fourteen (14) car parking spaces together with one (1) accessible parking space (total 15), together with, in accordance with the manoeuvring areas, access ways, and turning areas, to be fully sealed and line marked in accordance with AS.2890.1 2004 Parking Facilities and the relevant provisions of AS1428.1 and AS1428.4. The car parking plan is to be accompanied by a stormwater management plan prepared by an appropriately qualified engineer detailing the stormwater management of all additional proposed hardstand and impervious areas related to the car park. This stormwater management plan is to accompany any Section 68 permit for the drainage of stormwater submitted under related conditions of consent.

It is our intent to have Cultural significant ceremonies on our land once our Community Facility Shed is built. Tarring or cementing a carpark on our Aboriginal land is not culturally appropriate for the reasons listed below. We are aware that we will need to use gravel and ensure there is no issue with dust.

Cultural Respect – our Cultural Ceremonies have deep spiritual and symbolic significance. Performing these ceremonies on natural surfaces such as soil, grass, rock or sand is considered more respectful and in alignment with traditional practices.

Connection to the Land – we have a strong connection to our land and its natural environment – Conducting ceremonies on natural surfaces allows participants to feel grounded and connected to the land.

Cultural Continuity – Performing ceremonies on natural surfaces helps to preserve cultural traditions and maintain continuity with ancestral practices. It reinforces the importance of honouring and respecting cultural heritage for present and future generations.

We respectfully ask for Council to review the condition listed above; in regard to the sealing of our carpark due to cultural sensitivity. We make this application under Section 8.3 of the Environmental Planning & Assessment Act 1993

Yours sincerely,

D Douglas

De-anne Douglas

CEO Wannaruah Local Aboriginal Land Council

**10.1.5. Upper Hunter Region Employment Lands Strategy**

Attachments:	<ol style="list-style-type: none">1. Attachment A - Upper Hunter Region Employment Lands Strategy - Final October 2023 [10.1.5.1 - 162 pages]2. Attachment B - Upper Hunter Region Employment Lands Strategy Actions Prioritised [10.1.5.2 - 7 pages]
Responsible Officer:	Sharon Pope - Director - Planning & Environment
Author:	Sharon Pope (Director - Planning & Environment), Shaelee Welchman (Director - Community & Economy)
Community Plan Issue:	1 - Economic Prosperity
Community Plan Goal:	<i>A dynamic local economy with full employment for current and future residents in a diverse range of high value industries.</i>
Community Plan Strategy:	1.2.2 - Complete the Employment Land Use Strategy. 1.2.2.1 - Prioritise actions of the adopted Employment Land Strategy.

PURPOSE

The purpose of this report is to provide information on the outcomes of the Upper Hunter Region Employment Lands Strategy and to prioritise the actions that have been recommended for Muswellbrook Shire.

OFFICER'S RECOMMENDATION

Council approves the following actions:

1. Write to the Department of Planning, Housing and Infrastructure seeking endorsement from the Department for the Upper Hunter Regional Employment Lands Strategy;
2. Notes the *Upper Hunter Regional Employment Lands Strategy* provided in Attachment A; and
3. Endorses the prioritised actions identified in Attachment B, with delivery of actions to occur over the next 8 years through a combination of funding from:
 - a. Council general operating funds;
 - b. Planning Agreements with various State Significant Development projects approved in the Shire, and
 - c. Grant funding.

Moved: _____ **Seconded:** _____



BACKGROUND

Muswellbrook Shire Council, Singleton Shire Council, Upper Hunter Shire Council and Dungog Shire Council engaged HillPDA in 2022 to prepare the *Upper Hunter Region Employment Lands Strategy* (the Strategy). The Strategy provides a strategic framework to guide the future development of employment lands in the Upper Hunter Region (the Region), consistent with the NSW Government's strategic planning framework and policy context, the council's Community Strategic Plans and community aspirations.

Preparation of the Strategy was guided by the Department of Planning and Environment's (now Department of Planning, Housing and Infrastructure) *A guideline for local employment land strategies* (July 2022) and informed by the outcomes of targeted stakeholder engagement with councils, local businesses, industry associations, investors, and developers who operate in the Region.

Preparation of the Strategy was driven by the knowledge that the Upper Hunter Region will undergo an economic transition. The Region's \$15 billion economy has traditionally powered NSW, supplying energy needs through both coal mining and power generation, while exporting coal and agricultural product globally. As the world changes, the Region must also change by capitalising on its existing assets in energy generation, agriculture, and mining, while supporting a diversified post-mining economy with expansion in the renewable energy, advanced manufacturing, and agribusiness sectors.

To support economic growth in the Region, the Strategy identifies five directions:

1. Ensure sufficient supply of employment land to enable industry attraction.
2. Support vibrant centres and places.
3. Encourage emerging and growing industries.
4. Continue to support a strong and vibrant mining industry while preparing for a post-mining future.
5. Simplify and enhance the planning system and processes.

CONSULTATION

HillPDA led separate interactive online session with key internal Council staff from each Local Government Area (LGA) and the Department of Regional NSW.

Targeted phone calls, where HillPDA completed informal interviews over the course of two weeks with key business representatives and/or industrial representatives within each LGA. This included mine operators, key landowners and land developers, existing industry, and the Muswellbrook Chamber of Commerce & Industry.

The objective of this targeted industry consultation was to understand the gaps around employment land across the study area. This consultation was focused on better understanding barriers to the development of existing land stocks, including infrastructure requirements.

Into the future, it would be ideal that the councils in the Region work collaboratively with each other, and with State Government, landowners, existing industry, and potential future employers to attract new businesses that will support jobs and a diversified economy

REPORT

Muswellbrook Shire's economy is underpinned by mining and related industries. At the 2021 Census, approximately 3,469 workers were employed in mining in the LGA. The extent of the LGA's specialisation is exemplified by its industries' location quotients compared to regional NSW.

Key findings from the analysis undertaken to prepare the Strategy are that in Muswellbrook Shire:



- Under the DPE (Department of Planning and Environment) projections, there is an undersupply of retail provision in the Muswellbrook Town Centre of almost 7,000sqm, with this likely to increase over time to around 13,000sqm due to population growth projected in the Muswellbrook Town Area.

(It is noted that there was planned bulky goods retail at the showground site; if the plans to redevelop the showground are not progressed, then an alternative bulky goods site needs to be identified).

- Under the council growth scenario there would be an undersupply of 25,000sqm of employment land by 2041 due to the accelerated population growth. This would result in an additional demand for one new supermarket in the Muswellbrook LGA. There would also likely need to be additional bulky good retail.
- The Council growth scenario brings significantly more bulky goods demand, which would prioritise the bulky goods retail development earlier than otherwise. This would also possibly relocate uses such as Pacific Furniture and Kentan Machinery, freeing up retail places.
- Additional local retail, including apparel stores and restaurants, would be required under both scenarios, although an additional 3,500sqm compared to the council scenario. This could be absorbed on the New England Highway especially following the completion of the Muswellbrook bypass.

The Directions and Actions relevant to Muswellbrook Shire are provided below:

Direction 1: Ensure sufficient supply of employment land to enable industry attraction

Action 1.1: Secure a pipeline of zoned, serviced and unconstrained employment land.

Action 1.2: Explore future employment investigation areas.

Action 1.3: Continue to monitor employment land supply through the Urban Development Program.

Direction 2: Support vibrant centres and place

Action 2.1: Prepare and implement centre activation strategies for the main settlements

Action 2.2: Promote and facilitate, in collaboration with the landowner, the establishment of a regional homemaker centre in Muswellbrook.

Action 2.3: Support start-up businesses and flexible working spaces to drive innovation and regional lifestyle opportunity.

Action 2.6: Support new retail to accommodate population growth.

Direction 3: Encourage emerging and growing industries

Action 3.1: Leverage the growing tourism opportunity in Dungog, Singleton and Upper Hunter



Action 3.2: Unlock the opportunity for circular economy uses

Action 3.3: Explore the opportunity for a major distribution centre or intermodal facility within the region to support future business establishment and job creation

Action 3.4: Develop and promote the uptake of agri-tourism

Direction 4: Continue to support a strong and vibrant mining industry while preparing for a post-mining future

Action 4.1: Develop an industry diversification investment prospectus

Action 4.2: Resolve key issues related to the use of former mining land.

Action 4.3: Assist in facilitating master planning processes on key mining closure sites

Direction 5: Simplify and enhance the planning system and processes

Action 5.1: Aim to reduce development approval timeframes

Action 5.2: Implement a flexible planning framework

5.2.1 Establish a collaborative working group of Councils to align standards across the LGA.

Action 5.3: Investigate removing or adding land uses that could affect the viability of commercial or industrial development

The tasks associated with these actions are set out in Attachment B, with priorities and likely sources of funding. All of the actions will require further investigation before proceeding, and where they require a change to the Muswellbrook LEP 2009 or Muswellbrook DCP 2009, will be the subject of further reports to Council.

OPTIONS

Council may consider the following options:

Option 1: Note the content of the Strategy and endorse the prioritised Actions in Attachment B.

Option 2: Note the Strategy and undertake further community consultation on the identification and prioritisation of Actions.

Option 3: Note the content of the Strategy and decline to take any further action.

CONCLUSION

By 2041, the Actions in the *Upper Hunter Region Employment Lands Strategy* sees the Upper Hunter Region as a dynamic, sustainable, and diverse regional economy that embraces innovation and resilience, while fostering a strong sense of community. Industry will continue to be supported in the Region, generating jobs, infrastructure services, and amenities to enable a growing population. Through diversification, the Region will be recognised as a leader in the development of new industries and technologies, and as a desirable place to live, work, and visit.



SOCIAL IMPLICATIONS

The Region contributes approximately 2.1% to the State's Gross State Product while comprising approximately 0.8% of the State's population. It is vital that there is a plan in place to ensure the Region remains an employment and economic generator for years to come. The transition from mining to alternative uses can provide over 6,000 ha of mining land to new employment uses. Starting the transition as early as possible, through industry attraction, will help ensure that the existing 11,000 mining and electricity generation jobs are matched by 11,000 alternative skilled jobs in the future.

Employment lands can spearhead the region's growth into new industries, including renewable energy, agriculture and agribusiness, advanced manufacturing, transport and logistics, and eco-tourism.

Complementing the successful transition of mining industries will be a deeper investment in agricultural industry and urban centres, creating lively hubs that attract innovators as well as tourists to experience the best the region has to offer.

FINANCIAL IMPLICATIONS

Completion of Actions recommended in the Strategy can be through:

- Advocacy to the other tiers of Government.
- Changes to Business-as-Usual practices and would have no net financial impact on Council

Work undertaken by engaging consultants and/or industry specialist. These costs could be covered from three main funding sources:

1. Council general operating funds;
2. Planning Agreements with various State Significant Development projects approved in the Shire; and
3. Grant funding.

POLICY IMPLICATIONS

The information contained in the Strategy, including the recommended Actions, should be used when reviewing the Community Strategic Plan, preparing the annual Operational Plan, and updating the Muswellbrook Local Strategic Planning Statement.

RISK MANAGEMENT IMPLICATIONS

The Upper Hunter Region is about 10 times as dependent on mining and electricity generation compared to similar regions in NSW. To support continued growth aspirations, Singleton and Muswellbrook Shires must diversify their economies and innovate for new jobs with salaries close to those in the mining and power industries.

Recent closures include Muswellbrook Coal, Liddell Coal, and Liddell Power Station. In the next decade, closures are expected to include Mount Arthur Mine, Mangoola Mine, and Bayswater Power Station. While existing mines are confident of continued operation, it is critical that Muswellbrook and Singleton take steps to prepare for a post-mining future. A well-planned transition is a State significant matter.

Unless employment opportunities are created within the Region, residents in each of the LGAs will need to travel long distances to work or leave the area altogether, which has the potential to reduce the vibrancy and economic viability of towns and centres in the Region, making it increasingly difficult to attract new residents and industry.

UPPER HUNTER REGION

Employment Lands Strategy



Prepared for Dungog, Muswellbrook,
Singleton and Upper Hunter Shire Councils.

AUGUST 2023

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EMPLOYMENT LANDS STRATEGY

EXECUTIVE SUMMARY

Introduction

Dungog Shire Council, Muswellbrook Shire Council, Singleton Shire Council, and Upper Hunter Shire Council have engaged HillPDA through Muswellbrook Shire Council to prepare the Upper Hunter Region Employment Lands Strategy (the Strategy). The Strategy provides a strategic planning framework to guide the future development of employment lands in the Upper Hunter Region (the Region), consistent with the broader strategic planning framework and policy context.

Preparation of the Strategy was guided by the Department of Planning and Environment's *A guideline for local employment land strategies* (July 2022) and informed by the outcomes of targeted stakeholder engagement with councils, local businesses, industry associations, investors, and developers who operate out of the Region. The Region consists of Dungog, Muswellbrook, Singleton, and Upper Hunter Local Government Areas (LGAs), as illustrated in Figure 1.

Figure 1: Upper Hunter Region



Source: HillPDA

Vision

The Upper Hunter Region is in the midst of an economic transition that will shape the future of the Region for generations to come. The Region's \$15 billion economy has traditionally powered NSW, supplying energy needs through both coal mining and power generation, while exporting coal and agricultural product globally. As the

world changes, the Region must also change with it powering toward a new green future, capitalising on its existing assets in energy generation, agriculture, and mining, while supporting a diversified post-mining economy with expansion in renewable energy, advanced manufacturing and agribusiness sectors. The Region will leverage its strengths to create a diversified economy that also includes tourism, services and digital uses, becoming a diverse innovation powerhouse across its four LGAs.

The Region contributes approximately 2.1% to the State's GSP while comprising approximately 0.8% of the State's population. It is vital that there is a plan in place to ensure the Region remains an employment and economic generator for years to come. The transition from mining to alternative uses can provide over 6,000 ha of mining land to new employment uses, properly staging the transition with industry attraction will ensure that 10,000 direct mining workers will have successful transitions from the coal industry. Furthermore, employment lands can spearhead the region's growth into new industries, including renewable energy, agriculture and agribusiness, advanced manufacturing, transport and logistics and eco-tourism.

Complementing the successful transition of mining industries will be a deeper investment in agricultural industry and urban centres. Creating lively hubs that attract innovators as well as tourists to experience the best the region has to offer.

By 2041, this Strategy sees the Upper Hunter Region as a dynamic, sustainable, and diverse regional economy that embraces innovation and resilience, while fostering a strong sense of community. Industry will continue to be supported in the Region, generating jobs, infrastructure services, and amenities to enable a growing population. Through diversification, the Region will be recognised as a leader in the development of new industries and technologies, and as a desirable place to live, work and visit.

This means that the Region can supply substantially more employment land to drive additional economic opportunity across the region and the State. Currently 15,124 hectares of land across the Upper Hunter Region is identified as a Mine Area by Geoscience Australia, of which the region plan identifies up to 6,058 hectares is identified as having future uses. Global trends and a large local workforce are spearheading the Region's gradual economic transition. Coal mining generates an estimated up to 10,861 jobs in the region, mostly in the LGAs of Muswellbrook and Singleton. The future of coal is uncertain, with some of the Region's closing in response to global demand. In extreme 'worst case' scenarios, mining job losses would lead to thousands of workers generating demand for employment land. While the closure of coal mines is unlikely to contribute to these many jobs being lost, it is already occurring at a smaller scale, necessitating early planning for the Region's economy. This also creates an opportunity to cultivate new industries, maintaining the Upper Hunter Region as a world-class economic unit by planning for thousands of emergent job opportunities.

The Upper Hunter Region has strong and diverse assets, including globally recognised agriculture, environmental amenity, proximity to major cities, transport links, and deep experience in providing energy for NSW and Australia. These assets can be leveraged to grow the Region's capabilities in renewable energy, agriculture and agribusiness, advanced manufacturing, transport and logistics, and eco-tourism. These industries require a range of employment lands, for which this Strategy provides strategic planning guidance. In particular, the supply, location, and servicing of industrial and business land use zones is essential in facilitating the growth of these industries and their complementary land uses.

To support economic growth in the Region, this Strategy identifies five directions:

- Ensure sufficient supply of employment land to enable industry attraction
- Support vibrant centres and place
- Encourage emerging and growing industries
- Continue to support a strong and vibrant mining industry while preparing for a post-mining future
- Simplify and enhance the planning system and processes.

These directions supported by 19 Actions. Each of the Councils in the Region must work collaboratively with each other, and with State Government, landowners, existing industry, and potential future employers to be able to take attract new businesses that will support jobs and a diversified economy.

Challenges

For the Upper Hunter Region to maximise its potential, a strong coordination of public and private funding and collaboration with local communities is essential. There are a range of challenges faced by the Region that can be addressed through coordinated investment, planning, and engagement. These challenges include the uncertain future of mining, the distribution of agricultural employment, and the future viability of the Region's towns and centres.

The Upper Hunter Region is about 10 times as dependent on mining compared to similar regions in Regional NSW. To support continued growth aspirations, Singleton and Muswellbrook must diversify their economies and innovate for new jobs with salaries close to those in the mining industry. Recent mine closures include Muswellbrook Coal, Liddell Coal, Mangoola, and Dartbrook, along with future closures including Mount Arthur Mine. While existing mines are confident of continued operation, it is critical that Muswellbrook and Singleton take steps to prepare for a post-mining future. With many mine workers and supporting businesses located throughout the Hunter Region, ensuring a well-planned transition is a State significant matter.

The local economies of Dungog and Upper Hunter LGAs are predominately agriculturally-based. While the Upper Hunter Region is world-renowned for its agriculture (particularly its equine industry), agricultural employment is dispersed over wide areas, especially with cattle farms amalgamating in response to economic conditions. Leveraging agricultural strengths for other employment can create more concentrated job opportunities for the Region's growing population. For instance, global food manufacturer JBS Australia currently employs 450 people in a meat processing plant in Scone. There are opportunities to use industrial land to grow agribusiness throughout the Region, as well as to expand the Region's agri-tourism capacity, particularly on business land in its towns and centres.

Unless employment opportunities are created locally and within the Region, residents in each of the LGAs will need to travel long distances to work or leave the area altogether, which has the potential to reduce the vibrancy and economic viability of towns and centres in the Region, making it increasingly difficult to attract new residents and industry. Each LGA faces specific challenges; however, common across all is the need to support industry attraction, with development-ready and affordable employment land both in centres and industrial precincts.

Strategic context

Based on a review of the broader strategic planning framework and policy context, the Strategy identifies the strategic vision and goals for the Region. These are to leverage the existing strengths across heavy industry, energy, equine, tourism and viticulture sectors, while supporting a more aggressive expansion into renewable energy, food and fibre, health and the 'new economy' with jobs based on digital business opportunities. Improvements to the Port of Newcastle and Newcastle Airport will be critical to the success for the Region as a key exporter and employer into the future. Through targeted stakeholder engagement, the Strategy also reveals that the Region envisions a broader role for itself with a strong potential for rapid expansion and innovation leveraging the landholdings that already exist.

HillPDA has drawn upon the Region's strategic vision and goals, and considered the availability of natural resources and infrastructure, to summarise the following key industries that are seen as appropriate to support diversification:

1. Renewable energy: After mining operations have ceased, the region will have access to land and infrastructure that could be repurposed for renewable energy projects, such as wind, solar farms and hydrogen generation.

2. Agriculture, agribusiness, viticulture: The area has fertile soil and access to water. It also has a strong history in agriculture which can be revitalised. Investing in new technologies such as hydroponics or vertical farming and more intensive agriculture practice may boost economic return.
3. Advanced manufacturing: The region has access to skilled workers and advanced manufacturing capabilities due to its mining origin. There are also existing industries that can benefit from technology advancements including defence, agriculture and renewal energy.
4. Circular Economy: The region is well placed to take advantage of the economic transition to a circular economy, with existing innovations in the sector, and large landholdings that can re-use or transform waste.
5. Transport and logistics: The region has strong road and rail transport infrastructure and strong access to the Port of Newcastle and Newcastle Airport.
6. Eco-tourism: The region's unique natural attractions make it viable for eco-tourism. This could involve promoting outdoor recreation activities such as hiking, fishing, or camping, and investing in infrastructure such as lodges, campsites, and tour companies. Rural and Indigenous Experiences can support the extension of the tourism offering leveraging the natural and agricultural environment of the region.

Socio-economic and market trends

The Strategy includes an analysis of socio-economic and market trends that emerged in the Region between 2011 and 2021, with the key findings used to inform some of the Strategy's recommendations and actions.

Throughout this time, the Region experienced 18 per cent growth in jobs, with the number of jobs increasing by 5,445 to reach a total 36,183.

The top five industries in 2021 were:

- Mining: 9,806 jobs (27.1% of employment)
- Agriculture, Forestry and Fishing: 2,648 jobs (7.3% of employment)
- Health Care and Social Assistance: 2,523 jobs (7% of employment)
- Retail Trade: 2,334 jobs (6.5% of employment)
- Construction: 2,219 jobs (6.1% of employment).

Mining jobs increased by 1,821 employees between 2011 and 2021, which means that they grew in importance in the Region.

Employment land supply

The Strategy includes an analysis of the existing supply of land and floorspace for various employment uses. It is noted that, given the timing of the analysis, it is based on now-repealed business and industrial land zonings (B1, B2, B3, B4, B5, B6, IN1, IN2, and IN3) which were replaced by a new suite of employment zones (E1, E2, E3, E4, E5, and MU1 zones) in April 2023, as part of the NSW Government's employment lands reforms. Key findings of this analysis are summarised below.

Employment land audit

- 1,033 hectares of zoned employment land in the Region
- Most employment lands are concentrated in Singleton (51%), followed by Muswellbrook (23%), Upper Hunter Shire (17%) and Dungog (5%)
- 528 hectares (51%) of all employment land is developed, with the highest proportion of developed land found in the B2 Local Centre, IN3 Heavy Industrial and B5 Business Development zones

- 505 hectares (49%) of all zoned employment land is vacant, with the highest proportion of vacant land found in the IN3 Heavy Industrial (78%), IN2 General Industrial (78%) and B5 Business Development (43%) zones.

Floorspace audit

- The Region has 1.17 million square metres of employment floorspace
- In particular, the Region has 321,000 square metres of industrial floor space, concentrated mostly in Muswellbrook and Singleton
- Most (86%) of the Region's floorspace is occupied by population serving, knowledge intensive and industrial land uses
- 7 per cent of floorspace is occupied by residential uses, mostly in the B2 Local Centre and B4 Mixed Use zones
- 4 per cent of floorspace is used for health and education and other community uses
- The remaining 3 per cent of floorspace is either vacant or occupied by temporary uses. These are mostly located near centres.

Current and future demand

HillPDA projected the amount of additional employment land required to support the Region's current and future resident, worker and visitor communities. This analysis did not look at the change related to mining and energy in the region:

Employment land

Dungog currently has a modest undersupply of land located close to town centres we consider between 2.4ha to 5ha would be critical immediate steps close to either Dungog or Clarence Town.

Muswellbrook must focus on the investment attraction to take advantage of the significant land supply from the transition of mines and the AGL power station sites. These provide up to 3,216ha of land that could be used over the next fifty years with immediate opportunity covering up to 1,800ha across Mount Arthur and Muswellbrook Coal. Muswellbrook has sufficient supply if it can attract businesses and secure the policy changes to unlock the opportunity. In the interim up to 33 hectares of land close to town could support expanded business and town centre uses over the next 20 years.

Singleton like Muswellbrook has up to 2,842ha of mining land that could be transitioned to alternative uses over time. While an additional 51.5ha of zoned and serviced business land could accommodate immediate demand, the focus is on generating additional demand to further grow the region.

Upper Hunter can meet industrial land supply through its existing land Scone; however, additional land release at Scone and Aberdeen would help generate competitive land environment. Upper Hunter Shire has limited business zoned land apart from B4 Mixed Use zoned land at Scone, additional land around the airport and racing precinct that is not currently zoned for business may be suitable to accommodate the remaining employment growth

HillPDA has considered the evidence provided by the Employment Lands Development Monitor (ELDM) in its auditing of employment land; however, it should be noted that councils have expressed a need for greater servicing for what is defined by the ELDM as serviced land (i.e. land that is serviced and ready for development).

Centres

LGA	Key findings
Dungog	<ul style="list-style-type: none"> The DPE projections support an additional 4,000 to 5,000sqm of retail floorspace driven by population growth in the LGA. With only an IGA and Wholefood Co-op store currently, there is potential for a full-line supermarket (say 2,800sqm to 3,500sqm) with supporting specialty shops which would strengthen current capture rate levels and reduce the current levels of escape expenditure to Maitland and Raymond Terrace. The full line supermarket would likely be located at Clarence Town. Clarence Town, approximately 20-minute drive from Dungog and Raymond Terrace. Therefore, it is likely that the capture for a full-service supermarket at Dungog would split the catchment from Clarence Town. Under the council growth scenario there is very limited growth in floorspace demand. This would likely be accommodated through the relocation of some industrial uses in Dungog high street and development of population serving industrial land in Clarence Town.
Muswellbrook	<ul style="list-style-type: none"> Under the DPE projections there is an undersupply of retail provision in the Muswellbrook Town Centre of almost 7,000sqm, with this likely to increase over time to around 13,000sqm due to population growth projected in the MTA. Consider alternative locations for bulky-goods retail perhaps near the race course precinct. Under the council growth scenario there would be an undersupply of 25,000sqm by 2041 due to the accelerated population growth. This would result in an additional demand for one new supermarket in the Muswellbrook LGA. There would also likely need to be additional bulky good retail. The council growth scenario brings significantly more bulky goods demand, which would prioritise the bulky goods retail development earlier than otherwise. This would also possibly relocate uses such as Betta Home Living and Kentan Machinery allowing the town centre to expand. Additional local retail including apparel stores and restaurants would be required under both scenarios, although an additional 3,500sqm compared to the council scenario. This could be absorbed on the New England Highway especially following the completion of the Muswellbrook bypass.
Singleton	<ul style="list-style-type: none"> Under the DPE projections, the Singleton trade area is considered generally sufficiently provisioned to service its community over the short to medium term. Over the longer term, there may be scope for some minor additional food services. Priority should be given to protecting the viability of Singleton's existing centre. <ul style="list-style-type: none"> Without population growth, there is not the capacity for an additional supermarket in the north of Singleton without cannibalising existing trade There are currently significant and prominent vacancies in the CBD and a long-term undeveloped approved Woolworths development in Singleton north, indicating that there has been limited demand in the short-term. Under Council's preferred population projections the demand in Singleton escalates substantially, and there would be the capacity for an additional one or even two supermarkets by 2041. <ul style="list-style-type: none"> Singleton Heights does not have a full-service supermarket and most of the growth would be in the northern part of town The development of a retail supermarket with supporting retail, specialist stores, and apparel stores in a retail precinct in north Singleton could be absorbed without cannibalising the existing CBD The demand for additional department store and apparel stores may not translate to additional floorspace with the continued rise of online retailing over the next twenty years, and will need to be considered with the new context.
Upper Hunter	<ul style="list-style-type: none"> Under the DPE scenario, Scone is sufficiently provisioned to service its community. Expanding retail space could result in an oversupply and an increase in vacancies. Focusing on protecting the existing centre is important for Scone to ensure it remains vibrant. There might be a modest undersupply in the Scone under the high growth scenario. We consider that there might be some change in use from residential to retail in some of the B2 and B4 zone, but there is not sufficient undersupply to demand a substantial change in use.

Enablers and Barriers

The Strategy seeks to identify and address a range of enablers and barriers for the successful development of employment lands through a land-use planning Strategy. These were identified through the land audits, trends analysis, and stakeholder engagement:

Strengths	Weaknesses
<ul style="list-style-type: none"> • Mining industry and support • Visitor economy as part of the wine region • Identification of new employment land • Industrial land close to town • Growing visitor economy and town centres • Strong population growth • Innovative e-commerce businesses are establishing • Proximity to National Parks • Proximity to the Port of Newcastle • World class equine industries in the Upper Hunter Shire • Meat processing and agriculture in Singleton and the Upper Hunter Shire 	<ul style="list-style-type: none"> • Economic diversification • Wastewater capacity and servicing strategy • Traffic through town centre in Singleton • Limited remaining serviced employment land across all LGAs • Skilled labour and housing/accommodation availability • Land is in consolidated ownership across all LGAs • Road network is in poor condition and requires passage through town centres in Dungog • Limited warehousing and logistics space to allow for population growth in Dungog and Muswellbrook • Located within water catchment limited permitted uses.
Opportunities	Threats
<ul style="list-style-type: none"> • Industrial expansion at Rixs Creek • Development of Whittingham as an intermodal site • Planned use of post-mining land and infrastructure in Muswellbrook and Singleton • Substantial investment in renewable energy • Bypasses enabling investment into centres • Expand tourism through town centre revitalisation • Transition of former power generation land for employment land • Agritourism and adventure tourism increasing a diverse offering in the LGA • Intensive agriculture to complement beef, dairy and poultry • Scone Airport as a possible transportation node • Racing NSW Investment in the Upper Hunter Shire. • Water freed-up by mine and power station opportunities 	<ul style="list-style-type: none"> • Accelerated mine closures in Singleton and Muswellbrook • Unable to unlock existing supply all LGAs • Low population growth • Limited employment land capacity close to town in Muswellbrook and Singleton • Complex planning and regulatory framework to enable economic transitions • Difficulty securing funding for major infrastructure upgrades. • Slow release of rezoned land due to monopolistic behaviours.

Strategic Directions and Actions

The Strategy is supported by five strategic directions, with a number of supporting actions for each of the strategies. These are summarised below. The full Strategy, including elaborated actions and delivery tasks, comprises Chapter 1.0 of this report.

Strategic Direction and Actions

Direction 1: Ensure sufficient supply of employment land to enable industry attraction

Industry needs development ready and turn-key land to be attracted to an area. This means that there needs to be proactive supply to ensure that industry wants to move to the area. At a minimum, at least 630,000sqm of new floorspace is required by 2041 to service population growth.

A larger supply of employment land will be critical to support industry attraction and help accelerate the economic diversification of the region, by having development-ready land for an industry to move to the region. Multiple development fronts and a deep pipeline can help ensure that there is competitive pressure among developers to help

affordability for business. Continual monitoring through the urban development program will help ensure that each Council can respond to any changes and adjust the strategy in a timely manner.

A1.1: Secure a pipeline of zoned, serviced and unconstrained employment land.

A1.2: Explore future employment investigation areas.

A1.3: Continue to monitor employment land supply through the Urban Development Program.

Direction 2: Support vibrant centres and place

Centres are the lifeblood of the community, they are where many residents work, live and play on a daily and weekly basis. Further activating the centres will help ensure that they are vibrant, especially as they will be bypassed for commuters. This provides an opportunity to create walkable and lively places, which leverage the existing high-streets. Ensuring that there is sufficient supply of retail spaces will help accommodate potential population growth. Clear Centre planning for new areas will help ensure this occurs.

A2.1: Prepare and implement centre activation strategies for the main settlements

A2.2: Promote and facilitate, in collaboration with the landowner, the establishment of a regional homemaker centre in Muswellbrook

A2.3: Support start-up businesses and flexible working spaces to drive innovation and regional lifestyle opportunity.

A2.4: Grow the vibrancy of Dungog Town Centre

A2.5: Prepare a Clarence Town Structure Plan and supporting documents to provide clarity around growth expectations and determine where a full-line supermarket could be accommodated.

A2.6 Support new retail to accommodate population growth.

Direction 3: Encourage emerging and growing industries

Councils are seeing the need for the Region to diversify with new industries. Businesses have said that they want more done to bring tourists and innovation in the region. The planning system has a role to encourage new businesses in the area by promoting new opportunities such as agri-tourism, while identifying sites for workers accommodation to enable the tourist opportunity to grow. The circular economy, distributions, and intermodals can all leverage the existing infrastructure within the region and provide a compelling value-add for the region.

A3.1: Leverage the growing tourism opportunity in Dungog, Singleton and Upper Hunter LGAs

A3.2: Unlock the opportunity for circular economy uses

A3.3: Explore the opportunity for a major distribution centre or intermodal facility within the region to support future business establishment and job creation

A3.4: Develop and promote the uptake of agri-tourism

Direction 4: Continue to support a strong and vibrant mining industry while preparing for a post-mining future

While mining is currently a strong regional industry, there is a need to plan for employment in a post-mining future. Councils have invested in new innovation ecosystems and are seeking sites for innovation hubs and greater diversification, the need for which is identified in the Diversification Action Plan. Supporting flexibility in the planning system and creating an investment prospectus will help ensure that post-mining land can be absorbed. The use of the land will need to be taken up early by an employer external to the region, to drive population growth and new jobs in the region. In order to support the transition of more than 6,000ha of mining land into new employment uses, it is critical that investment attraction activity is undertaken to de-risk the transition, and enable to mining industry and subsequent developers to confidently invest, knowing employers will take-up the use of the land. In addition, Councils will continue to work with miners, Federal and State governments to ensure that there is a straightforward regulatory pathway to enable transition.

A4.1: Develop an industry diversification investment prospectus

A4.2: Resolve key issues related to the use of former mining land.

A4.3: Assist in facilitating master planning processes on key mining closure sites

Direction 5: Simplify and enhance the planning system and processes

The region needs to ensure that its planning system continues to be an enabler for economic growth. Council continuing to look at opportunities to streamline in their local area, reduce timeframes and promoting flexibility and certainty will help ensure continued investment. While supporting appropriate land-uses will all help create a vibrant Region.

A5.1: Aim to reduce development approval timeframes

A5.2: Implement a flexible planning framework

A5.3: Investigate removing or adding land uses that could affect the viability of commercial or industrial development

1.0 STRATEGY

1.1 Vision

The Upper Hunter Region is in the midst of an economic transition that will shape the future of the Region for generations to come. The Region's \$15 billion economy has traditionally powered NSW, supplying energy needs through both coal mining and power generation, while exporting coal and agricultural product globally. As the world changes, the Region must also change with it powering toward a new green future, capitalising on its existing assets in energy generation, agriculture, and mining, while supporting a diversified post-mining economy with expansion in renewable energy, advanced manufacturing and agribusiness sectors. The Region will leverage its strengths to create a diversified economy that also includes tourism, services and digital uses, becoming a diverse innovation powerhouse across its four LGAs.

The Region contributes approximately 2.1% to the State's GSP while comprising approximately 0.8% of the State's population. It is vital that there is a plan in place to ensure the Region remains an employment and economic generator for years to come. The transition from mining to alternative uses can provide over 6,000 ha of mining land to new employment uses, properly staging the transition with industry attraction will ensure that 10,000 direct mining workers will have successful transitions from the coal industry. Furthermore, employment lands can spearhead the region's growth into new industries, including renewable energy, agriculture and agribusiness, advanced manufacturing, transport and logistics and eco-tourism.

Complementing the successful transition of mining industries will be a deeper investment in agricultural industry and urban centres. Creating lively hubs that attract innovators as well as tourists to experience the best the region has to offer.

By 2041, this Strategy sees the Upper Hunter Region as a dynamic, sustainable, and diverse regional economy that embraces innovation and resilience, while fostering a strong sense of community. Industry will continue to be supported in the Region, generating jobs, infrastructure services, and amenities to enable a growing population. Through diversification, the Region will be recognised as a leader in the development of new industries and technologies, and as a desirable place to live, work and visit.

1.2 Directions and actions

DIRECTION 1: ENSURE SUFFICIENT SUPPLY OF EMPLOYMENT LAND TO ENABLE INDUSTRY ATTRACTION

Action 1.1: Secure a pipeline of zoned, serviced and unconstrained employment land.

Population changes in the Region will produce demand for approximately 630,000sqm of new floorspace by 2041. The process for calculating this projection is discussed in section 7.0. We heard that stakeholders also want jobs local to housing, to provide greater containment of jobs. New industries require development-ready serviced, zoned and unconstrained employment land for new businesses to locate quickly. The councils have a high quantum of land already do not have land that is serviceable and ready to go for new businesses seeking to operate at scale. Other areas do not have zoned land in the right location.

Principal delivery tasks include:

- **Dungog:**
 - Investigate an expansion area for E4 General Industrial north-west of Common Road, Dungog noting that topography and flooding are constraints.
 - Investigate and rezone an industrial precinct (E4 General Industrial) around Stroud Hill Road, which could be focussed on artisan industry leveraging existing strengths in agricultural production and providing an additional tourism focus.

- Singleton:
 - Work with the landowner to secure servicing strategy for Whittingham including funding potential funding strategies.
- Muswellbrook:
 - Support the proposed translation of the employment land reform to deliver more E3 Productivity Support land around Rutherford Road and Central Muswellbrook.
 - Investigate and rezone an industrial precinct (E4 General Industrial) near the existing industrial precinct at Thomas Mitchell Drive, the junction of Muscle Creek Rd and the proposed bypass or St Hilliers.
 - Explore use of the SP4 Enterprise zone for mine buffer land and former mine and power station sites for large manufacturing and agribusinesses that are not appropriate in a traditional E4 General Industrial zone, and are capable of managing all their waste disposal needs on site.
- Upper Hunter Shire:
 - Prepare a business case for the upgrade of the Scone Wastewater Treatment Plant to increase its capacity to allow further expansion of existing industrial sites.
 - Consider supporting employment uses on SP1 land at Scone airport and eventually rezoning land adjacent to the racing precinct and airport to future employment uses.
 - Investigate potential tenants and employers for industrial land at Aberdeen.

Action 1.2: Explore future employment investigation areas.

The expansion of new employment areas will be needed to continue to grow the industrial base for the Region and establish new manufacturing uses. This will help meet the 630,000sqm of floorspace needed by 2041 and encourage industry attraction by having well-located employment lands.

Principal delivery tasks include:

- Dungog:
 - Explore the provision of additional industrial land in Dungog LGA, as part of a Clarence Town Structure Plan, if the high population growth rate is adopted.
 - Undertake a Growth Management Strategy to ascertain where future growth will be accommodated.
 - Support interest for meat processing plants in areas outside the water catchment.
- Singleton:
 - The former Rixs Creek mining site is logically located to be able to deliver industrial land. There is demand for 15 ha of industrial land in Singleton which could be delivered through this site. Work with the proponent to undertake technical studies and master planning to determine the ideal location for an industrial precinct.
- Muswellbrook:
 - In collaboration with landowners, seek to transition the AGL Liddell Site from an SP2 Special Purpose site to an SP4 Enterprise zone that would enable flexibility to curate employment uses on the site.
 - Investigate potential for rezoning near the Racecourse to an E3 Economic Productivity zone to enable more opportunity for light industry, advanced manufacturing, and a homemakers centre.
 - Work with proponent (BHP) to encourage a master planning process on Mount Arthur land that seeks to repurpose hardstand infrastructure for the purpose of industrial uses. Considering the location, land along Thomas Mitchell Drive may be appropriate for circular economy uses.

- Upper Hunter

Encourage the take-up of land for specialised uses in the Equine Precinct and at the airport. This could include light industry and commercial uses that complement the primary precinct intent.

Explore an investigation site for a regional holiday/caravan park in the LGA including servicing and water treatment.

The identification of future investigation land should be guided by the principles below, which provide a framework to accompany this section of the Strategy.

Future land identification principles

The following criteria have been developed based on stakeholder consultation findings and industry experience. They identify the key characteristics that should be considered when looking to rezone land for employment uses. These criteria have helped inform the constraints analysis. However, the conditions of surrounding land and development appetite have also been considered.



Environmental constraints

Environmental constraints such as conservation zoned land can limit the development potential of land. This applies to areas of environmental significance both on zoned land and on land abutting employment areas. Sensitive environmental assets should be protected and areas of environmental risk (eg flooding, bushfire) should be avoided.

Principle: Avoid land subject to or in proximity to hazard and protection planning layers.



Slope

Employment lands benefit from flat topography. Industrial uses are not suited to sloped land due to access constraints, requirements for large property areas and the cost of developing on sloped land.

Industrial land requires larger floor plates, so benefits from relatively flat sites. We note that the region has challenging topography, although there are opportunities to utilise sloping sites through innovative developments.

Principle: Generally speaking, the flatter the land the better.



Electricity supply

The vast majority of industries are reliant on electricity for operational needs. Industrial electricity supply requires significant forward planning with the servicing agencies because expensive “headworks” upgrades may be required to service employment lands. There may be opportunities for providing industrial electricity resulting from the Hunter Transmission Project.

Principle: Provide an appropriate standard of electricity to employment lands to meet industrial uses.



Water supply and management

Water supply is vital for employment uses, particularly the provision of adequate levels of water pressure to allow firms to meet fire safety requirements. Water management such as sewer and stormwater services should also be in place. On site wastewater solutions and recycled water may need to be considered in the region. Resilience to floods, droughts, and other natural disasters should also be considered in water management practices.

Principle: Locate employment lands in areas which can be serviced by water, sewerage and stormwater in a cost effective and environmentally sensitive way.



Vehicular access

Vehicular access is the foundation for functional employment land uses. Consideration of car access and parking, truck and B-double circulation and motorway access is key. Small firms are particularly susceptible to problems with vehicle access into and out of their sites.

Principle: Locate and design employment lands to have vehicular access from a major road with circulation and parking suitable to the vehicles that need access.



Freight access

Employment lands benefit from access to the national and international freight network. This includes railway, ports and airports. Direct freight access or access via an intermodal logistics terminal is an asset for employment land.

Principle: Locate employment lands with close access to a freight railway, port or airport terminal.



Proximity to extractive industries

In some scenarios extractive industries leases can limit the developable area of employment land sites and immediate availability of industrial zoned land due to buffer requirements. Considering moving within the buffer requirements for some uses will be beneficial.

Principle: Employment lands should be located beyond the buffer requirements from current and potential future extractive resource assets.



Agglomeration

Employment uses benefit from proximity to other employment land uses. Therefore, new employment lands should seek to leverage the economic value of existing areas to boost efficiencies.

Principle: Employment lands should be located adjacent to an existing employment precinct, unless forming a significant new precinct.



Workforce and service catchment

Businesses located in proximity to residential areas have better access to the skills they need to operate and the customer base they service. Access to a populated catchment offers a competitive advantage to employment lands and could help to create 15-minute neighbourhoods, while continuing to provide employment to the region.

Principle: Employment lands should be located in a driveable distance from a regional population centre.



Public transport

Adequate public transport access means easier access for workers. Public transport can often be of concern to firms based in more inaccessible regional areas in relation to moving employees to and from work.

Principle: Employment lands should be accessible by at least one form of public transport. Otherwise, parking needs to be provided for workers.

Action 1.3: Continue to monitor employment land supply through the Urban Development Program.

An Urban Development Program (UDP) for the Region was established in April 2023. The UDP is the NSW Government's program for managing land and housing supply and assisting with infrastructure coordination. The success of the program will be somewhat dependent on the cooperation of councils and their utility services in providing information, as well as on local and State government resourcing to deliver strategies for sites

Principal delivery tasks include:

- In collaboration with the Department of Planning and Environment, seek to provide information that informs the status, supply and challenges to delivering employment lands.

DIRECTION 2: SUPPORT VIBRANT CENTRES AND PLACE

Action 2.1: Prepare and implement centre activation strategies for the main settlements

The main settlements of Dungog, Scone, Muswellbrook and Singleton would benefit from clear strategies that seek to attract investment and grow visitation numbers. The by-pass projects create opportunities for Scone, Muswellbrook and Singleton to revitalise their centres to become vibrant destinations. These projects will shift the centres from being thoroughfares for cars, and instead provide greater opportunity for high street activation and walkability.

Principal delivery tasks include:

- Establish a clear vision for the town centre developed in collaboration with centre traders
- Identify catalyst sites that can be activated temporarily or permanently
- Establish and promote a regular event strategy to draw people into the town centres
- Incorporate an investment prospective that identifies the opportunities and gaps in the market for new retail and hospitality
- Establish or empowers the chamber of commerce or similar governance body to input into, implement and monitor the activation strategy.

Action 2.2: Promote and facilitate, in collaboration with the landowner, the establishment of a regional homemaker centre in Muswellbrook.

Across Upper Hunter, Singleton and Muswellbrook LGAs, total demand for bulky good retail will increase to 25,306 sqm of bulky-good retail. Muswellbrook is centrally located between Scone and Singleton and has an appropriate zoned and located site that could be leveraged for the purpose of a home-maker centre. Agglomerating bulky-good retailing has the economic benefits for retailers due to increased trade attraction and retail competitiveness.

Principal delivery tasks include:

- Explore options for a Bulky Goods retailing site should the Showground no longer be relocated near Skellatar Stock Route and near Racecourse Road to clustering entertainment uses. Working with landowners to seek rezone land, if necessary.
- Attracting interested investors and tenants to establish in the homemaker centre.

Action 2.3: Support start-up businesses and flexible working spaces to drive innovation and regional lifestyle opportunity.

The Upper Hunter Region is seeing an influx of people moving to the region to leverage its lifestyle opportunities. As identified in Section 5.3, social media has generated the opportunity for more business start-ups and entrepreneurs to enter the e-commerce market. It has also created the capacity for people to live outside of major metropolitan areas as the dependency on bricks and mortar retailing has diminished. The emergence of new businesses and start-ups has increased the demand for:

- Warehouses with scale-up opportunities
- Manufacturing floorspace with scale-up opportunities
- Co-sharing spaces and collaboration spaces (commercial and industrial)
- Transport and logistics services including product packaging and distribution
- Commercial kitchens.

Muswellbrook Council has identified this opportunity and has created a facility that supports start-up manufacturing businesses. Dungog main street has also seen the emergence of new businesses leveraging agri- and experiential tourism. Bypass projects in Singleton, Scone, and Muswellbrook also create further opportunities from the potential revitalisation of town centres. There is opportunity for the region to further capture and position itself to cater to start-ups and entrepreneurs by establishing flexible incubator workspaces that can be co-shared.

The principal tasks would involve seeking to deliver flexible spaces through:

- Utilising existing underutilised council assets and government land
- Voluntary Planning Agreements
- Providing co-working or pop-up spaces in vacant commercial or industrial premises.
- Providing shared (incubator) warehousing facilities to enable initial industry expansion

Action 2.4: Grow the vibrancy of Dungog Town Centre

The Dungog Town Centre is going through a resurgence, with new and unique businesses moving into town. There is opportunity to capitalise on this renewed interest and investment by undertaking strategic projects that can catalyse the centre.

Principal delivery tasks include:

- Seek funding to implement planning for town beautification initiatives including:
 - Hooke Street revitalisation project, and
 - Brown Street pedestrian improvements to enhance access from Dungog Station
- Encourage the relocation of the agricultural sales businesses to the industrial precinct
- Explore a business case for repurposing government land near the station to accommodate a mixed use development opportunity.

Action 2.5: Prepare a Clarence Town Structure Plan and supporting documents to provide clarity around growth expectations and determine where a full-line supermarket could be accommodated.

The Dungog population is projected to double by 2041, (see Section 4.3.1) however there is limited strategic planning to support where the growth will go and at what scale. With population growth comes demand for retail, industrial and commercial services and space. There is a need to undertake strategic planning to provide clarity around growth expectations and determine where population serving floorspace should be delivered.

Principal delivery tasks include:

- Prepare the Clarence Town Structure Plan
- Prepare a servicing and delivery plan

- Update Local Environmental Plan
- Update Development Control Plan
- Prepare Development Contribution Plan.

Action 2.6: Support new retail to accommodate population growth.

Under high population growth scenarios the amount of retail across the LGAs will likely need to increase. Focus should be provided to supporting vibrant high streets that provide an important tourist and placemaking element to each of the towns. Bulky goods and supermarkets could be located in new areas or existing areas, as suggested in section 7.2.

Principal delivery tasks include:

- Identify and support a supermarket north of the Hunter River to support the growing population with full-line retail demand.
- Dungog LGA supermarket demand would increase by 2,148 square metres, which would lend itself to a full-size supermarket in the LGA by 2041. Depending on the likely location of population growth it might lend itself in Clarence Town to increase convenience for residents of both Dungog and Clarence Town. Council should identify a strategic site for the new supermarket and consider potential options for the current supermarket site.
- Muswellbrook has capacity for an additional 6,378sqm of retail overall, of which 2,021sqm is for supermarket and grocery uses. While there may not be capacity for a full-line supermarket, there could be capacity for a fresh format or an independent supermarket in Muswellbrook to serve the expected population growth.

DIRECTION 3: ENCOURAGE EMERGING AND GROWING INDUSTRIES

Action 3.1: Leverage the growing tourism opportunity in Dungog, Singleton and Upper Hunter

The tourism sector employs 1,266 people in the region. Through our product audit we identified 383 businesses offering tourism products or services across the region. Our consultation indicated the region had overall not experienced an increase due to Covid; however, there had been some increased adventure-based tourism in Dungog. Our consultation has also indicated that the majority of overnight stays are taken up by mining workers in Singleton and Muswellbrook towns. Noting the southern portion of Singleton Council is part of the Hunter Valley state significant tourism destination combined with Cessnock Council, this action is about establishing tourism beyond the Hunter Valley and vineyard precinct.

Section 5.2.5 identifies a number of strategies that could be adopted by the Joint Organisation of Councils, or individual councils to enhance the visitor economy across the region. These have been utilised to inform the principal tasks to achieving the action.

Principal delivery tasks include:

- Encourage the development of appropriate workers accommodation to free up accommodation for tourists.
- Investigate a site in the Upper Hunter LGA for a major tourist oriented premium holiday/caravan park
- Investigate the feasibility of a major branded holiday park around Dungog, leveraging the adventure tourism and natural assets of the region.
- Work with providers to offer unique and authentic experiences to attract visitors to eco and agritourism destinations. This can include activities such as hiking or cycling events, farm-to-table meals, farm tours, environment or agricultural education, and hands-on experiences like picking your own produce or helping with farm chores.
- Build partnerships with local businesses, farmers, and tourism organizations to promote eco and agritourism destinations and provide visitors with a wider range of experiences.

- Use digital marketing: strategies such as social media and online advertising to reach a wider audience and promote tourism destinations to potential visitors.
- Offer value-added products such as farm-fresh produce, artisanal goods, and locally-made souvenirs to help generate additional revenue for farmers and enhance the overall visitor experience.
- Develop a regional brand, similar to what has been successfully achieved on the Northern Rivers, that celebrates the unique features and products that are produced.
- Investigate the potential for Aboriginal-based tourism opportunities to complement the existing nature and adventure offerings in partnership with local Aboriginal communities.
- Finalise and implement the draft Vineyard Tourism Strategy for Singleton LGA.

Action 3.2: Unlock the opportunity for circular economy uses

Consultation has revealed strong interest in circular economy uses for the Region. The circular economy involves the recycling, remanufacturing, and reuse of materials, and has the potential to intersect with other important industries for the Region.

The circular economy presents opportunities for energy generation through the re-use of waste. As the NSW Energy from Waste Policy Statement identifies, a range of waste materials can be used for energy generation. If this is carried out in the Region, it could both support its green energy network and provide employment opportunities.

In addition to energy generation, the circular economy industry also includes manufacturing using recycled materials; this presents opportunities to grow the region's manufacturing industries to include the processing of waste and its manufacture into sustainable products. Another part of the circular economy involves the recycling of renewable energy equipment, including photovoltaic panels, wind turbines, and batteries. This sector of the circular economy could also grow in the Region alongside the long-term development of its renewable energy industry.

Circular economy opportunities are growing partly as a result of developments outside the region. Greater Sydney requires at least one large regional energy recovery facility and medium-scale 'dirty' MRF by 2030, and by 2040 at least three additional large-scale energy from waste facilities, and an additional medium-scale dirty MRF. The Hunter would require a medium-scale energy from waste facility. NSW does not have the capacity to treat persistent organic pollutants (such as PFAS) instead exporting to Queensland and Victoria. Former mine sites have the existing infrastructure to enable energy from waste facilities. Energy from Waste requires an approval from the EPA prior to being permitted under the SEPP. New requirements for food organic and green organic waste processing creates the need for a regional processing facility. The Upper Hunter Region could be a viable location for the joint organisation for processing this waste.

Principal delivery tasks include:

- Write to the EPA to advocate for former mining land in Muswellbrook to be used for circular economy uses as part of the energy from waste policy principles.
- Consider council site for the Hunter Joint Organisation Facility that incorporates FOGO processing

Action 3.3: Explore the opportunity for a major distribution centre or intermodal facility within the region to support future business establishment and job creation

As identified in section 5.0, there is a growing demand for transport and logistics hubs that are located close to major road and rail distribution connections. Despite the region's strategic location and industry base, there is currently no intermodal terminal in the Region. There is opportunity to cluster manufacturing, logistics and supply chain operators for agriculture, defence, mining and renewable energy. The existing heavy industrial site at Whittingham in Singleton LGA is strategically located with the opportunity, through investment, to leverage rail and road connections. While Whittingham presents a key opportunity within the Region, this Action and its delivery tasks could be applicable to various potential sites across the region.

An example inland intermodal is the Bromelton State Development Area in South East Queensland¹.

Principle delivery tasks include:

- In collaboration with Regional NSW, DPE and the land owner, seek to designate the site as a Special Activation Precinct.
- Work with stakeholders to develop a masterplan and technical studies.
- Seek to promote and attract significant industry investment in line with the strategic intent for the precinct.

Action 3.4: Develop and promote the uptake of agri-tourism

As identified in section 4.2.1, agriculture, forestry and fishing is the second largest employing industry in the Region. In 2023, the NSW Government introduced clear planning definitions for agritourism in NSW to make it easier for farmers to maximise the utilisation and economic return of their properties. These terms included farm gate premises, farm experience premises and farm stay accommodation. The government also announced new planning pathways through exempt and complying development to make it easier for landowners to maximise property utilisation. These changes create significant opportunity for the Region to leverage its primary agriculture industry to enhance regional visitation and economic return.

Principal delivery tasks include:

- Develop a simple factsheet that articulates the types of uses that can now operate on farms and the associated consent pathways.
- Draw on information from the DPE factsheet on agritourism.
- Share factsheet through social media and host on websites.
- Partner with local chamber of commerce and business organisations to distribute information on agritourism rules.
- Upper Hunter Council to consider implementing the agritourism clauses in its LEP.

DIRECTION 4: CONTINUE TO SUPPORT A STRONG AND VIBRANT MINING INDUSTRY WHILE PREPARING FOR A POST-MINING FUTURE

Action 4.1: Develop an industry diversification investment prospectus

The conversion of over 6,000ha of mining related land to new employment uses is critical to ensuring that a Region which contributes 2% of the State's Gross State Product with over 10,000 people directly employed in the mining industry continues to have a sustainable economy. That means the replacement industries and jobs will need to be found to avoid disruptions to the Region and State economy, which will be driven by industry and all levels of government working collaboratively to bring new jobs to the Region.

In saying this, however, the region is strategically located and well positioned to diversify its economy as outlined in section 5.2. There are a number of mining operations in the region that are logically located and have mooted intent to cease operations by 2030, if not before. Mine sites include MacArthur Coal and Muswellbrook Coal will be undergoing closure processes. As outline in section 5.4, mining sites have significant established infrastructure and hard stand areas that could be repurposed to accommodate substantial industries. In order to capitalise on the economic opportunity of these sites there is a need to generate independent interest and demand to invest in and repurpose the operations.

Principal delivery tasks include:

- Develop an investment prospectus (collaboration between Singleton and Muswellbrook councils, DPE and Regional NSW) to attract large industry operators that would be interested in investing in repurposing strategic mine sites. The prospectus should:

¹ <https://www.statedevelopment.qld.gov.au/coordinator-general/state-development-areas/current/bromelton-state-development-area>

- Advertise site opportunities
- Demonstrate the strategic merits of the region
- Engage with a wide-range of potential users including defence, circular economy, and manufacturing users
- Demonstrate vision for the region and depth of market capacity.

Action 4.2: Resolve key issues related to the use of former mining land.

Mining land provides established infrastructure for employment land expansion. The consultation process indicated that there are many complexities in this process. Mine approvals require offsetting areas that are multiple times the size of site areas for operation, as well as the rehabilitation of site areas. Areas for offsetting create barriers for urban expansion in Muswellbrook. Existing operating mine sites are under WHS (Mines and Petroleum Sites) legislation and lease conditions require reporting of any breaches. These are more onerous than existing lease conditions. Therefore, the use of buffer land can place the mine operation under threat if not appropriately managed. There are opportunities for both Singleton and Muswellbrook LGAs to work collaboratively to resolve key issues and challenges.

Principal delivery tasks include:

- Advocate that DPE and DRNSW as part of their place planning function work to:
 - Resolving biodiversity offsets to allow for site infrastructure to be retained and utilised
 - Consider partial modification pathway that do not restrict current mining operations
 - Find options to amend leases or WHS (Mines and Petroleum Sites) legislation to allow non-mining operation on land
- Advocate that DPE (Planning), DPE (EES), DRNSW, industries, councils and federal government form a working group to resolve key barriers. The findings should be reported to the Urban Development Program.
- Support modifications to consent for the SSD approvals that would enable development on buffer land, as well as changes in the post mining land form (and in particular land use).

Action 4.3: Assist in facilitating master planning processes on key mining closure sites

While some mines are planning to continue operations, others are undergoing closure processes. Muswellbrook Coal is currently undergoing the mine closure process. A range of other mines in Muswellbrook and Singleton LGAs may soon undergo closure processes as well. BHP has also announced the closure of its NSW Energy Coal business by 2030 subject to gaining approvals to enable mining beyond 2026. The Region Plan identifies an action for the Department to develop expedited options to change to another employment use for mine sites where existing infrastructure like hard stand areas, workshops, stores, treatment plants and rail loops are concentrated.

Principal delivery tasks include:

- Work with mining companies, Regional NSW, and InvestNSW to prepare a prospectus and EOI for future uses of mines to better understand possible uses and help inform the preparation of SSD modifications.
- Councils to work with proponents to support or encourage master planning process for the Mount Arthur Mine buffer land (near Thomas Mitchell Drive) and the Muswellbrook Coal proposed industrial land in Muswellbrook LGA, and for Liddell Coal Operations and Ashton Coal land in Singleton LGA. There is strategic merit in all locations for the sites to accommodate employment and economic generating uses.
- Work with proponent, DPE, and Regional NSW to outline council's strong desire for economic uses for post-mining land as part of any council submission or advice related to mine extensions
- Advocate and provide input into place strategies prepared by DPE for each of the mine closure sites. Regularly ask DPE for updates on funding and progress on these place strategies.

DIRECTION 5: SIMPLIFY AND ENHANCE THE PLANNING SYSTEM AND PROCESSES

Action 5.1: Aim to reduce development approval timeframes

As identified in Section 5.8, development approval timeframes vary between averages of approximately 74 days (Upper Hunter LGA) and 114 days (Dungog LGA). These longer approval timeframes can add substantial holding costs to developers and can act as a deterrent to future investors. It also limits the ability for development ready land to be available for new businesses to establish itself.

There are opportunities to maximise the effectiveness of planning systems throughout the entire Region. For instance, a shared 'joint organisation' Duty Planner could add to collaboration and consistency between the region's LGAs with regard to fast-tracked and complying development applications.

Principal delivery tasks include:

- Encouraging the application of SEPP (Exempt and Complying Development) to reduce number of comprehensive development application that Council has to assess. This could be done by:
 - Providing information on Council's website about the circumstances in which a complying development application can be used (rather just a than a link to the planning portal)
 - Employing a shared 'joint organisation' Duty Planner to inform prospective applicants of the opportunities under part 5 of the SEPP for a fast-track assessment via the complying development pathway and navigating the planning portal.
- Encourage formal and informal pre-DA meetings and ongoing discussions with applications to resolve issues well prior to the DA being lodged.

Action 5.2: Implement a flexible planning framework

Discussions with stakeholders from local industry and businesses have identified that the more flexible the planning controls can be the more attractive an area is to invest in. This is discussed further in Chapter 8.0. The below set of delivery tasks aim to increase overall planning flexibility, including within employment zones, to make development more attractive through the easing of restrictions. The intent would be to create a consistent set of standards across the Upper Hunter.

Principal delivery tasks include:

- Establish a collaborative working group of Councils to align standards across the LGA.
- Advocate for consistent standards for Hunter Water to simplify the referrals process within the water catchment. This could include allowing Council to assess impacts without referral for development that is consistent.
- Investigate removing maximum height limits in the E4 General Industrial zone to avoid unnecessarily deterring or restricting development.
- Investigate parking requirements to ensure that they are not overly restrictive and do not unnecessarily increase development costs.
- In Muswellbrook consider the necessity of 10.0m setback from the principal boundary alignment, and the variation criteria requiring 6m landscaping across the frontage of the site in the DCP.
- In Singleton consider the necessity of a 15m setback in B1, B5, and IN3 zone, and the 9m setback in the B6 one in the DCP.

Action 5.3: Investigate removing or adding land uses that could affect the viability of commercial or industrial development

The employment zone reform creates an opportunity to rethink about how zones are applied and the permissibility of uses within them. A review of the permissible uses under the new planning framework was undertaken to determine whether there is relative consistency across the region and what uses could be added

or removed to improve the commercial viability and appeal of the region for development. This includes the encouragement of light industry, which is defined as being not impactful on surrounding amenity.

Principal delivery tasks include:

- In Dungog, consider removing the residential accommodation group term from permissible with consent and instead refine to higher density development such as shop top housing, multi-dwelling housing and residential flat buildings
- In all LEPs, consider enabling light industries as permissible with consent in the E1 Local Centre zone and E2 Commercial Centre zone (where adopted).
- In Upper Hunter LEP, consider enabling backpackers' accommodation, bed and breakfast accommodation and serviced apartments as permissible uses in the E1 Local Centre zone



BACKGROUND REPORT

INTRODUCTION

2.0 INTRODUCTION

Dungog Shire Council, Muswellbrook Shire Council, Singleton Shire Council and Upper Hunter Shire Council engaged HillPDA through Muswellbrook Shire Council to prepare the Region Employment Lands Strategy (the Strategy). The Strategy provides a strategic planning framework to guide the future development of employment lands in the Region (the Region) identified in Figure 1, consistent with the broader strategic planning framework and policy context.

Preparation of the Strategy was guided by the Department of Planning and Environment's *A guideline for local employment land strategies* (July 2022) and informed by the outcomes of targeted stakeholder engagement with councils, local businesses, industry associations, investors, and developers who operate out of this Region.

Figure 2: Region



Source: HillPDA

2.1 Background

Taking a strategic approach to the delivery of suitable employment lands in the right locations is key to ensuring the Region's long-term economic prosperity and sustainability. Employment lands not only provide local and regional employment opportunities; they also support the functionality, vibrancy and well-being of urban areas across the Region and beyond, by providing:

- Essential services such as waste and water management, repair trades and construction services
- Warehousing, logistics and last mile distribution centres
- Areas for businesses to design, manufacture and produce goods and services
- Opportunities for businesses to increase their economic output and efficiencies through the effects of agglomeration.

2.2 What are employment lands?

Employment lands are areas within an LGA that are zoned to support employment uses. While it is acknowledged that a variety of land use zones support employment uses, including rural lands, this Strategy relates specifically to land in the Region that was zoned for business or industrial purposes immediately prior to 26 April 2023.

Due to the timing of this Strategy, it is based on the now repealed business and industrial land zonings listed in Table 1. It is noted that these zones were replaced by a new suite of employment zones listed in Table 2. The new zones were introduced by the NSW Government in December 2022 and commenced on 26 April 2023 as part of the employment lands reforms. A translation of the former business and industrial zones into the new employment zones for each of the LGAs in the Region is provided in Table 3.

Each LGA in the Region has taken a different approach in terms of the land uses that are permissible within the various employment zones, as demonstrated in the attached land use matrix.

Table 1: Former business and industrial zones

Zone	Description
B1 Neighbourhood Centre	Small scale retail, business, and community uses.
B2 Local Centre	Business, entertainment and community uses.
B3 Commercial Core	Retail, business, office, entertainment, and community uses.
B4 Mixed Use	Business, office, residential and retail.
B5 Business Development	Business, warehouse and large format retail.
B6 Enterprise Corridor	Business along main roads.
IN1 General industrial	Industrial and warehouse.
IN2 Light Industrial	Light industrial, warehouse and related uses.
IN3 Heavy Industrial	Heavy industries with high impacts (noise, vibrations, odours, etc.).

Table 2: New employment zones

Zone	Description
E1 Local Centre	Retail, business, entertainment and community uses. Residential uses allowed in the form of shop-top housing and boarding houses.
E2 Commercial Centre	Large scale commercial, retail, business and compatible associated uses like recreational and community services. Employment and business focus. Residential uses by exception (for high density areas) if the primary employment focus is preserved.
E3 Productivity Support	Mix of services, low-impact and creative industries, manufacturing, warehousing, office and limited supporting retail. Residential uses generally not appropriate.
E4 General Industrial	Light and general industrial and warehouse uses, with limited general retail. Residential uses not allowed.
E5 Heavy Industrial	Heavy industry and associated.
MU1 Mixed Use	Genuine mixed use including residential, retail, light industry, tourist accommodation.

Table 3: Zone translation for LGAs in the Region

Former business/industrial zone	New employment zone
Dungog	
B2	E1
B4	MU1
IN1	E4
Muswellbrook	
B2	E1, E2, E3, RE1
B5	E2, E3
IN1, IN2	E4
Singleton	
B1	E1
B3	E2
B4	MU1
B5, B6	E3
IN3	E5
Upper Hunter	
B2	E1
B2, B4	MU1
IN2	E4

Source: Department of Planning and Environment, *Equivalent zone tables*

2.3 Objectives

The purpose of the Strategy is to establish a strategic planning framework to guide future planning and decision making for employment lands in the Region, consistent with the broader strategic planning framework and policy context.

Specific objectives of the Strategy are to:

- Understand the amount and status of employment lands across the study area
- Ensure adequate supply to meet the forecasted demand and industry needs over the next 20 years
- Avoid shortages of serviced land in appropriate locations, so that economic/employment opportunities and competitiveness are not compromised
- Understand the region's land, business, employee, and training capacities, and whether resident skillsets align with local jobs
- Identify barriers/issues, and make recommendations to overcome or minimise them
- Provide recommendations that align with local planning objectives and strategies
- Ensure efficient and effective use of strategically located sites and infrastructure
- Ensure that planning is economically and environmentally sustainable
- Recognise fundamental elements in employment lands and the economy that could assist in 'closing the gap', as well as in responding to more general global, domestic, and local trends.

Overall, the Strategy seeks to identify opportunities for the Region to transition from an agricultural-mining dominated economy to a more diverse and modern economy focused around higher order and productive industries and the knowledge-intensive economy, supporting new and high-paying jobs.

The Region's economy is heavily reliant on mining for its economic potential, particularly coal mining in Singleton and Muswellbrook LGAs. Overall, the Region is 10 times as dependent on mining compared with other similar regions in Regional NSW.

To support their continued growth aspirations, Singleton and Muswellbrook must diversify their economy, and innovate to seek new jobs that pay salaries close to those in the mining industry. Recent mine closures include Muswellbrook Coal, Liddell Coal, Mangoola, and Dartbrook along with future closures including Mount Arthur Mine. While existing mines are confident of continued operation, it is critical that as the world decarbonises that Muswellbrook and Singleton take steps to prepare for a post-mining future. With many mine workers and supporting businesses located throughout the Hunter, ensuring a well-planned transition is a state significant matter.

The local economies of Dungog and Upper Hunter LGAs are predominately agriculturally based, with global food manufacturer JBS Australia employing approximately 450 people in Scone. Activating centres to bring tourism, offering a range of industrial opportunities, will support the projected population growth with job opportunities.

Unless employment opportunities are created locally and within the Region, residents in each of the LGAs will need to travel long distances to work or leave the area altogether, which has the potential to reduce the vibrancy and economic viability of towns and centres in the Region, making it increasingly difficult to attract new residents and industry.

Each LGA faces specific challenges; however, common across all is the need to support industry attraction, with development ready and affordable employment land both in centres and industrial precincts.

To support economic growth in the Region, this Strategy identifies five directions:

- Ensure sufficient supply of employment land to enable industry attraction
- Support vibrant centres and place
- Encourage emerging and growing industries
- Continue to support a strong and vibrant mining industry while preparing for a post-mining future

- Simplify and enhance the planning system and processes.

These directions supported by 19 Actions. Each of the Councils in the Region must work collaboratively with each other, and with State Government, landowners, existing industry, and potential future employers to be able to take attract new businesses that will support jobs and a diversified economy.

2.4 Stakeholder engagement

In preparation of this Strategy, HillPDA carried out stakeholder engagement with councils, local businesses, educational institutions, industry associations, investors, and developers operating in the Region. Engagement activities involved a combination of phone, online, and in-person interviews. Private sector stakeholders engaged as part of this process include real estate agencies, energy companies, manufacturers, and small businesses.

STRATEGIC CONTEXT

3.0 STRATEGIC CONTEXT

This section provides an overview of key strategic local and regional planning documents that together provide the strategic context for this Strategy. It demonstrates that the overarching vision for the Region is to leverage the existing strengths across heavy industry, energy, equine, tourism, food and fibre, and viticulture sectors, while supporting a more aggressive expansion into renewable energy and the new economy. Improvements to the Port of Newcastle and Newcastle Airport will be critical to the success for the Region as a key exporter and employer into the future. Based on stakeholder feedback, we note that the Region envisions a broader role for itself with potential for rapid expansion and innovation to leverage existing infrastructure and landholdings to continue the region's contribution to the State economy.

3.1 Hunter Regional Plan 2041

The *Hunter Regional Plan 2041*, published in December 2022, establishes objectives, strategies, actions, and planning priorities for the wider Hunter region. Under the Regional Plan, the Region is situated within the 'Upper Hunter district', with the exception of Dungog LGA, which is situated within the 'Barrington district'. The Regional Plan identifies strengths of the former in heavy industry, energy, equine, and viticulture sectors, with Dungog identified as an administrative centre for the latter district. The Regional Plan identifies the overall diversification of the Hunter Region, including in such sectors, as a key future objective.

A variety of employment land opportunities are identified by the Regional Plan, including the adaptation and transition of ex-mining lands to alternative employment uses; the contribution of the REZ to manufacturing and energy-intensive industries; the potential of knowledge and innovation clusters; the contribution of commercial centres towards local employment and economies; and opportunities in manufacturing, logistics, warehousing, freight, and circular economy industries.

This Strategy has been guided by these broad regional-level visions for future employment opportunities across the Hunter region. In focusing closely on the Region in particular, the Strategy is able to detail the strengths and opportunities of this region, producing strategies to address the Region's needs.

Consistent with the Region Plan this Strategy considers:

- how existing employment land areas, including those that provide urban services, will be retained
- unless opportunities for urban renewal arise through the relocation of industry
- if there is sufficient supply of vacant, serviced employment land providing capacity for a range of different sized employment enterprises
- the employment land needs for the local government area and identify flexible planning and development control frameworks to support their growth
- opportunities to facilitate growth in logistics, circular economy, new economic enterprises and industries and their supply chains
- the suitability of transport interchanges and bypasses for employment lands in consultation with Transport for NSW
- lands around the interchanges of the M1 Pacific Motorway and Pacific Highway should be used for employment activities that benefit from easy access to key markets such as manufacturing, logistics and warehousing
- the proximity of sensitive land uses and ensure they do not encroach upon these areas.

3.2 Hunter Regional Economic Development Strategy 2023 Update

The Hunter Regional Economic Development Strategy – 2023 Update (REDS Update) updates the 2018-2022 Strategy. It recognises the significant investment that has occurred in the region since 2018, including, as relevant to this study:

- The Hunter-Central Coast Renewable Energy Zone (REZ) could generate 40GW of renewable energy, translating to ~\$100 billion of potential investment.
- \$2 billion invested in upgrades to the New England Highway, M1 Motorway and the Scone, Muswellbrook and Singleton bypasses.

There has been year on year growth from 2011-2020 in the four key industries of Mining (+5.5%), Electricity supply (incl. renewables) (+3.5%), Agriculture (+6.5%) and Defence (+8.5%). Manufacturing however has seen a reduction in year-on-year growth of 4.8%.

The revised strategies for the REDS Update include (change from 2018 strategy in bold):

- Improve inter and intra-connectivity of the region to boost business opportunities in the ‘engine’ industries of agriculture, mining, manufacturing **and tourism**.
- Diversify the region’s economy to build resilience **while leveraging opportunities presented by transformative change in the** mining and energy sectors.
- Improve infrastructure, services and amenities to fully **realise and sustain** the region’s growth potential.
- **Invest in development of the region’s local workforce capability and capacity.**

3.3 Upper Hunter Economic Diversification Strategic Priorities

The *Upper Hunter Economic Diversification Action Plan: Implementation Priorities* provides a framework for the Region’s economic diversification. The Action Plan sets out proposed responses to the expected economic shocks as a result from reductions in coal mining-related employment, energy market changes, automation, power station closures, and water and energy security issues. It also identifies other impacts to employment that result from land use uncertainty and the wider land impacts of mining.

The Action Plan identifies innovation precincts and hubs as the principal generators of new employment opportunities. Educational institutions are potential drivers for such precincts and hubs, which include an Equine Innovation Precinct in Scone and an Energy Research Hub in Muswellbrook.

This Strategy has been influenced by the priorities outlined in the Action Plan. It considers employment land trends and opportunities that are guided by wider industrial trends expected to have significant impacts on the Region. While recognising that there will be a long-term transition from traditional mining and power station employment, this Strategy supports changes to the land-use planning framework through the transition.

3.4 The Six Cities Region Discussion Paper

The *Six Cities Region Discussion Paper*, published in September 2022, is a precursor to the forthcoming *Six Cities Region Plan*. Under that Plan, the Region—particularly Dungog and Singleton LGAs — border the ‘Lower Hunter and Greater Newcastle City’. The region forms part of the Hunter-Central Coast Renewable Energy Zone (REZ), which is in an early planning stage.

This Strategy is framed by the Discussion Paper in considering the connectivity of the Region to other surrounding regions within NSW, as well as anticipated developments such as the Hunter-Central Coast REZ.

3.5 Local-level strategies

Employment lands are also influenced by strategies at the LGA level across the region. Local Strategic Planning Statements (LSPS), as well as Community Strategic Plans, Land Use Strategies, and other policies produced by local Councils, form strategic frameworks for the development of employment lands in the region.

These policies have been reviewed and summarised in relevant LGA profiles and informed the Strategy's directions and actions for each LGA.

3.6 LEP Additional permitted uses

All LGAs within the Region provide for 'additional permitted uses' through relevant Local Environmental Plans (LEPs). In a few cases, these additional permitted uses allow for employment land uses to be carried out in otherwise prohibitive zones. The purpose of such additional permitted uses is often to facilitate the continuation of existing on-site developments and activities. However, there are also cases in which additional permitted use provisions seek to unlock employment land opportunities beyond those provided by local zoning schemes. Table 2 summarises additional permitted uses that provide additional employment lands in LGAs throughout the Region.

Table 2: Additional permitted use provisions in Region by LGA

LGA	Site	Zonings	Additional permitted uses	Area
Singleton	George Street lots	R1	Office premises	0.3ha
Upper Hunter	Hunter Valley Equine Research Centre Precinct, Scone	RE2	Animal boarding or training establishments and veterinary hospitals	110.3ha

Source: HillPDA (2022)

As Table 2 shows, there are few cases of additional permitted use provisions providing significant additional employment lands within the Region.

The Racecourse at Scone forms part of the Hunter Valley Equine Research Centre Precinct, while zoned RE2 this provides a basis for racing and equine industry research and sports.

Additional permitted use provisions also apply to three lots in relative proximity to each other on George Street in Singleton. Despite being located within an R1 General Residential zoned area, office premises are permitted with consent on these sites, providing a potential 3,000sqm of office space near the Singleton town centre.

Other additional permitted employment uses are present in applicable planning documents. These relate to single sites for potential vehicle sales or hire premises, or other businesses.

SOCIO-ECONOMIC TRENDS

4.0 SOCIO-ECONOMIC TRENDS

This section provides an overview of the current and historic socio-economic trends in the Region. This analysis is based on data obtained from the Australian Bureau of Statistics (ABS), Transport for NSW and Department of Planning and Environment (DPE).

4.1 Resident population characteristics

The resident population refers to persons living in the Region, regardless of where they travel to work.

4.1.1 Terminology

In line with the Greater Sydney Commission's (GSC) employment categories, in some sections in this chapter and proceeding chapters, employment industries have been aggregated into four broad industry codes (BICs). These are based on the Australian and New Zealand Standard Industrial Classification (ANZSIC) 1-Digit categories.² These four BICs are as follows:

- **Knowledge intensive:** Information Media and Telecommunications; Financial and Insurance Services; Rental, Hiring and Real Estate Services; Professional, Scientific and Technical Services; and Public Administration and Safety.
- **Health and education:** Education and Training; and Health Care and Social Assistance.
- **Population serving:** Retail Trade; Accommodation and Food Services; Arts and Recreation Services; Construction; Administrative and Support Services and Other Services.
- **Industrial:** Agriculture; Forestry and Fishing; Mining; Manufacturing; Electricity, Gas, Water and Waste Services; Wholesale Trade; and Transport, Postal and Warehousing.

Due to the significance of agricultural and mining industries, these industries have been separated out of 'industrial' for some of the analysis where specified, because they are unlikely to occur on employment land. While these industries do provide significant regional employment, this Strategy requires considering the range of alternative industries that also have scope to provide employment in the region on employment land.

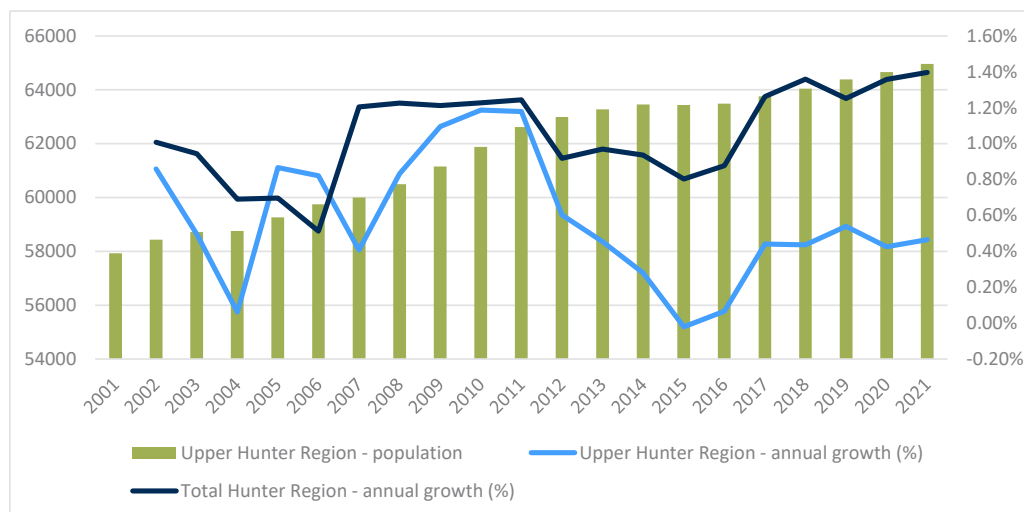
4.1.2 Resident population growth

Over a 20-year period to 2021, the population in the Region increased by 7,028 persons or 12%, reaching a total of around 64,704 residents. This represented an annual compound growth rate of around 0.55%. This was less than half the annual compounded growth rate for NSW (1.24%) over same period.

The Region generally experiences lower growth than the Hunter Region overall. The Region has experienced greater volatility in growth rates each year, reflecting the lower population and possibly the impact of major employers on the region due to economic and/or social or land use impacts.

² The Australian and New Zealand Standard Industrial Classification (ANZSIC) 1-Digit industry system classifies entities based on their main business activity and is used to collect and analyse data across 19 industries

Figure 3: Estimated resident population 2001-21 (year ending in June)

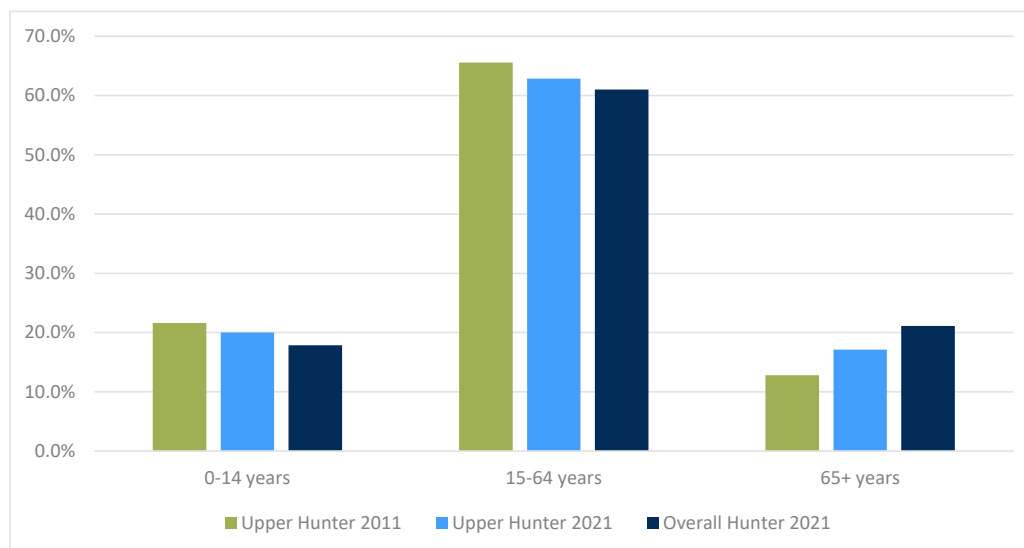


Source: ABS Regional population, HillPDA

4.1.3 Age composition

The Upper Hunter Region has a relatively younger population than the rest of the Hunter as seen in Figure 4. Despite ageing over the past decade, the Region continues to have a higher proportion of working-age population (66%) than the Hunter Region overall (61%)

Figure 4: Age composition 2011-21



Source: ABS 2011 and 2021 Census, TableBuilder

Population growth in the region reflects an aging population, with 150 residents fewer aged 14 in 2021 compared to 2011. In the same period the number of people aged between 15 and 19 decreased by 409. There were significant increases in older age groups with 1,370 more people between 50 and 64 years old and 3,330 more aged over 65.

Table 3: Net change in age cohorts in the Region, 2011-21

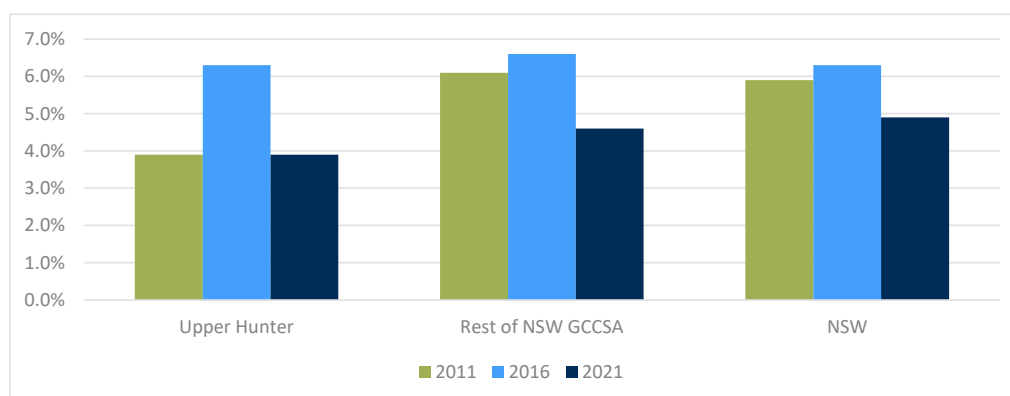
	Change 2011-16	Change 2016-21
0-14 years	-50	-100
15-49 years	-852	+443
50-64 years	+839	+531
65+ years	+1,672	+1,658

Source: ABS 2011, 2016, and 2021 Censuses

4.1.4 Labour force status

At each census, the unemployment rate in the Region has been lower than the rest of the state. This reflects the range of jobs for a mix of skills and work arrangements across the Upper Hunter Region. If there were substantial changes to the employment and employer make-up, this lower unemployment could be under threat.

Figure 5: Unemployment rate across selected regions, 2011-21



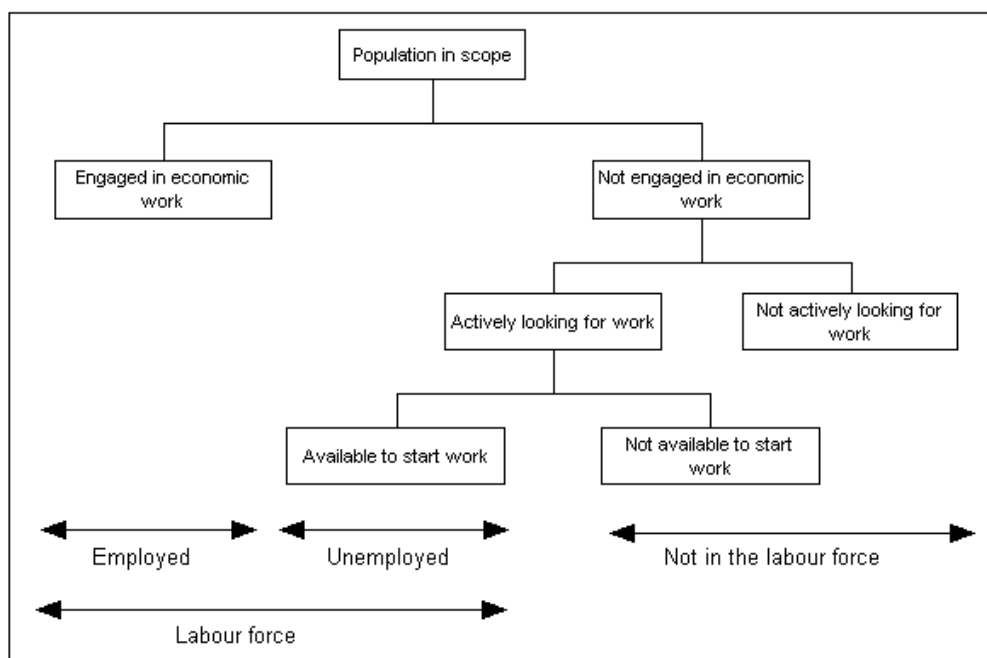
Source: ABS 2011 and 2021 Census, TableBuilder

While the Region has had lower unemployment than the remainder of NSW over the past 10 years, unemployment peaked in 2016 at close to the levels of Rest of NSW and NSW. As Figure 5 shows, this reflects broader trends seen across the State, perhaps combined with a volatility in the region's economy as indicated by the population trends observed in section 4.1.2.

Figure 6 outlines the Labour Force framework as defined the ABS, explaining the definitions of employed and unemployed. The ABS defines people as 'employed' if they work one hour or more in a week. This is the international standard for employment data and allows for comparison overtime and across countries. To be classified as unemployed, there are three key criteria:

- Not working more than one hour in the week
- Actively looking for work in the previous four weeks
- Available to start work in the week

Figure 6 The Labour Force Framework



Source: ABS

4.1.5 Resident industry of employment

In 2021, there were 30,653 employed residents in the Region, which is a 5.5% (1,604) increase over ten years. The compound annual growth rate was 0.27%, approximately a fifth of what was recorded in NSW outside of the Greater Sydney Area ("Rest of NSW"), which had 1.56% CAGR.

Over the five years to 2021, the Upper Hunter Region employment grew at a CAGR of 1.9%, representing a mini recovery from the peak in unemployment experienced in 2016. During that period there were 2,708 more employed residents than 2016, helped the region recover from a decline in 1,104 between 2011 and 2016.

There were employment challenges across the Upper Hunter Region in 2016, which have since rebounded. This reflected some broader trends across regional NSW, for example jobs in Wholesale Trade, Retail Trade and Manufacturing declined between 2011 and 2016, before recovering between 2016 and 2021. Manufacturing jobs experienced a very sharp decline between 2011-16, in both the Region and Regional NSW.

Between 2011-21, the top five growth industries for employed residents of the Region were:

- Health Care and Social Assistance: 744 additional jobs
- Administrative and Support Services: 420 additional jobs
- Education and Training: 417 additional jobs
- Public Administration and Safety: 126 additional jobs
- Arts and Recreation Services: 110 additional jobs.

Some industries experienced declines in the Region during this time. The top 5 were:

- Manufacturing: 487 fewer jobs
- Retail Trade: 148 fewer jobs
- Wholesale Trade: 111 fewer jobs

- Professional, Scientific and Technical Services: 109 fewer jobs
- Rental, Hiring and Real Estate Services: 100 fewer jobs.

Many industries in the Region, however, declined significantly in employed residents between 2011 and 2016, before increasing between 2016 and 2021. This was most strongly observable in the following:

- Construction: 327 fewer jobs between 2011-16, 422 additional jobs between 2016-21
- Mining: 363 fewer jobs between 2011-16, 312 additional jobs between 2016-21
- Wholesale Trade: 289 fewer jobs between 2011-16, 171 additional jobs between 2016-21
- Retail Trade: 292 fewer jobs between 2011-16, 144 additional jobs between 2016-21
- Manufacturing: 623 fewer jobs between 2011-16, 136 additional jobs between 2016-21.

Manufacturing; Wholesale Trade; and Transport, Postal and Warehousing are major demand drivers of land in employment and industrial precincts. Growing these industries would help support demand for employment land and diversified economic growth in the Region. This would occur through jobs in these industrial and logistics-related industries growing alongside the service-oriented top five growth industries identified above.

Some industries that have declined in the region, such as Professional, Scientific and Technical Services and Rental, Hiring and Real Estate Services, also reflect trends observed across regional NSW. It may be a challenge for the Region to develop knowledge-related industries, which should be considered for the types of employment land that may be delivered.

Table 4: Resident employment by industry, Region

Industry	Region			Net Change		Share 2021 (%)
	2011	2016	2021	2016-21	2011-21	
Agriculture, Forestry and Fishing	2,581	2,462	2,570	108	-11	8.4%
Mining	5,235	4,872	5,184	312	-51	16.9%
Manufacturing	1,971	1,348	1,484	136	-487	4.8%
Electricity, Gas, Water and Waste Services	801	808	733	-75	-68	2.4%
Construction	2,209	1,882	2,304	422	95	7.5%
Wholesale Trade	884	595	766	171	-118	2.5%
Retail Trade	2,486	2,194	2,338	144	-148	7.6%
Accommodation and Food Services	1,904	1,837	1,898	61	-6	6.2%
Transport, Postal and Warehousing	1,057	958	959	1	-98	3.1%
Information Media and Telecommunications	130	142	103	-39	-27	0.3%
Financial and Insurance Services	346	328	332	4	-14	1.1%
Rental, Hiring and Real Estate Services	412	328	312	-16	-100	1.0%
Professional, Scientific and Technical Services	1,164	962	1,055	93	-109	3.4%
Administrative and Support Services	838	1,009	1,258	249	420	4.1%
Public Administration and Safety	1,525	1,728	1,651	-77	126	5.4%
Education and Training	1,618	1,799	2,035	236	417	6.6%
Health Care and Social Assistance	2,120	2,270	2,864	594	744	9.3%
Arts and Recreation Services	254	264	364	100	110	1.2%
Other Services	1,338	1,143	1,272	129	-66	4.2%
Inadequately described/not stated	726	1,015	1,156	141	430	3.8%
Total	29,599	27,944	30,638	2,694	1,039	100.0%

Source: ABS 2011, 2016, and 2021 Census, TableBuilder

4.1.6 Resident location quotient

Location quotient (LQ) is a simple way of calculating the main industries in an area relative to a comparable area. This section uses LQ to compare industries in the Region to all of regional NSW excluding Greater Sydney ("Rest of NSW"). This involves comparing job ratios to generate an LQ number for each industry in the Region, which indicates the prevalence of certain jobs compared to the Rest of NSW.

A brief description of the LQ numbers is below:

- Where LQ is equal 1, the identified industry is as prevalent as in the comparable area
- An LQ greater than 1.2 indicates a significant specialisation of the industry in the study area – indicating possibly a key economic strength. Higher numbers indicate a greater specialisation with anything exceeding 2 being a major specialisation
- An LQ between 0.8 and 1.2 means the industry is broadly similar in importance in the study area compared to the comparison region and could be seen as representative
- An LQ under 0.8 indicates an industry which is more important in the comparable area than the study area and may represent an economic weakness or opportunity for growth.³

From Table 5, we can see that the Region's employed residents possess:

- Major specialisations in the industries of Mining and Electricity, Gas, Water and Waste Services, when compared to the Rest of NSW (excluding Greater Sydney)
- Significant specialisations in the industries of Agriculture, Forestry and Fishing; Wholesale Trade; and Administrative and Support Services
- Economic weaknesses/opportunities for growth in Information Media and Telecommunications; Financial and Insurance Services; Professional, Scientific and Technical Services; Education and Training; and Health Care and Social Assistance
- Similar ratios to the Rest of NSW in all other industries of employment.

Table 5: Resident employment location quotient, Region to Rest of NSW

Industry	Upper Hunter	Rest of NSW	LQ
Agriculture, Forestry and Fishing	5%	3%	1.80
Mining	10%	1%	7.63
Manufacturing	3%	3%	0.95
Electricity, Gas, Water and Waste Services	1%	1%	2.13
Construction	4%	5%	0.88
Wholesale Trade	1%	1%	1.40
Retail Trade	5%	5%	0.89
Accommodation and Food Services	4%	4%	0.91
Transport, Postal and Warehousing	2%	2%	0.93
Information Media and Telecommunications	0%	0%	0.49
Financial and Insurance Services	1%	1%	0.62
Rental, Hiring and Real Estate Services	1%	1%	0.89
Professional, Scientific and Technical Services	2%	3%	0.77
Administrative and Support Services	2%	2%	1.41
Public Administration and Safety	3%	4%	0.82
Education and Training	4%	5%	0.79
Health Care and Social Assistance	6%	9%	0.63
Arts and Recreation Services	1%	1%	1.07
Other Services	2%	2%	1.20

³ Profile.id

Source: ABS 2021, TableBuilder, HillPDA

Table LQ key:

Economic Weakness	Neutral	Significant Specialisation	Major Specialisation
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The relative weakness in education and training is of particular concern considering the Upper Hunter Diversification Action Plan considers that education institutions will be critical drivers for the innovation hubs and precincts that will help diversity the Region economies.

The strength in agriculture, forestry and fishing is more pronounced in the Dungog and Upper Hunter LGAs, whereas mining is particularly pronounced within Singleton and Muswellbrook.

4.1.7 Where residents work and self-containment rate

Most residents in the region also work in the region. The self-containment rate refers to the portion of residents working in the LGA. For the Upper Hunter Region, it is 81% (24,593) of the 30,500 employed residents, indicated in Table 6. A further 12 per cent of employed Region residents worked within the surrounding Hunter Region; mostly Dungog and Singleton residents who commute to Maitland and Newcastle for work. This implies that residents have a preference to work within the local area (although this has declined slightly between 2016 and 2021). Therefore, population growth would need to be accompanied by employment growth in the region. Due to this, there must be sufficient supply of employment land in centres and precincts to attract jobs to the region.

Table 6: Region employment self-containment rate (2021)

Location	2016	%	2021	%
Live and work in the area	22,638	82.1%	24583	80.2%
Live in the area, but work outside	4,927	17.9%	6061	19.8%
Total employed residents in the area	27565	100.0%	30644	100.0%

Source: ABS 2016, TableBuilder; ABS 2021, TableBuilder

The industrial sector (including mining) has the highest self-containment rate (87%), followed by the population serving sector (78%). Simultaneously, the industrial sector employs the largest proportion of Region residents overall. This implies that industrial industries play a comparatively more significant economic role within the Region. Anecdotally, however, we have heard that there are a number of drive-in drive out workers in the LGA who prefer the coastal lifestyle and work within the mining sector.

Table 7: Region employment self-containment rate by BIC (2021)

BIC	Live and work in the area	Live in the area, but work outside	Self-containment rate
Knowledge intensive	3,912	1,072	75%
Health and education	3,606	1,282	74%
Population serving	7,370	2,029	78%
Industrial (including mining and agriculture)	10,126	1,488	87%

BIC defined in Section 4.1.1

Source: ABS 2021, TableBuilder

Health and education and knowledge intensive industries have lower self-containment rates. This possibly reflects the comparative disadvantage in employment in these areas identified in section 4.1.6.

4.2 Employment and economic characteristics

This section refers to people aged 15 years and over working in the Region, regardless of their place of usual residence.

4.2.1 General employment trends

Total jobs in the Upper Hunter Region increased by 5,445 (18%) in the ten years to 2021, reaching 36,183 jobs. The 1.6% compound growth rate achieved in the Region was two thirds the compounded annual growth rate of NSW (excluding Greater Sydney) (2.3%).

The top five industries in the Region in 2021 were:

- Mining: 9,806 jobs (27.1% of employment)
- Agriculture, Forestry and Fishing: 2,648 jobs (7.3% of employment)
- Health Care and Social Assistance: 2,523 jobs (7% of employment)
- Retail Trade: 2,334 jobs (6.5% of employment)
- Construction: 2,219 jobs (6.1% of employment).

Mining jobs increased by 1,821 employees within the region between 2011 and 2021, which means they grew in importance in the region.

The census represents a point in time, during 2016 there were fewer jobs than in 2011 in a number of industries the most significant reductions were in:

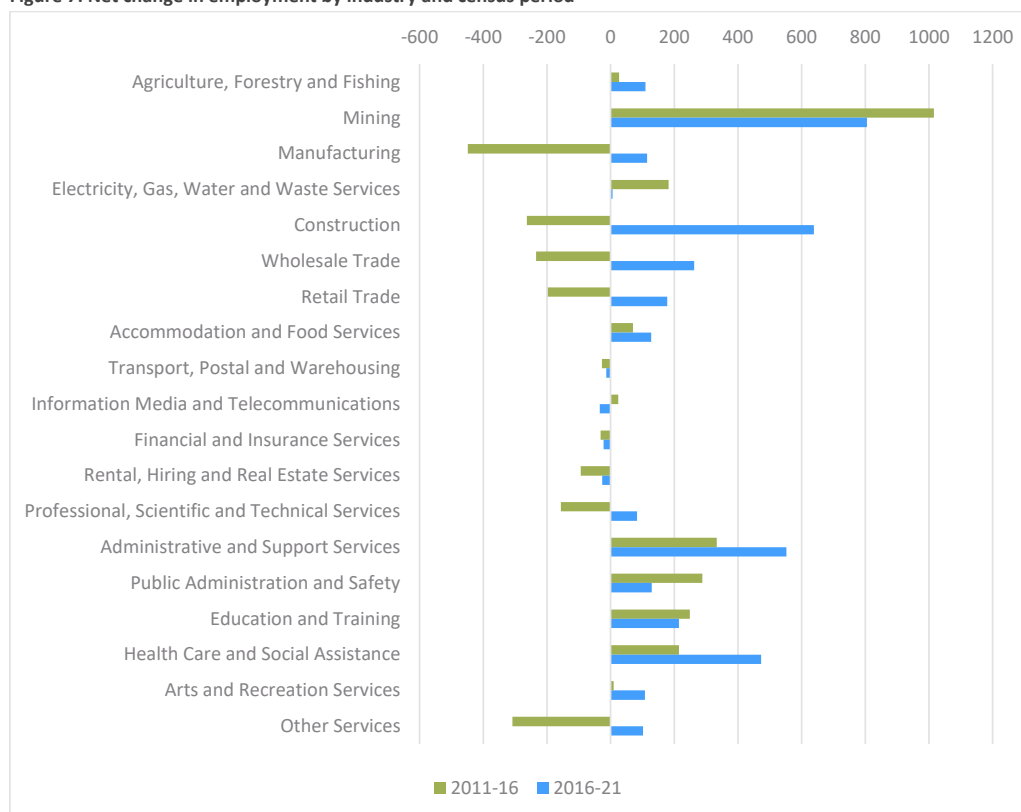
- Manufacturing: 448 fewer jobs
- Other Services: 308 fewer jobs
- Construction: 263 fewer jobs
- Wholesale Trade: 234 fewer jobs
- Retail Trade: 197 fewer jobs.

However, over the 2016-21 period, the same industries recorded the following growth in employment:

- Manufacturing: – 115 additional jobs
- Other Services: 102 additional jobs
- Construction: 639 additional jobs
- Wholesale Trade: 263 additional jobs
- Retail Trade: – 178 additional jobs.

In addition to the above industries, over the 2016-21 period, employment related to Professional, Scientific and Technical Services increased by 83 jobs, where the industry had previously fallen in job numbers between 2011 and 2016.

Figure 7: Net change in employment by industry and census period



Source: 2011, 2016 and 2021 Census, TableBuilder

The largest employment generating sector in the Region in 2021 was industrial BIC (16,951 jobs), followed by population serving industries (9,823 jobs), health and education industries (4,624 jobs), and lastly knowledge intensive industries, with 3,543 jobs. The mining sector makes up the majority of jobs within the industrial BIC, accounting for approximately 9,800 jobs, about the same as the population serving industries.

As seen in the following table, the population serving and industrial BICs significantly increased in employment between 2016-21 (1,707 and 1,286 additional jobs respectively). For the population serving BIC, this helped respond to a 354 reduction in jobs between 2011 and 2016. The health and education BIC also significantly increased between 2016 and 2021 (688 additional jobs).

It must also be noted that the number of jobs inadequately described or not stated significantly increased between the 2011 and 2021 Censuses. This may imply that employment within some job sectors is higher than that identified in the ABS. For example, REMPLAN estimates mining employment to have been at around 10,617 jobs in 2021 in the region. This was 811 jobs, or 8% higher, than the number estimated in the 2021 Census.

Figure 8: Employment by BICs 2011, 2016 and 2021

BIC	2011	2016	2021	2011-16 change	2016-21 change
Knowledge intensive	3382	3413	3543	31	130
Health and education	3472	3936	4624	464	688
Population serving	8470	8116	9823	-354	1707
Industrial	15149	15665	16951	516	1286
Inadequately/not stated	266	1078	1240	812	162

Source: 2011, 2016 and 2021 Census, TableBuilder

4.2.2 Workers' places of residence

People who work in the Region tend to live within the region, although this trend is declining slightly. At the 2021 Census, approximately 36,183 workers were employed in the region, 24,588 of whom (68.0 per cent) were residents. This is compared to 2016, at which time approximately 22,649 workers (or 70.3 per cent) were residents, shown in Table 8.

Table 8: Region workers by place of residence, 2016-21

Location	2016	%	2021	%
Live and work in the area	22,649	70.3%	24,588	68.0%
Work in the area, but live outside	9,564	29.7%	11,595	32.0%
Total workers employed in the area	32,213	100.0%	36,183	100.0%

Source: ABS 2016 and 2021 Censuses, TableBuilder

People who travel from outside the Region to work within it also tend to still reside within the wider Hunter Region. At the 2021 Census, only 1,383 people (or less than 4 per cent of the region's workers) came from other regions of NSW to work in the Region. This means that the implications of employment lands in the Region should also be considered for residents of the Lower Hunter. This is due both to the thousands of workers who commute from the Lower Hunter Region and to the jobs in the Lower Hunter that are reliant upon the Upper Hunter's economy.

4.2.3 Manufacturing employment

Manufacturing is a key occupier and driver of employment precincts. Within the Region, manufacturing employment decreased by around 333 jobs over the last ten years (2011-21). However, over the last five years (2016-21), manufacturing recorded an increase in employment of around 115 jobs. Analysis of industries at the ANZSIC 4-digit level⁴ reveals that over the 2016-21 period, around 40 classes of manufacturing sub-categories increased in employment. The top five of these industry sub-categories, by net employment growth, were:

- Explosive Manufacturing: 59 additional jobs
- Shipbuilding and Repair Services: 38 additional jobs
- Mining and Construction Machinery Manufacturing: 29 additional jobs
- Tyre Manufacturing: 22 additional jobs
- Other Electrical Equipment Manufacturing: 15 additional jobs.

Some of these industry sub-categories, such as Explosive Manufacturing, Mining and Construction Machinery Manufacturing, and Tyre Manufacturing, are closely connected to the mining industry. As such, they are vulnerable to changes in mining trends in the region. This creates a need to assess the different employment land needs of different manufacturing jobs, which is discussed in section 5.2.2.

4.2.4 Transport, postal and warehousing employment

The industry of transport, postal and warehousing is another key driver for industrial land and space. This industry increased over the five-year period to 2021, likely experiencing high demand and rapid growth during the COVID-19 crisis. Industries likely to experience high demand and growth are those in courier pick-up and delivery services, and warehousing and storage services.

⁴ The lowest industry level that the ABS provides and undertakes employment analysis in is four digit.

The top five classes of these industries, by net employment growth between 2016 and 2021, were:

- Other Transport Support Services nec: 43 additional jobs
- Freight Forwarding Services: 24 additional jobs
- Interurban and Rural Bus Transport: 22 additional jobs
- Urban Bus Transport (Including Tramway): 7 additional jobs
- Courier Pick-up and Delivery Services: 4 additional jobs.

4.2.5 Wholesale trade employment

Wholesale trade is another key occupier and driver of industrial lands. Overall employment increased by around 29 jobs over the last ten years (2011-21). However, over the last five years (2016-21), wholesale trade recorded an increase in employment of around 263 jobs. Over the last five years, 15 wholesale sub-industries recorded a growth in employment, the top five classes of growth being:

- Other Specialised Industrial Machinery and Equipment Wholesaling: 170 additional jobs
- Agricultural and Construction Machinery Wholesaling: 94 additional jobs
- Other Machinery and Equipment Wholesaling nec: 18 additional jobs
- Clothing and Footwear Wholesaling: 7 additional jobs
- Computer and Computer Peripheral Wholesaling: 6 additional jobs.

4.2.6 Other services employment

Most industries are categorised within 18 of the 19 ANZSIC 1-digit level industry categories. However, a remaining group of industries are categorised as 'Other services', a population-serving industry category that encapsulates miscellaneous fields of work, divided into repair and maintenance; personal and other services; and household-related industries.

At the 2021 Census, approximately 1,290 people were employed in the Region within the 'other services' industry category. Of these workers, approximately 612 (or 47 per cent) were employed in machinery or equipment repairs. Jobs in the 'other services' industry category increased by approximately 102 over the five years to 2021. The continued growth of these jobs in relation to the Region's expected population growth should be considered.

4.2.7 Industry clustering/specialisations

Industry clustering/specialisations for geographical areas can be understood through location quotient (LQ) analysis. In addition to resident LQ, detailed in section 4.1.6, an analysis of employment location quotient can also be generated for people who work but do not necessarily live within the region.

Compared to the Rest of NSW area, the Region has a major specialisation in the Mining industry with an LQ of 10.75, shown in Figure 9 and Figure 10. This specialisation is focused on the Muswellbrook and Singleton LGAs, which have respective LQs of 12.73 and 14.20 in mining. By contrast, Upper Hunter and Dungog LGAs do not benefit from mining, with LQs of 0.21 and 0.31, respectively. The region also has a secondary major specialisation in the Electricity, Gas, Water and Waste Services industry, which is predominantly concentrated in the Muswellbrook LGA (LQ of 5.92). A significant future challenge for both Singleton and Muswellbrook LGAs will be to transition away from mining, and for the latter LGA also to transition away from related electricity industries. We note that there are a number of diversification strategies indicated in these LGAs' local planning frameworks.

The Region also has significant specialisations in Administrative and Support Services; Wholesale Trade; and Agriculture, Forestry and Fishing. Agriculture exists as a major specialisation of Upper Hunter and Dungog LGAs, with relevant LQs of 4.12 and 3.13 respectively. This likely demonstrates the globally significant equine industry in the Upper Hunter LGA and the challenges for industrial and urban development in Dungog LGA (within the water catchment). By contrast, Muswellbrook LGA's agricultural industry is on par with the Rest of NSW, with an LQ of 0.93, while agriculture is a relative weakness of the Singleton LGA, with an LQ of 0.50. In the coming years,

there may be a desire for agricultural industries to be maintained in Muswellbrook and developed in Singleton LGA. As Singleton leverages its potential for food and fibre, and significant population growth in the lower Hunter, the Region may need to pivot to become a “food bowl” with continued protection of prime agricultural land.

Figure 9: Employment location quotient, Region to Rest of NSW

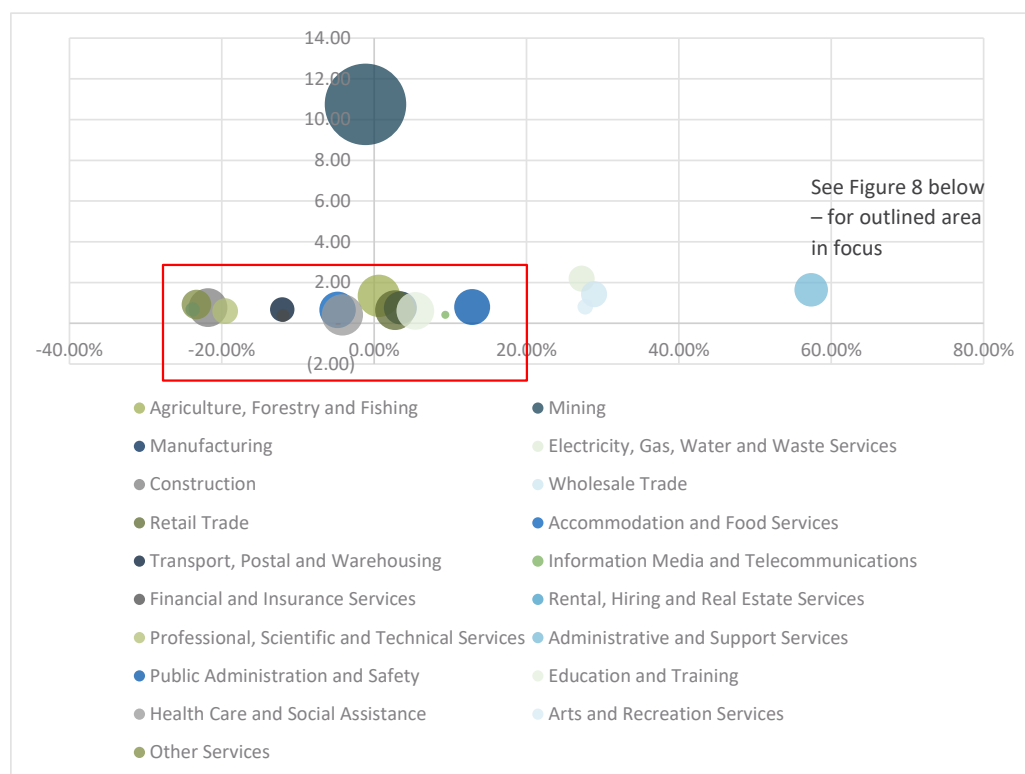
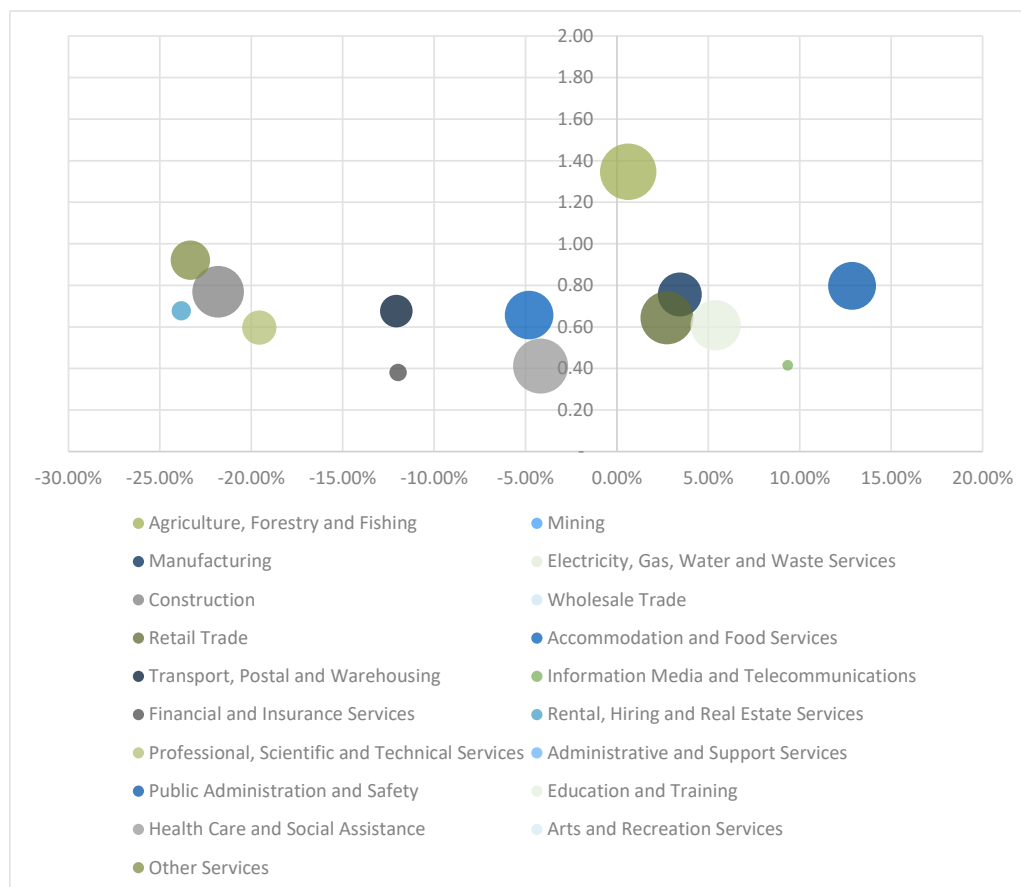


Figure 10: Employment location quotient (lower portion in focus), Region to Rest of NSW



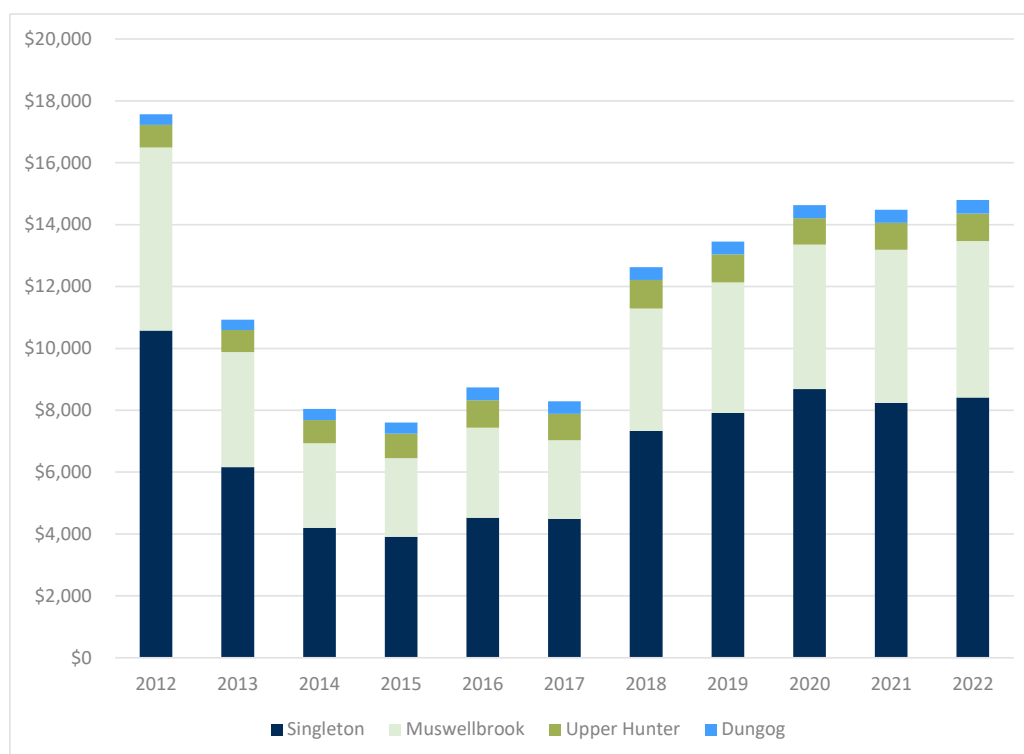
Source: ABS 2011 and 2021 Census, Table Builder, HillPDA

Employment LQ analysis can indicate changes in specialisations over time. In particular, the regional LQ for Administrative and Support Services has increased by 57 per cent between 2011 and 2021. This growth has been the strongest within Muswellbrook LGA, where the industry LQ has increased by 87 per cent. It has also increased by 50 per cent in Singleton LGA, where there are now over 1,000 jobs in the industry, representing a significant specialisation with an LQ of 1.45. This is predominantly due to jobs in Labour Supply Services, which is likely contingent on the mining sector. Other specialisations that grew between 2011 and 2021 include Wholesale Trade; Electricity, Gas, Water and Waste Services; and Arts and Recreation Services, the LQs for which increased by 29 per cent, 27 per cent, and 28 per cent respectively. Meanwhile, LQs declined for industries including Rental, Hiring and Real Estate Services and Construction.

4.2.8 Gross Regional Product (industry)

Gross Regional Product (GRP) is a measure of size or net wealth generated by the local economy. Over a 10-year period from 2012, it is estimated that the real GRP of the Region decreased by 15.7% over the past ten years. This represents the change in the regional export value of coal in Singleton and Muswellbrook LGAs. Meanwhile, the real GRP of Upper Hunter and Dungog LGAs grew by 2.1% and 2.2% on a capitalised annual basis. Figure 11 indicates the region's recent economic dependence on mining, with fluctuations in the GRPs of Muswellbrook and Singleton LGAs having an impact on the region's overall GRP.

Figure 11: Region Real GRP 2012-22 (\$m)



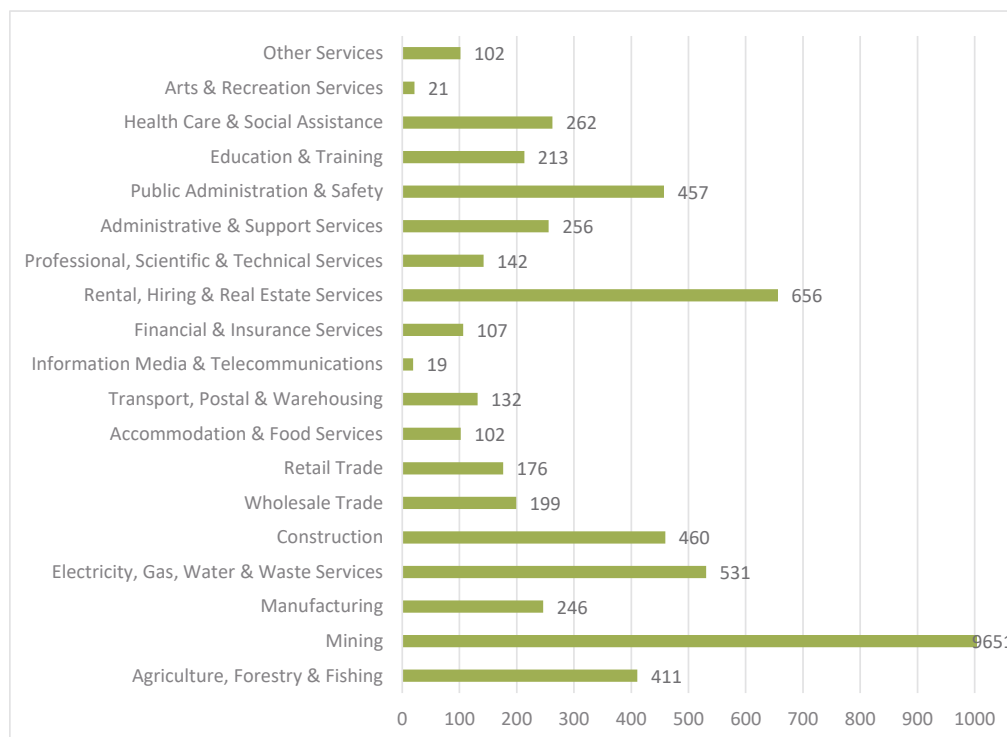
Source: RemPlan and HillPDA

4.2.9 Industry Value Added and worker productivity

The industry value added (IVA) of an industry refers to the value of outputs less the costs of inputs. It measures the contribution that the industry makes to the country's wealth or gross domestic product (GDP). The top five industries by value added in 2020/21 were:

- Mining: \$9,651 million
- Rental, Hiring & Real Estate Services: \$656 million
- Electricity, Gas, Water and Waste Services: \$531 million
- Construction: \$460 million
- Public Administration and Safety: \$457 million.

Figure 12: Industry value added by industry 2020/21 (\$m)



Note: Mining is 9,651 and outside the chart boundary

Source: Remplan

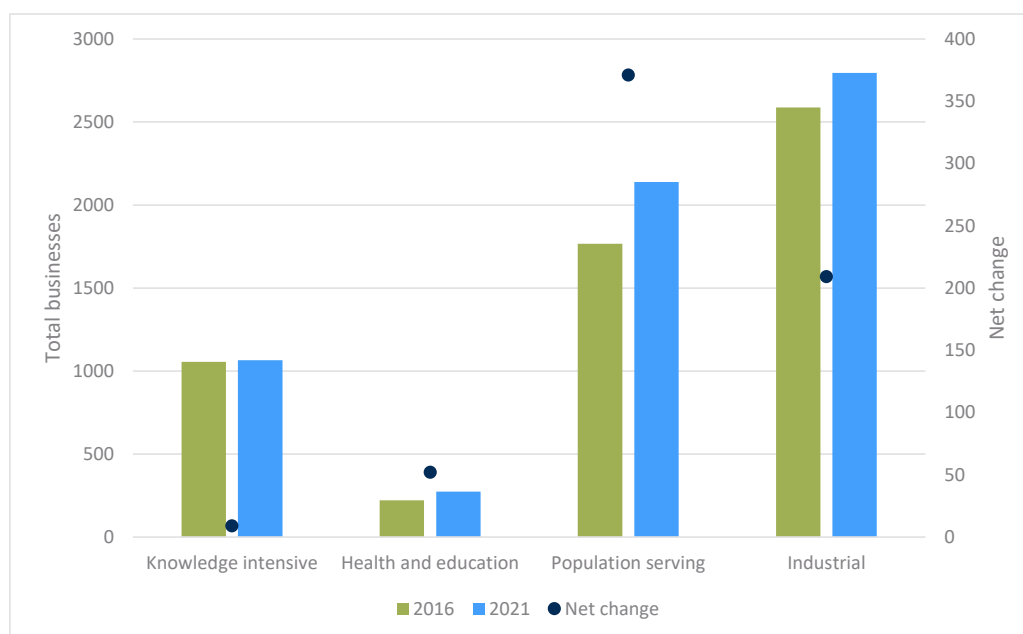
4.2.10 Businesses by industry type

Between 2017 and 2022, the number of businesses operating in the Region increased by 584, or 10%. By June 2022, there were 6,277 registered businesses in the Region. This represented 0.73% of all registered businesses in NSW.

The number of businesses in the Region increased more slowly than NSW. This was evident in the proportion of the NSW businesses registered in Region declining from 0.76% in 2017 to 0.73% by June 2022. The number of businesses, as well as the churn, can be an important indicator of the prevalence of the innovation and entrepreneurial sector within a region.

Over this five-year period, the largest increase in businesses was in the population serving BIC (+371 businesses), followed by industrial businesses (+209), health and education (+52), and lastly knowledge intensive, with 9 additional businesses.

Figure 13: Change in number of businesses across Region, 2017-21



Source: ABS Counts of Australian Businesses, including Entries and Exits

4.3 Projections

This section outlines population and employment projections for the Region for the purposes of projecting employment land demand. Such demand is based on many factors, with different industries having different land needs. On an ongoing basis, the region's employment land supply needs are to be addressed by the Urban Development Program (UDP), which is indicated in Action 1.3 of this report. This will help to ensure an adequate amount of land that provides for the population's employment needs while not unnecessarily compromising other land uses.

Projected populations and workforces have a fundamentally strong bearing on the region's forecasted employment land needs. Two population growth scenarios for the region have been developed and assessed for this Strategy. These scenarios, and the assumptions applied, are detailed below.

The population growth scenarios applied in this Study summarised in Table 9, and are as follows:

- **Scenario 1:** under Scenario 1, the population of the Region is projected to increase from 63,731 people in 2021 to 67,249 people in 2041. This would consist of high growth in Dungog, modest growth in Muswellbrook, and population reductions in Singleton and Upper Hunter Shire
- **Scenario 2:** under Scenario 2, the population of the Region is projected to increase more consistently, based on a combination of the Hunter JO preferred approach and statistics provided by each council. This would result in a population increase to 78,600 people in 2041, with modest growth in Dungog and substantially increased growth in Muswellbrook, Singleton, and Upper Hunter Shires.

Table 9: Population projections for Region Employment Lands Strategy

	Scenario 1 (2041 projection)	Scenario 2 (2041 projection)
Dungog	14,374	10,200
Muswellbrook	17,387	22,700
Singleton	21,315	30,500
Upper Hunter	13,280	16,700

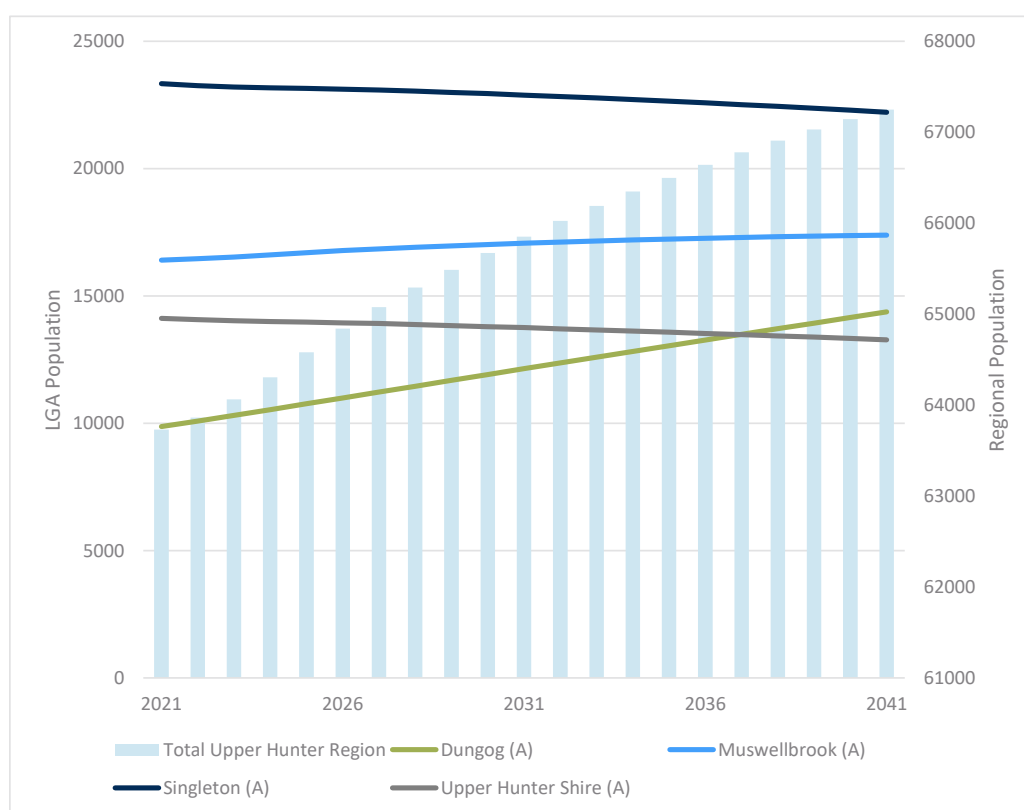
Source: TfNSW, Hunter JO, Singleton Council

4.3.1 Scenario 1 – DPE Population projections

According to the Department of Planning and Environment's *2022 NSW Common Planning Assumption Projections*, the population of the Region is projected to grow by approximately 3,518 people, or 5.5%, to reach 67,249 people in 2041. This would comprise a compound annual growth rate of 0.3%, which is slower than that projected for the entirety of NSW (1.0%).

As shown in Figure 14, the populations of Dungog and Muswellbrook LGAs are expected to grow over the next 20 years, while the rest of the Region is expected to decline in residents.

Figure 14 DPE growth projections for the region



Source: DPE 2022, 2022 NSW Common Planning Assumption Projections

This population growth is projected to result from a combination of natural change and migration.

Table 10 shows the projected population change across the Region between 2022 and 2041, and the proportions of this change as caused by different phenomena. As the table shows, population growth around the region is set to be mostly caused by natural change, with the exception of Dungog LGA. This signifies a forecasted high proportion of births versus deaths in Muswellbrook, Singleton, and Upper Hunter LGAs; but a forecasted high proportion of new residents moving to Dungog LGA.

Table 10 Projected population growth by causal factors in Region, 2022-41

LGA	2041 population	Net natural change, 2022-41	Net migration, 2022-41	Total net population change, 2022-41
Dungog	14,374	+168	+4,335	+4,503
Muswellbrook	17,387	+2,089	-1,107	+982
Singleton	22,211	+2,712	-3,836	-1,124
Upper Hunter Shire	13,276	+429	-1,271	-843
Region Total	67,249	+5,398	-1,880	+3,518

Source: DPE 2022, 2022 NSW Common Planning Assumption Projections

Table 11 summarises DPE's population projections for the Region during the 20 years to 2041. As it shows, the Region is projected to undergo change, with a significant proportion of this change occurring within Dungog LGA, the population of which is expected to grow by 45.6%.

Table 11 Projected population change across Region, 2021-41

LGA	2021	2041	Change 2021-41	% change
Dungog	9,872	14,374	4,503	45.6%
Muswellbrook	16,405	17,387	982	6.0%
Singleton	23,335	22,211	-1,124	-4.8%
Upper Hunter Shire	14,119	13,276	-843	-6.0%
Region Total	63,731	67,249	3,518	5.5%

Source: DPE 2022, 2022 NSW Common Planning Assumption Projections

4.3.2 Scenario 2 – Hybrid Projections

Scenario 2 is informed by a combination of Hunter Joint Organisation and Singleton Council population figures. These include:

Table 12 Hunter JO Population Numbers Update (Council View)

LGA	Medium	High
Dungog	9,800	10,200
Muswellbrook	18,500	22,700
Singleton	28,000	29,000
Upper Hunter Shire	16,000	16,700
Region Total	63,731	67,249

Source: Hunter JO

Singleton Council have also provided their own population projections, which forecast 30,484 residents in 2041, with a low range of 22,504 and a high range of 38,465. This is based on ABS Census data from 1996 and an annual growth rate of 1.2% derived from growth over the last 25 years. This estimate can inform planning for Singleton LGA, with a similar growth rate having since been observed in the ABS's Estimated Residential Population for the LGA.

HillPDA has considered the Hunter JO and DPE projections. Without a detailed briefing on the methodology of the projections, we have adopted the Hunter JO Council View (high) scenario for Dungog, Muswellbrook, and Upper Hunter LGAs. This forms an upper range of population growth, therefore providing a maximum for Muswellbrook and Upper Hunter Shires. For Dungog Shire, we consider that the medium projection represents the status quo. As such, utilising the high growth scenario helps to provide an indication of the impact of potential modest demand increases. For Singleton Shire, HillPDA has adopted the population forecast provided by Singleton Council.

Table 13 shows the Scenario 2 projections adopted by HillPDA in terms of change from the 2021 Estimated Resident Population as reported by the ABS, including compound annual growth rates (CAGR).

Table 13: Scenario 2 population projections by LGA, Region

LGA	2021	2041	2021-41	2021-41 (CAGR)
Dungog	9,525	10,200	675	0.3%
Muswellbrook	16,463	22,700	6,237	1.6%
Singleton	24,719	30,484	5,765	1.1%
Upper Hunter Shire	14,254	16,700	2,446	0.8%
Region Total	64,961	80,084	15,123	1.1%

Source: Hunter JO; Singleton Shire Council; HillPDA

Population growth forecasts for Scenarios 1 and 2 by LGA are indicated in the LGA Profiles section attached to this report.

4.4 Revised employment projections by growth scenario

Employment projections are based on forecasts provided by Transport, Performance and Analytics (TPA), a branch of Transport for NSW. Projections are provided for each industry sector in 5-year increments between 2016-66. Although these projections are based on NSW DPE population projections, some discrepancies have been noted.

TPA employment projections provided an important baseline for future employment growth and are based on observed trends. TPA employment projections have been prorated to the revised population scenarios developed in this study. These form Scenario 1 of the employment projections.

Scenario 2 of the employment projections has been based on the impact of increased employment as a result of determining a working population in the LGA, which was assigned based on the ratio of workers to population in 2021 census, the 2021 and 2041 TPA and DPE projections. In most cases worker containment and attraction was utilised, with the exception of Singleton. The TPA projections saw Singleton have a worker to population ratio containment of 95.4%, which we considered would have reflected a residential declining population and an increasing working population. This means that more people would be commuting to the LGA (in our view, an increasing population would have partially reflected that workers would have chosen to move to the LGA instead of commuting).

Using this methodology, it is estimated that:

- Under Scenario 1 employment across the Region would increase by around 3,658 jobs or 9% over the 20-year period
- Under Scenario 2 employment across the Region would increase by around 7,489 jobs or 18% over the 20-year period.

Additional adjustments were made to the employment forecasts. The TPA projections in relation to Electricity, Gas, Water and Waste Services in Muswellbrook LGA assumed continued growth in the sector from 2021 to 2051 resulting in an additional 362 jobs or 29% growth. This meant that the sector would have had continuous growth without any decline. We considered this would have been unlikely due to the closure of Liddell and Bayswater Power Stations. HillPDA amended the projections so that the growth rate for Muswellbrook aligned with the other LGAs.

Table 14 Net change in jobs under each scenario

Industry	Base Case	Scenario 1		Scenario 2	
		2041	Net Change	2041	Net Change
Agriculture, Forestry and Fishing	3,136	4,416	1,279	4,699	1,562
Mining	10,861	9,168	-1,692	10,009	-852
Manufacturing	1,990	2,448	457	2,720	730
Electricity, Gas, Water and Waste Services	1,464	1,523	59	1,113	-351
Construction	2,647	3,112	465	3,388	741
Wholesale Trade	843	904	61	1,052	210
Retail Trade	2,790	3,288	498	3,597	807
Accommodation and Food Services	2,192	2,628	436	2,886	694
Transport, Postal and Warehousing	1,297	1,340	43	1,516	218
Information Media and Telecommunications	103	105	2	174	71
Financial and Insurance Services	339	496	157	595	256
Rental, Hiring and Real Estate Services	402	544	141	640	238
Professional, Scientific and Technical Services	1,443	1,487	43	1,654	211
Administrative and Support Services	1,622	2,198	577	2,427	805
Public Administration and Safety	2,164	1,665	-498	1,859	-305
Education and Training	2,388	3,078	690	3,327	939
Health Care and Social Assistance	2,654	3,027	373	3,277	623
Arts and Recreation Services	370	523	153	639	268
Other Services	1,557	1,971	414	2,181	623
Total	40,264	43,923	3,658	47,753	7,489

Source: TPA, HillPDA 2023 based on forecasts provided by the councils.

Another important consideration is projections of mining-related employment. The above numbers do not attest to current trends in the energy industry, in which the closure of mines in Muswellbrook and Singleton is likely. Table 15 presents a recent list of mines operating in the Region, by consent expiry dates and average number of employees. If all expiry dates are to be reached without renewal being sought (as is currently the case for large mines including Mount Arthur Mine), 11,363 mining jobs will be lost between 2021 and 2041. While some mines will likely seek renewal, the decrease in mining jobs will likely be larger than what is indicated in

Table 14.

Table 15 List of mines and consent expiry dates at December 2022, Region

Name	Consent expiry	Avg. employees	LGA
Muswellbrook Mine	31/12/2022	151	Muswellbrook
Ashton Mine	31/12/2023	269	Singleton
Mount Arthur Mine	30/06/2026	2,046	Muswellbrook
Mount Pleasant Operations	22/12/2026	496	Muswellbrook
Liddell Mine	31/12/2028	566	Singleton
Mangoola	20/11/2029	380	Muswellbrook
Hunter Valley Operations	24/03/2030	1,679	Singleton
Rixs Creek Mine	31/12/2035	299	Singleton
Camberwell Mine/Integra	31/12/2035	260	Singleton
Mt Thorley Mine	15/02/2037	1,611	Singleton
Mount Owen Mine	31/12/2037	876	Singleton
Bengalla Mine	28/02/2039	704	Muswellbrook
Ravensworth-Narama Mine	31/12/2039	964	Singleton
Wambo Colliery	31/12/2039	232	Singleton
Bulga Mine	31/12/2039	830	Singleton
<i>United Project (proposed)</i>	<i>31/12/2039</i>	<i>514</i>	<i>Singleton</i>

Source: Geoscience Australia; Mining NSW

INDUSTRIAL AND RETAIL TRENDS

5.0 INDUSTRIAL AND RETAIL TRENDS

This section discusses the emerging broader industry trends and their potential implications on employment lands across the Region, with particular consideration of the impacts of new and emergent technologies on employment lands.

5.1 Historical trends

The Region has a long history of contributing to economic development within NSW. After the establishment of coal mining near Newcastle in the early 19th century, mining spread upwards through the Hunter Valley to become established near Muswellbrook in the early 20th century. Over the last 100 years, regional coal mining and associated power generation have contributed to national and international energy markets. Agriculture simultaneously developed throughout the Region during this time, spearheaded by dairy farming in Dungog and thoroughbred horse breeding in the Upper Hunter Shire, the origins for which date back to the early 1800s. All of these industries led eventually to a proliferation of different sectors in the region, contributing to long-term demand for employment lands. However, 21st century trends in energy, agriculture, and other industries are likely to encourage the further diversification of the Upper Hunter's industries, the context for which will be outlined in the following sections.

5.2 Industry diversification

There is opportunity to diversify the Upper Hunter Region economy and allow new industries to emerge. Considering the natural resources and infrastructure that is available in the Upper Hunter Region, as well as the regional strategic context, HillPDA sees the following industries as appropriate to support the diversification:

1. Renewable energy: The region has access to land and infrastructure for renewables now, but after mining operations cease, more land and infrastructure could be repurposed for renewable energy projects, such as wind, solar farms and hydrogen generation, without impacting agricultural production.
2. Agriculture and agribusiness: The area has fertile soil and access to water. It also has a strong history in agriculture which can be revitalised. Investing in emerging industries, new technologies such as hydroponics or vertical farming, and more intensive agriculture practice may boost economic return.
3. Advanced manufacturing: The region has access to skilled workers and advanced manufacturing capabilities due to its mining origin. There are also existing industries that can benefit from technology advancements including defence, agriculture and renewal energy.
4. Transport and logistics: The region has strong road and rail transport infrastructure and strong access to the Port of Newcastle and Newcastle Airport.
5. Eco-tourism: The region's unique natural attractions make it viable for eco-tourism. This could involve promoting outdoor recreation activities such as hiking, fishing, or camping, and investing in infrastructure such as lodges, campsites, and tour companies.
6. Defence: The region has existing defence assets and capabilities. If these are further developed, there may be increased opportunities for employment lands relating to the defence industry.

These industries, their spatial requirements and employment trends are explored in the following sections. The future suitability of land supply is discussed later in the report. As an overview, however, each industry has different sets of spatial requirements. These are briefly noted as follows:

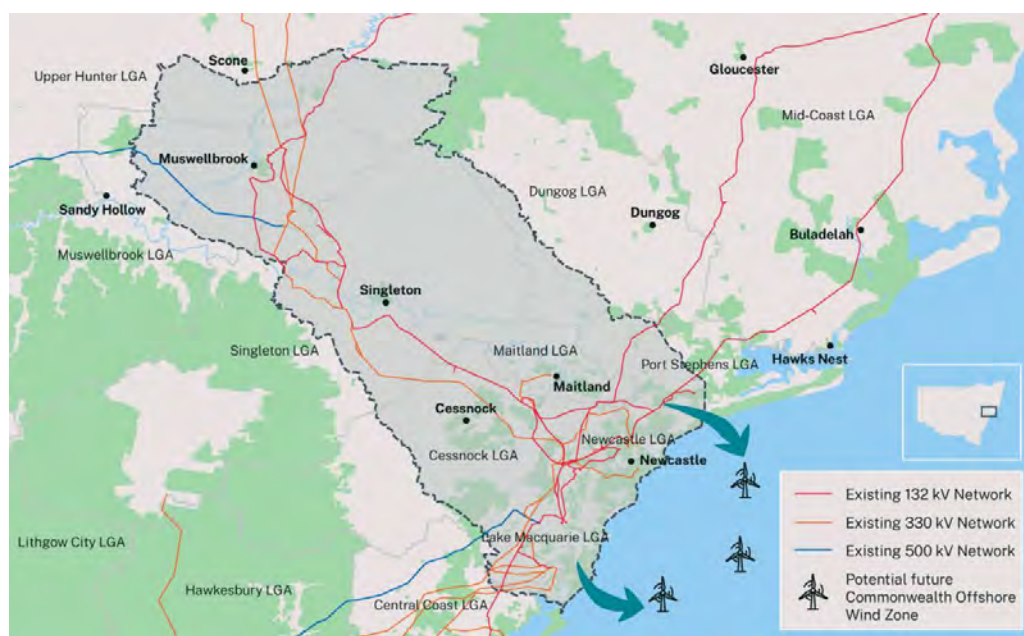
- Renewable energy generation can be carried out on large expanses of land, which do not necessarily comprise employment lands. Some forms of energy may require more concentrated land uses, however, similarly to the 'Heavy industry' land indicated in section 5.9.

- Agriculture often requires large tracts of agricultural land. However, forms of intensive agriculture or agribusiness can take place more intensively, such as food processing carried out in factories
- Advanced manufacturing can occur on a range of employment lands, but larger floorspace requirements are more common, with the increasing use of advanced technologies that require space. The spatial requirements of advanced manufacturing are discussed further in section 5.2.2
- Transport and logistics industries may require varying amounts of floorspace. As discussed in section 5.2.3, warehouses may use between 200 and over 10,000 square metres of floorspace, with distribution centres requiring larger amounts of land
- Eco- and agri-tourism utilises diverse types of land. This could range from large sections of agricultural land to the smaller factories and facilities used for tourist-friendly agribusinesses
- Defence industries often have significant spatial requirements, with military training or weapons storage requiring large amounts of land. However, related manufacturing industries may require a range of comparatively smaller floorspace areas, which are outlined in sections 5.2.2 and 5.9.

5.2.1 Renewable energy

Renewable energy production refers to the process of generating energy from renewable sources that are naturally replenished over time, such as solar, wind, hydro, geothermal, and biomass. The Region falls within the Hunter and Central Coast Renewable Energy Zone (HCC REZ). This is illustrated in Figure 15, with individual LGAs demarcated by grey boundary lines.

Figure 15: Hunter and Central Coast REZ



Source: Energyco.nsw.gov.au/hcc-rez

The majority of pipeline renewable energy developments currently pertain to solar and wind energy. In general, two hectares of land is required to produce 1MWdc of solar power. Approximately 30MW – 50MW of power generation on a solar farm results in 1 direct operational job, noting some of these direct jobs may not be in the local area. This translates to a job density between 100-188ha per job, meaning that on its own, solar cannot provide sufficient jobs to support employment in the region. There are similar trends for wind generation.

Pumped hydro has a much higher job density, at approximately 3-4ha per job, but this is still a sparser concentration of employment than that potentially provided by employment lands.

Solar, wind, hydro, and hydrogen energy, and related battery storage, will be important to support a viable advanced manufacturing industry within the Region by providing access to nearby energy and storage opportunities. On its own, renewable energy does not have the job density to maintain current rates of employment to diversify the economy. The opportunity of the Upper Hunter Region is therefore to form an agglomeration of solar and wind farms that will attract supporting industries and manufacturing. An example of this approach can be seen in the potential Muswellbrook Clean Industries Precinct, in which industrial lands would be located near solar and pumped hydro energy on the former Muswellbrook Coal mine site.

Renewable energy generation in and around the region presents a number of opportunities for different industries, including:

- **Manufacturing:** Driving demand for new manufacturing processes and technologies, such as the production of solar panels, wind turbines, and energy storage systems. This presents an opportunity for manufacturers to create new products and services that support the renewable energy industry.
- **Construction:** Opportunities for construction companies, as new wind and solar projects require the construction of new infrastructure. This includes the installation of wind turbines and solar panels, the construction of energy storage systems, and the development of new transmission lines.
- **Agriculture:** Farmers can lease land for wind or solar farms, providing an additional source of income. In addition, farmers can use renewable energy technologies, such as solar panels or small wind turbines, to generate their own electricity and reduce their energy costs.
- **Transport and logistics:** The renewable energy industry is generating demand to transport the significant infrastructure required to establish the energy generating uses.

As well as supporting the HCC REZ, the Region is uniquely positioned to leverage the major roads and highways that connect to the New England REZ and Central-West Orana REZ. Part of the Upper Hunter Shire LGA also falls within the Central-West Orana REZ, which will connect the Region to further employment opportunities.

Figure 16: NSW Renewable Energy Zone locations



Source: Energyco.nsw.gov.au/hcc-rez

The Region is an ideal location to manufacture energy production and storage components, such as solar panels, wind turbines and batteries, and distribute them to the broader region. Energy generation will be a key enabler for the region, with self-sufficiency and proximity to become important selling points for industry.

5.2.2 Advanced manufacturing

There are several advanced manufacturing trends that are shaping the future of manufacturing from both an employment skills and spatial requirements perspective. Trends include:

- Integrating digital technologies into manufacturing processes including the use of automation, artificial intelligence, the Internet of Things, and other advanced technologies to create connected, intelligent manufacturing ecosystems
- Additive manufacturing processes, also known as 3D printing, which has allowed companies to create complex shapes and design that were previously impossible through traditional manufacturing methods.
- Smart factories that use digital technologies to create highly automated and connected manufacturing environments through the use of integrated sensors and other digital technologies. This has optimised production, reduced downtime and improved quality control
- Sustainable manufacturing which includes the use of renewable energy sources, reducing waste and leveraging circular economy opportunities
- Collaborative robots which perform repetitive or dangerous tasks enhancing safety in processes.

With these trends comes the need to adapt the skillset of the workforce. Advanced manufacturing creates growing demand for:

- Engineers in the fields of mechanical, chemical, electrical, software and materials
- Technicians who install, maintain and repair the machinery and equipment
- Operators who oversee the function of machinery and equipment
- Data analysts who analyse and interpret the vast amounts of data generated and determine operational improvements.

There are synergies between some of the skillsets that would exist among mining employees and mining supply chain contributors and those required to support advanced manufacturing. Upskill programs, run through education institutes and training providers, can assist the transition of the mining based workforce. STEM programs run through schools can also educate students on the alternate career pathways. Muswellbrook Council has recognised this opportunity and has invested in the infrastructure to support the transition of the workforce and create opportunity for new business growth.

The floorspace requirements for advanced manufacturing have also shifted from that required by traditional manufacturing processes. Generally, advanced manufacturing processes require larger floorspace than traditional manufacturing due to the use of automated and advanced technologies that require more space. For example, a small advanced manufacturing facility for producing precision machinery parts might require at least 1,000 to 2,000 square metres of floorspace, while a larger facility for producing high-tech electronics might require 10,000 or more square metres of floorspace. Size will vary depending on several factors such as the specific type of manufacturing process, the size of the equipment and machinery needed, the number of employees working on the manufacturing floor, and the overall production volume.

It is expected that the employment density of these factories will be lower with increased automation, similarly fully internet enabled technology has the potential to be remotely controlled, which emphasises the need for:

- Highly skilled employees in the LGA to maintain the competitive value on site
- Access to internet, data storage and processing facilities.

As traditional mining support businesses transition out of the industrial estates, there are likely opportunities for the existing floorspace to be repurposed for advanced manufacturing uses, identified in actions under Direction 4. There will, however, be shorter term demand for smaller floorspace to support emerging businesses, necessitating sufficient separate employment land.

The advanced manufacturing opportunity is particularly relevant for the LGAs of Singleton and Muswellbrook.

5.2.3 Transport and logistics

Transport and logistics are constantly evolving industries, and there are several trends that are currently shaping the way these industries operate, including:

- The use of automation technology such as robotics, drones, and autonomous vehicles which is leading to more efficient and cost-effective operations, as well as improved safety and reliability.
- A growing focus on sustainability, with companies looking for ways to reduce their carbon footprint and improve their environmental impact. This includes the use of alternative fuels, electric vehicles, and more efficient logistics networks.
- The rise of e-commerce is driving significant growth, with companies needing to deliver goods quickly and efficiently to customers around the world. This has led to the development of new delivery models and technologies, such as same-day delivery and last-mile delivery solutions. This has implication on the demand for floorspace close to population centres.
- The use of big data and analytics to optimize operations, improve customer service, and make more informed decisions about supply chains.
- Global trade which is leading to increased demand for transport and logistics services, as well as new challenges related to cross-border shipping and customs regulations.

The increased use of automation and technology in the transport and logistics sector is creating demand for specialised skills workers including data analysts, robotic engineers and programmers. There will also be less demand for lower skilled jobs such as truck drivers as technology takes over the driving tasks. While e-commerce has generated demand for workers in order fulfillment, warehousing and last mile delivery.

The spatial requirements of the transport and logistics industries has also evolved with increased demand for varied warehousing spaces ranging in size from 200sqm up to over 10,000sqm. Distribution centres that include warehousing, loading docks, fleet storage, office space and ancillary facilities can need well over a hectare of land. Distribution centres can complement both the agriculture and manufacturing sector that are strong or emerging in the Upper Hunter Region.

The expansion of Newcastle Airport as an international airport brings air freight export opportunities. Similarly, the proposed container terminal at the Port of Newcastle would help diversify the Port and provide the Region with import-export access by rail. Scone Aerodrome also provides some air freight access to the north-western portion of the Region.

The Newcastle Institute for Energy and Resources (NIER) states that a key component of the changing energy industry across the Hunter region is set to be the generation, storage, and transport of hydrogen, which would require a strong transport and logistics network, incorporating the Port of Newcastle. In addition to this, the future competitiveness of other regional industries, such as a changing food and agribusiness landscape, is shown to be bolstered by well-developed transport and logistics systems. This supports the opportunity for mining-related areas to be used for logistics hubs, with the possibility for further growth in the transport and logistics industry across the Region.

The location of the Region on major highways and in proximity to the Port of Newcastle and Newcastle Airport creates opportunity for an inland port facility.

5.2.4 Agriculture and agribusiness

There are a variety of opportunities for agribusiness and equine sectors across the Region. Dungog and Upper Hunter LGAs have major agricultural specialisations, thus having strong opportunities in terms of related agribusiness growth. Simultaneously, sustainable industry trends may bring agribusiness benefits to the entirety of the Region.

The *Upper Hunter Economic Diversification Plan* lists various opportunities, advantages, and outcomes for agribusinesses throughout the Region. It states that food demand growth, the relocation of processing plants, and emerging industries such as industrial hemp, protected cropping, and processing plants, are driving agribusiness opportunities for the Region. The region's logistics infrastructure, proximity to markets, and industry clusters are cited as particular advantages, which help to achieve outcomes through new and larger operations, the adoption of circular economy principles, and land availability.

Within the wider region, Upper Hunter LGA is highly significant in terms of equine and related industries, with the LGA containing the second most significant thoroughbred horse breeding area in the world. While equine agriculture is often carried out on large-scale, rural properties, the existence of the Hunter Equine Centre near Scone also provides a potential clustering site for equine-related employment, including in veterinary services. Simultaneously, the cattle industry provides another key opportunity for food manufacturing employment clustering within the LGA. This is supported by cattle being produced across the LGA and subsequently being processed in facilities near Scone. The transferral of agricultural strengths into agribusiness employment can be further facilitated by enhancing the activation of town centres in the Shire, which may foster agribusiness agglomeration.

By contrast, in Dungog LGA, which has relatively strong agricultural employment, beef and dairy cattle industries have been noted as struggling for profitability. As stated in the *Draft Dungog Rural Lands Strategy*, the beef industry supply chain often involves the transportation of cattle from the LGA to be processed in Scone or

Singleton. Dungog LGA's poultry industry is contrastingly more clustered, with hatcheries, growing farms, and processing plants often located in close mutual proximity, but the local cattle industry employs significantly more people. As Dungog's draft Rural Lands Strategy points out, poultry farming has grown to contribute the majority of the LGA's agricultural value and livestock, while cattle farms have amalgamated and increased in size, responding to profitability challenges to take advantage of economies of scale. Agribusiness opportunities within Dungog LGA will depend on the agricultural activities that will be undertaken in the LGA's future. While synergies across the region are important, opportunities for agribusiness are stronger when located near primary agricultural production, such as within the LGA.

More broadly there are likely downstream processing and agri-business supply chain support opportunities, such as food processing, worth further exploring on industrial land—particularly as land prices rise in the main processor area of Newcastle. Supply chain opportunities may also include agri-tourism, discussed in the following section. There are opportunities to foster greater partnership and entrepreneur interest by providing business support programs, promotion and networking opportunities. Driving continued innovation and workforce development through partnerships with education and research institutions would also support this sector.

The pursuit of sustainability may strengthen food production and agribusiness, as well as other related industries in the Region. The Region is identified by NIER as one of three regional “nodes” in which sustainable development and economic diversification may be promoted in this way.

Food production and agribusiness, may be strengthened by a variety of circular economy initiatives, benefited by the use land and products related to mining and renewable energy industries. In particular, co-location and supply chain strengthening in the energy industry is predicted to increase efficiency and competitiveness in food and agribusiness, as well as in manufacturing.

In addition, new opportunities are being identified in the relationship between these industries and a changing energy economy. For instance, the use of lithium battery storage and capacity in meat processing plants may provide competitive advantage and cost savings for food product manufacturing and other industries. Within the sugar production industry, manufacturing processes may be also strengthened from improvements in electricity cogeneration from the burning of sugar cane residue. Current opportunities for food production, agribusiness, and manufacturing show the economic benefits that are to be found in greater economic diversification, as well as mutual ties between different changing industries.

5.2.5 Eco and agri-tourism

Due to the natural assets and beautiful farms in the region, there is significant opportunity to expand the eco-tourism and agri-tourism sectors. Eco-tourism typically involves visiting protected areas, such as national parks or wildlife reserves, and engaging in activities that have a minimal impact on the environment, such as hiking, bird watching, or wildlife observation. Agri-tourism typically involves activities such as farm tours, pick-your-own produce, farm-to-table meals, wine tastings, and agricultural education. The Upper Hunter LGA, Singleton LGA and Dungog LGA are well positioned to expand their regional offering.

The COVID-19 pandemic saw a growing demand for local tourism opportunities, with more people travelling regionally to visit small villages, explore natural assets and experience farming. This is evidenced by the growing boutique retailing emerging and the expanding interest in mountain biking in Dungog.

There is scope for further expansion of the region's eco- and agri-tourism profile. Strategies such as the Hunter Valley Destination Management Plan 2022 – 2030, which applies to Singleton and Cessnock LGAs, encourage nature-based, outdoor, and sustainable tourism to be developed and promoted within the region. This could be extended to further leverage the natural geography of the entire region. For instance, waterways and lakes, such as Lake Glenbawn and Lake St Clair, could be used to deliver more tourism opportunities. Additional agri-tourism could also be supported across the region, to add a more diverse set of tourism experiences to the Hunter Valley's existing profile of food- and wine-based tourism.

There are several strategies that can be adopted by councils to encourage visitors to the region. For example:

- Work with providers to offer unique and authentic experiences to attract visitors to eco and agritourism destinations. This can include activities such as hiking or cycling events, farm-to-table meals, farm tours, environment or agricultural education, and hands-on experiences like picking your own produce or helping with farm chores.
- Build partnerships with local businesses, farmers, and tourism organizations to promote eco and agritourism destinations and provide visitors with a wider range of experiences.
- Use digital marketing: strategies such as social media and online advertising to reach a wider audience and promote tourism destinations to potential visitors.
- Offer value-added products such as farm-fresh produce, artisanal goods, and locally-made souvenirs to help generate additional revenue for farmers and enhance the overall visitor experience.
- Develop a regional brand, similar to what has been successfully achieved on the Northern Rivers, that celebrates the unique features and products that are produced.

5.2.6 Defence

The Region contains assets and capabilities that support its role in defence and related industries. Singleton Military Area is located approximately 6 kilometres south of Singleton. It contains the Lone Pine Barracks and the Singleton Training Area, which provides initial training for infantry soldiers. Another facility is Myambat, a storage facility near Denman in Muswellbrook LGA. The wider Hunter Region also includes the Williamstown Special Activation Precinct, which seeks to centre a defence and aerospace cluster around the Williamstown Royal Australian Airforce Base and the adjacent Newcastle Airport.

Between these facilities, local industry, and skillsets in the region, there is the capability to extend the role of defence in the Upper Hunter economy. Existing regional assets include aerospace, data, simulation, and space expertise, which have been developed through the University of Newcastle and a variety of private industry organisations. In addition, industries such as mining in the region have experience in remote asset management, which could be applicable to the space industry. These assets could all be applied to develop the regional defence economy, which will generate demand for employment lands for related manufacturing.

Furthermore, global challenges such as shortages in ammunition provide an opportunity for defence-related manufacturing. There would potentially be future synergies between explosives for mining and for munitions.

As outlined in the Hunter Regional Plan, there is a need both to protect existing defence-related land uses and to provide land for defence-related manufacturing. There is also the potential to reuse ex-mining land for defence employment, with the Regional Plan indicating a mine at Bulga near the Singleton Military Area as having potential defence land uses.

5.3 Social media and e-commerce

Social media has created numerous opportunities for e-commerce including generating growth in business start-ups and entrepreneurs. Platforms such as Facebook, Instagram, Twitter, and Pinterest have millions of users who can see products, increase brand visibility and attract more customers.

The barriers to entry for new businesses have been lowered with social media providing a low-cost or free way to market products and reach potential customers. Social media has also facilitated crowdfunding, making it easier for start-ups to raise capital for business ideas. This has made it easier for entrepreneurs to launch new businesses with less upfront capital.

It has also generated an increase in product manufacturing at both a bespoke and commercial scale as businesses test new product and scale up ideas. Creative enterprises and experiential businesses have also surged due to social media with influencers and advertising and able target key markets and generate increased visitation. What this means is that more people are choosing to leave traditional professional and trade roles in pursuit of

new business ventures. In some instances, these ventures give them opportunity to live in regional areas – with unique clusters and location branding then emerging.

The emergence of new businesses and start-ups has increased the demand for:

- Warehouses with scale-up opportunities
- Manufacturing floorspace with scale-up opportunities
- Co-sharing spaces and collaboration spaces (commercial and industrial)
- Transport and logistics services including product packaging and distribution
- Commercial kitchens.

Focusing on e-commerce opportunities means many of these locations and start-ups may not need store front or high-street access to operate. While many businesses will likely still use high streets and cluster with similar businesses, these trends may generate more demand for employment lands that facilitate a diversity of regional start-ups and businesses.

5.4 Circular economy and energy from waste

The circular economy redefines the economy from a linear where resources are produced into consumables and into waste, by looking at how waste can become a resource. This involves innovative recycling and re-use throughout the economy.

The Region already has recycling and composting facilities and is looking at further investment in the circular economy. Existing facilities include Scone Resource Recovery Centre, Muswellbrook Waste & Recycling Facility, Denman Waste Transfer Station, and Dungog Waste Management Facility. One element from the circular economy is energy from waste (EfW), which involves looking at energy production from waste. These are strictly regulated because of air quality and other environmental impacts.

Any development of new energy from waste in NSW is prohibited outside of the four designated areas of Parkes, Richmond Valley, Goulburn-Mulwaree, and Lithgow. However, new areas can be considered with post electricity generation sites and mine sites permitted to be considered. These locational factors for energy from waste are outlined in Figure 17.

Post mine sites in Muswellbrook and Singleton would fulfil all of these requirements, and therefore, it is recommended that should Council wish to pursue EfW opportunities that they write to the EPA to seek a gazetted area for EfW on their mine sites.

Figure 17 Locational factors for energy from waste

The locations should:



Source: Energy from Waste Infrastructure Plan

5.5 Adaptation of mining lands

When mining operations end, it can have a significant impact on the local economy, as well as on the community's social fabric. With the future of coal mining uncertain, the transition of disused mine sites to new employment uses has been an important consideration. The physical features of mine sites may accommodate potential industrial employment, e.g., mine shafts, residue materials, and proximity to infrastructure such as road, rail, and port connections.

Mining lands can be reused in a variety of ways, depending on the specific conditions of the site and the needs of the local government area. Potential economic generating uses include:

- Development of renewable energy sources such as solar, wind, or geothermal power
- Agriculture, horticulture, or forestry, depending on the soil conditions
- Recreational or cultural uses such as hiking trails, bike paths, camping areas, or heritage sites to facilitate tourism
- Industrial or commercial use, such as the development of manufacturing facilities, research and development centres, or business parks
- Residential use, where on lands in appropriate location and there is a need for housing.

The largest prohibitor of future site reuse is the conditions that are placed on site during the approval process. Generally the sites are required to be rehabilitated and restored to prior condition, which generally requires the removal of all infrastructure. An additional barrier can be water licences, which are generally linked to the use on the site. The State Government has been tasked with identifying pathways to unlock mining lands.

Once mines have been closed and relinquished, other challenges of re-using the land remain. These include the question of which developer or organisation will redevelop the land; the need to attract businesses to invest in ex-mine precincts; and the need to overcome water and sewer servicing challenges. However, a range of potential land use opportunities, discussed in the following paragraphs, may encourage the development of ex-mine sites through collaboration between the government and the private sector.

The Australian Government's *Mine Closure: Leading Practice Sustainable Development Program for the Mining Industry* report provides a guideline as to the sustainable closure of mining sites. It details the case study of former coalfields in the Ruhr and Saar valleys in Germany, where employment has been shifted towards logistics, distribution, manufacturing, and food production sectors. In particular, proximity to roads, canals, and railways has provided strong opportunities for industry to develop in particular sites, while the planning of business parks has allowed for industry clustering to occur. As stated in the report, these opportunities were made possible through the provision of infrastructure in the form of offices, commercial real estate, housing, recreational areas, and cultural facilities.

Other opportunities for former mining sites also exist inside the energy industry. For instance, the use of ex-mine shafts for gravity energy storage systems shows the potential reuse of coal mines for the renewable energy sector. This is a program that is set to be studied at a decommissioned coalmine in Cessnock LGA.

NIER carries out work with regard to various new industry opportunities associated with decarbonisation. While barriers of scale exist for businesses in emerging industries, co-location and co-investment are seen to encourage and enable industrial development, with new industries benefiting from clustering together. If this is carried out in specific areas, these industries may also utilise landscape features associated with former resource-related activities. In particular, resource recovery and circular economy principles provide opportunities for the re-use of mining land. Within Muswellbrook LGA, the potential for tailings to be used as a soil additive that supports mine rehabilitation, energy, and biofuel production has been explored, with the potential to create further opportunities for agribusiness on mined land.

If successful adaptation of mining lands is achieved, significantly more employment land stock would be generated in Muswellbrook and Singleton LGAs. The Hunter Regional Plan identifies a set of 20 mines that could together comprise over 6,000ha of additional employment land once decommissioned, excluding buffer lands. This is far in excess of the amount of employment land that will be needed in the next decades. Employment opportunities can be strengthened through clustering and agglomeration; due to this, particular mine sites should be carefully selected for employment opportunities to meet demand and maximise opportunities, with other mines undergoing environmental rehabilitation once decommissioned.

5.5.1 Projected mine closures

As discussed in section 4.3, the mining industry is set to lose jobs and decline in share of employment in the Region from 2021 to 2041. DPE projections forecast losses of approximately 1,400 mining jobs in Singleton LGA and 280 mining jobs in Muswellbrook LGA. However, consultation with Councils has identified that mining jobs in Muswellbrook are likely to decline far more significantly, at approximately 2,500.

There are currently seven mines operating in the Region with consent expiries between 2021 and 2031, and eight with consent expiries between 2031 and 2041. The total employees in these mines number approximately 11,360. We note that many of these mines intend to continue operations.

Four of Muswellbrook LGA's five current mines, constituting a total of approximately 3,070 employees, have consent expiry dates before 2031. Meanwhile, seven of Singleton LGA's 10 mines have consent expiry dates between 2031 and 2041. The consent for Muswellbrook LGA's largest employing mine, Mount Arthur Mine, expires in mid-2026; however, BHP have applied to extend operations until 2030 before ending operations.

Without approved extensions, Muswellbrook would lose most its mines and related jobs before 2031, while Singleton LGA would lose most mines and related jobs between 2031 and 2041. Despite the stated intention of

many companies to seek extensions, it is critical that each Council prepare for post-mining futures, especially to safeguard against policy changes and sudden closures.

Some new mines are also set to be opened, with existing mines also to be renewed. Renewal is currently being sought for two mines within Muswellbrook LGA and one within Singleton LGA, where an additional new mine is also being proposed.

While consents for some of the region's mines last until the end of 2039 and potentially later, planning for mine closure is a long-term process. Consequently, Local Strategic Planning Statements for Muswellbrook and Singleton LGAs, as well as region-wide strategies, identify the need to plan for mine rehabilitation and post-mining land use prior to even commencing mining.

5.5.2 Alternative uses for mining land

The mining sector plays a critical role in the future of the Region. As mines commence closures in the Region, due to supply shortages or corporate decision-making, there is an opportunity to transition the mines into productive employment land, as has been identified by the local community. This would leverage the existing hardstand, structures, and rail loops that exist on mines.

Mining applications identify the post mining landform and uses, for many of the mines in the Region this post mining landform and use relates to a combination of environmental conservation, forestry, and agricultural uses. Any change to the approval final land use will require either a new development consent or a modification to an existing consent from the relevant consent authority under the EP&A Act.⁵

For an applicant to seek a different post mining landform then there would need to be a modification to the consent. Mining industry stakeholders have stated that they are nervous about seeking modifications to the consent, because it opens up the whole consent up to review, which could include 'modernising' conditions. While this may be okay when a mine will continue to operate for a long-time, as it is seeking to wind-down to closure, there is limited appetite to change practices or upgrade standards. This results in nervousness and reluctance to seek a modification for post-mining land-use as it could impact on their current operations, which is the priority of a mining company. Collaborative work between, industry, Councils and DPE will help create the opportunity for post-mining land-uses and landform that include opportunities to leverage existing infrastructure, when it comes time to rezone the land to an Employment Zone or use.

In January 2023, the NSW Government published *Practical guide: post mining land use* to inform approaches to post-mining land use (PMLU). This included discussion of the practical benefits of alternative PMLU's to higher value and employment-generating beneficial uses.

- Large parcels of land
- Variety of landforms that can be repurposed
- Access to good quality water
- Good transport links
- Large volumes of stored water or potential for water storage
- Access to electricity infrastructure
- Access to regional population
- Established water management infrastructure

⁵ [Achieving rehabilitation completion \(sign-off\) \(nsw.gov.au\)](https://www.nsw.gov.au/achieving-rehabilitation-completion)



One key consideration identified by the guide is the physical environment. The guide states that the physical challenges of mines could be overcome if PMLU is considered at the mine design stage, although mining companies have so far been relatively uninvolved in planning PMLU for the purposes of employment land. The guide also states that the community's social needs, the economic feasibility of different options, and legislative requirements are all important in the planning of PMLUs. Achieving the right PMLU requires companies and government agencies to work together in addressing these considerations.

The PMLU focusses on identifying opportunities and recommends mining companies undertake expression of interest processes to identify specific future users. The ability for councils to plan for PMLU is somewhat limited, due to the stronger role of State and Federal Government legislation and policymaking. Councils are best placed to play an advocacy role, expressing the needs of local communities to mining companies and to other branches of government. The actions under Direction 2 of this report establish the ways that Councils in the Region can do so. Council could play an economic development role, facilitating expression of interest potentially on an LGA-wide basis in collaboration with industry and state government.

From an urban development perspective, there is economic risk developing an industrial precinct without potential future users, and therefore, identifying tenants early and understanding the financial contribution that the tenants would be willing to make through rent, and expectations as to built form, would be critical to understanding the viability of industrial transformation. Some stakeholders also spoke about developing industrial land on mining land or carrying out part of the transition early; however, this also presents regulatory risks for the sector. The mining sector is regulated by the *Work Health and Safety (Mines and Petroleum Sites) Regulation 2022*, the requirements of which are stricter than normal WHS requirements due to potential mine dangers. It is not desirable for most other operators to operate under those requirements, with non-mining companies lacking experience in the requirements. A breach in WHS standards on a mine (even if not mining-related) has the potential to compromise the mining licence, particularly if it goes unreported to the regulator.

As a result of these factors, mining operators have not been closely involved in establishing future employment uses for mining lands. There are, however, a range of opportunities being assessed at a policy level to best address the future use of mining lands.

5.5.3 Engagement with mine operators

Successful planning for PMLU can be aided by current mine operators being involved in planning the transition of mining lands. This presents a challenge, as many current operators remain optimistic about the future of mining and intend to maintain operations. Through HillPDA's stakeholder engagement, it has been noted that these operators are not incentivised to become engaged in planning for mine closures and subsequent land uses.

Significant local mine operators such as BHP and AGL have nonetheless become involved in the planning of PMLU, due to the forthcoming closure of mines including Mount Arthur and Muswellbrook Coal. A renewable energies precinct and adjacent industrial lands are currently in a planning stage for the area surrounding Muswellbrook Coal mine. Rehabilitation has also been planned for the Mount Arthur Mine, with BHP suggesting potential nature-based recreation to be facilitated on the site in the future.

The expertise of mining operators in navigating land use policies, finance, and economic strategy will be useful in planning for PMLU. Although risk and uncertainty may discourage mine closure planning at an early stage, engagement and advocacy between Councils, mine operators, and other stakeholders will likely encourage more strategic planning of post-mining lands.

5.6 Clustering opportunities

A 2022 report by the NSW Innovation and Productivity Council, *The Role of Anchors: lessons from international innovation precincts*, discusses the role of industry clusters in achieving private and public outcomes and bolstering local employment. As it states, clusters and precincts can be formed through the work of public or private 'anchor institutions', infrastructure access, and the presence of multiple large firms.

The potential role of 'anchor institutions' has been identified in strategic plans for the Region, including university and TAFE institutions, energy companies, and health institutions, often working together on industry initiatives. As the *Role of Anchors* report states, anchors facilitate new supply chains, investment, and business co-location within regional areas, aiding industries and regions to navigate industry shocks and economic change.

Currently, much of the Region is reliant upon mining, energy, and agricultural companies for employment. Regardless of the future of these industries, the region will likely continually need key infrastructure and industry anchors to achieve its full economic potential beyond mining, energy, and agriculture. The involvement of anchors in processes of mining and power station land transition would particularly aid the development of employment land clusters, as the regional economy undergoes a shift between industries.

Specific clustering opportunities are discussed at an LGA level in the Local Government Area Profiles attached to this report.

5.7 Changes outside the region

The Region comprises the northwest area of the wider Hunter Region, part of which is included in the Six Cities Region of NSW. Industry trends in the Region connect it economically to other nearby areas, which has implications for the planning of employment lands, discussed in the following sections. The decline of mining in the Region may impact other industries in the Hunter Region and the State more broadly.

5.7.1 Regional supply chains

Industries in the Region have supply chain relationships with other areas, particularly the rest of the Hunter Region.

The mining industry generates jobs in related industries in the Lower Hunter. The Port of Newcastle, located at Kooragang, is the world's largest port for exporting coal, which is transported via the Hunter Valley Coal Rail Network from mines in the Region. The port includes general and bulk cargo handling facilities, which generate jobs in the processing and loading of coal. Other related industries that directly surround the port include

materials manufacturing and freight services. The anticipated decline of coal mining in the Region may impact jobs in these industries.

Other coal-related industries in the Lower Hunter Region support mining operations in the Upper Hunter, and are thus somewhat reliant on the mining industry. In particular, the area of Tomago includes machinery and equipment manufacturing and wholesaling facilities that support the mining industry. This includes the companies Komatsu and WesTrac. Jobs relating to mining equipment are at risk of being impacted by industry changes in the Region. However, new opportunities for energy equipment companies may also arise from the needs of renewable energy industries.

This report considers areas for employment within the Region. It is possible that industry changes in the Lower Hunter Region impact demand for employment land in this area. For instance, there may be a greater need for manufacturing or wholesaling employment across the wider Hunter Region or the State, which may lead to greater numbers of people commuting from outside the Region to find work. The following section considers such commuting patterns in light of future industry changes.

5.7.2 Industry change impacts on workers living externally

The Region provides significant employment to residents of the lower Hunter Region. As identified in section 4.2.2, it is common for workers in the Upper Hunter to live externally. As such, projected mining job losses will likely impact employment prospects residents external to the region.

This may contribute to a larger population in the Region, if Lower Hunter residents become employed in alternative Upper Hunter industries and no longer choose to commute as far. However, the inverse may also occur, with Upper Hunter residents moving to seek housing and employment in the Lower Hunter. It is therefore difficult to predict the exact future trends impacted by the relationships between the Upper and Lower Hunter. However, planning for employment land needs should generally acknowledge that the Region provides jobs beyond its own boundaries, whether directly or indirectly, and consider the impacts of employment land planning for people beyond the residents of the Upper Hunter.

5.7.3 Agriculture outside the region

While large-scale industrial market trends are impacting the Hunter Region, the region is also set to be impacted by land use changes occurring elsewhere in NSW, particularly agricultural changes in Greater Sydney.

The Australian Farm Institute's 2020 research report, *Managing farm-related land use conflicts in NSW*, discusses agricultural trends throughout NSW. As it states, development in Greater Sydney has simultaneously intensified agricultural land uses and placed pressure on common forms of agriculture, particularly poultry farms and market gardens, with the result of farmers ceasing to operate in such areas. Continual urban development has also led chicken meat production to become more regionally distributed, with the Hunter Valley containing chicken processing plants. The egg industry, in addition to chicken meat production, has been shown to be a strength of the Hunter region (Hunter and Central Coast Development Corporation & Department of Regional NSW 2021).

Considering the state of urban development in areas such as Greater Sydney and the Lower Hunter, the Region may continue to grow in terms of agribusiness opportunities related to these forms of farming. There is opportunity to increase agribusiness clustering in the region, particularly considering the typically higher land costs closer to Newcastle.

5.8 Development activity

The volume of development applications (DAs) lodged and assessed in the Upper Hunter Region has fluctuated over recent financial years. During the current financial year (2022-23), there were 504 DAs lodged and 370 assessed as of February 2023, according to listings of relevant local developments published by Cordell Connect.

The assessment time for a DA generally differs throughout the Region, between averages of approximately 74 days (Upper Hunter LGA) and 114 days (Dungog LGA).

HillPDA has analysed Cordell Connect data on local and State significant developments to gain an insight into the pipeline for employment-related development, as shown in Table 16.

Table 16 Development pipeline in the Region

	Dungog		Muswellbrook		Singleton		Upper Hunter	
	Value (\$m)	Count	Value (\$m)	Count	Value (\$m)	Count	Value (\$m)	Count
Abandoned	\$0	1	\$6	3	\$44	15	\$194	7
Deferred	\$-	-	\$4	1	\$1	2	\$9	2
No further research to be conducted	\$0	1	\$62	9	\$9	21	\$30	27
Commenced	\$2	2	\$37	6	\$6	4	\$6	5
Possible	\$1	1	\$1,371	19	\$1,193	46	\$2,331	29
Early	\$100	2	\$80	2	\$3	1	\$-	-
Firm	\$1	1	\$480	10	\$27	13	\$29	4

Cordell Connect

The most significant major projects in the region are solar or renewable energy projects. All projects in excess of \$50 million, with the exception of the Muswellbrook Showground conversion (listed as 'no further research to be conducted' in Cordell Connect) are solar and wind farm projects.

The job density of solar projects is unlikely to deliver significant employment outcomes; however, such projects will be an important enabler for the region and the State. This illustrates the significant importance of the REZ for the region's investment pipeline.

Table 17 breaks down the land-uses for projects that have been classified as early, firm, possible, and commenced that are employment related (with a use expected on employment land) and an estimated value in excess of \$100,000. There are a total of 126 projects, of which 67 projects exceed \$1 million, 30 exceed \$5 million, and 17 exceed \$50 million. Projects have been delineated according to categories of development established by Cordell Connect.

Table 17 Development pipeline by land use for projects classified as early, firm possible, commenced projects

Development Type	Dungog		Muswellbrook		Singleton		Upper Hunter	
	(\$m)	Count	(\$m)	Count	(\$m)	Count	(\$m)	Count
Food Processing	\$-	-	\$30.00	1	\$-	-	\$0.20	1
Tourist Accommodation	\$-	-	\$1.10	2	\$6.65	4	\$2.90	3
Entertainment	\$-	-	\$27.00	1	\$11.46	8	\$0.20	1
Industrial	\$-	-	\$44.38	7	\$19.13	10	\$3.10	6
Commercial	\$-	-	\$-	-	\$0.57	1	\$0.80	2
Emergency	\$1.35	1	\$2.31	1	\$1.50	2	\$1.00	1
Heavy Industry	\$-	-	\$-	-	\$-	-	\$-	-
Medical	\$-	-	\$45.00	1	\$-	-	\$0.82	1
Tourist Activity	\$1.08	1	\$1.77	1	\$3.42	1	\$-	-
Light Industry	\$-	-	\$1.47	2	\$11.30	12	\$1.20	6
Infrastructure	\$-	-	\$0.55	1	\$4.44	3	\$0.50	1
Military	\$-	-	\$373.75	3	\$-	-	\$-	-
Transport	\$-	-	\$2.88	2	\$-	-	\$4.70	2
Agriculture	\$-	-	\$33.34	1	\$6.79	6	\$31.50	5
Power Station	\$100.63	3	\$1,762.56	10	\$1,137.64	6	\$2,310.20	3
Retail	\$-	-	\$0.25	1	\$-	-	\$0.75	1

Source: Cordell Connect, HillPDA 2023

LGA-specific data on major project pipelines are provided in the Local Government Profiles attached to this report.

5.9 Lot sizes by industry profile

The table below provides an indication of the typical lot sizes used by different types of employment land. These are based on the typical uses for the type of precinct, and examples of areas from NSW and the region.

Table 18: Lot size of industrial land typology

Employment land type	Indicative lot sizes (sqm)	Example area	Typical uses	Typical zones	New zones
Heavy industry	150,000+	<ul style="list-style-type: none"> Bayswater Power Station, Muswellbrook LGA Port Kembla, Wollongong LGA 	Heavy manufacturing, freight and logistics, resource processing	IN3, SP1	E5 Heavy Industrial, SP1
Large lot industrial	20,000 – 150,000	<ul style="list-style-type: none"> Mount Thorley, Singleton LGA Erskine Park, Penrith LGA 	Manufacturing, logistics	IN1	E4 General industrial
General industrial/productivity support	1,000 – 20,000	<ul style="list-style-type: none"> Industrial Close, Muswellbrook LGA West Gosford, Central Coast LGA 	Trade supplies, automotive, manufacturing, warehousing	IN1, IN2	E4 General industrial E3 Productivity Support
Small lot factoryette	Up to 500 (can be within strata)	<ul style="list-style-type: none"> Alfred Road, Chipping Norton, Liverpool LGA 	Trade supplies, automotive, manufacturing, warehousing	IN1, IN2	E3 Productivity Support
Mixed use commercial and industrial/enterprise corridor	1,000 – 25,000	<ul style="list-style-type: none"> B6 zone near showground site, Muswellbrook LGA B6 zone, Singleton LGA Canterbury Road, Canterbury-Bankstown LGA 	Trade supplies, office, retail, automotive, warehousing	B5	E3 Productivity Support
Business/technology park	5,000 – 25,000	<ul style="list-style-type: none"> Tuggerah, Central Coast LGA [Does not exist in Region] 	Office, research, advanced manufacturing	B7	E3 Productivity Support

Source: HillPDA research 2023

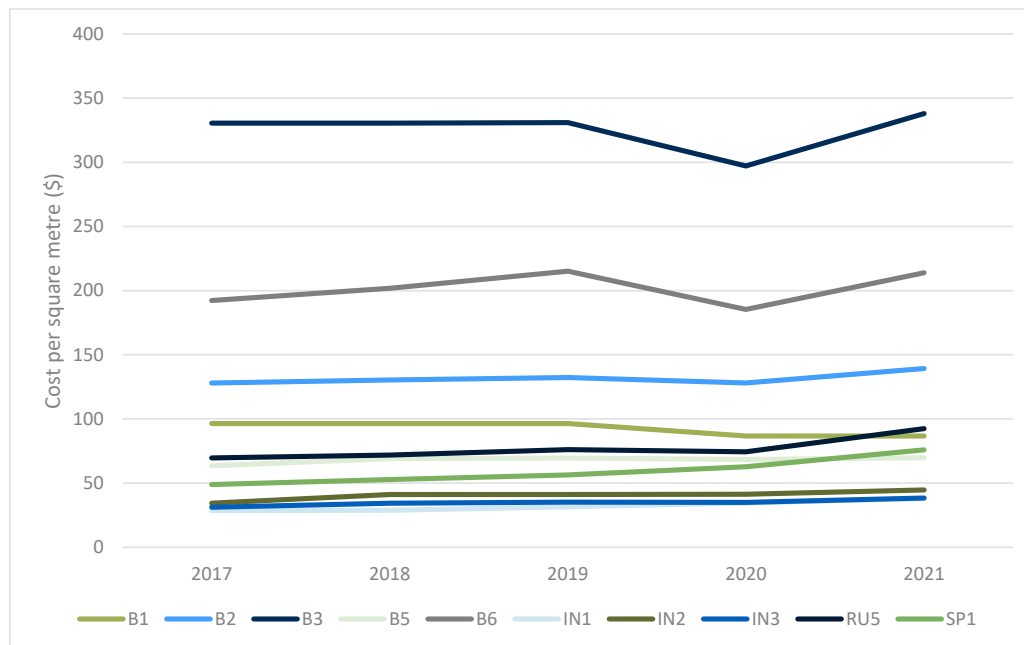
The above categories facilitate different types of employment examined in section 5.2. For instance, freight and logistics can occur across a range of lot sizes, with larger distribution facilities housed in large lot industrial land. Advanced manufacturing, meanwhile, can occur on general industrial/productivity support land, with floorspace requirements ranging from 1,000 to over 10,000 square metres. Advanced manufacturing can also be facilitated by business/technology park land.

The Region's current and future employment land supply needs are considered in sections 6.0 and 7.0 of this report.

5.10 Land value trends

The unimproved land value has increased over time for each of the land use types across the four LGAs. In general, B3 land, which is predominately located in Singleton town centre with larger retailers, is the most valuable. This is followed by B6 land, which also houses established businesses. The remaining land zonings overall have lower values. B2 land has a slight premium over B4 and RU5 land, which reflects the likely advantage of being located in an urban centre within the region. Similarly, we note that there is a premium on IN1 land over IN2 and IN3 land, which reflects the greater flexibility of uses, and likely the smaller lot sizes, allowing for more intensive uses.

Figure 18 Unimproved Capital Land Values



Source: Valuer-General 2023



SUPPLY

6.0 LAND AND FLOORSACE SUPPLY

6.1 Employment land audit

The following section overviews the land characteristics of the existing and proposed employment precincts in the Region. Characteristics include:

- Total land area
- Total land area by zoning
- Status of employment land (developed and vacant)
- Lot sizes (developed and vacant).

HillPDA considered the Employment Land Development Monitor and undertook its own additional land use auditing.

The Audit considered employment zoned land as defined in section 2.2.

6.1.1 Employment Land Development Monitor

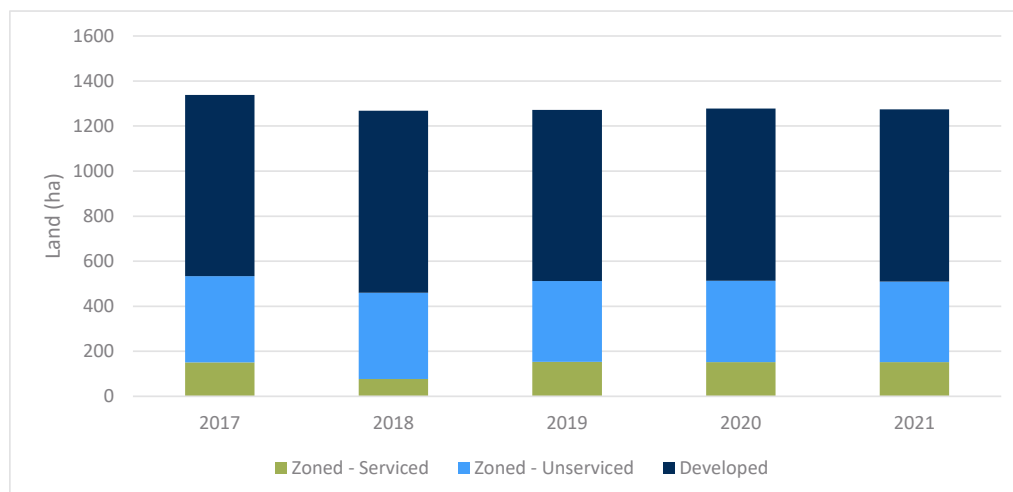
The Employment Lands Development Monitor (ELDM) prepared by the Department of Planning and Environment tracks the amount of Employment Lands in the Hunter, Greater Sydney, Central Coast and Illawarra. The ELDM defines employment land as land having the following zoning:

- IN1 General Industrial (ha)
- IN2 Light Industrial (ha)
- IN3 Heavy Industrial (ha)
- IN4 Working Waterfront (ha)
- B5 Business Development (ha)
- B6 Enterprise Corridor (ha)
- B7 Business Park (ha)

Other land in the region also provides for employment. For instance, agriculture or mining jobs take place on rurally zoned land. However, this Strategy pertains specifically to employment lands as defined in section 2.2, and has utilised the above list of zonings to audit employment land precincts.

The Employment Land Development Monitor has estimated employment land to total 1,274ha in the Upper Hunter Region.

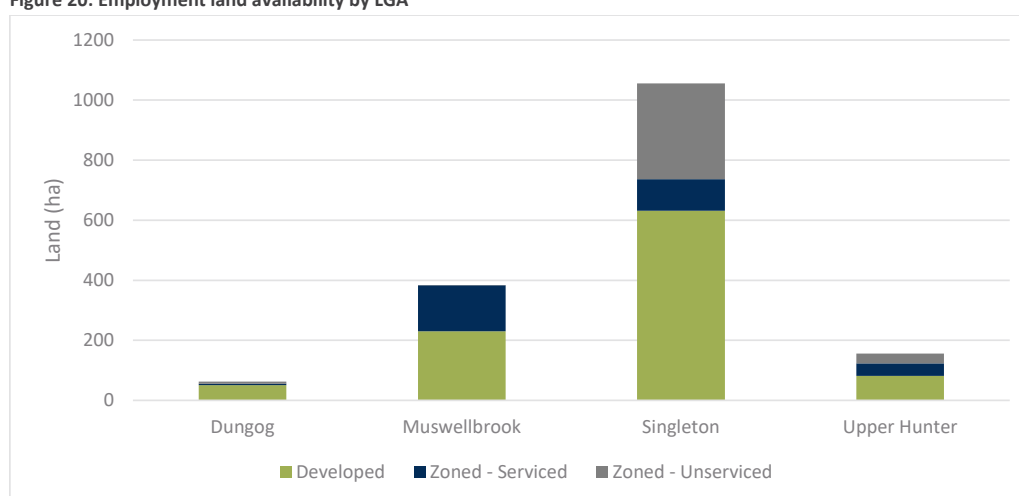
Figure 19: Region Employment Land Availability



Note: The ELDM takes a theoretical approach to servicing, which assumes land is serviced if it is within 30m of a water main or a sewer main. It does not take into account the water, sewer, or electrical capacity of upstream infrastructure, or the ability for the site to be connected to services.

Source: ELDM (2018, 2019, 2020, 2021)

Figure 20: Employment land availability by LGA



Note: The ELDM takes a theoretical approach to servicing, which assumes land is serviced if it is within 30m of a water main or a sewer main. It does not take into account the water, sewer, or electrical capacity of upstream infrastructure, or the ability for the site to be connected to services.

Source: ELDM (2021)

6.1.1.1 Servicing and the ELDM

Servicing refers to the capacity of the site to be connected to sewer, water, power, and telecommunications infrastructure. The ELDM's approach to servicing is limited because it does not necessarily consider electrical, or total network capacity. Instead, Undeveloped and Serviced Employment Lands is defined as land that is currently zoned, undeveloped and located within 30 metres of a water and sewer main. Where there is a sewer main within 30 m for a particular site, it is assumed that water is also available on the site.

While a site might be able to be connected to a sewer system, it does not mean that the sewer system or water system has the upstream capacity to accommodate the connection to the system. In many instances the Council sewer systems are generally at capacity and not designed to process significant quantities of trade waste.

HillPDA undertook initial consultation with Council to better understanding servicing constraints.

- Upper Hunter Shire is highly constrained with 8,000 EF treatment facility currently operating slightly above capacity
- Muswellbrook sewer has limited capacity and would require expansion
- Dungog does not have the capacity for significant industrial waste
- Singleton has mostly un-serviced land, and would require sewer expansion or augmentation.

HillPDA tested the ELDM data against our own land-use audit methodology, which is summarised below to develop a clear picture of Employment Land supply across each of the LGAs.

6.1.2 Land use audit methodology and data sources

The land use audit was informed by the following information sources:

- NSW Department of Planning and Environment (DPE) land use zones
- Department of Spatial Services, SIX Maps Clip and Ship Cadastral layer (property lots)
- MetroMap aerial imagery
- Cordell Connect, development applications.

6.1.2.1 Employment land estimate methodology

To determine the amount of employment land, the following steps were undertaken:

1. Each LGA's cadastral or property lot layers were clipped against NSW DPE land zones
2. Each lot was assigned its corresponding land zone, LGA name and land area (sqm)
3. All land zones except for employment land zonings were excluded
4. Road, laneways and footpaths were excluded, where possible
5. Resulting property lot land areas were assessed at the zone and LGA level.

6.1.2.2 Land status definitions and methodology

To determine the status of Region employment land stocks, the following steps were undertaken:

1. Each individual employment cadastral or property lot was assessed using aerial imagery via MetroMap
2. Each lot was assigned the status of developed or vacant
3. MetroMap was somewhat dated in limited locations (early 2021 satellite images). As such, Cordell Connect was used to overlay recent industrial developments and those currently under construction (post 2021). Where these intersected with any lots identified as vacant, they were changed to a developed status.

Two land use status definitions have been applied in this assessment, these being:

- **Developed:** this refers to employment land stocks which are being used or which are considered to have limited to no capacity to contribute to future development at present. Developed land predominantly was identified by having a pre-existing building (commercial or residential) on the lot. In some cases, developed land includes land which is being used for ancillary operational businesses purposes, including storage. This category also includes railway land which is zoned as employment land. These corridors, if inactive, are too narrow to be used for future supply. We note that this has future growth development as infill development, through knockdown-rebuild or refurbishment. However, this may not significantly increase floorspace, without adding levels.

- **Vacant:** this refers to employment land stocks which are vacant; that is, they do not contain a pre-existing building, have no building under construction, or have limited storage use. This land is available for development. Please note a constraints analysis was not undertaken at this stage.

6.1.3 Existing employment land characteristics

The following section overviews the land characteristics of the existing employment precincts across the Region.

6.1.3.1 Total zoned employment land area by development status and LGA

The land use audit indicates that the Region contains around 1,033 hectares of zoned employment land. The majority (571 hectares or 51% of land stocks) was contained within Singleton, followed by Muswellbrook (238 hectares or 23% of land stocks) and Upper Hunter Shire, with 175 hectares or 17% of land stocks. Dungog Shire had 49 hectares or 5% of employment land.

Of total employment land stocks, 528 hectares, or 51%, was considered developed, with the remaining 505 hectares, or 49%, being vacant.

The following table summarises employment land stocks by area and status for each LGA that comprises the Region.

Table 19: Employment land area by status and LGA (ha)

LGA	Developed	Vacant	Total
Dungog	27	22	49
Muswellbrook	204	34	238
Singleton	189	382	571
Upper Hunter Shire	108	67	175
Total	528	505	1,033

Source: HillPDA 2023

6.1.3.2 Employment land by zone and development status

Total employment land stocks by zone

Of total employment land stocks across the Region, the largest zone was IN3 Heavy Industrial 39% (401 hectares) of total land stocks. The next largest land zonings were:

- IN1 General Industrial which accounted of 23% of land stocks (241 hectares)
- B5 Business Development which accounted of 13% of land stocks (139 hectares)
- B2 Neighbourhood Centre which accounted of 10% of land stocks (106 hectares)
- B6 Enterprise Corridor which accounted of 2% of land stocks (43 hectares)
- B7 Business Park which accounted of 1% of land stocks (23 hectares).

Developed land stocks by zone

Of the 527 hectares of developed employment lands, most land was IN1 zoned, accounting for 34% (178 hectares) of total developed land stocks. The next largest land zonings were:

- B2 which accounted of 19% of developed land stocks (99 hectares)
- IN3 which accounted of 16% of developed land stocks (86 hectares)
- B5 which accounted of 15% of developed land stocks (80 hectares)

Vacant land stocks by zone

Of the 505 hectares of zoned employment land that was vacant, the largest zone was IN3 General Industrial, accounting for 62% (315 hectares) of total vacant land stocks. The next largest land zoning was:

- IN1 which accounted of 12% of vacant land stocks (63 hectares)
- B5 which accounted of 12% of vacant land stocks (59 hectares)
- IN2 which accounted for 8% of total land stocks (41 hectares)

The following table summarises employment land stocks by zone, land area and development status for each LGA that comprises the Region.

Table 20: Region employment land stocks by LGA, zone and land status (ha)

Land status	Land zone	Dungog	Muswellbrook	Singleton	Upper Hunter Shire	Total
Developed	B1	-	-	0.4	-	0.4
	B2	14.9	42.7	-	41.8	99.4
	B3	-	-	8.0	-	8.0
	B4	-	-	16.1	39.4	55.5
	B5	-	10.2	69.8	-	79.9
	B6	-	-	8.8	-	8.8
	IN1	12.0	140.1	-	26.3	178.3
	IN2	-	10.9	-	0.5	11.4
	IN3	-	-	86.2	-	86.2
	Total	26.9	203.8	189.2	108.0	527.9
Vacant	B1	-	-	2.6	-	2.6
	B2	1.5	3.3	-	1.5	6.3
	B3	-	-	0.0	-	0.0
	B4	0.8	0.0	5.4	12.8	18.9
	B5	-	0.0	59.2	-	59.2
	B6	-	-	0.1	-	0.1
	IN1	19.4	26.1	-	17.3	62.8
	IN2	-	4.8	-	35.7	40.5
	IN3	-	-	314.6	-	314.6
	Total	21.7	34.2	381.9	67.3	505.1
Total	B1	-	-	3.0	-	3.0
	B2	16.4	46.0	-	43.3	105.7
	B3	-	-	8.0	-	8.0
	B4	0.8	0.0	21.5	52.2	74.4
	B5	-	10.2	128.9	-	139.1
	B6	-	-	8.9	-	8.9
	IN1	31.3	166.2	-	43.6	241.2
	IN2	-	15.7	-	36.2	51.9
	IN3	-	-	400.8	-	400.8
	Total	48.5	238.0	571.2	175.3	1,033.0

Note: Some of this land includes small parcels or slivers of land that are unlikely to be developable (such as B2 land in Muswellbrook)

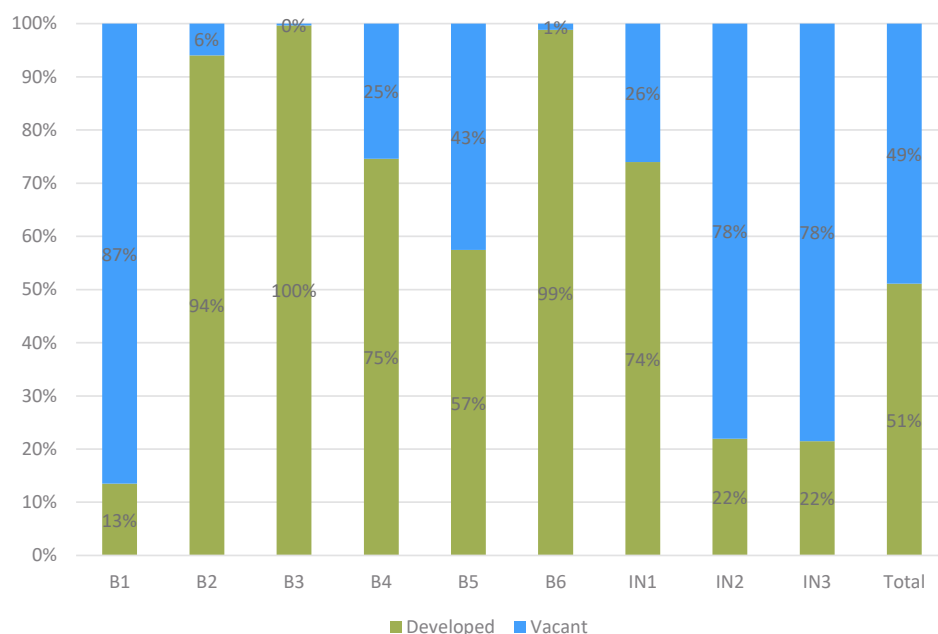
Source: HillPDA 2023

6.1.3.3 Vacant land by individual zone

Figure 21 shows the proportion of land developed versus vacant for each employment zone. It shows that:

- Of the 3 hectares of B1 zoned land 87% (2.6 hectares) was vacant
- Of the 105 hectares of B2 zoned land 6% (6.3 hectares) was vacant.
- Of the 8 hectares of B3 zoned land almost none (0.03 hectares) was vacant.
- Of the 74 hectares of B4 zoned land 25% (19 hectares) was vacant.
- Of the 139 hectares of B5 zoned land 43% (139 hectares) was vacant
- Of the 9 hectares of B6 zoned land 1% (0.1 hectare) was vacant
- Of the 241 hectares of IN1 zoned land 26% (63 hectares) was vacant
- Of the 52 hectares of IN2 zoned land 78% (40 hectares) was vacant
- Of the 400 hectares of IN3 zoned land 78% (315 hectares) was vacant.

Figure 21: Proportion of employment zoned land developed versus vacant by zone



Source: HillPDA 2023

6.1.3.4 Number of lots by size ranges and status

The number of lots by the size and status provides an indication of what lots are in demand and occupied, as well as providing an indication of how ready the lots are for development. For example, lots greater than 5 hectares are likely to need servicing and might require further subdivision. Lots smaller than 500sqm speak to town centre uses and if vacant may not be suitable to a range of uses, and therefore may not provide significant employment land supply.

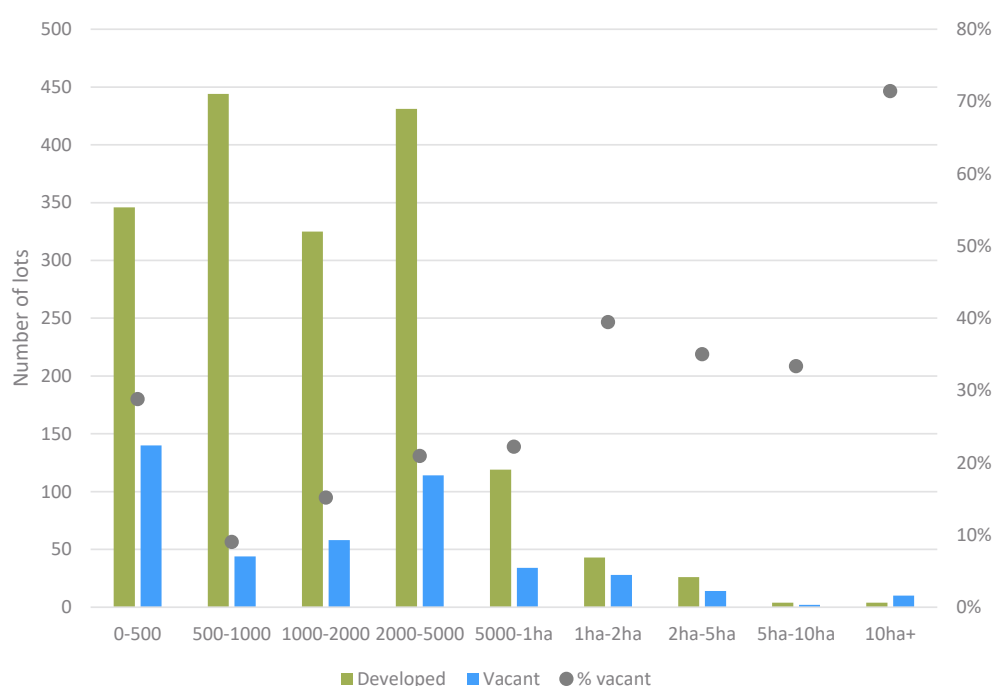
There were an estimated 2,186 zoned employment lots across the Region. Of these, around 1,742 lots, or 80%, were developed, with the remaining 20%, or 440 lots, being vacant.

Of the 2,186 lots, around 87% (1,902 lots) were 5,000sqm and under. The most common lot size range was 2,000-5,000sqm. Lots in this range accounted for 25% of all lots (545 lots).

The number of vacant lots, when expressed as a proportion to the total number of lots within a range, shows that larger lot ranges (1ha and above) generally had a higher proportion of vacant lots than smaller lot ranges. For example, only 44 (or 9%) of the 488 lots ranging in size from 500 to 1,000sqm were vacant, compared to 41% of lots sized 1 hectare and larger being vacant. It should be noted, however, that there was a considerably smaller number of total lots in this latter category, shown in the below figure.

The status of lots indicates potential development readiness. The presence of vacant lots of particular sizes indicates land that may be developed for the various forms of employment-generating activities discussed in sections 5.2 and 5.8.

Figure 22: Number of employment land lots by size range and status



Source: HillPDA 2023

The table below provides the number of lots counted for each size range by its development status.

Table 21: Number of employment land lots by size range and status

Status	0-500	500-1000	1000-2000	2000-5000	5000-1ha	1ha-2ha	2ha-5ha	5ha-10ha	10ha+	Total
Developed	346	444	325	431	119	43	26	4	4	1742
Vacant	140	44	58	114	34	28	14	2	10	444
Total	486	488	383	545	153	71	40	6	14	2186
% of total land stocks	22%	22%	18%	25%	7%	3%	2%	0%	1%	100%
% vacant	29%	9%	15%	21%	22%	39%	35%	33%	71%	20%

Source: HillPDA 2023

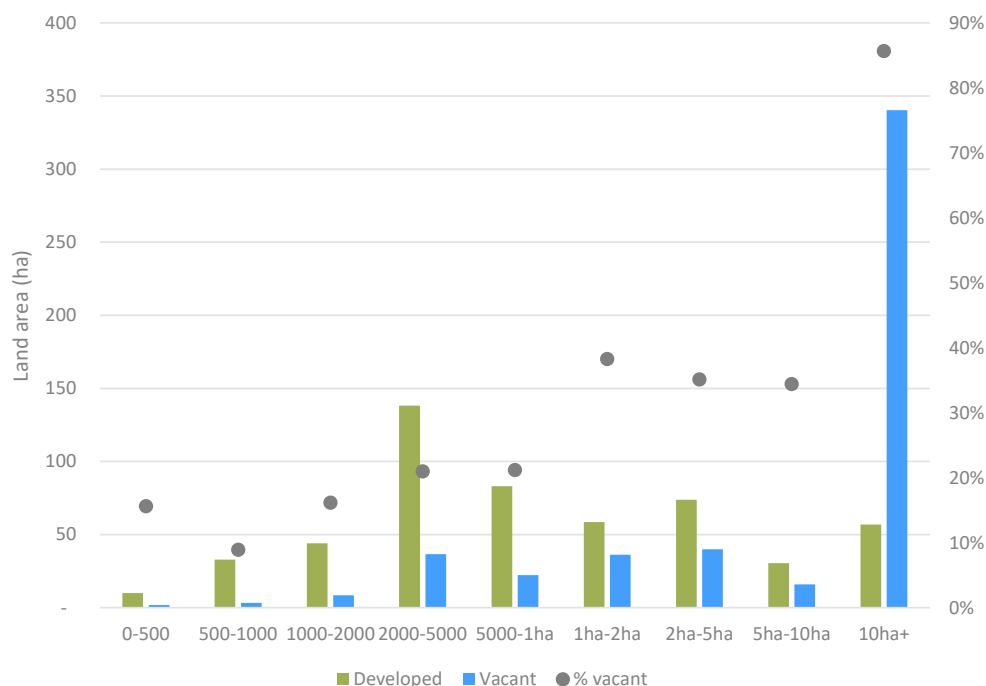
6.1.3.5 Amount of employment zoned land by lot size range and status (ha)

The analysis above showed that 94% of lots were smaller than 1 hectare in size. 652 hectares or 63% of all employment land in the Upper Hunter Region is located on lots larger than one hectare in size.

Although lots within the 2,000-5,000sqm size were the most common lot range (25% of all lots), they only comprised 17% (175 hectares) of employment land stocks. Of this, 22 hectares was vacant.

The amount of vacant land stocks is proportionally higher in the larger lots. For example, of the 505 hectares of vacant land stock, 86% or 433 hectares had a lot size of 1 hectare and over.

Figure 23: Amount of employment zoned land by lot size range (ha)



Source: HillPDA 2023

The table below provides the amount of employment zoned land by lot size range and status.

Table 22: Amount of employment zoned land by lot size range (ha)

Status	0-500	500-1000	1000-2000	2000-5000	5000-1ha	1ha-2ha	2ha-5ha	5ha-10ha	10ha+	Total
Developed	10	33	44	138	83	59	74	30	57	6
Vacant	2	3	8	37	22	36	40	16	340	505
Total	12	36	53	175	105	95	114	46	397	1,033
% vacant	16%	9%	16%	21%	21%	38%	35%	34%	86%	49%

Source: HillPDA 2023

6.2 Floorspace audit

HillPDA completed a floorspace audit of the sites in the LGA. This was focused on land that was zoned for employment uses. Areas that generated jobs outside of zoned land were excluded from the audit. There are 2,729 buildings on employment land in the Region. Approximately, 1,781 buildings were employment generating this means that they were either coded as relating to one of the four BICs, industrial, population serving, knowledge intensive, or health and education.

6.2.1 Methodology

Using the land identified in the employment land audit. HillPDA:

- Utilised building footprint data
- Reviewed each site on google maps or with DA plans to ensure that the correct number of floors for the was utilised
- Assign businesses (or business types) to each building using a combination of ABR data, scraping, and site visits.
- Each building was assigned to one of the four BICs, as well as temporary, residential, and sundries (which referred to items that did not represent floorspace on the site e.g. shipping container, water tanks)
- Review council provided DA information on undeveloped land to determine additional floorspace.
- Utilise the Regional NSW Industry Attraction Mapping tool to identify vacant space for lease in each precinct.

6.2.2 Floorspace by business type

Utilising ABR data and our own audit we have estimated floorspace on the relevant land by business type. There is about 1.17 million square metres of employment floorspace in the Region. Most land is taken up by population serving uses, with retail trade and accommodation and food services taking up land in the centres. However, these are also distributed in centres.

The region provides around 321 thousand square metres of industrial space, with most floorspace centred on Muswellbrook and Singleton. There is limited floorspace identified as vacant in the LGA with most identified in town centres.

Around seven per cent of employment zoned land is taken up with residential dwellings, which predominately occur in the B2 and B4 zones. This creates flexibility in the centres and allows for a mix in uses to ensure that there is occupancy (either residential or commercial) in the centres and helps create the 'high street' and rural feel for the centres, particularly in Dungog and the Upper Hunter Shire, which have the highest proportion of residential dwellings in employment zones.

Table 23 Floorspace by business type

	Dungog	Singleton	Muswellbrook	Upper Hunter	Region Total
Population Serving	28,693	233,739	198,029	76,634	537,096
Knowledge Intensive	9,628	52,076	74,964	13,392	150,060
Industrial	25,839	153,492	114,764	27,057	321,152
Health and Education	1,842	5,505	4,753	6,013	18,113
Vacant	2,273	11,307	7,485	2,433	23,497
Community	4,664	6,937	14,215	3,648	29,464
Residential	17,242	13,103	23,597	31,809	85,750
Temporary	866	2,357	919	362	4,505
Total	91,047	478,516	438,725	161,349	1,169,638

Source HillPDA 2023

6.2.3 Floorspace by zone

The floorspace audit indicates that there is 1,026,421sqm of functional employment generating floorspace that is assigned to each of the four BICs with an additional 17,400sqm of vacant floorspace. Industrial uses account for 40% of the uses in the B5 zone, which is substantially higher than would normally be expected in the zone, reflecting the use of McDougalls Hill as a combined industrial and productivity support zone.

Table 24 Employment generating Floorspace by zone (excludes residential and temporary uses)

Zone	Population Serving	Knowledge Intensive	Industrial	Health and Education	Vacant	Total
B1	1,428	-	-	-	-	1,428
B2	263,273	76,662	14,225	12,608	4,974	371,743
B3	68,543	4,076	-	1,051	1,758	75,427
B4	57,188	15,591	6,175	1,688	7,848	88,491
B5	81,560	19,365	67,371	1,256	-	169,552
B6	28,892	3,638	-	1,509	-	34,039
IN1	25,128	18,018	143,775	-	1,151	188,072
IN2	4,475	3,304	8,003	-	-	15,782
IN3	6,610	9,406	81,602	-	1,701	99,319
Total	537,096	150,060	321,152	18,113	17,432	1,043,853

Source: HillPDA

6.2.4 Site utilisation

The overall average site utilisation refers to the floorspace per developed land area. Overall, it is 0.21 across the region. This is typical of lower density and rural environments, where land is relatively more affordable, so lot sizes can be larger with an allowance for growth, instead of developing additional roads and smaller lots. It reflects the car dependency and suburban nature with of development with many lots having open spaces for parking and storage within the centre zones.

The extremely low site coverage for IN1, IN2 and B5 zones reflects that there has been underutilisation of some lots, as well as many lots serving depot or wrecking yard purposes which are not captured as floorspace. When looking at lots that have a building area of 1,000sqm or more the site utilisation increases to 0.27. This reflects the capacity for additional densification in the employment precincts.

Table 25 Site utilisation

	Average FSR
B1	0.35
B2	0.62
B3	0.64
B4	0.50
B5	0.13
B6	0.89
B7	0.10
IN1	0.07
IN2	0.09
IN3	0.35

Source: HillPDA

Any redevelopment of industrial precincts or sites would require a suitable site for businesses to move to in the interim, a staged approach where the business is able to continue operations, or a business closure. Flexibility to allow densification of use in employment precincts may help alleviate some of the land-use pressures. However, denser uses may require additional infrastructure such as water, waste water, and electricity depending on the use.

6.2.5 Advertised property

HillPDA reviewed property advertised for sale/lease in November 2022. There were 98 properties on the market that could have served an employment lease. 56 were for sale and 42 were advertised for lease. There were also additional vacant properties that were not on the market, as indicated by the floorspace audit. 27 of the properties on the market had been listed for more than 365 days. Indicating that there has been challenges in filling spaces, or the spaces available are not suitable for business expansion. It also reflects the consolidated ownership, which was reported in the stakeholder engagement, whereby industrial release areas have been held with stages released progressively.

6.3 Tourism product audit

HillPDA has completed a Tourism Product Audit within the region. Tourism products were identified using ABR and Yellow Pages data. Tourism as an industry is defined by the status of the consumer; that is, the consumer is a visitor rather than a resident, whereas most industry classification schemes including ANZIC rely on the type of producer. The ABS has developed the Tourism Industry Correspondence that provides an outline of which ANZIC code provides characteristic and connected tourism. In general, tourist-related industries are also population serving industries, forming a broad category that serves both locals and tourists.

Across the Region, tourism accounts for 1,266 jobs across 612 businesses. The predominant tourism sector is accommodation and food services, which incorporates hotels, pubs, and cafes.

Table 26 Tourism Business Count

	Employees	Output \$m	No. Businesses
Dungog	148	26.5 (3.3%)	105
Muswellbrook	303	47.6 (0.5%)	126
Singleton	547	92.8 (0.6%)	212
Upper Hunter	268	43.4 (2.4%)	169

Source: Remplan, Tourism Research Australia

Through our tourism product audit, we considered that there were 383 businesses or services that offered tourism products. While retail provides an important service to tourists and benefits from tourism it was excluded from the tourism product audit. In many cases businesses provided multiple offerings across each of the features.

Table 27 Tourism Product Count

LGA	Attraction	F&B	Accommodation	Tour	Experience
Dungog	15	14	34	1	4
Muswellbrook	18	30	15	0	3
Singleton	46	71	52	0	27
Upper Hunter	13	6	3	7	6

Source: HillPDA

As shown in Table 27, there is a diverse array of tourism products in the Region. However, these are mostly concentrated within Singleton Shire. Together with Cessnock LGA, Singleton forms a part of the Upper Hunter tourism destination, which the NSW Destination Management Plan identifies as a 'hero destination' for the State. Tourism may soon grow across other parts of the Region as well, with the Destination Management Plan identifying Upper Hunter Shire and Dungog Shires as potential future 'hero destinations'.

While the Hunter Valley has food and drink offerings based around wine and luxury experiences, the Region has also sought to differentiate itself on themes focused on 'adventure' and 'country', with a focus on national parks, adventure tourism and agritourism experiences. However, it is reported that access to agriculture can be challenging.

There are very few dedicated tour and experience operators. These businesses can help develop products that attract people to the region. The expansion of these subsets would rely on tourists willing to spend more, access to unique opportunities

With close proximity to Sydney and including Wollemi and Barrington Tops, which exists within the Upper Hunter and Dungog LGAs, there is opportunity to expand the offerings in the region. The Hunter Valley is a short drive from Sydney, with the Region only slightly further.

The key enablers and barriers for tourism in the region are summarised below:

Enablers	Barriers
<ul style="list-style-type: none"> Proximity to Sydney Boutique and Unique Accommodation Scenic Vistas National Parks – Wollemi and Barrington Tops Horses Ability for tourism 	<ul style="list-style-type: none"> Activating built heritage, activating national parks Agriculture is an attractor, but access is difficult (incl equine) Lack Consistent signage Weather dependent tourism Drive through perception F&B diversity and quality Accommodation taken up by mining workers

Communities have a focus on events, but they need to be continued to regularly attract visitors to the region. This could be considered with looking to increase the number of events and duration, along with accommodation capacity could encourage more people to overnight in the region while events are on. The impact of covid-19 on the visitor economy did not come up through the stakeholder consultations, with many not seeing a significant uplift.

The image of the Upper Hunter Region needs to shift from a ‘stop over’ to a strong destination. Dungog has created a destination through its cycling tourism and gateway to national parks. This will be more important for Muswellbrook, Singleton, and Scone as they become bypassed, which will create the need for attractors to bring people to these centres. A clear identity, diverse offerings and high quality accommodation will be critical for the success of the region.

Motel style and pub-based accommodation is predominant in the Region. A lot of the accommodation is targeted toward drive in drive out mining workers. While there are caravan parks, they are dated and focus on transient visitors. The region does not offer the facilities that a major branded ‘holiday parks’ such as NRMA or Ingenia Holidays offer, which would help attract family visitors and encourage longer stays in the region with a higher amenity offering. Either transitioning existing council-owned facilities or identifying new land to a higher quality offering would help lift tourism in the region. This could leverage off the growing tourism profile of areas such as Dungog.

Much of the premium accommodation is located within the wine region in Singleton. However, there are unique accommodation offerings through each of the LGAs. Agritourism enabling planning changes could enable an increase in unique accommodation offerings that target the Sydney market and boost overnight visitation. This could include farm-based accommodation, farm stays, and accommodation on or adjacent to farmland.

Outside of Muswellbrook and Singleton, accommodation is mostly occupied over the weekend period, reflecting the region as a weekend destination from Sydney. It would likely be challenging to draw short-term stays from international tourists without a broader tourism offering. This could potentially through utilising a combination of unique accommodation and creating a global brand for the national parks in the area, leveraging social media in particular. Another opportunity is to engage with Local Aboriginal Land Councils to discuss eco-tourism and cultural opportunities reflecting the Aboriginal heritage of the area. This might help add tourism and experience operators, while supporting Aboriginal economic empowerment in the region.

The agritourism reforms provide an opportunity for even further diversification, without compromising the agricultural purpose of agricultural purposes through farm stays, farm gate premisses allowing boutique produce.



Farm experiences will leverage and build in the 'adventure' aspect of tourism giving tourists the ability to have experiences that may increase the amount spent and the ability for increased diversification of tourism offerings, without compromising primary production and agriculture in the region.

DEMAND

7.0 LAND AND FLOORSPACE DEMAND

The following section projects the amount of additional employment land required to support the Region's resident, worker and visitor communities.

To understand and forecast future demand, this section analyses population projections (detailed in section 4.3) which informs revised employment projections for the Region. Employment projections are then converted into floorspace equivalents and land requirements using standard conversion ratios.

7.1 Industrial and Productivity Support (E3, E4 and E5)

7.1.1 Demand methodology

The methodology for projecting the demand for employment land is as follows:

1. Analyse State Government employment projections (released in November 2022) at the LGA and Region level
2. Pro rata State employment projections to the population scenarios assessed in this study
3. Estimate the amount of employment directed towards employment precincts, based on the industry type, land zonings, and market trends
4. This step is achieved by applying a distribution proportion to the net growth/decline in employment at the industry level. For example, 90% of manufacturing would be expected to be directed towards industrial or productivity precincts, while 10-20% retail to these precincts.
5. Convert net growth in employment directed towards employment precincts to floorspace by applying industry standard employment densities (the amount of floorspace required per worker) to the net growth/decline by industry type
6. Convert floorspace requirements into demand for land by applying typical Floor Space Ratios (FSRs) for developments in employment precincts.

It is important to note that additional floorspace beyond the demand projections could support industry attraction that would further support population growth and accommodation.

It is also important to note that this methodology focuses on net changes in employment land and industry outcomes. Therefore, change in use is likely to be accommodated.

Employment within the mining industry is treated separately in the report, so the change in mining floorspace is not included in the totals. Jobs in other industries, which will likely be needed to replace mining jobs, have been factored into the forecasted employment land demand.

7.1.2 Net employment floorspace requirements 2021-41

Employment is converted into floorspace needs by applying industry standard employment densities (the amount of floorspace required per worker) to the amount of employment directed towards the Region employment precincts in 2021 and 2041. Employment densities for the industries of manufacturing, wholesale and warehousing have considered business practices and technologies that are changing, such as increased automation.

Based on our assumptions it is estimated that between 2021-41:

- Under Scenario 1 employment zones across the Region would accommodate an additional 270,414 sqm of employment floorspace
- Under Scenario 2 employment zones across the Region would accommodate an additional 628,154 sqm of employment floorspace.

Table 28: Region, net additional floorspace demand 2021-41 (sqm)

	2041 (Scenario 1)	2041 (Scenario 2)
Agriculture, Forestry and Fishing	38,374	58,560
Mining	-	-
Manufacturing	41,151	95,120
Electricity, Gas, Water and Waste Services	8,839	12,613
Construction	13,955	32,733
Wholesale Trade	11,593	2,383
Retail Trade	22,432	53,451
Accommodation and Food Services	17,449	34,036
Transport, Postal and Warehousing	7,809	111,966
Information Media and Telecommunications	57	2,294
Financial and Insurance Services	4,711	9,744
Rental, Hiring and Real Estate Services	21,196	48,388
Professional, Scientific and Technical Services	1,303	19,075
Administrative and Support Services	20,187	24,935
Public Administration and Safety	-14,952	-3,462
Education and Training	20,707	34,524
Health Care and Social Assistance	13,044	23,043
Arts and Recreation Services	9,186	15,669
Other Services	33,101	67,028
Total	270,141	628,155

Source: HillPDA

This analysis made adjustments external to the model for electricity, gas, water, and waste services category. The scenario 1 forecasts estimated that the electricity, gas, water and waste services would grow by 54,236sqm with no reduction for the likely closure of Liddell and Bayswater Power Stations. This has been adjusted downward to 4,500sqm increase in net demand for land. However, additional land would also need to be found for replacement jobs from the closure of the power stations. The modelling approach for Scenario 2 treated the growth in Electricity Gas and Wastewater slightly differently and resulted in a 12,613sqm increase.

In relation to mining land, the forecasts estimated a 194,612sqm reduction in demand for land on which mining industry workers are employed. Demand in mining service industries is incorporated into the totals for other industries such as Manufacturing and Wholesale Trade. Within the mining industry, land needs pertain to mines and directly surrounding land, rather than employment lands. Therefore, we have excluded mining from the net demand analysis. Scenario testing for mining related land is included in section 7.1.5.

7.1.3 Net employment land demand 2021-41

Net growth in floorspace is converted into land requirements by applying typical Floor Space Ratios (FSRs) for developments in employment precincts.

Typically, the building areas of industrial developments do not encompass the entirety of the land parcels they reside within. This is a result of the specific site requirements of typical industrial occupiers, which require setbacks from property boundaries, turning areas, parking areas, loading and unloading, etc. In our experience, although employment (industrial) precincts have an allowable typically FSR around 1:1—that is, the amount of floorspace that could be developed is equal to the properties' total land area—the actual built FSR ranges from

between 0.3:1 to 0.6:1. For this assessment, HillPDA has applied a ratio of 0.4:1 to net growth in floorspace demand.

It is also prudent to allow for some level of vacancy and additional capacity. As such, an additional 20% in floorspace demand has been applied.

Using this methodology, it is estimated that the demand for employment land floor space will increase between 50ha and 130ha between 2021 and 2041. This equates to annual demand of between 2.5 and 6.5 hectares over the next 20-year period.

hectares of employment land between 2021-41. This equates to an annual demand of between 9 to 15 hectares over the 20-year period.

Table 29: Total additional employment land demand 2021-41 (ha)

LGA	Scenario 1	Scenario 2
Dungog	9	5
Muswellbrook	23	83
Singleton	30	52
Upper Hunter	17	51

Source: HillPDA

Based on the current development patterns, the above total demand for employment land has been distributed into two broad employment land zones, these being:

1. Businesses zoned land (current B5, B6 and B7 zones), these are to transform into E3 productivity support under the new planning reforms
2. Industrial zoned land (current IN1, IN2, IN4 zones), these are to transform into an E4 general industrial and W4 working waterfront zones under the new planning reforms.

Table 30: Total additional employment land demand by broad zone 2021-41 (ha)

	Business	Industrial	Total
Scenario 1	24	25	49
Scenario 2	62	69	131

Source: HillPDA

7.1.4 Land capacity gap assessment

The employment land development monitor identified 154 hectares of vacant zoned and serviced land available in the Region, of which 51 hectares was for business and 103 was for industrial purposes.

Comparing this to the demand under each scenarios reveals that:

- Under Scenario 1 there is an overall surplus in employment zoned land of around 105 hectares. Business zoned land would have a surplus of around 27 hectares and a surplus of around 78 hectares of industrial zoned land
- Under Scenario 2 there is an overall surplus in employment zoned land of around 23 hectares. Business zoned land would have deficit in supply of around 11 hectares while industrial zoned land would have a surplus of around 34 hectares of industrial zoned land.

Please note that this capacity assessment has not been informed by a constraints analysis. The availability and suitability of vacant land stocks for development would need to be determined. It should also be noted that consulted councils have expressed that land defined by the ELDM as “serviced” may in fact require greater levels of servicing.

Table 31: Employment precinct supply and demand gap assessment (ha)

Category	Scenario	Business	Industrial	Total
Supply (ha) Zoned and Serviced		51	103	154
Demand (ha)	Scenario 1	24	25	49

	Scenario 2	62	69	131
Under (-) / Oversupply (+) – (ha)	Scenario 1	27	78	105
	Scenario 2	-11	34	23

Source: HillPDA

HillPDA has sought to identify the spatial relationship of the difference in floorspace, because different LGAs have different levels of floorspace that is available in the LGA. While the region can provide the overall floorspace on zoned and serviced land, it results in certain LGAs being advantaged for businesses.

Table 32: Employment land gaps analysis

		Dungog	Dungog	Musw.	Musw.	Singleton	Singleton	Up. Hnt.	Up. Hnt.
		Business	Industrial	Business	Industrial	Business	Industrial	Business	Industrial
Supply	Vacant (Audit)	2.3 (B2, B4)	2.36	3.3 (B2)	30.9	59.3 (B5) 5.4 (B4)	314.6	12.8 (B4)	48
	Undeveloped (Serviced)	0	2.6	0	77.6	51.5	0	0	23.2
Demand	Scenario 1	2.32	1.41	9.3	12.7	11.8	7.4	6.0	8.9
	Scenario 2	1.05	0.8	33.8	43.6	22.4	13.4	16.8	25.5
Under (-) / Over Supply (+)	Scenario 1	-2.3	18	-9.3	18.2	47.5	307.2	6.8	39.1
	Scenario 2	-1.05	18.5	-33.8	-12.7	36.9	301.2	-4	22.5

7.1.5 Mining related land

Mining is a significant contributor to the Muswellbrook and Singleton LGA. There are currently between 9,749 (ABS Census) and 11,726 (Council) employed in mining within the LGA. The loss of jobs within the minerals sector will create the need for new jobs in other sectors in the economy, which would take place on a range of land use zones.

The demand for jobs in the mining sector is a driver of population change in the LGAs but is not influenced by changes in population. The key drivers include local coal supply, local policy settings, and global demand for coal.

There are significant uncertainties to the potential industries of employment. We have undertaken a scenario approach to new employment land that would generate employment from a reduction in coal employment. Scenarios:

- Scenario A – 20% reduction in mining related jobs
- Scenario B – 40% reduction in mining related jobs
- Scenario C – 60% reduction in mining related jobs
- Scenario D – 80% reduction in mining related jobs
- Scenario E – 100% reduction in mining related jobs.

We note that the scenarios exceeding a 40 per cent reduction were developed at the request of stakeholders. These scenarios have been modelled to capture degrees of change in mining related employment over the 20-year life of this Strategy, with a 100 per cent reduction in mining related jobs representing an extreme 'worst case' scenario for local employment. However, the mining sector was extremely bullish about the future of mining in the Upper Hunter.

The impact of these scenarios are summarised in the table below and are in addition to the gap analysis mentioned earlier. The land uses are typical job types in the land use zones. Future job types have been projected by analysing trends in non-mining industries forecasted by TfNSW for 2021 to 2041 in Singleton and Muswellbrook LGAs. These forecasts indicate an increase in population serving industries over the following 20 years.

Table 33 Mining replacement land projections across Muswellbrook and Singleton LGAs

	Decline in Jobs	Implied Land Use E1/E2	Implied Land Use E3	Implied Land Use E4	Total Implied Land Use
Scenario A	2,172	5.8	3.4	5.3	14.6
Scenario B	4,344	11.6	6.8	10.7	29.2
Scenario C	6,516	17.4	10.3	16.0	43.7
Scenario D	8,688	23.3	13.7	21.4	58.3
Scenario E	10,861	29.1	17.1	26.7	72.9

Note: This utilises standard job densities to create implied land-use; however, lower job density employment uses would result in a shift in approach.

Utilising this approach, we consider that there are between 14.6 and 72.9ha required across Muswellbrook and Singleton LGAs, assuming the replacement jobs take on a typical mix of future employment uses. Based on differing uses this could be further adjusted. We have not allocated the floorspace to particular LGAs but assume approximately 30% of the land would be required in Muswellbrook and 70% in Singleton based on the share of employment at mines in each LGA aligned with mine employment and consent expiry dates.

These floorspace projections are based on typical job densities in different types of employment lands. Larger areas with lower job densities may also be used for certain manufacturing or agribusiness land uses, but the figures in the above table reflect projected needs for generic quantities of employment land.

Many of the replacement jobs will require more significant parcels of 10ha-100ha in large manufacturing/agribusinesses uses, where the mine sites or power sites, will result in limited conflict with urban areas, while still possessing infrastructure and renewable energy opportunities. This would result in additional land required for the same jobs, undertaking EOI for future uses on post-mining land would help establish these expectations.

7.1.6 Key Findings

- Dungog has a small undersupply of business zoned land, requiring at least 2.4 hectares zoned under the high growth scenario
- Dungog has an oversupply of industrial land; however, this land is not well-located therefore a long-term approach to zoning at least 1.5ha close to Dungog or Clarence Town would be helpful
- Muswellbrook requires B2-zoned land between 9 and 33 ha
- Muswellbrook requires a maximum of 13ha of industrial land. This would be achieved through the conversion of post mining land and the transition of the Liddell Power Station. The key focus would be on employment attraction
- Singleton has 51.5ha of zoned and serviced business land, which could potentially accommodate the demand for both business and industrial land within the LGA
- Upper Hunter Shire has limited business zoned land apart from some B4 land at the entrance to Scone, which might be able to accommodate growth under Scenario 1. Additional land (not zoned for business) around the airport and racing precinct would likely be able to accommodate the remaining employment growth
- Upper Hunter Shire can meet the industrial land demand through its existing undeveloped (serviced) land; however, some of this land is not well-located, such as a small tract of land around Merriwa. Additional land at Scone and Aberdeen would help meet the industrial land demand

- The change in mining related jobs would result in at least an additional 7.3 to 29ha required across Muswellbrook and Singleton LGAs.

7.2 Centre demand (E1, E2)

This section derives trade area(s) for the four main settlements (Town Centres) within the Upper Hunter Region to service the residential community. Settlements examined include Singleton, Muswellbrook, Dungog and Scone. On deriving these trade area(s), the section projects the resident population, estimates total retail expenditure and the amount of retail floorspace that could be supported in these local centres between 2022-41.

7.2.1 Town centres of influence

The key centres within Upper Hunter Region include:

- **Dungog Town Centre:** The town centre is centrally located with retail and commercial services largely fronting Dowling Street (the main street). Total occupied retail floorspace at Dungog is estimated at around 6,500sqm and includes a convenience based retail offering anchored by a Lovey's Grocers IGA plus Liquor of around 1,200sqm and a small format Wholefood Co-op store. The centre includes older style shopfront space and includes a small provision of apparel retailing, around 10 eateries, bottle store, pharmacy, a medical centre and a small provision of other non-food retailers and commercial services.
- **Muswellbrook Town Centre:** provides a substantive commercial and retail offer estimated at around 30,000sqm, with the vast majority of retail provision provided within the enclosed shopping centres being:
 - Muswellbrook Marketplace located just off the New England Highway on Sowerby Street. The retail offer is 11,161sqm GLAR and is anchored by a Big W discount department store (5,557sqm) and Woolworths supermarket (3,337sqm).
 - Muswellbrook Fair located along Rutherford Street provides a further 8,765sqm of retail floorspace and is anchored by a Coles supermarket (3,071sqm) and Harvey Norman bulky goods store (2,032sqm).

Additional strip retailing extends to the north of Muswellbrook Marketplace to Turanville Avenue and south to William Street and along Rutherford Road adjacent to Muswellbrook Fair. This area includes an IGA supermarket and an ALDI food store.
- **Singleton Town Centre:** is the largest commercial and retail centre within the Upper Hunter Region, and provides around 36,000sqm of retail floorspace focused on John Street. Most of the retail space in the centre is provided in Singleton Square with 20,056sqm of retail floorspace and includes a Big W DDS (6,433sqm), Coles (3,921sqm) and Woolworths supermarkets (3,800sqm) as well as 55 specialty retailers. Singleton Plaza provides another 3,500sqm of retail floorspace, including a 2,000sqm Supa IGA, while Singleton Town Square provides a further 2,000sqm. A stand-alone ALDI food store is located on John Street in the CBD.
- **Scone Town Centre:** provides some 16,000sqm of retail floorspace orientated toward Kelly Street. The centre includes a full line Woolworths supermarket and BWS liquor store, a Coles supermarket, a hardware store, and a number of apparel stores and eateries.

In terms of future retail, a 5,000sqm bulky goods centre has been approved in the Upper Hunter LGA at Macqueen Street in Aberdeen. Council has also received development applications for Service Stations and small-

scale developments which include ancillary retail at Scone, Aberdeen and Singleton. However these latter applications are smaller in scale and not likely to compete significantly with the main retail centres.

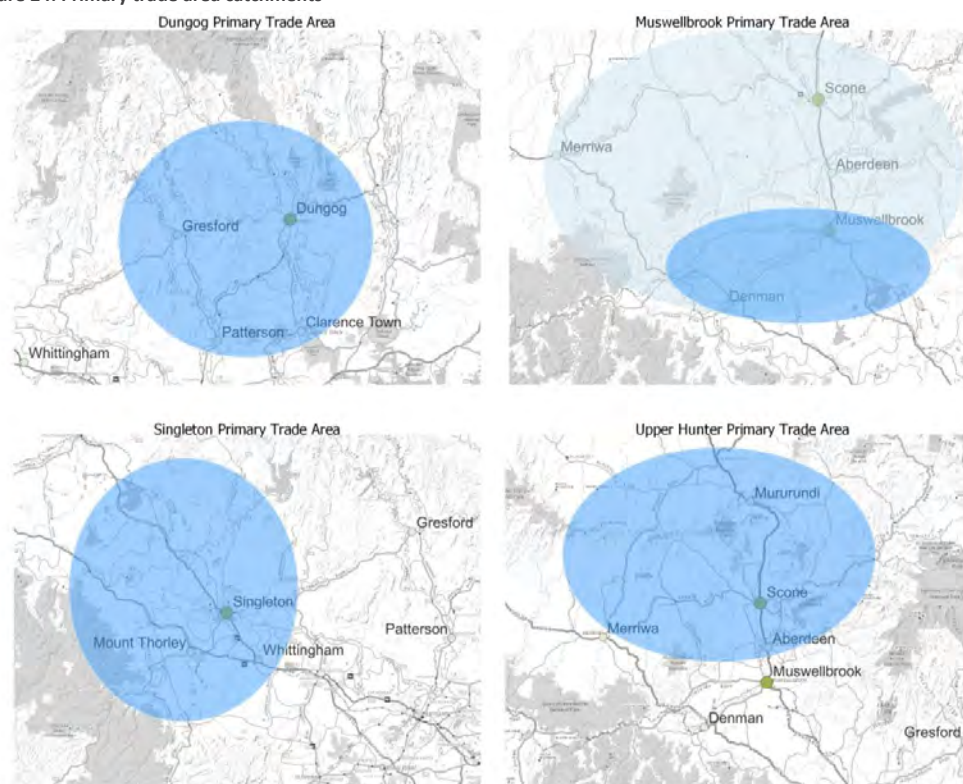
7.2.2 Trade area analysis

Trade areas are used to define the geographic area (catchment) that a centre draws from. A primary trade area (PTA) generally provides around 50 – 75 per cent of a centres business and secondary trade areas (STA) provide around 15 – 25 per cent of business. The two trade areas combined comprise a Main Trade Area (MTA). In some cases, a tertiary trade area could be identified (for instance, capturing less than 15 per cent of expenditure). The remaining is from fringe areas of discretionary visitor spending. Defining trade areas is important for understanding the potential expenditure catchment from which a centre can draw upon and what scale a centre can be. It does not necessarily mean the centre will draw trade away from another centre, particularly if it is located in a secondary trade catchment.

Trade areas have been defined for existing Town Centres within the Region. The trade area for each centre has been defined as the corresponding LGA, except for Muswellbrook Town Centre, where two trade areas have been defined: a PTA which encompasses Muswellbrook LGA, and an STA which encompasses Upper Hunter LGA. Muswellbrook Town Centre is likely to attract trade from residents of Upper Hunter LGA due its stronger offer and proximity. The two trade areas are collectively referred to as Muswellbrook's main trade area (MTA).

The four Town Centres ensure that each LGA is serviced by a functional retail centre that meets the retail needs of the community and promotes a sense of place and is focal point for the community.

Figure 24: Primary trade area catchments



Source: HillPDA 2023

At this point, it is worth noting that there is some escape expenditure to other centres outside the defined trade areas. Raymond Terrace captures a considerable level of expenditure from Dungog residents, and other centres such as Maitland, Kotara and Newcastle capture some expenditure from all four LGAs.

7.2.3 Household expenditure

The expenditure generated by the trade area households was derived using the population projection scenarios as outlined in section 4.3. The table below provides a summary of total expenditure on retail goods and services generated by trade area households. Expenditure is directly related to the number of residents present in each trade area and also correlated with household income levels.

Table 34 Expenditure generated by trade area

Trade Area	DPE Case					LGA Case				
	2022	2026	2031	2036	2041	2022	2026	2031	2036	2041
Dungog MTA	142.7	159.5	182.2	208.0	237.7	140.2	146.4	153.5	160.9	168.7
Muswellbrook PTA	247.0	257.7	271.8	286.8	302.6	250.3	275.5	310.6	350.2	395.1
Muswellbrook STA	208.6	212.5	217.5	222.7	228.1	211.0	225.0	244.0	264.6	287.0
Muswellbrook MTA	455.6	470.2	489.3	509.5	530.7	461.3	500.5	554.5	614.8	682.0
Singleton MTA	348.8	356.2	365.6	375.5	385.7	353.5	380.7	417.8	458.6	503.5
Scone MTA	208.6	212.5	217.5	222.7	228.1	211.0	225.0	244.0	264.6	287.0

Source: ABS Retail Turnover, ABS Household Expenditure Surveys and HillPDA 2023

7.2.4 Potential expenditure captured by Town Centres

Town centre expenditure capture refers to the amount of expenditure that is captured at a given area. A town centre would not be expected to capture all retail expenditure generated in its respective trade area. Competition from other nearby centres (e.g. Maitland and Raymond Terrace) and online retail provide alternatives and offer other brands or retail store types that are not represented in the trade area. The below table provides a summary of the target capture rates for each Town Centre and retail category. These capture rates have been applied to the retail expenditure by store type for each MTA as identified in the table below.

Table 35 Upper Hunter Region capture by town centre and retail store type

Retail category	Dungog	Muswellbrook			Singleton	Scone
	MTA	PTA	STA	MTA	MTA	MTA
Supermarkets & Grocery Stores	65.0%	90.0%	10.0%	53.1%	90.0%	85.0%
Specialty Food Stores	60.0%	90.0%	10.0%	53.3%	90.0%	85.0%
Fast-Food Stores	5.0%	45.0%	35.0%	40.4%	45.0%	30.0%
Restaurants, Hotels and Clubs*	-	45.0%	35.0%	40.4%	45.0%	-
Department Stores	5.0%	35.0%	20.0%	28.2%	40.0%	20.0%
Apparel Stores	20.0%	65.0%	10.0%	40.0%	70.0%	30.0%
Bulky Goods Stores	30.0%	75.0%	15.0%	47.7%	80.0%	60.0%
Other Personal & Household Goods Retailing	50.0%	80.0%	10.0%	48.2%	85.0%	65.0%
Selected Personal Services	34.9%	69.6%	17.0%	45.5%	71.2%	54.4%

Source: HillPDA 2023

Through our stakeholder engagement with local chambers of commerce, we noted that there was frustration among local businesses about containment, with higher paid and skilled workers choosing to live closer to the coast and commuting to the regions, which somewhat compromised the success of the high streets in these regions.

By applying the above capture rates, the below table provides an estimate as to the total amount of retail expenditure potentially captured by the Town Centre within their respective trade area.

It is estimated that retailers in Dungog Town Centre could capture around 35 per cent of the total amount of expenditure generated within its respective MTA. Retailers in Muswellbrook Town Centre could capture 70 per

cent of PTA expenditure and 17 per cent of STA expenditure, while retailers in Singleton and Scone could capture around 71 and 54 per cent of the total amount of expenditure generated within their respective MTAs.

The below details the total potential residential expenditure that could be captured by each Town Centre.

Table 36 Estimated potential residential retail expenditure captured by retailers within Town Centre (\$m)

Town Centre	DPE Case					Council Case				
	2022	2026	2031	2036	2041	2022	2026	2031	2036	2041
Dungog*	52.3	58.9	67.7	77.8	89.5	51.4	54.0	57.0	60.2	63.5
Muswellbrook*	217.7	226.5	238.1	250.4	263.4	220.6	241.8	271.2	304.5	341.9
Singleton**	266.9	273.1	281.1	289.4	298.1	270.5	291.9	321.2	353.5	389.2
Scone*	119.1	122.0	125.6	129.4	133.2	120.5	129.2	140.9	153.7	167.6

Source: HillPDA, *includes an allowance for an additional 5% of expenditure captured from beyond MTA ** includes an allowance for an additional 7.5% of expenditure captured from beyond MTA to reflect its superior offer in the region

7.2.5 Potential tourism expenditure captured by Town Centre

Muswellbrook, Singleton and Upper Hunter LGAs also attract a significant proportion of domestic overnight visitors and to a lesser extent international visitors. Tourism provides a further source of expenditure for these centres. The below table details the potential tourist expenditure that each town centre could capture.

Table 37 Estimated tourist expenditure captured by retailers within Town Centres (\$m)

Town Centre	International visitors (nights)*	Domestic visitors (nights)*	Spend on retail goods and service per visitor night**	Tourism retail goods and service spend potential (\$m)	Tourism retail goods and service spend captured with town centre (\$m)***
Dungog	-	-	\$97	\$20.0	\$10.0
Muswellbrook	-	285,000	\$70	\$20.0	\$10.0
Singleton	114,000	487,000	\$70	\$42.0	\$21.0
Scone	-	284,000	\$70	\$20.0	\$10.0

Note: * Adopts tourism levels as at 2019 to reflect conditions prior to impacts of Covid-19 Source: DestinationNSW 2029 LGA Profiles ** International and National Visitor Survey average 2010-2020 ***Assumes Town Centre captures around 50% of total tourism retail goods and services spend.

Note that Dungog visitor numbers and international visitors to Muswellbrook LGA and Upper Hunter Shire are low and are assumed to be accounted for in the trade from beyond capture in the preceding analysis. Trade from beyond also accounts for any day trippers to the LGA.

Our consultation findings identified that businesses were opting for shorter opening schedules, focusing on a three-to-four-day opening schedule instead of a seven- or five-day schedule, often with shorter trading hours. This has allowed businesses to focus on the later portion of the week and weekend trading to accommodate for tourists. This reflects the cost of operating the business, and focusing on when business and trade will be most profitable.

7.2.6 Total expenditure captured by the Town Centres

The below provides total potential retail sales in each Town Centre generated from trade area residents and tourists/visitors.

Table 38 Estimated total potential retail expenditure captured by retailers within Town Centre (\$m) DPE Case.

Town Centre	2022	2026	2031	2036	2041
Dungog	52.3	58.9	67.7	77.8	89.5
Muswellbrook	227.7	236.5	248.1	260.3	273.3
Singleton	287.9	294.1	302.2	310.5	319.1
Scone	129.1	131.9	135.6	139.3	143.2

Source: HillPDA

7.2.7 Demand for retail floorspace by town centre

In order to determine the demand for retail floorspace within the Town Centre's MTA, target turnover rates (\$/sqm of retail floorspace, and otherwise known as Retail Turnover Densities (RTDs)) have been applied to projected retail expenditure captured in the MTA. These RTD rates broadly represent industry averages.

The table below provides a summary of the potential retail space that could be supported within each of the Town Centre located within the respective LGA, taking to account existing and future supply of retail within the LGA.

Table 39 Potential retail floorspace demand by town centre (sqm)

Town Centre	RTD	Base Case					Council Case				
		2022	2026	2031	2036	2041	2022	2026	2031	2036	2041
Dungog											
Demand	8,361	6,258	7,029	8,069	9,263	10,635	6,151	6,451	6,797	7,162	7,546
Supply	-	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500
Under/over supply	-	242	-529	-1,569	-2,763	-4,135	349	49	-297	-662	-1,046
Muswellbrook											
Demand	5,944	36,631	37,861	39,479	41,194	43,009	37,086	40,282	44,714	49,690	55,279
Supply	-	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
Under/over supply	-	-6,631	-7,861	-9,479	-11,194	-13,009	-7,086	-10,282	-14,714	-19,690	-25,279
Singleton											
Demand	6,531	44,082	44,891	45,937	47,023	48,149	44,631	47,765	52,034	56,730	61,896
Supply	-	45,026	45,026	45,026	45,026	45,026	45,026	45,026	45,026	45,026	45,026
Under/over supply	-	944	135	-911	-1,997	-3,123	395	-2,739	-7,008	-11,704	-16,870
Scone											
Demand	6,787	17,555	17,907	18,359	18,824	19,304	17,742	18,885	20,427	22,107	23,937
Supply*		16,000	16,000	21,000	21,000	21,000	16,000	16,000	21,000	21,000	21,000
Under/over supply		-1,555	-1,907	2,641	2,176	1,696	-1,742	-2,885	573	-1,107	-2,937

Source: HillPDA *Assumes bulky good centre of around 5,000sqm opens at Aberdeen by 2031 Note red indicates an undersupply whilst green denotes an oversupply.

7.2.8 Key findings

LGA	Key findings
Dungog	<ul style="list-style-type: none"> The DPE projections support an additional 4,000 to 5,000sqm of retail floorspace driven by population growth in the LGA. With only an IGA and Wholefood Co-op store currently, there is potential for a full-line supermarket (say 2,800sqm to 3,500sqm) with supporting specialty shops which would strengthen current capture rate levels and reduce the current levels of escape expenditure to Maitland and Raymond Terrace. Locating the full line supermarket would likely be located at Clarence Town. Clarence Town is located approximately a 20-minute drive from Dungog and Raymond Terrace. Therefore, it is likely that the capture for a full-service supermarket at Dungog would split the catchment from Clarence Town.

LGA	Key findings
	<ul style="list-style-type: none"> Under the council growth scenario there is very limited growth in floorspace demand. This would likely be accommodated through relocating some industrial uses in Dungog high street and development of population serving industrial land in Clarence Town.
Muswellbrook	<ul style="list-style-type: none"> Under the DPE projections there is an undersupply of retail provision in the Muswellbrook Town Centre of almost 7,000sqm, with this likely to increase over time to around 13,000sqm due to population growth projected in the MTA. <ul style="list-style-type: none"> We note there was planned bulky goods retail at the showground site if the plans to redevelop the show ground are not progressed, then an alternative bulky goods site needs to be identified. Under the council growth scenario there would be an undersupply of 25,000sqm by 2041 due to the accelerated population growth. This would result in an additional demand for one new supermarket in the Muswellbrook LGA. There would also likely need to be additional bulky good retail. The council growth scenario brings significantly more bulky goods demand, which would prioritise the bulky goods retail development earlier than otherwise. This would also possibly relocate uses such as Pacific Furniture and Kentan Machinery, freeing up retail places. Additional local retail including apparel stores and restaurants would be required under both scenarios, although an additional 3,500sqm compared to the council scenario. This could be absorbed on the New England Highway especially following the completion of the Muswellbrook bypass.
Singleton	<ul style="list-style-type: none"> Under the DPE projections trade area is considered generally sufficiently provisioned to service its community over the short to medium term. Over the longer term there may be scope for some minor additional food services. Priority should be given to protecting the viability of the existing centre. <ul style="list-style-type: none"> Without population growth there is not the capacity for an additional supermarket in the north of Singleton without cannibalising existing trade. There are currently significant and prominent vacancies in the CBD, and long-term undeveloped approved Woolworths development in Singleton north, indicating that there have been limited demand in the short-term. Under more ambitious population projections the demand in Singleton escalates substantially, and there would be the capacity for an additional one or even two supermarkets by 2041. <ul style="list-style-type: none"> Singleton Heights does not have a full-service supermarket and most of the growth would be in the northern part of town. The development of a retail supermarket with supporting retail, specialist stores, and apparel stores in a retail precinct in north Singleton could be absorbed without cannibalising the existing CBD. The demand for additional department store and apparel stores may not translate to additional floorspace with the continued rise of online retailing over the next twenty years, and will need to be considered with the new context.
Upper Hunter	<ul style="list-style-type: none"> Under the DPE scenario Scone is sufficiently provisioned to service its community. Expanding retail space could result in an oversupply and an increase in vacancies. Focusing on protecting the existing centre is important for Scone to ensure it remains vibrant. There might be a modest undersupply in the Scone under the high growth scenario. We consider that there might be some change in use from residential to retail in some of the B2 and B4 zone, but there is not sufficient undersupply to demand a substantial change in use.

BARRIERS AND OPPORTUNITIES

8.0 BARRIERS AND OPPORTUNITIES

This chapter has been informed through stakeholder, council and industry consultation, which has identified a range of employment land considerations. As such, the following sections discuss a range of considerations, having all been explored from a range of viewpoints during consultation. The consultation methodology has been discussed in Section 9. Typical barriers

8.1.1 Zoned land not meeting market demand

The planning system regulates the land uses that can exist in different locations. However, it can be a barrier in circumstances where proponents cannot find suitably zoned land to meet demand, or where planning controls prevent certain uses from occurring on sites.

Stakeholder engagement identified that the development sector and emerging businesses in the region were frustrated about a lack of employment-ready land and the length of approval times to be able to secure land. These stakeholders stated that this results in developments moving to other locations, in which timeframes are more accommodated by the planning system. This results in upward pressure on the region's land prices, because potential employment land is underdeveloped.

The Strategy addresses this barrier by recommending that planning responds to regional supply and demand trends to ensure there is a strong pipeline of suitably zoned employment land. Actions for ensuring this pipeline are provided under Direction 1 of this Strategy, and actions for simplifying and enhancing planning systems in particular are provided under Direction 5.

8.1.2 Land banking

Our stakeholder engagement indicated that many of the industrial sites within the Region were held in consolidated ownership. Our employment land audit and floorspace audit indicated that there were only a few precincts in each LGA, with limited employment land development fronts. Therefore, it is possible that land banking has occurred.

Some sites such as Whittingham have been sterilised for a number of years, due to a range of factors including development viability, servicing, and broader economic conditions.

Urban development in Australia is predominantly developer-led and is subject to the constraints of development economics. A property developer's business model is to maximise profit and where supply is monopolised due to poor planning, then suboptimal land supply will occur, resulting in upward price pressures. The industry does not have obligations to deliver a supply of property product. Undeveloped land is an asset on a landowner's balance sheet like any other asset, earning a return in the form of capital gain once sold. Development will occur when a property can meet hurdle rates, that is, the return is sufficient for the risk of development. If developing and selling the land provides a greater return to the landowners, then development is likely to occur. The impact of land banking is upward pressure on price due to a constrained supply.

This Strategy addresses the perceived issue of land banking by identifying a number of investigation areas for future employment land release in each LGA. For a regional council it is particularly important to investigate a number of areas, because land surrounding the town is likely to be held in consolidated ownership. Post mining sites also provide a competitive pressure as an alternative for potential employment land, which would help ensure land is developed in a timely manner. Councils should generally plan for a surplus of 20 per cent over an above stated demand to secure a strong pipeline.

8.1.3 Workforce skillset

The Region has a relatively skilled workforce. The workforce is focused on the industries that are already present in the Region, with expertise in mining and agriculture. Therefore, it is difficult to diversify the economy too far from those industries, because a new workforce needs to be attracted to the region. Conversely, larger cities (Sydney, Melbourne, Newcastle) tend to have a larger workforce to draw from. Focusing on transferrable skills and putting in place programs to encourage people to upskill and re-skill is important.

It is the role of economic development strategies to ensure that workforce skills are in alignment with employment opportunities. This Strategy addresses the workforce skillset challenges through advocacy actions for planned responses to mine closures. In addition, councils in the region are establishing incubator and innovation spaces in the Region to encourage workers to use their transferrable problem-solving skills to innovate and solve new problems.

8.1.4 Statutory planning processes and regulatory barriers

Urban development must follow a complicated statutory planning process, with complex regulation. There are complicated processes for planning applications in NSW. This is for both local and regionally significant development, as well as for State Significant Development. Our consultation indicated that many stakeholders felt frustrated by the planning process in government, for straight forward industrial and business development.

More complex mining-related development is currently tied-up with multiple levels of government and different agencies in each government. Anecdotally, this has created hard boundaries around Muswellbrook Town Centre and has limited the uses of the sites beyond mining.

Rezoning can also be delayed as they go through each of the layers. Procedural expectations vary across different levels of government. Strategic planning plays a role by establishing the need for the LGA.

Utilising planning systems that are as close to code-based as possible, while also allowing flexibility for applicants, will help facilitate better and faster planning decisions. Investment confidence will be strengthened by building perceptions of a straight-forward, transparent, and efficient planning process across the Region. Businesses are more likely to invest in areas with Councils perceived as being enabling than in areas with Councils perceived as being barriers to development.

This Strategy addresses and acknowledges the complexities in the system, which are not always in the control of councils, by:

- Identifying areas for council-led rezoning and investigation areas to simplify the planning process with a ready supply of zoned land
- Identifying controls that can be simplified, modernised, or removed in the LEPs
- Promoting clear guidance materials to applicants and residents in the LGA
- Encouraging advocacy on resolving overlapping issues such as use of mining-related land, place plans, and regulatory barriers to energy from waste.

8.1.5 Infrastructure capacity

Employment land should be located where it is adequately serviced by infrastructure. Where the infrastructure is at capacity or does not exist, this can be a barrier to the development of employment land. Infrastructure investments for servicing generally require large up-front costs. However, the first development may only be utilising a little of that capacity. That means that either councils need to invest upfront in infrastructure or developers are required to forward fund, and then seek reimbursements over time. This can create unacceptable risks for both councils, especially councils with smaller rate bases, and developers.

Our consultation has indicated that waste water treatment plants are generally at capacity in the major centres of each of the councils, and/or have not been designed to process significant quantities of trade waste.

This Strategy addresses the challenges in infrastructure capacity by encouraging a collaborative approach with large landowners on servicing. Flexibility and the use of onsite solutions may be preferred to extending wastewater or electricity networks. It also encourages locating development at sites with existing infrastructure capacity. Key infrastructure tasks are included in the Actions section of this report.

8.1.6 Transport connectivity

Retail and industrial operations are becoming increasingly aligned. Supply chain efficiencies are key for the success of the retail sector. The increase in online retailing is driving demand for warehousing and distribution centres. Proximity to key transport routes is one of the priorities for industrial occupiers due to supply chain efficiencies and the increasing geographic division between consumption and production.

The Upper Hunter Region has a considerable network of distribution for coal and agricultural products. The region has network and accessibility to the Newcastle Port; however, this is predominantly for coal. Newcastle Port is expected to host a container terminal in the future, and this is expected to increase capacity for exports and other forms of logistics.

Within the region, access to the Port of Newcastle (and Newcastle Airport) is a challenge in Dungog LGA, with the Brig O'Johnston Bridge in Clarence Town limiting truck movements. The upgrading of the bridge is considered to be critical for the transport of local produce.

Traditional single and multi-channel logistics are being replaced by omni-channel logistics offering availability 24 hours a day online, with multiple methods of delivery, at the convenience of the customer. With this enhanced demand for supply chain efficiency, comes the need for different models of warehousing and distribution hubs. Integrated transport facilities are beginning to be developed to receive, process and store goods and dispatch in one unified facility. Stakeholder engagement indicated that warehousing and storage facilities were limited in some areas and that distribution opportunities for smaller goods were impeded by frequency of logistic services.

This Strategy addresses transport and logistics infrastructure by encouraging the use of rail loops as mining becomes less intensive, and encouraging employment land to be located in areas with good motorway access.

8.1.7 Telecommunications

Currently, practically any form of business in Australia requires telecommunications. Regional areas have historically had poorer connectivity as compared to metropolitan areas, and therefore to advance economic development of new and existing industries, digital connectivity infrastructure is required. The key challenge is that this infrastructure is not profitable for most industries to deliver (extractive industries are an exception due to their profitability). Existing and future industries including agriculture, hydrogen, other/new industries do not have funding to establish connections. While it is generally a commonwealth responsibility, state and territory governments have been investing and co-investing to deliver infrastructure. In some cases, this means delivering fit-for-purpose infrastructure beyond what is provided by the National Broadband Network.

Telecommunications infrastructure has recently been included in development control plans – such as the *Western Sydney Aerotropolis Development Control Plan 2022* – to ensure that development demonstrates delivery of high-speed internet.

This Strategy addresses the need for telecommunications infrastructure through encouraging data centres.

8.2 Constraints analysis

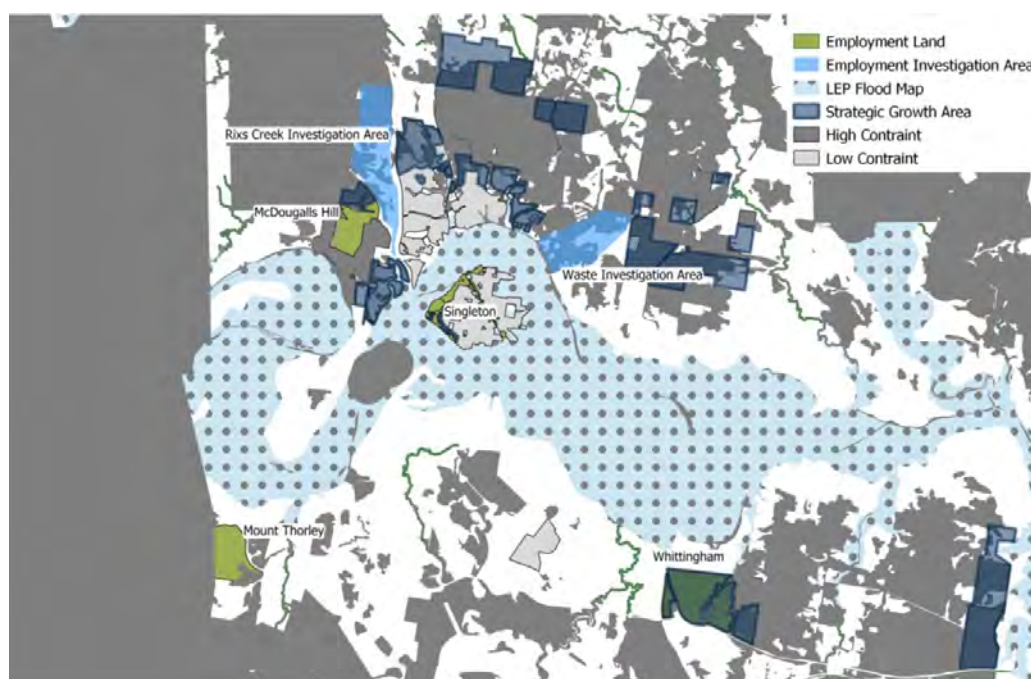
HillPDA has reviewed the constraints present in each of the LGAs. This has been based on either data received from the Council or using the Planning Portal Spatial Viewer to identify high level constraints. This has allowed HillPDA to identify area for investigation.

8.2.1.1 Singleton LGA

HillPDA has identified two potential new investigation areas for employment land in the Singleton LGA around the township, Rixs Creek and the 'Waste Precinct'.

Rixs Creek is an extension of McDougalls Hill to the West and provides an employment use on buffer land. It is separated from residential development by the highway and has a substantial area for expansion. The area has some bushfire and mapped biodiversity conservation corridors, but overall is suitable for industrial development. Rixs Creek is located adjacent to town. There is a risk that as mines close Mount Thorley becomes a less attractive location for industrial development, as it would be somewhat isolated from the township.

Figure 25: Singleton LGA constraints mapping



HillPDA understands that the land is predominantly serviced; however, it is located close to town and servicing could also be extended and augmented at a reasonable rate.

The Waste Precinct is located to the west of Singleton. We understand that servicing has recently been extended and Council is seeking to relocate its work depot to the precinct. This land is predominantly bushfire affected but not flood affected, thereby providing an opportunity to utilise a combination of private and Council owned land for some employment land expansion and complementary uses to the council services in the precinct. We consider that this provides an opportunity for further investigation given the ownership, proximity to town, and the lack of flood affection.

8.2.1.2 Dungog LGA

HillPDA received limited data in relation to Dungog LGA. We have used the DPE spatial viewer to assess high level constraints.

Figure 26: Dungog constraints mapping



The existing industrial area does not have flood affection. The western portion has some flood affection. It is difficult to extend the industrial area.

We recommend looking at the area west of the existing industrial precinct as a new area. While there is some identified biodiversity land separating it, there seems to be limited vegetation when looking at aerials. There is some fire affection, which might be addressed through maintaining buffers. The land is not as hilly as other areas around Dungog.

At the Eastern Industrial precinct there is a substantial amount of land that does not have flood affection and is relatively flat, even compared to the existing western precinct. While there is limited business in this part of the LGA. It makes sense that it could form the start of an artisan industrial and agricultural equipment precinct.

Dungog LGA has limitations due to the presence of water catchments. In particular, the Williams River Catchment Area is a declared special area under Section 53(3) of the Hunter Water Act 1991. This covers most of the Dungog LGA (including Dungog and Clarence Town). This means that any work that significantly affects the Corporation's operations or water quality require referral to Hunter Water. Examples of development include:

- Any development with a constructed area above 2000m²
- Landfilling, earthworks or clearing of more than 2500m²
- Industrial or commercial development involving processing, use, storage of waste, chemicals, hazardous or toxic materials, wet industry, mechanical workshop, or produce nutrients in the catchment.
- Forestry operations
- Intensive Agriculture (including plant, livestock and aquaculture)
- Animal boarding and training establishments and intensive animal facilities.

In these areas development needs to be neutral or have a beneficial effect on the water catchment. In many cases, managing stormwater with onsite solutions will require a significant amount of space to store and then use the water on site. This may be limiting for some developments that require significant amount of hardstand in the catchment.

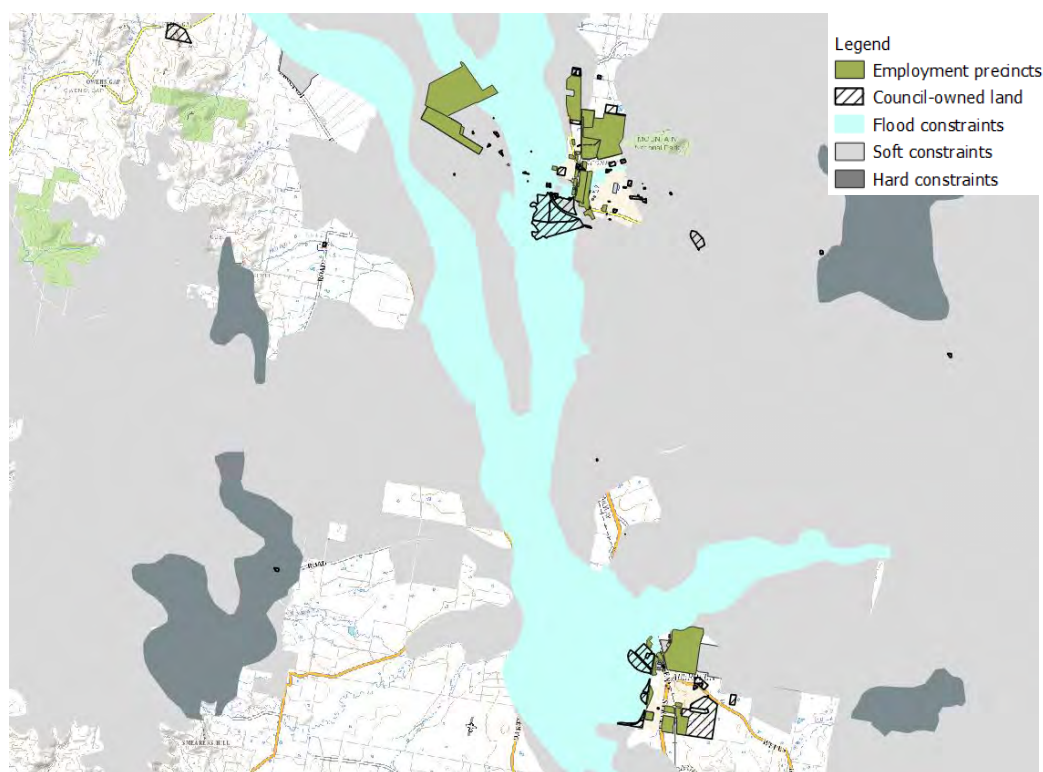
Dungog Council has stated that meeting Hunter Water requirements in the water catchment have generally impeded industries from establishing businesses in the area, due to generating additional costs.

Intensive agriculture is both water heavy and can produce a high amount of waste. It is therefore more likely these uses would need to locate outside the drinking catchment. Paterson is not affected by the Drinking Water Catchment, which therefore could make it a desirable place to focus industrial development or intensive agriculture. Paterson currently has no sewage system, so any development in the area needs septic tanks, and therefore, is not suitable for industrial development..

8.2.1.3 Upper Hunter LGA

HillPDA has assessed the land around Scone. Land is predominantly identified as strategic agricultural land for equine industry, with some for the biophysical strategic agricultural land as well. There is currently sufficient zoned industrial land. The expansion of the racing precinct is a complementary use that would enable additional employment opportunity. Further industrial land expansion is not recommended at this time. However, reviewing and maximising the flexibility for uses around the airport and racing precinct would avoid flooding and utilise existing access roads.

Figure 27: Upper Hunter Shire constraints mapping (Scone/Aberdeen)



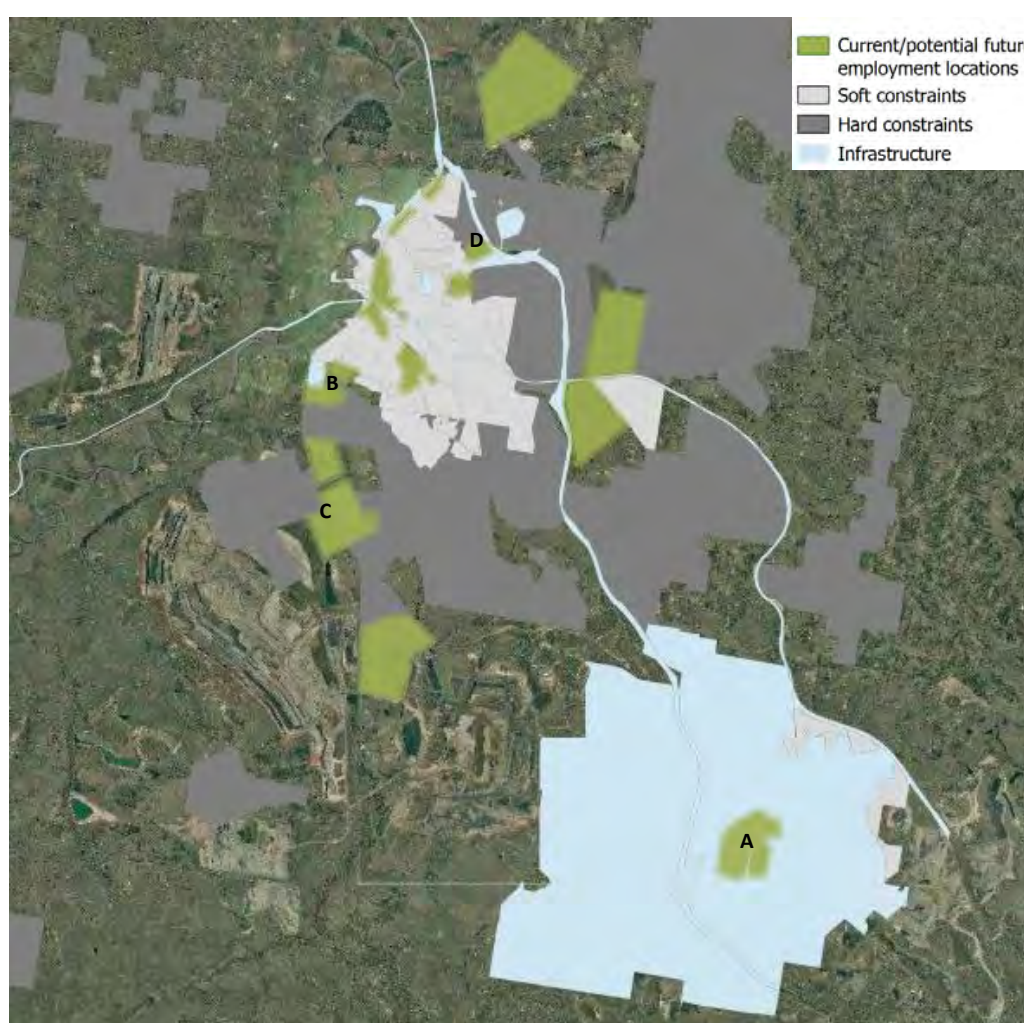
8.2.1.4 Muswellbrook LGA

The constraints around employment land in Muswellbrook are predominately related to conservation zones. Flood mapping was not provided for Muswellbrook, so the flood impact has not been assessed. There is servicing capacity and electricity capacity in each of the growth areas. However, expansions on former mine sites may need additional servicing or on-site servicing. Current and potential employment areas are highlighted in green in Figure 28. This includes employment land opportunities at AGL land (A); Skellatar Stock Route (B); the buffer

conservation land at Thomas Mitchell Drive, if expansion is permitted (C); and land currently on the site of the Muswellbrook Coal Mine (D).

The expansion at the buffer land alongside Thomas Mitchell Drive is strategically located across from the existing agricultural precinct and therefore allows for the expansion of a significant industrial uses. In time, this would also help leverage soon to be closed Mont Arthur Mine. Skellatar Stock Route is an opportunity for infill industrial land that a proponent is considering to develop, and provides light industrial, productivity support precinct opportunities, across from the school. Finally, Muswellbrook coal is located close to town, and has the potential to provide a range of industrial, and renewable energy industry.

Figure 28 Indicative constraints analysis Muswellbrook LGA



8.3 Opportunities

The Region has been characterised by a robust mining industry, which has anchored jobs, alongside viticulture and agriculture, including world leading equine industries. While stakeholders saw the importance of economic diversification, it was clear that diversification should not undermine these strengths of the region.

Businesses were optimistic about the region's future, progressing faster with rezoning was a critical opportunity they were keen to seek. The mining and utilities sector commented on the positive working relationship with councils and the proactive nature of planning in the region.

We heard that younger families moving back to the region has helped expand retail offerings in the region. Similarly, the working from home trend has anecdotally seen more people move to the area to work and enjoy a country lifestyle. Some have decided to explore business start-ups and entrepreneurial ventures.

Looking forward, local industry was excited about the opportunity presented by the airport and port opportunities.

8.3.1 Regional context

The Region is well-positioned regionally. While section 5.7 identifies some of the risks arising from the region's connectivity with other areas, there are also opportunities due to its position within NSW, as well as the presence of connecting infrastructure.

The Region is positioned near the Six Cities Region of NSW, between Greater Newcastle and the inland regions of New England, Orana, and the Central West. Major roads and rail lines connect these regions of NSW, all of which will be mutually reliant through the development of renewable energy zones and the growth of regional cities. As such, the Region is well-placed to continue to play an important economic role within NSW.

One legacy of the Region's coal mining industry is the presence of significant transport infrastructure. Transport linkages currently used to transport coal and other goods could be leveraged to enhance the region's future role in transport and logistics. For instance, the potential for an intermodal facility to be developed in the region is discussed in section 0.

8.3.2 Equine industries

The Upper Hunter LGA is a globally significant equine area. The new Scone Equine Precinct on Satur Road has the potential to centre the knowledge and innovation of the industry and ensure continued investment. The precinct currently consists of the Airport, Equine Centre, racecourse, and TAFE. Racing NSW is investing to create a racing precinct, which has the potential to increase training opportunities for horses, increase the number of races that are held in the precinct, and form an innovation centre for equine research.

As has been identified in academic research, effective water management in the Upper Hunter Shire is a primary task in ensuring the future benefits of its equine region. With regard to employment lands, this Strategy assumes that such practices can be carried out, advocating for the expansion of equine opportunities with the nearby development of light industrial and commercial opportunities.

This Strategy addresses these investment opportunities through suggested actions, including consideration of the SP4 zone to help ensure that the area is fit for purpose and value-adding and mutually supporting businesses to operate within the cluster.

8.3.3 Renewable energy

Renewable energy is currently the largest development investor in the Region as seen in section 5.8. While these industries have relatively low job densities, reliable and relatively more affordable power will help attract manufacturing and other energy users to the region. Well-located power generation through solar and wind can help viability as there would be a relatively lower loss compared to distant power generation. This provides an opportunity to help enable advanced manufacturing to establish in the region.

Sections of the Region are within both the Hunter and Central West-Orana Renewable Energy Zones, providing opportunities for the development of renewable technologies in the region. The Region is also well located proximate to other Renewable Energy Zones. There could be opportunity for the Region to form an

agglomeration of solar and renewable industry centred around design, manufacturing, repair, and then future circular economy uses, as part of an integrated advanced manufacturing industry.

Whittingham, at the intersection of the Golden Highway and New England Highway, has access to both the Central-West Orana and New England Renewable Energy Zones. It is well-located to Port Botany and the Port of Newcastle by road. A limitation of the precinct is freight rail accessibility, which it is proximate to the existing rail. There could be possible extension to form an intermodal. The intersection of the Golden Highway and New England Highway has strategically located IN3 Heavy Industrial zoned land. Unfortunately, this land is not serviced and despite rezoning in the mid to late 2000s, there has been limited development. The land is under consolidated ownership and there is limited ability to ensure land release. This site, however, has the potential to be a critical agri-industrial centre for processing prior to export, collecting goods from both strategic links prior to export. This would require servicing and agreement from the relevant landowners. In addition, there are many other additional opportunities for intermodals in the Region, due to its strong transport infrastructure and developing industries including renewable energy.

This Strategy addresses the above opportunities by:

- Encouraging detailed investigation of Whittingham for an intermodal
- Encouraging investigation of a site on New England Highway in Muswellbrook LGA for an intermodal linked to hydrogen refuelling and battery exchange
- Supporting well-located solar and renewable energy
- Encouraging collaborative development of post-electricity generating and mining sites to connect renewable energy and infrastructure opportunities
- Leveraging existing rail loops and infrastructure on mines.

8.3.4 Leverage post mining lands

Mining land has established infrastructure including hardstand areas, offices, and rail loops. This infrastructure is currently required to be rehabilitated into conservation or pastoral land. Looking at innovative ways to better leverage this infrastructure will help encourage growth.

Currently, many mining jobs in the region are situated on land within SP2 (Power Station), RU1 and C3 zonings. Once mines are decommissioned, the land they are on will be rehabilitated to non-employment land uses, unless different options for ex-mine and buffer sites are developed, and such lands are rezoned to become employment lands.

The Upper Hunter Region Plan provides illustrative ideas for each mine. The next step of the process will be to undertake an EOI process consistent with the PMLU Guideline to better understand the types of providers, to inform the post-mining landform. Enabling a post-mining land form that is consistent with industry needs will help ensure that the investment is worthwhile for the mining company and longer-term employment is achieved.

This report addresses this opportunity by advocating for a pathway forward to better leverage post-mining lands.

8.3.5 Infrastructure investment

Road infrastructure investment, through establishing bypasses through Singleton and Muswellbrook, provide the opportunity to improve the town centres and reposition them as more walkable destinations to attract tourism to the region. The new flyover at Whittingham provides the ability for potential further uses for the zoned industrial land within that precinct.

The Strategy addresses this investment by encouraging the preparation of town centre activation strategies and an intermodal terminal at Whittingham.

8.3.6 Innovation enabling

The innovation sector will be critical to the growth and diversification of the Region. Our stakeholder engagement indicated that businesses and innovators needed space to create, think, and collaborate to grow business engagement. Muswellbrook Council has collaborated with The Melt to create an innovation hub for the region, which allows for rapid prototyping and testing of new technology and products.

The opportunity to further partner with universities, TAFE, and businesses to create an innovation culture for the region would help enable the region to further grow and diversify the economy, as envisioned in the Upper Hunter Economic Diversification Action Plan.

This Strategy addresses this enabler by encouraging space for collaboration and early upscaling of start-up businesses, and then encouraging further employment land that will help businesses continue to expand.

8.3.7 Population growth

Population growth creates the need for more population serving employment and adds to the skill-base of the workforce, encouraging greater investment. Rapid population growth will most likely come from people moving to the region. This will likely require, in addition to population-serving industry, additional industrial and knowledge intensive jobs to establish in the area.

This Strategy addresses the need to develop an investment prospectus to encourage large significant employers to take-up land that will likely become available if a rezoning or post-mining opportunities were to occur.

8.3.8 Value-adding industry

The Upper Hunter Region contains agricultural strengths including viticulture, cattle-farming, and a world-leading equine industry. There is scope to expand complementary industries that add value to agricultural production and provide significant local employment.

Viticulture is concentrated around Singleton and, to a lesser extent, Muswellbrook LGAs. Although much local wine is produced on-site at vineyards, there are also opportunities to concentrate wine production in larger-scale facilities on employment lands, as seen elsewhere in Regional NSW.

The relationship between agriculture and value-adding industry can also be seen in the local meat industry. Cattle and other animal farming industries have synergies with local processing facilities, such as the JBS Meats Australia processing plant in Scone. This could be extended to cover a wider range of farm product manufacturing, particularly as the Region's agricultural base expands and diversifies.

The Upper Hunter Region also has a well-developed equine market, which supports a local horse industry concentrated particularly around the west of Scone.

These examples comprise opportunities to grow local industries by using local employment lands to leverage and add value to the agricultural output of the Region.

8.3.9 Intensive agriculture

As farming technologies innovate and the world decarbonises, there will be opportunities to develop new forms of intensive agriculture. Practices such as vertical farming may occur in employment precincts, providing accessible employment while reducing environmental impacts of traditional farming. Hydroponic technologies also provide a potential avenue for intensifying agricultural yields, while minimising land use needs and attendant environmental impacts.

As these technologies to continue to develop, the agricultural industry may shift to encompass more concentrated forms of employment, possibly on employment lands. Ex-mine sites may be suitable locations for such enterprises. This Strategy addresses this opportunity by advocating for a development prospectus to encourage the pursuit of innovative employment opportunities throughout the Region.

8.3.10 Circular economy

The circular economy encompasses a wide-ranging set of principles; as such, it could provide diverse opportunities for the Upper Hunter Region.

The Upper Hunter Region and surrounding areas are experiencing growth in population, industries, and businesses. Such growth is likely to generate increased amounts of household, industrial, and commercial waste. Together with the Region's existing energy capacity, this creates a circular economy opportunity for the Upper Hunter.

The circular economy involves utilising waste products to create new commodities through recycling, manufacturing, and/or energy production. These activities could complement the Upper Hunter Region's other sectors, particularly with regard to manufacturing and energy generation. As more land becomes available in the Region on decommissioned mines and other potential employment sites, there will be opportunities to cultivate a local circular economy in areas that are well-separated from residential development and other sensitive land uses.

8.3.11 Tourism

The Upper Hunter Region has a variety of assets that strengthen its potential tourism offering. Located within several hours of major population centres such as Newcastle, Sydney, and the Central Coast, the Region has an opportunity to further expand its tourism economy.

The Upper Hunter Region is already widely recognised for its wine and equine agriculture, both of which are currently being leveraged for a regional tourism market. Other assets across the Region include national parks, waterways, heritage sites, and town centres. Awareness of the Region's tourism market could be increased by marketing these assets to domestic and international tourists. Further opportunities to strengthen agritourism are discussed in Chapter 8.3.12.

The growth of the Upper Hunter Region's tourism sector would generate opportunities for employment lands. For instance, visiting consumers could support value-added industries by purchasing boutique regional food, drink, and other products. Furthermore, the Region's local and commercial centres could be boosted by tourists fraternising local businesses. This opportunity is currently being strengthened by bypass and revitalisation plans, as well as the protection of built heritage in historical town centres, to strengthen the Region's tourist appeal.

8.3.12 Agritourism and agribusiness

In addition to population growth, population-serving employment would also contribute to the region's burgeoning tourism industry. This could coincide with a lifting of the region's agribusiness profile. The Region's natural assets, as well as its agricultural strengths, are driving interest in the region as a tourism destination. Agricultural industries such as viticulture could be further leveraged to provide agritourism. This would also facilitate the region's further development of agribusiness, in which agriculture is currently driving future potential.

8.3.13 Defence, aerospace and allied industries

The Region is located close to strategic defence and aerospace industry such as Williamstown, Singleton Army Base and the Myambat munitions storage facility. Furthermore, the explosives required for mining creates an opportunity for establishment of businesses allied to Defence. There is a challenging environment for the production of explosive powers throughout Europe and the US, as well as Australia, which could be located near the Upper Hunter. In addition, former mining sites and the use of airports such as Scone, could help position the Upper Hunter as a testing ground for drone delivered weaponry, missiles manufacturing and satellite rockets.

With the challenges associated with flight training in Sydney (Bankstown and Camden) and the opening of the Western Sydney Airport, there could be additional opportunity for additional flight training, and associated small



aircraft manufacturing and repairs for the Upper Hunter. Furthermore, it will likely be easier to store aircraft in the Hunter than in Sydney.

LGA PROFILES

9.0 DUNGOG LGA PROFILE

9.1 Current situation

Dungog is located adjacent to Port Stephens, Maitland, Singleton, Upper Hunter, and Mid-Coast LGAs. It is proximate to Newcastle Airport and the Port of Newcastle. The population is centred around Dungog, Clarence Town, Paterson, and Gresford.

The employment land development monitor shows Dungog has 50.4 hectares of developed employment land supply, and only 5.2 hectares of serviced employment land. Through stakeholder engagement it was evident that there was demand for further employment land for logistics, warehousing, and business expansion in the region. The LGA and its strong agricultural industry benefit from rural zoning, which has meant that many businesses have become rurally based; however, this can lead to potential land-use conflicts where some businesses may be better suited to industrial uses, such as mechanics.

From a broader logistics position, Dungog's timber bridge network creates a significant constraint on development within the LGA, with developments such as upgrading the Brig O'Johnston Bridge important for connecting local produce to nearby places. This is significant as Dungog currently relies on agriculture as the significant employer in the LGA.

9.2 Strategic context

Table 40 outlines the key local strategic documents that have informed the strategic planning context for Dungog LGA.

Table 40 Local Strategic Context

Key documents/strategies/actions	Relevant considerations for ELS
Moving Toward 2040: Dungog Shire Local Planning Statement	
Planning Priority 2 – Promote diversification and innovation of agriculture	
Action 1. Undertake the Rural Lands Strategy to:	
<ul style="list-style-type: none"> Investigate opportunities for innovation and diversification of agribusiness and possible complementary industries Review planning controls with regard to permissible uses in the RU1 Primary Production zone, minimum lot size provisions and utilising the RU4 Small Lot Primary Production zone Review the supply chain and transport infrastructure for agriculture and industry and identify opportunities for innovation and diversification. 	<ul style="list-style-type: none"> The ELS should consider Dungog Shire Council's intention to develop an RLS, as a means of identifying employment opportunities in a way that is sensitive to and maximises opportunities from existing rural land uses.
Planning Priority 3 – Encourage new industry and economic development	
Action 3. Undertake Employment Lands Study to:	
<ul style="list-style-type: none"> Review supply and demand for commercial and industrial land Opportunities for growth in these areas and appropriate locations. 	<ul style="list-style-type: none"> The ELS should also acknowledge the already stated need for an ELS to identify needed and appropriate industrial and commercial lands within Dungog LGA.
Action 4. Investigate opportunities for economic growth:	
<ul style="list-style-type: none"> In emerging technologies and industries based on land capability as identified in the Rural Lands Strategy Identify areas of strength with regard to the provision of telecommunication services and provide strategies to leverage off these For investment in renewable energy for Council and the LGA generally For exporting and growth in the region by leveraging off the connections to the Newcastle Airport and Port of Newcastle Develop a strategy and guideline for local business for economic growth and exporting opportunities. 	<ul style="list-style-type: none"> For Dungog LGA, the ELS should also consider telecommunication access, potential renewable energy investment, and connections to Newcastle Airport and Port of Newcastle. The potential role of local businesses in exporting should also be considered.

Key documents/strategies/actions	Relevant considerations for ELS
<p>Our Dungog Shire 2032: Community Strategic Plan 2022 – 2032</p> <p>Objective 3.1 That we ensure our economy is strong, creative, innovative and sustainable and provides us with jobs, business and creative opportunities and easy access to goods and services.</p> <ul style="list-style-type: none"> Strategy 3.1.2 Ensure we plan for the availability of land to facilitate commercial and industrial growth Strategy 3.1.5 Promote the Shire as a good location for the establishment of innovative, small to medium scale, sustainable businesses. 	<ul style="list-style-type: none"> The ELS should consider the “small to medium” scale of businesses indicated by the CSP as being appropriate for Dungog LGA.
<p>Dungog Shire Economic Development Plan 2022 – 2026: Riding Towards Prosperity</p> <p>Theme 2 – Infrastructure</p> <ul style="list-style-type: none"> Action 2. Conduct an audit of the existing internet and mobile phone services across the LGA to determine both the best performing areas and those in most need of improvement <p>Theme 3 – Industry</p> <ul style="list-style-type: none"> Action 1. Undertake Employment Lands Study and make necessary amendments to the Local Environmental Plan to deliver sufficient industrial land and commercial land in the Shire (priority project) Action 2. Council to take a proactive role and investigate other options for the provision of increased industrial land (i.e. IN1 Lands) through the Strategic Property Review (priority project) <p>Theme 4 – Innovation</p> <ul style="list-style-type: none"> Action 2. Investigate investment in energy conservation and renewable energy for Council and the LGA (priority project) 	<ul style="list-style-type: none"> As also indicated in the Dungog LSPS, access to telecommunication services is an important consideration for the ELS The ELS should include specific suggested LEP adjustments while drawing upon the collaborative efforts of Dungog Shire Council, to provide a useful framework for delivering employment land Energy conservation and renewable energy should be considered by the ELS as a potential employment land use
<p>Dungog Shire Council Delivery Program 2022-2026</p> <p>Strategy 3.1.2 Ensure we plan for the availability of land to facilitate commercial and industrial growth</p> <p>Actions:</p> <ul style="list-style-type: none"> Continue to develop availability of Council owned industrial land Work with our regional Council and NSW Government partners to prepare and deliver an Employment Lands Study which includes Dungog Shire Conduct a review of all Council’s operational land holdings with a view to it informing a development prospectus. 	<ul style="list-style-type: none"> The ELS should consider Council-owned industrial land within Dungog LGA.
<p>Dungog Shire Council – Draft Rural Lands Strategy (2021)</p> <ul style="list-style-type: none"> Action 1-8 Encourage and promote the establishment of cooperatives and processing plants on land in Zone RU1 Primary Production and Zone RU4 Primary Production Small Lots to support existing and emerging agricultural enterprises Action 1-9 Engage with Muswellbrook Council and the Upper Hunter Economic Diversification Group to explore opportunities for the Dungog LGA with regard to the Bio Refinery project Action 1-10 Advocate the Federal and State Government for funding and improvements to key access routes that connect local producers to export opportunities in the Port of Newcastle, Newcastle Airport and connect to regional processing facilities and saleyards Action 4-3 Prepare planning proposals to implement the actions of the RLS to provide flexibility in the planning framework that allows for innovation and diversification. <p>Draft Dungog Rural Lands Strategy – Rural Issues Paper (2020)</p> <ul style="list-style-type: none"> 10.2 Need for growth and diversification 10.4 Diversification and new industry development. 	<ul style="list-style-type: none"> The ELS should be informed by current industry patterns and strengths across the LGA, as well as the RLS’s identification of potential sites for clustering opportunities The ELS should consider the infrastructure surrounding Dungog LGA, and whether it could be better connected to the LGA As with other LGAs, the ELS should consider the importance of industry diversification for Dungog Shire Additional opportunities for non-agricultural employment industries may be identified by the ELS.

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9.3 Industries of employment

Dungog's strongest industry of employment is Agriculture, Forestry and Fishing, which employed 410 workers in the LGA at the 2021 Census, followed by Education and Training, which employed 311 workers.

Agriculture, Forestry and Fishing represents a major local specialisation, with a location quotient (LQ) value of 4.12 relative to regional NSW. A full explanation of LQ analysis is provided in the main background report; however, any LQ value above 2 is considered a major specialisation compared to a comparator area.

Dungog's agricultural specialisation is propelled by its strength in beef and dairy cattle farming, which employed over 200 workers in 2021. Despite this strength, Dungog's agricultural specialisation has waned slightly between 2011 and 2021. We consider slight variations to be normal; however, Dungog Shire Council has noted that agricultural specialisation may be declining in the LGA.

9.4 Population and employment projections

Various methods for projecting population and employment growth are detailed in Sections 3.3 and 3.4 in the main Employment Lands Strategy. Table 41 indicates potential population and employment trends for Dungog LGA between 2021 and 2041, including compound annual growth rates (CAGR). As it shows, there are significant differences between Scenario 1 for population growth (projected by DPE) and the medium and high projections for Scenario 2. Differences between employment scenarios are less drastic, but employment growth Scenario 2 still projects fewer employees by 2041 compared to Scenario 1.

Table 41 Population and employment projections, Dungog LGA, 2021-41

Dungog	2021	2041	2021-41 change	2021-41 CAGR
Population: Scenario 1	9,525	14,374	4,849	2.1%
Population: Scenario 2 (Medium)	9,525	9,800	275	0.1%
Population: Scenario 2 (High)	9,525	10,200	675	0.3%
Employment: Scenario 1	2,756	3,646	890	1.4%
Employment: Scenario 2	2,417	2,940	523	1.0%

Source: Hunter JO; ABS; TfNSW; HillPDA

9.5 Employment precincts

There are four employment land precincts in Dungog, containing industrial zoned land at various stages of development. The LGA also contains two centres/large villages, Dungog and Clarence Town; and two infrastructure-based precincts. Table 42 indicates employment-generating precincts within the LGA.

Table 42 Dungog precincts

Precinct name	Current zone	Description
Employment land		
Common Road Industrial	E4 General Industrial	Dungog's main industrial area - nearing capacity with few vacant lots. Variety of light industrial uses including Council works depot, stables, NSW National Parks and Wildlife Service depot, kitchen remodelling and earthmoving services.
Hooke Street Industrial	E4 General Industrial	5 lots zoned general industrial with buildings of unknown use. Vacant land available to the north of the site, intersected by Hooke Street.
Clarence Town industrial	E4 General Industrial	2.69ha of unused zoned industrial land held under single ownership
Stroud Hill Road Industrial	E4 General Industrial	Largely vacant general industrial land surrounded by RU1 Primary Production.

Precinct name	Current zone	Description
Centres and large villages		
Dungog	E1 Local Centre	Historic buildings with retail and commercial services largely fronting Dowling Street (the main street). Small provision of apparel retailing, around 10 eateries, bottle store, pharmacy, a medical centre and a small provision of other non-food retailers and commercial services.
Clarence Town	E1 Local Centre	Some vacant lots with capacity to accommodate expansion of retail, hospitality, and professional service provision. Predominantly detached dwellings on large blocks. Few retail offerings.
Other		
Short Street Waste Management	SP2 Infrastructure Waste or Resource Management Facility	Infrastructure saleyards – includes waste management facilities, Dungog Saleyards, and a vacant lot.
Lord Street Public Administration	SP2 Infrastructure Public Administration Buildings	Zoned public administration area – houses Dungog fire station and some buildings for which no information is available. Appears to be fully developed.

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9.6 Employment land supply and demand

HillPDA has undertaken an employment land audit and a demand analysis to calculate the likely under/oversupply of employment land from 2021 to 2041 across the region. The full methodology and findings of this process are detailed in the main report. Table 43 indicates the forecasted supply and demand of employment land in Dungog LGA from 2021 to 2041, showing that there is likely to be an oversupply of industrial land and a slight undersupply of business land by 2041.

Table 43 Forecasted employment supply and demand, Dungog LGA, 2021-41

Supply/Demand	Status/Scenario	Business	Industrial
Supply	Vacant (Audit)	2.3 (B2, B4)	2.36
	Undeveloped (Serviced)	0	2.6
Demand	Scenario 1	2.32	1.41
	Scenario 2	1.05	0.8
Under (-) / Over Supply (+)	Scenario 1	-2.3	18
	Scenario 2	-1.05	18.5

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9.7 Development activity

Dungog has a relatively small development pipeline compared to other LGAs in the region. Construction data reported by Cordell Connect indicate approximately eight developments in the pipeline for the LGA, shown in Table 44.

Table 44 Development pipeline in Dungog LGA

Development Status	Value (\$m)	Count
Abandoned	\$0	1
Deferred	\$-	-
No further research to be conducted	\$0	1
Commenced	\$2	2
Possible	\$1	1
Early	\$100	2
Firm	\$1	1
Development Type (Commenced/Possible/Early/Firm developments)	Value (\$m)	Count

Food Processing	\$-	-
Tourist Accommodation	\$-	-
Entertainment	\$-	-
Industrial	\$-	-
Commercial	\$-	-
Emergency	\$1.35	1
Heavy Industry	\$-	-
Medical	\$-	-
Tourist Activity	\$1.08	1
Light Industry	\$-	-
Infrastructure	\$-	-
Military	\$-	-
Transport	\$-	-
Agriculture	\$-	-
Power Station	\$100.63	3
Retail	\$-	-

Source: Cordell Connect

The projects in the pipeline for Dungog also tend to be less significant for employment generation compared to other LGAs across the region, with fewer major projects occurring. The LGA's most significant projects are:

- Proposed Martins Creek Solar Farm with an estimated value of \$50 million
- Proposed Vacy Solar Farm with an estimated value of \$50 million
- The new Dungog Fire Station with an estimated value of \$1.35 million.

Solar farms require low job densities and thus tend to deliver small-scale employment outcomes. However, these projects can be important enablers for the area, region, and State. Dungog's solar farms may eventually contribute to a more employment-generating investment pipeline in the area.

9.8 Barriers and enablers to growth

Strengths	Weaknesses
<ul style="list-style-type: none"> • Growing visitor economy and town centres • Strong population growth • Innovative e-commerce businesses are establishing • Proximity to Barrington Tops National Park • Boutique retail offerings in the LGA. • Proximity to Port of Newcastle (approximately 45 minutes from Clarence Town) 	<ul style="list-style-type: none"> • Road network is in poor condition and requires passage through town centres • Limited warehousing and logistics space to allow for population growth • Located within water catchment limited permitted uses.
Opportunities	Threats
<ul style="list-style-type: none"> • Expand tourism through town centre revitalisation • Invest in shared storage and warehousing for up to 3,000sqm. • Consider a section 7.11 plan for heavy haulage • Agritourism and adventure tourism increasing a diverse offering in the LGA • Intensive agriculture to complement beef, dairy and poultry 	<ul style="list-style-type: none"> • Council funding and rate base is insufficient to fully maintain infrastructure and b-doubles tend to degrade roads more quickly than other vehicles • Lack of planned growth management making infrastructure delivery and capacity difficult • Many access routes go through residential areas, to avoid land-use conflicts time of day restrictions may need to be put in place

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9.9 Planning framework considerations

Development in the Dungog LGA is guided by the Dungog Local Environmental Plan 2014 ('Dungog LEP'). Businesses in the Upper Hunter Region have identified the flexibility of planning systems as a key consideration for where to locate development. General delivery tasks for achieving this across the region involve enabling light industries as permissible with consent in E1 zones, investigating the removal of maximum height limits in E4 zones, and investigating the possible impacts of parking requirements in LEPs.

Dungog LGA has longer development approval timeframes than other LGAs in the region, which can act as a deterrent to future investors. While existing constraints in the LGA may be adding to such timeframes, actions such as pre-development assessment meetings to discuss potential issues may expediate assessments and attract more investment.

9.9.1 E1 Local Centre

Centres within Dungog LGA will transition to E1 Local Centre under the planning framework. The proposed permissible uses are appropriate to support appropriate development types in the centre. Objective 3 of the zone reads:

Objective 3: To enable residential development that contributes to a vibrant and active local centre and is consistent with the Council's strategic planning for residential development in the area.

While there is merit in this objective, there is currently limited strategic planning within the LGA to demonstrate consistency with residential development requirements. There is a need to undertake strategic planning in the form of a Local Housing Strategy and Structure Plans to identify housing delivery opportunities and logical growth areas. This should consider growth around all centres.

There is currently no objective that encourages the attraction and enhancement of tourism opportunities. This is a growing sector, particularly in Dungog, and should be reflected in the Objectives for centres.

9.9.2 Potential higher density development provisions

As mentioned above, towns within Dungog LGA include E1-zoned land. This land use zone permits shop top housing among other forms of development with consent. Expressly permitting other higher density forms of housing with consent (e.g. multi-dwelling housing and residential flat buildings) in the zone would help to concentrate development in the town centres and enhance the viability of employment-generating commercial development.

9.10 Clustering opportunities

The future development of anchor institutions in the Upper Hunter Region may indirectly facilitate employment in Dungog LGA. More directly, the concentration of employment lands in certain parts of the LGA would also facilitate some employment clustering.

Employment in the LGA is currently most strongly concentrated in the town of Dungog. Further enhancements to the town would further improve its standing as a commercial centre for the area. Improvements to the accessibility and amenity of Dungog Town Centre would improve its vibrancy, which may attract further investment. This could catalyse Dungog becoming a cluster for small businesses, particularly if a mixed-use development is also undertaken near Dungog Railway Station.

Agriculture provides another opportunity for small-scale business clustering. Dungog's agricultural industries include cattle and poultry farming. While cattle farming employment is more significant in the LGA, it lacks the clustering seen in the poultry industry. There is opportunity for more cattle-related clusters to form within the LGA. This could occur through locating meat processing facilities outside the water catchment. However, the future of such industries depends on trends in Dungog's agricultural output.

Dungog LGA also has the potential for some agritourism industry clustering to occur. This could involve the development of artisan industries in industrial areas, to convert the LGA's agricultural strengths into potential tourism opportunities. It would also involve encouraging farm-based agritourism, as well as enhancing the appeal of the LGA's town centres.

Stakeholder engagement has also revealed a desire for more logistics, warehouse, and business expansion opportunities in Dungog LGA. This could be encouraged through provision of appropriate employment lands alongside the delivery of related infrastructure. In particular, more industrial land precincts could be zoned in areas such as Clarence Town in a high population growth scenario. The provision of more industrial space may have flow-on effects to boost other local industries, such as local artisan goods production.

The economic character of Dungog will likely continue to be predominately local businesses that seek to service either local community or tourists, with some expansion of remote employees. The critical challenge for Dungog as an LGA continues to be accessibility and the water catchment. Leaning into artisan manufacturing across primary industries, adventure tourism, has the potential to further grow the economy with supporting retail and legal offerings.

9.11 Actions

The following actions and principal delivery tasks are applicable for Dungog LGA:

Table 45 Actions and principal delivery tasks for Dungog LGA

Action	Principal delivery tasks
1.1: Secure a pipeline of zoned, serviced and unconstrained employment land.	<ul style="list-style-type: none"> Investigate an expansion area for E4 General Industrial north-west of Common Road, Dungog noting that topography and flooding are constraints. Investigate and rezone an industrial precinct (E4 General Industrial) around Stroud Hill Road, which could be focussed on artisan industry leveraging existing strengths in agricultural production and providing an additional tourism focus.

1.2: Explore future employment investigation areas.	<ul style="list-style-type: none"> Explore the provision of additional industrial land in Dungog LGA, as part of a Clarence Town Structure Plan, if the high population growth rate is adopted. Undertake a Growth Management Strategy to ascertain where future growth will be accommodated. Support interest for meat processing plants in areas outside the water catchment.
1.3: Continue to monitor employment land supply through the Urban Development Program.	<ul style="list-style-type: none"> In collaboration with the Department of Planning and Environment, seek to provide information that informs the status, supply and challenges to delivering employment lands.
2.1: Prepare and implement centre activation strategies for the main settlements	<ul style="list-style-type: none"> Establish a clear vision for the town centre developed in collaboration with centre traders Identify catalyst sites that can be activated temporarily or permanently Establish and promote a regular event strategy to draw people into the town centres Incorporate an investment prospective that identifies the opportunities and gaps in the market for new retail and hospitality Establish or empowers the chamber of commerce or similar governance body to input into, implement and monitor the activation strategy.
2.3: Support start-up businesses and flexible working spaces to drive innovation and regional lifestyle opportunity.	<ul style="list-style-type: none"> Utilising existing underutilised council assets and government land Voluntary Planning Agreements Providing co-working or pop-up spaces in vacant commercial or industrial premises Providing shared (incubator) warehousing facilities to enable initial industry expansion.
2.4: Grow the vibrancy of Dungog Town Centre	<ul style="list-style-type: none"> Seek funding to implement planning for town beautification initiatives including: <ul style="list-style-type: none"> Hooke Street revitalisation project, and Brown Street pedestrian improvements to enhance access from Dungog Station Encourage the relocation of the agricultural sales businesses to the industrial precinct Explore a business case for repurposing government land near the station to accommodation a mixed use development opportunity.
2.5: Prepare a Clarence Town Structure Plan and supporting documents to provide clarity around growth expectations and determine where a full-line supermarket could be accommodated.	<ul style="list-style-type: none"> Prepare the Clarence Town Structure Plan Prepare a servicing and delivery plan Update Local Environmental Plan Update Development Control Plan Prepare Development Contribution Plan.
2.6: Support new retail to accommodate population growth.	<ul style="list-style-type: none"> Dungog LGA supermarket demand would increase by 2,148 square metres, which would lend itself to a full-size supermarket in the LGA by 2041. Depending on the likely location of population growth it might lend itself in Clarence Town to increase convenience for residents of both Dungog and Clarence Town. Council should identify a strategic site for the new supermarket and consider potential options for the current supermarket site.
3.1: Leverage the growing tourism opportunity in Dungog, Singleton and Upper Hunter LGAs	<ul style="list-style-type: none"> Encourage the development of appropriate workers accommodation to free up accommodation for tourists Work with providers to offer unique and authentic experiences to attract visitors to eco and agritourism destinations. This can include activities such as hiking or cycling events, farm-to-table meals, farm tours, environment or agricultural education, and hands-on experiences like picking your own produce or helping with farm chores Build partnerships with local businesses, farmers, and tourism organizations to promote eco and agritourism destinations and provide visitors with a wider range of experiences Use digital marketing: strategies such as social media and online advertising to reach a wider audience and promote tourism destinations to potential visitors Offer value-added products such as farm-fresh produce, artisanal goods, and locally-made souvenirs to help generate additional revenue for farmers and enhance the overall visitor experience Investigate the potential for Aboriginal-based tourism opportunities to complement the existing nature and adventure offerings.

3.4: Develop and promote the uptake of agri-tourism	<ul style="list-style-type: none"> • Develop a simple factsheet that articulates the types of uses that can now operate on farms and the associated consent pathways • Draw on information from the DPE factsheet on agritourism • Share factsheet through social media and host on websites • Partner with local chamber of commerce and business organisations to distribute information on agritourism rules.
5.1: Aim to reduce development approval timeframes	<ul style="list-style-type: none"> • Encouraging the application of SEPP (Exempt and Complying Development) to reduce number of comprehensive development application that Council has to assess. This could be done by: <ul style="list-style-type: none"> – Providing information on Council's website about the circumstances in which a complying development application can be used (rather just a than a link to the planning portal) – Employing a shared 'joint organisation' Duty Planner to inform prospective applicants of the opportunities under part 5 of the SEPP for a fast track assessment via the complying development pathway and navigating the planning portal • Encourage formal and informal pre-DA meetings and ongoing discussions with applications to resolve issues well prior to the DA being lodged.
5.2: Implement a flexible planning framework	<ul style="list-style-type: none"> • Investigate removing maximum height limits in the E4 General Industrial zone to avoid unnecessarily deterring or restricting development • Investigate parking requirements to ensure that they are not overly restrictive and do not unnecessarily increase development costs.
5.3: Investigate removing or adding land uses that could affect the viability of commercial or industrial development	<ul style="list-style-type: none"> • In Dungog, consider removing the residential accommodation group term from permissible with consent and instead refine to higher density development such as shop top housing, multi-dwelling housing and residential flat buildings • In all LEPs, consider enabling light industries as permissible with consent in the E1 Local Centre zone and E2 Commercial Centre zone (where adopted).

10.0 MUSWELLBROOK LGA PROFILE

10.1 Current situation

Muswellbrook LGA is currently dominated by the mining industry with significant employment in electrical generation. These uses are located off traditional employment lands and on SP2 and rural land use zones. As the economy shifts from a fossil fuel economy to a renewable economy these traditional uses will become redundant. It is important for Council to plan a sustainable economic future for the LGA to ensure it is set up for future success. The first mine closures at Muswellbrook Coal and BHP Mount Arthur, as well as the closure of the Liddell Power Station have already commenced.

10.2 Strategic context

Table 46 outlines the key local strategic documents that have informed the strategic planning context for Muswellbrook LGA.

Table 46 Local Strategic Context

Key documents/strategies/actions	Relevant considerations for ELS
Muswellbrook Local Strategic Planning Statement 2020 Planning Priority 1: Our Shire embraces technology and innovation. Actions: <ul style="list-style-type: none"> Council will identify potential locations for establishment of food processing facilities utilising the strong local workforce and capitalising on local infrastructure and transport networks Local planning instruments will be reviewed to introduce flexibility to allow for low impact, technology-based businesses and industries to locate in the Shire Planning Priority 2: We plan for the transition of mine and power station sites before their closure. Actions: <ul style="list-style-type: none"> Council will be an active participant in the planning and transition of Liddell Power Station to a range of employment opportunities Council will be an active participant in the planning and transition of Muswellbrook Coal Mine to a range of employment opportunities Council is an active participant in the planning and transition of Bayswater Power Station to a range of employment opportunities Council will be an active participant in the planning and transition of Dartbrook and Mangoola Coal Mines to a range of employment and housing opportunities. Planning Priority 3: The mineral resource and power generation industry is productive, accountable and considerate of surrounding land uses. Actions: <ul style="list-style-type: none"> Council will advocate for updates to state and local planning instruments to encourage coal mines and quarries to maintain buffers to equine, viticulture operations and other critical industry clusters. Planning Priority 5: Land uses in rural areas are protected from incompatible land uses and supporting industries are encouraged. Actions: <ul style="list-style-type: none"> Council will prepare a Rural and Agricultural Lands Study and Policy investigate the viability of new and emerging agribusinesses to support diversification of the sector. Planning Priority 7: Industrial land is developed in an orderly manner, which meets future needs, and is provided with appropriate infrastructure. Actions:	<ul style="list-style-type: none"> The ELS should consider food processing facilities as a potential local source of employment, as well as the opportunities presented by technological innovation The ELS should identify the sites of mines and power stations anticipated to close as potential employment land locations. Specific land use opportunities that retain the sites' former labour intensity should be identified The ELS should consider the need for differing employment and other land uses to be mutually protected, particularly through the maintenance of buffers The ELS should consider the LSPS's intention to support agriculture with compatible industries, such as through appropriate agribusinesses in rural areas The ELS should consider the influence of existing and planned infrastructure on the location of employment land. This extends to considerations of how infrastructure linked to mines and power stations can be leveraged for employment transitions The ELS should also consider the role of centres in providing commercial and knowledge- and services-related employment, such as Muswellbrook Town Centre, as well as a potential commercial Highway Service Centre

- The availability of land for industry is monitored through updating the Muswellbrook Urban Development Program
- Council will continue to invest in its Future Fund and Economic Development programs to encourage diversification of industries, economic opportunities and employment in the Shire
- Council will review local planning instruments to ensure there is flexibility for industry, agribusiness and sustainable energy generation to be established in the buffers to mine and power stations sites, and as transition uses
- Council will prepare an infrastructure plan to guide investment in infrastructure that will support a wide range of agribusiness, mining and industrial activity.

Planning Priority 8: Our Town Centres and Villages are places of economic growth, business diversification and employment opportunities.

Actions:

- Local planning instruments will be reviewed to implement the Muswellbrook Town Centre Strategy to guide future development in Muswellbrook Central Business District, including plans for a purpose-built civic services precinct
- Investigations will occur to identify an appropriate location for a Highway Service Centre, with direct access to the town, to support the needs of the travelling public, provide employment opportunities and to enable the Muswellbrook community to promote itself to future visitors when the Muswellbrook Bypass is constructed.

Muswellbrook Shire 2022 – 2032 Community Strategic Plan

Where do we want to be in 10 years?

- 1. A dynamic local economy with full employment for current and future residents in a diverse range of high value industries.

How will we get there?

- 1.1 Support job growth within the Shire
- 1.2 Diversify the economy, facilitate the development of intensive agriculture, innovative manufacturing, health services and other growth industries.

- The ELS should recognise the LGA's potential diverse range of industries as identified by the Community Strategic Plan, in addition to focusing on key areas identified in the CSP and LSPS.

Muswellbrook Town Centre Strategy

Key Strategic Direction 10. Enhanced Economic Activity

Objective

Encourage an increase in private investment activity in the town centre.

Actions

- Council to investigate the opportunity to create and market development sites after establishing public benefit requirements from its current building stock
- Council to explore the opportunity to establish Private Public Partnerships to achieve an increase in overall investment in the town centre.

Objective

Examine the opportunity to establish new business encouragement and activity programmes

Action

- Consider the establishment of a program like "renew Newcastle" to facilitate the establishment of new local business and increase use of existing vacant building stock

- The ELS should consider opportunities for educational-related clusters to facilitate employment in Muswellbrook town centre, as well as the potential of further concentrated commercial development to strengthen employment diversity.

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10.3 Industries of employment

Muswellbrook's local economy is underpinned by mining and related industries. At the 2021 Census, approximately 3,469 workers were employed in mining in the LGA. The extent of the LGA's specialisation is exemplified by its industries' location quotients compared to regional NSW. A full explanation of LQ analysis is provided in the main report; however, any LQ value above 2 is considered a major specialisation compared to a comparator area. Muswellbrook has two major specialisations compared to the 'Rest of NSW' area. These are Mining, with an LQ value of 12.73; and the related industry of Electricity, Gas, Water and Waste Services, with an LQ value of 5.92.

Coal mine and power station closures in the area creates an exigent need to diversify the local economy, which is discussed in the LGA's local strategic planning framework. Possible future responses include the development of local business and retail opportunities and the adaptation of former mine sites to become employment lands.

10.4 Population and employment projections

Various methods for projecting population and employment growth are detailed in Sections 3.3 and 3.4 in the main Employment Lands Strategy. Table 41 indicates potential population and employment trends for Muswellbrook LGA between 2021 and 2041. As it shows, Scenario 2 of the population projections forecasts significantly higher growth than Scenario 1, which is based on the work of DPE. This is particularly the case for the 'high' variant of Scenario 2. Employment growth Scenario 2 also forecasts higher employment growth than employment growth Scenario 1, at a CAGR of 1.7 per cent compared to 0.5 per cent.

Table 47 Population and employment projections, Muswellbrook LGA, 2021-41

Muswellbrook	2021	2041	2021-41 change	2021-41 CAGR
Population: Scenario 1	16,405	17,387	982	0.3%
Population: Scenario 2 (Medium)	16,405	18,500	2,095	0.6%
Population: Scenario 2 (High)	16,405	22,700	6,295	1.6%
Employment: Scenario 1	11,809	12,994	1,185	0.5%
Employment: Scenario 2	10,795	15,124	4,329	1.7%

Source: Hunter JO; ABS; TfNSW; HillPDA

10.5 Employment precincts

Muswellbrook LGA contains a variety of key employment precincts. These consist of five employment land sites, three centres/large villages, and one educational infrastructure precinct, shown in the below table.

Table 48 Muswellbrook precincts

Precinct name	Current zone	Description
Employment land		
Thomas Mitchell Drive	E4 General Industrial	Two clusters of E4 General Industrial zoned land incorporating an Ausgrid Depot, construction equipment suppliers and distributors, manufacturing and mining services and some consumer-focused industry. Southern cluster is largely developed, with more capacity in vacant lots in the cluster further north. The viability of the mining services businesses will be closely tied to the continuation of mining in the LGA.
Denman Road	E4 General Industrial	Six E4 General Industrial lots including engineering, workshopping, hydraulics, and a lift and shift firm. Low total building area, but significant amount of storage, and workshopping space.
Common Road	E4 General Industrial	E4 precinct serves a light industry/population serving/productivity support purpose. Mostly consists of light industrial, with some vacant lots. Businesses in the area include electrical, landscape supplies, scrap metal, and body repairs, as well as some warehousing and self-storage. The precinct has some capacity, and while its proximity to the waste and recycling facility could create some circular economy clustering, it would be more suitable to remain in light industry. Access to the precinct is

Precinct name	Current zone	Description
		somewhat limited, with heavy vehicle access required via Coal Road, to avoid disturbing residents along Queen Street.
Denman	E4 General Industrial	23.3ha vacant parcel of land zoned E4 General Industrial - predominantly vacant, current use unclear.
Showground Precinct	E3 Productivity Support	Precinct mainly contains the Muswellbrook Showground. A motor vehicle dealer, gym and a youth service centre are also within the precinct.
Centres and large villages		
Muswellbrook Town Centre North (Muswellbrook Marketplace)	E2 Commercial Centre	Main Street style centre stretching from the Muswellbrook rail station to just north of Wilkins Street mostly fronting Bridge Street (New England Highway). Diversity of retail, professional, hospitality and administrative service floorspace. Incorporates TAFE NSW, Council office and library. Muswellbrook Marketplace is a 11,161 sqm sub-regional shopping centre that is anchored by the major retail tenants of Woolworths and Big W. The centre is off the main street, instead fronting Sowerby Street and Brook Street.
Muswellbrook South (Sydney Street and Bridge Street to Wilder Street)	E3 Productivity Support	Scattered residential and retail fronting Maitland Street consisting of population serving businesses such as carwashes, accommodation, take-away food providers and automotive services. Could be more reflective of a productivity support zoned.
Rutherford Road Muswellbrook (Muswellbrook Fair)	E1 Local Centre	Scattered E1 Local Centre zoning fronting Maitland Street and Rutherford Road. Muswellbrook Fair contributes around 8,765sqm of retail floorspace and includes the major tenants of Coles and Harvey Norman (Shopping Centre Director, 2020). An Aldi and a large car dealership adjoin the mall on either side. Another car dealership, a hotel and a take-away food premise front Maitland Street. The precinct is mostly developed with only one sloped 3,450sqm site.
Other		
Education Precinct	R1 General Residential	Tafe NSW and Muswellbrook South Public School are located in the R1 zone fronting Maitland Street between the Rutherford Road Centre and Muswellbrook South centre area.

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10.6 Employment land supply and demand

HillPDA has undertaken an employment land audit and a demand analysis to calculate the likely under/oversupply of employment land from 2021 to 2041 across the region. The full methodology and findings of this process are detailed in the main report. Table 50 indicates the forecasted supply and demand of employment land in Muswellbrook LGA from 2021 to 2041, showing that there is likely to be an undersupply of both business and industrial land under population growth Scenario 2 and an undersupply of business land/oversupply of industrial land under population growth Scenario 1.

Table 49 Forecasted employment supply and demand, Muswellbrook LGA, 2021-41

Supply/Demand	Status/Scenario	Business	Industrial
Supply	Vacant (Audit)	3.3 (B2)	30.9
	Undeveloped (Served)	0	77.6
Demand	Scenario 1	9.3	12.7
	Scenario 2	33.8	43.6
Under (-) / Over Supply (+)	Scenario 1	-9.3	18.2
	Scenario 2	-33.8	-12.7

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10.7 Development activity

Muswellbrook LGA contains a wide range of employment-generating pipeline projects at various stages of development. As shown in Table 50, this includes developments relating to industry, infrastructure, power stations, and a range of other purposes. The largest monetary value is in military-related pipeline developments reflecting upgrades to Myambat.

Table 50 Development pipeline in Muswellbrook LGA

Development Status	Value (\$m)	Count
Abandoned	\$6	3
Deferred	\$4	1
No further research to be conducted	\$62	9
Commenced	\$37	6
Possible	\$1,371	19
Early	\$80	2
Firm	\$480	10
Development Type (Commenced/Possible/Early/Firm developments)	Value (\$m)	Count
Food Processing	\$30.00	1
Tourist Accommodation	\$1.10	2
Entertainment	\$27.00	1
Industrial	\$44.38	7
Commercial	\$-	-
Emergency	\$2.31	1
Heavy Industry	\$-	-
Medical	\$45.00	1
Tourist Activity	\$1.77	1
Light Industry	\$1.47	2
Infrastructure	\$0.55	1
Military	\$373.75	3
Transport	\$2.88	2
Agriculture	\$-	-
Power Station	\$100.63	3
Retail	\$-	-

Source: Cordell Connect

The development pipeline in Muswellbrook includes a range of major projects. For the following list, renewable energy projects have been omitted, due to typically lower job densities leading to lower impacts on employment. The remainder of Muswellbrook's major projects include:

- \$763 million construction of a battery energy storage system at Liddell
- \$400 million conversion of Liddell Coal mine into a pumped hydro facility
- \$200 million construction of a 135MW Solar Farm at Muscle Creek
- Muswellbrook Battery Energy Storage System at Sandy Creek Road valued at \$150 million
- Hunter River Solar Farm valued at \$150 million
- AGL Green Energy Hydrogen Facility valued at \$50 million
- Yarraman Abattoir and Feedlot at Denman with an estimated value of \$30 million
- Carramere Road resource management facility with an estimated value of \$29 million
- Muswellbrook Regional Entertainment & Conference Centre with an estimated value of \$27 million
- Glen Munro Road waste & resource management facilities with an estimated value of \$8 million
- Coal Road organics recycling facility at Muswellbrook with an estimated value of \$3.9 million
- Turner Street Museum at Denman with an estimated value of \$1.8m creating a tourist attraction with a heritage village
- Maitland Street Motel - The Remington expansion with an estimated value of \$1.7m.

The above list indicates employment-generating opportunities in several different industries. The Regional Entertainment & Conference Centre indicates that Council is investing in the tourism infrastructure to attract additional visitors to the area. The above projects also demonstrate a high level of interest in resource, waste, and recycling management in Muswellbrook, which could be further investigated for the region.



10.8 Barriers and enablers to growth

Strengths	Weaknesses
<ul style="list-style-type: none"> Central location Road and rail infrastructure connection to the port and airport Energy infrastructure Mining industry and support Motivated council and dialogue with industry Investment in innovation and start-up 	<ul style="list-style-type: none"> Urban Expansion is limited by conservation land Limited light industrial uses Limited remaining serviced employment land Wastewater servicing
Opportunities	Threats
<ul style="list-style-type: none"> Unpick conservation arrangements for urban expansion and employment uses as part of post mining future Regional centre for Health services Regional population serving services innovation transition to renewables AGL transition land to be converted into renewable energy precinct Regional bulky good retailing Planned use of post-mining land and infrastructure Muswellbrook bypass enabling investment in the centre 	<ul style="list-style-type: none"> Accelerated mine closures Unable to unlock existing supply Limited Housing Limited short term accommodation Low population growth Limited employment land capacity close to town Lack of space for incubation and scaling up from incubation stage

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10.9 Planning framework considerations

Development in Muswellbrook LGA is guided by the Muswellbrook Local Environmental Plan 2009 ('Muswellbrook LEP'). Businesses in the Upper Hunter Region have identified the flexibility of planning systems as a key consideration for where to locate development. General delivery tasks for achieving this across the region involve enabling light industries as permissible with consent in E1 and E2 zones, investigating the removal of maximum height limits in E4 zones, and investigating the possible impacts of parking requirements in LEPs.

Light industry is a form of development defined as being not impactful on surrounding amenity, and which contributes to the appeal of precincts for a wider range of investors. It should also be noted that this action is primarily relevant to Muswellbrook in terms of the E2 zone, which now applies to a segment of Muswellbrook discussed in section 10.5 above as 'Muswellbrook North'.

10.9.1 Shop top housing provisions

The section of Muswellbrook zoned as E2 Commercial Centre currently provides for a range of population-serving uses and includes the Muswellbrook Marketplace shopping centre. Commercial viability could be further enhanced by the effects of permitting shop top housing with consent in this zone.

10.9.2 Setback and landscaping provisions

Muswellbrook LEP currently requires industrial buildings to have front setbacks of at least 10 metres. Together with landscaping requirements, this reduces the flexibility of local planning, possibly impacting the LGA's attractiveness to investors. Considering the necessity of these provisions would be useful in framing an understanding of the LEP's current flexibility, and an assessment of whether to address this.

10.10 Clustering opportunities

Muswellbrook LGA has some employment clusters that have typically formed around its energy industries and nearby towns. Coal mines to the south of Muswellbrook have existed in synergy with Bayswater and Liddell Power Stations, until the closure of the latter in 2023. Bayswater Power Station is also likely to close within the

next 10 years. Combined with the likely closure of mines in the region, the previous strong employment role of such clusters is at risk. Simultaneously, the potential uses of ex-mining and power station lands, discussed in the main ELS report, provide opportunities for new industry clusters to form, if employment lands are supported in tandem with the development of new industries such as renewable energy.

An example of a new potential industry cluster is the Muswellbrook Clean Industries Precinct, which proposes to co-locate solar and pumped hydro energy on the former Muswellbrook Coal mine site near connected industrial land. This proposed clustering provides an example of how previously concentrated employment could be replaced with new industries in the same areas. The actions outlined below identify the Mount Arthur and Muswellbrook Coal sites as key locations for doing so.

Within the town of Muswellbrook itself, clusters provide a diversity of opportunities for employment growth. The Donald Horne Building has recently opened in Muswellbrook, adding to the Hunter Innovation Precinct, which brings together employment-generating anchor institutions in the form of TAFE NSW, the University of Newcastle, and Muswellbrook Library. There is also the potential to develop potential entertainment and commercial clusters in Muswellbrook according to Action 2.2, discussed in the main ELS report. Lastly, the overall development of Muswellbrook town centre may also facilitate further commercial clusters, which would generate more jobs in Muswellbrook.

10.11 Actions

The following actions and principal delivery tasks are applicable for Muswellbrook LGA:

Table 51 Actions and principal delivery tasks for Muswellbrook LGA

Action	Principal delivery tasks
1.1: Secure a pipeline of zoned, serviced and unconstrained employment land.	<ul style="list-style-type: none"> Support the proposed translation of the employment land reform to deliver more E3 Productivity Support land around Rutherford Road, Skellatar Stock Route and Race Course Road and Central Muswellbrook Investigate and rezone an industrial precinct (E4 General Industrial) near the existing industrial precinct at Thomas Mitchell Drive, the junction of Muscle Creek Rd and the proposed bypass or St Hilliers Explore use of the SP4 Enterprise zone for mine buffer land and former mine and power station sites for large manufacturing and agribusinesses that are not appropriate in a traditional E4 General Industrial zone, and are capable of managing all their waste disposal needs on site.
1.2: Explore future employment investigation areas.	<ul style="list-style-type: none"> In collaboration with landowners, seek to transition the AGL Liddell Site from an SP2 Special Purpose site to an SP4 Enterprise zone that would enable flexibility to curate employment uses on the site Investigate potential for rezoning near the Racecourse to an E3 Economic Productivity zone to enable more opportunity for light industry, advanced manufacturing, and a homemakers centre. Work with proponent (BHP) to encourage a master planning process on Mount Arthur land that seeks to repurpose hardstand infrastructure for the purpose of industrial uses. Considering the location, land along Thomas Mitchell Drive may be appropriate for circular economy uses.
1.3: Continue to monitor employment land supply through the Urban Development Program.	<ul style="list-style-type: none"> In collaboration with the Department of Planning and Environment, seek to provide information that informs the status, supply and challenges to delivering employment lands.
2.1: Prepare and implement centre activation strategies for the main settlements	<ul style="list-style-type: none"> Establish a clear vision for the town centre developed in collaboration with centre traders Identify catalyst sites that can be activated temporarily or permanently Establish and promote a regular event strategy to draw people into the town centres Incorporate an investment prospective that identifies the opportunities and gaps in the market for new retail and hospitality

	<ul style="list-style-type: none"> Establish or empowers the chamber of commerce or similar governance body to input into, implement and monitor the activation strategy.
2.2: Promote and facilitate, in collaboration with the landowner, the establishment of a regional homemaker centre in Muswellbrook.	<ul style="list-style-type: none"> Explore options for a Bulky Goods retailing site should the Showground no longer be relocated near Skellatar Stock Route and near Racecourse Road to clustering entertainment uses. Working with landowners to seek rezone land, if necessary. Attracting interested investors and tenants to establish in the homemaker centre.
2.3: Support start-up businesses and flexible working spaces to drive innovation and regional lifestyle opportunity.	<ul style="list-style-type: none"> Utilising existing underutilised council assets and government land Voluntary Planning Agreements seeking some flexible working space incorporated in the development Providing co-working or pop-up spaces in vacant commercial or industrial premises Providing shared (incubator) warehousing facilities to enable initial industry expansion.
2.6: Support new retail to accommodate population growth.	<ul style="list-style-type: none"> Muswellbrook has capacity for an additional 6,378sqm of retail overall, of which 2,021sqm is for supermarket and grocery uses. While there may not be capacity for a full-line supermarket, there could be capacity for a fresh format or an independent supermarket in Muswellbrook to serve the expected population growth.
3.2: Unlock the opportunity for circular economy uses	<ul style="list-style-type: none"> Write to the EPA to advocate for former mining land in Muswellbrook to be used for circular economy uses as part of the energy from waste policy principles. Consider council site for the Hunter Joint Organisation Facility that incorporates FOGO processing. Progress with construction with Council's FOGO processing facility Consider establishing separation of Commercial and industrial wastes at the existing Waste & Recycling Facility to diverse from landfill and return to functional economy. Consider amendments to local planning controls to permit reuse of recovered waste in building construction.
3.3: Explore the opportunity for a major distribution centre or intermodal facility within the region to support future business establishment and job creation	<ul style="list-style-type: none"> In collaboration with Regional NSW, DPE and the land owner, seek to designate the site as a priority precinct. Work with stakeholders to develop a masterplan and technical studies Seek to promote and attract significant industry investment in line with the strategic intent for the precinct.
3.4: Develop and promote the uptake of agri-tourism	<ul style="list-style-type: none"> Develop a simple factsheet that articulates the types of uses that can now operate on farms and the associated consent pathways Draw on information from the DPE factsheet on agritourism Share factsheet through social media and host on websites Partner with local chamber of commerce and business organisations to distribute information on agritourism rules.
4.1: Develop an industry diversification investment prospectus	<ul style="list-style-type: none"> Develop an investment prospectus (collaboration between Singleton and Muswellbrook councils, DPE and Regional NSW) to attract large industry operators that would be interested in investing in repurposing strategic mine sites. The prospectus should: <ul style="list-style-type: none"> Advertise site opportunities Demonstrate the strategic merits of the region Demonstrate vision for the region and depth of market capacity.
4.2: Resolve key issues related to the use of former mining land	<ul style="list-style-type: none"> Advocate that DPE and DRNSW as part of their place planning function work to: <ul style="list-style-type: none"> Resolving biodiversity offsets to allow for site infrastructure to be retained and utilised Consider partial modification pathway that do not restrict current mining operations Find options to amend leases or WHS (Mines and Petroleum Sites) legislation to allow non-mining operation on land.

	<ul style="list-style-type: none"> Advocate that DPE (Planning), DPE (EES), DRNSW, industries, councils and federal government form a working group to resolve key barriers. The findings should be reported to the Urban Development Program.
4.3: Assist in facilitating master planning processes on key mining closure sites	<ul style="list-style-type: none"> Councils to work with proponents to support or encourage master planning process for the Mount Arthur Mine buffer land (near Thomas Mitchell Drive) and the Muswellbrook Coal proposed industrial land in Muswellbrook LGA, and for Liddell Coal Operations and Ashton Coal land in Singleton LGA. There is strategic merit in all locations for the sites to accommodate employment and economic generating uses. Work with proponent, DPE, and Regional NSW to outline council's strong desire for economic uses for post-mining land as part of any council submission or advice related to mine extensions Advocate and provide input into place strategies prepared by DPE for each of the mine closure sites. Regularly ask DPE for updates on funding and progress on these place strategies.
5.1: Aim to reduce development approval timeframes	<ul style="list-style-type: none"> Encouraging the application of SEPP (Exempt and Complying Development) to reduce number of comprehensive development application that Council has to assess. This could be done by: <ul style="list-style-type: none"> Providing information on Council's website about the circumstances in which a complying development application can be used (rather just a than a link to the planning portal) Employing a shared 'joint organisation' Duty Planner to inform prospective applicants of the opportunities under part 5 of the SEPP for a fast track assessment via the complying development pathway and navigating the planning portal Encourage formal and informal pre-DA meetings and ongoing discussions with applications to resolve issues well prior to the DA being lodged.
5.2: Implement a flexible planning framework	<ul style="list-style-type: none"> Investigate removing maximum height limits in the E4 General Industrial zone to avoid unnecessarily deterring or restricting development Investigate parking requirements to ensure that they are not overly restrictive and do not unnecessarily increase development costs In Muswellbrook consider the necessity of 10.0m setback from the principal boundary alignment, and the variation criteria requiring 6m landscaping across the frontage of the site in the DCP.
5.3: Investigate removing or adding land uses that could affect the viability of commercial or industrial development	<ul style="list-style-type: none"> In all LEPs, consider enabling light industries as permissible with consent in the E1 Local Centre zone and E2 Commercial Centre zone (where adopted) In Muswellbrook LEP, consider enabling shop top housing as permissible with consent in the E2 Commercial Centre zone.

11.0 SINGLETON LGA PROFILE

11.1 Current situation

Singleton LGA, like Muswellbrook, currently has a strong economic reliance on the mining industry. As the energy market shifts gradually towards renewables, it is important for Singleton Shire Council to consider post-mining employment-generating land uses.

Singleton is positioned adjacent to Dungog, Muswellbrook, and Upper Hunter Shires, as well as to Lower Hunter LGAs such as Cessnock and Maitland LGAs. The New England and Golden Highways both run through the LGA. There are a variety of future employment land opportunities for the LGA, due both to its location and to its current and potential future assets.

11.2 Strategic context

Table 52 outlines the key local strategic documents that have informed the strategic planning context for Singleton LGA.

Table 52 Local Strategic Context

Key documents/strategies/actions	Relevant considerations for ELS
<p>Singleton Council Local Strategic Planning Statement 2041</p> <p>Planning Priority 4.1: The Industry Base is Innovative, Resilient and Productive</p> <p>Strategic Policy Positions</p> <ul style="list-style-type: none"> We will seek to prevent the encroachment of sensitive uses on employment land Clustering of land uses that are complementary and compatible will be encouraged through implementation of appropriate planning controls Emerging opportunities for economic diversification in the LGA will be investigated Opportunities to reduce barriers to establishing key industries and services in the LGA will be investigated Land use planning constraints and opportunities for renewable energy will be investigated. <p>Actions</p> <ul style="list-style-type: none"> 4.1.1 Develop an employment lands strategy that provides for the sustainable growth and diversification of industries 4.1.2 Prepare a report, which investigates constraints, opportunities and impacts associated with establishing renewable energy production facilities in the LGA 4.1.3 Establish a monitoring and reporting system to monitor implementation of the employment lands strategy <p>Planning Priority 4.4: The Mineral Resource Industry is Productive, Accountable and Considerate of Surrounding Land Uses</p> <p>Strategic Policy Positions</p> <ul style="list-style-type: none"> As relevant, LEP amendment proposals, which seek to rezone land to a non-rural zone or reduce the minimum lot size for subdivision of land, will be required to demonstrate that the development of the land for the intended future purpose will not constrain reasonable access to viable mineral resource deposits LEP amendment proposals and development proposals that are likely to result in the disturbance or harm to natural resources are supported by adequate justification for why the proposal should proceed in consideration of alternative options to the disturbance or harm. <p>Action</p>	<ul style="list-style-type: none"> The ELS should consider both the projected future role of mining within Singleton LGA and signalled intents to diversify local employment. The ELS should consider Council's existing intents to form an ELS that emphasises sustainable growth and industry diversification. Through doing so, it should more thoroughly explore the diversification of employment, including a strengthening of the renewable energy sector, the clustering of land uses, and the reduction of barriers to new industries Simultaneously, the ELS should also recognise the ongoing importance ascribed by the LSPS to mining. It should recognise the role of buffer areas in minimising conflict and achieving land use balance. It must also consider the impact of potential employment land uses on both access to mineral resource deposits, and potential disturbance of natural resources.

- 4.4.1 In consultation with government agencies, develop and apply, through appropriate mechanisms, buffer areas around urban settlement and growth areas, establishing limits on how close extractive industries can encroach upon such areas, so as to minimise the potential for land use conflict and maintain balance between the respective land uses

Create Singleton 2032: Community Strategic Plan 2022 – 2032

Our Economy

Our Strategies

- 4.1 Attract new investment to increase the diversity and resilience of the Singleton economy
- 4.2 Support the capacity of Singleton businesses to be flexible, adaptable and prepared for change

- The ELS should simultaneously recognise two of the Community Strategic Plan's aims of preserving the strength of mining and facilitating diversification in the LGA.

Singleton Socio-Economic Development Strategy 2020/2024

Encourage new industry investment

- Action 18 Work closely with governments, universities and industry to identify opportunities within Singleton and the Upper Hunter
- Action 19 Engage with AGL regarding the future use of the Liddell and Bayswater power station sites
- Action 20 Investigate the opportunities available in ethanol and Bio-valley innovation
- Action 21 Advocate for flexible post mining land use that meets the communities current and future needs
- Action 22 Advocate for DA approval flexibility that allows for improved access to mining buffer lands within the approval framework.
- Industry transition
- Action 43 Seek funding for ongoing mine rehabilitation projects to ensure the final land use meets community expectation
- Action 45 Develop an investment prospectus for all under employed post mining land and infrastructure that will assist with attracting investment.

- Economic diversification away from mining in the Singleton LGA is presented as a slightly less pressing imperative than in Muswellbrook LGA. However, opportunities for it should still be explored by the ELS
- The ELS should consider Singleton LGA's intentions of how to facilitate improved access to mining buffer lands, for employment land uses
- Overall, the ELS should also include consideration of sites identified by the Strategy for potential new employment opportunities in the LGA, such as current mine sites

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11.3 Industries of employment

Singleton LGA has a particular strength in mining. At the 2021 Census, approximately 6,280 Singleton residents worked in the mining industry.

Location quotient (LQ) is a metric used to assess an area's specialisation in certain industries. A full explanation of LQ analysis is provided in the main report; however, any LQ value above 2 is considered a major specialisation compared to a comparator area. Singleton's LQ value for mining is 14.2 compared to regional NSW, representing a very high major specialisation. As the energy market shifts away from fossil fuel to renewable sources, the long-term transition from mining employment is a key concern for Singleton, which is at risk of this LQ value (and thus the strength of its specialisation) declining. Possible responses include adapting former mining sites to become employment lands or leveraging Singleton's tourism profile to create employment land opportunities.

Singleton LGA also has a significant specialisation in Administrative and Support Services, at 1.45 relative to the 'Rest of NSW' area. This specialisation grew by 50 per cent from 2011 to 2021, with the industry now employing over 1,000 workers in the LGA. However, this is predominantly due to jobs in Labour Supply Services, which is likely contingent on the mining sector, and potentially also at a threat of decline in the future.

11.4 Population and employment projections

Various methods for projecting population and employment growth are detailed in Sections 3.3 and 3.4 in the main Employment Lands Strategy. Table 41 indicates potential population and employment trends for Singleton LGA between 2021 and 2041. As it shows, Scenario 2 of the population projections forecasts very different growth trends than Scenario 1, which is based on the work of DPE. Growth of 5,765 residents is forecasted,

compared with DPE's projection of negative growth of over 2,500 residents. By contrast, both employment growth scenarios project an increase in workers, although Scenario 2 projects a higher increase than Scenario 1.

Table 53 Population and employment projections, Singleton LGA, 2021-41

Singleton	2021	2041	2021-41 change	2021-41 CAGR
Population: Scenario 1	24,719	22,211	-2,508	-0.5%
Population: Scenario 2	24,719	30,484	5,765	1.1%
Employment: Scenario 1	19,375	20,346	971	0.2%
Employment: Scenario 2	17,534	21,339	3,805	1.0%

Source: Singleton Shire Council; ABS; TfNSW; HillPDA

11.5 Employment precincts

A map of the employment precincts currently zoned are in Figure 29. Table 54 outlines the role and nature of each of the precincts.

Figure 29 Map of Singleton employment precincts



Table 54 Singleton precincts

Precinct name	Current zone	Description
Employment land		
Mount Thorley	E5 Heavy Industrial	Mount Thorley is a heavy industrial precinct that mainly services the mining industry.
Whittingham	E5 Heavy Industrial	Whittingham is a vacant E5 site at the intersection of the Golden Highway and New England Highway. There is not a clear potential use for the site.
McDougalls Hill	E3 Productivity Support	McDougalls Hill is a E3 Productivity Support precinct with some vacant land to the north of the precinct and mostly fully developed to the south. The proponents are considering the feasibility of commencing stages 4 and 5 on lot 3000.
Downtown Singleton	E3 Productivity Support	There are several sites in the town of Singleton that are zoned E3 Productivity Support. Two of these sites are in the southeast of Singleton, directly adjacent to the railway line; and another site is in the north of Singleton, near the New England Highway.
George Street Singleton	E3 Productivity Support	There is some land on either side of George Street in Singleton zoned E3 Productivity Support. This provides for a variety of employment-generating businesses to be located along the approach to Singleton town centre.
Centres and large villages		
Singleton Township	E4 Productivity Support	The northeast of the commercial core is largely occupied by population servicing industries including retail trade, accommodation and food services and administrative support services. Large format retail occupies the precinct's southwest with Gowrie Street Mall. Group of 5 vacant lots.

Singleton Mixed Use	MU1 Mixed Use	Singleton's commercial core area is surrounded by a wider area zoned MU1 Mixed Use. This provides for a range of more locally-based businesses along the north-west edge of the town.
Branxton	E1 Local Centre	Currently zoned E1 Local Centre vacant land - master planning in development for site to accommodate a newly planned medium-sized township 'Huntlee'.
Other		
Singleton Military Area	SP2 Infrastructure Defence	Singleton Military Area is a large area zoned SP2 Infrastructure Defence, on which infantry training takes place, located approximately 6 kilometres south of Singleton.

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11.6 Employment land supply and demand

HillPDA has undertaken an employment land audit and a demand analysis to calculate the likely under/oversupply of employment land from 2021 to 2041 across the region. The full methodology and findings of this process are detailed in the main report. Table 55 indicates the forecasted supply and demand of employment land in Singleton LGA from 2021 to 2041, showing that there is likely to be an oversupply of business land and a significant oversupply of industrial land by 2041.

Table 55 Forecasted employment supply and demand, Singleton LGA, 2021-41

Supply/Demand	Status/Scenario	Business	Industrial
Supply	Vacant (Audit)	59.3 (B5)	314.6
	Undeveloped (Serviced)	5.4 (B4)	0
Demand	Scenario 1	11.8	7.4
	Scenario 2	22.4	13.4
Under (-) / Over Supply (+)	Scenario 1	47.5	307.2
	Scenario 2	36.9	301.2

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11.7 Development activity

Singleton LGA contains a variety of pipeline developments at different stages of development. As indicated in Table 56, there is a relatively large number of developments deemed 'possible' according to data published by Cordell Connect. Along with 'early', 'firm', and 'commenced' pipeline developments, these relate to industrial, infrastructure, agricultural, and power station land uses, among other purposes.

Table 56 Development pipeline in Singleton LGA

Development Status	Value (\$m)	Count
Abandoned	\$44	15
Deferred	\$1	2
No further research to be conducted	\$9	21
Commenced	\$6	4
Possible	\$1,193	46
Early	\$3	1
Firm	\$27	13
Development Type (Commenced/Possible/Early/Firm developments)	Value (\$m)	Count
Food Processing	\$-	-
Tourist Accommodation	\$6.65	4
Entertainment	\$11.46	8
Industrial	\$19.13	10
Commercial	\$0.57	1
Emergency	\$1.50	2
Heavy Industry	\$-	-

Medical	\$-	-
Tourist Activity	\$3.42	1
Light Industry	\$11.30	12
Infrastructure	\$4.44	3
Military	\$-	-
Transport	\$-	-
Agriculture	\$6.79	6
Power Station	\$1,137.64	6
Retail	\$-	-

Source: Cordell Connect

Singleton's most significant pipeline investments are in power station developments, with an overall value of \$1.138 billion. However, potential power station developments relate to renewable energy and gas projects, which tend to feature low job densities and do not lead directly to strong concentrations of employment (although they may do so indirectly). Excluding renewable and gas projects from the list, Singleton's major projects tend to have lower monetary values, consisting of:

- Singleton Recycling Centre at McDougalls Hill with an estimated value of \$7.18 million
- Ravensworth Composting Facility Expansion at Ravensworth with an estimated value of \$4.82 million
- Singleton Arts & Culture Centre at Singleton with an estimated value of \$3.42 million
- Krinklewood Estate at Broke with an estimated value of \$2.95 million
- 11 Mathry Close Light Industrial Units Aiqua at Gowrie with an estimated value of \$2.49 million
- Thrift Close Industrial Development at Mount Thorley with an estimated value of \$2 million.

Singleton has slightly fewer such major projects compared to Muswellbrook, but they are more varied in character. Investment in Singleton is focused on tourist infrastructure, through the Culture Centre and Krinklewood Estate; the circular economy, through recycling and composting; and the ongoing development of light industry on available land.

11.8 Barriers and enablers to growth

Strengths	Weaknesses
<ul style="list-style-type: none"> • Road and rail infrastructure • Mining industry and support • Visitor economy as part of the wine region • Identification of new employment land • Industrial land close to town 	<ul style="list-style-type: none"> • Economic diversification • Wastewater capacity and servicing strategy • Traffic through town centre • Limited remaining serviced employment land • Land is in consolidated ownership
Opportunities	Threats
<ul style="list-style-type: none"> • Industrial expansion at Rixs Creek • Development of Whittingham as an intermodal site • Planned use of post-mining land and infrastructure • Singleton bypass enabling investment in the centre 	<ul style="list-style-type: none"> • Accelerated mine closures • Unable to unlock existing supply • Low population growth • Limited employment land capacity close to town

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11.9 Planning framework considerations

Development in Singleton LGA is guided by the Singleton Local Environmental Plan 2013 ('Singleton LEP'). Businesses in the Upper Hunter Region have identified the flexibility of planning systems as a key consideration for where to locate development. Singleton LEP provides for some additional permitted uses, mentioned below. More fundamental delivery tasks for across the region, however, involve enabling light industries as permissible with consent in E1 and E2 zones, investigating the removal of maximum height limits in E4 zones, and

investigating the possible impacts of parking requirements in LEPs. These are suggested as tasks for the Singleton LEP.

11.9.1 Additional permitted uses

Singleton LEP provides for the additional permitted use of office premises on R1-zoned lots totalling approximately 0.3 hectares of land along George Street, Singleton. Through these provisions, employment-generating land uses are permitted on non-employment land zoned for residential housing. However, these provisions are possibly responding to existing activities, rather than necessarily seeking to unlock new supplies of employment land.

11.9.2 Setback provisions

Consideration should be given to the potential role of setback provisions in the local planning framework. While building setbacks have a variety of purposes, relaxed setback rules may eventually enhance flexibility and attract more investors into the area.

11.10 Clustering opportunities

Singleton has some clusters that currently generate employment in the LGA. Singleton's existing and emerging industries should be used to facilitate new clusters, responding proactively to industry change.

As discussed in section 10.10, there have typically been synergies between Liddell and Bayswater Power Stations (located in Muswellbrook LGA) and nearby mines. This includes mines in Singleton LGA, for which synergies with power stations could be considered an industry cluster. As power stations close and coal mines are decommissioned, there is a need to replace this strong employment base with alternative local employment. A clear avenue for doing so is the re-use of ex-mining land to provide jobs, possibly involving renewable energy or transport and logistics clusters. Actions 4.1, 4.2, 4.3 provide guidance as to the planning requirements of doing so, with the latter action identifying Liddell and Ashton coal mines as potential future sites for employment clustering. Action 1.2 also discusses the potential role of the former Rixs Creek mining site as providing a new employment precinct in the area.

Another opportunity is to develop an intermodal facility at Wittingham, which would leverage the development of the Hunter and Central West-Orana Renewable Energy Zones to provide transport and logistics employment. This may aid in the development of a region-wide agglomeration of jobs connected to renewable energy production, such as advanced manufacturing; repair; and design. It would do so by strengthening the connectivity of industries across the region in addition to providing its own quantity of jobs. This concept could be applied at a number of well-located alternative sites throughout Singleton Shire, as well as in other LGAs.

Lastly, there is the opportunity to develop population-serving clusters through the development of Singleton town centre and/or new areas. This could include improvements to the amenity and accessibility of Singleton and/or the development of a supermarket north of the Hunter River. Developing towns within the LGA may attract further investment, which would encourage the further clustering of local businesses and commercial employment in town centres.

11.11 Actions

The following actions and principal delivery tasks are applicable for Singleton LGA:

Table 57 Actions and principal delivery tasks for Singleton LGA

Action	Principal delivery tasks
1.1: Secure a pipeline of zoned, serviced and unconstrained employment land.	<ul style="list-style-type: none"> Work with the landowner to secure servicing strategy for Whittingham including funding potential funding strategies.

1.2: Explore future employment investigation areas.	<ul style="list-style-type: none"> The former Rixs Creek mining site is logically located to be able to deliver industrial land. There is demand for 15 ha of industrial land in Singleton which could be delivered through this site. Work with the proponent to undertake technical studies and master planning to determine the ideal location for an industrial precinct.
1.3: Continue to monitor employment land supply through the Urban Development Program.	<ul style="list-style-type: none"> In collaboration with the Department of Planning and Environment, seek to provide information that informs the status, supply and challenges to delivering employment lands.
2.1: Prepare and implement centre activation strategies for the main settlements	<ul style="list-style-type: none"> Establish a clear vision for the town centre developed in collaboration with centre traders Identify catalyst sites that can be activated temporarily or permanently Establish and promote a regular event strategy to draw people into the town centres Incorporate an investment prospective that identifies the opportunities and gaps in the market for new retail and hospitality Establish or empowers the chamber of commerce or similar governance body to input into, implement and monitor the activation strategy.
2.3: Support start-up businesses and flexible working spaces to drive innovation and regional lifestyle opportunity.	<ul style="list-style-type: none"> Utilising existing underutilised council assets and government land Voluntary Planning Agreements Providing co-working or pop-up spaces in vacant commercial or industrial premises Providing shared (incubator) warehousing facilities to enable initial industry expansion.
2.6: Support new retail to accommodate population growth.	<ul style="list-style-type: none"> Identify and support a supermarket north of the Hunter River to support the growing population with full-line retail demand.
3.1: Leverage the growing tourism opportunity in Dungog, Singleton and Upper Hunter LGAs	<ul style="list-style-type: none"> Encourage the development of appropriate workers accommodation to free up accommodation for tourists Work with providers to offer unique and authentic experiences to attract visitors to eco and agritourism destinations. This can include activities such as hiking or cycling events, farm-to-table meals, farm tours, environment or agricultural education, and hands-on experiences like picking your own produce or helping with farm chores Build partnerships with local businesses, farmers, and tourism organizations to promote eco and agritourism destinations and provide visitors with a wider range of experiences Use digital marketing: strategies such as social media and online advertising to reach a wider audience and promote tourism destinations to potential visitors Offer value-added products such as farm-fresh produce, artisanal goods, and locally-made souvenirs to help generate additional revenue for farmers and enhance the overall visitor experience Investigate the potential for Aboriginal-based tourism opportunities to complement the existing nature and adventure offerings.
3.2: Unlock the opportunity for circular economy uses	<ul style="list-style-type: none"> Consider council site for the Hunter Joint Organisation Facility that incorporates FOGO processing.
3.3: Explore the opportunity for a major distribution centre or intermodal facility within the region to support future business establishment and job creation	<ul style="list-style-type: none"> In collaboration with Regional NSW, DPE and the land owner, seek to designate the site as a Special Activation Precinct Work with stakeholders to develop a masterplan and technical studies Seek to promote and attract significant industry investment in line with the strategic intent for the precinct.
3.4: Develop and promote the uptake of agri-tourism	<ul style="list-style-type: none"> Develop a simple factsheet that articulates the types of uses that can now operate on farms and the associated consent pathways Draw on information from the DPE factsheet on agritourism Share factsheet through social media and host on websites Partner with local chamber of commerce and business organisations to distribute information on agritourism rules.
4.1: Develop an industry diversification investment prospectus	<ul style="list-style-type: none"> Develop an investment prospectus (collaboration between Singleton and Muswellbrook councils, DPE and Regional NSW) to attract large industry operators that would be interested in investing in repurposing strategic mine sites. The prospectus should:

	<ul style="list-style-type: none"> – Advertise site opportunities – Demonstrate the strategic merits of the region – Demonstrate vision for the region and depth of market capacity.
4.2: Resolve key issues related to the use of former mining land	<ul style="list-style-type: none"> • Advocate that DPE and DRNSW as part of their place planning function work to: <ul style="list-style-type: none"> – Resolving biodiversity offsets to allow for site infrastructure to be retained and utilised – Consider partial modification pathway that do not restrict current mining operations – Find options to amend leases or WHS (Mines and Petroleum Sites) legislation to allow non-mining operation on land. • Advocate that DPE (Planning), DPE (EES), DRNSW, industries, councils and federal government form a working group to resolve key barriers. The findings should be reported to the Urban Development Program.
4.3: Assist in facilitating master planning processes on key mining closure sites	<ul style="list-style-type: none"> • Councils to work with proponents to support or encourage master planning process for the Mount Arthur Mine buffer land (near Thomas Mitchell Drive) and the Muswellbrook Coal proposed industrial land in Muswellbrook LGA, and for Liddell Coal Operations and Ashton Coal land in Singleton LGA. There is strategic merit in all locations for the sites to accommodate employment and economic generating uses. • Work with proponent, DPE, and Regional NSW to outline council's strong desire for economic uses for post-mining land as part of any council submission or advice related to mine extensions • Advocate and provide input into place strategies prepared by DPE for each of the mine closure sites. Regularly ask DPE for updates on funding and progress on these place strategies.
5.1: Aim to reduce development approval timeframes	<ul style="list-style-type: none"> • Encouraging the application of SEPP (Exempt and Complying Development) to reduce number of comprehensive development application that Council has to assess. This could be done by: <ul style="list-style-type: none"> – Providing information on Council's website about the circumstances in which a complying development application can be used (rather just a than a link to the planning portal) – Employing a shared 'joint organisation' Duty Planner to inform prospective applicants of the opportunities under part 5 of the SEPP for a fast track assessment via the complying development pathway and navigating the planning portal • Encourage formal and informal pre-DA meetings and ongoing discussions with applications to resolve issues well prior to the DA being lodged.
5.2: Implement a flexible planning framework	<ul style="list-style-type: none"> • Investigate removing maximum height limits in the E4 General Industrial zone to avoid unnecessarily deterring or restricting development • Investigate parking requirements to ensure that they are not overly restrictive and do not unnecessarily increase development costs • In Singleton consider the necessity of a 15m setback in B1, B5, and IN3 zone, and the 9m setback in the B6 one in the DCP.
5.3: Investigate removing or adding land uses that could affect the viability of commercial or industrial development	<ul style="list-style-type: none"> • In all LEPs, consider enabling light industries as permissible with consent in the E1 Local Centre zone and E2 Commercial Centre zone (where adopted).

12.0 UPPER HUNTER LGA PROFILE

12.1 Current situation

The Upper Hunter LGA occupies the northern portion of the Upper Hunter Region and is its largest LGA by size. It has a globally prominent equine industry, with an equine industry cluster near Scone. The Upper Hunter LGA has an opportunity to further leverage its strong agricultural industries, as well as related industries such as meat processing and eco-tourism.

12.2 Strategic context

Table 58 outlines the key local strategic documents that have informed the strategic planning context for the Upper Hunter LGA.

Table 58 Local Strategic Context

Key documents/strategies/actions	Relevant considerations for ELS
Upper Hunter Local Strategic Planning Statement (2020) 7.1 Sustainable Environment <ul style="list-style-type: none"> 7.0.5 Planning Priority: Facilitate the use of renewable energy <ul style="list-style-type: none"> Action 1.19 Support the investigation of renewable energy opportunities throughout the region and infrastructure requirements. 7.3 Rural Economy <ul style="list-style-type: none"> 7.0.9 Planning Priority: Promote sustainable agriculture <ul style="list-style-type: none"> Action 3.1 Incorporate the Land Use Strategy's local framework for assessing impacts to agricultural lands into statutory planning provisions (e.g. LEP) or, alternatively, DCP to mandate the preparation of an Agricultural Impact Assessment for certain developments that occur within areas identified as important to agricultural industries. 7.0.11 Planning Priority: Accommodate employment-generating activities <ul style="list-style-type: none"> Action 3.10 Review (and amend planning controls if necessary) the supply of floor space within commercial centres in Towns and Villages Action 3.11 Investigate the industrial land supply in Merriwa and Murrurundi Action 3.12 Develop partnerships with stakeholders to enhance development guidelines in relation to development within the vicinity of the Scone Airport Action 3.13 Work with TfNSW, RMS and DPIE to develop planning controls for land adjoining the Scone Bypass. 7.5 Vibrant and Creative Community <ul style="list-style-type: none"> 7.0.19 Planning Priority: Encourage economic diversification <ul style="list-style-type: none"> Action 5.8 Work with Upper Hunter Economic Diversification Plan partners to develop appropriate planning response Action 5.9 Support the establishment of the Upper Hunter Green Energy Precinct 	<p>The ELS should respond to the role of agriculture in the LGA and avoid contributing to land use conflict through the planning of employment lands.</p> <ul style="list-style-type: none"> The ELS should include a consideration of renewable energy, as relevant to employment lands within Upper Hunter LGA The ELS should also consider employment lands with regard to the need to consider the agricultural impacts of developments The ELS should respond to the LSPS's identified need to investigate industrial land in Merriwa and Murrurundi, land near the Scone Airport and Bypass, and commercial floorspace in existing centres Other needs for diversification, such as infrastructure, may also be identified in the ELS. The ELS should be carried out with regard given to the constraints and suitability of land across the LGA.
Upper Hunter Land Use Strategy 2017 Direction 1.4 Urban employment lands and centres <ul style="list-style-type: none"> Policies <ul style="list-style-type: none"> Employment lands will be regularly reviewed and maintained to provide a minimum of 5 years' supply of land zoned and serviced for industrial and commercial uses is available in a minimum of 2 landownerships A network of commercial centres will reflect the Settlement Pattern adopted by the Strategy, which will be used to consider the preferred 	<ul style="list-style-type: none"> The ELS should consider the combination of commercial, health, education, aviation, and industrial employment uses identified by the Strategy for the Upper Hunter LGA In terms of commercial employment land in the LGA, the ELS should consider existing centres, of which Scone is the largest

<p>location and scale of commercial, retail, community and civic developments</p> <ul style="list-style-type: none"> – The current supply of land zoned for business uses in Town and Village centres will be rationalised, and future development to strengthen commercial centres will be supported by appropriate planning controls – Inappropriate commercial developments (e.g. bulky goods retailing) will be discouraged from locating in industrial areas – Intensive/industrial agriculture uses may be permitted in industrial areas – Community and cultural facilities will be permitted in business and industrial zones <ul style="list-style-type: none"> • Strategic actions <ul style="list-style-type: none"> – Prioritise Investigation Areas as identified in the Strategy to assist with managing the industrial lands supply – Review the boundaries of and supply of floorspace within commercial centres in Towns and Villages – Reviewing the zoning regime in Merriwa and Murrurundi to consider the range of light industrial uses permitted in residential areas; and – Identifying an additional 2 to 5 ha of industrial lands, collectively, in these towns – Monitor and review the availability and take-up of commercial and industrial lands to identify the need for future rezoning. <p>Direction 2.2: Scone</p> <ul style="list-style-type: none"> • Objectives <ul style="list-style-type: none"> – To retain and attract employment-generating uses along the Satur/Bunnan Road corridor, particularly to support the ongoing viability and growth of the Airport, TAFE and Equine Centre. • Strategic actions <ul style="list-style-type: none"> – Review the potential and demand for commercial development potential along the proposed Scone bypass route and develop a strategy for responding to rezoning requests prior to the completion of the bypass, particularly at northern and southern intersection accesses to the town. <p>2.3: Scone's Airport and surrounds</p> <ul style="list-style-type: none"> • Objectives <ul style="list-style-type: none"> – To provide for the continued operation of Scone Airport and facilitate airport related employment generation – To support the implementation of Council's strategic plan for the Airport. • Policies <ul style="list-style-type: none"> – Maintain suitable zoning of buffer land in an appropriate location to enable airport related employment generating development. <p>Direction 2.4: Aberdeen</p> <ul style="list-style-type: none"> • Objectives <ul style="list-style-type: none"> – To rationalise the town's supply of industrial lands, supporting the efficient use and re-use of established industrial areas. <p>Direction 2.5: Merriwa</p> <ul style="list-style-type: none"> • Objectives <ul style="list-style-type: none"> – To support the future growth of the industrial area in the town. <p>Direction 2.6: Murrurundi</p> <ul style="list-style-type: none"> • Objectives <ul style="list-style-type: none"> – To support the future establishment of an industrial area in the town. • Strategic actions 	<ul style="list-style-type: none"> • While the Strategy states that commercial developments should be located away from industrial areas, the encouragement of community/cultural facilities in business/industrial zones, as well as the potential for agriculture in industrial areas, should inform the ELS • The ELS should respond to the Strategy's identification of the need for 2-5ha of additional industrial lands in Merriwa and Murrurundi, as well as the specific areas suggested for this land • The ELS should consider commercial development primarily around Scone • The ELS should consider possibilities for employment clusters surrounding the airport, TAFE and Equine Centre • The ELS should respond to the Strategy's identification of the need for buffer lands both surrounding the airport, and to protect different agricultural land uses • The ELS should consider the Strategy's proposed rationalisation of employment land in Aberdeen, as well as its identification of the former abattoir site for employment • The ELS should consider the potential healthcare and other service-related employment lands identified by the Strategy for Murrurundi • As with other LGAs, the ELS should consider balance between the current opportunities presented by coal and related industries, and the anticipated future need for diversified employment, across the Upper Hunter LGA.
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<ul style="list-style-type: none"> – Work with industry and the community to identify the requirements and considerations to establish a dedicated industrial area in Murrurundi – Once an industrial area is established in Murrurundi, use the Housing and Land Monitor to regularly monitor the supply of industrial lands. <p>Direction 4.1: Agricultural lands</p> <ul style="list-style-type: none"> • Policies • Proposals identified as being incompatible with existing or potential future agricultural enterprises will be generally discouraged, or will be required to establish and maintain appropriate buffers. 	
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12.3 Industries of employment

The Upper Hunter LGA has a particular strength in the agriculture industry. At the 2021 Census, 1,187 workers in the LGA were employed in Agriculture, Forestry and Fishing, comprising approximately 26 per cent of employed residents. The location quotient (LQ) value for this industry relative to the 'Rest of NSW' is 4.17. A full explanation of LQ analysis is provided in the main report; however, any LQ value above 2 is considered a major specialisation compared to a comparator area. As this indicates, agriculture is a particular strength of the Upper Hunter Shire.

Agriculture in the Upper Hunter LGA is centred around equine agriculture and food production. At the 2021 Census, Horse Farming employed 470 residents, with Beef Cattle Farming (Specialised) employing 410 residents, together providing the majority of agricultural employment in the LGA.

In addition to its agricultural sector, the Upper Hunter LGA leads the region in specialisations in the Arts and Recreation and Manufacturing industries, with respective LQs of 2.54 and 1.34. Its strength in arts and recreation has grown by 58 per cent between 2011-21, but it remains a small specialisation of employment mainly concentrated in the Horse and Dog Racing Activities sector, connected to the strong local equine industry. This may continue to grow in the region with further racing investment in the LGA. Upper Hunter LGA's manufacturing LQ has increased by 64 per cent between 2011 and 2021, predominantly within the Meat Processing industry. There is a meat processing plant in the area, which may work synergistically with nearby cattle farming patterns.

As this indicates, agriculture in the Upper Hunter LGA is also a catalyst for other industries, such as related recreation and manufacturing industries. This report considers further opportunities to leverage the LGA's existing strengths to develop industries that utilise employment lands.

12.4 Population and employment projections

Various methods for projecting population and employment growth are detailed in Sections 3.3 and 3.4 in the main Employment Lands Strategy. Table 41 indicates potential population and employment trends for Upper Hunter LGA between 2021 and 2041. As it shows, Scenario 2 of the population projections forecasts significantly different growth than Scenario 1, which is based on the work of DPE. This is particularly the case for the 'high' variant of Scenario 2, forecasting a growth of 2,446 residents, while DPE has projected negative growth. By contrast, both employment growth scenarios project positive growth, although Scenario 2 projects significantly higher growth, with a CAGR of 2.2 per cent compared to 0.7 per cent.

Table 59 Population and employment projections, Muswellbrook LGA, 2021-41

Upper Hunter LGA	2021	2041	2021-41 change	2021-41 CAGR
Population: Scenario 1	14,254	13,276	-978	-0.4%
Population: Scenario 2 (Medium)	14,254	16,000	1,746	0.6%
Population: Scenario 2 (High)	14,254	16,700	2,446	0.8%
Employment: Scenario 1	6,326	7,269	943	0.7%
Employment: Scenario 2	5,414	8,350	2,936	2.2%

Source: Hunter JO; ABS; TfNSW; HillPDA

12.5 Employment precincts

Table 21 identifies and describes the key employment precincts in Upper Hunter LGA.

Table 60 Upper Hunter LGA precincts

Precinct name	Current zone	Description
Employment land		
Makybe Diva Street Industrial	E4 General Industrial	Comprised of smaller vacant lots to the south, and two larger lots to the north. There is Evidence of some recent industrial activity to the south.
Muffett Street Industrial	E4 General Industrial	E4 General Industrial is located to the west of Muffett Street, and has highway access; however, the road widths present a challenge for larger trucks in the precinct. Precinct is largely vacant, light industrial – capacity for industrial related uses
Aberdeen Industrial	E4 General Industrial	Largely vacant with six vacant lots to the south. Some evidence of industrial use in the four lots to the northeast. However, it has been limited.
Merriwa Industrial	E4 General Industrial	Industrial precinct located to the west of the Merriwa town centre - includes a small range of local population servicing industrial precincts
Centres and large villages		
Aberdeen	E1 Local Centre	Township's retail and business core - Three small clusters centred on MacQueen Street offering retail and automotive services. Largely vacant, small building areas.
Scone	E1 Local Centre	Being a stud farm region, Scone focuses on agricultural industries with veterinary practices, livestock processing and selling centres. It is also the main centre for the region with major retail and population serving industries for the broader population.
Merriwa	E1 Local Centre	Local centre includes a small range of businesses providing a variety of goods and services to locals and visitors.
Murrundi	E1 Local Centre	Small retail offerings in detached dwellings centred on Mayne Street, part of the New England Highway
Other		
Muffett Street Special Purpose Precinct	SP1 Special Activities Livestock Processing Industry	Industrial uses are predominantly located along Muffett Street, as well as livestock processing and saleyards on SP1 zoned land to the north. Meatworks facilities are located to the south of the precinct, and a recycling centre to the north.
Equine Precinct (Flemington Driver)	RE2 Private Recreation	Located adjacent to the airport on Satur Road - Largely cleared land housing private recreation uses including Equine Research Centre and horse racing facilities

Precinct name	Current zone	Description
Airport Precinct (Airfield Road)	SP1 Special Activities Airport	Special activities airport co-located adjacent to an Equine Centre and tertiary educational institution
Aberdeen Mixed Use Employment	MU1 Mixed Use	Located to the South of Aberdeen - mixed use precinct is currently vacant

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12.6 Employment land supply and demand

HillPDA has undertaken an employment land audit and a demand analysis to calculate the likely under/oversupply of employment land from 2021 to 2041 across the region. The full methodology and findings of this process are detailed in the main report. Table 61 indicates the forecasted supply and demand of employment land in the Upper Hunter LGA from 2021 to 2041, showing that there is likely to be an oversupply of industrial land, and either a slight oversupply or undersupply of business land under population growth Scenarios 1 and 2 respectively, by 2041.

Table 61 Forecasted employment supply and demand, Upper Hunter LGA, 2021-41

Supply/Demand	Status/Scenario	Business	Industrial
Supply	Vacant (Audit)	12.8 (B4)	48
	Undeveloped (Serviced)	0	23.2
Demand	Scenario 1	6.0	8.9
	Scenario 2	16.8	25.5
Under (-) / Over Supply (+)	Scenario 1	6.8	39.1
	Scenario 2	-4	22.5

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12.7 Development activity

The Upper Hunter LGA has a development pipeline encapsulating a wide variety of employment-generating developments, with strong monetary investment in the pipeline for energy-related developments. Table 62 indicates the statuses and types of developments in the pipeline for the LGA, according to data published by Cordell Connect.

Table 62 Development pipeline in Upper Hunter LGA

Development Status	Value (\$m)	Count
Abandoned	\$194	7
Deferred	\$9	2
No further research to be conducted	\$30	27
Commenced	\$6	5
Possible	\$2,331	29
Early	\$-	-
Firm	\$29	4

Development Type (Commenced/Possible/Early/Firm developments)	Value (\$m)	Count
Food Processing	\$0.20	1
Tourist Accommodation	\$2.90	3
Entertainment	\$0.20	1
Industrial	\$3.10	6
Commercial	\$0.80	2
Emergency	\$1.00	1
Heavy Industry	\$-	-
Medical	\$0.82	1
Tourist Activity	\$-	-
Light Industry	\$1.20	6
Infrastructure	\$0.50	1
Military	\$-	-
Transport	\$4.70	2
Agriculture	\$31.50	5
Power Station	\$2,310.20	3
Retail	\$0.75	1

Source: Cordell Connect

The strongest investments in the Upper Hunter LGA are for pipeline developments relating to power stations, with an overall potential investment value of \$2.31 billion. Renewable energy generation, which would be supported by such investment, exhibits lower job densities and tends to have a relatively smaller impact on concentrated employment generation. As such, renewable energy developments have been excluded from the following list, which details the Upper Hunter LGA's pipeline major projects:

- Racing NSW Scone Race Club Horse Stables at Scone with an estimated value of \$32 million
- Scone Equine Hospital Stages 1 & 2 at Scone with an estimated value of \$13 million
- 1-5 Makybe Diva Street & 2854 New England Highway Service Centre at Scone with an estimated value of \$11 million.

Such investments are most commonly focused on the equine industry, which will be further enhanced by the Racing NSW Precinct. The investment with the highest potential monetary value is the Racing NSW Scone Race Club Horse Stables, with an estimated value of \$32 million.

12.8 Barriers and enablers to growth

Strengths	Weaknesses
<ul style="list-style-type: none"> Globally significant equine industry Strong food-based agriculture industry 	<ul style="list-style-type: none"> Economic diversification Wastewater capacity and servicing Challenges of highway connectivity for employment lands
Opportunities	Threats
<ul style="list-style-type: none"> Tourism leveraging strengths in agricultural industries Solar energy generation Racing NSW precinct development Scone bypass 	<ul style="list-style-type: none"> Low population growth Presence of one major employer in the area (JBS Australia)

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12.9 Planning framework considerations

Development in the Upper Hunter LGA is guided by the Upper Hunter Local Environmental Plan 2013 ('Upper Hunter LEP'). Businesses in the Upper Hunter Region have identified the flexibility of planning systems as a key consideration for where to locate development. The Upper Hunter LEP has unique elements that either provide some flexibility or could be amended to do so. General delivery tasks for across the region, however, involve enabling light industries as permissible with consent in E1 zones, investigating the removal of maximum height limits in E4 zones, and investigating the possible impacts of parking requirements in LEPs.

12.9.1 Additional permitted uses

The Upper Hunter LEP provides for the additional permitted uses of animal boarding or training establishments and veterinary hospital at the Hunter Valley Equine Research Centre Precinct at Scone. This land is zoned RE2 Private Recreation. While not being employment land, LEP provisions therefore allow for employment-generating land uses to be carried out on approximately 110.3 hectares of land at this site.

12.9.2 Potential tourism provisions

The Upper Hunter Shire has a strong agricultural base, giving it the potential to facilitate agritourism. While eco-tourism is discussed in the Upper Hunter LEP, there is scope for Council to implement changes introduced by the Department of Planning and Environment in 2022 regarding the treatment of agritourism in LEPs. The adoption of these changes would extend the definition of agritourism in the Upper Hunter LEP to include farm stay accommodation, while streamlining planning pathways regarding developments. This would allow the Upper Hunter Shire to leverage its agricultural position to provide employment land relating to tourism, depending on the appropriate land use zones for such changes.

There is also scope for Council to consider enabling backpackers' accommodation, bed and breakfast accommodation, and serviced apartments as permissible uses in E1 zones through the Upper Hunter LEP, which would support the development of tourism in the LGA's towns.

12.10 Clustering opportunities

The Upper Hunter LGA has some employment clusters that could be further leveraged, although it should be noted that industry diversification would also be beneficial for the area.

An equine industry precinct is located to the west of Scone. A racecourse, TAFE campus, and the Equine Research Facility are all located around Satur Road, providing a set of anchor institutions for employment clustering. These are supported by nearby infrastructure including Scone Airport and Scone Equine Hospital. This cluster of sites

has supported the development of the Upper Hunter LGA's engine industries. Racing NSW investment in a racing precinct will likely further the development of this cluster, as would the development of the Upper Hunter Equine Innovation Precinct as identified in the *Upper Hunter Diversification Action Plan*. Such developments could be supported by providing for employment on SP1 land at Scone Airport or rezoning nearby land in the future.

Another potential employment cluster is to the northeast of Scone, which includes a JBS Australia processing facility and a nearby livestock selling centre near Muffett Street. There is potential to attract a wider range of food-related facilities to the area. This may also aid in making local employment more secure by diversifying food manufacturing across multiple employers. However, the viability of establishing more food manufacturing in this area would first have to be established.

12.11 Actions

The following actions and principal delivery tasks are applicable for Upper Hunter LGA:

Table 63 Actions and principal delivery tasks for Upper Hunter LGA

Action	Principal delivery tasks
1.1: Secure a pipeline of zoned, serviced and unconstrained employment land.	<ul style="list-style-type: none"> Prepare a business case for the upgrade of the Scone Wastewater Treatment Plant to increase its capacity to allow further expansion of existing industrial sites Consider supporting employment uses on SP1 land at Scone airport and eventually rezoning land adjacent to the racing precinct and airport to future employment uses Investigate potential tenants and employers for industrial land at Aberdeen.
1.2: Explore future employment investigation areas.	<ul style="list-style-type: none"> Encourage the take-up of land for specialised uses in the Equine Precinct and at the airport. This could include light industry and commercial uses that complement the primary precinct intent Explore an investigation site for a regional holiday/caravan park in the LGA including servicing and water treatment.
1.3: Continue to monitor employment land supply through the Urban Development Program.	<ul style="list-style-type: none"> In collaboration with the Department of Planning and Environment, seek to provide information that informs the status, supply and challenges to delivering employment lands.
2.1: Prepare and implement centre activation strategies for the main settlements	<ul style="list-style-type: none"> Establish a clear vision for the town centre developed in collaboration with centre traders Identify catalyst sites that can be activated temporarily or permanently Establish and promote a regular event strategy to draw people into the town centres Incorporate an investment prospective that identifies the opportunities and gaps in the market for new retail and hospitality Establish or empowers the chamber of commerce or similar governance body to input into, implement and monitor the activation strategy.
2.3: Support start-up businesses and flexible working spaces to drive innovation and regional lifestyle opportunity.	<ul style="list-style-type: none"> Utilising existing underutilised council assets and government land Voluntary Planning Agreements Providing co-working or pop-up spaces in vacant commercial or industrial premises Providing shared (incubator) warehousing facilities to enable initial industry expansion.
3.1: Leverage the growing tourism opportunity in Dungog, Singleton and Upper Hunter LGAs	<ul style="list-style-type: none"> Encourage the development of appropriate workers accommodation to free up accommodation for tourists Investigate a site in the Upper Hunter LGA for a major tourist oriented premium holiday/caravan park Work with providers to offer unique and authentic experiences to attract visitors to eco and agritourism destinations. This can include activities such as hiking or cycling events, farm-to-table meals, farm tours, environment or agricultural education, and hands-on experiences like picking your own produce or helping with farm chores Build partnerships with local businesses, farmers, and tourism organizations to promote eco and agritourism destinations and provide visitors with a wider range of experiences Use digital marketing: strategies such as social media and online advertising to reach a wider audience and promote tourism destinations to potential visitors

	<ul style="list-style-type: none"> • Offer value-added products such as farm-fresh produce, artisanal goods, and locally-made souvenirs to help generate additional revenue for farmers and enhance the overall visitor experience • Investigate the potential for Aboriginal-based tourism opportunities to complement the existing nature and adventure offerings.
3.4: Develop and promote the uptake of agri-tourism	<ul style="list-style-type: none"> • Develop a simple factsheet that articulates the types of uses that can now operate on farms and the associated consent pathways • Draw on information from the DPE factsheet on agritourism • Share factsheet through social media and host on websites • Partner with local chamber of commerce and business organisations to distribute information on agritourism rules • Upper Hunter Council to consider implementing the agritourism clauses in its LEP.
5.1: Aim to reduce development approval timeframes	<ul style="list-style-type: none"> • Encouraging the application of SEPP (Exempt and Complying Development) to reduce number of comprehensive development application that Council has to assess. This could be done by: <ul style="list-style-type: none"> – Providing information on Council's website about the circumstances in which a complying development application can be used (rather just a than a link to the planning portal) – Employing a shared 'joint organisation' Duty Planner to inform prospective applicants of the opportunities under part 5 of the SEPP for a fast track assessment via the complying development pathway and navigating the planning portal • Encourage formal and informal pre-DA meetings and ongoing discussions with applications to resolve issues well prior to the DA being lodged.
5.2: Implement a flexible planning framework	<ul style="list-style-type: none"> • Investigate parking requirements to ensure that they are not overly restrictive and do not unnecessarily increase development costs.
5.3: Investigate removing or adding land uses that could affect the viability of commercial or industrial development	<ul style="list-style-type: none"> • In all LEPs, consider enabling light industries as permissible with consent in the E1 Local Centre zone and E2 Commercial Centre zone (where adopted) • In Upper Hunter LEP, consider enabling backpackers' accommodation, bed and breakfast accommodation and serviced apartments as permissible uses in the E1 Local Centre zone.

13.0 STAKEHOLDER APPROACH

HillPDA completed targeted industry consultation to understand gaps around employment land across the study area. This consultation was focussed on better understanding any barriers to the development of existing land stocks, including infrastructure requirements. It consisted of two parts:

Targeted phone calls, where HillPDA completed informal interviews over the course of two weeks with key business representatives and/or industrial representatives within each LGA. The conversations would aim to discuss items such as (but not limited to):

- SWOT of employment lands
- Understand any incentives that may attract business
- Understand any barriers to attracting businesses
- What infrastructure attracts businesses/are required in each LGA
- Locational attributes/attractors
- Is the supply, zoning and location of land appropriate for business needs.

Key stakeholder workshops which consisted of an interactive online session with key internal Council staff from each LGA (separately) and the Department of Regional NSW. These meetings would allowed HillPDA to better understands:

- Gain local knowledge of employment lands in each LGA
- Ensure recommendation alignment with local planning and growth strategies
- Infrastructure requirements
- Issues or possible improvements to planning controls or employment areas
- Understand any incentives and barriers for businesses.

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5. Due care has been taken to prepare the attached financial models from available information at the time of writing, however no responsibility can be or is accepted for errors or inaccuracies that may have occurred either with the programming or the resultant financial projections and their assumptions.
6. This report does not constitute a valuation of any property or interest in property. In preparing this report HillPDA has relied upon information concerning the subject property and/or proposed development provided by the Client and HillPDA has not independently verified this information except where noted in this report.
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This valuation is prepared on the assumption that the lender or addressee as referred to in this valuation report (and no other) may rely on the valuation for mortgage finance purposes and the lender has complied with its own lending guidelines as well as prudent finance industry lending practices, and has considered all prudent aspects of credit risk for any potential borrower, including the borrower's ability to service and repay any mortgage loan. Further, the valuation is prepared on the assumption that the lender is providing mortgage financing at a conservative and prudent loan to value ratio.
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SYDNEY

Level 3, 234 George Street
Sydney NSW 2000
GPO Box 2748 Sydney NSW 2001
t: +61 2 9252 8777
f: +61 2 9252 6077
e: sydney@hillpda.com

MELBOURNE

Suite 114, 838 Collins Street
Docklands VIC 3008
t: +61 3 9629 1842
f: +61 3 9629 6315
e: melbourne@hillpda.com

WWW.HILLPDA.COM

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■ P23008 Upper Hunter Region Employment Lands Strategy

Upper Hunter Region Employment Lands Strategy – Muswellbrook Shire Actions Prioritised

BA: Business Action delivered by changes to staff practices/procedures with current resources on an ongoing basis

Short term: 1 – 2 years

Medium Term: 3 – 5 years

Long Term: 6-10 years

Action	Delivery Task	Timeframe	Funding
General	G1: Refer to report and its recommendations when assessing development applications and request to change the Muswellbrook LEP 2009/Muswellbrook DCP 2009.	BA	Council
	G2. Refer to report recommendations when updating the Muswellbrook Local Strategic Planning Statement, Community Strategic Plan and annual Operational Plan.	BA	Council
	G3. Refer to the report and its recommendations when preparing advocacy documents, submissions on State Gov policy and submissions for funding/grants.	BA	Council
1.1: Secure a pipeline of zoned, serviced and unconstrained employment land.	1.1.1 Support the proposed translation of the employment land reform to deliver more E3 Productivity Support land around Rutherford Road, Skellatar Stock Route and Racecourse Road and Central Muswellbrook	Long	Council
	1.1.2 Investigate and rezone an industrial precinct (E4 General Industrial) near the existing industrial precinct at Thomas Mitchell Drive, the junction of Muscle Creek Rd and the proposed bypass or St Hilliers	Medium	Council
	1.1.3 Explore use of the SP4 Enterprise zone for mine buffer land and former mine and power station sites for large manufacturing and agribusinesses that are not appropriate in a traditional E4 General Industrial zone, and are capable of managing all their waste disposal needs on site.	Medium	Council

Action	Delivery Task	Timeframe	Funding
1.2: Explore future employment investigation areas.	1.2.1 In collaboration with landowners, seek to transition the AGL Liddell Site from an SP2 Special Purpose site to an SP4 Enterprise zone that would enable flexibility to curate employment uses on the site	Short	Council & Landowner
	1.2.2 Investigate potential for rezoning near the Racecourse to an E3 Economic Productivity zone to enable more opportunity for light industry, advanced manufacturing, and a homemakers centre.	Long	Council
	1.2.3 Work with proponent (BHP) to encourage a master planning process on Mount Arthur land that seeks to repurpose hardstand infrastructure for the purpose of industrial uses. Considering the location, land along Thomas Mitchell Drive may be appropriate for circular economy uses.	Medium	Council & Landowner
1.3: Continue to monitor employment land supply through the Urban Development Program.	1.3.1 In collaboration with the Department of Planning and Environment, seek to provide information that informs the status, supply and challenges to delivering employment lands.	Medium	Council & DPHI
2.1: Prepare and implement centre activation strategies for the main settlements	2.1.1 Establish a clear vision for the town centre developed in collaboration with centre traders	Medium	Council & grants
	2.1.2 Identify catalyst sites that can be activated temporarily or permanently	BA	Council
	2.1.3 Establish and promote a regular event strategy to draw people into the town centres	Short	Council
	2.1.4 Incorporate an investment prospective that identifies the opportunities and gaps in the market for new retail and hospitality	Short	Council
	2.1.5 Establish or empowers the chamber of commerce or similar governance body to input into, implement and monitor the activation strategy.	Short	Council

Action	Delivery Task	Timeframe	Funding
2.2: Promote and facilitate, in collaboration with the landowner, the establishment of a regional homemaker centre in Muswellbrook.	2.2.1 Explore options for a Bulky Goods retailing site should the Showground no longer be relocated near Skellatar Stock Route and near Racecourse Road to clustering entertainment uses. Working with landowners to seek rezone land, if necessary.	Long	Council
	2.2.2 Attract interested investors and tenants to establish in the homemaker centre.	Long	Council
2.3: Support start-up businesses and flexible working spaces to drive innovation and regional lifestyle opportunity.	2.3.1 Utilise existing underutilised council assets and government land for start up businesses	Medium	Council & grants
	2.3.2 Voluntary Planning Agreements utilised to establish some flexible working spaces within new development	Medium	Community Benefit Fund
	2.3.3 Provide co-working or pop-up spaces in vacant commercial or industrial premises	Short	Council and Landowners
	2.3.4 Provide shared (incubator) warehousing facilities to enable initial industry expansion.	Long	Council, Community Benefit Fund & grants
2.6: Support new retail to accommodate population growth.	2.6 Muswellbrook has capacity for an additional 6,378sqm of retail overall, of which 2,021sqm is required for supermarket and grocery sales. While there may not be capacity for a full-line supermarket, there could be capacity for a fresh format or an independent supermarket in Muswellbrook to serve the expected population growth. Explore with masterplans for urban growth in Muswellbrook.	Long	Council;
3.2: Unlock the opportunity for circular economy uses	3.2.1 Write to the EPA to advocate for former mining land in Muswellbrook to be used for circular economy uses as part of the energy from waste policy principles.	BA	Council
	3.2.2 Consider Council sites for FOGO processing.	Short	Council

Action	Delivery Task	Timeframe	Funding
	3.2.3 Progress with construction with Council's FOGO processing facility	Short	Council & grants
	3.2.4 Consider establishing separation of Commercial and industrial wastes at the existing Waste & Recycling Facility to diverse from landfill and return to functional economy.	Medium	Council
	3.2.5 Consider amendments to local planning controls to permit reuse of recovered waste in building construction.	Medium	Council
3.3: Explore the opportunity for a major distribution centre or intermodal facility within the region to support future business establishment and job creation	3.3.1 In collaboration with Regional NSW, DPHI and the land owner, seek to designate a site as a priority precinct.	Medium	Council & DPHI
	3.3.2 Work with stakeholders to develop a masterplan and technical studies for an intermodal facility	Long	Council & grants
	3.3.3 Seek to promote and attract significant industry investment in line with the strategic intent for the intermodal precinct	Long	Community Benefit Fund
3.4: Develop and promote the uptake of agri-tourism	3.4.1 Develop a simple factsheet that articulates the types of uses that can now operate on farms and the associated consent pathways	Short	Council
	3.4.2 Partner with local chamber of commerce and business organisations to distribute information on agritourism rules.	Short	Council

Action	Delivery Task	Timeframe	Funding
4.1: Develop an industry diversification investment prospectus	4.1.1 Develop an investment prospectus (collaboration between Singleton and Muswellbrook councils, DPE and Regional NSW) to attract large industry operators that would be interested in investing in repurposing strategic mine sites. The prospectus should: <ul style="list-style-type: none"> a) Advertise site opportunities b) Demonstrate the strategic merits of the region c) Demonstrate vision for the region and depth of market capacity. 	Short	Council, Community Benefit Fund & Regional NSW./ Investment NSW
4.2: Resolve key issues related to the use of former mining land	4.2.1 Advocate that DPHI and DRNSW as part of their place planning function work to: <ul style="list-style-type: none"> a) Resolve biodiversity offsets to allow for site infrastructure to be retained and utilised b) Consider partial modification pathway that do not restrict current mining operations c) Find options to amend leases or WHS (Mines and Petroleum Sites) legislation to allow non-mining operation on land. 	BA	Council (but the place planning function is DPHI)
	4.2.2 Advocate that DPHI, DPE (EES), DRNSW, industries, councils and federal government form a working group to resolve key barriers. The findings should be reported to the Urban Development Program.	Short	Council
4.3: Assist in facilitating master planning processes on key mining closure sites	4.3.1 Work with proponents to support or encourage master planning process for the Mount Arthur Mine buffer land (near Thomas Mitchell Drive) and the Muswellbrook Coal proposed industrial land in Muswellbrook LGA, and for Liddell Coal Operations. There is strategic merit in all locations for the sites to accommodate employment and economic generating uses.	BA (Ongoing)	Council & landowners

Action	Delivery Task	Timeframe	Funding
	4.3.2 Work with proponents, DPHI, and Regional NSW to outline Council's strong desire for economic uses for post-mining land as part of any council submission or advice related to mine extensions	BA	Council
	4.3.3 Advocate and provide input into place strategies prepared by DPE for each of the mine closure sites. Regularly ask DPE for updates on funding and progress on these place strategies.	BA	Council
5.1: Aim to reduce development approval timeframes	5.1.1 Encourage the use of SEPP (Exempt and Complying Development) to reduce number of comprehensive development application that Council must assess. This could be done by: <ul style="list-style-type: none"> a) Providing information on Council's website about the circumstances in which a complying development application can be used (rather just a than a link to the planning portal) b) Employing a shared 'joint organisation' Duty Planner to inform prospective applicants of the opportunities under part 5 of the SEPP for a fast track assessment via the complying development pathway and navigating the planning portal 	Short	Council
	5.1.2 Encourage formal and informal pre-DA meetings and ongoing discussions with applications to resolve issues well prior to the DA being lodged.	BA	Council
5.2: Implement a flexible planning framework	5.2.1 Investigate removing maximum height limits in the E4 General Industrial zone to avoid unnecessarily deterring or restricting development.	Medium	Council
	5.2.2 Investigate parking requirements to ensure that they are not overly restrictive and do not unnecessarily increase development costs.	Medium	Council
	5.2.3 Establish a collaborative working group of Councils to align standards across the LGA.	Short	Council

Action	Delivery Task	Timeframe	Funding
	5.2.4 In Muswellbrook consider the necessity of 10.0m setback from the principal boundary alignment in industrial areas, and the variation criteria requiring 6m landscaping across the frontage of the site in the DCP.	Medium	Council
5.3: Investigate removing or adding land uses that could affect the viability of commercial or industrial development	5.3.1 Consider enabling light industries as permissible with consent in the E1 Local Centre zone and E2 Commercial Centre zone (where adopted)	Medium	Council
	5.3.2 In Muswellbrook LEP, consider enabling shop top housing as permissible with consent in the E2 Commercial Centre zone.	Complete	

**10.1.6. Monthly Report to Council - Planning, Environment and Regulatory Services**

Attachments:	Nil
Responsible Officer:	Sharon Pope - Director - Planning & Environment
Author:	Tracy Ward (Sustainability Officer), Jenna Cambourn (Administration Officer), Michael Brady (Sustainability Officer)
Community Plan Issue:	6 - Community Leadership
Community Plan Goal:	Collaborative and responsive leadership that meets the expectations and anticipates the needs of the community.
Community Plan Strategy:	6.2.1 - Maintain a strong focus on financial discipline to enable Council to properly respond to the needs of the communities it serves.

OFFICER'S RECOMMENDATION

The information contained in this report be noted.

Moved: _____ **Seconded:** _____

REPORT**PLANNING AND ENVIRONMENT*****Schedule 1: Development Applications Approved (1/2/2024-10/3/2024)***

DA No.	DESCRIPTION	PROPERTY	VALUE (\$)
2023.111.2	S4.55(1A) Modification - Dwelling house	16 Stockyard Parade Muswellbrook	\$694,655.00
2023.122.1	Garage with first floor loft	3 Arlingham Close Muswellbrook	\$152,515.00
2011.10.2	S4.55(2) Modification - Change to number of storage unit blocks	49 Enterprise Crescent Muswellbrook	\$80,000.00
2023.107.1	Ancillary Use - Shed	5 Stockyard Parade Muswellbrook	\$62,994.00
2023.96.1	Shed	31 Babbler Crescent Muscle Creek	\$74,000.00
2023.56.1	Geotechnical investigations & clearing of native vegetation	Limestone Road Muswellbrook	\$993,939.00



DA No.	DESCRIPTION	PROPERTY	VALUE (\$)
2023.118.1	construction of class 10a steel frame shed	75 Woodland Ridge Road Muscle Creek	\$75,000.00
2023.103.1	Installation of a veranda at the front of the residence	Ellis Parish County Brisbane	\$15,000.00

TOTAL = 8***Schedule 2: Development Applications Currently Being Assessed******As at 11/3/2024***

DA No.	DESCRIPTION	PROPERTY	VALUE
2022.124.2	S8.2 Review - Shed for Community Facility	17-19 Maitland Street Muswellbrook	\$ 182,720.00
2024.13.1	Inground Fibreglass Swimming Pool, and Associated Safety Barriers	24 Rosella Close Muscle Creek	\$ 40,380.00
2024.11.1	Detached Secondary Dwelling	9 Adams Street Muswellbrook	\$ 151,500.00
2024.8.1	Shed	75 Woodland Ridge Road Muscle Creek	\$ 58,000.00
2023.140.1	Battery Energy Storage System	981 New England Highway Aberdeen	\$16,883,605.00
2023.139.1	Battery Energy Storage System	981 New England Highway Aberdeen	\$16,883,605.00
2024.5.1	Carport	71 Virginia Street Denman	\$ 10,989.00
2022.132.2	S4.55(1) (Modification) Sixty Seven(67) Lot Subdivision & Childcare Centre	9036 New England Highway Muswellbrook	\$ 6,705,835.00
2023.29.2	S4.55(1A) Modification - Dwelling House	6 Stable Close Muswellbrook	\$ 538,860.00
2024.9.1	Demolition Of Existing Structures & Construction of Childcare Centre	38 Maitland Street Muswellbrook	\$ 1,924,000.00
2024.6.1	Shed	14 Hyde Street Denman	\$ 25,542.00
2024.7.1	Shed	57 Stockyard Parade Muswellbrook	\$ 55,242.00
2023.130.1	Subdivision of 6 lots into 3	New England Highway Liddell	\$ 98,900.00
2017.76.2	S4.55 (2) Modification- Renovations and Additions to Racing & Function Centre	35 Racecourse Road Muswellbrook	\$ 4,750,965.00



DA No.	DESCRIPTION	PROPERTY	VALUE
2024.3.1	Retaining wall and outdoor deck	9 Shearer's Close Muswellbrook	\$ 251,217.00
2024.4.1	Demolition of above ground structures at existing service station.	12-20 Sydney Street Muswellbrook	\$ 79,630.00
2024.2.1	Farm Shed - Roof	386 Ferndale Road Yarrawa	\$ 99,000.00
2023.138.1	Shed	42 Babbler Crescent Muscle Creek	\$ 73,000.00
2021.94.3	S4.55(1) Modification Second Storey Addition, Inground Pool Alfresco	20 Cypress Place Muswellbrook	\$ 250,000.00
2023.134.1	Carport	20 Thompson Street Muswellbrook	\$ 10,363.00
2023.125.1	Subdivision of Six (6) Lots into Thirteen (13) Lots	3 Bengalla Road Muswellbrook	\$ 30,000.00
2024.1.1	Demolition of existing buildings at 88-108 Bridge Street	88-96 Bridge Street Muswellbrook	\$ 500,000.00
2022.5.2	S4.55(1A) Modification - Storage Facility & Signage	Victoria Street Muswellbrook	\$ 1,304,330.00
2018.54.9	S4.55(1A) Modification - Alterations and additions to Loxton House	142 Bridge Street Muswellbrook	\$ 1,100,000.00
2023.136.1	Double garage with awning	1639 Merriwa Road Sandy Hollow	\$ 37,900.00
2023.133.1	Two (2) Lot Subdivision	3179 Bylong Valley Wy Baerami	\$ 23,000.00
2023.128.1	Subdivision of One (1) Lot into Two (2) Lots	20 Honey Lane Sandy Hollow	\$ 27,500.00
2023.54.3	S4.55(1A) Modification - Commercial Storage	39-41 Ogilvie Street Denman	\$ 121,391.00
2023.129.1	New dwelling & change of use of existing cottage to secondary dwelling	1010 Bylong Valley Wy Baerami	\$ 463,000.00
2023.131.1	Demolition of a dwelling and construction of multi-dwelling housing comprised of four (4) dwellings	35 Scott Street Muswellbrook	\$ 1,196,490.00
2023.60.1	Dwelling Alterations and additions (pool deck & awning)	22 Lorne Street Muswellbrook	\$ 35,000.00
2023.132.1	Shed	5 Octagonal Way Muswellbrook	\$ 30,000.00



DA No.	DESCRIPTION	PROPERTY	VALUE
2023.124.1	Swimming Pool & Associated Barriers	12a Grey Gum Road Denman	\$ 49,620.00
2023.119.1	Alterations and additions to Three (3) heritage listed Buildings	90 Wiltons Lane Kayuga	\$ 882,527.00
2023.126.1	Subdivision of One (1) Lot into Two (2) Lots	90-92 Palace Street Denman	\$ 15,000.00
2023.123.1	Dwelling - Relocated	478 Sandy Creek Road Muswellbrook	\$ 135,240.00
2023.117.1	Dwelling House - Single Storey - Manufactured Home	13 Virginia Street Denman	\$ 296,551.00
2017.8.2	S4.55(2) Modification -129 lot residential subdivision in 5 stages	Almond Street Denman	\$ 4,000,000.00
2023.112.1	Dwelling House	44 Aberdeen Street Muswellbrook	\$ 576,090.00
2023.76.2	S4.55(1) Modification - Subdivision of One (1) Lot into Two (2) Lots	280 Scrumlo Road Hebden	\$ 28,600.00
2023.105.1	Signage - Fascia and freestanding sign replacement	102-106 Sydney Street Muswellbrook	\$ 40,000.00
2023.108.1	Ancillary Use - Carport	10 Ted Clay Street Muswellbrook	\$ 13,952.00
2023.100.1	Demolition, 2 Shops, 2 Dwellings, Motel Building, strata subdivision Demolition of Existing Structures; construction of 2 retail premises, 2 shop top houses, 7-unit motel and Strata Title Subdivision (11 lots)	37 Ogilvie Street Denman	\$ 1,441,202.00
2023.54.2	S4.55(1A) Modification - Commercial Storage Building	39-41 Ogilvie Street Denman	\$ 121,391.00
2021.29.2	S4.55(1A) Modification - Relocation of Existing Dwelling & Construct New dwelling	49 Carl Street Muswellbrook	\$ 490,000.00
2023.78.1	Geotechnical Drilling & minor vegetation clearing	Dolahentys Road McCullys Gap	\$ 1,888,600.00
2023.86.1	Construction of a 90 Place Childcare Centre	84 Brook Street Muswellbrook	\$ 1,975,000.00



DA No.	DESCRIPTION	PROPERTY	VALUE
2023.72.1	Demolition of Existing Structures & Construction of Childcare Centre	200 Bridge Street Muswellbrook	\$ 2,960,280.00
2023.66.1	Battery Energy Storage System and Associated Shed Structures	105 Merriwa Road Denman	\$16,900,000.00
2023.57.1	Battery Energy Storage System & Shed Structures	981 New England Highway Aberdeen	\$16,900,000.00
2023.65.1	Hotel Or Motel Accommodation - 4 Accommodation Units	10 Ogilvie Street Denman	\$ 42,900.00
2023.61.1	Three (3) Lot Subdivision	Golden Hwy Giants Creek	\$ 20,031.00
2023.41.1	Steel Frame Industrial structure	12 Wallarah Road Muswellbrook	\$ 100,000.00
2023.14.1	Storage Complex - 103 self-storage units and 12 open storage bays	Turner Street Denman	\$ 3,555,527.00
2022.147.1	Change of Use - Tyre Recycling Facility	12 Carramere Road Muswellbrook	\$ 2,200,000.00
2023.135.1	Shed	44 Cousins Street Muswellbrook	\$ 30,000.00
2022.95.1	Staged Demolition of Existing Buildings and Construction of New Grandstand and Amenities.	3 Wilkinson Avenue Muswellbrook	\$ 9,455,600.00
2022.92.1	Subdivision of One (1) Lot into One Hundred & Ninety-Four (194) Residential Lots	Almond Street Denman	\$18,284,734.00
2002.205.9	S4.55 (1A) Modification - Changes in Rehabilitation Framework	Muscle Creek Road Muscle Creek	\$ -
2021.137.1	Change Of Use to Educational Facility	820 Rosemount Road Denman	\$ -
2021.73.1	Temporary use of the land for receival and dismantling of rail wagons with off-site disposal	18 Strathmore Road Muswellbrook	\$ 50,000.00
2020.83.1	Subdivision of one lot (1) into three (3)	60-62 Palace Street Denman	\$ 10,000.00
2020.7.1	Additions and Alterations to existing Hotel	184 Bridge Street Muswellbrook	\$ 110,000.00
2019.53.1	Subdivision of Two (2) Lots into Seventy-Five (75) Lots	9027 New England Hwy Muswellbrook	\$ 4,875,600.00



DA No.	DESCRIPTION	PROPERTY	VALUE
2024.12.1	Development and construction of a 40m Telecommunications Monopole at the BMX Track in Muswellbrook	Cook Street Muswellbrook	\$ 350,000.00
2023.137.1	Detached Steel Framed Shed and Pool	54 Humphries Street Muswellbrook	\$ 18,800.00
2023.113.1	A storage room will be added to the existing exhibition hall.	Ellis Parish County Brisbane	\$ 11,000.00
2023.83.1	Three (3) Lot Subdivision	Golden Hwy Giants Creek	\$ 20,031.00
2023.19.1	Change of Use - Home Occupation	16 Burgundy Street Muswellbrook	\$ 10,000.00
2022.74.2	Construction of a double storey dwelling	13 Lou Fisher Place Muswellbrook	\$ 425,000.00
2021.121.2	Construction of a 5.6m x 3.7m x 3 m room in the shed single-story office	95-107 Maitland Street Muswellbrook	\$ 5,000.00

Total = 71



20.1.12 Inspect onsite wastewater sewerage systems to ensure they are installed and maintained in compliance with regulatory requirements.

On-site Wastewater Statistics - 13 Month Analysis (2023/2024)

	Feb 23	Mar 23	Apr 23	May 23	Jun 23	July 23	Aug 23	Sept 23	Oct 23	Nov 23	Dec 23	Jan 24	Feb 24
Applications Received (new installation)	0	2	0	2		0	1	1	2	3	0	1	0
Applications Approved (new installation)	0	0	0	0		1	2	2	0	1	1	0	1
Inspections (new system)	0	7	0	0		0	3	1	3	3	3	0	0
Inspections (existing system)	2	0	0	0		1	1	0	0	3	0	1	33

24.1.5 Registration and inspection of regulated premises (caravan parks, food outlets, skin penetration premises, hairdressers, mortuaries, air handling systems) in accordance with regulatory requirements to ensure public health and safety is protected.

	Feb 23	Mar 23	Apr 23	May 23	Jun 23	July 23	Aug 23	Sept 23	Oct 23	Nov 23	Dec 23	Jan 24	Feb 24
Applications Received (new businesses)	13	10	1	13		11	1	4	1	1	28	2	2
Inspections (new businesses)	2	2	0	0		1	0	1	1	2	4	3	2
Inspections (existing businesses)	3	4	13	16		1	0	0	0	1	0	3	1
Reinspections	0	0	0	0		0	0	0	0	0	0	0	0

4.1.1.1 Reduce the environmental impact of development on our community by carrying out regular inspection of building sites and monitoring waste.

Building Site Compliance Inspection Statistics – 13 Month Analysis (2023/2024)

	Feb 23	Mar 23	Apr 23	May 23	Jun 23	July 23	Aug 23	Sept 23	Oct 23	Nov 23	Dec 23	Jan 24	Feb 24
Total Sites Inspected	15	12	11	9	7	20	16	10	10	15	6	7	10
Total non-compliant and educated	0	0	0		0	0	0	1	0	0	0	0	0



Total compliance after education	15	12	0		0	0	0	9	0	0	0	0	0
Total Penalty Notices Issued	0	0	0		0	0	0	0	0	0	0	2	0



14.1.11 Continue surveillance and regulation of illegal dumping on an ongoing basis through participation in the Hunter Central Coast Regional Illegal Dumping Squad

13 Month Analysis (2023/2024)

	Feb 23	Mar 23	Apr 23	May 23	Jun 23	July 23	Aug 23	Sept 23	Oct 23	Nov 23	Dec 23	Jan 24	Feb 24
Total Investigations	4	7	4	4	3	4	1	1	1	5	1	7	8 (3 reports were also made with no waste actually found or insufficient information to investigate)
Total Clean up by Council - insufficient evidence	0	0			0	3	0	1	0	2	0	3	1
Total Clean Up by individual	1	6			0	1	0	0	0	0	0	2	1
Total Penalty Notices Issued	0	0			0	0	0	0	0	0	0	0	0
Court Attendance Notice Issued	0	0			0	0	0	0	0	0	0	0	0
Still under investigation	3	1			0	0	0	0	1	3	1	2	6

24.1.8 Ensure statutory requirements under the Private Swimming Pools Program (Swimming Pool Act 1992) are implemented.

13 Month Analysis (2023-24) – as at 8/1/2024

	Feb 23	Mar 23	Apr 23	May 23	Jun 23	Jul 23	Aug 23	Sep 23	Oct 23	Nov 23	Dec 23	Jan 24	Feb 24	Total
Applications for Compliance Certs.	2	3	0	0	0	1	1	2	2	1	1	0	3	14
Total compliance inspections (not inc. finals for OCs)	11	8	7	4	8	8	9	10	12	7	5	13	8	107
Initial Inspections	3	5	2	1	2	3	3	7	7	2	2	5	2	43



Re-inspections	8	3	5	3	5	5	7	3	5	5	3	8	6	64

Compliance Certs / Occ. Certs issued	1	7	3	6	5	6	7	7	7	4	2	5	5	61
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Fees invoiced	\$700	\$863	\$740	\$786	\$350	\$800	\$700	\$700	\$1600	\$650	\$500	\$900	\$1050	\$10,339.00
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Total Pools in Council's SPR = 990

(Note: 1128 records in SPR but 135 have been notified as demolished, 2 are Council's Public Pools and 1 is on Crown Land)

Current Compliance = 28.7%

SUSTAINABILITY

1 to 29 February 2024

Renewable Energy Power Purchase Agreement

Sustainability staff have been working with Hunter Joint Organisation for a tender for a energy power purchase for Council's large sites. Sustainability staff worked to provide forecasts for electricity consumption up to 2027. Council's large sites account for 80% of Council's total spend and consumption on electricity. Source Energy who are putting the tender together anticipate that the tender will achieve at least 50% renewable energy (up to 100%) for the same or less than Council is currently paying. The tender is seeking to have price certainty up to 2030.

Net Zero Accelerator Course

Sustainability staff have had the opportunity to participate in a Council Net Zero Accelerator course run by the state government. The course provides foundation theory and practical experience to increase the skills and knowledge of Council staff to assist in developing and implementing pathways for Councils to achieve Net Zero.

Flying Foxes

A Flying Fox count was conducted in both Muswellbrook and Denman. On the day of the count there were 1200 Grey Headed Flying Foxes and 100 Little Red Flying Foxes occupying Muscle Creek behind Repco, the Muswellbrook Motor Inn, and The Remington. In Denman there were approximately 250 Grey Headed Flying Foxes roosting along the Hunter River in the vicinity of Palace Street. Car covers have recently been provided to residents in this area who requested them.

Air Quality

Sustainability and planning staff met with Newcastle University PhD student Mitch Aafejes to discuss the next stage of the low-cost sensor project. The Clarity sensors have recently been recalibrated with the Department of Environment's monitor in Bowman Park. They will be deployed shortly to monitor NO₂ levels in three locations to obtain baseline levels prior to the construction of the bypass.



Regular weekly cartridge changes have continued at the air quality monitor at Water and Waste. The twelve-month summary report for calendar year 2023 was released from ANSTO and it confirmed that during that period there were no exceedances of PM2.5 according to national standards. This could be attributed to the wetter year.

Sustainability staff also provided feedback for the NSW Government's new Air Quality Hub.

<https://www.environment.nsw.gov.au/topics/air>

Sustainable Futures Network

This network of educational groups met to discuss who to implement the Sustainable Future Network project. As part of this groups make a commitment to be a sustainable school. This project is funded through the Environmental Trust.



Bulky Waste Collection

Sustainability and Regulatory staff have developed these graphics to try to improve the bulky waste collection.



Sustainable Futures – Muswellbrook Facebook

The popularity of the Sustainable Futures – Muswellbrook Facebook page continues to grow. It has now received 1,773 page likes and 1,986 page followers. This page continues to be a great way for Council to engage with the community around a range of sustainability topics. This includes promotion of sustainability activities, waste management practices, sewerage management, the Reuse Shop, soft plastic recycling, Sustainability Hub activities, reducing



food waste, plastic free July, worm farms, composting, grant projects and more.

Restore Muscle Creek through Environmental and Educational Action

Work continues on this Environmental Trust funded project to revegetated Muscle Creek with 1 hectare of weed control and planting 1500 seedlings. Erosion and weed control have now been completed with planting occurring in March.

Sustainable Events Procedure

After 3 years of development and with the assistance of other Council departments the Sustainable Events procedure has now been incorporated into Council's Sponsorships, Grants and Contributions Policy.

Clean Up Australia Day – Muswellbrook

In February Warrior Disability Services, with support from Council, organised and ran this event. The main purpose of this event is to try and encourage others to prevent litter. The main litter items found were lolly packets, drink containers (worth 10 cents), 7 Eleven cups, cardboard packaging and broken glass drink containers. Thanks to Muswellbrook High School Official, Muswellbrook Home School, Muswellbrook Shire Council Sustainability staff and Hunter Sustainability Landcare Team members who came out for Clean Up Australia Day today. This project has been assisted by the NSW Government through its Environmental Trust.



Waterwatch Muswellbrook Preschool

Council's Sustainability staff visited Muswellbrook Preschool us to talk about insects and bugs that can be found at the local Muswellbrook beach.

Muswellbrook Connect

The Muswellbrook Connect groups met to discuss how they can work together for everyone's benefit. Through this group a food drive was organised between St Alban's Anglican Church, Muswellbrook South Public School, Muswellbrook Preschool and the Sustainability Hub.

FOGO

Sustainability staff are assisting with community engagement on the upcoming FOGO service. During this period there was an emphasis on the question of Why FOGO.



Organic matter in your red lid bin contributes to:

- Greenhouse gas emissions
- Risk of pollution of air, soil and water
- Risk of health hazards to humans and animals
- More resources used
- More space needed for landfill

Organic matter in your FOGO bin contributes to:

- Compost that enhances soil structure and quality
- Better soil structure that prevents runoff to waterways
- Better products for local farmers to grow healthy food
- Better sporting fields, parks and gardens
- Better land rehabilitation

The infographic features two green bins. The left bin has a red lid and is labeled 'LANDFILL'. The right bin has a green lid and is labeled 'FOOD ORGANICS GARDEN ORGANICS (FOGO) From July 2024'. The background of the left side shows a person coughing, a factory emitting smoke, and a landfill with a bulldozer. The background of the right side shows a person playing soccer, a person holding a bag of compost, and a person gardening.

To find out more about why we are going **FOGO** visit www.muswellbrook.nsw.gov.au/fogo

 muswellbrook shire council



10.2. Community Infrastructure

10.2.1. Concept Design Bell St Denman

Attachments:	1. Denman Recreation Reserve Bell St- Design- P M 810 C REV A [10.2.1.1 - 14 pages]
	2. Denman Recreation Reserve Bell Street Internal Road and Car Park Upgrade- RE F- March 2024 v 1 [10.2.1.2 - 107 pages]
Responsible Officer:	Matthew Lysaught - Director - Infrastructure & Operations
Author:	Kellie Scholes (Group Manager - Infrastructure & Operations)
Community Plan Issue:	5 - Community Infrastructure
Community Plan Goal:	Effective and efficient infrastructure that is appropriate to the needs of our community.
Community Plan Strategy:	2.1.2 - Promote and facilitate increased participation in active and passive recreation activities.
	5.1.1 - Review, develop and maintain liveable town and village precincts.
	1.2.4.5 - Progress detailed designs for Denman Recreation Area works.

PURPOSE

To provide Council with the Concept Design for the upgrade of Bell St Denman and to request Council's endorsement of the Concept.

OFFICER'S RECOMMENDATION

Council:

1. Endorses the Concept Drawings attached to the report for the proposed Denman Recreation Reserve internal roads and Bell Street upgrades; and
2. Notes the Review of Environmental Factors attached to the report.

Moved: _____ **Seconded:** _____

BACKGROUND

The Resources for Regions - Round 9 funding program includes a suite of Council nominated projects, with 'Project 2 – Denman Recreation Reserve Works' included in the program. The project involves the implementation of the Denman Recreation Area Masterplan (2018), including the provision of new road infrastructure. The scope of the work includes components of the Denman Recreation Reserve road and carpark upgrade and the upgrading and sealing of Bell Street from Almond Street to the Denman Pony Club access.

In order to undertake construction of the infrastructure, design drawings and supporting investigations are required to be undertaken.



CONSULTATION

Consulting Engineers Local Government Engineering Service

Project Manager – Roads and Drainage

Technical Officer – Recreation and Property

Group Manager Infrastructure and Operations

REPORT

A Concept Design has been prepared by consultants Local Government Engineering Services, for proposed road works to upgrade the currently unsealed section of Bell Street and for the construction of internal roads and onsite carparking within the adjacent Denman Recreation Reserve.

The Concept Design is attached to the report. A Review of Environmental Factors, which covers the footprint of the site of the proposed future road construction work on the Denman Recreation Area and Bell Street, is attached to the report.

Bell Street Denman, provides access to the pony club, sporting fields, and the proposed new netball courts located in the north- western area of the recreation reserve. Bell Street is classified as Austroads Class 9; it has low traffic volumes and is a no through road. However, Bell Street provides significant access for the users of the recreational facilities, including the pony club grounds. In its current condition, Bell Street currently provides an unsatisfactory standard of access, as it consists of a formed sealed road for only a distance of approximately 306 m from Turner Street, and the remaining section of road is poorly formed and unsealed.

The Concept Design has been informed by the adopted Denman Recreation Reserve Masterplan, detailed survey of the site, geotechnical testing, and preparation of a Review of Environmental Factors. The aim of the concept and proposed road upgrades is to provide:

- an improved level of access /service consistent with the intended use;
- to retain the current road class in terms of formed road width and maintenance criteria;
- improve drainage performance through the provision of formed table drains and pipes; and
- provide a design which is environmentally sustainable through such measures as reducing spoil from earthworks and minimising the removal of existing vegetation within the road reserve.

The typical road cross sections proposed include the general parameters provided below, however, the pavement has been designed with consideration of the geotechnical testing, and includes two pavement types (full reconstruction and widening with overlay):

Pavement formation width 4.5m

Table drains 1.2m

Provision subsoil drainage

Sub-base 110 mm

Base 110 mm- 130 mm

Seal 7 /14 Double Double

OPTIONS

1. Council could provide details of any additional inclusions and /or amendments to the concepts attached to the report and request that the final design is prepared to reflect these comments, or



2. Council could endorse the Concept Drawings attached to the report.

CONCLUSION

Endorsement of the Concept Drawings will allow the design to be finalised, the cost estimates undertaken, and tenders for construction to be prepared. Acknowledgement of the Review of Environmental Factors attached to the report will allow the information to be formally noted.

SOCIAL IMPLICATIONS

The provision of improved access to and through the Denman Recreation Area will support the use of the facility and provide positive benefits in terms of the well-being of the Community who use it.

FINANCIAL IMPLICATIONS

For the expenditure of the Resources for Regions Road 9 funding, Council has nominated a project – Denman Recreation Reserve which includes upgrades to the internal roads and the unsealed section of Bell Street Denman.

Ongoing Operational and Maintenance Costs Implications Associated with Capital Project

1. *Financial Implications – Capital*

Council has nominated this project for a funding allocation from R4RR9.

2. *Financial Implications – Operational*

The construction of pavements, drainage, and bitumen sealing of the roads will reduce the operational costs for grading and regravelling of the currently unsealed section of Bell Street.

POLICY IMPLICATIONS

Projects with an estimated value >\$75,000 are required to have a Council endorsed concept.

STATUTORY IMPLICATIONS

Council is the roads authority and Crown Lands manager and is acting within its powers.

LEGAL IMPLICATIONS

Nil known.

OPERATIONAL PLAN IMPLICATIONS

Upgrading and providing a sealed road will reduce Council's operational needs in terms of road maintenance.

RISK MANAGEMENT IMPLICATIONS

A Review of Environmental Factors informs the design and construction of the proposed work.

WASTE MANAGEMENT IMPLICATIONS

The concept has been prepared with the intention to minimise waste, particularly focusing on balancing cut and fill.

COMMUNITY CONSULTATION/MEDIA IMPLICATIONS



Consultation with the community and user groups of the facility will be undertaken prior to any construction works being carried out.

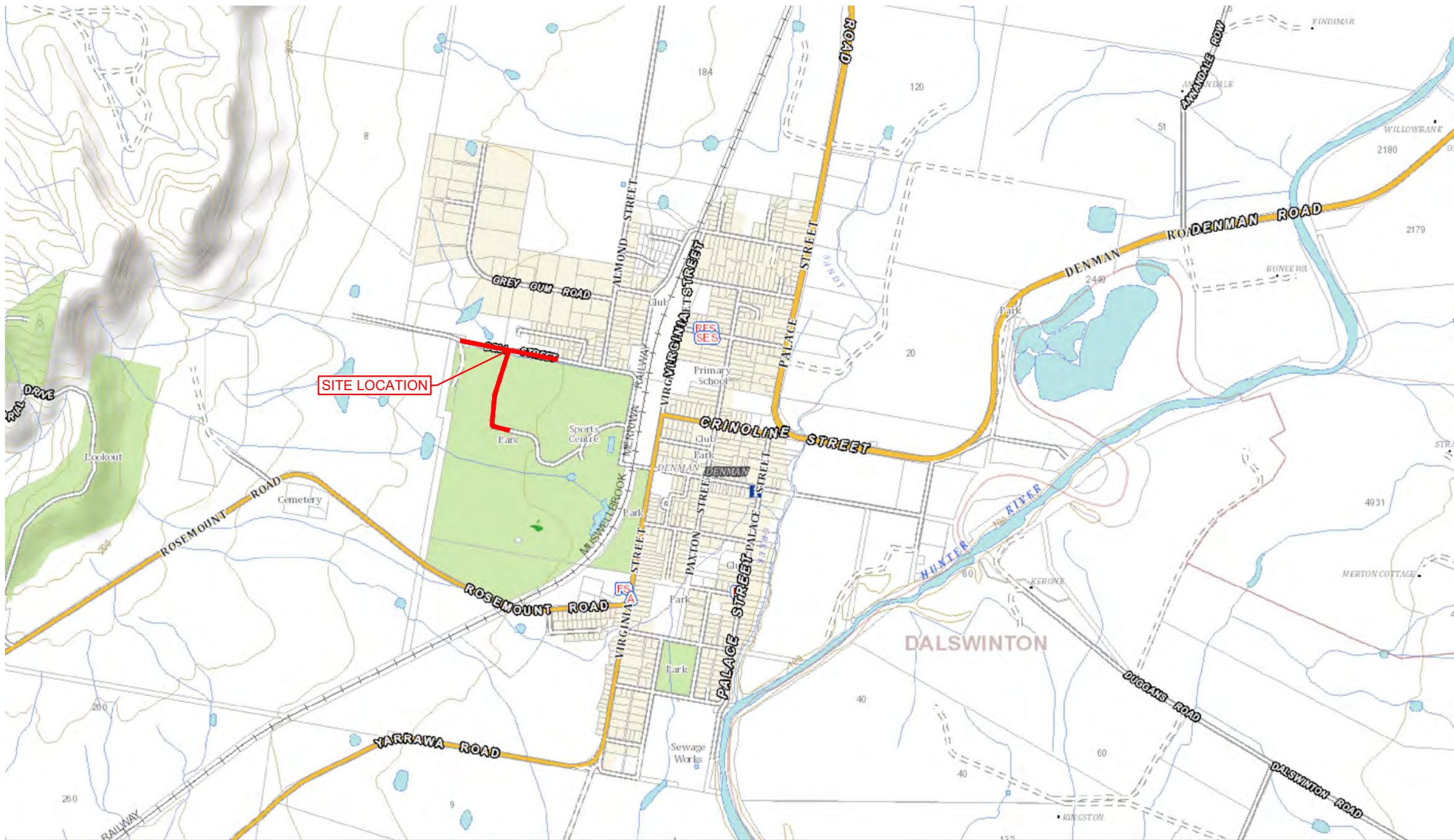
MUSWELLBROOK SHIRE COUNCIL

BELL STREET, INTERNAL ROAD AND CARPARK CONCEPT DESIGN

INDEX

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1	COVER SHEET
2	GENERAL ARRANGEMENT PLAN
3	TYPICAL SECTIONS
4	BELL STREET PLAN AND LONGITUDINAL SECTION, SHEET 1 OF 2
5	BELL STREET PLAN AND LONGITUDINAL SECTION, SHEET 2 OF 2
6	INTERNAL ROAD PLAN AND LONGITUDINAL SECTION, SHEET 1 OF 2
7	INTERNAL ROAD PLAN AND LONGITUDINAL SECTION, SHEET 2 OF 2
8	BELL STREET CROSS SECTIONS, SHEET 1 OF 3
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10	BELL STREET CROSS SECTIONS, SHEET 3 OF 3
11	INTERNAL ROAD CROSS SECTIONS, SHEET 1 OF 4
12	INTERNAL ROAD CROSS SECTIONS, SHEET 2 OF 4
13	INTERNAL ROAD CROSS SECTIONS, SHEET 3 OF 4
14	INTERNAL ROAD CROSS SECTIONS, SHEET 4 OF 4

LOCALITY MAP



GENERAL NOTES:

IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND LEVEL ALL SERVICES ADJACENT TO OR OTHERWISE AFFECTING THE WORKS PRIOR TO THE COMMENCEMENT OF WORKS, WHETHER OR NOT THEY ARE INDICATED ON THE DRAWINGS. WHERE SERVICES CONFLICT WITH PROJECT WORKS THEY ARE TO BE RELOCATED ON APPROVAL FROM THE 'PRINCIPAL'S AUTHORISED PERSONNEL' (P.A.P.). THE CONTRACTOR, ON APPROVAL FROM THE P.A.P., SHALL MAKE ALL NECESSARY ARRANGEMENTS WITH THE RELEVANT AUTHORITY TO RELOCATE OR ADJUST AS FOUND NECESSARY.

EXISTING SIGNS TO BE REUSED PROVIDED THEY ARE IN A GOOD AND SERVICEABLE CONDITION TO THE SATISFACTION OF THE P.A.P.. OTHERWISE, REPLACE WITH A NEW, EQUIVALENT SIGN.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO SUPPLY AND IMPLEMENT CONTEMPORARY SITE-SPECIFIC EROSION AND SEDIMENT CONTROL MEASURES AS PART OF THEIR ENVIRONMENTAL MANAGEMENT PLAN FOR THE PROJECT. THE CONTROL MEASURES SHALL BE IN ACCORDANCE WITH COUNCIL SPECIFICATIONS AND 'THE BLUE BOOK'. THE CONTRACTOR SHALL, PRIOR TO COMMENCEMENT OF WORKS, PREPARE AND SUBMIT TO COUNCIL AN EROSION AND SEDIMENT CONTROL PLAN.

ALL DISTURBED AREAS ARE TO BE REGENERATED AND RESTORED TO PRE-EXISTING CONDITION.

THE CONTRACTOR SHALL NOT ENTER UPON OR DO ANY WORK WITHIN ADJACENT LANDS WITHOUT PRIOR WRITTEN PERMISSION OF THE LAND OWNER AND COUNCIL.

THE CONTRACTOR SHALL AT ALL TIMES MAINTAIN IN A SAFE CONDITION AN ALL WEATHER ACCESS TO THE ROADWAYS AND PROPERTIES ADJACENT TO THE SITE TO THE SATISFACTION OF COUNCIL.

THE CONTRACTOR SHALL UNDERTAKE TRAFFIC CONTROL MEASURES IN ACCORDANCE WITH THE WORK HEALTH AND SAFETY ACT 2011.

THE CONTRACTOR SHALL CLEAR AND DISPOSE OF THOSE TREES THAT ARE LOCATED WITHIN 1m OF EARTHWORKS. SERVICE LINES AND/OR AS IDENTIFIED BY THE P.A.P.. CLEARING AND GRUBBING SHALL BE UNDERTAKEN IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION. TREES TO BE RETAINED ON SITE SHALL BE PROTECTED BY THE ERECTION OF PROTECTIVE FENCING PRIOR TO COMMENCEMENT OF SITE WORKS.

CLEARING IS DEFINED AS: CUTTING DOWN, FELLING, THINNING, LOGGING OR REMOVING NATIVE VEGETATION; KILLING, DESTROYING, POISONING, RING BARKING, UPROOTING, OF NATIVE VEGETATION; SEVERING TOPPING OR LOPPING BRANCHES, LIMBS, STEMS OR TRUNKS OF NATIVE VEGETATION; OR SUBSTANTIALLY DAMAGING OR INJURING NATIVE VEGETATION IN ANY OTHER WAY.

ALL EXISTING CULVERTS ARE TO BE CLEANED AND VEGETATION TO BE REMOVED FROM INLET AND OUTLET TO RE-ESTABLISH A CLEAR WATERWAY.

ALL EXISTING CULVERTS ARE TO BE INSPECTED DURING CONSTRUCTION TO ENSURE THEY ARE STRUCTURALLY SOUND. DAMAGED SECTIONS OF CULVERTS MAY BE REPLACED UPON APPROVAL FROM THE P.A.P..

SUB-SOIL DRAINAGE TO BE CONSTRUCTED USING LEVEL EQUIPMENT AND TO BE INCLUDED IN WORK AS EXECUTED PLANS.

LEGS IN NO WAY CERTIFY THE STRUCTURAL INTEGRITY NOR STRUCTURAL CAPACITY OF EXISTING STRUCTURES WITHIN THE WORKS. IF THE CONTRACTOR DEEMS AN EXISTING STRUCTURE TO BE STRUCTURALLY UNSOUND, CONTACT THE PRINCIPAL'S REP. (P.A.P.)

SURVEY NOTES:

DETAIL SURVEY - BELL STREET, DENMAN - OCTOBER 2023

THIS SURVEY PLAN/DATA HAS BEEN PREPARED FOR MUSWELLBROOK SHIRE COUNCIL FROM FIELD SURVEY FOR THE PURPOSE OF SHOWING THE PHYSICAL FEATURES, TOPOGRAPHY AND LEVELS FOR ROAD DESIGN. THE INFORMATION SHOWN HEREIN IS ONLY RELIABLE FOR THIS PURPOSE AND SHOULD NOT BE USED FOR ANY OTHER PURPOSE OR AT A LATER DATE WITHOUT VERIFICATION. THIS SURVEY MUST BE READ IN CONJUNCTION WITH THE DOCUMENT "PM810 SVYRPT 231106".

SURVEY IS ON GROUND DISTANCES, MGA2020 ORIENTATION AND AHD71 LEVELS VIA GNSS SURVEY CONNECTION. ORIGIN OF COORDINATES: SSM 11104, CLASS B (SOURCE: SCIMS 27.10.23). TO OBTAIN MGA GRID DISTANCES SCALE BY 1.000163 FROM ORIGIN. ORIGIN OF LEVELS: SSM 11104, RL 111.731m AHD, CLASS LC (SOURCE: SCIMS 27.10.23).

THE CONTOURS SHOWN ARE INDICATIVE OF LANDFORM ONLY AND SHOULD NOT BE TAKEN IN PREFERENCE TO SPOT HEIGHTS SHOWN.

BOUNDARY LINES SHOWN HAVE BEEN SOURCED FROM THE NSW DIGITAL CADASTRAL DATABASE (DCDB), AND ARE NOT SURVEY ACCURATE. THE DCDB BOUNDARY LINES ARE FOR REFERENCE ONLY. PRELIMINARY CADASTRAL INVESTIGATION HAVE BEEN UNDERTAKEN AND CADASTRAL BOUNDARIES WILL BE UPDATED UPON COMPLETION OF THE CADASTRAL MODEL.

A STATE SURVEY MARK (E.G. PM, SS ETC) OR BOUNDARY REFERENCE MARK MUST NOT BE DESTROYED OR DAMAGED UNLESS AUTHORISATION HAS BEEN GIVEN BY THE SURVEYOR GENERAL AND THE MARKS ARE ASSESSED BY A REGISTERED SURVEYOR OR PERSON AUTHORISED BY THE SURVEYOR GENERAL'S DEPARTMENT. ALL OTHER SURVEY MARKS ARE NOT TO BE DISTURBED OR DESTROYED UNTIL ASSESSED BY THE SITE SURVEYOR.

ANY STATE SURVEY MARK (E.G. PM, SS ETC.) THAT ARE DESTROYED ARE TO BE REPLACED WITH ANOTHER STATE SURVEY MARK AS PER THE SURVEYOR GENERAL'S DIRECTIONS NO. 11: PRESERVATION OF SURVEY INFRASTRUCTURE. A PLAN OF SURVEY INFORMATION ONLY MUST BE PREPARED BY A REGISTERED SURVEYOR PRIOR TO ANY BOUNDARY REFERENCE MARK BEING DESTROYED OR DISTURBED. IT IS RECOMMENDED THAT A LAND SURVEY, AS DEFINED UNDER THE SURVEYING ACT 2002, SHOULD BE UNDERTAKEN BEFORE ANY CONSTRUCTION ACTIVITY IS CARRIED OUT.

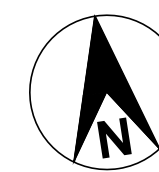
UNDERGROUND SERVICES SHOWN ARE TO AS5488 QUALITY LEVEL D. ALL POSITIONS SHOWN ARE APPROXIMATE ONLY AND HAVE BEEN DERIVED FROM THE SURVEYED SURFACE LOCATION OF PITS, POLES AND MARKERS IN CONJUNCTION WITH BEFORE YOU DIG AUSTRALIA PLANS. ALL SERVICE LOCATIONS MUST BE CONFIRMED VIA POTHOLING BY A CERTIFIED SERVICE LOCATOR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

ALL SYMBOLS SHOWN ARE DIAGRAMMATIC ONLY AND NOT TO SCALE. TREE DIMENSIONS SHOWN ARE DIAMETERS AT BREAST HEIGHT (DBH).

THIS NOTE FORMS PART OF THIS PLAN/DATA. REPRODUCTION OF THIS PLAN/DATA OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.

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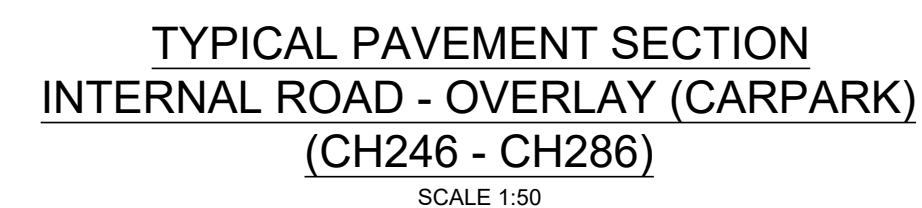
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PAVEMENT DETAILS TO BE READ IN CONJUNCTION WITH REGIONAL GEOTECH SOLUTIONS PTY LTD
PAVEMENT DESIGN REPORT (REPORT NUMBER RGS50112.1-AB).




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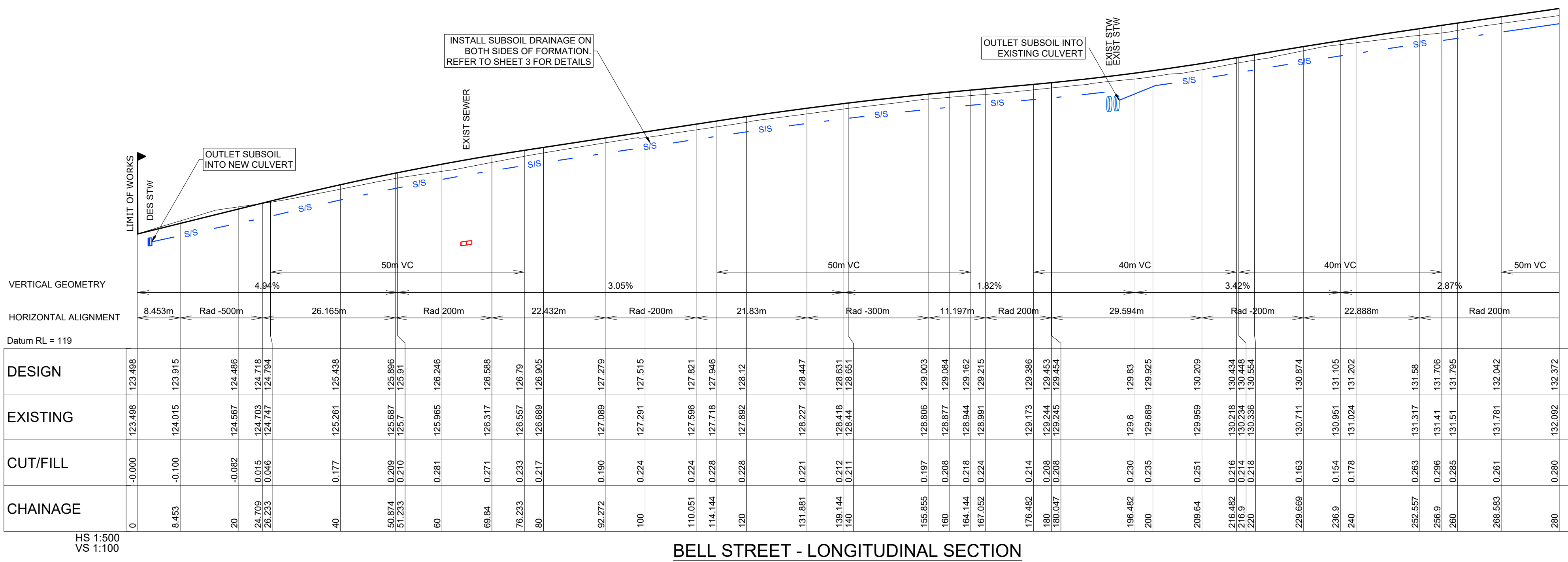
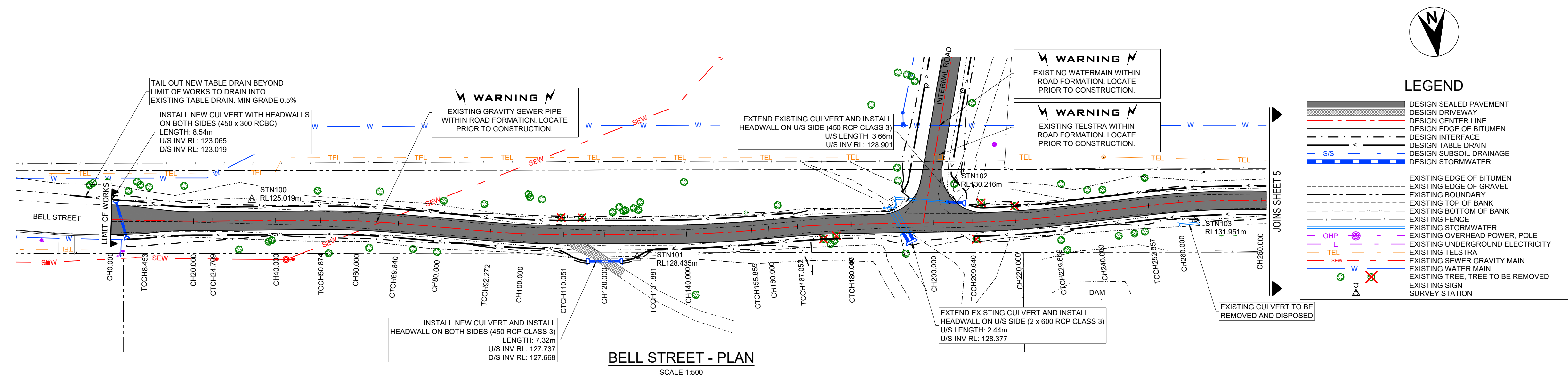


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	TYPICAL SECTIONS

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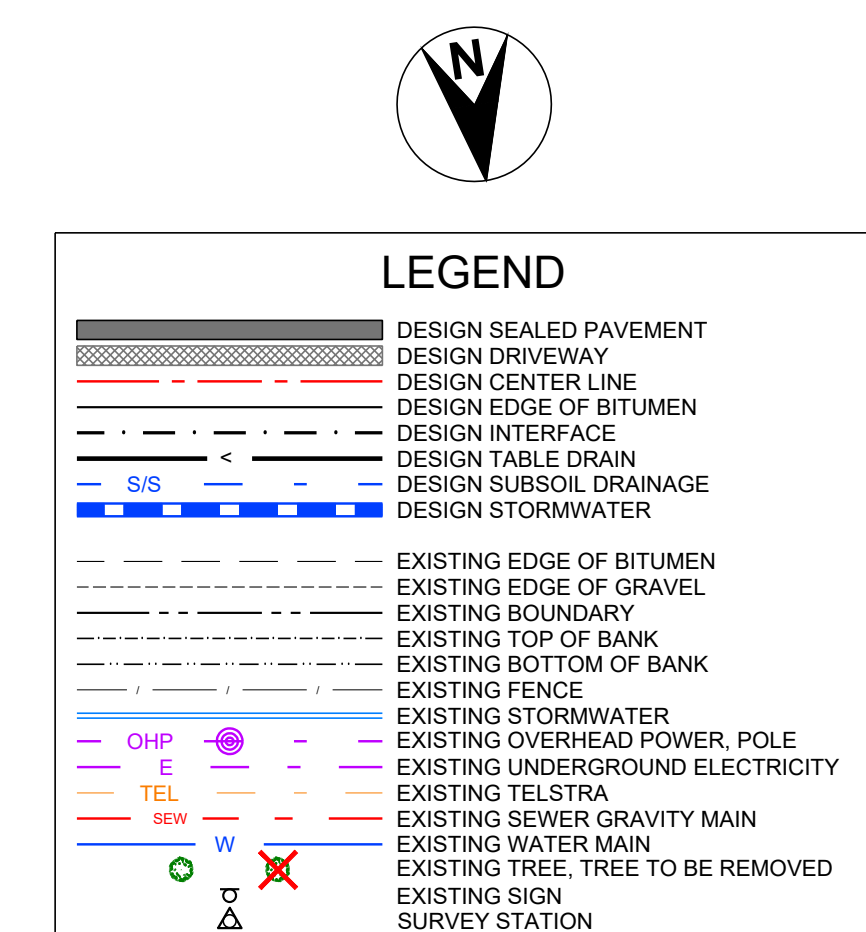


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PROJECT
BELL STREET, INTERNAL ROAD AND CARPARK CONCEPT DESIGN
BELL STREET PLAN AND LONGITUDINAL SECTION
SHEET 1 OF 2

SCALES
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DATUM: AHD

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Port Macquarie **Inverell**
 71 Lord St, Port Macquarie NSW 2444 17 Byron Street, Inverell NSW 2360
 Ph: 02-65843888 Ph: 02-67225110
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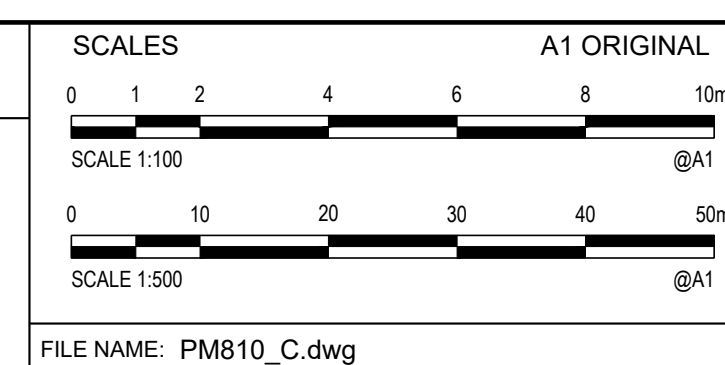
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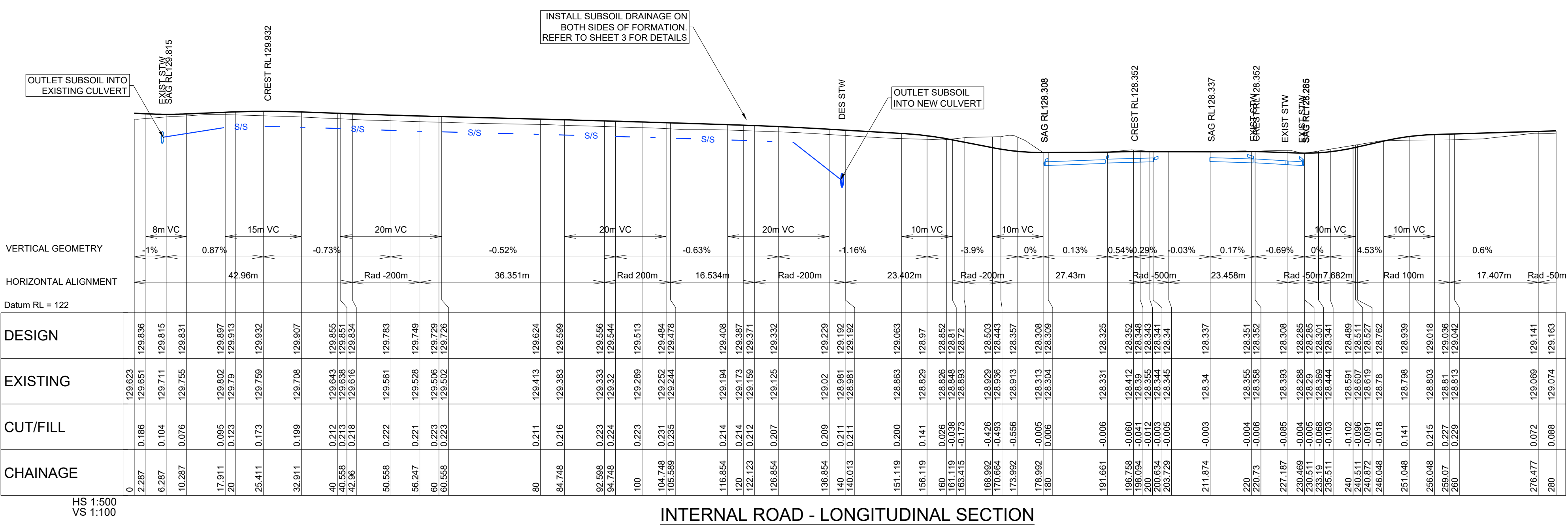
PROJECT

BELL STREET, INTERNAL ROAD
AND CARPARK CONCEPT DESIGN

BELL STREET PLAN AND LONGITUDINAL SECTION
SHEET 2 OF 2

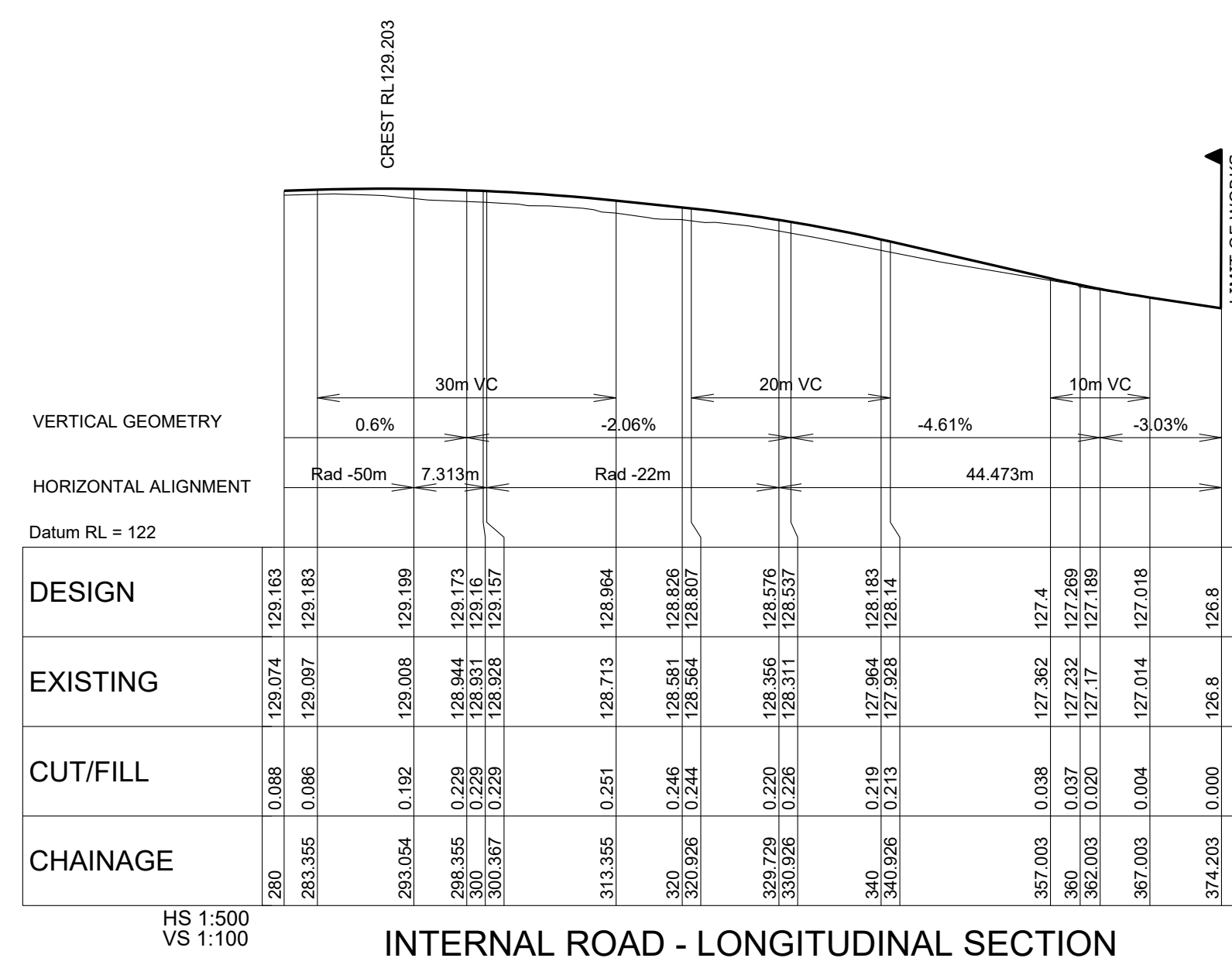


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APPROVED	DATE	STATUS:			
J.C	07/12/23	CONCEPT			
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[illegible]

BELL STREET, INTERNAL ROAD, AND CAR PARK UPGRADE – DENMAN



REVIEW OF ENVIRONMENTAL FACTORS

MARCH 2024

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Authorisation

Author Name:	Grant Bennett	Reviewer / Approver:	David Stubbs
Position:	Environmental Consultant	Position:	North Regional Manager
Signature:		Signature:	
Date:		Date:	

Document Revision History

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Report Name: Bell Street, Internal Road, and Car Park Upgrade

Project No.: 1009

Prepared for:
Muswellbrook Shire Council

Prepared by:
WolfPeak Pty Ltd

T: 1800 979 716

W: www.wolfpeak.com.au

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FOREWORD AND CERTIFICATION

Foreword

The purpose of this Review of Environmental Factors (REF) is to assess all potential environmental impacts of the Bell Street, Internal Road, and Car Park Upgrade (the proposed activity).

This REF has been prepared in accordance with section 5.5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), section 171 of the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation), the Department of Planning and Environment's *Guidelines for Division 5.1 assessments* (June 2022), and the relevant provisions of *State Environmental Planning Policy (Transport and Infrastructure) 2021* (SEPP Transport and Infrastructure).

This REF concludes that the proposed activity will not result in any significant environmental impacts and therefore an Environmental Impact Statement (EIS) is not required.

Certification

I certify that I have reviewed and endorsed the contents of this REF document, and, to the best of my knowledge, it is in accordance with the EP&A Act, the EP&A Regulation and the Guidelines approved under section 170 of the EP&A Regulation, and the information it contains is neither false nor misleading.

REF prepared by	Grant Bennett
Signed	
Date	13/03/2024
Designation	Environmental Consultant
Organisation	WolfPeak Pty. Ltd.
REF Reviewed by	David Stubbs
Designation	North Regional Manager
Signed	
Date	13/03/2024





Determination

I, as an authorised person on behalf of Muswellbrook Shire Council, have examined and considered this REF for the Bell Street, Internal Road, and Car Park Upgrade in accordance with section 5.5 of the EP&A Act. I am satisfied that the proposed activity is not likely to significantly affect the environment and therefore determine that an Environmental Impact Statement is not required.

On behalf of Muswellbrook Shire Council, I accept this REF and determine that the proposal may now proceed subject to the implementation of the mitigation measures detailed in Section 6 and Appendix A and the conditions of any required approvals, permits or licences.

REF approved by	
Signed	
Date	
Designation	
Organisation	Muswellbrook Shire Council



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ABBREVIATIONS / GLOSSARY

Abbreviation/Term	Description
AHIMS	Aboriginal Heritage Information Management System
BC Act	<i>Biodiversity Conservation Act 2016</i>
Council	Muswellbrook Shire Council
EIS	Environmental Impact Statement
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)</i>
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
FM Act	<i>Fisheries Management Act 1994</i>
LEP	Local Environmental Plan
LGA	Local Government Area
REF	Review of Environmental Factors
SEPP	State Environmental Planning Policy

1. PROJECT OVERVIEW

Project Title	Bell Street, Internal Road, and Car Park Upgrade
Proposed Activity	<p>The proposed activity is to carry out upgrade works to Bell Street in Denman, NSW, to improve the quality of access to the Denman Pony Club, Denman Park, and for residents along Bell Street. The Denman Park internal road and car park will also be upgraded to improve access and amenity.</p> <p>A detailed overview of the proposed activity is provided in Section 3.3 of this REF.</p>
Location	<p>Address: Bell Street, Denman NSW 2328</p> <p>Lot: 231 DP: 729996</p>
Site Inspection	<p>Date: 23/01/2024</p> <p>Attendees: Grant Bennett WolfPeak</p>
Information Relied Upon	<p>The following reports, plans and technical information have informed the preparation of this REF and assessment of environmental impacts:</p> <ul style="list-style-type: none"> ▪ Appendix A – Summary of Mitigation Measures ▪ Appendix B – Bell Street, Internal Road and Carpark Concept Design ▪ Appendix C – Ecological Assessment for Bell Street, Internal Road and Car Park Upgrade, Denman ▪ Appendix D – Aboriginal Heritage Information Management System search results ▪ Appendix E – NSW Construction and Maintenance Noise Estimator Tool results

2. SITE CONTEXT

Site context	<p>Denman is a small country town in the Upper Hunter Valley in New South Wales as shown in Figure 1. It is situated within the Muswellbrook Local Government Area approximately 24-kilometres south-west of Muswellbrook and approximately 250-kilometres north of Sydney and is known for producing fine wine, good food, and its heritage charm.</p> <p>The proposed activity will be carried out within and adjacent to Denman Street on the western edge of the town, approximately 1-kilometre north-west of Denman's town centre as shown in Figure 2. The activity will occur on land zoned RE1 Public Recreation, RU5 Village and R5 Large Lot Residential under the <i>Muswellbrook Local Environmental Plan 2009</i>.</p> <p>Bell Street is a single lane two-way rural local road which is owned and managed by Muswellbrook Shire Council and serves the Denman Pony Club, Denman Park and residents.</p> <p>Denman Park is a Crown Reserve for which Muswellbrook Shire Council are responsible for the care, control and management of the reserve. The park is an expansive reserve housing Denman's sporting facilities and includes an aquatic centre, canteen, change rooms, cricket grounds, golf course, indoor sports stadium, tennis facility, pony club, rugby league fields, toilets and athletics grounds.</p>
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COMMERCIAL IN CONFIDENCE

Figure 1: General locality of proposed activity



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COMMERCIAL IN CONFIDENCE

Figure 2: Location of proposed activity relative to Denman Park



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3. PROJECT DESCRIPTION AND JUSTIFICATION

3.1 Project Need and Objectives

Project Need: Muswellbrook Shire Council (Council) have successfully acquired funding to upgrade Bell Street and Denman Park. Bell Street comprises an approximate 390-metres of unsealed road which is used to serve the Denman Pony Club, Denman Park, and residents, while the Denman Park internal road is approximately 360-metres in length which navigates through the park.

The proposed activity is required to upgrade Bell Street, and the internal road and car park of Denman Park to improve access and amenity for the park which will contribute to the planning priorities of the Muswellbrook Local Strategic Planning Statement which has been prepared under Division 3.1 of the *Environmental Planning and Assessment Act 1979*. Consistency with the Local Strategic Planning Statement is discussed in Section 4.4.

Project Objective: The primary objective of the proposed activity is to upgrade Bell Street and the Denman Park internal road and carpark to improve access and amenity for the community and tourists which houses a range of Denman's sporting facilities.

3.2 Project Alternatives and Preferred Option

A number of options were considered for the project which are identified in Table 1. The preferred option is Option 2 which is to carry out upgrade works to Bell Street and the internal road and carpark of Denman Park.

Table 1: Options Assessment

Option	Assessment	Preferred Option
'Do Nothing'	<p>Bell Street and the Denman Park internal road and car park are currently unsealed surfaces. The 'Do Nothing' option will likely result in the continuing deterioration of the road surfaces which will reduce the quality of access and amenity of the Denman Park.</p> <p>The 'Do Nothing' option is also not consistent with the project need and objective.</p>	No
Upgrade Bell Street, Internal Road and Car Park	<p>Bell Street and the Denman Park internal road and car park are currently unsealed surfaces which detract from the accessibility and amenity of Denman Park.</p> <p>Carrying out the proposed upgrade works is the preferred option as is justified for the following reasons:</p> <ul style="list-style-type: none"> The proposed activity will meet the primary objective of the project which is to improve access and amenity of the Denman Park The proposal will be carried out in areas of existing disturbance which will significantly minimise adverse impacts on the receiving environment The proposed activity will contribute to the planning priorities of the Muswellbrook Local Strategic Planning Statement which has been prepared under Division 3.1 of the <i>Environmental Planning and Assessment Act 1979</i> 	Yes

3.3 Proposed Activity Scope

Muswellbrook Shire Council have successfully acquired funding to upgrade Bell Street and Denman Park. The proposed activity scope is to carry out the following upgrade works to improve access and amenity associated with the park:

- Upgrade and sealing of approximately 390-metres of Bell Street,
- Upgrade and sealing of approximately 360-metres of the Denman Park internal road, and
- Upgrading and sealing of the Denman Park car park in accordance with AS2890.1 (approximately 45-metres x 7-metres)

As part of the upgrade process the following activities will be carried out:

- Installation of new, extension of existing, and removal of failed culverts and headwalls,
- Installation of new grated surface inlets and RCP pipe, and connection to existing grated inlet pipe to improve drainage,
- Relocation of fencing to facilitate batter works, and
- Lower existing drain inspection opening to match pavement level.

A summary of the proposed works involves the following:

- An erosion and sedimentation (ERSED) control plan, and waste management system, shall be designed and implemented to minimise impacts to the first order stream and drainage lines. ERSED controls may involve coir logs, silt curtains, and/or jute matting to limit sediment entering waterways and/or drainage lines,
- Locate existing services,
- Establish ancillary site as necessary,
- Establish road safety controls and implement Traffic Management Plan
- Remove and dispose trees and vegetation as necessary,
- Construct sub-soil drainage as required,
- Excavate existing pavement and stockpile on site for reuse,
- Install and or/repair existing culverts and associated headwalls,
- Install new pipes and inlets on Internal Road to improve drainage,
- Establish subbase layer with 110mm thick DGS40 or NGS40 material and compact to 97% MMDD,
- Establish base layer with 100mm thick DGB20 or NGB-2d material and compact to 98% MMDD,
- Establish wearing course layer with 14/7mm 2 coat seal,
- Install car park in accordance with AS2890.1 standards, and
- Regenerate and restore all disturbed areas to pre-existing condition.

All works shall be carried out in accordance with the Bell Street, Internal Road and Carpark Concept Design engineering plans. An overview of the scope of works is shown in Figure 3.



Figure 3: Proposed activity scope of works



3.4 Construction Activities

3.4.1 Construction Methodology

An overview of the construction methodology is provided in Table 2.

Table 2: Construction Methodology

Stage	Overview
Pre-Construction and Site Establishment	<ul style="list-style-type: none"> • A Construction Environmental Management Plan (CEMP) shall be prepared by an appropriately qualified person and approved by Council prior to works commencing. The CEMP shall, at minimum, ensure the following will be undertaken: <ul style="list-style-type: none"> ◦ Ensure appropriate controls and procedures are implemented during construction to avoid or minimise real and potential impacts to the environment ◦ Ensure appropriate measures are implemented to comply with all relevant legislation and other requirements ◦ Provide staff with an increased level of understanding and awareness of sensitive environmental issues within and adjacent to the works area • Erosion and sediment controls consistent with currently accepted best management practice (i.e., Landcom [2004] Managing Urban Stormwater: Soils and Construction [4th Edition] – The Blue Book) are to be installed where required to prevent sediment moving off-site and sediment laden water entering drainage lines <ul style="list-style-type: none"> ◦ These controls would be maintained and in good working order for the whole duration of the activity and subsequently until the site has been stabilised and the risk of erosion and sediment movement from the site is minimal • Establish ancillary site as necessary • Prior to the removal of any vegetation, a qualified ecologist shall thoroughly inspect the clearing area to identify and mark trees and/or other habitat features to be retained. A thorough pre-clear survey is to be conducted by a qualified ecologist prior to commencement of clearing works to check for fauna • All personnel working on site shall be made aware of the environmental protection requirements to be implemented during the project. This is to include site inductions and regular 'toolbox' briefings. Site specific areas of high sensitivity may include Aboriginal object and/or places, threatened species habitat and threatened ecological communities. Records of site inductions are to be kept as part of the CEMP • 'No Go' areas are to be identified and clearly delineated to prevent vegetation harm beyond what has been assessed and marked • Vegetation requiring removal is to be clearly marked using a separate method to the 'No Go' areas • Establish traffic controls as required • Any tools or machinery used during construction are to be appropriately cleaned, degreased and services prior to use/entry at the site.
Construction	<ul style="list-style-type: none"> • Construction activities shall be carried out in accordance with the approved engineering plans attached in Appendix B

	<p>Road works and car park</p> <ul style="list-style-type: none"> • Install 300x300 subsoil drainage – construct to Council's construction specification 1171. Line with geotextile Bidim A12 and install 100mm diameter corrugated perforated plastic pipe • Excavate existing pavement material to design subgrade level and stockpile on site. Existing pavement material to be re-used as select material • Proof roll exposed subgrade to highlight individual areas requiring further replacement. Where required backfill to subgrade level using select fill CBR>5% PI<15% max particle size of 100mm. Compact to 100% standard compaction • Select layer to be established with 130mm thick existing pavement material or DGS40. Compact to 100% standard compaction • Subbase layer to be established with 110mm thick DGS40 or NGS40 material. Compact to 97% MMDD • Base layer to be established with 100mm thick DGB20 or NGB-2d material. Compact to 98% MMDD • Establish wearing course with 14/7mm 2 coat seal • Reduce road width behind back of stadium and establish new pavement to match existing grated pit levels • Install car park in accordance with AS2890.1:2004 Part 1: Off-street car parking <p>Culverts and drainage</p> <ul style="list-style-type: none"> • Tail out new table drain beyond limit of works to drain into existing table drain – minimum grade 0.5% on both Bell Street and Internal Road to the existing car park • Install new 8.54m culvert with headwalls on both sides (450x300mm RCBC) on Bell Street at chainage 0.000 • Install new 7.32m culvert with headwalls on both sides (450mm RCP Class 3) on Bell Street at chainage 120.000 • Extend existing culvert on Bell Street at chainage 200.000 and install headwalls on underside (2x600mm RCP Class 3) • Remove and dispose existing culvert on Bell Street at chainage 260.000 • Extend existing culvert on Internal Road and install headwalls on underside (450mm RCP Class 3) • Install 2x new 600x600mm grated surface inlet pits, 2x new 375mm diameter RCP Class 3 pipes and connect to existing grated inlet pit on Internal Road
Rehabilitation	<ul style="list-style-type: none"> • All waste generated by the activity will be removed from each site and recycled/disposed of as necessary • Monitor all works for settling and manage as required • Monitor all disturbed areas for weed establishment and treat as necessary • Remove temporary erosion and sedimentation controls once sites have been stabilised and controls are no longer required • All disturbed sites will be regenerated using a diverse combination of local native plants or native vegetation mulch

3.4.2 Construction Schedule

Construction of the proposed activity is expected to commence in mid-2024 and take approximately six (6) months to complete. The proposed activity start date may alter, although the duration of the construction activities would remain the same.

Note: This REF is valid for a period of 12 months. If the proposed activity is delayed by more than 12 months, a new or revised assessment should be conducted.

3.5 Operation and Maintenance

Upon completion, inspection of the roads and car park will be integrated into and maintained within Council's existing maintenance policy and procedures. Inspection and maintenance activities will occur during standard hours of operation, and regular ongoing maintenance will be undertaken as required to prevent deterioration and/or failure of the condition of the roads and car park. Exotic vegetation will be controlled in a manner that prevents establishment of weeds occurring in new areas, and disturbed areas will be regenerated using a diverse combination of local native plants or native vegetation mulch.

4. PLANNING AND LEGISLATIVE CONTEXT

As part of the REF process, it is necessary to determine whether the proposed activity is permissible under current planning legislation and in accordance with other relevant legislative requirements.

4.1 Commonwealth Legislation

4.1.1 *Environment Protection and Biodiversity Conservation Act 1999*

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) applies as the activity is on land that contains the following, or the activity may affect nationally listed threatened species and ecological communities or listed migratory species.

The EPBC Act provides an assessment and approvals system for actions that impact on Matters of National Environmental Significance (MNES) and actions that have a significant impact on Commonwealth land. The approval of the Minister for the Department of the Climate Change, Energy, the Environment and Water (DCCEEW) is required if an action is likely to have a significant impact on or involve:

- world heritage properties
- national heritage places
- wetlands of international importance
- nationally threatened species and ecological communities
- migratory species
- Commonwealth marine areas
- the Great Barrier Reef Marine Park
- nuclear actions, or
- a water resource, in relation to coal seam gas development and large coal mining development.

Under the Act, any action which has a significant impact on a MNES value triggers a referral under the EPBC Act. There are no significant impacts detected on MNES values on or near the activity area and therefore the EPBC Act is not triggered by this proposal.

Evaluations of species and communities listed under the EPBC Act have been assessed within the Ecological Assessment for Bell Street, Internal Road and Car Park Upgrade, Denman (Ecological Assessment) in Appendix C and a summary provided in section 7.2 of this REF. The EPBC Act Protected Matters Report is also attached in the Ecological Assessment.

4.1.2 *Native Title Act 1993*

The objects of the Commonwealth *Native Title Act 1993* (NT Act (Cwlth)) provides for “the recognition and protection of native title” and “establishes ways in which future dealings affecting native title may proceed and to set standards for those dealings”.

An online search of the National Native Title Tribunal (NNTT) was undertaken on 24 January 2024 which included searches within the Muswellbrook Shire Council Local Government Area (LGA). A native title claim

has been registered on the Register of Native Title Claims by the Gomeroi People with a Tribunal file number of NC2011/006; however, no approved determinations of native title exist within the LGA.

Section 24KA of the NT Act (Cwlth) applies to a future act if:

- (a) it relates, to any extent, to an onshore place; and
- (b) it either:
 - (i) permits or requires the construction, operation, use, maintenance or repair, by or on behalf of any person, of any of the things listed in subsection (2) that is to be operated, or is operated, for the general public; or
 - (ii) consists of the construction, operation, use, maintenance or repair, by or on behalf of the Crown, or a local government body or other statutory authority of the Crown, in any of its capacities, of any of the things listed in subsection (2) that is to be operated, or is operated, for the general public; and
- (c) it does not prevent native title holders in relation to land or waters on which the thing is located or to be located from having reasonable access to such land or waters in the vicinity of the thing, except:
 - (i) while the thing is being constructed; or
 - (ii) for reasons of health and safety
- (d) a law of the Commonwealth, a State or a Territory makes provision in relation to the preservation or protection of areas, or sites, that may be
 - (i) in the area in which the act is done; and
 - (ii) of particular significance to Aboriginal peoples or Torres Strait Islanders in accordance with their traditions.

Table 3 assesses the proposed activity for compliance under section Subdivision K of the NT Act (Cwlth).

Table 3: Requirements for validity of the future act under Subdivision K – Facilities for services to the public

Requirement for facilities for services to the public	Section 24KA	Compliance
The future act relates (to any extent) to an onshore place	(1)(a)	Yes
The facility is any of the following: <ul style="list-style-type: none"> (a) a road, railway, bridge, or other transport facility (other than an airport of port); (b) a jetty or wharf; (c) a navigation marker or other navigational facility; (d) an electricity transmission or distribution facility; (e) lighting of streets or other public places; (f) a gas transmission or distribution facility; (g) a well, or a bore, for obtaining water; (h) a pipeline or other water supply or reticulation facility; (i) a drainage facility, or a levee or other device for management of water flows; (j) an irrigation channel or other irrigation facility; 	(2)	Yes The future act relates to a road and associated car parking which is a thing listed in subsection (2)

<ul style="list-style-type: none"> (k) a sewerage facility, other than a treatment facility; (l) a cable, antenna, tower or other communication facility; (la) an automatic weather station; (m) any other thing that is similar to any one or more of the things mentioned in the paragraphs above. 		
<p>The future act either:</p> <ul style="list-style-type: none"> (i) permits or requires the construction, operation, use, maintenance or repair, by or on behalf of any person, of any of the things listed in subsection (2) that is to be operated, or is operated, for the general public; or (ii) consists of the construction, operation, use, maintenance or repair, by or on behalf of the Crown, or a local government body or other statutory authority of the Crown, in any of its capacities, of any of the things listed in subsection (2) that is to be operated, or is operated, for the general public; and 	(1)(b)	<p>Yes</p> <p>The future act requires the construction of a thing listed in subsection (2) which will be operated for the general public</p>
<p>The future act it does not prevent native title holders in relation to land or waters on which the thing is located or to be located from having reasonable access to such land or waters in the vicinity of the thing, except:</p> <ul style="list-style-type: none"> (i) while the thing is being constructed; or (ii) for reasons of health and safety; and 	(1)(c)	<p>Yes</p> <p>The future act will not prevent native title holders from having reasonable access to such land or waters in the vicinity of the road, except during construction</p>
<p>If there are any areas or sites in the future act area of particular significance to Aboriginal peoples or Torres Strait Islanders in accordance with their traditions, a law of the State is made in relation to the area or sites preservation or protection.</p>	(1)(d)	<p>Yes</p> <p>The NPW Act is responsible for the conservation of places, objects and features of significance to Aboriginal people; thus, compliance with the NPW Act is required (refer section 4.2.11)</p>
<p>The future act does not relate to the compulsory acquisition of the whole or part of any native title rights and interests.</p>	(1A)	<p>Yes</p> <p>No compulsory acquisition is required for the future act</p>

The proposed road and car park construction is a future act that meets the requirements of validation under the NT Act (Cwlth) Subdivision K, Section 24KA, Section (1) (a-d) and Section (1A).

Pursuant to section 24KA(8), native title holders or any registered native title claimants in relation to land or waters in the area concerned by the activity have the right to be notified of the future act only if there has been no approved determination of the native title. Given there is a registered native title claim over the study area, and there are no approved determinations of native title, Council are required to notify the Gomeri People of the future act prior to works commencing, and provided an opportunity for representatives of the Gomeri People to provide feedback on the proposed activity.

4.2 State Legislation

4.2.1 *Environmental Planning and Assessment Act 1979*

The *Environmental Planning and Assessment Act 1979* (EP&A Act) regulates development carried out in NSW. Part 5 of the Act permits activities to be assessed by a determining authority.

Pursuant to section 5.1(1) of the Act:

- the proposal is an “activity” which includes (d) the carrying out of work; and
- “determining authority” includes a “public authority by or on whose behalf the activity is or is to be carried out”

Pursuant to section 1.4 of the Act, a “public authority” includes “a public or local authority constituted by or under an Act”.

Muswellbrook Shire Council is a council constituted under by the *Local Government Act 1993* (section 219) and is therefore a “public authority” as defined in section 1.4 of the EP&A Act. For the purposes of the proposal, Muswellbrook Shire Council is the proponent and determining authority.

The relevant sections of the EP&A Act include:

- section 5.5(1) which requires the determining authority to “examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity”;
- section 5.5(3) which requires the determining authority to “consider the effect of an activity on any wilderness area (within the meaning of the *Wilderness Act 1987*) in the locality in which the activity is intended to be carried on”; and
- section 5.6 which requires the determining authority to address the regulations for environmental impact assessments (currently the *Environmental Planning and Assessment Regulation 2021*); and
- section 5.7 which require an Environmental Impact Statement (EIS) to be prepared if the proposed activity is “a prescribed activity, an activity of a prescribed kind or an activity that is likely to significantly affect the environment”.

Pursuant to section 1.7 of the Act, the 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. The provisions of the BC Act and FM are discussed in sections 4.2.3 and 4.2.6 respectively.

Further:

- The activity is not ‘designated development’ under Schedule 3 of the *Environmental Planning and Assessment Regulation 2021*.
- The activity is not declared to be state significant infrastructure under section 2.13 of the *State Environmental Planning Policy (Planning Systems) 2021*.
- The activity is not identified within a State Environmental Planning Policy (SEPP) as not permissible without development consent under another environmental planning instrument that prevails over the *State Environmental Planning Policy (Transport and Infrastructure) 2021*. In particular:
 - the activity is not in a coastal wetland or littoral rainforest or does not otherwise meet the criteria for development requiring consent outlined in section 2.7(2) of the *State Environmental Planning Policy (Resilience and Hazards) 2021*, and

- the activity is not coastal protection works or, if coastal protection works, the activity is one of the types of coastal protection works that may be carried out by or on behalf of a public authority without development consent, and
- the activity is not a type of development requiring development consent under section 2.9 of the *State Environmental Planning Policy (Resources and Energy) 2021*.
- The activity is not declared to be exempt development under an environmental planning instrument or fails to fully meet the requirements for exempt development.
 - The proposed car park upgrade meets the criteria for exempt development for the purpose of *State Environmental Planning Policy (Transport and Infrastructure) 2021*; however, Council will process all elements of the proposal as an activity for the purpose of Division 5.1 of the EP&A Act (refer section 4.3.1).

4.2.2 *Environmental Planning and Assessment Regulation 2021*

In conducting its assessment under Part 5 of the EP&A Act, Muswellbrook Shire Council is required to consider the environmental factors listed in the Department of Planning and Environment's *Guidelines for Division 5.1 assessments* (June 2022) published under section 170 of the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation).

The relevant factors outlined in Table 1 in section 3 of the Division 5.1 Guidelines are considered in section 7.1.

In accordance with Section 171(4) of the EP&A Regulation, a REF must be published on the determining authority's website or the NSW Planning Portal only if:

- (a) the activity has a capital investment value of more than \$5 million, or
- (b) the activity requires an approval or permit as referred to in any of the following provisions before it may be carried out—
 - (i) *Fisheries Management Act 1994*, sections 144, 200, 205 or 219,
 - (ii) *Heritage Act 1977*, section 57
 - (iii) *National Parks and Wildlife Act 1974*, section 90,
 - (iv) *Protection of the Environment Operations Act 1997*, sections 47-49 or 122, or
- (c) the determining authority considers that it is in the public interest to publish the review.

Pursuant with section 171(4) of the EP&A Regulation, this REF does not require publication as the proposal does not require an approval or permit prior to commencement.

The proposed activity is not an activity listed under Schedule 3 of the EP&A Regulation, and is therefore not designated development for the purposes of the EP&A Act.

4.2.3 *Biodiversity Conservation Act 2016*

The purpose of the *Biodiversity Conservation Act 2016* (BC Act) is to maintain a healthy, productive, and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development.

Pursuant to section 7.8(2) of the BC Act, an activity under Part 5 of the EP&A Act that is "likely to significantly affect threatened species" is regarded "as an activity likely to significantly affect the environment".

In this circumstance, an EIS is required and must include or be accompanied by a species impact statement or a biodiversity development assessment report.

However, an EIS is not required if the likely significant effect on threatened species is the only likely significant effect on the environment. In this situation, a species impact statement or a biodiversity development assessment report is still required.

In accordance with section 7.2 of the BC Act, an activity is likely to significantly affect threatened species if:

- (a) it is likely to significantly affect threatened species or ecological communities, or their habitats, according to the test in section 7.3, or
- (c) it is carried out in a declared area of outstanding biodiversity value.

Reliance on the Biodiversity Value Map is not relevant to this assessment as the biodiversity offsets scheme does not apply to development under Part 5 of the EP&A Act (section 7.2(2) of the BC Act).

The proposal has been assessed in accordance with the requirements of the BC Act and an Ecological Assessment prepared to assist the preparation of the REF. A summary of the Ecological Assessment is provided as follows:

Survey Results

A site survey was carried out in January 2024 which determined the vegetation along Bell Street comprises a highly disturbed Grassy Woodland. Weeds are common on the roadside and largely comprise exotic grasses. The site vegetation is analogous with the *Hunter Valley Footslopes Slaty Gum Woodland in the Sydney Basin Bioregion* Threatened Ecological Community (TEC), which is listed as Vulnerable under the BC Act, and the *Central Hunter Valley eucalypt forest and woodland* TEC which is listed as Critically Endangered under the EPBC Act.

No threatened flora species were detected during the survey. One (1) threatened fauna species, the Grey-crowned Babbler (eastern subspecies) (*Pomatostomus temporalis temporalis*), was detected foraging within vegetation adjacent the road. An additional 13 threatened species were found to have potential to occur within the site.

Impact of the Proposal

The works will require the removal of eight (8) canopy roadside trees, which includes two hollow-bearing trees and six secondary Koala food trees. A small extent of shrubby understorey and groundcovers will also be removed.

There is potential for the works to result in indirect impacts on adjoining vegetation or fauna species utilising the site. These include erosion and sedimentation, weed invasion, edge effects and increased noise at the time of works. Specific mitigation measures are recommended to reduce the potential for indirect impacts.

A test of significance as prescribed under section 7.3 of the BC Act has been prepared to determine whether the proposed activity is likely to significantly affect threatened species or ecological communities, or their habitats and is included in the Ecological Assessment. The test of significance has determined that the proposed activity would not result in a significant impact on threatened species or ecological communities, or their habitats. A Biodiversity Development Assessment Report or Species Impact Statement is not required for the proposal.

4.2.4 Wilderness Act 1987

The objects of the Wilderness Act 1987 are to provide for the permanent protection and proper management of wilderness areas and to promote the education of the public in the appreciation, protection and management of wilderness.

Pursuant to section 5.5 of the EP&A Act:

- (3) a determining authority shall consider the effect of an activity on any wilderness area (within the meaning of the *Wilderness Act 1987*) in the locality in which the activity is intended to be carried on.

No land within or near the proposed activity is declared wilderness; thus, the *Wilderness Act 1987* does not apply to the proposal.

4.2.5 *Heritage Act 1977*

The objectives of the *Heritage Act 1977* include to encourage the conservation of the State's heritage and to assist owners with the conservation of items of State heritage significance. Section 4 of the Act broadly defines environmental heritage as comprising the following items:

- those places, buildings, works, relics, moveable objects, and precincts, of State or local heritage significance.

The Act defines a relic as “any deposit artefact, object or material evidence that—

- (a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and
- (b) is of State or local heritage significance”.

Sections 139 to 145 within Division 9 of the Act prevent the excavation or disturbance of land for the purpose of discovering, exposing or moving a relic, except by a qualified archaeologist to whom an excavation permit from Heritage NSW has been issued.

Section 146 of the Act requires that “a person who is aware or believes that he or she has discovered or located a relic (in any circumstances, and whether or not the person has been issued with a permit) must—

- (a) within a reasonable time after he or she first becomes aware or believes that he or she has discovered or located that relic, notify the Heritage Council of the location of the relic, unless he or she believes on reasonable grounds that the Heritage Council is aware that the Heritage Council is aware of the location of the relic, and
- (b) within the period required by the Heritage Council, furnish the Heritage Council with such information concerning the relic as the Heritage Council may reasonably require”.

Searches have been undertaken of the NSW State Heritage Inventory and Schedule 5 Environmental heritage of the *Muswellbrook Local Environmental Plan 2009* (LEP).

No items of State heritage significance have been recorded near the proposed activity; however, a number of local heritage items and one (1) heritage conservation area listed under Schedule 5 Environmental heritage of the Muswellbrook LEP are situated within 1-kilometre of the proposed activity as shown in Figure 4. The closest heritage item to the proposal comprises the Railway terminus site on Turner Street, which is situated approximately 350-metres east of the proposal footprint.

No works are proposed to occur within or adjacent to any heritage items; thus, no impacts are anticipated.



Figure 4: Local heritage items and conservation areas proximate to the proposed activity



4.2.6 Fisheries Management Act 1994

The *Fisheries Management Act 1994* (FM Act) applies to all waters that are within the limits of the State of NSW. It aims, amongst other things, to conserve fish stocks and key fish habitats, threatened species, populations and ecological communities of fish and marine vegetation, and promote ecologically sustainable development, including the conservation of biological diversity.

Division 12 Application of Planning Act

Division 12 applies to environmental assessments under Part 5 of the EP&A Act.

Pursuant to section 221ZX of the FM Act, an activity under Part 5 of the EP&A Act that is “likely to significantly affect threatened species, populations or ecological communities” is regarded as “an activity likely to significantly affect the environment”.

Consideration of the requirements of section 221ZV of the FM Act is therefore required to determine whether the proposed activity is likely to significantly affect threatened species, populations or ecological communities. Searches of the Fisheries NSW Spatial Data Portal does not identify any aquatic species listed under the FM Act with the potential to occur within the locality, and no species or ecological communities listed under the Act were recorded on site. Therefore, no species listed under the FM Act have been evaluated for their potential to occur on the site.

The proposal is not likely to “significantly affect threatened species, populations or ecological communities”, and the activity does not require concurrence of the Minister for Agriculture. Further, an approval pursuant to sections 144, 201, 205 or 219 of the FM Act is not required.

The proposed activity involves works within the water and riparian zone of a single stream which runs parallel to Bell Street. The stream is mapped as a first order stream under the Strahler system and is not mapped as key fish habitat under the FM Act.

One of the primary objectives of the FM Act is to conserve fish stocks and key fish habitats (section 3(2)(a)). The term “key fish habitats” is not defined in the FM Act or the *Fisheries (General) Regulation 2019*; however, the NSW Department of Primary Industries (NSW DPI) provides a definition of “key fish habitats” on their public webpage ([Protecting habitats](#)) and in the NSW DPI ‘Policy and guidelines for fish habitat conservation and management: Update 2013’.

For the purposes of the FM Act, under these guiding publications, NSW DPI does not consider first and second order streams as “key fish habitats”. Thus, a permit under section 200 of the FM Act is not required to carry out dredging and/or reclamation works.

4.2.7 Crown Land Management Act 2016

The *Crown Land Management Act 2016* (CLM Act) outlines general licence requirements for the use or occupation of Crown land. The proposed activity is situated on Denman Park which is Crown Land (being Crown Reserve) and comprises the whole of Lot 1 DP171274, Lot 231 DP729996, and Lot 126 DP750924 within the Denman County.

Pursuant to section 3.3(2)(a) of the Act, Muswellbrook Shire Council are the appointed Crown land manager (CLM) for the Crown Reserve. Pursuant to section 3.13 of the Act:

- (1) The functions of a Crown land manager of specified dedicated or reserved Crown Land are—
 - (a) to be the person responsible for the care, control and management of the Crown land for the purposes referred to in section 2.12 applicable to the land, and
 - (b) to exercise any other functions that are conferred or imposed on the manager by or under this Act or another Act (including by Divisions 3.4 and 3.5)

Denman Park is a dedicated Crown Reserve with the purpose of providing for Public Recreation. The proposed activity will contribute to the purposes of public recreation by improving access and amenity of the reserve, thus, the proposal is consistent with section 2.12 of the Act which mandates that “dedicated or reserved Crown land may be used only for the following purposes—

- (a) the purpose for which it is dedicated or reserved,
- (b) any purpose incidental or ancillary to a purpose for which it is dedicated or reserved,
- (c) any other purposes authorised by or under this Act or another Act”.

Further, as the Crown land manager for the reserve, Council is not required to obtain a licence under Division 5.6 of the Act.

4.2.8 *Water Management Act 2000*

The *Water Management Act 2000* (WM Act) outlines approval requirements for activities at a specified location in, on or under waterfront land. The WM Act also outlines water access rights and surface water runoff.

Section 91E of the WM Act establishes an approval regime for controlled activities in, on or under “waterfront land”, which is the bed of any river, lake or estuary, and the land within 40-metres of the highest bank of the river, the shore of the lake or the mean high-water mark of the estuary. A **river**, as defined in the Act, includes (a) any watercourse, whether perennial or intermittent and whether comprising a natural channel or a natural channel artificially improved.

A “controlled activity” approval is required for certain types of activities on waterfront land (unless an exemption applies). A “controlled activity” is defined in the WM Act to include the erection of a building or the carrying out of work within the meaning of the EP&A Act and the carrying out of any other activity that affects the quantity or flow of water in a water source.

Subdivision 4 of the *Water Management (General) Regulation 2018* (WM Regulation) provides an exemption from requirement for controlled activity approval. Section 41 of the WM Regulation states that “a public authority is exempt from section 91E(1) of the Act in relation to all controlled activities that it carries out in, on or under waterfront land. Muswellbrook Shire Council is a “public authority” as defined in section 1.4 of the EP&A Act and are therefore exempt from section 91E of the Act.

4.2.9 *Marine Estate Management Act 2014*

The proposal would not affect, nor does it directly adjoin a marine park or aquatic reserve in this location, thus, consideration of the Act is not required.

4.2.10 *Roads Act 1993*

The proposed activity relates to carrying out works on Bell Street and the Denman Park internal road, which are “public roads” as per the Transport for NSW ‘NSW Road Network Classifications’. “Public roads” are defined in the **Dictionary** of the *Roads Act 1993* (Roads Act) as:

- (a) any road that is opened or dedicated as a public road, whether under this or any other Act or law, and
- (b) any road that is declared to be a public road for the purposes of the Act.

Pursuant to section 138 of the Roads Act:

- (1) A person must not—
 - (a) erect a structure or carry out work in, on or over a public road, or

- (b) dig up or disturb the surface of a public road, or
- (c) remove or interfere with a structure, work or tree on a public road, or
- (d) pump water into a public road from any land adjoining the road, or
- (e) connect a road (whether public or private) to a classified road.

However, pursuant to Part 2, Division 1, section 5 of the Roads Act, section 138 does not require a public authority to obtain a roads authority's consent to the exercise of the public authority's functions in, on or over an unclassified road other than a Crown road. Accordingly, consent is not required under section 138 of the Roads Act.

4.2.11 *National Parks and Wildlife Act 1974*

The proposal is not located on or adjacent to land reserved under the National Parks and Wildlife Act 1974 (NPW Act).

One of the primary objectives of the NPW Act is the "conservation of places, objects and features of significance to Aboriginal people". Section 86 of the NPW Act states that:

- (2) a person must not harm an Aboriginal object
- (4) a person must not harm or desecrate an Aboriginal place.

Pursuant to section 87 of the NPW Act:

- (1) it is a defence to a prosecution for an offence under section 86(2) if the defendant shows that the defendant exercised due diligence to determine whether the act or omission constituting the alleged offence would harm an Aboriginal object and reasonably determined that no Aboriginal object would be harmed
- (2) The regulations may provide that compliance with requirements specified in the regulations, or in a code of practice adopted or prescribed by the regulations, is taken for the purposes of subsection (2) to constitute due diligence in determining whether the act or omission constituting the alleged offence would harm an Aboriginal object.

Pursuant to section 57 of the *National Parks and Wildlife Regulation 2021* (NPW Regulation), compliance with the Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales published by the Department of Environment, Climate Change and Water and dated 13 September 2010 is taken for the purposes of section 87(2) of the NPW Act to constitute due diligence in determining whether the act or omission constituting the alleged offence would harm an Aboriginal Object.

The proposal does not comprise exempt development or is the subject of a complying development certificate; thus, the proposed activity is not a low impact activity pursuant to section 58 of the NPW Regulation. The generic due diligence process as determined by the Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales has been applied to the proposal. Potential impacts to Aboriginal cultural heritage is discussed in section 6.7.

4.2.12 *Rural Fires Act 1997*

The proposal is situated within vegetation classified Vegetation Category 3 as determined by the NSW Rural Fire Service Guide for Bush Fire Prone Land Mapping. Upon completion, Bell Street and the Denman Park internal road will significantly improve vehicle access which will contribute to the following Objects of the *Rural Fires Act 1997* (RF Act) which are to provide:

- (a) for the prevention, mitigation and suppression of bush and other fires in local government areas (or parts of areas) and other parts of the State constituted as rural fire districts
- (c) for the protection of persons from injury or death, and property from damage, arising from fires, and

- (c1) for the protection of infrastructure and environmental, economic, cultural, agricultural and community assets from damage arising from fires.

4.2.13 *Local Land Services Act 2013*

The objects of the *Local Land Services Act 2013* (LLS Act) include “to ensure the proper management of natural resources in the social, economic and environmental interests of the State, consistently with the principles of ecologically sustainable development”. The Act regulates the clearing of native vegetation; however, for the purposes of section 60(O), the clearing of native vegetation in a regulated rural area is authorised under other legislation if:

- (a) the clearing was
- (ii) an activity carried out by a determining authority within the meaning of Part 5 of that Act after compliance with that Part.

As the activity is being assessed under Part 5 of the EP&A Act, the proposal is authorised under section 60(O)(b)(ii) of the LLS Act.

4.2.14 *Protection of the Environment Operations Act 1997*

The *Protection of the Environment Operations Act 1997* (POEO Act) is the key environmental protection and pollution statute. The POEO Act is administered by the Environment Protection Authority and establishes a licensing regime for waste, air, water and pollution. Relevant sections of the Act are listed below:

- Part 5.3 Water Pollution
- Part 5.4 Air Pollution
- Part 5.5 Noise Pollution
- Part 5.6 Land Pollution and Waste

Any work potentially resulting in pollution must comply with the POEO Act. Relevant licences must be obtained if required; however, no licences pursuant to sections 47, 48, 49 or 122 of the Act are required.

Further, the proposed activity is not a scheduled activity or scheduled development work identified in Schedule 1 of the POEO Act.

4.2.15 *NSW Reconstruction Authority Act 2022*

Pursuant to Part 4, Division 3, section 38(3) of the *Reconstruction Authority Act 2022* (RA Act), a local council must have regard to the State disaster mitigation plan and any relevant disaster adaptation plan in exercising the local council's functions under—

- (a) the *Environmental Planning and Assessment Act 1979*, and
- (b) the *Local Government Act 1993*.

The RA Act commenced on 17 December 2022 which did not include the commencement of Part 4 (as per section 2(a)). Pursuant to section 2(b), Part 4 of the Act will commence *on a day or days to be appointed by proclamation*; thus, the Act does not apply to this REF.

4.2.16 *Contaminated Land Management Act 1997*

The general object of the *Contaminated Land Management Act 1997* is to establish a process for investigating and (where appropriate) remediating land that the EPA considers to be contaminated significantly enough to require regulation under Division 2 of Part 3 of that Act.

Searches of the NSW Environment Protection Authority (EPA) List of Notified Sites and the Contaminated Land Public Record were undertaken on 16 January 2024. No records occur on the contaminated land record; however, two (2) contaminated sites are recorded on the list of notified sites approximately 1-kilometre north of the proposed activity. No works will occur on or within proximity of the notified sites; thus, no impacts are likely to occur.

Given the proposed activity will not impact contaminated land, the provisions of the Act do not apply to the proposed activity.

4.2.17 *Environmentally Hazardous Chemicals Act 1985*

The *Environmentally Hazardous Chemicals Act 1985* (EHC Act) requires that a person who proposes to carry on any prescribed activity with respect to an environmentally hazardous chemical or a declared chemical waste, being an activity which, by reason of a chemical control order, may lawfully be carried on only under the authority of a licence, may apply to the Environment Protection Authority for a licence authorising the carrying out of that activity.

The proposed activity does not involve handling or disposal of chemicals subject to a Chemical Control Order (CCO) prescribed under section 22 or 23 of the Act, thus, the Act does not apply to the proposed activity.

4.3 Environmental Planning Instruments

The EP&A Act permits public authorities to carry out development without consent if an environmental planning instrument provides that specified development may be carried out without the need for development consent.

4.3.1 *State Environmental Planning Policy (Transport and Infrastructure) 2021*

State Environmental Planning Policy (Transport and Infrastructure) 2021 (SEPP Transport and Infrastructure) aims to streamline the delivery of necessary services and infrastructure to communities through establishing alternate approval pathways for the undertaking of work by public authorities.

The proposed activity is considered development permitted without consent pursuant to the following sections of SEPP Transport and Infrastructure:

Division 12 Parks and other public reserves

Section 2.73

(2) Development for any purpose may be carried out without consent—

(c) on Crown managed land, by or on behalf of—

(ii) a Crown land manager of the land (or an administrator of the manager)

if the development is for the purposes of implementing a plan of management adopted for the land under the Act referred to above in relation to the land or in accordance with the *Local Government Act 1993* in relation to Crown managed land managed by a council.

Pursuant to section 48(1) of the *Local Government Act 1993* (LG Act), Council is responsible for (a) public reserves that are not under the control of or vested in any other body or persons and are not held by a person under lease from the Crown. As described in section 4.2.7, Council are the Crown land manager for the reserve and are therefore responsible for the care, control and management of the Crown land.

Division 17 Roads and traffic

Section 2.109

- (1) Development for the purpose of a road or road infrastructure facilities may be carried out by or on behalf of a public authority without consent on any land.

Division 4 Exempt development

The proposed car park upgrade may be carried out as exempt development pursuant to section 2.21 of SEPP Transport and Infrastructure.

Section 2.21(1) Development for a purpose specified in Schedule 1 is exempt development if—

- (a) it is carried out by or on behalf of a public authority, and
- (b) it meets the development standards for the development specified in Schedule 1, and
- (c) it complies with section 2.20.

Consistency with the requirements of section 2.21(1) are outlined in Table 4.

Table 4: Exempt development consistency with section 2.21(1) of SEPP Transport and Infrastructure

Section 2.21(1) requirement	Consistency with proposal
Is the development for a purpose specified in Schedule 1?	The development is for the purpose of an at grade car park which is development specified in Schedule 1 Exempt development – refer Table 6.
Will the development be carried out by or on behalf of a public authority?	The development will be carried out Muswellbrook Shire Council which is a public authority pursuant to section 1.4 of the EP&A Act.
Does the development meet the development standards for the development specified in Schedule 1?	The development meets the development standards for the development specified in Schedule 1 – refer Table 6.
Does the development comply with section 2.20?	The development complies with section 2.20 – refer Table 5.

The general requirements for exempt development are specified in section 2.20(2). Consistency with the general requirements are detailed in Table 5.

Table 5: General requirements for exempt development

General requirements for exempt development	Consistency with proposal
(a) must meet the relevant deemed-to-satisfy provisions of the <i>Building Code of Australia</i> , or if there are no such relevant provisions, must be structurally adequate, and	The development does not relate to a building.

(b) must not, if it relates to an existing building— (ii) cause the building to contravene the <i>Building Code of Australia</i> , or (iii) compromise the fire safety of the building or affect access to any fire exit, and	The development does not involve an existing building.
(c) must be carried out in accordance with all relevant requirements of the Blue Book, and	Erosion and sediment controls will be implemented where required and shall be consistent with the relevant requirements of the Blue Book.
(d) must not be designated development, and	The development is not designated development under Schedule 3 of the <i>Environmental Planning and Assessment Regulation 2021</i> .
(e) if it is likely to affect a State or local heritage item or a heritage conservation area, must involve no more than minimal impact on the heritage significance of the item or area, and	No State or local heritage items will be impacted by the development.
(f) must not involve the demolition of a building or work that is, or is part of, a State or local heritage item, and	The development does not involve the demolition of a building or work that is, or is part of, a State or local heritage item.
(g) if it involves the demolition of a building, must be carried out in accordance with Australian Standard AS 2601—2001, The demolition of structures, and	The development does not involve the demolition of a building.
(h) must be installed in accordance with the manufacturer's specifications, if applicable, and	The car park will be upgraded in accordance with the requirements of AS/NZS 2890.1:2004 Part 1: Off-street car parking.
(i) must not involve the removal or pruning of a tree or other vegetation that requires a permit or development consent for removal or pruning, unless that removal or pruning is undertaken in accordance with a permit or development consent, and	The development does not involve the removal or pruning of a tree or other vegetation that requires a permit or development consent for removal or pruning.
(j) must not involve the removal of asbestos, unless that removal is undertaken in accordance with Working with Asbestos: Guide 2008 (ISBN 0 7310 5159 9) published by the WorkCover Authority.	The development does not involve the removal of asbestos.

Schedule 1 Exempt development – Chapter 2

Development purposes specified in Schedule 1, and their required standards, which are applicable to the proposed activity are detailed in Table 6.

Table 6: Schedule 1 Exempt development – Chapter 2

Development purpose	Development standards	Consistency with proposal
Car parks – at grade car parks only	<ul style="list-style-type: none"> Must be open (unenclosed) car parking (but may include associated gates including security booths and boom gates). 	The proposed car park upgrade will be an open car park.
	<ul style="list-style-type: none"> Must not be carried out on land within a growth centre (within the meaning of State Environmental Planning Policy (Sydney Region Growth Centres) 2006) that is not subject land within the meaning of clause 17 of Schedule 7 to the Threatened Species Conservation Act 1995. 	The proposed car park upgrade will not be carried out on land within a growth centre.
	<ul style="list-style-type: none"> Must not exceed 200 spaces for a site with access to any road or 50 spaces for a site with access to a classified road or to a road that connects to a classified road (if the access is within 90m of that connection, measured along the alignment of the connecting road). 	The proposed car park upgrade will not exceed 200 spaces, and the development is not associated with a classified road.

The proposed car park upgrade meets the criteria for exempt development for the purpose of SEPP Transport and Infrastructure; however, Council will process all elements of the proposal as an activity for the purpose of Division 5.1 of the EP&A Act.

4.3.2 State Environmental Planning Policy (Resilience and Hazards) 2021

Chapter 2 Coastal management

The proposed activity is not situated on land identified as “coastal wetlands” or “littoral rainforest” on the *Coastal Wetlands and Littoral Rainforests Area Map*, nor is it situated on land identified as “coastal vulnerability area” on the *Coastal Vulnerability Area Map*.

Chapter 4 Remediation of land

Chapter 4 of *State Environmental Planning Policy (Resilience and Hazards) 2021* (SEPP Resilience and Hazards) provides a state-wide planning approach for the remediation of contaminated land and aims to promote the remediation of contaminated land to reduce the risk of harm to human health or the environment. Section 4.6(1) requires the consent authority to consider whether land is contaminated prior to consent of an application; however, Chapter 4 only applies to development applications under Part 4 of the EP&A Act and therefore does not apply to the proposal.

Notwithstanding, potential impacts from contaminated land have been considered in the preparation of this REF. Searches of the NSW Environment Protection Authority (EPA) List of Notified Sites and the Contaminated Land Public Record were undertaken on 16 January 2024. No records occur on the contaminated land record; however, two (2) contaminated sites are recorded on the list of notified sites approximately 1-kilometre north of the proposed activity. No works will occur on or within proximity of the notified sites; thus, no impacts are likely to occur.

4.3.3 State Environmental Planning Policy (Biodiversity and Conservation) 2021

Pursuant to section 4.4(1) of *State Environmental Planning Policy (Biodiversity and Conservation) 2021* (SEPP Biodiversity and Conservation), Chapter 4 applies to each local government area listed in Schedule 2. The Muswellbrook local government area is listed in Schedule 2; thus, the provisions of Chapter 4 apply to the proposed activity.

The aims of SEPP Biodiversity and Conservation are to protect the biodiversity values of trees and other vegetation in non-rural areas of the State, and to preserve the amenity of non-rural areas of the State through the preservation of trees and other vegetation.

Chapter 4 aims to encourage the conservation and management of areas of natural vegetation that provide habitat for koalas to support a permanent free-living population over their present range and reverse the current trend of koala population decline.

Chapter 4 only applies to development applications under Part 4 of the EP&A Act and therefore does not apply to the proposed activity. Notwithstanding, the aim of Chapter 4 has been considered in the proposal. The proposed activity is not mapped as occurring within core Koala habitat, nor is it situated in an area where a Koala Plan of Management has been prepared.

4.3.4 Local Environmental Plans

Muswellbrook Local Environmental Plan 2009

The proposed activity is permissible as development without consent under SEPP Transport and Infrastructure which prevails over the provisions of the Muswellbrook LEP. Notwithstanding, the proposed activity is consistent with the objects of the applicable zones on which the proposed activity is situated.

4.4 Applicable Strategic Plans under Division 3.1 of the EP&A Act

Hunter Regional Plan 2041

The regional plan represents a strategic vision and direction which aims to set the tone for greater housing choice, improved affordability and better connectivity in all Hunter communities. The proposed activity will contribute to performance outcome 3 of objective 3 which will provide and improve local access to open space and community activities.

Muswellbrook Shire Council Local Strategic Planning Statement 2020-2040

The Muswellbrook Local Strategic Planning Statement (LSPS) is part of a hierarchy of strategic land use planning documents and is a mandated requirement of the NSW State Government under the *Environmental Planning and Assessment Act 1979*. The Muswellbrook LSPS implements the actions in the Hunter Regional Plan and Council's own priorities as set out in the Muswellbrook Community Strategic Plan and other adopted strategies and actions.

The proposed activity will be carried out in accordance with Planning Priority 8 of the LSPS in that:

- Developments that increase economic activity, activation of public areas, and improve amenity in Muswellbrook, Denman and Sandy Hollow will be supported.

5. CONSULTATION

5.1 SEPP Transport and Infrastructure Council and Agency Consultation and Notification

Part 2.2 of SEPP Transport and Infrastructure contains provisions for public authorities to consult with local councils and other public authorities prior to the commencement of certain types of development. Agency consultation is detailed in Table 7.

Table 7: Consultation and notification Under Part 2.2 of SEPP Transport and Infrastructure

Is consultation with council required under sections 2.10, 2.11, 2.12 or 2.14 of SEPP Transport and Infrastructure?		
Is the proposed activity likely to have a substantial impact on the stormwater management services which are provided by council?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is the proposed activity likely to generate traffic to an extent that will strain the existing road system in a local government area?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Will the proposed activity involve connection to a council owned sewerage system? If so, will this connection have a substantial impact on the capacity of the system?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Will the proposed activity involve connection to a council owned water supply system? If so, will this require the use of a substantial volume of water?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Will the proposed activity involve the installation of a temporary structure on, or the enclosing of, a public place which is under local council management or control? If so, will this cause more than a minor or inconsequential disruption to pedestrian or vehicular flow?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Will the proposed activity involve more than a minor or inconsequential excavation of a road or adjacent footpath for which council is the roads authority and responsible for maintenance?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Is the proposed activity located on flood liable land? If so, will the activity change flooding patterns to more than a minor extent?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is there a local heritage item (that is not also a state heritage item) or a heritage conservation area in the study area for the works? If yes, does a heritage assessment indicate that the potential impacts to the item/area are more than minor or inconsequential?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is the proposed activity on land that is within a coastal vulnerability area? Is the activity inconsistent with a certified coastal management program that applies to the land?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Is consultation with other agencies required under sections 2.13, 2.15 or 2.16 of SEPP Transport and Infrastructure?		
Is the proposed activity development on flood liable land that may be carried out without development consent?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is the proposed activity adjacent to a national park, nature reserve or other area reserved under the <i>National Parks and Wildlife Act 1974</i> ?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is the proposed activity on land in Zone C1 National Parks and Nature Reserves on or in a land use zone that is equivalent to that zone, other than land reserved under the <i>National Parks and Wildlife Act 1974</i> ?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is the proposed activity adjacent to a declared aquatic reserve under the <i>Fisheries Management Act 1994</i> ?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is the proposed activity adjacent to a declared marine park under the <i>Marine Estate Management Act 2014</i> ?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is the proposed activity adjacent to a declared aquatic reserve under the <i>Marine Estate Management Act 2014</i> ?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is the proposed activity in the Sydney Harbour Foreshore Area as defined by the <i>Place Management NSW Act 1998</i> ?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Does the proposed activity involve the installation of a fixed or floating structure in or over navigable waters?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is the proposed activity for the purpose of residential development, an educational establishment, a health services facility, a correctional facility or group home in bush fire prone land?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Does the proposed activity increase the amount of artificial light in the night sky and that is on land within the dark sky region?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is the proposed activity development on defence communications facility buffer land within the meaning of section 5.15 of the <i>Standard Instrument – Principal Local Environmental Plan</i> ?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is the development on land in a mine subsidence district within the meaning of the <i>Coal Mine Subsidence Compensation Act 2017</i> ?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Details of required consultation with council

The proposed activity involves more than a minor or inconsequential excavation of Bell Street and the Denman Park internal road which council is the roads authority and responsible for maintenance. As the proponent, Muswellbrook Shire Council supports the proposed activity; thus, further consultation is not required.

Details of required consultation with other agencies

None required.

6. ENVIRONMENTAL IMPACT ASSESSMENT

This section identifies environmental impacts that the proposed activity may have. The assessment focuses on the existing environment, impact assessments, and mitigation measures.

Impact ratings are determined with consideration of the extent, size, scope, intensity, and duration of the potential impact and are defined as the following:

- Positive or negligible impact: 0
- Low impact: 1
- Medium impact: 2
- High impact: 3

6.1 Overview of the Project Area

Denman is located approximately 24-kilometres south-west of Muswellbrook and approximately 250-kilometres north of Sydney in the Upper Hunter Valley of NSW. The closest open meteorological station is the Scone Airport station which is located approximately 41.5-kilometres north-east of Denman. The station is detailed as follows:

Site name: Scone Airport AWS

Site number: 061363

Latitude: 32.03°S **Longitude:** 150.83°E

Elevation: 221m

Commenced: **Status:** Open

Mean maximum and minimum temperatures for the years 1990-2023, and mean rainfall statistics for the years 1994-2023 for the area are detailed below:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean max temp (°C)	31.8	30.6	28.1	24.6	20.4	17.1	16.7	18.9	22.3	25.6	28.2	30.5	24.6
Mean min temp (°C)	17.2	16.6	14.3	10.0	6.5	4.8	3.3	3.7	6.7	9.7	13.0	15.4	10.1
Mean rainfall (mm)	62.6	58.1	62.6	32.4	34.3	43.6	38.8	36.1	35.4	52.0	77.9	74.3	608.4

6.2 Land Use

Existing Environment

Bell Street is a no-through-road which is owned and managed by Council and is utilised by the community to access the Denman Pony Club, Denman Park, and residential properties.

Denman Park is a dedicated Crown Reserve which provides public recreation opportunities to the community. Muswellbrook Shire Council are the Crown land managers of the reserve and are responsible for the care, control and management of the reserve while encouraging public use, ensuring the safety of its visitors, and minimising impacts on the natural environment. The park is used to accommodate Denman's sporting facilities and includes an aquatic centre, canteen, change rooms, cricket grounds, golf course, indoor sports stadium, tennis facility, pony club, rugby league fields, toilets and athletics grounds. Crown Land proximate to the proposed activity is shown in Figure 5.

Bell Street is situated on land zoned RU5 Village and R5 Large Lot Residential while Denman Park is situated on land zoned RE1 Public Recreation as shown in Figure 6.



The closest sensitive receivers include the Denman Hospital and Denman Public School, both of which are located approximately 700-metres from the proposed activity.

Impact Assessment

The proposed activity will not permanently alter the existing use of the land within or near the activity footprint. Bell Street provides the only access to multiple properties which are located along the length of the road. Short-term, temporary access restrictions may be placed on Bell Street and Denman Park for the duration of the activity to facilitate construction works which may adversely impact use of the road and park.

Impact Rating

Based on the above assessment, land use impacts associated with the proposal are considered to have an impact rating of: Low – 1

Mitigation Measures

The following mitigation measures would be implemented to minimise land use impacts:

- Notification shall be provided to residents which require Bell Street to access their property, key stakeholders of Denman Park, and the community
 - Notification shall be provided a minimum of five (5) business days or seven (7) calendar days prior to works commencing
 - Notification shall include key contacts and contact options (phone numbers, email address etc.), options to lodge a complaint, and the nature and expected duration of the activity.



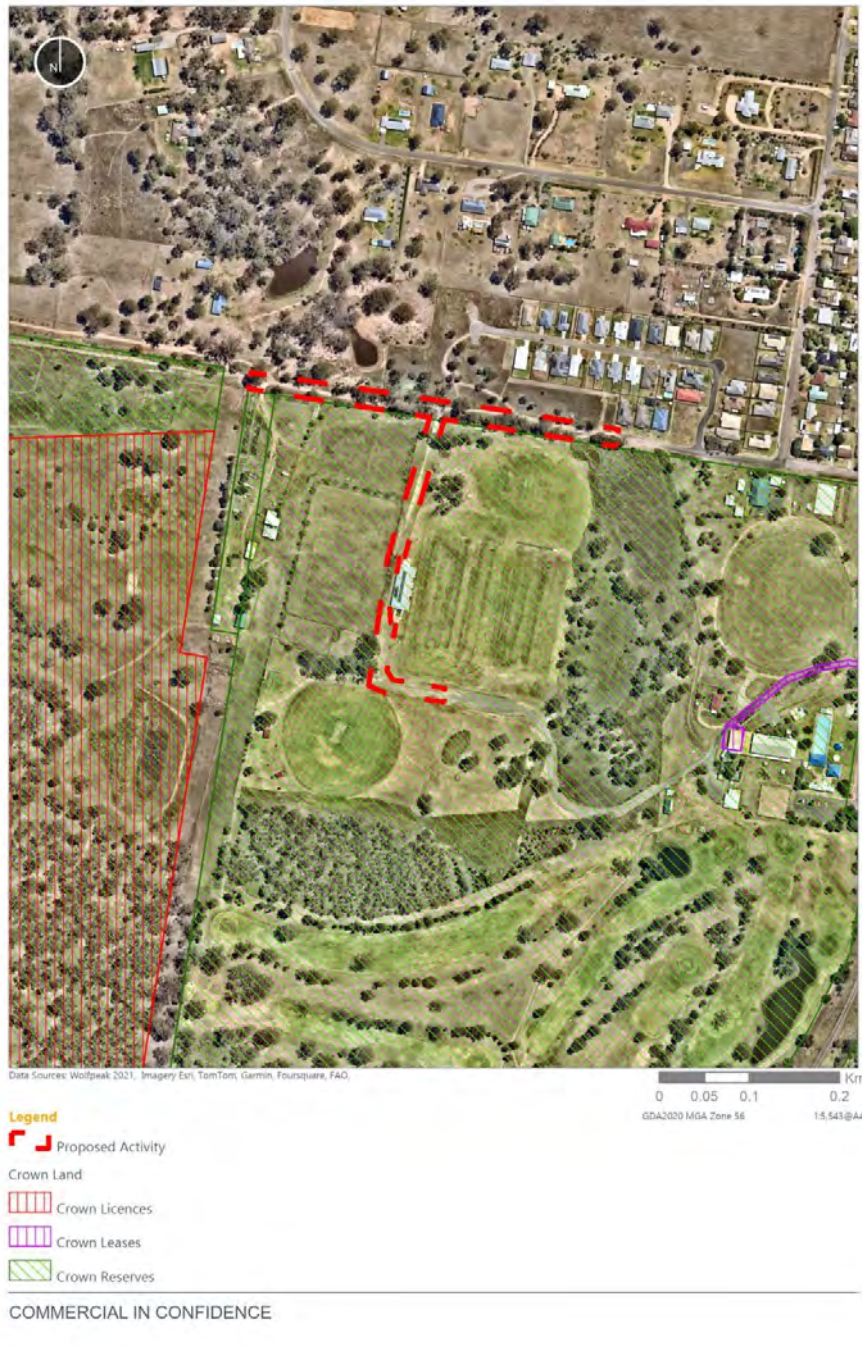
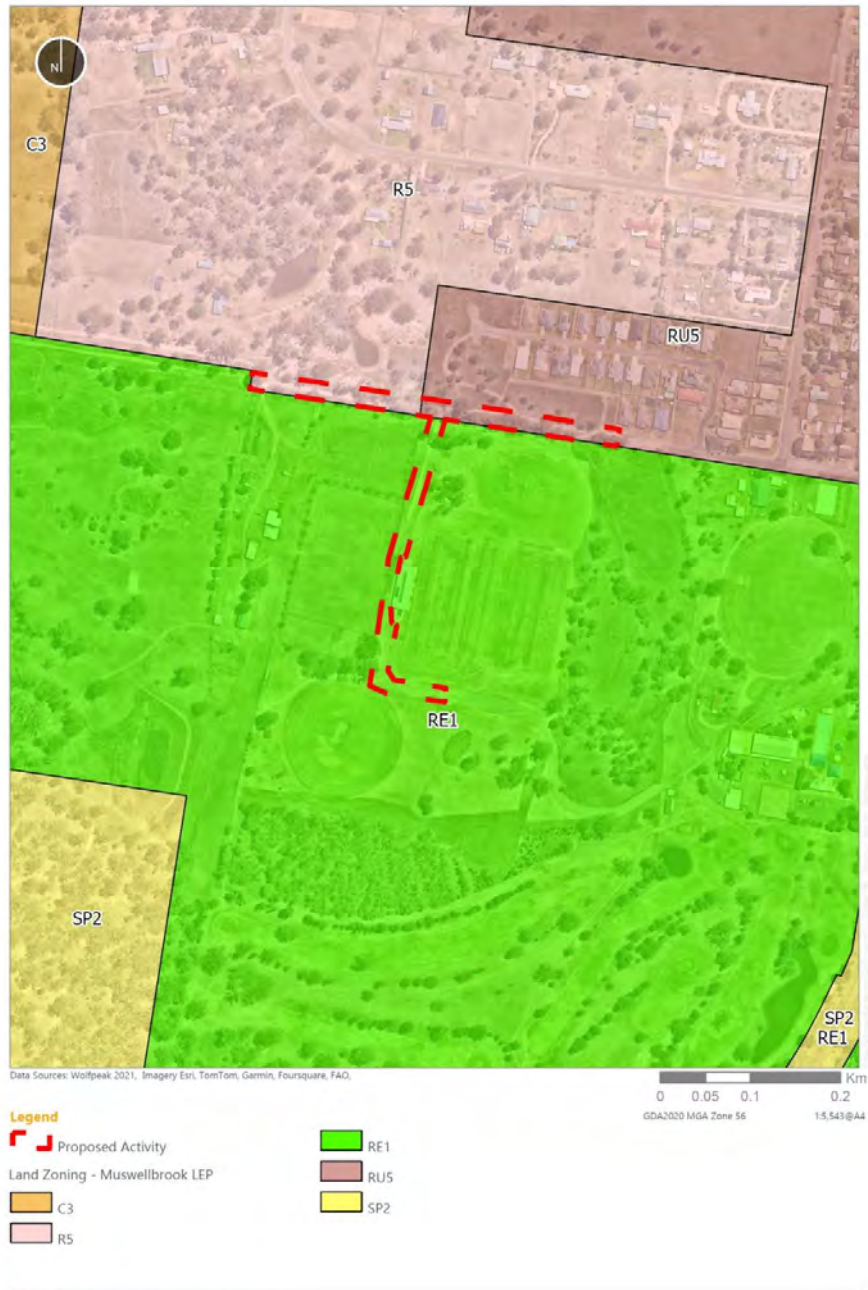


Figure 5: Crown Land proximate to the proposed activity



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Figure 6: Land zoning applicable to the proposed activity (Muswellbrook Local Environmental Plan 2009)



6.3 Contaminated Land

Existing Environment

Searches of the NSW Environment Protection Authority (EPA) List of Notified Sites and the Contaminated Land Public Record were undertaken on 16 January 2024. No records occur on the contaminated land record; however, two (2) contaminated sites are recorded on the list of notified sites approximately 1-kilometre north of the proposed activity as shown in Figure 7.

Details of the recorded sites are included in Table 8.

Table 8: List of NSW Contaminated Sites within 1-kilometre of the proposed activity

Suburb	Site Name	Address	Contamination Activity Type	Management Class	Latitude	Longitude
Denman	Former Industrial Site	9 Fontana Way	Metal Industry	Regulation under CLM Act not required	-32.37911159	150.6869866
Denman	Former Industrial Site	10 Fontana Way	Metal Industry	Regulation under CLM Act not required	-32.37945456	150.6868239

Impact Assessment

No works will occur on or within proximity of the notified sites; thus, no impacts to known contaminated sites are likely to occur. Excavation and ground disturbance works are required to facilitate construction works; therefore, there is potential for unrecorded contaminated areas to be encountered.

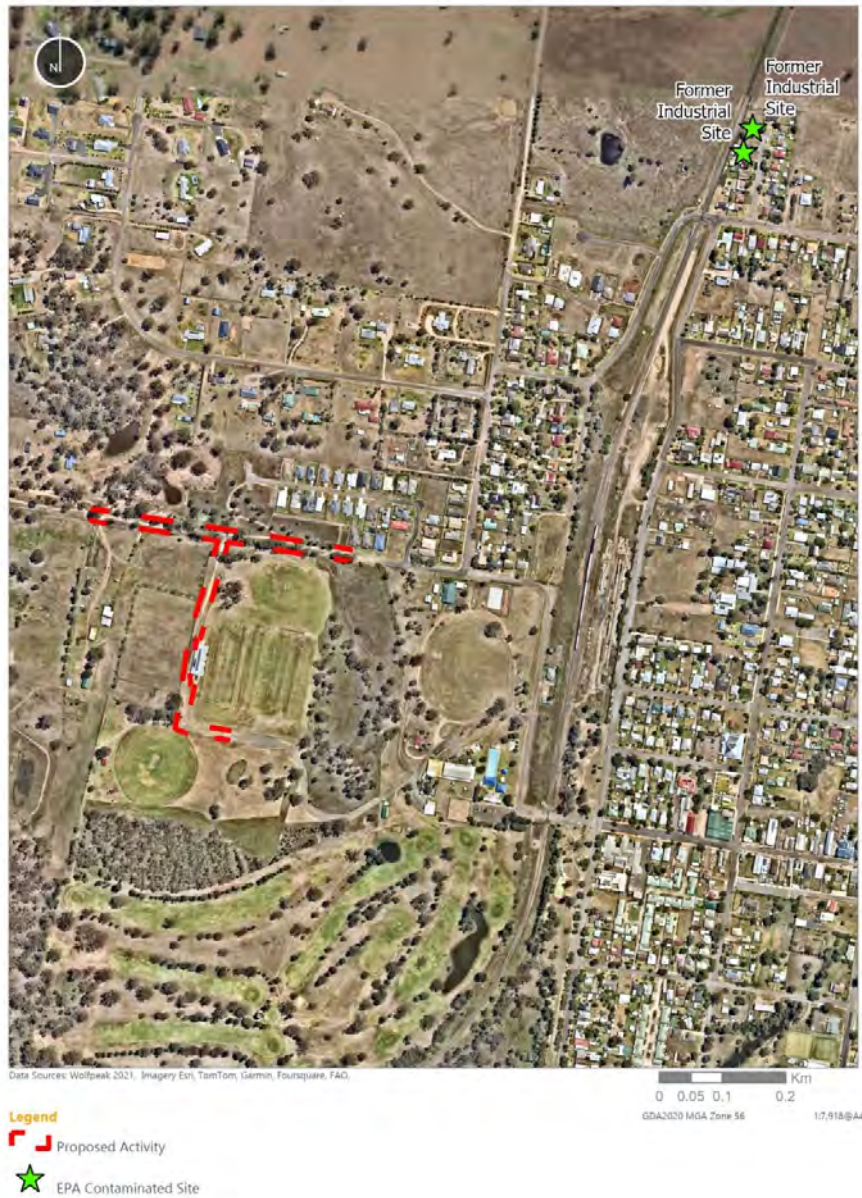
Impact Rating

Based on the above assessment, contaminated land impacts associated with the proposal are considered to have an impact rating of: Low – 1

Mitigation Measures

The following mitigation measures would be implemented to minimise contaminated land impacts:

- If hazardous substances are discovered on the site, suspend all work which may result in exposure to such hazardous substances and notify Council immediately. Asbestos, material containing asbestos, polychlorinated biphenyl (PCB) and lead based paints are recognised as hazardous substances. Other substances in certain situations are also considered hazardous and therefore require controlled handling.



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Figure 7: EPA contaminated sites proximate to the proposed activity



6.4 Landform, Geology and Soils

Existing Environment

Denman and the proposed activity are situated on ungrouped Ordovician sedimentary and metasedimentary rocks of the Lachlan Orogen which comprise siltstone, phyllite, slate and sandstone of the Ordovician Age.

The proposal is situated on the Sandy Hollow soil landscape (Figure 8) which are moderately deep to deep (50 – <150 cm), rapidly drained Tenosols and Rudosols (Earthy Sands and Siliceous Sands) occur adjacent to Lees Pinch (lpt) soil landscape. Moderately deep to deep (50 – <150 cm), well-drained Red Kandosols (Red Earths) below some sandstone outcrops. Very deep (150 – 500 cm), imperfectly drained Red, Yellow and Brown Sodosols (Red Brown Earths, Red and Yellow Solodic Soils) are common on footslopes.

The Sandy Hollow soil landscape has areas of high run-on and is prone to sheet erosion if the surface is disturbed. If water becomes concentrated and the dispersible sodic subsoils are exposed, gully erosion is likely to occur. Localised salinity may also be present.

A review of State mapping indicates that no Naturally Occurring Asbestos (NOA) is potentially occurring within or near the proposed activity location.

Impact Assessment

The proposal involves minor excavation and ground disturbance to soil profiles and groundcover, and minimal vegetation removal is required within the works footprint of Bell Street; therefore, there is a risk of erosion and sedimentation through:

- Erosion of disturbed soils
- Transportation of sediments from the road pavement from vehicle movements
- Transport of sediments in runoff and deposition.

Impact Rating

Based on the above assessment, geology and soil impacts associated with the proposal are considered to have an impact rating of: Low – 1

Mitigation Measures

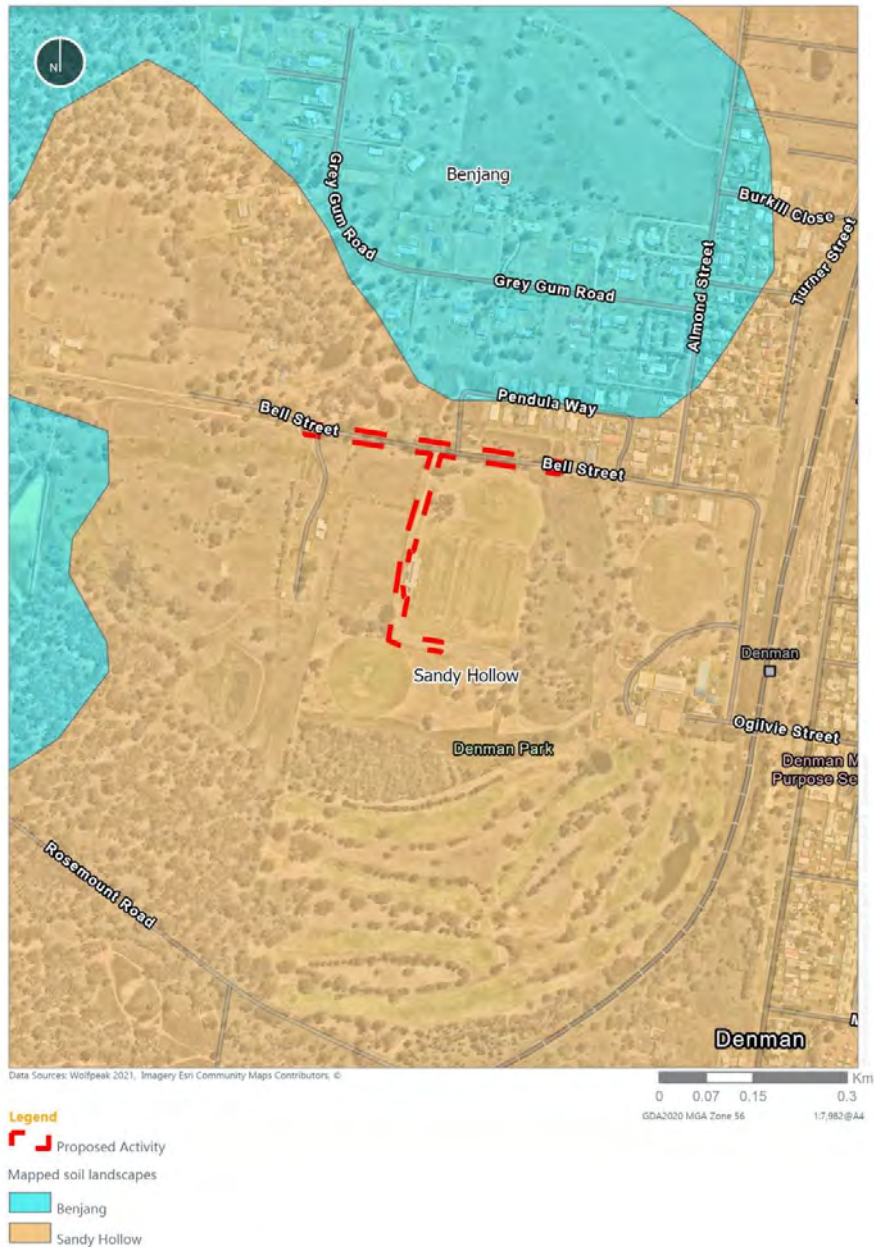
The following mitigation measures would be implemented to minimise geology and soil impacts:

- Erosion and sediment control measures in accordance with currently accepted best management practice (i.e., Landcom [2004] Managing Urban Stormwater: Soils and Construction [4th Edition] – The Blue Book) shall be implemented and maintained to:
 - Prevent sediment moving off-site and sediment laden water entering a water course, drainage lines or drain inlets
 - Reduce water velocity and capture sediment on site
 - Minimise the amount of material transported from site to surrounding pavement surfaces
 - Divert upslope and clean water around the site
 - Sediment controls shall be inspected regularly by the relevant contractor and by Council staff
 - Sediment control measures shall be in place for the storage of any spoil as required
- Soil disturbance shall be limited to the area required to undertake the proposed activity
- All areas disturbed by works will be progressively stabilised and rehabilitated to ensure stable surfaces are obtained as soon as practical (progressively where possible)



- Revegetation of exposed surfaces will be encouraged by maintaining suitable grades, carefully separating, retaining and respreading topsoil and covering exposed soil surfaces with weed-free mulch or matting to protect soils
- Works shall not be undertaken during or within 3 days of heavy rain events (other than work necessary to ensure that erosion and sediment controls are maintained).





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Figure 8: Mapped soil landscapes occurring near the proposed activity



6.5 Hydrology and Water Quality

Existing Environment

The proposed activity involves works within the water and riparian zone of a single stream which runs parallel to Bell Street and bisects the street at the intersection of Bell Street and the Denman Park internal road. The stream is mapped as a first order stream under the Strahler system, is not mapped as key fish habitat under the FM Act, and flows into a small detention basin to the north of Bell Street. At the time of the site inspection, the stream and all adjacent drainage lines were dry. Multiple culverts are located along the length of Bell Street to facilitate drainage and water flow from the road to the stream. Photo 1 and Photo 2 demonstrate examples of the culverts to be upgraded during construction works. An unnamed third order Strahler stream is located approximately 145-metres south of the proposed car park upgrade. Watercourses proximate to the proposed activity are shown in Figure 9.

Impact Assessment

The proposed activity is situated within and nearby several watercourses and natural drainage systems. During construction, works have the potential to negatively impact on watercourses and/or drainage lines in the following ways:

- Erosion and sedimentation that may affect watercourses and/or drainage lines
- Pollution of local water quality from machinery and construction materials and spills
- A variety of dispersible liquid materials would be used which pose a potential pollutant threat to local water quality. These liquids include but are not limited to diesel, unleaded petrol, machinery oils and lubricants. The nature of these liquids and their ability to disperse away from the site means that they could have a negative impact on ground or surface water on or adjacent to the study area, especially during rain.

No groundwater is anticipated to be extracted and there is unlikely to be any changes to flood or tidal regimes.

Impact Rating

Based on the above assessment, impacts on hydrology and water quality associated with the proposal are considered to have an impact rating of: Low – 1

Mitigation Measures

The following mitigation measures would be implemented to minimise hydrology and water quality impacts:

- Erosion and sedimentation, and waste management safeguards will be effectively implemented to minimise associated water quality impacts
- Visual monitoring of local water quality (i.e., turbidity, hydrocarbons spills/slicks) will be periodically undertaken to identify any water quality issues
- All equipment is to be maintained in good working condition and operated according to manufacturer's specifications
- Refuelling of plant and equipment is to occur a minimum of 40-metres from drainage lines or waterways
- Stockpile sites are not to be located within 10-metres of drainage lines
- Stockpiles shall be located on previously disturbed areas, away from areas that receive concentrated runoff
- Sediment fencing and sediment traps will be used to protect the watercourse during the works. Works are only to be undertaken during periods of low flow



- As much earth and gravel as possible is to be removed from the road surface prior to works commencing to minimise silt and debris entering adjacent waterways
- No work is to be undertaken during, or immediately following, periods of high rainfall
- Store oils and fuels in a suitably bunded, covered, and secure area with sufficient capacity to contain at least 110 percent of the volume of the largest container
- Spare fuels to be stored in containers within pre-existing cleared areas and a minimum of 40-metres from drainage lines and/or waterways
- Spills and leaks are to be contained within the worksite and site clean-up to occur
- Spill kits to be available on site and/or in construction vehicles.





Photo 1: Existing culverts to be cleared and extended



Photo 2: Existing internal condition of a culvert on Bell Street



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Figure 9: Mapped watercourses proximate to the proposed activity



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6.6 Biodiversity

Existing Environment

An assessment of the natural values associated with the proposed activity was prepared by WolfPeak in March 2024 and is attached in Appendix C. The following information provides a summary of biodiversity values identified in that report.

Terrestrial Biodiversity

The proposed activity is located within highly disturbed areas of Bell Street and Denman Park where native vegetation occurs as a narrow strip along Bell Street. The NSW State Vegetation Type Map (SVTM) maps vegetation at the site as the Plant Community Type (PCT) 3485 – Central Hunter Slaty Gum Grassy Forest as shown in Figure 10.

Vegetation along Bell Street comprises a highly disturbed grassy woodland. Canopy species comprise Slaty Gum (*Eucalyptus dawsonii*), White Box (*Eucalyptus albens*), Grey Box (*Eucalyptus moluccana*), Narrow-leaved Ironbark (*Eucalyptus cebra*), Blakely's Red Gum (*Eucalyptus blakelyi*) and Yellow Box (*Eucalyptus melliodora*). Box Mistletoe (*Amyema miquelii*) is common throughout the canopy trees, while the midstory is shrubby and contains Native Olive (*Notelaea macrocarpa*), Cooba (*Acacia salicina*), White Cedar (*Melia azedarach*) and the occasional Bulloak (*Allocasuarina luehmannii*). The groundcover comprises mainly grasses, including Rhodes Grass (*Chloris gayana*), Setaria (*Setaria sp.*), Hedgehog Grass (*Echinopogon sp.*), *Eragrostis sp.*, *Digitaria sp.*, Windmill Grass (*Chloris truncata*), Paddy's Lucerne (*Sida rhombifolia*), Pigweed (*Portulaca oleracea*), Lamb's Tongues (*Plantago lanceolata*), Couch (*Cynodon dactylon*), Broad-leaved Carpet Grass (*Axonopus compressus*) and Kikuyu (*Cenchrus clandestinus*).

Based on the floristics present, site vegetation more closely aligns with PCT: 3490 – Hunter Valley Foothills Slaty Gum Forest.

Vegetation along the internal road and within the carpark largely comprises exotic grasses (dominated by Rhodes Grass) and a few scattered Slaty Gums.



Figure 10: Mapped vegetation communities proximate the activity location

Habitat Values

The habitats within and adjacent to the site offer a range of foraging resources and habitat for fauna. The Eucalypts on site may offer nectar resources for a variety of species. Koala food trees are common throughout the area including White Box, Yellow Box, Grey Box and Blakely's Red Gum which are secondary species. Hollow-bearing trees (HBTs) occur within the site and are common in the greater area with a large proportion of large, remnant trees retained in the landscape. These may provide potential nesting/denning/roosting habitat for a variety of species.

The field survey identified two (2) HBTs within the works area which are flagged for removal to facilitate the required road upgrade. These are detailed in Table 9 and shown in Photo 3 to Photo 7.

Table 9: Hollow-bearing trees to be removed to facilitate construction works

Tree ID	Species	Height (m)*	DBH ¹ (cm)*	# and size of hollows	Comments
HBT 1	White Box	15	67	2 medium hollows	To be removed
HBT 2	Yellow Box	15	63	2 small hollows 3 medium hollows	To be removed
Key: * heights are approximate; ¹ Diameter at breast height.					

The site vegetation forms a linear corridor along a first order stream connecting to a large, forested area (zoned Environmental Management) to the west. This first order stream occurs as a shallow drainage line, which is unlikely to provide habitat for aquatic fauna. Several culverts accommodating this mapped watercourse occur beneath Bell Street; however, these were identified as offering poor microbat roosting potential with no evidence of roosting observed.

Lands surrounding site are largely heavily modified and cleared.



Photo 3: HBT #1



Photo 4: Medium hollow within HBT #1



Photo 5: HBT #2



Photo 6: Medium hollow in HBT #2



Photo 7: Small hollow in HBT #2

Aquatic Biodiversity

The single stream running parallel to Bell Street was dry during the site inspection; however, would be freshwater during times of flow and as such, no seagrasses or mangroves are present.

The NSW Department of Primary Industries 'Fisheries NSW Spatial Data Portal' does not map any distribution of threatened freshwater species within or proximate the activity site.

To date, one (1) endangered marine vegetation population¹ and four (4) endangered aquatic ecological communities² have been listed under the FM Act. These comprise:

- *Posidonia australis* seagrass in the Port Hacking, Botany Bay, Sydney Harbour, Pittwater, Brisbane Waters and Lake Macquarie regions¹
- Lowland Darling River aquatic ecological community²
- Lowland Lachlan River aquatic ecological community²
- Lowland Murray River aquatic ecological community²
- Snowy River aquatic ecological community².

These do not occur within the study area and are not considered likely to occur based on geographical limitations.

Areas of outstanding biodiversity value or critical habitat

The proposed activity will not directly or indirectly affect an Area of Outstanding Biodiversity Value or critical habitat as none are mapped as occurring within or proximate to the proposed works area.

Threatened Ecological Communities

Biodiversity Conservation Act 2016

The vegetation community within the site (PCT 3490) is known to be associated with the TEC *Hunter Valley Foothills Slaty Gum Woodland in the Sydney Basin Bioregion* which is listed as Vulnerable under the BC Act.

Floristically, there are numerous species identified in the study area which align with the characteristic species of this TEC, and the vegetation community also aligns structurally and geographically to this TEC.

The community occurs in a modified state and is in moderate condition, with a high exotic grass content and partially cleared understorey. The canopy layer; however, comprises mature Eucalypts, with many large hollow-bearing trees present. The community occurs as a fragmented patch in the vicinity and to the north of Bell Street.

Environment Protection and Biodiversity Conservation Act 1999

The vegetation community within the site (PCT 3490) is known to be associated with the TEC *Central Hunter Valley eucalypt forest and woodland* which is listed as Critically Endangered under the EPBC Act.

Site vegetation satisfies the key diagnostic characteristics and condition thresholds described in the Conservation Advice, with key diagnostics including occurrence in the Hunter River catchment, on lower hillslopes or valley floors in undulating country, and occurring as a woodland or forest with a canopy layer dominated by Slaty Gum, Grey Box and Narrow-leaved Ironbark with a canopy cover of at least 10%. The community meets the moderate quality condition threshold (Class D), where the patch is at least 2-hectares with at least 50% of the perennial understorey is native and the patch has at least one large locally indigenous tree or at least one tree with hollows.

Threatened Species and Populations

BioNet searches for threatened species and populations were carried out on 15 January 2024 to determine all valid records of threatened (listed under the BC Act) or Commonwealth listed species within the study area. The BioNet search identified six (6) threatened flora species and 18 threatened fauna species that have previously been recorded within the area.

An EPBC Act Protected Matters Report was also generated on 15 January 2024 and is included in the Ecological Assessment which identified multiple threatened entities with the potential to occur within the area.

Both searches were carried out within a 10-kilometre radius the activity location, with all BioNet records of threatened flora and fauna proximate the activity site shown in Figure 11.

Threatened Flora

No threatened flora species were detected on site during the field survey. Searches of relevant literature and databases found records of two (2) endangered populations occurring within 1-kilometre of the site, comprising the *Eucalyptus camaldulensis* and *Acacia pendula* populations in the Hunter catchment, both listed as an endangered population under the BC Act.

Threatened Fauna

During the site inspection, a group of 3 – 4 Grey-crowned Babblers, which are listed as vulnerable under the BC Act, were observed within the shrubby vegetation of the site. Four (4) BioNet records of the Grey-crowned Babbler occur within 900-metres of the subject site.

Given the habitat types on site and presence of local records, the threatened species listed in Table 10 are known or considered to potentially occur in the study area.

Table 10: Threatened fauna with the potential to occur within the study area

Species	Legal Status	Habitat suitability/ occurrence type	Occurrence likelihood
Spotted Harrier (<i>Circus assimilis</i>)	V – BC Act	Generic potential foraging habitat over adjoining farmland.	Moderate
Little Eagle (<i>Hieraaetus morphnoides</i>)	V – BC Act	Generic potential foraging habitat over adjoining farmland.	Moderate
Little Lorikeet (<i>Glossopsitta pusilla</i>)	V – BC Act	Some potential foraging habitat when Eucalypts are in flower, some suitable hollows present.	Low
Varied Sitella (<i>Daphoenositta chrysoptera</i>)	V – BC Act	Potential foraging habitat in understorey.	Moderate
Brown Treecreeper (eastern subspecies) (<i>Climacteris picumnus victorae</i>)	V – BC Act	Potential foraging habitat in understorey.	Moderate
Speckled Warbler (<i>Chthonicola sagittata</i>)	V – BC Act	Potential foraging habitat in understorey.	Moderate

Grey-crowned Babbler (eastern subspecies) <i>Pomatostomus temporalis temporalis</i>	V – BC Act	Potential foraging habitat in understorey.	Known
Diamond Firetail (<i>Stagonopleura guttata</i>)	V – BC Act	Potential foraging habitat on the ground (grasses and invertebrates).	Moderate
Koala (<i>Phascolarctos cinereus</i>)	E – BC Act E – EPBC Act	Potential foraging habitat, several Koala food trees (KFTs) present.	Low
Yellow-bellied Sheath-tail-bat (<i>Saccolaimus flaviventris</i>)	V – BC Act	Generic potential foraging habitat.	Low
Eastern Coastal Free-tailed Bat (<i>Myotis norfolkensis</i>)	V – BC Act	Generic potential foraging habitat.	Low
Greater Broad-nosed Bat (<i>Scoteanax rueppellii</i>)	V – BC Act	Generic potential foraging habitat.	Low
Large Bent-winged Bat (<i>Miniopterus orianae oceanensis</i>)	V – BC Act	Generic potential foraging habitat.	Low
Key: Vulnerable (V), Endangered (E)			



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Figure 11: Threatened flora and fauna records (BioNet) proximate the activity location



Impact Assessment

Eight (8) roadside canopy trees, as detailed in Table 11 and shown in Figure 12, require removal for the road upgrade on Bell Street, including two (2) HBTs. A small amount of midstory shrubs and largely exotic grasses also require removal.

The removal of this vegetation will reduce the extent of foraging habitat for a number of potentially occurring threatened species, including nectar sources, prey habitat and secondary food trees for the Koala. Several of the trees to be removed contain hollows; therefore, there will be a reduction in potential denning habitat for hollow-obligate fauna species. Removing areas of roadside vegetation in a modified agricultural landscape will also lead to reduced connectivity for less mobile and gap-shy fauna species.

Table 11: Vegetation to be removed to facilitate construction works on Bell Street

ID	Common Name	Species Name	Height (m)*	DBH ¹ (cm)*	HBT	KFT
1	Narrow-leaved Ironbark	<i>Eucalyptus crebra</i>	10	Multi-stem tree with the following DBHs 29 14	-	-
2	Narrow-leaved Ironbark	<i>Eucalyptus crebra</i>	15	93	-	-
3	Blakely's Red Gum	<i>Eucalyptus blakelyi</i>	10	26	-	Secondary
4	Yellow Box	<i>Eucalyptus melliodora</i>	20	127	-	Secondary
5	White Box	<i>Eucalyptus albens</i>	15	67	HBT 1	Secondary
6	White Box	<i>Eucalyptus albens</i>	10	51	-	Secondary
7	Inland Grey Box	<i>Eucalyptus microcarpa</i>	15	70	-	Secondary
8	Yellow Box	<i>Eucalyptus melliodora</i>	15	63	HBT 2	Secondary

Key: * heights are approximate; ¹ Diameter at breast height.

The proposal also includes works to multiple existing culverts within the activity footprint. Two (2) new culverts will be installed on Bell Street, two (2) culverts will be extended (one (1) on Bell Street and one (1) on the internal road), and one (1) culvert on Bell Street will be removed. None of the existing culverts contained evidence of microbat roosting and offer very low roosting potential. Only a small extent of Rhodes Grass will be impacted during culvert works.

The proposed works will require removal of less than 0.4-hectares of vegetation from the TEC occurring on Bell Street. Vegetation removal is; however, limited to the removal of eight (8) scattered canopy trees along the existing road edge, as well as a small extent of shrubs and groundcovers at the foot of those trees.

Impact Rating

Based on the above assessment, impacts on ecology associated with the proposal are considered to have an impact rating of: Medium – 2



Figure 12: Mature trees to be removed to facilitate construction



Mitigation Measures

The following mitigation measures would be implemented to minimise ecological impacts:

- The clearing footprint is to be clearly marked (e.g. with stakes and bunting) before clearing in order to prevent inadvertent clearance beyond what is required and has been assessed
- Trees to be removed should be clearly marked with flagging tape or spray paint. No clearing is to occur beyond the marked area, and vehicles are only to be parked in pre-existing cleared, designated areas
- Protection zones are to be established around retained trees and vegetation. Clearing and earthworks is to avoid damage or compaction to root zones of the retained trees
- Trees are not to be felled into adjoining retained vegetation. Vegetation clearing should be undertaken in a sequential manner that does not isolate patches of habitat and gives fauna an opportunity to escape into adjacent habitat
- The project ecologist is to conduct a pre-start briefing to clearing and civil contractors prior to the commencement of clearing works. All in attendance are to be informed of the required clearing measures to ensure compliance
- The clearing extent is to be inspected for fauna by a qualified ecologist immediately prior to commencement of any vegetation removal involving machinery and/or tree-felling. This is to occur each morning if clearing spans over multiple days/weeks. The ecologist is to flag any habitat features which may contain fauna and trees which contain hollows, nests or dreys.
- If a Koala is present within the area, works must be suspended until the Koala moves along on its own volition. If the Koala is located in a position that a 50-metre buffer may be established, works may proceed outside this buffer
 - In this event, the ecologist is to remain on site to monitor the Koala for signs of distress. If the ecologist determines that the Koala is in distress, works must be suspended within this area until a larger buffer is created, or the Koala moves along on its own volition.
- The ecologist is to remain on site to supervise removal of all vegetation and manage any fauna interactions. Other than Koalas, any detected fauna is to be relocated off-site. Any bird nest considered active is to be removed in a manner that allows retrieval of eggs/young, and these are to be taken into care by FAWNA
- Hollow-bearing trees to be removed are to be felled in a manner that will minimise the risk of injury/mortality of denning/roosting fauna. This is suggested to be achieved by the following general procedures:
 - Hollow-bearing trees are to be gently bumped several times prior to removal to encourage any fauna present to vacate. They are then to be removed via 'soft felling' methods with machinery or gradual cut-down by an arborist to minimise injury to fauna. Habitat trees with a high likelihood of containing fauna are to be removed last and should be removed with a crane
 - A qualified ecologist is to be present during felling and sectioning of the hollow-bearing trees (at the proponent's cost) in case of animal injury. Hollows are to be inspected for fauna once the tree is deposited. All uninjured animals are to be released in the retained habitat on the subject site
 - If the hollow is determined to be occupied and fauna do not require assistance (e.g. roosting bats), the entrance is to be blocked and the sectioned log placed in a shaded and protected area on the edge of the subject site. The obstacle is to be removed just prior to dusk to allow passive escape of the fauna within. The log may then be removed if required.

- Upon completion of clearing, a post clearance fauna management report (with photos) is to be submitted to Council within 14 days of the removal of the vegetation and hollow-bearing trees. The post clearance report must detail the methods and results of the pre-clear surveys and clearing supervision, including the details and outcome of all fauna interactions during clearing works. The report must also provide evidence that the clearing and habitat removal procedures were adhered to
- If Grey-crowned Babblers are detected on site during clearing, the following measures are to be undertaken:
 - All clearing activities are to stop should Grey-crowned Babblers be detected on site
 - The ecologist is to monitor the Grey-crowned Babblers and determine whether clearing can commence in another section of the site. If so, clearing is to be done in a location that promotes the birds to be flushed from the site (i.e. only clear from one end should they be in the middle)
 - Clearing can continue as normal once the ecologist determines they have moved from the site
 - If any babbler dreys are detected on site, they are to be checked by an ecologist to determine the presence of eggs or chicks. If present, the drey is to be retained until it is vacated.
- Nest boxes are to be installed and maintained to offset the loss of hollow-bearing trees at a ratio of one (1) nest box per hollow. The two (2) hollow-bearing trees impacted contain a total of seven (7) hollows; thus, it is recommended that seven (7) nest boxes are installed to offset the loss of these habitat trees
 - Nest boxes are to be constructed of ACQ treated timber or similar, whereby timber is treated for pests and decay
 - Nest boxes are not to be treated or constructed from materials which have been treated by chemicals which may cause harm to fauna if ingested.
 - Nest boxes are to be mounted by an ecologist prior to clearing of the subject site's hollow-bearing trees. It is recommended that the following nest boxes are installed:
 - Two (2) microbat boxes
 - Three (3) medium parrot boxes, and
 - Two (2) medium glider/possum boxes.
 - A brief report detailing the following is to be provided to Council within 14 days of mounting:
 - GPS coordinates of the nest boxes (with nest boxes numbered consecutively)
 - Host tree species, trunk DBH, and height
 - Mounting height and aspect of each nest box.
 - The nest boxes are to be monitored and maintained annually for a period of five (5) years. Any damaged boxes are to be replaced or repaired and any exotic species such as European bees are to be removed.
- Site compounds are to be located in currently cleared areas either in the road reserve or adjoining private land

- Disturbance of the sites soils during vegetation removal and construction has potential to encourage weed invasion; therefore, the following mitigation measures shall be undertaken:
 - Disturbance of vegetation and soils on the site should be limited to the areas of the proposed work and should not extend into adjacent vegetation
 - To assist in reducing the spread of exotic species, all vehicles and machinery are to be inspected for the presence of weeds prior to entering the site
 - Invasive *Biosecurity Act 2015* listed weeds (i.e. Lantana, Fireweed) within the clearing footprint are appropriately treated and collected prior to clearing and are disposed of within a landfill facility
 - Any new weed infestations that arise within the works area during construction are to be treated and removed

6.7 Aboriginal Cultural Heritage

Existing Environment

Aboriginal communities have a strong connection to the land and water, which is central to their spirituality and identity. They view of natural resources as essential for food, medicine, land care, cultural transmission, kinship, and social bonds, and this inseparable heritage and connection to nature requires integrated landscape management.

Denman is located within the administrative boundary of the Wanaruah Local Aboriginal Land Council. A search of the Aboriginal Heritage Information Management System (AHIMS) was undertaken on 16 January 2024 (Appendix D) which identified fourteen Aboriginal sites and no Aboriginal places occurring within 1-kilometre of Denman Park (Lot 231 DP729996). One (1) site is recorded in the north-east corner of Denman Park which is located approximately 200-metres east of the footprint of the proposed impact area.

A native title claim has been registered on the Register of Native Title Claims by the Gomeroi People with a Tribunal file number of NC2011/006. The claim covers land and waters of approximately 111,318-square-kilometres in north western New South Wales. The application area is located on the Queensland – New South Wales Border, about 170-kilometres west of Coffs Harbour and 115-kilometres north west of Newcastle. To date, no approved determinations of native title exist within or near the study area.

Impact Assessment

Minor excavation, ground surface disturbance, and minimal vegetation removal is required to facilitate construction of the proposed activity; however, the proposed activity will occur in areas which have previously been disturbed by the construction of the original roads and car park. Further, no mature trees will be impacted during construction or operation.

It is therefore considered unlikely that Aboriginal objects will be impacted by the proposed activity.

Impact Rating

Based on the above assessment, impacts on Aboriginal heritage associated with the proposal are considered to have an impact rating of: Low – 1

Mitigation Measures

The following mitigation measures would be implemented to minimise Aboriginal heritage impacts:

- Prior to works commencing, Council shall notify the Gomeroi People of the future act and provide an opportunity for representatives of the Gomeroi People to give feedback on the proposed activity

- All personnel working on site will receive induction/training to ensure awareness of location of existing Aboriginal objects within the study area and immediate surrounds, and relevant statutory responsibilities
- A Council officer or heritage specialist qualified in Aboriginal site and object identification shall be on site during excavation works to inspect soil and ground disturbance for Aboriginal objects
- Works would proceed with caution, and if any Aboriginal objects or human remains are located during the proposed works, the Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW shall be followed
- Should unanticipated Aboriginal archaeological material be encountered during site works, all work must cease in the vicinity of the find and an archaeologist or suitably qualified heritage officer contacted to assess the find and to advise on the course of action to be taken. Further archaeological assessment and Aboriginal community consultation may be required prior to the recommencement of works. Any objects confirmed to be Aboriginal in origin must be reported to Heritage NSW
- If suspected human remains are discovered and/or harmed in, on or under the land within the activity footprint, the following actions must be undertaken:
 - The remains must not be harmed/further harmed
 - Immediately cease all works at that location
 - Secure the area to avoid further harm to the remains
 - Contact the NSW Police and the Environment Line (Heritage NSW) on 131 555 as soon as practicable and provide any details of the remains and their location
 - Do not recommence any work at that location unless authorised in writing by Heritage NSW.

6.8 Historic Heritage

Existing Environment

Searches have been undertaken of Australia's National Heritage List, the NSW State Heritage Inventory and Schedule 5 Environmental heritage of the *Muswellbrook Local Environmental Plan 2009* (LEP).

No items of State heritage significance have been recorded near the proposed activity; however, a number of local heritage items and one (1) heritage conservation area listed under Schedule 5 Environmental heritage of the Muswellbrook LEP are situated within 1-kilometre of the proposed activity. The closest heritage item to the proposal comprises the Railway terminus site on Turner Street, which is situated approximately 350-metres east of the proposal footprint as shown in Figure 4.

Impact Assessment

No works are proposed to occur within or adjacent to any heritage items; thus, no impacts are anticipated. The proposal does, however, require minor earthworks and ground disturbance to pre-existing disturbed areas. In the unlikely event that historic heritage artefacts are uncovered during works, the following mitigation measures shall be implemented.

Impact Rating

Based on the above assessment, impacts on historic heritage associated with the proposal are considered to have an impact rating of: Negligible – 0

Mitigation Measures

The following mitigation measures would be implemented to minimise historic heritage impacts:

- If unexpected historic heritage items are uncovered during the works, all works must cease in the vicinity of the material/find
- Establish a 'no-go zone' around the material/find
- Inform all site personnel about the no-go zone
- Inform Council's heritage team and Heritage NSW immediately.

6.9 Traffic, Transport and Access

Existing Environment

Bell Street is a no-through-road which is owned and managed by Council and is utilised by the community to access the Denman Pony Club, Denman Park, and residential properties. All access to the proposed works on Bell Street and within Denman Park will occur via Bell Street.

Impact Assessment

Bell Street will remain open to the public for the full duration of the activity; however, Council construction crew may implement traffic control if deemed necessary. Detours are not a viable option as no other public roads are available to provide alternate access, and no side tracks are required.

Upon completion, the proposed activity will contribute to improving road safety and access on Bell Street and within Denman Park.

Impact Rating

Based on the above assessment, impacts on traffic and access associated with the proposal are considered to have an impact rating of: Low – 1

Mitigation Measures

- Where possible, current traffic movements and property access are to be maintained during the works. Any disturbance is to be minimised to prevent unnecessary traffic delays
- If traffic disturbance is unavoidable, a Traffic Control Plan (TCP) or Traffic Management Plan (TMP) will be prepared in accordance with the RMS Traffic Control at Work Sites Manual (RTA 2010) and must ensure that works are arranged such that:
 - Road workers are able to work safely
 - Road users are able to travel around, past or through the work site safely
 - Road workers and road users are separated wherever possible, and
 - It does not impact or cause delay to road users, or, if not reasonably practicable, it is minimised
- Erect signs regarding proposed works, temporary road closures, diversions, and notify community members
- Works shall not be undertaken at night. Works to be undertaken in the shortest time frame possible to minimise the period which the community are disturbed
- Notification is to be given to affected users prior to the works taking place (i.e., all properties along the length of Bell Street). Notification is to include, at minimum:
 - Details of the proposal
 - The duration of works and working hours
 - Any changed traffic or access arrangements

- How to lodge a complaint or obtain more information
- Contact name and details

Notification should be a minimum of five (5) business or seven (7) calendar days prior to works commencing

6.10 Air Quality

Existing Environment

Bell Street and Denman Park's internal road and car park are all unsealed surfaces. Existing vehicle movements from local traffic and users of the park are likely to generate dust daily. Several open cut coal mines are also situated within the Upper Hunter Valley, with the closest ones to Denman consisting of Mangoola Coal Mine and the Mount Arthur Coal Mine, which are located approximately 8-kilometres north and 15-kilometres north-west of Denman respectively.

Impact Assessment

During construction, there is likely to be dust generated during the delivery of staff, machinery and vehicles, and by machinery carrying out the proposed works. The primary sources of airborne particulate matter generated by the activity would include:

- The delivery and transport of construction vehicles, staff, and materials to site
- Vehicle and machinery (exhaust) emissions, and
- Dust emissions from vegetation removal (chainsaws etc) and soil disturbance.

Impact Rating

Based on the above assessment, impacts on air quality associated with the proposal are considered to have an impact rating of: Low – 1

Mitigation Measures

The following mitigation measures would be implemented to minimise air quality impacts:

- Measures to minimise or prevent air pollution or dust are to be used including watering or covering exposed areas
- Works are not to be carried out during strong winds or in weather conditions where high levels of dust or airborne particulates are likely
- Vegetation or other materials are not to be burnt on site
- Vehicles transporting waste or other materials that may produce odours or dust are to be covered during transportation
- Vehicles and equipment must be registered, clean, and are to be maintained in good working order
- Monitor work areas and stockpiles for dust generation and seed/cover/spray to suppress
- Do not leave vehicles idling
- Use electric machinery instead of diesel/petrol machinery where practicable
- A watercart shall be kept on site and used to water down access roads, stockpiles, and areas which are susceptible to dust generation
- Contractors/staff engaged to carry out the works shall monitor meteorological conditions and undertake dust generating activities in favourable conditions to avoid impacts to adjacent properties (i.e., when wind strength is low and is not blowing towards nearby residential properties or sensitive receivers).

6.11 Noise and Vibration

Existing Environment

The proposed activity will be carried out adjacent to residential areas occurring on the north side of Bell Street. The nearest sensitive receivers to noise and vibration are residential properties directly adjacent to Bell Street, and properties on Pendula Way which are within 150-metres of the works area. Denman Park also hosts a range of recreation activities which may be sensitive to noise and vibration, particularly activities associated with the Pony Club, which is located approximately 140-metres west of the stadium and proposed car park.

The nearest non-residential sensitive receivers include the Denman Public School which is situated approximately 600-metres east of the Bell Street works, and the Denman Hospital which is situated approximately 650-metres east of the new car park works.

Photo 8 demonstrates the proximity of nearby residential properties to where the works commence on Bell Street.



Photo 8: Residential properties adjacent to the where the activity commences on Bell Street

Impact Assessment

The proposed works will occur in residential areas and recreational areas which are used by the community for a range of activities. A quantitative noise assessment (Appendix E) was undertaken using the Transport for NSW Construction and Maintenance Noise Estimator Tool (CMNET). The CMNET was undertaken using the Distance Based (Noisiest Plant) assessment with the following modelling inputs:

Noise area category: R1 – Rural Undeveloped Areas

Noisiest plant: Chainsaw 4-5hp

Line of site: Yes

L_{Aeq}(15 minute) Noise Management Level (NML)(dB(A)): detailed as follows:

Time of Day	Noise management level (NML)
Day (standard hours)	50
Out of hours day	45
Out of hours evening	40
Out of hours night	35

The CMNET identifies that developed settlements (urban and suburban) up to 305-metres from the noise source have the potential to be impacted by noise generating activities (e.g., excavator dumping rubbles) during daytime standard working hours. An overview of potentially impacted receivers is shown in Figure 13, while Figure 14 shows potentially impacted residential receivers. A summary of the impacts and measures required is detailed in Table 12.

Table 12: Summary of impacts and measures to nearby sensitive noise and vibration receivers

Developed settlements (urban and suburban)		
Impact level	Distance (m)	Measures required
Noticeable	305	N/A
Moderately intrusive	135	N
Highly intrusive	50	N
Highly affected	30	N, PC, RO
Key: N = Notification; PC = Phone calls; RO = Respite offer		

The magnitude of construction noise impacts is dependent on a number of factors including the intensity and location of activities, the type of equipment used, background noise levels during construction periods and the prevailing weather conditions. Based on these parameters, the expected construction noise levels are generally conservative and do not represent a constant noise emission that would be experienced by noise sensitive receivers throughout the construction period.

Impact Rating

Based on the above assessment, noise and vibration impacts associated with the proposal are considered to have an impact rating of: Medium – 2

Mitigation Measures

The following mitigation measures would be implemented to minimise noise and vibration impacts:

- Noise generating works would be limited to the recommended standard hours for construction work outlined in the Interim Construction Noise Guideline (DECC, 2009) which are:
 - Monday to Friday 7:00am to 6:00pm.
 - Saturday 8:00am to 1:00pm.

- No works on Sundays or Public Holidays.
- Work outside standard hours would only comprise:
 - The delivery of materials outside standard hours requested by police or other authorities for safety reasons.
 - Emergency work to avoid the loss of lives and/or property.
 - Works timed to reduce disruption to essential services.
- Where out-of-hours activities are required, an additional assessment Noise and Vibration Management Plan will be prepared and implemented in consultation with sensitive receivers
- Where practicable, plant and equipment that are used intermittently are to have throttle setting reduced or shut down when not in use. Any plant or equipment that is not in use for extended periods of time are to be switched off
- Sensitive receivers (identified in Figure 14) shall be provided advanced warning of works and potential disruptions prior to works commencing. Notification may consist of using variable message signs, letterbox drop (or equivalent), web site / social media or a combination to distribute information detailing work activities, time periods over which these will occur, impacts and mitigation measures
 - Notification shall be a minimum of five (5) working days prior to the commencement of works
- Respite offers should be considered where there are high noise and vibration generating activities near sensitive receivers. As a guide work should be carried out in continuous blocks that do not exceed 3-hours each, with a minimum respite period of 1-hour between each block
 - The actual duration of each block of work and respite should be flexible to accommodate the usage and amenity at nearby receivers.



COMMERCIAL IN CONFIDENCE

Figure 13: Noise sensitive receivers proximate to the proposed activity





Figure 14: Noise sensitive receivers on Bell Street and Pendula Way



6.12 Visual Amenity

Existing Environment

The proposed activity will be undertaken within residential and recreation areas which are visible to the community, while Denman Park is a popular location for which a variety of recreational activities are pursued.

Impact Assessment

During construction, the visual amenity of Bell Street and Denman Park will be temporarily impacted by construction vehicles and the storage of materials nearby. Up to eight (8) mature trees comprising River Red Gum and Grey Box and small amounts of regrowth vegetation and groundcover will be removed to facilitate construction which will permanently alter the visual amenity of the site.

Upon completion, sealing the roads and car park will also permanently alter the visual amenity of the area; however, this will not be dissimilar to other roads in the locality.

Impact Rating

Based on the above assessment, visual amenity impacts associated with the proposal are considered to have an impact rating of: Low – 1

Mitigation Measures

The following mitigation measures would be implemented to minimise visual impacts:

- Vegetation removal shall be kept at the minimum necessary to complete the works to reduce aesthetic changes
- Minimise the extent of works areas and maintain work sites in a clean and tidy manner
- Minimise the duration of work as much as practicable to reduce long-term visual impacts
- Ensure post-construction vegetation rehabilitation works are completed.

6.13 Resource Use and Waste Generation and Management

Existing Environment

Waste currently generated on the site is limited to minor consumable and putrescible waste generated by users of Denman Park. Minor non-putrescible vegetative waste is also produced during landscaping activities associated with maintaining the park.

Impact Assessment

Soil, rock, and other material excavated during the works will be stockpiled nearby to each works area and reused where practicable. Existing road base or materials which cannot be reused or recycled will require disposal.

Waste materials will be generated by the removal of existing infrastructure; however, no hazardous waste is anticipated to be generated.

Minor consumable and putrescible waste will be generated from workers undertaking the activity.

Small amounts of extractive materials comprising gravel or rock will be used for the road base.

Minimal natural resources (fossil fuels) will be used to power machinery used during construction and ongoing maintenance of the assets.

Impact Rating

Based on the above assessment, visual amenity impacts associated with the proposal are considered to have an impact rating of: Low – 1

Mitigation Measures

The following mitigation measures would be implemented to minimise waste impacts:

- Resource management hierarchy principles shall be followed in accordance with the *Waste Avoidance and Resource Recovery Act 2001*:
 - avoidance and reduction of waste
 - re-use of waste
 - recycling, processing or reprocessing waste
 - recovery of energy
 - disposal
- Characterise and manage waste in accordance with the NSW EPA's Waste Classification Guidelines
- Waste generated during construction will be collected and disposed of at a suitably licenced waste facility
- Where feasible, recyclable material is to be segregated to maximise recycling opportunities
- Use electric machinery instead of diesel/petrol powered machinery where practicable
- Machinery and vehicles to be serviced regularly to prevent unnecessary use of resources
- Minimise the use of machinery and plant where practicable; turn off machinery when not in use and reduce throttle speed of machines; machinery shall be in good, serviced condition to reduce emissions
- Material use will be minimised as much as practicable.

6.14 Social and Economic

Existing Environment

Bell Street provides the only access to multiple residential properties as well as Denman Park which is used to accommodate Denman's sporting facilities and is utilised extensively by the community for a variety of recreation pursuits. The park includes an aquatic centre, canteen, change rooms, cricket grounds, golf course, indoor sports stadium, tennis facility, pony club, rugby league fields, toilets and athletics grounds.

Electricity transmission lines are present along the length of Bell Street and are in close proximity to trees to be removed (Figure).

Impact Assessment

During construction, there will be short-term, temporary delays which have the potential to impact on social and economic values of the area, particularly with social and community events occurring within Denman Park. Council construction crew may implement traffic control if deemed necessary as detours are not a viable option as no other public roads are available to provide alternate access. The activity also has the potential to impact on electricity transmission lines along the length of Bell Street.

The proposed activity would not change the demographics of the locality and will not cause significant population movements (i.e., an influx or departure of workforce).

Construction work involves inherent risks which are associated with a range of common workplace hazards; therefore, there is potential for personal injury during construction which may impact workers and/or the community; however, safety risks to the community are considered to be low and no public access will be permitted to the work site.

Upon completion, the proposed activity will contribute to improving safety, access and amenity along Bell Street and within Denman Park.

The proposal will also contribute a small, but positive impact on the local economy through the employment of local contractors used to carry out the activity.

Impact Rating

Based on the above assessment, social and economic impacts associated with the proposal are considered to have an impact rating of: Positive – 0 and Low – 1

Mitigation Measures

The following mitigation measures would be implemented to minimise social and economic impacts:

- Regard to public safety will always be maintained; and restrict public access to the construction site
- The contractor will be responsible for the preparation and implementation of any Safe Work Method Statements in accordance with the *Work Health and Safety Act 2011*
- Contain all work within the boundaries designated in the approved engineering documents
- Restore work sites to as close to their original condition as possible
- Minimise spread of stockpiles, waste, and parking
- Display public information signs until site restoration is complete
- Erect temporary exclusion fencing from ancillary sites where required to prevent unauthorised access
- Carry out community and stakeholder consultation before works start
- Locate services on 'Before You Dig Australia' (BYDA) search and peg out no-go areas to avoid service-disruption
- All personnel will exercise courtesy in dealing with the community
- Liaise with other development sites to co-ordinate works and minimise impacts (e.g., delivery times, parking)
- Schedule works in non-peak periods where practicable
- Consultation to be undertaken with local residents, key stakeholders of Denman Park, and the Pony Club, all of which rely on the use of Bell Street.



Photo 9: Proximity of electricity infrastructure to vegetation requiring removal

6.15 Cumulative Impacts

Existing Environment

During the preparation of this REF, no other projects or activities are scheduled to be carried out at the same time within or near the activity site.

The existing vegetation provides suitable habitat for a range of fauna species, including threatened species.

Impact Assessment

Vegetation removal required for the works has the potential to cumulatively impact on biodiversity values including available habitat for threatened species.

The proposed activity is unlikely to cumulatively impact on social values; however, there will be an increase of vehicle/machinery activity during construction stages from the delivery of workers, materials and machinery required to carry out the works.

Impact Rating

Based on the above assessment, cumulative impacts associated with the proposal are considered to have an impact rating of: Low – 1

Mitigation Measures

The following mitigation measures would be implemented to minimise cumulative impacts:

- All works must be coordinated to minimise impacts to natural landscape or biodiversity values
- Vegetation clearing should be staged where practicable to limit potential impacts to available habitat
- Coordinate delivery of resources to limit vehicle and machinery movements to and from the site as far as practicable
- Notification of works should be carried out to inform the community of the proposed work activities, time periods over which these will occur, impacts and mitigation measures.

6.16 Environmental Impact Ratings

A summary of the impact ratings for environmental factors is provided in Table 13.

Table 13: Environmental Impact Ratings

Consideration	Impact Rating
Land Use	• Low impact – 1
Contaminated Land	• Low impact – 1
Landform, Geology and Soils	• Low impact – 1
Hydrology and Water Quality	• Low impact – 1
Biodiversity	• Medium impact – 2
Aboriginal Heritage	• Low impact – 1
Historic Heritage	• Low impact – 1
Traffic, Transport and Access	• Positive impact – 0, and • Low impact – 1
Air Quality	• Low impact – 1
Noise and Vibration	• Medium impact – 2
Visual Amenity	• Low impact – 1
Resource Use and Waste Generation and Management	• Low impact – 1
Social and Economic	• Positive impact – 0, and • Low impact – 1
Cumulative Impacts	• Low impact – 1

7. CONSIDERATION OF SECTION 171(2) FACTORS, MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE AND ECOLOGICALLY SUSTAINABLE DEVELOPMENT PRINCIPLES

7.1 Section 171(2) of the EP&A Regulation

Pursuant to section 171(3) of the EP&A Regulation, a determining authority must demonstrate how the environmental factors specified in the environmental factors guidelines (currently the Department of Planning and Environment's *Guidelines for Division 5.1 assessments* (June 2022) (Guidelines)) were taken into account when considering the likely impact of an activity.

In accordance with Guidelines, potential impacts on the environmental factors listed under section 171(2) of the EP&A Regulation are summarised in Table 14.

Table 14: EP&A Regulation section 171 Assessment

Consideration	Response	Significance of Impact
(a) any environmental impact on a community?	The proposed activity has the potential to create short-term adverse impacts on the community which are associated with access restrictions on Bell Street and to Denman Park. Upon completion, access and amenity of Bell Street and Denman Park will be significantly improved.	Minor negative: short-term Positive: long-term
(b) any transformation of a locality?	The proposed activity will not transform the locality.	Not significant
(c) any environmental impact on the ecosystems of the locality?	The proposed activity has the potential to have minor, short-term negative environmental impacts on the ecosystems within the locality; however, potential impacts would be minimised with the implementation of the mitigation measures provided. Upon completion, the sealed surfaces would significantly reduce potential water runoff into adjacent waterways which would contribute to long-term positive impacts.	Low negative: short-term Positive: long-term
(d) any reduction of the aesthetic, recreational, scientific or other environmental quality or value of the locality?	During construction there would be a temporary reduction in aesthetic values of the locality which are associated with construction machinery and the storage of materials. There would also be a reduction in recreation values associated with temporary closures of sections of the park. There would be a permanent alteration of aesthetic values which is associated with the removal of	Minor negative: short-term and permanent

Consideration	Response	Significance of Impact
	vegetation; however, disturbed areas will be regenerated upon completion of the activity.	
(e) any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations?	The proposal is unlikely to impact on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations.	Not significant
(f) any impact on the habitat of protected animals, within the meaning of the <i>Biodiversity Conservation Act 2016</i> ?	<p>The proposal is unlikely to impact on the habitat of any protected animals due to the limited scope of works and the implementation of mitigation measures. The proposal only involves minor vegetation removal which has the potential to temporarily displace threatened species.</p> <p>A test of significance as prescribed under section 7.3 of the BC Act has been prepared to determine whether the proposed activity is likely to significantly affect threatened species or ecological communities, or their habitats and is included in the Ecological Assessment. The test of significance has determined that the proposed activity would not result in a significant impact on threatened species or ecological communities, or their habitats.</p>	Minor negative: short-term
(g) any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air?	The proposed activity is unlikely to endanger any species of animal, plant or other form of life, whether living on land, in water or in air due to the limited scope of works and the implementation of mitigation measures.	Not significant
(h) any long-term effects on the environment?	The proposed activity is unlikely to have any long-term adverse effects on the environment; however, upon completion, the sealed surfaces would significantly reduce potential water runoff into adjacent waterways which would contribute to long-term positive impacts.	Positive: long-term
(i) any degradation of the quality of the environment?	<p>The proposed activity has the potential to degrade the quality of the environment; however, implementation of the mitigation measures provided would significantly reduce any potential degradation.</p> <p>The activity requires the removal a small portion of vegetation within TECs under the BC Act and EPBC Act. The tests of significance carried out in the supporting Ecological Assessment have determined that the activity would not have a significant impact on those TECs.</p>	Low negative: short-term

Consideration	Response	Significance of Impact
(j) any risk to the safety of the environment?	The proposed activity is unlikely to create a risk to the safety of the environment given the limited scope of works and implementation of the mitigation measures provided.	Minor negative: short-term
(k) any reduction in the range of beneficial uses of the environment?	It is unlikely there would be any reduction in the range of beneficial uses of the environment as a result of the proposed activity.	Not significant
(l) any pollution of the environment?	There is potential for pollution of the environment to occur as a result of the proposed activity; however, implementation of the mitigation measures provided would significantly reduce potential pollution. Upon completion, the sealed surfaces would significantly reduce potential road debris/gravel runoff into adjacent waterways which would otherwise impact nearby waterways.	Minor negative: short-term Positive: long-term
(m) any environmental problems associated with the disposal of waste?	It is considered unlikely there would be any environmental problems associated with the disposal of waste due to the limited scope of works and implementation of mitigation measures.	Not significant
(n) any increased demands on natural or other resources that are, or are likely to become, in short supply?	The proposed activity requires the use of natural materials; however, given the limited scope of works, is unlikely to increase demands on natural resources or other resources that are, or are likely to become, in short supply.	Not significant
(o) any cumulative environmental effect with other existing or likely future activities?	There would be an increase of vehicles and traffic movement for the duration of the activity; however, it is considered unlikely the proposed activity would contribute to any cumulative environmental impacts.	Minor negative: short-term
(p) any impact on coastal processes and coastal hazards, including those under projected climate change conditions?	The proposed activity is not located in a coastal area; thus, no impacts are likely.	Not applicable
(q) any applicable local strategic planning statements, regional strategic plans or district strategic plans made under Division 3.1 of the Act?	The proposed activity will be carried out in accordance with, and contribute to, Planning Priority 8 of the Muswellbrook Local Strategic Planning Statement which was prepared under Division 3.1 of the EP&A Act	Positive: long-term
(r) any other relevant environmental factors?	The proposed activity is unlikely to impact on any other relevant environmental factors not already considered.	Not applicable

7.2 Matters of National Environmental Significance

Under the EPBC Act, any action which has a significant impact on a MNES value triggers a referral to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW). There are no significant impacts detected on MNES values on or near the activity area and therefore the EPBC Act is not triggered by this proposal.

A summary and evaluation of potential impacts to Matters of National Environmental Significance are provided in Table 15.

Table 15: EPBC Act Matters of National Environmental Significance Assessment

Factor	Results	Impact
a) Any significant impact on a World Heritage property?	1	The proposed activity is within the buffer area of the Greater Blue Mountains Area; however, would not impact on the World Heritage Property.
b) Any significant impact on a National Heritage place?	1	The proposed activity is within the buffer area of The Greater Blue Mountains Area; however, would not impact on the National Heritage Place.
c) Any significant impact on a wetland of international importance?	1	The proposed activity is within the feature area of the Hunter estuary wetlands which is 50-100km downstream of the proposal. The proposal would not impact on a wetland of international importance.
d) Any significant impact on a listed threatened species or communities?	52 threatened species and four (4) threatened ecological communities	A number of threatened species and/or ecological communities occur within the study area, with one (1) TEC being slightly impacted by the proposed activity. The Ecological Assessment has determined that no listed threatened species or ecological communities are likely to be significantly impacted by the proposed activity.
e) Any significant impacts on listed migratory species?	12	Several migratory species are considered potential occurrences in the study area; however, the Ecological Assessment has determined that no migratory species are likely to be significantly impacted by the proposed activity.
f) Any significant impact on Commonwealth marine areas?	None	The proposed activity would not impact on a Commonwealth marine area.
g) Any significant impact on the Great Barrier Reef Marine Park?	None	The proposed activity would not impact on the Great Barrier Reef Marine Park.
h) Does the proposed activity involve a nuclear action (including uranium mining)?	N/A	The proposed activity does not involve a nuclear action (including uranium mines).



Additionally, any impact (direct or indirect or cumulative) on a water resource, in relation to coal seam gas development and large coal mining development	N/A	The proposed activity is not related to coal seam gas development and large coal mining development, thus, will not impact (directly, indirectly or cumulatively) on a water resource.
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7.3 Ecologically Sustainable Development

One of the objects of the EP&A Act is to facilitate ecologically sustainable development (ESD) by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,

ESD principles are defined in section 6(2) of the *Protection of the Environment Administration Act 1991* as:

- (a) the precautionary principle—namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
- (b) inter-generational equity—namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations,
- (c) conservation of biological diversity and ecological integrity—namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,
- (d) improved valuation, pricing and incentive mechanisms—namely, that environmental factors should be included in the valuation of assets and services, such as—
 - (i) polluter pays—that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,
 - (ii) the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,
 - (iii) environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) adopted the above definition of ecologically sustainable development and added a fifth principle, which includes:

- (e) decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.

This REF has been guided by these principles when assessing the potential impact of the proposed activity. Where uncertainty exists, a precautionary approach has been taken to mitigate and minimise potential environmental impacts. The proposal is considered to be ecologically sustainable within the meaning of the above principles.

8. SUMMARY AND CONCLUSION

The Bell Street, Internal Road, and Car Park Upgrade project has been assessed under Part 5 of the *Environmental Planning and Assessment Act 1979* and this REF has been prepared in accordance with the relevant legislation, including but not limited to, section 5.5 of the EP&A Act and section 171 of the EP&A Regulation.

Potential and likely impacts associated with the proposed activity have been comprehensively assessed throughout this REF. Actions to mitigate these impacts have been documented in Appendix A and shall be implemented in the undertaking of the proposed activity and the preparation of any relevant environmental management plan associated with the proposed activity.

Considering the assessment of impacts detailed in this REF, it is concluded that the Bell Street, Internal Road, and Car Park Upgrade is **not likely to have a significant impact on the environment**, and as such an EIS is not required.

This REF is limited to the assessment of the activity described in Section 3.3. Supplementary assessment and determination in accordance with the EP&A Act will be required for:

- Works outside of the scope of work assessed in this environmental impact assessment, for which the environmental impact has not been considered; or
- Modifications to the activity scope, methodology or recommended mitigation measures, that alter the environmental impact assessed in this environmental impact assessment.

APPENDIX A – SUMMARY OF MITIGATION MEASURES

Factor	Mitigation Measure
General	<ul style="list-style-type: none"> The mitigation measures identified within this Review of Environmental Factors (REF) are to be incorporated into a Construction Environmental Management Plan (CEMP) for the proposed works. The CEMP shall outline how the mitigation measures would be implemented as works are undertaken and who is responsible for their implementation All personnel working on site shall be made aware of the environmental protection requirements to be implemented during the project. This is to include site inductions and regular 'toolbox' briefings. Site specific areas of high sensitivity may include Aboriginal objects and/or places, threatened species habitat and Threatened Ecological Communities. Records of site inductions are to be kept as part of the CEMP.
Land Use	<ul style="list-style-type: none"> Notification shall be provided to residents which require Bell Street to access their property, key stakeholders of Denman Park, and the community <ul style="list-style-type: none"> Notification shall be provided a minimum of five (5) business days or seven (7) calendar days prior to works commencing Notification shall include key contacts and contact options (phone numbers, email address etc.), options to lodge a complaint, and the nature and expected duration of the activity.
Contaminated Land	<ul style="list-style-type: none"> If hazardous substances are discovered on the site, suspend all work which may result in exposure to such hazardous substances and notify Council immediately. Asbestos, material containing asbestos, polychlorinated biphenyl (PCB) and lead based paints are recognised as hazardous substances. Other substances in certain situations are also considered hazardous and therefore require controlled handling.
Landform, Geology and Soils	<ul style="list-style-type: none"> Erosion and sediment control measures in accordance with currently accepted best management practice (i.e., Landcom [2004] Managing Urban Stormwater: Soils and Construction [4th Edition] – The Blue Book) shall be implemented and maintained to: <ul style="list-style-type: none"> Prevent sediment moving off-site and sediment laden water entering a water course, drainage lines or drain inlets Reduce water velocity and capture sediment on site Minimise the amount of material transported from site to surrounding pavement surfaces Divert upslope and clean water around the site Sediment controls shall be inspected regularly by the relevant contractor and by Council staff Sediment control measures shall be in place for the storage of any spoil as required Soil disturbance shall be limited to the area required to undertake the proposed activity All areas disturbed by works will be progressively stabilised and rehabilitated to ensure stable surfaces are obtained as soon as practical (progressively where possible) Revegetation of exposed surfaces will be encouraged by maintaining suitable grades, carefully separating, retaining and respreading topsoil and covering exposed soil surfaces with weed-free mulch or matting to protect soils

	<ul style="list-style-type: none"> Works shall not be undertaken during or within 3 days of heavy rain events (other than work necessary to ensure that erosion and sediment controls are maintained).
Hydrology and Water Quality	<ul style="list-style-type: none"> Erosion and sedimentation, and waste management safeguards will be effectively implemented to minimise associated water quality impacts Visual monitoring of local water quality (i.e., turbidity, hydrocarbons spills/slicks) will be periodically undertaken to identify any water quality issues All equipment is to be maintained in good working condition and operated according to manufacturer's specifications Refuelling of plant and equipment is to occur a minimum of 40-metres from drainage lines or waterways Stockpile sites are not to be located within 10-metres of drainage lines Stockpiles shall be located on previously disturbed areas, away from areas that receive concentrated runoff Sediment fencing and sediment traps will be used to protect the watercourse during the works. Works are only to be undertaken during periods of low flow As much earth and gravel as possible is to be removed from the road surface prior to works commencing to minimise silt and debris entering adjacent waterways No work is to be undertaken during, or immediately following, periods of high rainfall Store oils and fuels in a suitably bunded, covered, and secure area with sufficient capacity to contain at least 110 percent of the volume of the largest container Spare fuels to be stored in containers within pre-existing cleared areas and a minimum of 40-metres from drainage lines and/or waterways Spills and leaks are to be contained within the worksite and site clean-up to occur Spill kits to be available on site and/or in construction vehicles.
Biodiversity	<ul style="list-style-type: none"> The clearing footprint is to be clearly marked (e.g. with stakes and bunting) before clearing in order to prevent inadvertent clearance beyond what is required and has been assessed Trees to be removed should be clearly marked with flagging tape or spray paint. No clearing is to occur beyond the marked area, and vehicles are only to be parked in pre-existing cleared, designated areas Protection zones are to be established around retained trees and vegetation. Clearing and earthworks is to avoid damage or compaction to root zones of the retained trees Trees are not to be felled into adjoining retained vegetation. Vegetation clearing should be undertaken in a sequential manner that does not isolate patches of habitat and gives fauna an opportunity to escape into adjacent habitat The project ecologist is to conduct a pre-start briefing to clearing and civil contractors prior to the commencement of clearing works. All in attendance are to be informed of the required clearing measures to ensure compliance The clearing extent is to be inspected for fauna by a qualified ecologist immediately prior to commencement of any vegetation removal involving machinery and/or tree-felling. This is to occur each morning if clearing spans over multiple days/weeks. The ecologist is to flag any habitat features which may contain fauna and trees which contain hollows, nests or dreys. If a Koala is present within the area, works must be suspended until the Koala moves along on its own volition. If the Koala is located in a position that a 50-metre buffer may be established, works may proceed outside this buffer

	<ul style="list-style-type: none"> ◦ In this event, the ecologist is to remain on site to monitor the Koala for signs of distress. If the ecologist determines that the Koala is in distress, works must be suspended within this area until a larger buffer is created, or the Koala moves along on its own volition. • The ecologist is to remain on site to supervise removal of all vegetation and manage any fauna interactions. Other than Koalas, any detected fauna is to be relocated off-site. Any bird nest considered active is to be removed in a manner that allows retrieval of eggs/young, and these are to be taken into care by FAWNA • Hollow-bearing trees to be removed are to be felled in a manner that will minimise the risk of injury/mortality of denning/roosting fauna. This is suggested to be achieved by the following general procedures: <ul style="list-style-type: none"> ◦ Hollow-bearing trees are to be gently bumped several times prior to removal to encourage any fauna present to vacate. They are then to be removed via 'soft felling' methods with machinery or gradual cut-down by an arborist to minimise injury to fauna. Habitat trees with a high likelihood of containing fauna are to be removed last and should be removed with a crane ◦ A qualified ecologist is to be present during felling and sectioning of the hollow-bearing trees (at the proponent's cost) in case of animal injury. Hollows are to be inspected for fauna once the tree is deposited. All uninjured animals are to be released in the retained habitat on the subject site ◦ If the hollow is determined to be occupied and fauna do not require assistance (e.g. roosting bats), the entrance is to be blocked and the sectioned log placed in a shaded and protected area on the edge of the subject site. The obstacle is to be removed just prior to dusk to allow passive escape of the fauna within. The log may then be removed if required. • Upon completion of clearing, a post clearance fauna management report (with photos) is to be submitted to Council within 14 days of the removal of the vegetation and hollow-bearing trees. The post clearance report must detail the methods and results of the pre-clear surveys and clearing supervision, including the details and outcome of all fauna interactions during clearing works. The report must also provide evidence that the clearing and habitat removal procedures were adhered to • If Grey-crowned Babblers are detected on site during clearing, the following measures are to be undertaken: <ul style="list-style-type: none"> ◦ All clearing activities are to stop should Grey-crowned Babblers be detected on site ◦ The ecologist is to monitor the Grey-crowned Babblers and determine whether clearing can commence in another section of the site. If so, clearing is to be done in a location that promotes the birds to be flushed from the site (i.e. only clear from one end should they be in the middle) ◦ Clearing can continue as normal once the ecologist determines they have moved from the site ◦ If any babbler dreys are detected on site, they are to be checked by an ecologist to determine the presence of eggs or chicks. If present, the drey is to be retained until it is vacated. • Nest boxes are to be installed and maintained to offset the loss of hollow-bearing trees at a ratio of one (1) nest box per hollow. The two (2) hollow-bearing trees impacted contain a total of seven (7) hollows; thus, it is recommended that seven (7) nest boxes are installed to offset the loss of these habitat trees <ul style="list-style-type: none"> ◦ Nest boxes are to be constructed of ACQ treated timber or similar, whereby timber is treated for pests and decay
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	<ul style="list-style-type: none"> ◦ Nest boxes are not to be treated or constructed from materials which have been treated by chemicals which may cause harm to fauna if ingested. ◦ Nest boxes are to be mounted by an ecologist prior to clearing of the subject site's hollow-bearing trees. It is recommended that the following nest boxes are installed: <ul style="list-style-type: none"> - Two (2) microbat boxes - Three (3) medium parrot boxes, and - Two (2) medium glider/possum boxes. ◦ A brief report detailing the following is to be provided to Council within 14 days of mounting: <ul style="list-style-type: none"> - GPS coordinates of the nest boxes (with nest boxes numbered consecutively) - Host tree species, trunk DBH, and height - Mounting height and aspect of each nest box. ◦ The nest boxes are to be monitored and maintained annually for a period of five (5) years. Any damaged boxes are to be replaced or repaired and any exotic species such as European bees are to be removed. • Site compounds are to be located in currently cleared areas either in the road reserve or adjoining private land • Disturbance of the sites soils during vegetation removal and construction has potential to encourage weed invasion; therefore, the following mitigation measures shall be undertaken: <ul style="list-style-type: none"> ◦ Disturbance of vegetation and soils on the site should be limited to the areas of the proposed work and should not extend into adjacent vegetation ◦ To assist in reducing the spread of exotic species, all vehicles and machinery are to be inspected for the presence of weeds prior to entering the site ◦ Invasive <i>Biosecurity Act 2015</i> listed weeds (i.e. Lantana, Fireweed) within the clearing footprint are appropriately treated and collected prior to clearing and are disposed of within a landfill facility ◦ Any new weed infestations that arise within the works area during construction are to be treated and removed
Aboriginal Cultural Heritage	<ul style="list-style-type: none"> • Prior to works commencing, Council shall notify the Gomeroi People of the future act and provided an opportunity for representatives of the Gomeroi People to provide feedback on the proposed activity • All personnel working on site will receive induction/training to ensure awareness of location of existing Aboriginal objects within the study area and immediate surrounds, and relevant statutory responsibilities • A Council officer or heritage specialist qualified in Aboriginal site and object identification shall be on site during excavation works to inspect soil and ground disturbance for Aboriginal objects • Works would proceed with caution, and if any Aboriginal objects or human remains are located during the proposed works, the Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW shall be followed

	<ul style="list-style-type: none"> Should unanticipated Aboriginal archaeological material be encountered during site works, all work must cease in the vicinity of the find and an archaeologist or suitably qualified heritage officer contacted to assess the find and to advise on the course of action to be taken. Further archaeological assessment and Aboriginal community consultation may be required prior to the recommencement of works. Any objects confirmed to be Aboriginal in origin must be reported to Heritage NSW If suspected human remains are discovered and/or harmed in, on or under the land within the activity footprint, the following actions must be undertaken: <ul style="list-style-type: none"> The remains must not be harmed/further harmed Immediately cease all works at that location Secure the area to avoid further harm to the remains Contact the NSW Police and the Environment Line (Heritage NSW) on 131 555 as soon as practicable and provide any details of the remains and their location Do not recommence any work at that location unless authorised in writing by Heritage NSW.
Historic Heritage	<ul style="list-style-type: none"> If unexpected historic heritage items are uncovered during the works, all works must cease in the vicinity of the material/find Establish a 'no-go zone' around the material/find Inform all site personnel about the no-go zone Inform Council's heritage team and Heritage NSW immediately.
Traffic, Transport and Access	<ul style="list-style-type: none"> Where possible, current traffic movements and property access are to be maintained during the works. Any disturbance is to be minimised to prevent unnecessary traffic delays If traffic disturbance is unavoidable, a Traffic Control Plan (TCP) or Traffic Management Plan (TMP) will be prepared in accordance with the RMS Traffic Control at Work Sites Manual (RTA 2010) and must ensure that works are arranged such that: <ul style="list-style-type: none"> Road workers are able to work safely Road users are able to travel around, past or through the work site safely Road workers and road users are separated wherever possible, and It does not impact or cause delay to road users, or, if not reasonably practicable, it is minimised Erect signs regarding proposed works, temporary road closures, diversions, and notify community members Works shall not be undertaken at night. Works to be undertaken in the shortest time frame possible to minimise the period which the community are disturbed Notification is to be given to affected users prior to the works taking place (i.e., all properties along the length of Bell Street). Notification is to include, at minimum: <ul style="list-style-type: none"> Details of the proposal The duration of works and working hours Any changed traffic or access arrangements How to lodge a complaint or obtain more information Contact name and details

	<i>Notification should be a minimum of five (5) business or seven (7) calendar days prior to works commencing</i>
Air Quality	<ul style="list-style-type: none"> Measures to minimise or prevent air pollution or dust are to be used including watering or covering exposed areas Works are not to be carried out during strong winds or in weather conditions where high levels of dust or airborne particulates are likely Vegetation or other materials are not to be burnt on site Vehicles transporting waste or other materials that may produce odours or dust are to be covered during transportation Vehicles and equipment must be registered, clean, and are to be maintained in good working order Monitor work areas and stockpiles for dust generation and seed/cover/spray to suppress Do not leave vehicles idling Use electric machinery instead of diesel/petrol machinery where practicable A watercart shall be kept on site and used to water down access roads, stockpiles, and areas which are susceptible to dust generation Contractors/staff engaged to carry out the works shall monitor meteorological conditions and undertake dust generating activities in favourable conditions to avoid impacts to adjacent properties (i.e., when wind strength is low and is not blowing towards nearby residential properties or sensitive receivers).
Noise and Vibration	<ul style="list-style-type: none"> Noise generating works would be limited to the recommended standard hours for construction work outlined in the Interim Construction Noise Guideline (DECC, 2009) which are: <ul style="list-style-type: none"> Monday to Friday 7:00am to 6:00pm. Saturday 8:00am to 1:00pm. No works on Sundays or Public Holidays. Work outside standard hours would only comprise: <ul style="list-style-type: none"> The delivery of materials outside standard hours requested by police or other authorities for safety reasons. Emergency work to avoid the loss of lives and/or property. Works timed to reduce disruption to essential services. Where out-of-hours activities are required, an additional assessment Noise and Vibration Management Plan will be prepared and implemented in consultation with sensitive receivers Where practicable, plant and equipment that are used intermittently are to have throttle setting reduced or shut down when not in use. Any plant or equipment that is not in use for extended periods of time are to be switched off Sensitive receivers (identified in Figure 14) shall be provided advanced warning of works and potential disruptions prior to works commencing. Notification may consist of using variable message signs, letterbox drop (or equivalent), web site / social media or a combination to distribute information detailing work activities, time periods over which these will occur, impacts and mitigation measures

	<ul style="list-style-type: none"> ◦ Notification shall be a minimum of five (5) working days prior to the commencement of works • Respite offers should be considered where there are high noise and vibration generating activities near sensitive receivers. As a guide work should be carried out in continuous blocks that do not exceed 3-hours each, with a minimum respite period of 1-hour between each block ◦ The actual duration of each block of work and respite should be flexible to accommodate the usage and amenity at nearby receivers.
Visual Amenity	<ul style="list-style-type: none"> • Vegetation removal shall be kept at the minimum necessary to complete the works to reduce aesthetic changes • Minimise the extent of works areas and maintain work sites in a clean and tidy manner • Minimise the duration of work as much as practicable to reduce long-term visual impacts • Ensure post-construction vegetation rehabilitation works are completed.
Resource Use and Waste Generation and Management	<ul style="list-style-type: none"> • Resource management hierarchy principles shall be followed in accordance with the <i>Waste Avoidance and Resource Recovery Act 2001</i>: <ul style="list-style-type: none"> ◦ avoidance and reduction of waste ◦ re-use of waste ◦ recycling, processing or reprocessing waste ◦ recovery of energy ◦ disposal • Characterise and manage waste in accordance with the NSW EPA's Waste Classification Guidelines • Waste generated during construction will be collected and disposed of at a suitably licenced waste facility • Where feasible, recyclable material is to be segregated to maximise recycling opportunities • Use electric machinery instead of diesel/petrol powered machinery where practicable • Machinery and vehicles to be serviced regularly to prevent unnecessary use of resources • Minimise the use of machinery and plant where practicable; turn off machinery when not in use and reduce throttle speed of machines; machinery shall be in good, serviced condition to reduce emissions • Material use will be minimised as much as practicable.
Social and Economic	<ul style="list-style-type: none"> • Regard to public safety will always be maintained; and restrict public access to the construction site • The contractor will be responsible for the preparation and implementation of any Safe Work Method Statements in accordance with the Work Health and Safety Act 2011 • Contain all work within the boundaries designated in the approved engineering documents • Restore work sites to as close to their original condition as possible • Minimise spread of stockpiles, waste, and parking

	<ul style="list-style-type: none"> • Display public information signs until site restoration is complete • Erect temporary exclusion fencing from ancillary sites where required to prevent unauthorised access • Carry out community and stakeholder consultation before works start • Locate services on 'Before You Dig Australia' (BYDA) search and peg out no-go areas to avoid service-disruption • All personnel will exercise courtesy in dealing with the community • Liaise with other development sites to co-ordinate works and minimise impacts (e.g., delivery times, parking) • Schedule works in non-peak periods where practicable • Consultation to be undertaken with local residents, key stakeholders of Denman Park, and the Pony Club, all of which rely on the use of Bell Street.
Cumulative Impacts	<ul style="list-style-type: none"> • All works must be coordinated to minimise impacts to natural landscape or biodiversity values • Vegetation clearing should be staged where practicable to limit potential impacts to available habitat • Coordinate delivery of resources to limit vehicle and machinery movements to and from the site as far as practicable • Notification of works should be carried out to inform the community of the proposed work activities, time periods over which these will occur, impacts and mitigation measures.



APPENDIX B – APPROVED CONSTRUCTION PLANS

Refer to separate document – Bell Street, Internal Road and Carpark Concept Design





APPENDIX C – ECOLOGICAL ASSESSMENT FOR BELL STREET, INTERNAL ROAD AND CAR PARK UPGRADE, DENMAN

Refer to separate document – Ecological Assessment for Bell Street, Internal Road and Car Park Upgrade, Denman





APPENDIX D – AHIMS SEARCH RESULTS



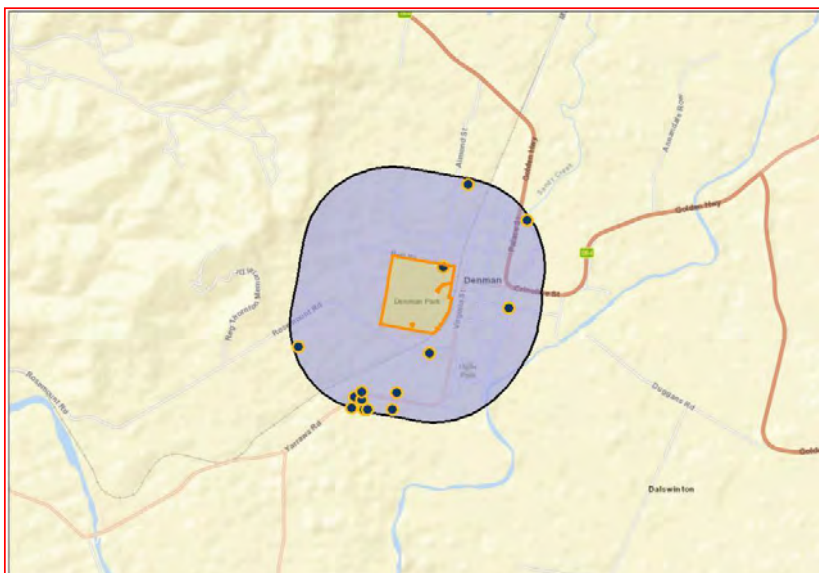
Wolf Peak Pty Ltd - Sydney
Level 10 189 Kent Street
Sydney New South Wales 2000
Attention: David Stubbs
Email: dstubbs@wolfpeak.com.au

Date: 16 January 2024

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 231, DP:DP729996, Section :- with a Buffer of 1000 meters, conducted by David Stubbs on 16 January 2024.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

14	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *



If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the [NSW Government Gazette \(https://www.legislation.nsw.gov.au/gazette\)](https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not to be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

Level 6, 10 Valentine Ave, Parramatta 2150
Locked Bag 5020 Parramatta NSW 2124
Tel: (02) 9585 6345

ABN 34 945 244 274
Email: ahims@environment.nsw.gov.au
Web: www.heritage.nsw.gov.au





APPENDIX E – NSW CONSTRUCTION AND MAINTENANCE NOISE ESTIMATOR TOOL RESULTS



Transport for NSW

Please pick from drop-down list in orange cells

Noise area category		R1
RBL or LA90 Background level (dB(A))	Day	40
	Evening	35
	Night	30
LAeq(15minute) Noise Management Level (dB(A))	Day	50
	Day (OOHW)	45
	Evening	40
	Night	35
Noisiest plant		Chainsaw
Is there line of sight to receiver?		Yes

Distanced Based Assessment (Noisiest Plant)

Steps for Assessment:

1. Schedule noisy works to occur in standard hours where possible or before 11pm and implement Standard Measures.
 2. Select the representative noise area category. The worksheet titled 'Representative Noise Environ.' provides a number of options.
 3. Select the noisiest plant. If not found in drop-down list, refer to 'Source List' and select a representative plant with similar characteristics.
 4. Is there line of sight to receiver? Select the appropriate scenario from the drop down list.
 5. Identify and implement standard mitigation measures where feasible and reasonable. Include any shielding implemented under the 'drop-down list'. Solid barriers can be in the form of road cutting, timber lapped and capped fence, shipping of houses or a sound barrier specifically designed to mitigate construction noise. Please note that vegetation and trees can provide some mitigation.
 6. Determine if there are any receivers (both residential and non-residential receivers) within the affected distance (a) there are many affected receivers and the impact duration at any one receiver is more than 3 weeks; or (b) there are a few affected receivers and the impact duration at any one receiver is more than 6 weeks. Note that consideration need to be given to the construction staging plan when determining impact duration.
 7. Identify if there are any receivers within the additional mitigation measures distances and identify feasible and reasonable measures to reduce noise.
 8. Where night works are involved, identify sleep disturbance affected distance.
 9. Document the outcomes of these steps.
- (Note that suitable noise management levels for other noise-sensitive businesses not identified in the Construction and Maritime noise specialist for more information)

Residential receiver

			L _{Aeq}					
			5 to 10 dB(A)			10 to 20 dB(A)		
			Noticeable			Clearly audible		
			Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))
Undeveloped green fields, rural areas with isolated dwellings	Day	250						
	Day (OOHW)	365				N, R1, DR	250	50
	Evening	525				N, R1, DR	365	45
	Night	760	N	760	35	N, R2, DR	525	40
	Highly Affected	25						
Developed settlements (urban and suburban)	Day	305						
	Day (OOHW)	460				N, R1, DR	305	50
	Evening	690				N, R1, DR	460	45
	Night	1010	N	1010	35	N, R2, DR	690	40
	Highly Affected	30						
Propagation across a valley / over water	Day	405						
	Day (OOHW)	630				N, R1, DR	405	50
	Evening	960				N, R1, DR	630	45
	Night	1420	N	1420	35	N, R2, DR	960	40
	Highly Affected	35						



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Non-residential receiver Undeveloped green fields, rural areas with isolated dwellings				L _{Aeq} (15min)		
Standard hours				<10 dB(A)		
Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	
Classroom at schools and other educational institutions	Day	55	175			
Hospital wards and operating theatres	Day	65	75			
Place of worship	Day	55	175			
Active recreation	Day	65	75			
Passive recreation	Day	60	120			
Industrial premise	Day	75	25			
Offices, retail outlets	Day	70	45			

				L _{Aeq} (15min)		
OOHW				< 5 dB(A)		
Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	
Hospital wards and operating theatres	Evening	65	75			
	Night	65	75	N	75	65
Place of worship	Evening	55	175			
	Night	55	175	N	175	55
Active recreation	Evening	65	75			
Passive recreation	Evening	60	120			
Industrial premise	Evening	75	25			
	Night	75	25	N	25	75
Offices, retail outlets	Evening	70	45			
	Night	70	45	N	45	70

Non-residential receiver Developed settlements (urban and suburban)				L _{Aeq} (15min)		
Standard hours				<10 dB(A)		
Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	
Classroom at schools and other educational institutions	Day	55	200			
Hospital wards and operating theatres	Day	65	85			
Place of worship	Day	55	200			
Active recreation	Day	65	85			
Passive recreation	Day	60	135			
Industrial premise	Day	75	30			
Offices, retail outlets	Day	70	50			

				L _{Aeq} (15min)		
OOHW				< 5 dB(A)		
Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	
Hospital wards and operating theatres	Evening	65	85			
	Night	65	85	N	85	65
Place of worship	Evening	55	200			
	Night	55	200	N	200	55

	Active recreation	Evening	65	85			
	Passive recreation	Evening	60	135			
	Industrial premise	Evening	75	30	N	30	75
		Night	75	30			
	Offices, retail outlets	Evening	70	50	N	50	70
		Night	70	50			

Non-residential receiver Propagation across a valley / over water				L _{Aeq} (15min)		
	Standard hours			<10 dB(A)		
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))
Classroom at schools and other educational institutions	Day	55	255			
Hospital wards and operating theatres	Day	65	95			
Place of worship	Day	55	255			
Active recreation	Day	65	95			
Passive recreation	Day	60	160			
Industrial premise	Day	75	35			
Offices, retail outlets	Day	70	60			

Hospital wards and operating theatres	OOHW			< 5 dB(A)			
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	
	Evening	65	95	N	95	65	
	Night	65	95				
	Evening	55	255	N	255	55	
	Night	55	255				
	Active recreation	Evening	65	95			
	Passive recreation	Evening	60	160			
	Industrial premise	Evening	75	35			
	Offices, retail outlets	Night	75	35	N	35	75
		Evening	70	60			
		Night	70	60	N	60	70

ures.

umber of examples to help select the noise area category.

th equivalent sound power level.

ented as part of the standard mitigation measures by changing the selection in the 'Is there line of sight to a low to g container, site office, etc. Substantial solid barriers are barriers greater than 5 metres in height or multiple rows rees are not considered to be a form of solid barrier and any gaps would compromise the acoustic integrity of the

for each relevant time period . Consider background LA90 noise measurements to check assumption in Step #2 if:

reasonable measures at each receiver.

and Maintenance Noise Estimator should be investigated on a project-by-project basis. Please contact a Roads

Abbreviation	Measure
N	Notification
SN	Specific notifications
PC	Phone calls
IB	Individual briefings
RO	Respite offer
R1	Respite period 1
R2	Respite period 2
DR	Duration respite
AA	Alternative accommodation
V	Verification

Note that spot check verification of noise levels and individual briefings are not required for projects with less than 3 weeks impact duration

1(15minute) noise level above background (L A90)						LAeq(15minute) 75 dB(A) or greater (Highly affected)		
20 to 30 dB(A)			> 30 dB(A)					
Moderately intrusive			Highly intrusive					
Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))
N	120	60	N	45	70	N, PC, RO	25	75
N, R1, DR	120	60	N, R1, DR, PC, SN	45	70	N, PC, RO	25	75
N, R1, DR	175	55	N, R1, DR, PC, SN	75	65	N, PC, RO	25	75
N, PC, SN, R2, DR	250	50	AA, N, PC, SN, R2, DR	120	60	N, PC, RO	25	75
						N, PC, RO	25	75
N	135	60	N	50	70	N, PC, RO	30	75
N, R1, DR	135	60	N, R1, DR, PC, SN	50	70	N, PC, RO	30	75
N, R1, DR	200	55	N, R1, DR, PC, SN	85	65	N, PC, RO	30	75
N, PC, SN, R2, DR	305	50	AA, N, PC, SN, R2, DR	135	60	N, PC, RO	30	75
						N, PC, RO	30	75
N	160	60	N	60	70	N, PC, RO	35	75
N, R1, DR	160	60	N, R1, DR, PC, SN	60	70	N, PC, RO	35	75
N, R1, DR	255	55	N, R1, DR, PC, SN	95	65	N, PC, RO	35	75
N, PC, SN, R2, DR	405	50	AA, N, PC, SN, R2, DR	160	60	N, PC, RO	35	75
						N, PC, RO	35	75

noise level above NML			L _{Aeq} (15minute) 75 dB(A) or greater (Highly affected)		
10 to 20 dB(A)					
Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
N	75	65	N, PC, RO	25	75
			N, PC, RO	25	75
N	75	65	N, PC, RO	25	75
			N, PC, RO	25	75
N	45	70	N, PC, RO	25	75
			N, PC, RO	25	75
			N, PC, RO	25	75

L _{Aeq} (15minute) noise level above NML								
5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
N, R1, DR	45	70	N, R1, DR	14	80	N, R1, DR, PC, SN	4	90
N, R2, NR	45	70	N, PC, SN, R2, DR	14	80	AA, N, PC, SN, R2, DR	4	90
N, R1, DR	120	60	N, R1, DR	45	70	N, R1, DR, PC, SN	14	80
N, R2, NR	120	60	N, PC, SN, R2, DR	45	70	AA, N, PC, SN, R2, DR	14	80
N, R1, DR	45	70	N, R1, DR	14	80	N, R1, DR, PC, SN	4	90
N, R1, DR	75	65	N, R1, DR	25	75	N, R1, DR, PC, SN	8	85
N, R1, DR	14	80	N, R1, DR	4	90	N, R1, DR, PC, SN	1	100
N, R2, NR	14	80	N, PC, SN, R2, DR	4	90	AA, N, PC, SN, R2, DR	1	100
N, R1, DR	25	75	N, R1, DR	8	85	N, R1, DR, PC, SN	3	95
N, R2, NR	25	75	N, PC, SN, R2, DR	8	85	AA, N, PC, SN, R2, DR	3	95

noise level above NML			L _{Aeq} (15minute) 75 dB(A) or greater (Highly affected)		
10 to 20 dB(A)					
Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
N	85	65	N, PC, RO	30	75
			N, PC, RO	30	75
N	85	65	N, PC, RO	30	75
			N, PC, RO	30	75
N	50	70	N, PC, RO	30	75
			N, PC, RO	30	75
			N, PC, RO	30	75

L _{Aeq} (15minute) noise level above NML								
5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
N, R1, DR	50	70	N, R1, DR	17	80	N, R1, DR, PC, SN	5	90
N, R2, NR	50	70	N, PC, SN, R2, DR	17	80	AA, N, PC, SN, R2, DR	5	90
N, R1, DR	135	60	N, R1, DR	50	70	N, R1, DR, PC, SN	17	80
N, R2, NR	135	60	N, PC, SN, R2, DR	50	70	AA, N, PC, SN, R2, DR	17	80

N, R1, DR	50	70	N, R1, DR	17	80	N, R1, DR, PC, SN	5	90
N, R1, DR	85	65	N, R1, DR	30	75	N, R1, DR, PC, SN	9	85
N, R1, DR	17	80	N, R1, DR	5	90	N, R1, DR, PC, SN	2	100
N, R2, NR	17	80	N, PC, SN, R2, DR	5	90	AA, N, PC, SN, R2, DR	2	100
N, R1, DR	30	75	N, R1, DR	9	85	N, R1, DR, PC, SN	3	95
N, R2, NR	30	75	N, PC, SN, R2, DR	9	85	AA, N, PC, SN, R2, DR	3	95

noise level above NML			L _{Aeq} (15minute) 75 dB(A) or greater (Highly affected)		
10 to 20 dB(A)					
Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
N	95	65	N, PC, RO	35	75
N	95	65	N, PC, RO	35	75
N	95	65	N, PC, RO	35	75
N	60	70	N, PC, RO	35	75
			N, PC, RO	35	75
			N, PC, RO	35	75

L _{Aeq} (15minute) noise level above NML								
5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
N, R1, DR	60	70	N, R1, DR	20	80	N, R1, DR, PC, SN	5	90
N, R2, NR	60	70	N, PC, SN, R2, DR	20	80	AA, N, PC, SN, R2, DR	5	90
N, R1, DR	160	60	N, R1, DR	60	70	N, R1, DR, PC, SN	20	80
N, R2, NR	160	60	N, PC, SN, R2, DR	60	70	AA, N, PC, SN, R2, DR	20	80
N, R1, DR	60	70	N, R1, DR	20	80	N, R1, DR, PC, SN	5	90
N, R1, DR	95	65	N, R1, DR	35	75	N, R1, DR, PC, SN	15	85
N, R1, DR	20	80	N, R1, DR	5	90	N, R1, DR, PC, SN	2	100
N, R2, NR	20	80	N, PC, SN, R2, DR	5	90	AA, N, PC, SN, R2, DR	2	100
N, R1, DR	35	75	N, R1, DR	15	85	N, R1, DR, PC, SN	3	95
N, R2, NR	35	75	N, PC, SN, R2, DR	15	85	AA, N, PC, SN, R2, DR	3	95

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