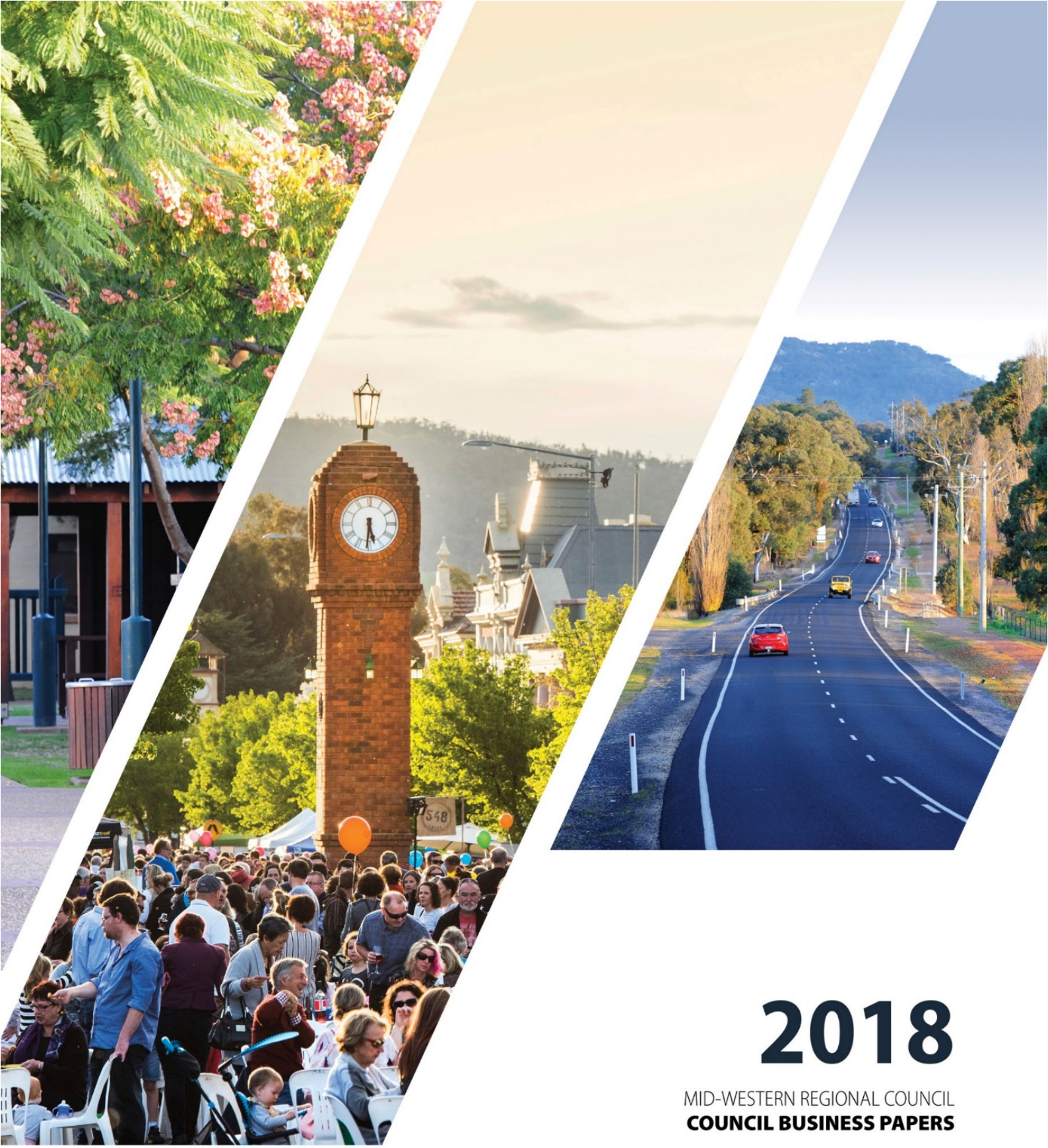

2018

MID-WESTERN REGIONAL COUNCIL
COUNCIL BUSINESS PAPERS

ORDINARY MEETING
WEDNESDAY 21 MARCH 2018

SEPARATELY ATTACHED ATTACHMENTS

Mid-Western Regional Council

A prosperous and progressive community we proudly call home

ATTACHMENTS

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Statement of Environmental Effects

Proposed Serviced Apartment Accommodation
8 Lewis Street, Mudgee

(Our Reference: 28423-PR01_A)

Disclaimer

This report has been prepared solely for Oriental Hotel (the client) in accordance with the scope provided by the client and for the purpose(s) as outlined throughout this report.
Barnson Pty Ltd accepts no liability or responsibility for or in respect of any use or reliance upon this report and its supporting material by anyone other than the client.

Report Title:	Statement of Environmental Effects
Project Name:	Change of Use – Serviced Apartment Accommodation
Client:	Oriental Hotel
Project No.	28423
Report Reference	28423-PR01_A
Date:	11/1/18
Revision:	Final

Prepared by:	**Reviewed by:**
Erika Dawson B. Urb & Reg. Planning (hons), Grad. Dip Bushfire Protection, RPIA, MFPAA Senior Town Planner	Jim Sarantzouklis B. Arts, Grad. Dip. Urb. Reg. Plan, Dip. EH&B Surveying, MAIBS MEHA RPIA Director

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1 INTRODUCTION

1.1 Background

Barnson Pty Ltd has been engaged by the Oriental Hotel to prepare information in support of a Development Application (DA) for a change of use of the existing dwelling to tourist and visitor accommodation (serviced apartment) on Lot 1 DP 995458, being 8 Lewis Street, Mudgee.

The subject site is located on the western side of Lewis Street just south of the intersection with Mortimer Street and has an area of 350m². The site contains an existing dwelling.

The project will consist of a change of use of the existing dwelling to a tourist and visitor accommodation (serviced apartment).

The site is zoned B3 Commercial Core under *Mid-Western Regional Local Environmental Plan 2012*. The proposed development is defined as tourist and visitor accommodation (serviced apartment), which is permissible with consent in the B3 zone.

This application consists of:

- A completed development application form; and
- Five (5) copies of this written statement, including plans.

1.2 Proponent

The proponent for the DA is the Oriental Hotel.

1.3 Consultant

Barnson Pty Ltd

Erika Dawson

2 Littlebourne Street

Bathurst NSW 2795

2 EXISTING ENVIRONMENT

2.1 Location and Title

The site the subject of this application is currently Lot 1 DP 995458, known as 8 Lewis Street, Mudgee. The lot is currently the subject of a subdivision application with the adjacent Lots 1 and 2 DP 732911 as a result of conditions on DA0164/2015.

The site is located on the western side of the Lewis Street, approximately 20m south of the intersection with Mortimer Street as shown in **Figure 1**.

Source: (NSW Government Spatial Services, 2017)

Figure 1 – Site Location

The site as it currently exists has an overall area of 474.3m² (refer **Appendix A**). It has direct frontage to Lewis Street and contains an existing dwelling, as shown in **Figure 2**.

The proposed resubdivision of the site will see proposed Lot 2 (refer **Appendix B**) which contains the subject dwelling having an area of 350.2m².

The site contains an existing dwelling as shown in **Plate 1** and **Plate 2**.

Source: (NSW Government Spatial Services, 2017)

Figure 2 – Site Aerial

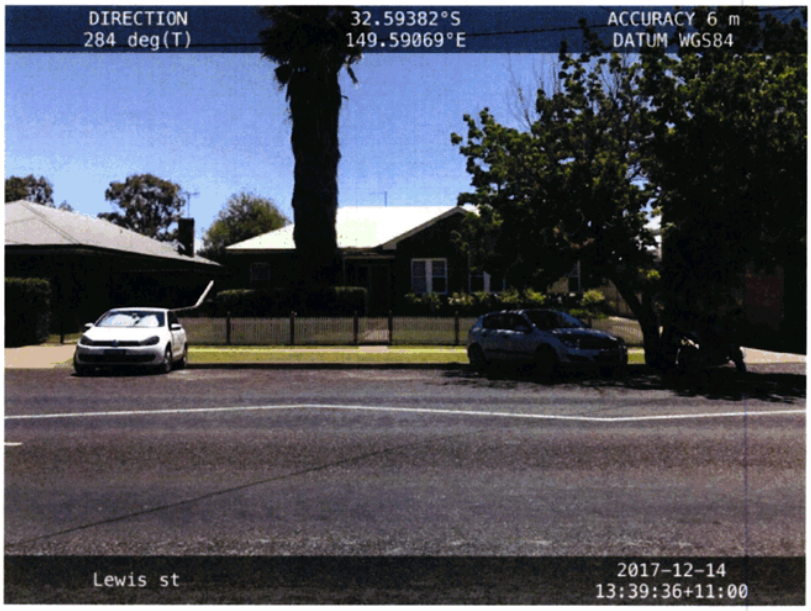


Plate 1 – Existing dwelling

Plate 2 – Driveway of existing dwelling

2.2 Land Use

The site is located in an area characterised by a mixture of commercial and residential development. It is sited adjacent to the Oriental Hotel (refer **Plate 3**), with residential development generally to the south and east of the site (refer **Plate 4**). North of the site beyond Mortimer Street is generally commercial development

Plate 3 – Existing Oriental Hotel to the north of the site

Plate 4 – View south of the site along Lewis Street

2.3 Flora and Fauna

The site is located within the existing urban area of Mudgee and is highly disturbed as a result of previous land uses. The site contains manicured urban gardens with no remnant vegetation.

2.4 Flooding and Stormwater

The site is not mapped by the LEP as being flood prone. The roof water from the existing building and site in general drains to the street.

2.5 Services

The site and dwelling have existing connections to electricity, reticulated water supply, and sewerage. Stormwater drains to Lewis Street.

2.6 Access and Traffic

Access to the site is from Lewis Street. It is a two lane two way sealed local street. It connects to Mortimer Street to the north and Gladstone Street to the south. The site has an existing driveway located on the northern side of the building.

2.7 Heritage

The site is identified on the *Mid Western Regional Local Environmental Plan 2012* as:

- Being within the Conservation Area – General Mudgee; and
- Being adjacent to a Heritage Item – General: 'Oriental Tavern', Hotel.

3 PROPOSED DEVELOPMENT

The proposed development involves the change of use of the existing dwelling (class 1a building) to a tourist and visitor accommodation (serviced apartment). The proposed use is a class 1b building under the National Construction Code (NCC). Plans of the development are provided in **Appendix C**.

The development will provide for maximum accommodation of six (6) people, being two in each bedroom.

An audit for the proposed change of use in terms of NCC compliance has been undertaken by Pro Cert Group. It is provided in **Appendix D**. The development is classified as a class 1b building under the NCC. As the development does not incorporate any new building work, a Construction Certificate is not required. Therefore, no provisions of the NCC are applicable and furthermore the provisions of the *Disability (Access to Premises – Building) Standards 2010* are not applicable. Only fire safety upgrades under Clause 93 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation) are applicable to the proposed development.

4 LAND USE ZONING

The subject site is zoned B3 Commercial Core pursuant to *Mid-Western Regional Local Environmental Plan 2012* (LEP). The proposed development is for a change of use to a tourist and visitor accommodation (serviced apartment), which is permissible with consent in the B3 Zone.

The permissibility of the proposed development is assessed in terms of the heads of consideration in Section 79C(1) of the *Environmental Planning & Assessment Act 1979*, which incorporates consideration of the LEP and the objectives and permissible uses outlined in the B3 Zone.

5 PLANNING CONSIDERATIONS

5.1 Biodiversity Conservation Act 2016

5.1.1 Is the development likely to significantly affect threatened species?

Clause 7.2 of the *Biodiversity Conservation Act 2016* (BC Act) identifies the following circumstances where a development is likely to significantly affect threatened species:

(a) it is likely to significantly affect threatened species or ecological communities, or their habitats, according to the test in section 7.3, or

(b) the development exceeds the biodiversity offsets scheme threshold if the biodiversity offsets scheme applies to the impacts of the development on biodiversity values, or

(c) it is carried out in a declared area of outstanding biodiversity value.

Each of these is addressed below.

5.1.1.1 Section 7.3 Test

To determine whether a development is likely to significantly affect threatened species or ecological communities, or their habitats, the following is to be taken into account in accordance with Section 7.3 of the BC Act:

(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,

(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

(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,

(c) in relation to the habitat of a threatened species or ecological community:

(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

(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

(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,

(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),

(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.

Comment: The proposed development is not likely to significantly affect threatened species or ecological communities, or their habitats.

5.1.1.2 Section 7.4 Test

Section 7.4 of the BC Act states:

(1) Proposed development exceeds the biodiversity offsets scheme threshold for the purposes of this Part if it is development of an extent or kind that the regulations declare to be development that exceeds the threshold.

(2) In determining whether proposed development exceeds the biodiversity offsets threshold for the purposes of this Part, any part of the proposed development that involves the clearing of native vegetation on category 1-exempt land (within the meaning of Part 5A of the Local Land Services Act 2013) is to be disregarded.

Comment: The proposed development does not exceed the biodiversity offsets threshold for the purposes of this part

5.1.1.3 Declared Area of Outstanding Biodiversity Value

The site is not mapped on the Biodiversity Value Map as being land with a high biodiversity value as defined by the BC Act.

5.1.2 Biodiversity Development Assessment Report

As outlined in **Section 5.1.1**, the proposed development is not likely to significantly affect threatened species as defined by Section 7.2 of the BC Act. Therefore, a Biodiversity Development Assessment Report is not required to accompany the application for development consent.

5.2 Environmental Planning & Assessment Act 1979

5.2.1 Section 79C(1) Heads of Consideration

Section 79C(1) of the EP&A Act (as amended) requires the Council to consider various matters in regard to the determination of the Development Application.

In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application:

(a) The provisions of:

(i) any environmental planning instrument, and

(ii) any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and

(iii) any development control plan, and

(iiia) *any planning agreement that has been entered into under section 93F, or any draft planning agreement that a developer has offered to enter into under section 93F, and*

(v) *the regulations (to the extent that they prescribe matters for the purposes of this paragraph), and*

(v) *any coastal zone management plan (within the meaning of the Coastal Protection Act 1979), that apply to the land to which the development application relates,*

(b) The likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality;

(c) The suitability of the site for the development,

(d) Any submissions made in accordance with this act or the regulations,

(e) The public interest.

The proposed development has been designed with consideration to the following matters, as outlined below.

5.3 Environmental Planning Instruments

5.3.1 SEPP No.55 - Remediation of Land

Clause 7 of *State Environmental Planning Policy No.55 – Remediation of Land* (SEPP 55) requires Council to consider the following before granting consent to a DA:

(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.

Comment: The subject site has been used for residential purposes for a substantial period of time. It is not known to have supported any land uses that are listed in Table 1 of the *Managing Land Contamination Planning Guidelines*. In this regard it is not expected that the land is contaminated.

5.3.2 State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004

The development is not considered to be a 'BASIX affected building' as the change of use will not result in the building becoming a 'BASIX affected building' as the existing use is already considered to be a 'BASIX affected building'. Therefore, this SEPP is not applicable to the development.

5.3.3 Mid-Western Regional Local Environmental Plan 2012

5.3.3.1 Land Use Zone

The subject site is zoned B3 Commercial Core pursuant to *Mid-Western Regional Local Environmental Plan 2013* (LEP). The objectives of the B3 zone are:

- *To provide a wide range of retail, business, office, entertainment, community and other suitable land uses that serve the needs of the local and wider community.*
- *To encourage appropriate employment opportunities in accessible locations.*
- *To maximise public transport patronage and encourage walking and cycling.*
- *To promote the central business district of Mudgee as the major focus for retail and commercial activity in Mid-Western Regional.*
- *To consolidate business development in the Mudgee town centre and avoid unnecessary or inappropriate expansion of business-related land uses into surrounding residential neighbourhoods.*
- *To ensure that new development is compatible with the historic architectural character and streetscapes of the Mudgee commercial core area.*
- *To ensure that the form and layout of new development is designed to encourage free pedestrian movement and connectivity within the commercial core.*

Comment: The proposed development is defined as 'Serviced Apartment' with a parent 'Tourist and Visitor Accommodation' term, which is considered to be consistent with the zone objectives as it provides for use that is complementary to the tourist hub nature of the CBD of Mudgee. It is permissible with consent in the B3 zone.

5.3.3.2 Heritage Conservation

Despite being located within the Mudgee Heritage Conservation Area; the proposed development does not require development consent pursuant to clause 5.10 of the LEP.

Clause 5.10(5) of the LEP states that where a development is located within a heritage conservation area, Council may require a heritage management document to be prepared. This document is to assess the extent to which the carrying out of the development would affect the heritage significance of the conservation area.

The proposed development would not have a discernible impact on the heritage significance of the conservation area.

5.4 Draft Environmental Planning Instruments

No draft Environmental Planning Instruments are applicable to the subject site or development.

5.5 Mid-Western Regional Development Control Plan 2013

5.5.1 Signage

All signage will be installed as exempt development in accordance with *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* (Codes SEPP).

5.5.2 Car Parking

Clause 5.1 of the DCP requires that tourist and visitor accommodation provide one (1) space per unit, plus two (2) spaces per three (3) employees.

The development is operated as one unit, thus requiring one (1) parking space. Two (2) parking spaces are available on site. No employees would be located on site, with only cleaning staff accessing the site once the visitors have left and thus being able to use the on-site parking spaces.

5.5.3 Tourist & Visitor Accommodation

Clause 6.4 of the *Mid-Western Regional Development Control Plan* (DCP) outlines the controls to be considered as part of a tourist and visitor accommodation development. These are addressed in the table below.

Table 1 – DCP Tourist & Visitor Accommodation Controls

Requirement	Comment
Location	• There is no Minimum Lot Size (MLS) applicable to the site. • Tourist and Visitor Accommodation is permissible with consent in the B3 Zone. The definition of 'residential accommodation' in the LEP clearly excludes 'tourist and visitor accommodation' and as such the appropriateness of location for the latter development should not be linked to where a dwelling house is permissible. The LEP (*inter* alia) has the role of determining permissibility of developments not the DCP. This provision (b) is clearly antipathetic to the purpose and status of DCPs as outlined in Section 74BA of the EP&A Act. In any case the location is considered to be appropriate for the development as it is consistent with the zone objectives and is a permissible land use in the zone.
Design & Layout	• The development is located within an existing dwelling. Therefore, the site constraints are considered suitable for the development.

	• The development will provide for a maximum of one (1) individual accommodation unit. No management will be on site.
Water Cycle Management	No changes are proposed to the existing effluent management or stormwater.
Electricity	No changes to existing electricity connections.
Parking	Addressed in **Section 5.5.2**.
Signage	Addressed in **Section 5.5.1**.

5.6 Any Planning Agreement entered into

No Planning Agreements entered into are known to exist in relation to the development or site.

5.7 Any Matters Prescribed by the Regulations

For the purposes of Section 79C(1)(a)(iv) of the EP&A Act, Clause 92 of the *Environmental Planning and Assessment Regulations 2000* (EP&A Regulations) specifies the additional matters a consent authority must take into consideration when determining a DA.

In relation to the proposed development, Clause 93 of the EP&A Regulation applies to the development being a change of use with no building works. Specifically, Council is required to consider the following:

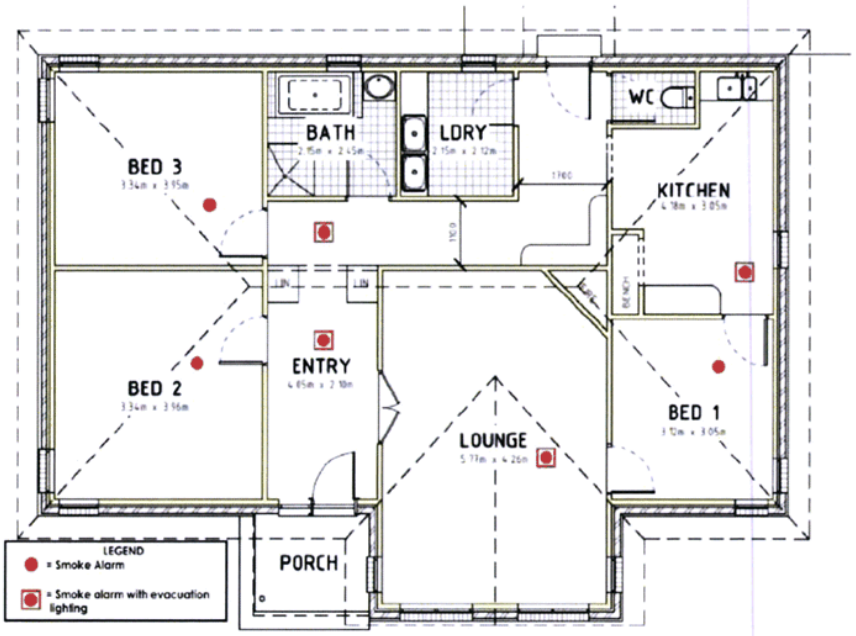
> *(2) In determining the development application, the consent authority is to take into consideration whether the fire protection and structural capacity of the building will be appropriate to the building's proposed use.*

These matters have been considered in the report prepared by Pro Cert Group which is provided in **Appendix D**. It determines that the structural capacity of the building is appropriate to its proposed use. It also provides for additional measures to provide for suitable fire protection for the proposed use. These are limited to upgrading the fire safety of the existing building to be appropriate to its new classification of Class 1b by the installation of a smoke alarm system that complies for this building classification.

The development is therefore to include the provision of a smoke alarm system that comprises the following elements:

- *Smoke alarms that are hardwired to the consumer mains power, which are interconnected, and which comply with AS3786-2014;*
- *Smoke alarms are to be provided in each bedroom and in the hallway serving those bedrooms;*
- *The smoke alarms located in the hallway must either contain an integrated evacuation light or lighting must be provided within the hallway that is activated by the smoke alarm system.*

The Pro Cert Report provides the following suggested layout of smoke alarms and evacuation lights within the building to achieve compliance with the above requirements.



Source: (Pro Cert Group Pty Ltd, 2017)

Figure 3 – Suggested Smoke Alarm Layout

5.8 Any Likely Impacts of the Development

5.8.1 Context & Setting

The subject site is located in an area characterised by a mixture of residential and commercial development. The development is the change of use of an existing dwelling. The development will not visually impact on the existing dwelling. The new use is considered to be compatible with the location. In this regard the proposed development is considered to be compatible with the existing and proposed context and setting.

5.8.2 Access, Transport & Traffic

The NSW Roads & Maritime Services (RMS) *Guide to Traffic Generating Development: Updated Surveys* (NSW Roads & Maritime Services, 2013) identifies that low density residential dwellings typically generate 7.4 daily vehicle trips in regional areas. It is not expected that the proposed development would generate any more traffic than the existing use as a dwelling.

The development includes two parking spaces on site. As outlined in **Section 5.5.2**, the parking provided is considered to be acceptable in terms of the DCP requirements.

5.8.3 Utilities

No changes are required to any existing utilities for the new use.

5.8.4 Heritage

Whilst being located in a heritage conservation area and adjacent to a heritage item (Oriental Hotel), the change of use would not impact on the heritage significance of either the area or the item.

5.8.5 Waste

Waste from the development would continue to be disposed of through Council's kerbside waste and recycling collection services. It is not expected that the use would generate any additional waste compared to the dwelling house use.

5.8.6 Noise

It is not expected that the development would result in significant noise generation or generation above that existing in the locality.

5.8.7 Social & Economic Impacts in the Locality

The development is expected to have some minor positive social and economic impacts in the locality by provision of tourist accommodation to support the local tourist and business industries.

5.9 Suitability of the Site for the Proposed Development

The suitability of the site for the proposed development has been addressed in the above sections of this report. There are no prohibitive constraints posed by adjacent developments. There does not appear to be any zoning, planning or environmental matters that should hinder the proposed development of the site. In this regard, it can be concluded that the proposal fits into the locality and the site attributes are conducive for the development.

5.10 The Public Interest

The proposed development is considered to be in the public interest as it provides for a small-scale tourist accommodation development. As outlined throughout this report the development is consistent with the minimum lot size for the area and is not expected to have any adverse off-site impacts.

6 CONCLUSION

It is recommended that the proposed change of use on Lot 1 DP 995458, known as 8 Lewis Street, Mudgee be supported on the following grounds:

- The proposal is considered acceptable in terms of the provisions of Section 79C of the *Environmental Planning and Assessment Act 1979*;
- The proposal is permissible with consent and consistent with the relevant development standards and provisions of the *Mid-Western Regional Local Environmental Plan 2012*;
- The proposal complies with the relevant provisions of the *Mid-Western Regional Council Development Control Plan 2013*;
- The proposed development is not anticipated to generate any adverse impacts in the locality; and
- The proposed development is considered suitable for the site and its surrounds.

7 REFERENCES

NSW Government Spatial Services. (2017, January 18). *Six Maps*. Retrieved from http://maps.six.nsw.gov.au/

NSW Roads & Maritime Services. (2013, August). Technical Directiton TDT2013/04a. *Guide to Traffic Generating Developments Updated Traffic Surveys*. NSW RMS.

Pro Cert Group Pty Ltd. (2017). *National Construction Code Assessment Report: Change of Use 8 Lewis Street, Mudgee*. Dubbo: Pro Cert Group Pty Ltd.

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Appendix A - Title & Deposited Plan

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 1/995458

SEARCH DATE	TIME	EDITION NO	DATE
6/7/2017	6:33 PM	6	28/1/2015

LAND

LOT 1 IN DEPOSITED PLAN 995458
AT MUDGEE
LOCAL GOVERNMENT AREA MID-WESTERN REGIONAL
PARISH OF MUDGEE COUNTY OF WELLINGTON
TITLE DIAGRAM DP995458

FIRST SCHEDULE

DESMOND MATHEW KENNEDY
CAROL ANNE KENNEDY
AS JOINT TENANTS (T AD521715)

SECOND SCHEDULE (3 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 LIMITED TITLE. LIMITATION PURSUANT TO SECTION 28T(4) OF THE REAL PROPERTY ACT, 1900. THE BOUNDARIES OF THE LAND COMPRISED HEREIN HAVE NOT BEEN INVESTIGATED BY THE REGISTRAR GENERAL.
3 AJ208238 MORTGAGE TO AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Barnson Pty Ltd (Mudgee) PRINTED ON 6/7/2017

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title.
Warning: the information appearing under notations has not been formally recorded in the Register.

URBISPRO PTY LTD - hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with section 96B(2) of the Real Property Act 1900.

Note: Information contained in this document is provided by URBISPRO PTY LTD (ABN 35 164 894 517), http://www.urbispro.com.au/ an approved NSW Information Broker

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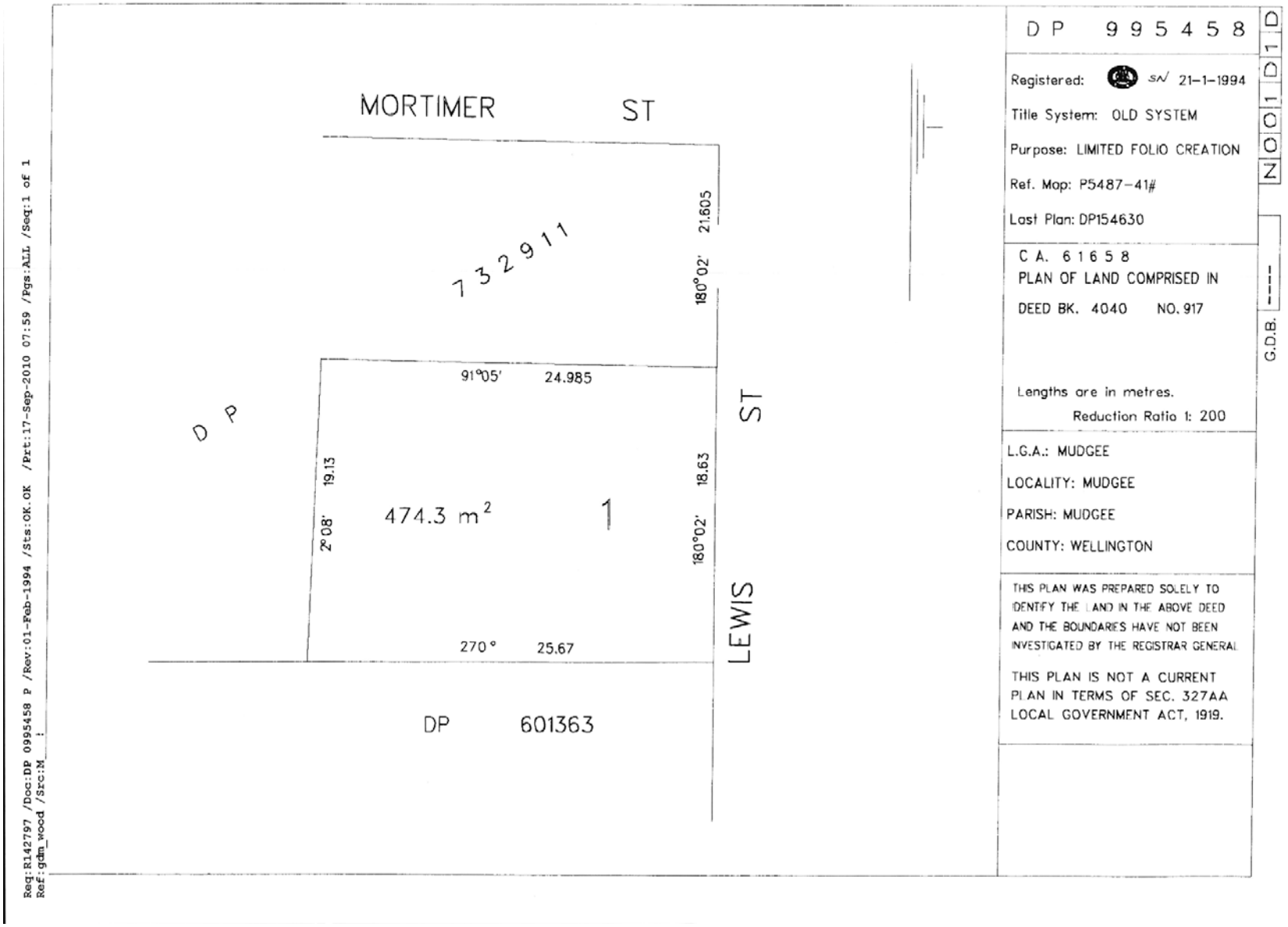
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732911
180°02'
21.605
91°05'
24.985
D P
19.13
2°08'
474.3 m²
1
18.63
180°02'
LEWIS ST
270°
25.67
DP 601363
Req:R142797 /Doc:DP 0995458 P /Rev:01-Feb-1994 /Sts:OK.OK /Prt:17-Sep-2010 07:59 /Pgs:ALL /Seq:1 of 1
Ref:gdm_wood /Src:M
DP 995458
Registered: SN 21-1-1994
Title System: OLD SYSTEM
Purpose: LIMITED FOLIO CREATION
Ref. Map: P5487-41#
Last Plan: DP154630
C.A. 61658
PLAN OF LAND COMPRISED IN
DEED BK. 4040 NO. 917
Lengths are in metres.
Reduction Ratio 1: 200
L.G.A.: MUDGEE
LOCALITY: MUDGEE
PARISH: MUDGEE
COUNTY: WELLINGTON
THIS PLAN WAS PREPARED SOLELY TO IDENTIFY THE LAND IN THE ABOVE DEED AND THE BOUNDARIES HAVE NOT BEEN INVESTIGATED BY THE REGISTRAR GENERAL
THIS PLAN IS NOT A CURRENT PLAN IN TERMS OF SEC. 327AA LOCAL GOVERNMENT ACT, 1919.
N O 1 D 1 D
G.D.B. ---

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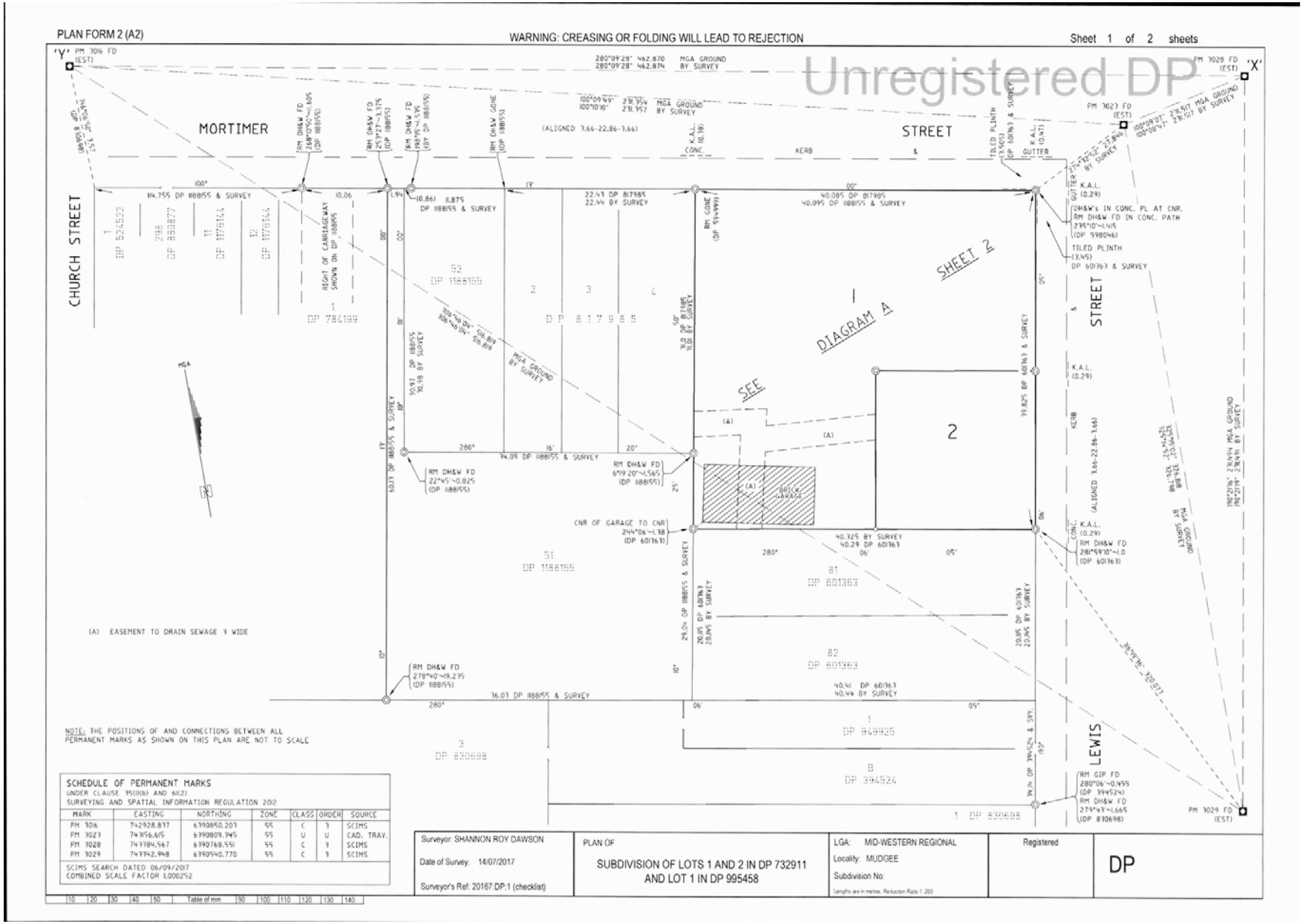
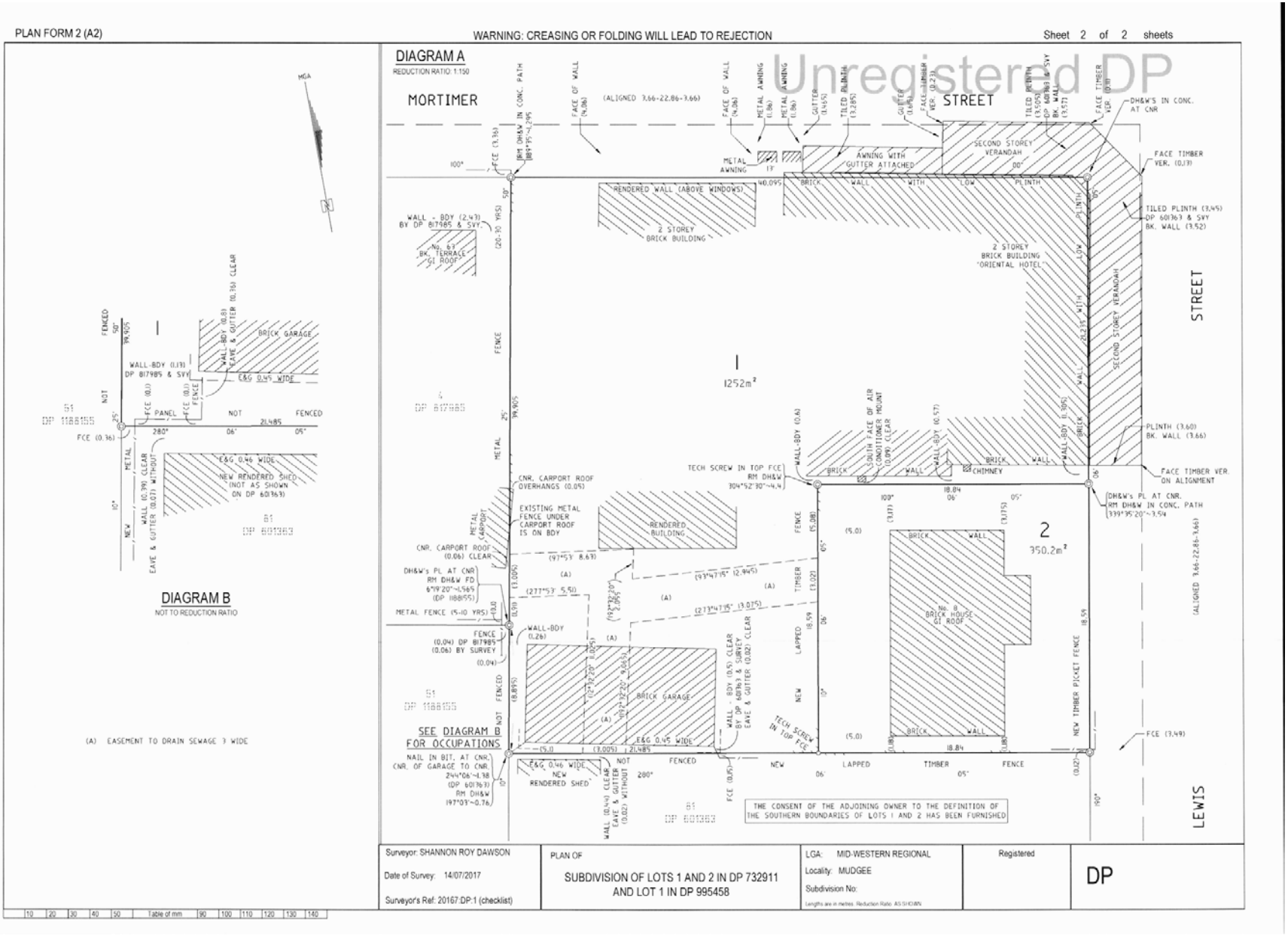
Appendix B - Proposed DP


PLAN FORM 2 (A2)
WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION
Sheet 1 of 2 sheets
Unregistered DP
MORTIMER STREET
CHURCH STREET
LEWIS STREET
SHEET 2
DIAGRAM A
SEE
(A) EASEMENT TO DRAIN SEWAGE 3 WIDE
NOTE: THE POSITIONS OF AND CONNECTIONS BETWEEN ALL PERMANENT MARKS AS SHOWN ON THIS PLAN ARE NOT TO SCALE
SCHEDULE OF PERMANENT MARKS
UNDER CLAUSE 35(1)(b) AND 6(2)
SURVEYING AND SPATIAL INFORMATION REGULATION 2012
MARK | EASTING | NORTHING | ZONE | CLASS | ORDER | SOURCE
PM 3016 | 742928.837 | 6390850.203 | 55 | C | 3 | SCIMS
PM 3023 | 743156.615 | 6390809.345 | 55 | U | U | CAD. TRAV.
PM 3028 | 743384.567 | 6390768.551 | 55 | C | 3 | SCIMS
PM 3029 | 743342.948 | 6390540.770 | 55 | C | 3 | SCIMS
SCIMS SEARCH DATED 06/09/2017
COMBINED SCALE FACTOR 1.000252
Surveyor: SHANNON ROY DAWSON
Date of Survey: 14/07/2017
Surveyor's Ref: 20167:DP:1 (checklist)
PLAN OF
SUBDIVISION OF LOTS 1 AND 2 IN DP 732911 AND LOT 1 IN DP 995458
LGA: MID-WESTERN REGIONAL
Locality: MUDGEE
Subdivision No:
Lengths are in metres. Reduction Ratio 1: 250
Registered
DP


PLAN FORM 2 (A2)
WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION
Sheet 2 of 2 sheets
DIAGRAM A
REDUCTION RATIO 1:150
Unregistered DP
MORTIMER STREET
LEWIS STREET
1252m²
350.2m²
DIAGRAM B
NOT TO REDUCTION RATIO
SEE DIAGRAM B FOR OCCUPATIONS
(A) EASEMENT TO DRAIN SEWAGE 3 WIDE
THE CONSENT OF THE ADJOINING OWNER TO THE DEFINITION OF THE SOUTHERN BOUNDARIES OF LOTS 1 AND 2 HAS BEEN FURNISHED
Surveyor: SHANNON ROY DAWSON
Date of Survey: 14/07/2017
Surveyor's Ref: 20167:DP:1 (checklist)
PLAN OF
SUBDIVISION OF LOTS 1 AND 2 IN DP 732911 AND LOT 1 IN DP 995458
LGA: MID-WESTERN REGIONAL
Locality: MUDGEE
Subdivision No:
Lengths are in metres. Reduction Ratio: AS SHOWN
Registered
DP

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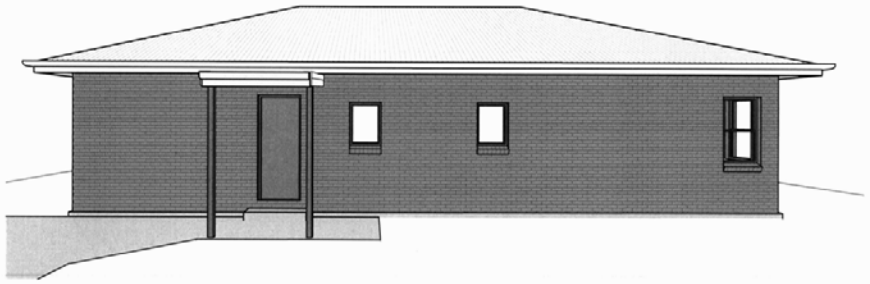
Appendix C - Development Plans



PROPOSED AREA OF WORKS
8 LEWIC STREET MUDGEE
LOT 1 - DP995458

N

01 | LOCALITY PLAN
NOT TO SCALE

DRAWING SCHEDULE

28423-A01	3D PERSPECTIVES & LOCALITY PLAN
28423-A02	SITE PLAN
28423-A03	FLOOR PLAN
28423-A04	ELEVATIONS 1/2
28423-A05	ELEVATIONS 2/2

PROPOSED CHANGE OF USE | 8 LEWIS STREET MUDGEE NSW

ISSUED FOR DEVELOPMENT APPLICATION

barnson

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4/106-110 Market Street
Mudgee NSW 2850
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e: generalenquiry@barnson.com.au
w: www.barnson.com.au

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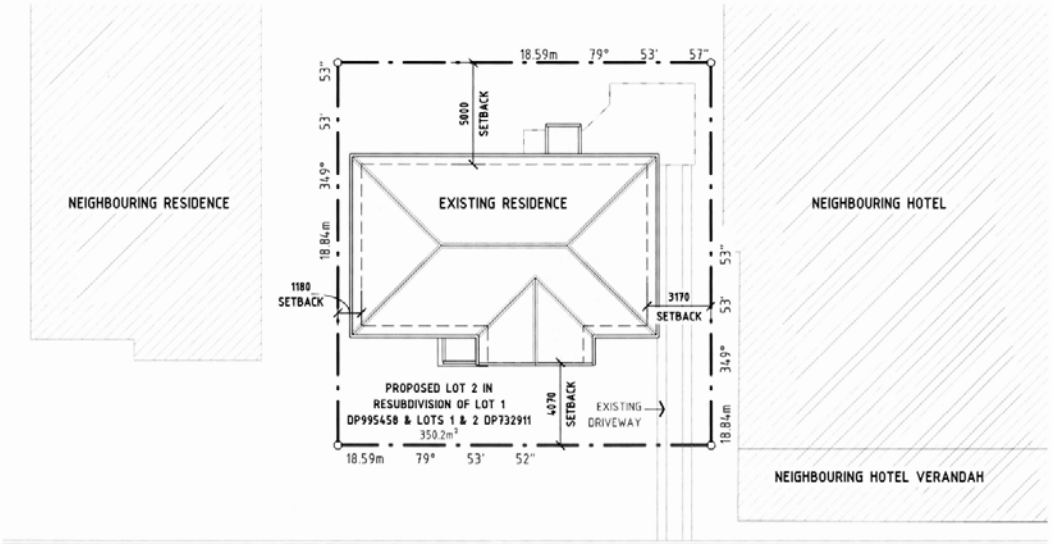
Client: THE ORIENTAL HOTEL
Project: PROPOSED CHANGE OF USE OF 8 LEWIS STREET MUDGEE
Drawing Title: 3D PERSPECTIVES & LOCALITY PLAN

Rev	Date	Amendment
A	01.12.17	EXISTING HOUSE DRAWN
B	14.12.17	ISSUED FOR CONSULTANT REVIEW
C	09.01.18	ISSUED FOR DEVELOPMENT APPLICATION

Design: OTHERS | Drawn: CP | Check: MJ
Sheet 01 of 05
Drawing Number: 28423- A01
Revision: C



02 SITE LAYOUT
SCALE: 1 : 200 (A3)

0 2000 4000 8000 16000

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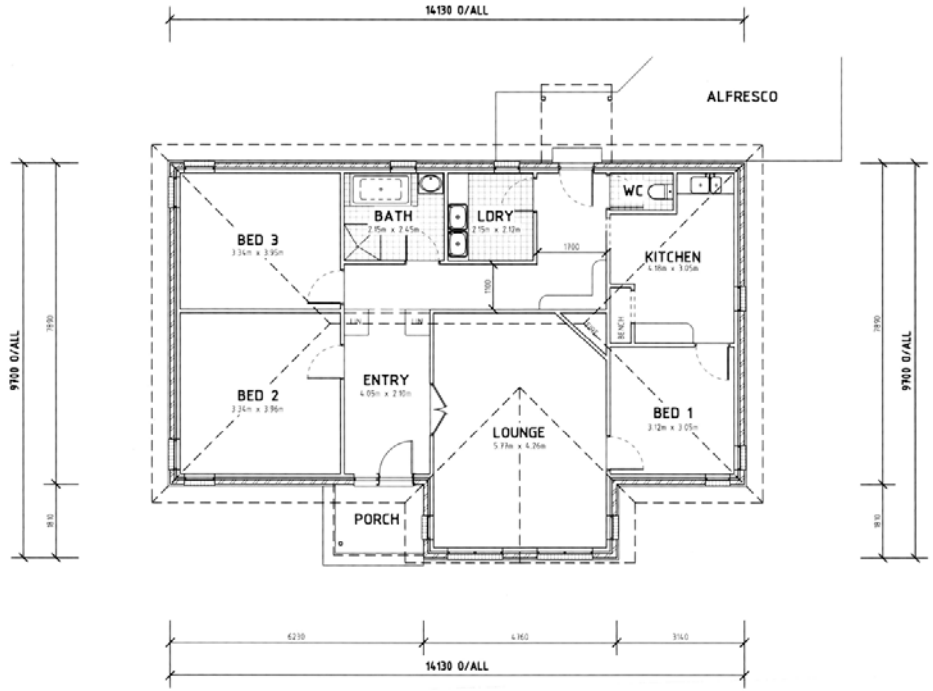
Client: THE ORIENTAL HOTEL
Project: PROPOSED CHANGE OF USE OF 8 LEWIS STREET MUDGEE
Drawing Title: SITE PLAN

Rev	Date	Amendment
A	01.12.17	EXISTING HOUSE DRAWN
B	14.12.17	ISSUED FOR CONSULTANT REVIEW
C	09.01.18	ISSUED FOR DEVELOPMENT APPLICATION

Design	Drawn	Check
OTHERS	CP	MJ

Sheet 02 of 05
Drawing Number: 28423- A02
Revision: C



03 | FLOOR LAYOUT

SCALE: 1 : 100 (A3)

0 1000 2000 4000 8000

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Client: THE ORIENTAL HOTEL
Project: PROPOSED CHANGE OF USE OF 8 LEWIS STREET MUDGEE
Drawing Title: FLOOR PLAN

Rev	Date	Amendment
A	01.12.17	EXISTING HOUSE DRAWN
B	14.12.17	ISSUED FOR CONSULTANT REVIEW
C	09.01.18	ISSUED FOR DEVELOPMENT APPLICATION

Design	Drawn	Check
OTHERS	CP	MJ

Sheet 03 of 05
Drawing Number: 28423- A03
Revision: C

04 | ELEVATION: EAST FACADE
SCALE: 1 : 100 (A3)

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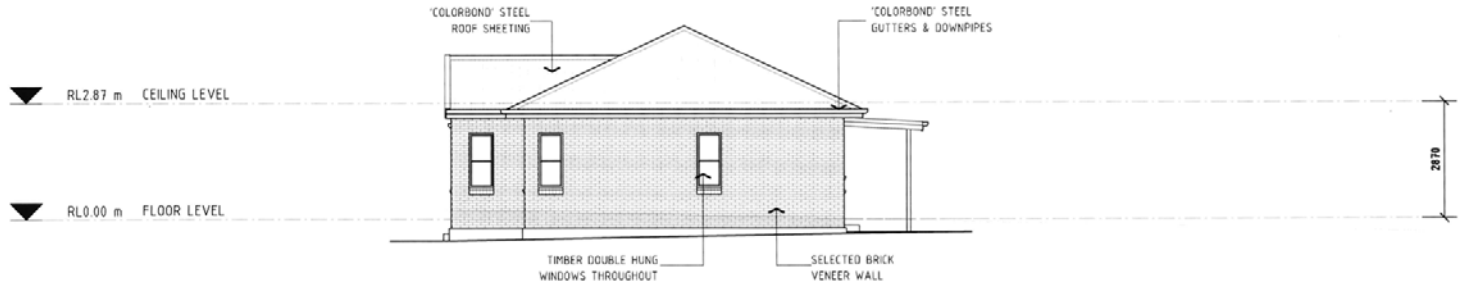

05 | ELEVATION: NORTH FACADE
SCALE: 1 : 100 (A3)

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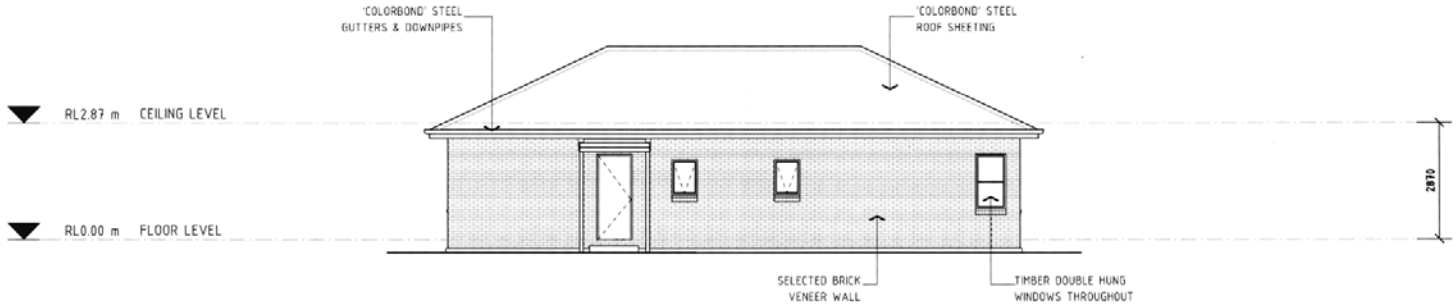
Client: THE ORIENTAL HOTEL
Project: PROPOSED CHANGE OF USE OF 8 LEWIS STREET MUDGEE
Drawing Title: ELEVATIONS 1/2

Rev	Date	Amendment
A	05.12.17	EXISTING HOUSE DRAWN
B	14.12.17	ISSUED FOR CONSULTANT REVIEW
C	09.01.18	ISSUED FOR DEVELOPMENT APPLICATION

Design	Drawn	Check
OTHERS	CP	MJ

Sheet 04 of 05
Drawing Number: 28423- A04
Revision: C



06 | ELEVATION: WEST FACADE
SCALE: 1 : 100 (A3)

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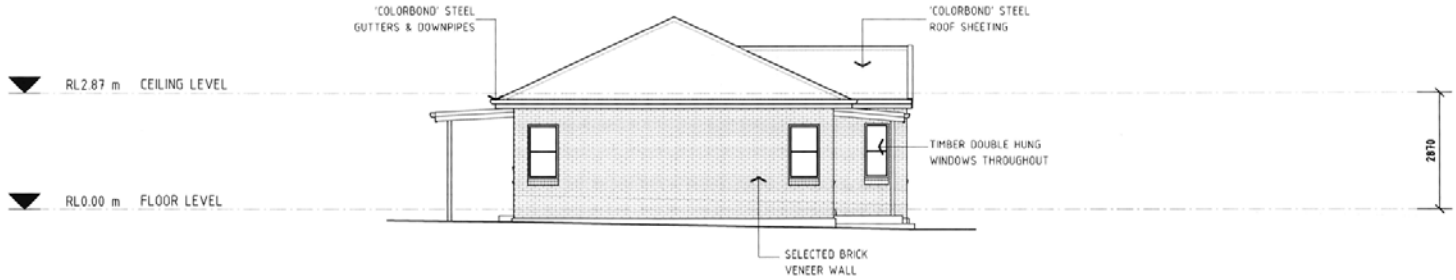

07 | ELEVATION: SOUTH FACADE
SCALE: 1 : 100 (A3)

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Client: THE ORIENTAL HOTEL
Project: PROPOSED CHANGE OF USE OF 8 LEWIS STREET MUDGEE
Drawing Title: ELEVATIONS 2/2

Rev	Date	Amendment
A	01.12.17	EXISTING HOUSE DRAWN
B	14.12.17	ISSUED FOR CONSULTANT REVIEW
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Design	Drawn	Check
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Sheet 05 of 05
Drawing Number: 28423- A05
Revision: C

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Appendix D - NCC Audit

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NATIONAL CONSTRUCTION CODE ASSESSMENT REPORT

National Construction Code 2016 – Volume Two – Building Code of Australia

BARNSON PTY LTD

Change of Use

8 Lewis Street, Mudgee NSW 2850

Lot 1 DP 995458

Report No: 774/2017 CC

Revision: 1.0

Date Prepared: 21st December 2017

Executive Summary

An assessment of the proposed Change of Use of the existing Dwelling located at 8 Lewis Street, Mudgee from a being a Residential Dwelling to a building used for Short Term Holiday Accommodation has been undertaken against the relevant Deemed-to-Satisfy (DtS) provisions of the National Construction Code of Australia 2016 – Building Code of Australia Volume Two (NCC) and the Disability (Access to Premises – Buildings) Standards 2010 (Premises Standards) as outlined in the report.

The purpose of this report is to assess compliance of the proposed development against the DtS provisions of the NCC & Premises Standard and to provide further detail as required for the Development Application stage.

It is to be noted that this assessment has been based on the Plans and Documentation provided by the client as detailed in Appendix A of this report.

A number of the compliance issues that have been identified rely on assumptions and interpretations that have been made, as outlined in Section 7 of this report. These matters should be clarified and confirmed prior to construction.

Document Control

Document No.	Rev	Issue Date	Report Details		
774/2017 CC	1.0	21.12.17	**Description:**	NCC Assessment Report	
			Prepared by:	Mr. Neil Diamond BPB No. 0091	
			Checked by:	Mr. Travis Stewart BPB No. 0393	

Table of Contents

1. Introduction

This report details the results of an assessment of the proposed Change of Use to the existing Dwelling located at 8 Lewis Street, Mudgee from a being a Residential Dwelling to a building used for Short Term Holiday Accommodation against the DtS provisions of the relevant sections of the NCC and Premises Standards.

The report has been prepared by Pro Cert Group Pty Ltd for Barnson Pty Ltd.

2. Purpose

The purpose of this report is to provide an assessment of the Change of Use to the existing building to detail what building upgrades will likely be imposed by Mid Western Regional Council as part of the assessment of the Development Application for the proposed change of use.

3. Scope and Limitations

3.1 Scope

The scope of this assessment is limited to the assessment of the design documentation referenced in Appendix A of this report.

3.2 Limitations

The following limitations apply to the assessment:

- The building that is the subject of this report is as depicted on the Plans and Specifications listed in Appendix A.
- Details in regards to access for people with disabilities have been assessed to the extent of the deemed-to-satisfy provisions of the NCC and the Premises Standards. The assessment does not consider the requirements for people with disabilities under the provision of the Disabilities Discrimination Act 1992.
- The assessment does not cover the requirements of legislation other than the nominated sections of the EP&A Act which might address building works such as Work Health & Safety, Construction Safety or the like.
- Generally the assessment does not incorporate the detailed requirements of Australian Standards unless specifically noted.
- **This report has been prepared based upon information provided by others. Pro Cert Group Pty Ltd has not verified the accuracy and / or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated into this report as a result.**

3.3 Documentation

The following documentation has been reviewed, referenced and/or relied upon in the preparation of this report:

- SIX Maps (www.maps.six.nsw.gov.au);
- NSW Legislation Website;
- National Construction Code Volume 2 2016;
- Disability (Access to Premises – Buildings) Standard 2010 (Premises Standard), and
- Plans & Associated Specifications listed in Appendix A.

4. Methodology

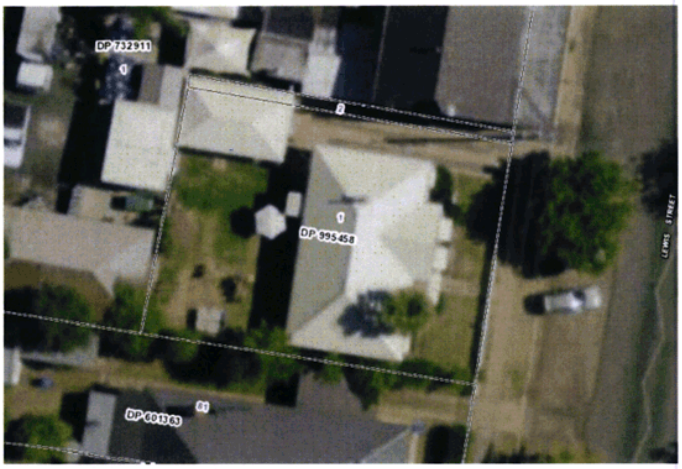
The following method of assessment has been used in the preparation of this report:

1. Determine the basic assessment data for the building;
2. Assess the proposed development against the provisions of the Environmental Planning & Assessment Act 1979 and Environmental Planning & Assessment Regulation 2000 in respect of fire safety upgrades.

3. Detail the required fire safety upgrades that are considered likely to meet the requirement of the Consent Authority in the assessment of the Development Application;
4. Provide a Fire Safety Schedule for the building for lodgement with the Development Application documentation.

5. Description of Proposed Development

It is understood that the proposed development involves the change of use to an existing building previously used as a Residential Dwelling to a building to be used for Short Term Accommodation. The building is located at Lot 1, DP 995458, 8 Lewis Street, Mudgee NSW 2850.



8 Lewis Street, Mudgee NSW 2850

6. Assessment Data Summary

6.1 Assumptions & Interpretations

It should be noted that a number of issues within the NCC are recognised to be interpretive in nature. Where these issues are encountered interpretations are made that are considered to be within standard industry practice and / or Pro Cert Group Pty Ltd policy formulated in regard of each issue. The following interpretations and assumptions have been made in the preparation of this report:

1. For the purposes of this assessment the classification of the building the subject of the proposed development is currently a Class 1a residential dwelling and after the proposed change of use it will have a classification of Class 1b. The Class 1b classification has been assessed on the basis of the building having a floor area of not more than 300m² and there being no more than 12 people reside in the building at any one time.
2. The floor areas and volumes for the building as noted in this report have been determined from the Drawings listed in Appendix A of this report.

6.2 Building Characteristics

The following assessment data has been drawn from the provisions of the NCC and from an assessment of the plans submitted by the client.

6.2.1 Classification

The proposed buildings have been classified in accordance with the requirements of Clause A3.2 of the NCC and the building classifications are summarised as follows:

Oriental Hotel, Change of Use, 8 Lewis Street, Mudgee	
Class	**Description**
1b	Short Term Accommodation Building

6.2.3 Summary of Construction Determination

The type of construction required for the proposed building works is summarised as follows:

Oriental Hotel, Change of Use, 8 Lewis Street, Mudgee	
Classification	1b
Number of Storeys Contained	1
Rise in storeys	1
Preliminary Type of Construction	N/A
Total Floor Area	120m^2
Volume	325m^3
Concessions	Nil
Final Type of Construction	N/A
Climate Zone	4

7. Statutory Framework

The following summarises the key statutory issues relating to fire safety and the NCC in relation to the proposed change of use of the existing building under the Environmental Planning & Assessment Act 1979 (Act) and the Environmental Planning & Assessment Regulation 2000 (Regulations).

In accordance with Section 79C(1)(a)(iv) of the Act the consent authority is required to take into consideration the application of Clause 93 and 94 of the Regulations in relation to the proposed change of use which are detailed as follows:

Clause 93 Fire safety and other considerations

(1) This clause applies to a development application for a change of building use for an existing building where the applicant does not seek the rebuilding, alteration, enlargement or extension of a building.

(2) In determining the development application, the consent authority is to take into consideration whether the fire protection and structural capacity of the building will be appropriate to the building's proposed use.

(3) Consent to the change of building use sought by a development application to which this clause applies must not be granted unless the consent authority is satisfied that the building complies (or will, when completed, comply) with such of the Category 1 fire safety provisions as are applicable to the building's proposed use.

***Note**. The obligation to comply with the Category 1 fire safety provisions may require building work to be carried out even though none is proposed or required in relation to the relevant development consent.*

(4) Subclause (3) does not apply to the extent to which an exemption is in force under clause 187 or 188, subject to the terms of any condition or requirement referred to in clause 187 (6) or 188 (4).

(5) The matters prescribed by this clause are prescribed for the purposes of section 79C (1) (a) (iv) of the Act.

(Source NSW Legislation website (www.legislation.nsw.gov.au) Current version for 15 December 2017 to date (accessed 21 December 2017 at 13:05))

Comment

(1) The proposed change of use is required to be considered under Clause 93 as it will be subject to a development application for the proposed change of building use and there is no building work proposed to be undertaken for the rebuilding, alteration, enlargement or extension of the building.

(2) Under subclause (2) the consent authority is required to take into consideration whether the fire protection and structural capacity of the building will be appropriate to the building's proposed use. The change in use will involve a change in building classification under the NCC from a Class 1a building to a Class 1b building. This change in classification leads to a change in the requirements for the number, location and operation of smoke alarms and the existing building will not comply with the provisions applicable to a Class 1b building. As such it is considered likely that the consent authority will consider that the fire safety measures contained within the building will not be appropriate to the proposed new use. As such the smoke alarm system in the building will be required to be upgraded to meet the requirements of the NCC appropriate to its new classification as a Class 1b building.

It is noted that the existing building is setback more than 900mm from the allotment boundaries as depicted on the plans for the proposed development which also indicates a proposed subdivision and as such the change of use to the building will not result in a requirement to provide any upgrade to the existing building in relation to Fire Resistance Levels of external walls or protection of openings in external walls as the minimum fire separation distances for a Class 1b building are equivalent to that required for a Class 1a building and will be complied with.

In relation to the structural capacity of the building it is considered that as the proposed new use and the existing use are both residential in nature and as such the change from a residential dwelling to a short term accommodation building there will be no additional live or dead loads that the building would be subject to under its proposed new use. In this regard it is considered that the structural capacity of the existing building would be appropriate for its new use.

(3) Under Subclause (3) the consent authority is required to ensure that the building, upon completion of the development, will contain the Category 1 Fire Safety Provisions that are applicable to its new use. In this regard Category 1 Fire Safety Provisions are defined in the Regulation as being "*Category 1 fire safety provision means the following provisions of the Building Code of Australia, namely, EP1.3, EP1.4, EP1.6, EP2.1, EP2.2 and EP3.2 in Volume One of that Code and P2.3.2 in Volume Two of that Code*".

As Volume One of the BCA/NCC is not applicable in this instance as Volume One only applies to Class 2 – 9 buildings in relation to fire safety. As such the applicable Category 1 Fire Safety Provision is that required by P2.3.2 in Volume 2 of the BCA/NCC which is detailed as follows:

P2.3.2 Fire detection and early warning

In a Class 1 building, occupants must be provided with automatic warning on the detection of smoke so that they may evacuate in the event of a fire to a place of safety.

In this regard as detailed under the comment for Subclause (2) above it will be necessary to upgrade the building in relation to the provision of a Smoke Alarm system that complies with Volume 2 of the NCC to ensure that the building complies with the fire safety provisions as applicable to its new use. This will also achieve compliance with P2.3.2 as detailed above.

(4) Noted, no exemption is proposed under this clause.

(5) Noted.

Clause 94 Consent authority may require buildings to be upgraded

(1) This clause applies to a development application for development involving the rebuilding, alteration, enlargement or extension of an existing building where:

(a) the proposed building work, together with any other building work completed or authorised within the previous 3 years, represents more than half the total volume of the building, as it was before any such work was commenced, measured over its roof and external walls, or

(b) the measures contained in the building are inadequate:

(i) to protect persons using the building, and to facilitate their egress from the building, in the event of fire, or

(ii) to restrict the spread of fire from the building to other buildings nearby.

(c) (Repealed)

(2) In determining a development application to which this clause applies, a consent authority is to take into consideration whether it would be appropriate to require the existing building to be brought into total or partial conformity with the Building Code of Australia.

(2A), (2B) (Repealed)

(3) The matters prescribed by this clause are prescribed for the purposes of section 79C (1) (a) (iv) of the Act.

(Source NSW Legislation website (www.legislation.nsw.gov.au) Current version for 15 December 2017 to date (accessed 21 December 2017 at 13:05))

Comment

This clause is not considered to be applicable to the proposed development as it is not proposed to rebuild, alter, enlarge or extend the existing building.

Disability (Access to Premises - Buildings) Standards 2010

All new building work must comply with the provisions of the Premises Standard and the Premises Standard applies to the construction of new buildings and new parts of existing buildings and is applicable at the Construction Certificate stage. As there will be no building works proposed and therefore no Construction Certificate stage for the proposed development there will be no requirement to upgrade the premises in relation to access for people with disabilities under this legislation.

National Construction Code 2016 – Volume 2 Building Code of Australia

All new building work must comply with the provisions of the National Construction Code. As there are no building works proposed the National Construction Code will not be applicable except where required in relation to fire safety upgrades under Clause 93 of the Act as detailed above.

8. Issues Requiring Resolution

8.1 Issues Requiring Amendments to Plans

As per Section 7 it has been identified that it will be necessary to upgrade the fire safety of the existing building to be appropriate to its new classification of Class 1b by the installation of a smoke alarm system that complies for this building classification. The relevant requirements of the NCC in relation to this smoke alarm system are detailed below:

Under Clause 3.7.2.2 of Volume 2 of the NCC 2016 for a Class 1b building smoke alarms must:

(a) be located in—

(i) ~~Class 1a buildings in accordance with 3.7.2.3; and~~

(ii) Class 1b buildings in accordance with 3.7.2.4 and 3.7.2.5; and

(b) comply with AS 3786, except that in a Class 10a private garage where the use of the area is likely to result in smoke alarms causing spurious signals, any other alarm deemed suitable in accordance with AS 1670.1 may be installed provided that smoke alarms complying AS 3786 are installed elsewhere in the Class 1 building; and

(c) be connected to the consumer mains power where consumer power is supplied to the building; and

(d) be interconnected where there is more than one alarm.

Under Clause 3.7.2.4 in a Class 1b building, smoke alarms must be installed on or near the ceiling—

(a) in every bedroom; and

(b) in every corridor or hallway associated with a bedroom, or if there is no corridor or hallway, in an area between the bedrooms and the remainder of the building; and

(c) on each other storey.

3.7.2.5 Lighting to assist evacuation — Class 1b buildings

In a Class 1b building, a system of lighting must be installed to assist evacuation of occupants in the event of a fire, and—

(a) be activated by the smoke alarm required by 3.7.2.4(b); and

(b) consist of—

(i) a light incorporated within the smoke alarm; or

(ii) the lighting located in the corridor, hallway or area served by the smoke alarm.

In this regard the plans for the proposed development are to show the provision of a smoke alarm system that comprises the following elements:

- Smoke alarms that are hardwired to the consumer mains power, which are interconnected and which comply with AS3786-2014;
- Smoke alarms are to be provided in each bedroom and in the hallway serving those bedrooms;

- The smoke alarms located in the hallway must either contain an integrated evacuation light or lighting must be provided within the hallway that is activated by the smoke alarm system.

Diagram 1 below has been prepared to illustrate the suggested layout of smoke alarms and evacuation lights within the building to achieve compliance with the above requirements.

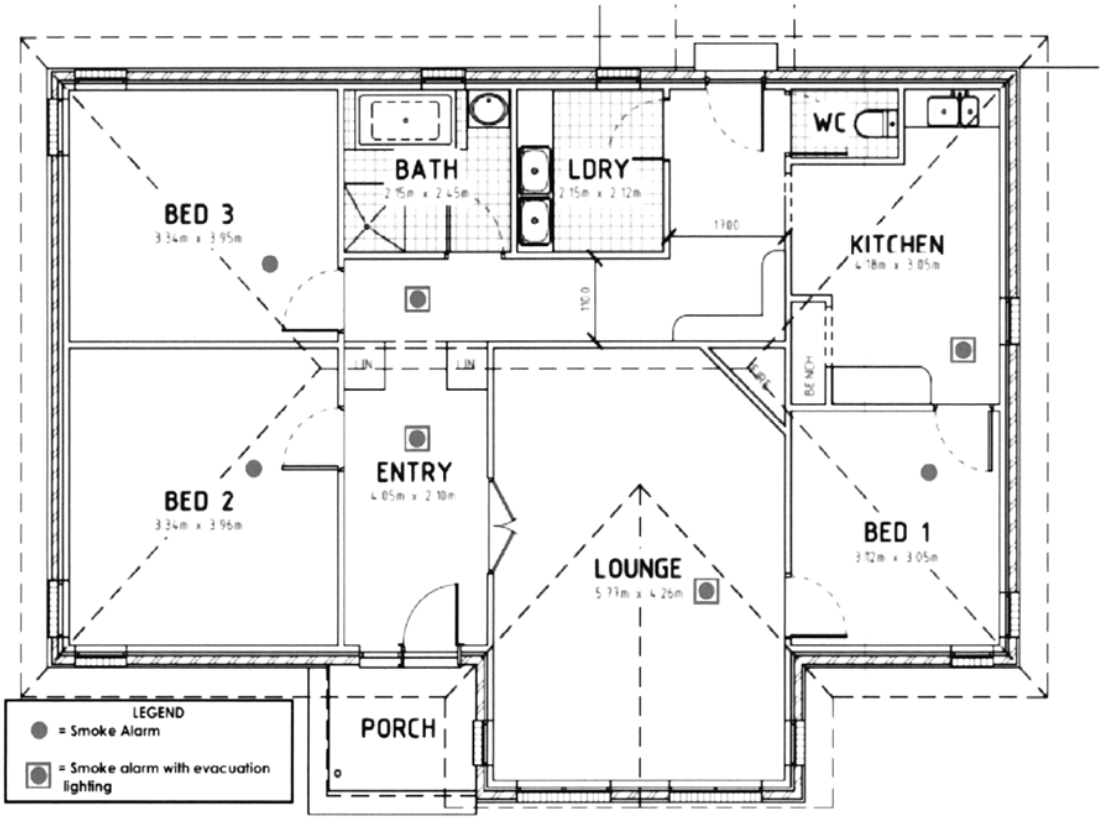


Diagram 1 – Suggested Smoke Alarm Layout

8.2 Performance Solutions Required

No performance solutions are proposed.

9. Statutory Fire Safety Measures

9.1 Fire Safety Measures

As the new building classification for the building will be a Class 1b building the requirements of the Act and Regulation applying to statutory fire safety measures will be applicable.

The Statutory Fire Safety Measures (smoke alarms & evacuation lighting) detailed as being required in this report are required to be certified upon completion by the contractor / sub-contractor responsible for the installation of the Fire Safety Measure by issuing a Certificate of Installation for the Fire Safety Measure.

The fire safety measures within the building must be maintained to ensure correct operation at all times the building is occupied, all firefighting equipment should be tagged when tested / inspection and log books kept up-to-date for all smoke detection, warning systems, etc.

A Final Fire Safety Certificate must be submitted to Mid Western Regional Council and the NSW Fire Brigade upon completion of the development and prior to the issue of an Occupation Certificate for the change of use. This certificate indicates the satisfactory performance of the fire safety measures contained within the building. The final fire safety certificate and fire safety schedule associated with the building must be displayed in a prominent place within the building.

An Annual Fire Safety Statement must be submitted to Mid Western Regional Council and the NSW Fire Brigade each year indicating satisfactory performance of the fire safety measures contained within the building. The annual fire safety statement must be displayed in a prominent place within the building and replaces the aforementioned Final Fire Safety Certificate and is updated annually.

The correct operation and maintenance of the buildings fire safety measures is critical in affording an adequate level of fire safety for occupants of the building.

9.2 Housekeeping

The ongoing management of the building should ensure good housekeeping procedures. The following matters should be considered by building management:

- Avoid storage of materials in unoccupied areas (i.e. large amount of flammable liquids / combustible materials within storage cupboards);
- Limit storage of flammable / combustible materials to designated and approved areas, and
- Prevent storage of materials that could hinder access to firefighting equipment, (i.e. storage in front of fire extinguishers and hose reels).

10. Conclusions

Having assessed the proposed development it is considered that the likely upgrades required for the building from the assessment of the Development Application by the consent authority will be the required installation of smoke alarms and evacuation lighting in accordance with Clauses 3.7.2.2, 3.7.2.4 & 3.7.2.5 of the NCC 2016 Volume 2.

It is considered that compliance with these clauses will satisfy the requirements both in relation to adequate fire safety provisions and Category 1 fire safety provisions applicable to the new use as required by Clause 93 of the Regulation and that there will be no need for any Performance Solutions to meet the applicable Performance Requirement of the NCC.

11. Appendix A – Referenced Design Documentation

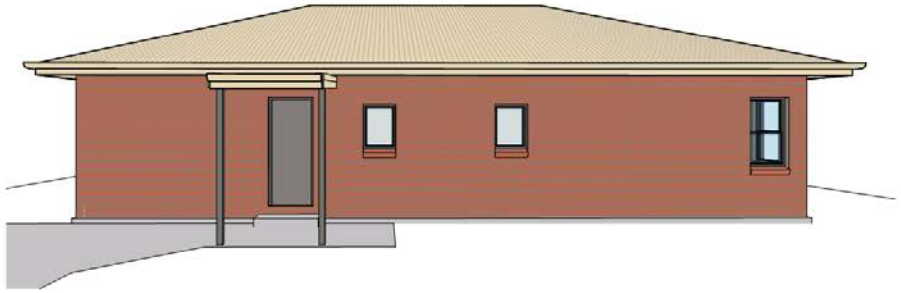
The following documentation was used in the preparation of this report:

Plan Title	Drawing No.	Revision	Date
Architectural Plans prepared by Barnson Pty Ltd Job Reference No: 28423			
3D Perspectives & Locality Plan	A01	B	14.12.17
Site Plan	A02	B	14.12.17
Floor Plan	A03	B	14.12.17
Elevations 1/2	A04	B	14.12.17
Elevations 2/2	A05	B	14.12.17

12. Appendix B – Schedule of Statutory Fire Safety Measures

The following comprises a Schedule of Statutory Fire Safety Measures that are seen as required / proposed to be installed in the building.

Item No.	Required Essential Fire Safety Measure	Standard of Performance	Location
1.	Smoke Alarms	NCC 2016 Clause 3.7.2.2, 3.7.2.4 and AS3786-2014	In each bedroom and in the hallway serving the bedrooms and other areas serving bedrooms.
2.	Evacuation Lighting	NCC 2016 Clause 3.7.2.5	Hallways and areas serving bedrooms.



PROPOSED AREA OF WORKS
8 LEWIC STREET MUDGEE
LOT 1 - DP995458

N

01 | LOCALITY PLAN
NOT TO SCALE

DRAWING SCHEDULE

28423-A01	3D PERSPECTIVES & LOCALITY PLAN
28423-A02	SITE PLAN
28423-A03	FLOOR PLAN
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PROPOSED CHANGE OF USE | 8 LEWIS STREET MUDGEE NSW

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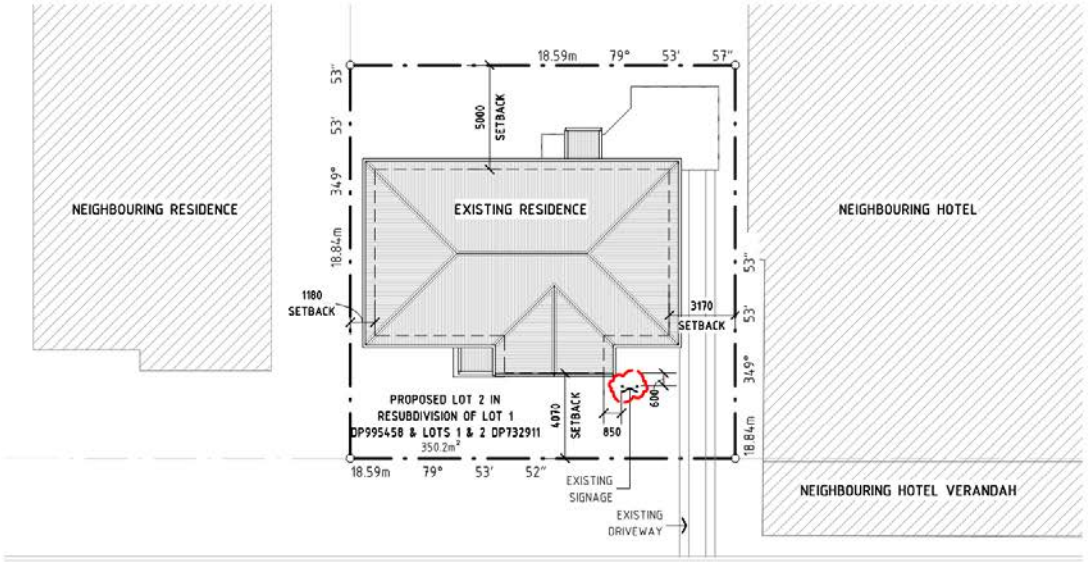

02 | SITE LAYOUT
SCALE: 1 : 200 (A3)

0 2000 4000 8000 16000

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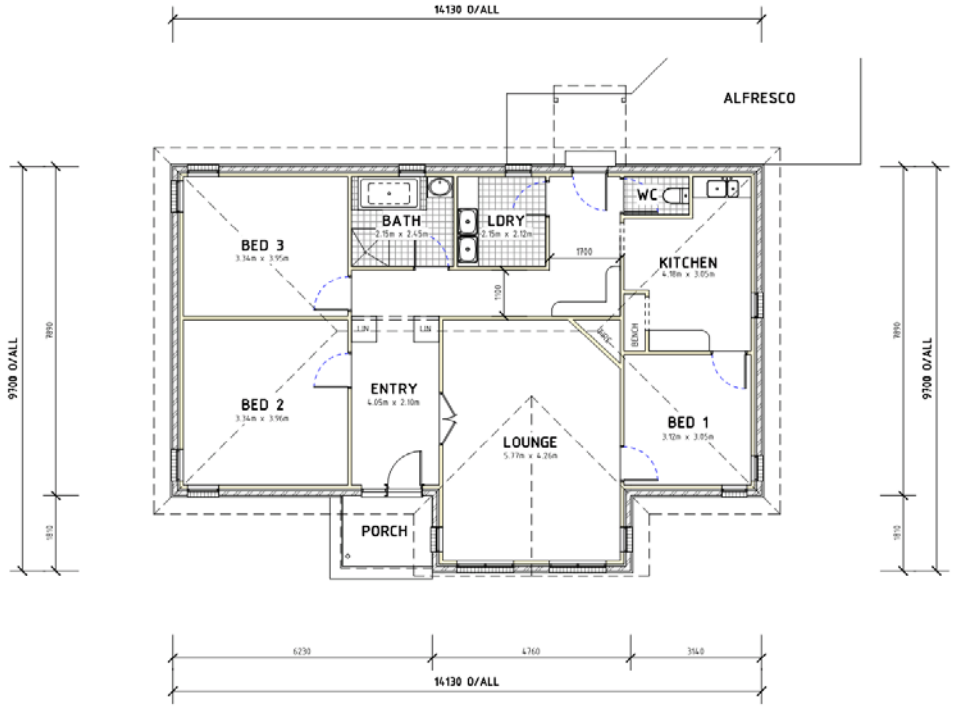
Client: THE ORIENTAL HOTEL
Project: PROPOSED CHANGE OF USE OF 8 LEWIS STREET MUDGEE
Drawing Title: SITE PLAN

Rev	Date	Amendment
A	01.12.17	EXISTING HOUSE DRAWN
B	14.12.17	ISSUED FOR CONSULTANT REVIEW
C	09.01.18	ISSUED FOR DEVELOPMENT APPLICATION
D	04.03.18	REISSUED FOR DVELOPMENT APPLICATION

Design	Drawn	Check
OTHERS	CP	MJ

Sheet 02 of 05
Drawing Number: 28423- A02
Revision: D



03 | FLOOR LAYOUT

SCALE: 1 : 100 (A3)

0 1000 2000 4000 8000

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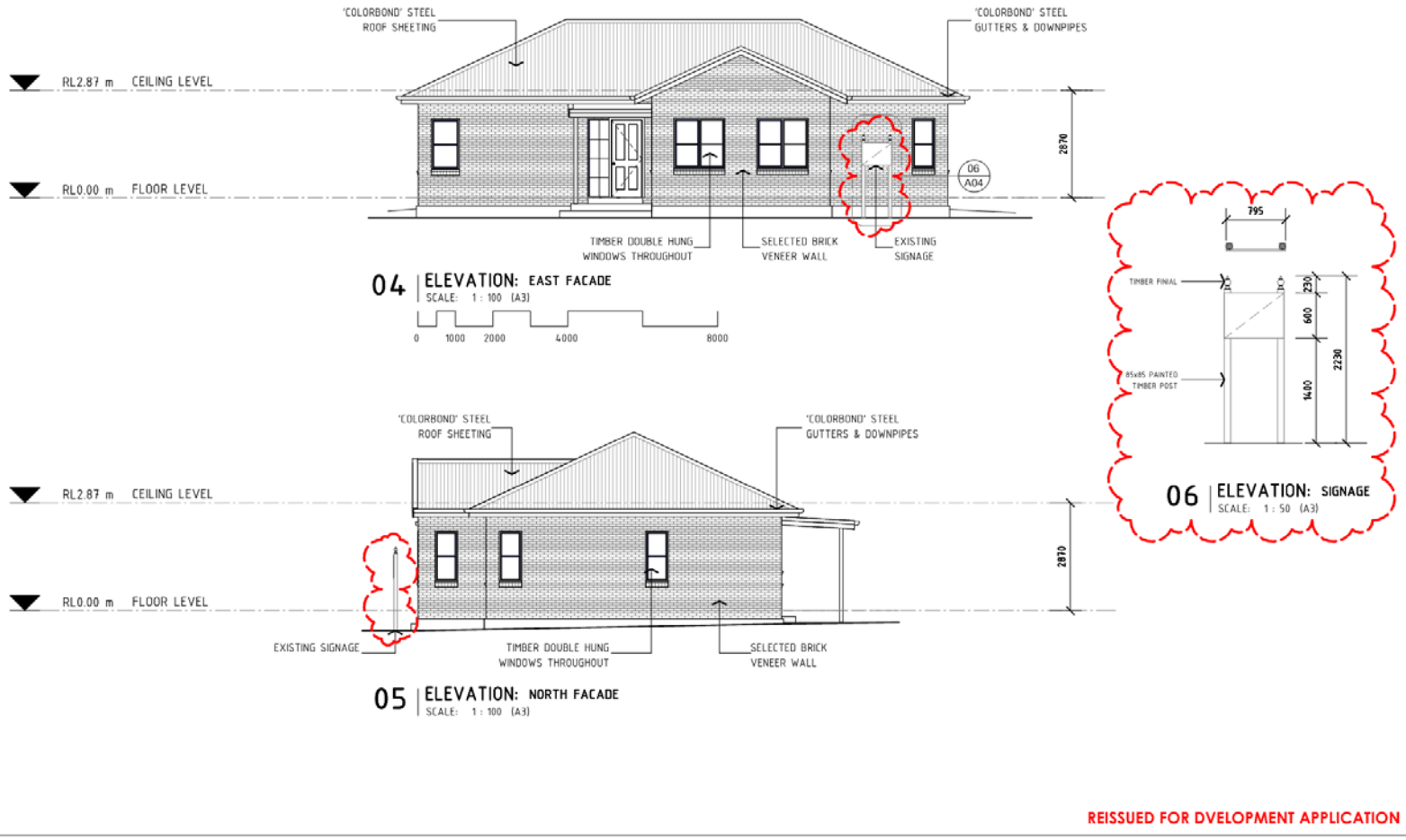
Client: THE ORIENTAL HOTEL
Project: PROPOSED CHANGE OF USE OF 8 LEWIS STREET MUDGEE
Drawing Title: FLOOR PLAN

Rev	Date	Amendment
A	01.12.17	EXISTING HOUSE DRAWN
B	14.12.17	ISSUED FOR CONSULTANT REVIEW
C	09.01.18	ISSUED FOR DEVELOPMENT APPLICATION
D	04.03.18	REISSUED FOR DVELOPMENT APPLICATION

Design: OTHERS | Drawn: CP | Check: MJ
Sheet 03 of 05
Drawing Number: 28423- A03
Revision: D


'COLORBOND' STEEL ROOF SHEETING
'COLORBOND' STEEL GUTTERS & DOWNPIPES
RL2.87 m CEILING LEVEL
RL0.00 m FLOOR LEVEL
2870
06 A04
TIMBER DOUBLE HUNG WINDOWS THROUGHOUT
SELECTED BRICK VENEER WALL
EXISTING SIGNAGE
04 ELEVATION: EAST FACADE
SCALE: 1 : 100 (A3)
0 1000 2000 4000 8000
'COLORBOND' STEEL ROOF SHEETING
'COLORBOND' STEEL GUTTERS & DOWNPIPES
RL2.87 m CEILING LEVEL
RL0.00 m FLOOR LEVEL
2870
EXISTING SIGNAGE
TIMBER DOUBLE HUNG WINDOWS THROUGHOUT
SELECTED BRICK VENEER WALL
05 ELEVATION: NORTH FACADE
SCALE: 1 : 100 (A3)
795
TIMBER FINIAL
85x85 PAINTED TIMBER POST
230
600
1400
2230
06 ELEVATION: SIGNAGE
SCALE: 1 : 50 (A3)
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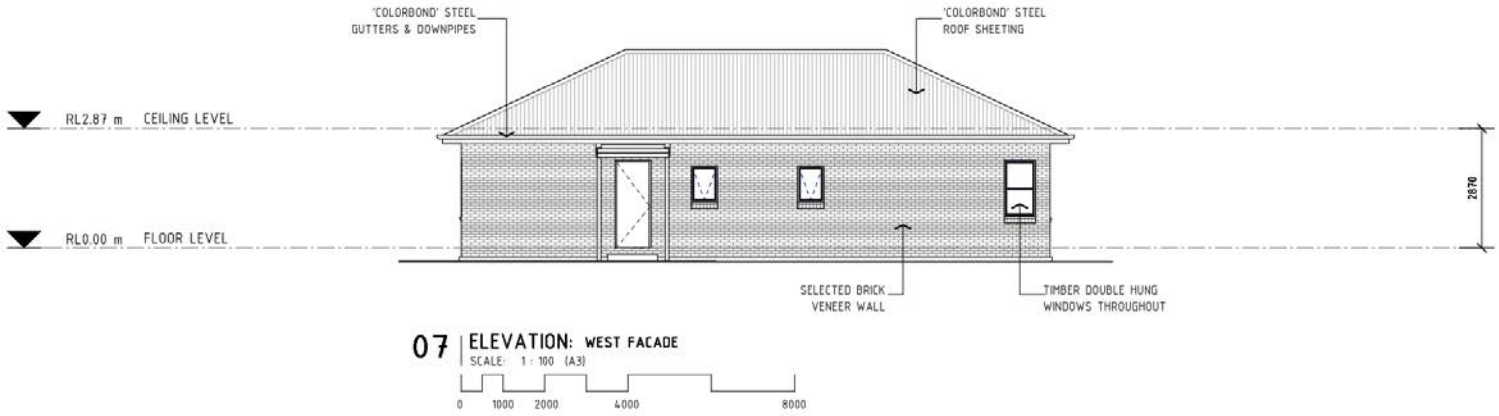
Client: THE ORIENTAL HOTEL
Project: PROPOSED CHANGE OF USE OF 8 LEWIS STREET MUDGEE
Drawing Title: ELEVATIONS 1/2
Rev A Date 01.12.17 Amendment EXISTING HOUSE DRAWN
Rev B Date 14.12.17 Amendment ISSUED FOR CONSULTANT REVIEW
Rev C Date 09.01.18 Amendment ISSUED FOR DEVELOPMENT APPLICATION
Rev D Date 04.03.18 Amendment REISSUED FOR DVELOPMENT APPLICATION
Design OTHERS
Drawn CP
Check MJ
Sheet 04 of 05
Drawing Number 28423- A04
Revision D



07 | ELEVATION: WEST FACADE
SCALE: 1 : 100 (A3)

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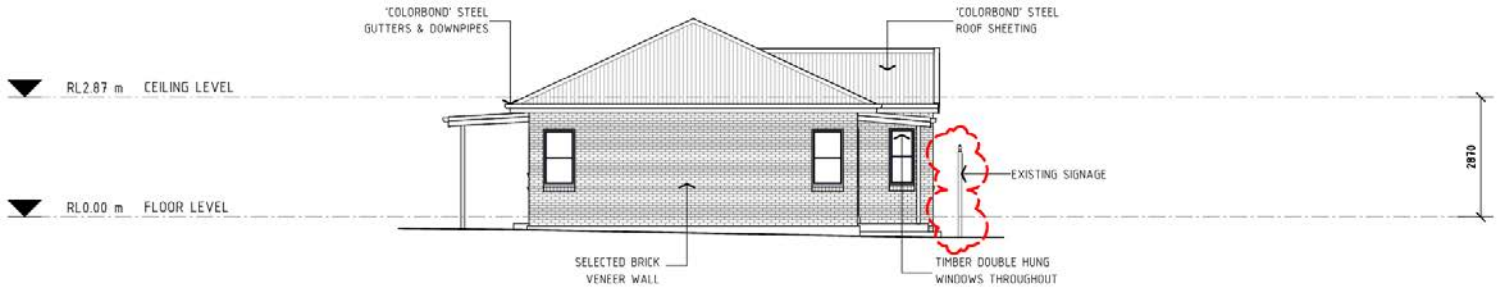

08 | ELEVATION: SOUTH FACADE
SCALE: 1 : 100 (A3)

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Client: THE ORIENTAL HOTEL
Project: PROPOSED CHANGE OF USE OF 8 LEWIS STREET MUDGEE
Drawing Title: ELEVATIONS 2/2

Rev	Date	Amendment
A	01.12.17	EXISTING HOUSE DRAWN
B	14.12.17	ISSUED FOR CONSULTANT REVIEW
C	09.01.18	ISSUED FOR DEVELOPMENT APPLICATION
D	04.03.18	REISSUED FOR DVELOPMENT APPLICATION

Design	Drawn	Check
OTHERS	CP	MJ

Sheet 05 of 05
Drawing Number: 28423- A05
Revision: D

PO BOX 156
MUDGEE NSW 2850

86 Market Street MUDGEE
109 Herbert Street GULGONG
77 Louee Street RYLSTONE

Ph: 1300 765 002 or (02) 6378 2850
Fax: (02) 6378 2815
email: council@midwestern.nsw.gov.au

Fire Safety Schedule

SECTION A. Development details

Unit/Street no.	Street name		
8	Lewis Street		
Mudgee		NSW	2850
		State	Postcode

SECTION B. Details of development application (DA)

Name of certifying authority	DA number/identifier	Date of DA
Mid-Western Regional Council	0185/2018	-

SECTION C. Statutory fire safety measures *(as set out under clause 166 EP&A Reg)*

No.	Measure	Particulars of measures *(including where the requirement for the measure is set out or described eg in building plans or in an alternative solution report)*	Currently implemented Yes/No	Proposed implementation Yes/No	Minimum performance standard
1	Portable Fire Extinguishers & Fire Blankets	Building Plans and clause 93 of the EP&A Regulation 2000	No	Yes	AS 2444 (2001)
2	Smoke Alarms & Evacuation Lighting	Building Plans and clause 93 of the EP&A Regulation 2000	No	Yes	BCA Vol 2, Part 3.7.2 & AS 3786 (1993)

SECTION D. Other fire safety measures

No.	Measure	Particulars of measures *(including where the requirement for the measure is set out or described eg in building plans or in an alternative solution report)*	Currently implemented Yes/No	Proposed implementation Yes/No	Minimum performance standard

SECTION E. Critical fire safety measures *(Measures listed above that must be assessed and certified at intervals of less than 12 months.)*

Measure number/letter	Intervals for supplementary fire safety statements

SECTION F. Certifying authority

Name	Ty Robson	Signature	
Accreditation No.	BPB 1241	Date	

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w www.barnson.com.au

date
6.03.2018

reference
28423-PL01_A

receiver
The General Manager
Mid-Western
Regional Council
Attn: Cameron Amos
86 Market Street
Mudgee NSW 2850

Dear Sir,

DA 0185/2018 – Change of Use – 8 Lewis Street, Mudgee | Response to Request for Further Information

I refer to your email dated 27 February 2018 requesting further information in relation to the above-mentioned Development Application (DA). Specifically, the following items are required to be addressed:

1. *Please address clause 6.7 Active street frontages of the Mid-Western Regional Local Environmental Plan 2012 (LEP). Please note – clause 5.3 development near zone boundaries may be of assistance in addressing clause 6.7 of the LEP;*
2. *The existing signage does not comply with the exempt provisions on State Environmental Planning Policy (Exempt and Complying Development Codes) 2008. Please include signage in the application and address Part 4.4 Signs of Mid-Western Regional Development Control Plan 2013.*

The following additional information is provided to address the above.

1. Active Street Frontages

The subject site is located on the edge of the B3 Commercial Core Zone under *Mid-Western Regional Local Environmental Plan 2012* (LEP) where it abuts the R3 Medium Density Residential Zone (refer **Figure 1**). The site is also located at the eastern edge of the area required to have active street frontages under the LEP (refer **Figure 2**).

Clause 6.7 of the LEP applies to land identified on the LEP mapping as "Active Street Frontage. The objective of this clause is to:

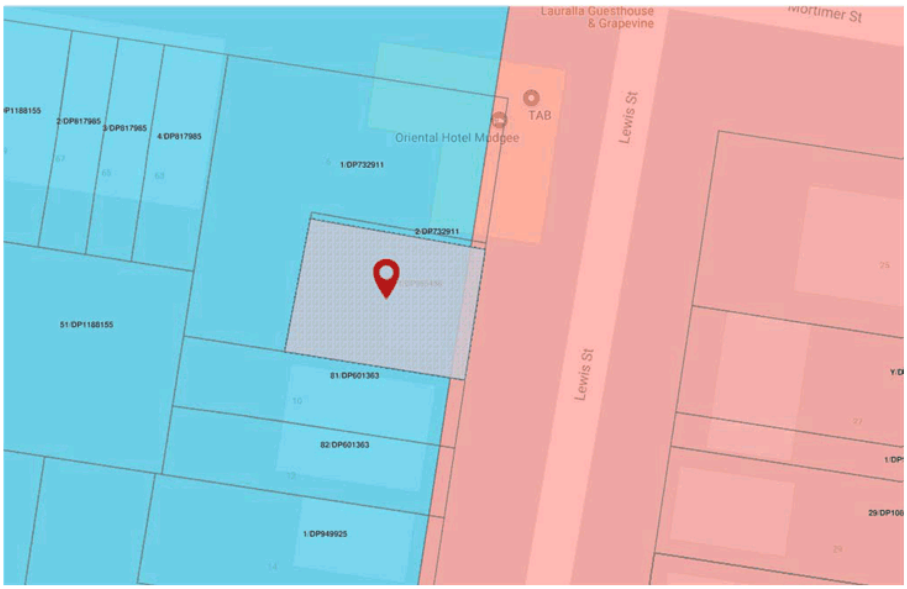
> *promote uses that attract pedestrian traffic along certain ground floor street frontages on land in Zone B3 Commercial Core.*

Clause 6.7(3) states:

> *Development consent must not be granted to the erection of a building, or a change of use of a building, on land to which this clause applies unless the consent authority is satisfied that the building will have an active street frontage after its erection or change of use.*

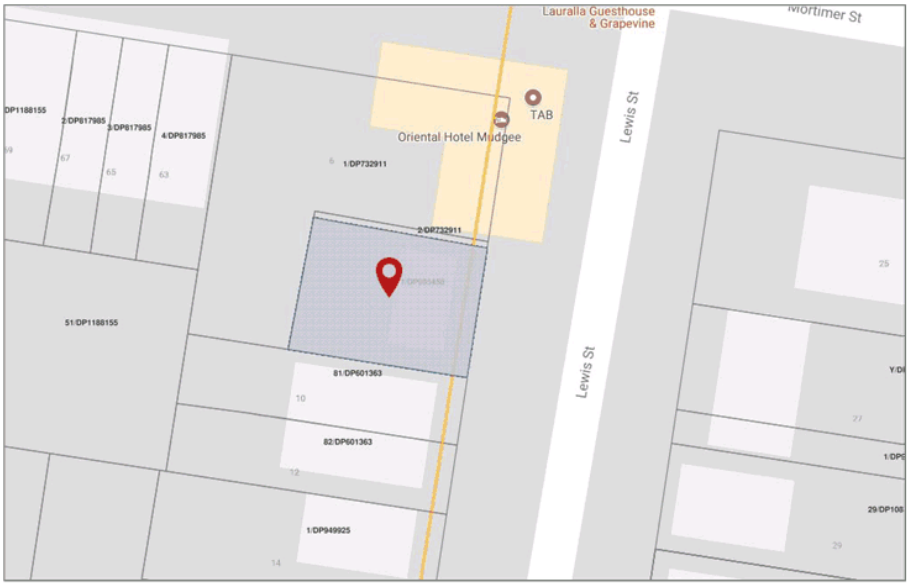
A building is considered to have an active street frontage if:

> *all premises on the ground floor of the building facing the street are used for the purposes of business premises or retail premises.*



Source: (NSW Planning & Environment, 2017)

Figure 1 – MWRLEP Zoning Map



Source: (NSW Planning & Environment, 2017)

Figure 2 – MWRLEP Active Street Frontages Map

Clause 5.3 of the LEP enables land uses that are not permissible on a parcel of land to be carried out on that parcel, if the land is within 50m of another land use zone. The subject site fits this category being within 50m of the R3 Medium Density Residential Zone. The objective of clause 5.3 is to

> *provide flexibility where the investigation of a site and its surroundings reveals that a use allowed on the other side of a zone boundary would enable a more logical and appropriate development of the site and be compatible with the planning objectives and land uses for the adjoining zone.*

Whilst the permissibility of the proposed land use is not in question (as it is permissible within the B3 Zone), clause 3.5 indicates that uses that are permissible because of its existence can therefore be considered appropriate, including their specific characteristics.

The prerequisites of using clause 3.5 are:

> *(a) the development is not inconsistent with the objectives for development in both zones, and*
>
> *(b) the carrying out of the development is desirable due to compatible land use planning, infrastructure capacity and other planning principles relating to the efficient and timely development of land.*

The objectives of the BE3 zone were addressed in relation to the proposed development in the Statement of Environmental Effects (SEE) submitted with the DA. The development is considered to be consistent with the objectives of the B3 zone. The objectives of the R3 Medium Density Zone are:

- *To provide for the housing needs of the community within a medium density residential environment.*
- *To provide a variety of housing types within a medium density residential environment.*
- *To enable other land uses that provide facilities or services to meet the day to day needs of residents.*
- *To encourage higher-density residential development that is sympathetic to and compatible with the existing character of the Mudgee Heritage Conservation Area.*

It can be seen (refer **Figure 3**) that the site and the land to the south of the site within the 'active street frontage' area is predominantly single dwelling houses. The development is considered to be consistent with the objectives of the R3 zone as is provides for a form of housing, albeit for tourist accommodation. The use is certainly considered compatible with both the residential and commercial zones.

The location of tourist accommodation in the city centre area is considered to provide for proper and orderly planning as it will locate tourists in the city centre area exposing them to local facilities and services. It will also reduce the need for motor vehicle transport, thus increasing foot traffic. The location of the proposed development is therefore considered to be desirable due to the compatibility of land use planning.

Whilst not providing specifically for a business premises or a retail premises, the use is considered to provide for improved activation of the street in terms of pedestrian traffic along the frontage when compared to a dwelling house. It is therefore considered to be consistent with the objective of clause 6.7 of the LEP.

Source: (NSW Government Spatial Services, 2017)

Figure 3 – Locality Aerial Photograph

2. Signage

It is proposed to include a business identification sign as part of the proposed development. Amended DA plans have been provided in **Attachment 1** to show the proposed sign. The sign has a signage panel 795mm x 600mm, which contains the business name and contact details (refer **Plate 1**). The signage panel is attached to two timber posts which have an overall height of 2.23m.

Signage is permissible with consent in both the B3 Commercial Core and R3 Medium Density Residential Zones. It is a discrete sign that identifies the building and provides contact details pertinent to the use for tourist accommodation. The sign is considered to be both consistent and complementary to the existing streetscape and character of the area. It would not have an adverse impact on the heritage significance of the conservation area. The sign is consistent with the provisions of the Mid-Western Regional Development Control Plan.

Plate 1 – Sign Details

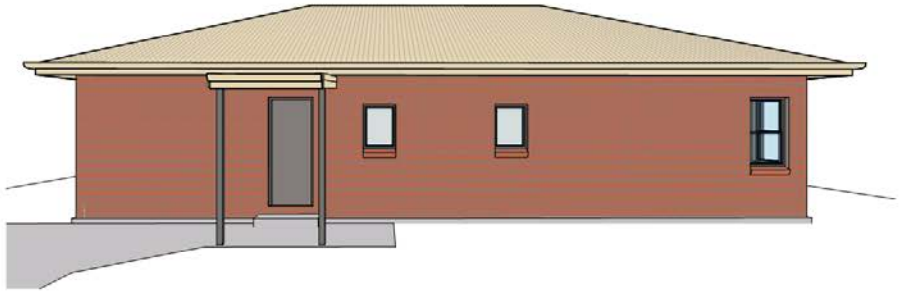
If you have any further enquiries regarding this matter, please contact the undersigned.

Yours faithfully

BARNSON PTY LTD

Erika Dawson
B. Urb. Reg. Plan. (Hons), BPAD Level 3 Accredited Practitioner, RPIA, MFPAA
Senior Town Planner

Attachment 1 – Revised DA Plans



PROPOSED AREA OF WORKS
8 LEWIC STREET MUDGEE
LOT 1 - DP995458

N

01 | LOCALITY PLAN
NOT TO SCALE

DRAWING SCHEDULE

28423-A01	3D PERSPECTIVES & LOCALITY PLAN
28423-A02	SITE PLAN
28423-A03	FLOOR PLAN
28423-A04	ELEVATIONS 1/2
28423-A05	ELEVATIONS 2/2

PROPOSED CHANGE OF USE | 8 LEWIS STREET MUDGEE NSW

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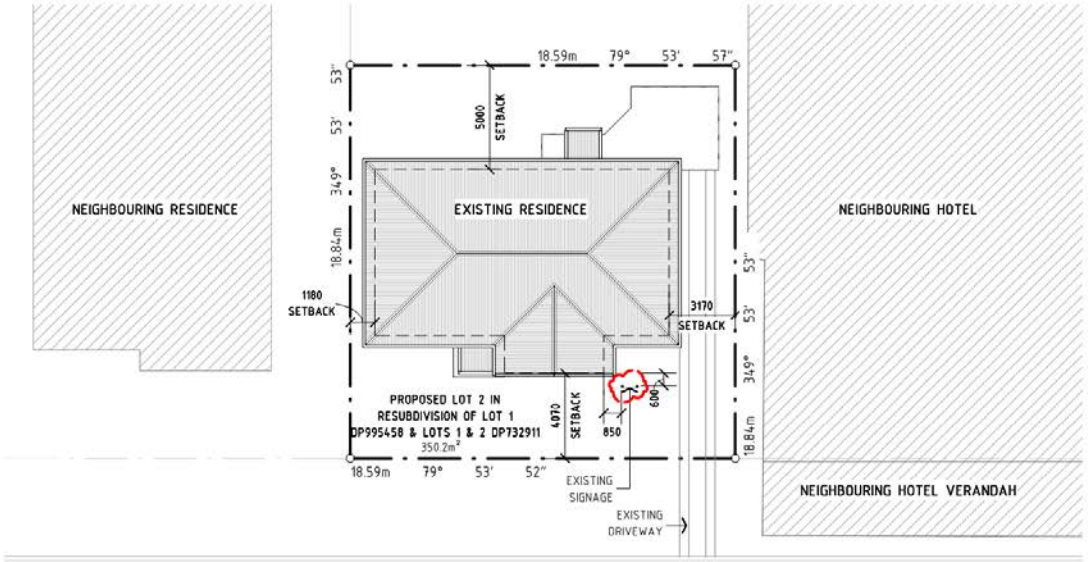
Client: THE ORIENTAL HOTEL
Project: PROPOSED CHANGE OF USE OF 8 LEWIS STREET MUDGEE
Drawing Title: 3D PERSPECTIVES & LOCALITY PLAN

Rev	Date	Amendment
A	01.12.17	EXISTING HOUSE DRAWN
B	14.12.17	ISSUED FOR CONSULTANT REVIEW
C	09.01.18	ISSUED FOR DEVELOPMENT APPLICATION
D	04.03.18	REISSUED FOR DVELOPMENT APPLICATION

Design: OTHERS | Drawn: CP | Check: MJ
Sheet 01 of 05
Drawing Number: 28423- A01
Revision: D



02 | SITE LAYOUT
SCALE: 1 : 200 (A3)

0 2000 4000 8000 16000

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Drawing Title: SITE PLAN

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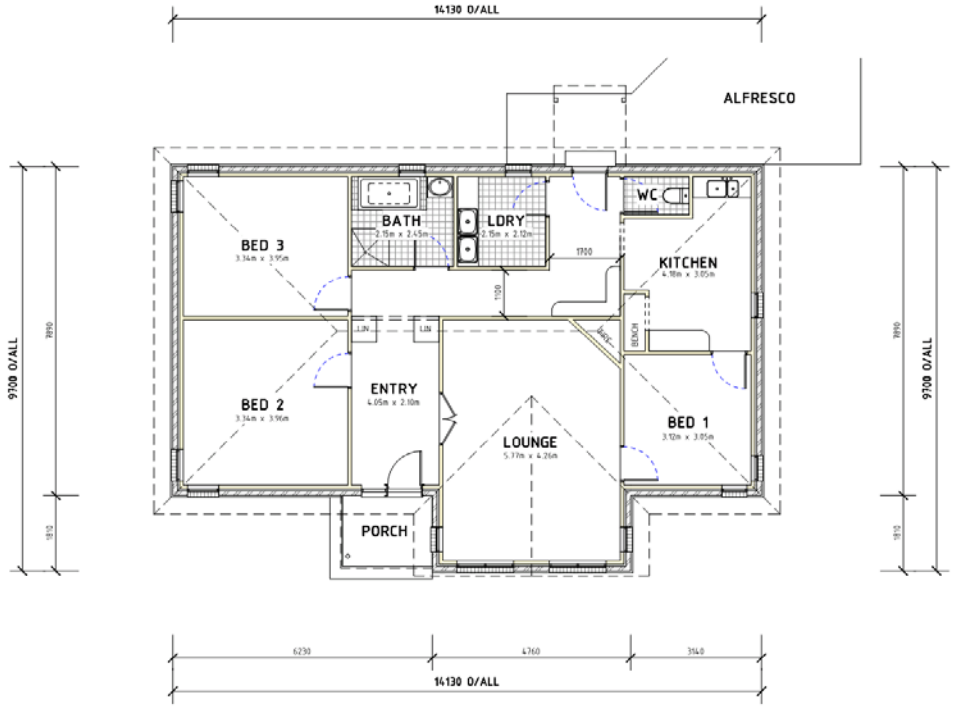
Design	Drawn	Check
OTHERS	CP	MJ

Sheet 02 of 05
Drawing Number: 28423- A02
Revision: D



03 | FLOOR LAYOUT
SCALE: 1 : 100 (A3)

0 1000 2000 4000 8000

N

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Client: THE ORIENTAL HOTEL
Project: PROPOSED CHANGE OF USE OF 8 LEWIS STREET MUDGEE
Drawing Title: FLOOR PLAN

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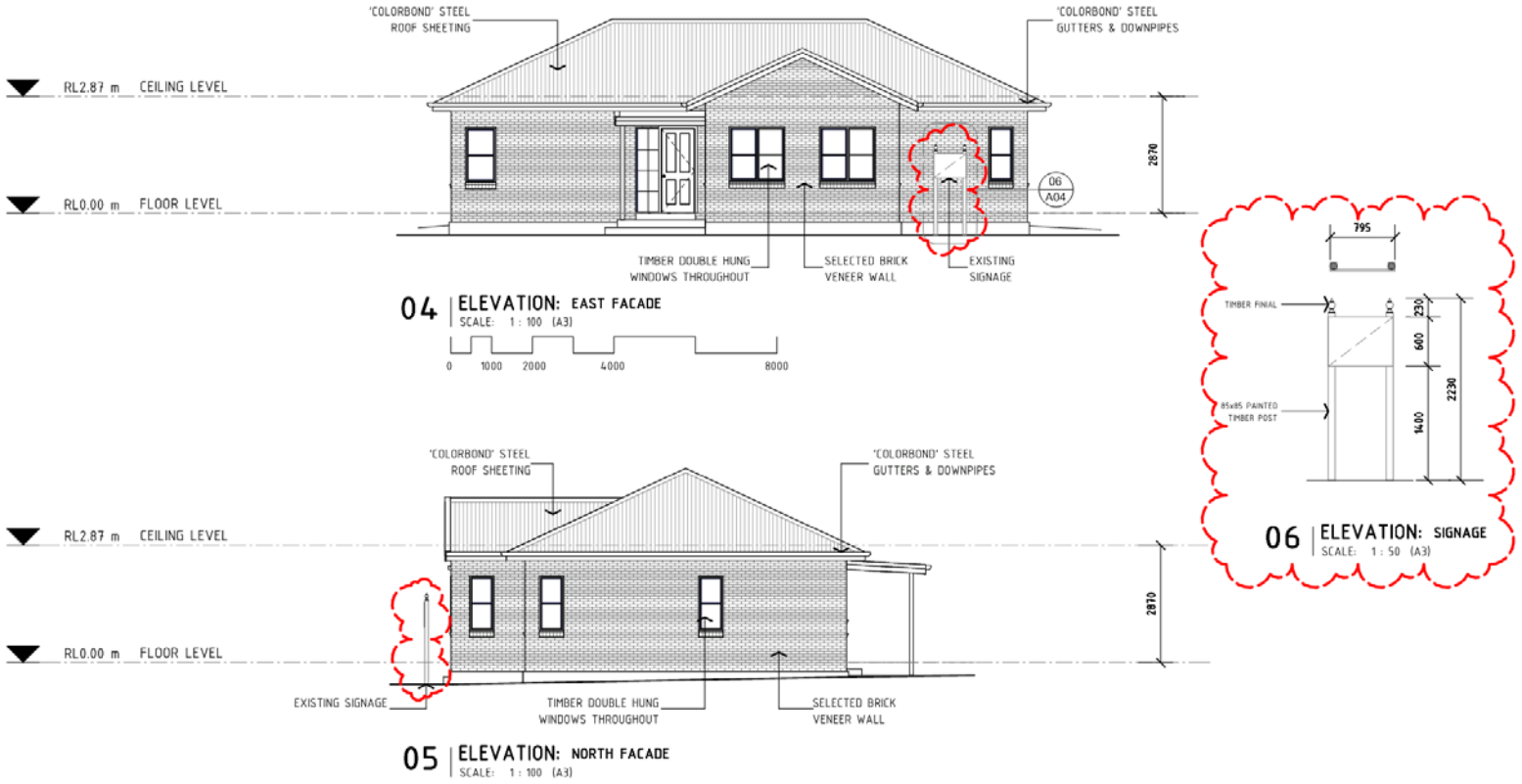
Sheet 03 of 05
Drawing Number: 28423- A03
Revision: D



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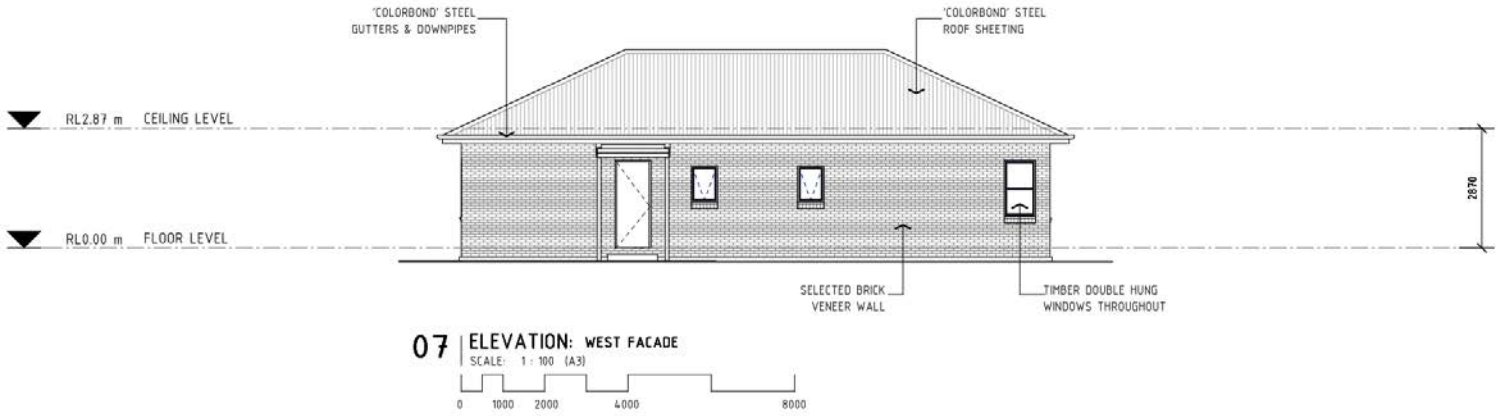
Project: PROPOSED CHANGE OF USE OF 8 LEWIS STREET MUDGEE
Drawing Title: ELEVATIONS 1/2

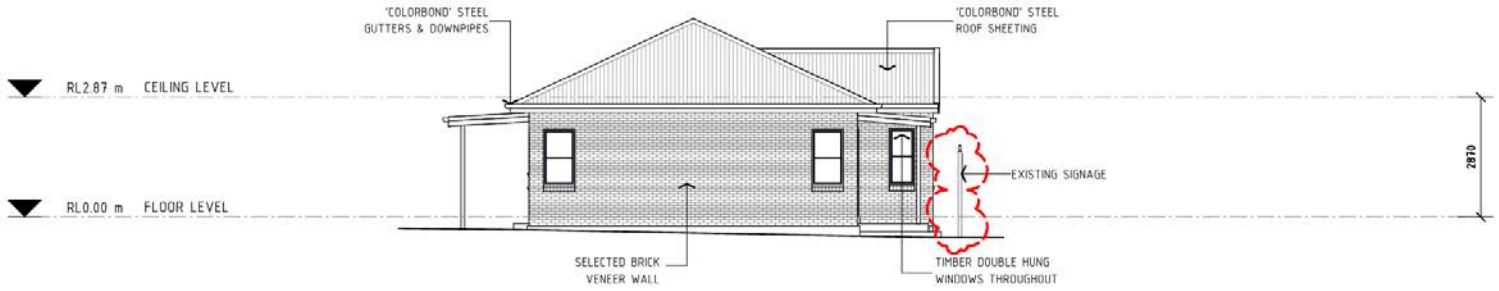
Rev	Date	Amendment
A	01.12.17	EXISTING HOUSE DRAWN
B	14.12.17	ISSUED FOR CONSULTANT REVIEW
C	09.01.18	ISSUED FOR DEVELOPMENT APPLICATION
D	04.03.18	REISSUED FOR DVELOPMENT APPLICATION

Design: OTHERS | Drawn: CP | Check: MJ
Sheet 04 of 05
Drawing Number: 28423- A04
Revision: D



07 | ELEVATION: WEST FACADE
SCALE: 1 : 100 (A3)

0 1000 2000 4000 8000



08 | ELEVATION: SOUTH FACADE
SCALE: 1 : 100 (A3)

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Drawing Title: ELEVATIONS 2/2

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A	01.12.17	EXISTING HOUSE DRAWN
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D	04.03.18	REISSUED FOR DVELOPMENT APPLICATION

Design	Drawn	Check
OTHERS	CP	MJ

Sheet 05 of 05
Drawing Number: 28423- A05
Revision: D

NSW GOVERNMENT Planning & Environment

15/09422

Mr Brad Cam
General Manager
Mid-Western Regional Council
PO Box 156
Mudgee NSW 22850

Attention: Elizabeth Densley, Manager Strategic Planning

Dear Mr Cam

Planning Proposal (PP_2015_MIDWR_003_00) to amend Mid-Western Regional LEP 2012 – part Lot 4 DP 1206488 Broadhead Road, Mudgee.

I am writing in response to Council's request for a Gateway determination under section 56(1) of the *Environmental Planning and Assessment Act* 1979 with respect to the planning proposal to reduce the minimum lot size from 12 hectares to 2 hectares on land at part Lot 4 DP 1206488 Broadhead Road, Mudgee.

As a delegate of the Minister for Planning, I have determined the planning proposal should proceed subject to the conditions in the attached Gateway determination (Attachment 1).

The Minister delegated his plan making powers to councils in October 2012. It is noted that Council has accepted this delegation. I have considered the nature of Council's planning proposal and have decided to issue authorisation for Council to exercise delegation to make this plan (Attachment 2).

The planning proposal has been considered and it is determined that there is merit in the proposal however consultation is required with the NSW Office of Water to determine an appropriate minimum lot size for the land having regard to water supply and impacts on groundwater. The result of this consultation may require the planning proposal to be amended. Accordingly consultation shall be carried out prior to exhibition of the planning proposal.

The amended Local Environmental Plan is to be finalised within 12 months of the week following the date of the Gateway determination. Council should also aim to commence the exhibition of the planning proposal as soon as possible. Council's request to draft and finalise the LEP should be made directly to Parliamentary Counsel's Office (parliamentary.counsel@pco.nsw.gov.au) 10 weeks prior to the projected publication date.

A copy of the request should be forwarded to the Department of Planning and Environment (westernregion@planning.nsw.gov.au) for administrative purposes.

Department of Planning & Environment
23-33 Bridge Street Sydney NSW 2000 | GPO Box 39 Sydney NSW 2001 | T 02 9228 6111 | F 02 9228 6445 | www.planning.nsw.gov.au

NSW GOVERNMENT | Planning & Environment

The amended LEP map and GIS data is to be uploaded to the Departments FTP site at ftp://lepup:up_upload@203.3.194.247/ and the map information emailed to pocgis@planning.nsw.gov.au and a copy to westernregion@planning.nsw.gov.au

The State Government is committed to reducing the time taken to complete LEPs by tailoring the steps in the process to the complexity of the proposal, and by providing clear and publically available justification for each plan at an early stage. In order to meet these commitments, the Minister may take action under section 54(2)(d) of the *EP&A Act* if the time frames outlines in this determination are not met.

In accordance with "A guide for the preparation of local environmental plans", Attachment 5 – Delegated plan making reporting template (Attachment 3) is enclosed for Council's information. Table 2 of the attachment is to be completed and forward to westernregion@planning.nsw.gov.au when requesting the planning proposal to be notified.

Should you have any queries in regard to this matter, I have arranged for Jessica Holland, Planning Officer to assist you. Ms Holland can be contacted on (02) 6841 2180.

Yours sincerely

a.w. albury 26-6-2015

Ashley Albury
General Manager, Western Region
Planning Services

NSW GOVERNMENT Planning & Environment

Gateway Determination

Planning Proposal (Department Ref: PP_2015_MIDWR_003_00): to amend the Mid-Western Regional LEP 2012 – amend minimum lot size on land at part Lot 4 DP 1206488 Broadhead Road, Mudgee.

I, the General Manager, Western Region at the Department of Planning and Environment as delegate of the Minister for Planning, have determined under section 56(2) of the EP&A Act that an amendment to the Mid-Western Regional Local Environmental Plan 2012 (LEP) to amend to the minimum lot size on land at part Lot 4 DP 1206488 Broadhead Road, Mudgee should proceed subject to the following conditions:

1. Prior to exhibition of the planning proposal consultation is required with the NSW Office of Water to determine an appropriate minimum lot size for the land having regard to water supply and impacts on groundwater.

   The planning proposal is not to be placed on exhibition until the Department is satisfied that the matter has been adequately addressed.

2. Community consultation is required under sections 56(2)(c) and 57 of the Environmental Planning and Assessment Act 1979 (EP&A Act) as follows:

   (a) The planning proposal is required to be made publicly available on exhibition for 28 days as described in A Guide to Preparing LEPs (Department of Planning and Infrastructure 2013).
   (b) The relevant planning authority must comply with the notice requirements for public exhibition of planning proposals and the specifications for material that must be made publicly available along with planning proposals as identified in section 5.5.2 of A Guide to Preparing LEPs.

3. The criteria adopted by Council and proposed to be included in the Mid-Western Regional Comprehensive Land Use Strategy regarding development of rural residential land with a minimum lot size of 2 hectares shall be amended to include consideration of a sustainable water supply. The criteria shall be made publicly available on exhibition with the planning proposal.

4. Consultation is required with the following State Agencies under Section 56 (2)(d) of the EP&A Act and/or to comply with the requirements of relevant section 117 Directions:

   (a) NSW Rural Fire Service
   (b) Department of Primary Industries - NSW Office of Water
   (c) Office of Environment and Heritage
   (d) National Parks and Wildlife Service

   Each public authority is to be provided with a copy of the planning proposal and any relevant supporting material, and given at least 21 days to comment on the planning proposal prior to community consultation.

NSW GOVERNMENT Planning & Environment

5. A public hearing is not required to be held into the matter by any person or body under section 56(2)(e) of the EP&A Act. This does not discharge Council from any obligation it may otherwise have to conduct a public hearing (for example, in response to a submission or if reclassifying land).

6. Prior to submission of the planning proposal under Section 59 of the EP&A Act, the LEP maps must be prepared and be compliant with the Department's 'Standard Technical Requirements for LEP maps'.

7. The timeframe for completing the LEP is to be 12 months from the week following the date of the Gateway determination.

Dated 26 day of June 2015.

A. u. ab

Ashley Albury
General Manager, Western Region
Planning Services

Delegate of the Minister for Planning

NSW GOVERNMENT Planning & Infrastructure

WRITTEN AUTHORISATION TO EXERCISE DELEGATION

Mid-Western Regional Council is authorised to exercise the functions of the Minister for Planning under section 59 of the *Environmental Planning and Assessment Act 1979* that are delegated to it by instrument of delegation dated 14 October 2012, in relation to the following planning proposal:

Number	Name
PP_2015_MIDWR_003_00	Amend the minimum lot size on land at part Lot 4 DP 1206488 Broadhead Road, Mudgee.

In exercising the Minister's functions under section 59, the Council must comply with the Department's "*A guide to preparing local environmental plans*" and "*A guide to preparing planning proposals*".

Dated 26 June 2015

Ashley Albury
General Manager, Western Region
Planning Services
Department of Planning and Environment

Delegate of the Minister of Planning

ATLAS
ENVIRONMENT & PLANNING

46 Market St
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Mudgee NSW 2850
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ABN: 79718726016

01 November 2017
Our Ref: A01-05 Consadine PProposal (vers002)

Attn: Planning and Development

The General Manager
Mid-Western Regional Council
PO BOX 86
MUDGEE NSW 2850

Dear Sir/Madam,

UPDATED PLANNING PROPOSAL TO ACHIEVE 2HA LOTS, PART LOT 4 DP1206488, BROADHEAD ROAD, SPRING FLAT

Please accept this proposal on behalf of the owner, Mr Peter Consadine. The property has been subject to recent development approval for subdivision. The subject land is part of Lot 4 DP1206488 (recently released DP for DA 367/2013 being the staged subdivision of Lot 1 DP773024 and Lot 9 DP1150667). This proposal refers to that part of the property that fronts Broadhead Road and Robertson Road, to the south of the approved development and adjoins existing developed 2ha lots.

Council originally provided support to the proposal in its ordinary meeting on 20 May 2015 with subsequent Gateway Determination received. In accordance with the first Gateway condition, the demonstration of a sustainable water supply to the satisfaction of DPI Water was key in progressing the proposal and several options were investigated. Where reticulated town water is not proven feasible, an alternative in this amended planning proposal is suggested. An option for sustainable waters is addressed through the water supply including rainwater catchments and bore supply proposed through a shared bore (likely community title arrangement). It is acknowledged if a community bore is not provided or other demonstrated sustainable water supply at DA stage, the lots will retain a 5ha min lot size.

The proposal has been amended to address and consolidate amendments to the proposal suitable for exhibition. The proposal has been amended as a result of consultation with DPE, MWRC, DPI Water and OEH, and to address the Gateway Conditions. Further, reference to Section 117 Direction 5.10 – Implementation of Regional Plans pertaining to the Central West and Orana Regional Plan has also been included which has been adopted since 2015 when first lodged.

This Planning Proposal relates to an amendment to *Mid-Western Regional Local Environmental Plan 2012*. As such the proposal is to be made publically available on exhibition. This amended proposal consolidates changes to the original Minespex proposal into a new document for ease of reference. Overall, the planning proposal has made consideration of any constraints to development and is not hindered by any environmental matter.

This land has merit for 2ha development as rural residential development, considering:

- The land is already zoned R5 Large Lot Residential.
- The proximity to Mudgee and distance to sealed road.
- Proximity to existing developed 2ha lots (adjoining to north).
- The topography and aspect of the land lending to views and varied residential development opportunities.
- The proposal would not take up valuable agricultural land (BSAL).
- The land is not constrained by significant environmental features.
- Elevation restricts servicing opportunities and the onsite disposal of wastewater is accomplished in a 2ha lot size.
- The land is separated from main roads, and will not compromise the aesthetic aspects of a main entrance to Mudgee town and suits this style of lifestyle lot.

The proposal aims to facilitate future subdivision of the land creating 2ha rural residential type lifestyle allotments in close vicinity to Mudgee township and existing similar development. The 2ha lifestyle lots are a distinctive living opportunity and not readily available near Mudgee. The style of dwelling associated with these sized un-serviced lots is typically a unique architectural dwelling utilising varied construction materials and is often a converted barn/shed used for the dwelling. The location of the proposed lots is separated from main roads, and will not compromise the aesthetic aspects of a main entrance to Mudgee town, (esp. from Sydney). The site will easily accommodate large lot residential housing in similar manner as the adjoining 2ha lots, whilst being considerate to environmentally sensitive areas. The development concept does not include connection to reticulated sewerage services and though services are being extended for DA367/2013, the terrain will restrict the likelihood of services being able to be physically provided. This aspect should provide certainty to Council regarding the long term integrity of the proposal for a long term 2ha lifestyle development.

The landowner has a proven track record in providing quality developments in Mudgee and wished to assure Council that this development would be pursued to fruition if supported. Should you require further information in relation to this matter, please do not hesitate to contact myself on 0439 724 980 or the owner, Mr Peter Consadine on 0401 258 904.

Yours faithfully

EMMA YULE

BAppSc, Grad Dip URP

Atlas Environment and Planning

THE PROPOSAL

PART 1 - Objectives and intended outcomes of the proposal

1.1 Statement of Intended outcomes

This planning proposal intends:

To enable the development of the land (approx. 50ha) within the property 'Fairview', for residential development, with lots of min. 2ha.

It is proposed to apply a 5ha minimum lot size to the subject land with a provision that lots may be further subdivided down to 2ha where a sustainable water supply is provided (such as roof rainwater catchments supplemented by a domestic bore or via a shared bore such as within a community title scheme).

This is consistent with the Council recommendation, May 2015 meeting:

"Council support the Planning Proposal in relation to part Lot 4 DP 1206488 Broadhead Road Mudgee;"

1.2 Details of the proposed development to be carried out – Concept Plan

The main purpose of this planning proposal is to make an amendment to the relevant LEP provisions, to enable a 2ha residential subdivision development. Future development is proposed that will involve the facilitation of at least 21 x 2ha. It is envisaged that the timing of this type of development, i.e. Large Lot Residential, could be in a 0-5 year timeframe. The development could be feasibly carried out as a community title scheme, with a community bore to supplement rainwater supply. The common areas within a Community Title scheme are known as the Association property and are comprised in lot 1 of the scheme. It is envisaged that the Lot 1 would contain a community bore and tank (and associated infrastructure). The minimum lot size would not apply to this Association land. Other lots with dwelling entitlement within the scheme would meet a minimum lot size of 2ha.

The proponent would request that the land's potential for '2ha lots' is considered at this time, addressing the growing demand identified in the Mudgee and Gulgong Urban Release Strategy (URS) for these lifestyle lots. The feasibility of the land to accommodate 2ha lot sizes in a subdivision layout is explored in a preliminary concept plan prepared by Jabek Pty Ltd. The layout demonstrates that ridge lines can be avoided for future dwellings, watercourses and slopes provide opportunities for views and varied development opportunities. (Refer to **Attachment 1**).

A concept plan is included to demonstrate that the future development of the land into 2ha lots is a feasible development concept. The preliminary concept sketch has excluded watercourses to demonstrate developable land has been included in each future lot. The layout uses the nominal lot size of 100m x 200m (2ha) to achieve a road layout that would form the basis of a future subdivision. Alternative development layouts exist for the

land, however this concept provides a development option that is considerate to the topography and achieves lots that have appropriate widths and frontages.

Topographically this land is ideal for 2ha lots as the aspect lends itself for physical separation and varied views. The land to be developed involves mapped visually sensitive land in the Mid-Western Regional LEP 2012. The future subdivision can easily adopt boundaries to enable dwelling sites away from ridge lines. The preliminary concept plan prepared by Jabek Pty Ltd depicts contours. This area will yield approximately 21 x 2ha lots.

The concept plan has demonstrated that the land can provide housing in a rural setting preserving scenic quality, whilst being considerate to environmentally sensitive areas. The connecting roads are being upgraded from Mudgee with the construction of the nearby subdivision requirements. The development of this land makes good use of infrastructure outlay. This preliminary concept layout is one option for development. Further survey and investigation may indicate alternative layouts and estimated yields. A diagrammatic overview of the proposal is depicted below and in **Attachment 1 - Concept Plan**.

The concept plan amended for exhibition demonstrates that the lot layout proposed includes suitable building envelopes with adequate on-site effluent disposal areas. The plan demonstrates that opportunities exist for a community bore to be sited on the land in accordance with DPI-Water buffer distances for water supply works approvals. The residue of Lot 4 DP 1206488 would be able to be utilised if needed for the location of a new bore and be part of the community title. The required buffers to the existing bore would require a shuffle to the proposed lot boundaries to ensure appropriate distances are met from effluent disposal areas. When a future reticulated community bore system is designed and the lot layout finalised the overall lot yield may change, however the loop road is located to the topography and would best service a 2ha subdivision.

This preliminary concept layout demonstrates through the dimensions and approximate lots sizes adopted, the potential for future residential development. The original diagrammatic overview of the proposal is depicted below in **Figure 1** and provided in **Attachment 1**.

Figure 1: Concept Plan (nts)

PART 2 - Explanation of Provisions

One option to achieve the objectives and intended outcomes as described in Part 1 of this proposal, is through the subject land to retain existing R5 Large Lot Residential zoning, with a corresponding amendment to the lot size map as relevant.

This may be achieved by the following:

1. Lot Size Map (Sheet LSZ_006E) to be amended to reflect change minimum lot size to 2ha as related to the concept.

    a. A 5ha minimum is applied to the subject land with a provision that lots may be further subdivided to a 2ha minimum where a sustainable water supply is demonstrated (e.g.: community bore).

PART 3 - Justification

This section sets out the reasoning for the proposed changes to the LEP, taking into consideration the intended outcomes and objectives outlined. The following questions are based on requirements contained in NSW Department of Planning and Environment *A guide to preparing planning proposals* (August 2016). This document aims to provide details sufficient to allow for exhibition.

SECTION A - Need for the Planning Proposal

Q.1. Is the planning proposal the result of any strategic study or report?

YES.

The Urban Release Strategy references land the subject of other Planning Proposals received and that were not progressed by Council, awaiting the finalisation of the URS. The intention of this planning proposal is to ensure that the consideration of this land put forward in Broadhead Road is given due consideration and compared to other land addressed in the URS, and similar planning proposals, as they are addressed further now that the URS has been adopted by Council.

The URS gap analysis "found insufficient land zoned in Mudgee's urban release areas to meet long term 20 year demand for standard residential lots (450-900sqm) and 2ha lots."pg 82. The inclusion of this land for 2ha lots will not create a significant infrastructure outlay. This planning proposal presents an option to develop land without town services and addresses the needs for 2 ha lots.

Q.2. Is the planning proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

YES.

It is considered that the Planning Proposal is the best means of achieving the intended outcomes. Alternative avenues under the current available LEP provisions have been considered that may achieve the outcomes of the proposal; however no options other than LEP amendment have been identified. In this case, a lot size map amendment is supported as a logical outcome to achieve the objectives of the proposal. The planning proposal should also be reflected in updates to the CLUS and URS.

SECTION B - Relationship to the strategic planning framework

Q.3. Is the planning proposal consistent with the objectives and actions of the applicable regional or sub-regional strategy?

In June 2014 (prior to the Gateway Determination) the NSW Government released new draft regional boundaries for NSW. The boundaries are now finalised for each region, and form the basis for a new generation of strategic plans called Regional Growth Plans. The Mid-Western Regional LGA falls within the 'Central West and Orana' region.

The NSW Government released the Central West and Orana Regional Plan (adopted in June 2017). The Regional Growth Plans generally identify areas suitable for housing and employment expansion in the applicable region. The proposal is consistent with the identified *Goal 4 – Strong Communities and liveable places that cater for the region's changing population*.

Mudgee, Parkes and Lithgow are identified as important regional centres (supporting the regional cities, Dubbo, Bathurst and Orange). No inconsistencies have been identified with the specific actions identified in the Plan. In particular, Direction 25, and Direction 28 refer to housing choice and rural residential development.

Action 4.3.1 is noted: *ACTION 4.3.1 Deliver enabling planning controls that facilitate an increased range of housing choices, including infill housing close to existing jobs and services.* This action and the principles of the URS are similar in this regard.

No specific mapping for Mudgee as a regional centre has been included in the Central West and Orana Regional Plan. The potential for regional implications is minimal, with the development supportive of the goal 4 to promote dynamic, vibrant and healthy communities.

Direction 28: *Manage rural residential development* is considered also. The Plan suggests a consistent approach to the identification of suitable location for new rural residential development. The Gateway Determination condition 2, requires the simultaneous exhibition of criteria for 2ha rural residential development adopted by MWRC to be available on exhibition with this proposal. The criteria to be included in the Comprehensive Land Use Strategy is consistent with the Regional Plan.

The specific actions for this direction are referred below:

ACTION 28.1 Locate new rural residential areas:

- *close to existing urban settlements to maximise the efficient use of existing infrastructure and services, including roads, water, sewer and waste services, and social and community infrastructure;*
- *to avoid and minimise the potential for land use conflicts with productive, zoned agricultural land and natural resources; and*
- *to avoid areas of high environmental, cultural or heritage significance, regionally important agricultural land or areas affected by natural hazards.*

The subject land being in close vicinity to existing residential development within the Mudgee town boundary supports the connectivity and good future accessibility to the town facilities (including social and community infrastructure) (adjacent Broadview Estate- residential development on Broadhead Road with lots of min 2000m^2 and existing developed 2ha lots in Robertson Road).

ACTION 28.2 Enable new rural residential development only where it has been identified in a local housing strategy prepared by Council and approved by the Department of Planning and Environment.

MWRC has supported the proposed LEP amendment and additional criteria for 2ha rural residential development is included in the CLUS amendment. The Mudgee and Gulgong Urban Release Strategy (URS) indicates the need for this style of housing.

ACTION 28.3 Manage land use conflict that can result from cumulative impacts of successive development decisions.

This land is already appropriately zoned for rural residential development. The style of rural residential development is compatible in the setting and is consistent with adjoining developed land. The land is not constrained by significant environmental factors and where natural drainage lines are apparent buffers have been included and proposed future lots would be increased in size to accommodate future development.

a. Does the proposal have strategic merit?

YES.

The planning proposal has strategic merit, as:

- The development site has been identified as a short term opportunity area for rural lifestyle opportunities in the CLUS.
- This planning proposal presents an option to develop land without reticulated services that addresses the demand for 2ha lots identified in the URS.
- The land adjoins developed 2ha development.
- The site utilises land that is ideal topographically for this style of development and is a logical extension of developed areas.
- The proposal is able to meet timing requirements for land release.
- The proposal will not cause substantial resource outlay by the Council/ratepayer.
- The realization of the development does not depend on the prior development of other land.
- The proposal is consistent with the guiding principles developed in the URS to ensure future residential land release is sustainable, economic, and provides positive environmental and social outcomes for the LGA.
- Potential environmental constraints to development are identified and overcome in design or can be further investigated at DA stage.

- Potential environmental constraints to development are identified and overcome in design or can be further investigated at DA stage.

The merit is demonstrated by the benefits the land provides in providing an option in particular for 2ha development that are consistent with the Mudgee and Gulgong URS. This planning proposal presents an option to develop land without reticulated services that addresses the demand identified. The scale of the proposed lot size amendment will also not risk an 'over supply' of land into the market.

b. Does the proposal have site-specific merit and is it compatible with the surrounding land uses, having regard to the following:

The natural environment; the existing uses, approved uses, and likely future uses in vicinity to the proposal; the services and infrastructure that are or will be available to meet the demands arising from the proposal and any proposed financial arrangements for infrastructure provision.

The suitability for 2ha lots is consistent with the CLUS findings, the site has merit for 2ha development as un-serviced lifestyle development, considering:

- The proximity to Mudgee and distance to sealed road.
- Proximity to existing developed 2ha lots (adjoining to north).
- The topography and aspect of the land lending to views and varied residential development opportunities.
- The proposal would not take up prime agricultural land.
- The land is not constrained by significant environmental features.
- Onsite disposal of wastewater is accomplished in a 2ha lot size where buffers are provided to drainage lines.

The land is approximately 2.3km south of Lions Drive along Broadhead Road in South Mudgee. This road was upgraded and sealed with subdivision works associated with DA0367/2013. The proximity to Mudgee on sealed road is consistent with the convenient lifestyle sought for such 2ha lots. The existing developed 2ha lots have access from Robertson Road. The concept plan includes one (1) additional lot that could be accessed from this road frontage. The watercourse, Sawpit Gully, provides an obstacle to further access from this road, and the concept plan has sought to avoid any disturbances to riparian corridors. As such a loop road can be developed off Broadhead Road, and new road and any upgrade can be sited to avoid existing treed areas.

The proposed development site does not take up BSAL mapped land (biophysical strategic agricultural land). The site has been used for grazing in the past and is cleared of significant native vegetation. Watercourses & gullies have been located on the concept plan and these have been excluded from the concept plan lot areas for yield estimation purposes. The photos below depict the land.

The majority of the land is **not** affected by Groundwater Vulnerability mapping (see **Figure 2** below). The MWR LEP 2012 has provisions to ensure measures would be engaged that ensure good design, and effluent disposal through a water cycle management plan be carried out within a development application process. No issue is raised with regard to the ability of the land to accommodate onsite disposal of wastewater within a 2ha lot size. Mapped watercourse areas are avoided in the Concept Plan.

The land is not constrained by significant environmental features. The land is not mapped flood prone land. The land is partially mapped as bushfire prone land and assessment would be required as part of a Development Application process, however due to the past clearing this is not envisaged to hinder 2ha lots in the future.

Plate 1- View to the west from Broadhead Road of the approx. location of Lot 1 and entry into new road within Concept Plan

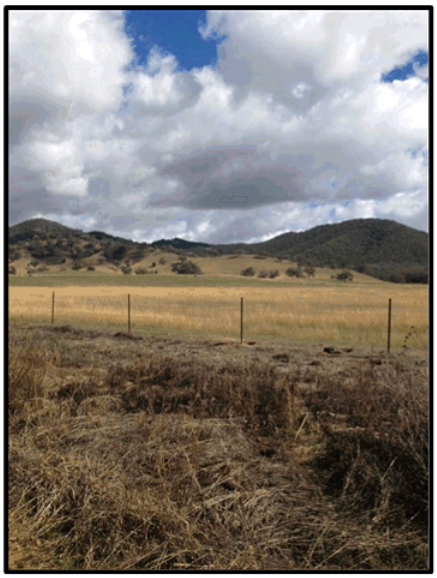


Plate 2 – View towards location of Gully near Lot 18 in Concept Plan. Treed hills in background are of scenic importance for Mudgee

Plate 3 - View at location of existing paper road being approx. location of Lots 19 & 20 in Concept Plan

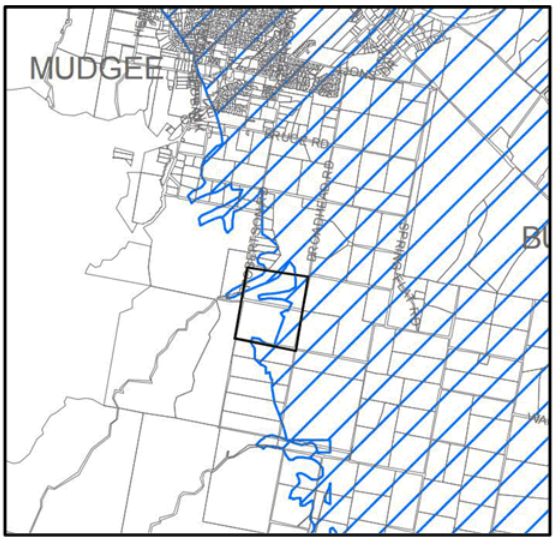


Figure 2: Excerpt Groundwater Vulnerability Map - Sheet GRV_006, MWRLEP 2012

The land will have strategic contiguity with existing developed 2ha lots and current developing 2000m^2 residential lots in Broadhead Road. The development of this land will maximise the use of existing road infrastructure and utilities in the long term minimising the costs to consumers and Council and financial risk to the rate payer (aligned to guiding principles in URS).

The topography of the land lends itself well to the style of lifestyle lot proposed. The land is located approx. 1.2km to the east of Avisford Nature Reserve and the associated treed hills within the Reserve and privately owned adjoining land are a significant visual element forming part of the unique character of Mudgee. A minimum of 2ha is suitable in the locality considering the mapping in the LEP as 'visually sensitive land', which incorporates the elevated areas. The aspect and building sites within lots can be further explored after survey within a development application process.

This planning proposal provides a site suitable for development which supports conservation of the significant visual elements that contribute to the character of Mudgee. Such as with the elevated land, the rural character of the main entry to Mudgee town is not affected by this development. The location within the already cleared, lower slopes and foothills to the treed hill backdrop to Mudgee is considered a positive attribute for 2ha style development. The concept lot layout has provided opportunities for dwelling sites that would be balanced in the visual setting without development on ridges. The topographic attributes can be considered further in a subdivision application and is not envisaged to be restrictive. The undulating terrain is ideal to create blocks with views and create a lifestyle and residential choice unique to Mudgee.

Q.4. Is the proposal consistent with Council's Local Strategy or other local strategic plan?

YES.

However, no strategy directly explores a constraints analysis for 2ha lifestyle lots surrounding Mudgee, though the URS identifies a clear demand for such lots.

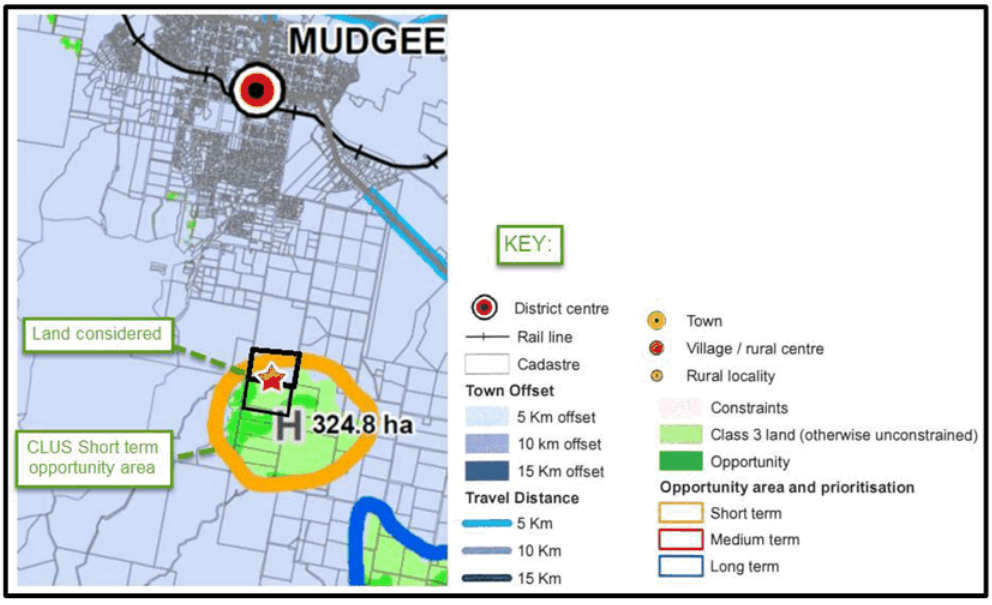
The Comprehensive Land Use Strategy (CLUS) forms the current basis of Council policy and constraints assessment. The CLUS assessed suitable land for lifestyle allotments however a minimum of 12ha was adopted as the minimum lot size, with 2ha lots located near to Mudgee on the Town Structure Plan. A lack of current available land for 2ha lots and with extension of reticulated services leading to development of smaller lot sizes in former large lot areas is apparent around Mudgee. The CLUS encourages opportunities for housing diversity in the Mid-Western Regional LGA. As an addendum to the CLUS was adopted by Council applying a criteria regarding development with a minimum lot size of 2 hectares. The criteria are considered below.

The Mudgee and Gulgong Urban Release Strategy (URS) provides guidance on the timing, location and type of future residential development. The URS supports that there is a growing demand and limited supply of large residential lots of 2ha. The proposal allows for release of land including 21 x 2ha lots. This planning proposal includes a concept for future rural residential development which will have dimensions appropriate to incorporate building sites with onsite effluent disposal areas with required buffers to neighbouring boundaries.

Mid-Western Regional Comprehensive Land Use Strategy (CLUS)

The Mid-Western Regional Council adopted the CLUS in 2010, which aimed to provide clear direction for growth for the next 15-20 years. The Strategy has informed the comprehensive MWRLEP and provides a context for future land use. This planning proposal is consistent with the CLUS as it makes the best use of available infrastructure and land within the existing settlement area.

The *"Mid-Western Regional Comprehensive Land Use Strategy"*, prepared by Parsons Brinckerhoff (August 2010) (CLUS) refers to the subject land as a lifestyle opportunity area. This is reflected by the current R5 Large Lot Residential zoning. The subject land falls within Sector H located to the South of Mudgee, identified as a 'Short Term' opportunity area. The CLUS states that *"These opportunity areas should be prioritised for rural lifestyle development and investigated for release in the short term. The minimum lot size for these opportunity areas should generally be 12 hectares, although Council may consider 2-6hectares as identified on the Town Structure Map"* (page 67).



Excerpt CLUS Figure 4-3 Rural Lifestyle Opportunities – 15km offset are surrounding Mudgee

The site is consistent with the Mudgee Town Structure Plan in that the proposal acknowledges the planned development extent formed by Spring Flat Road as mapped in the CLUS. Also the land is identified as within the Opportunity area prioritised for the short term for rural lifestyle opportunities (as identified above). The

subject land was earmarked for 12ha lots in 2010 and the LEP provisions reflect this. The large lot residential opportunities identified on the Mudgee Town Structure Plan however do not provide many opportunities for 2ha development, with most vacant land, with reference to Clause 4.1 (3A), being able to be subdivided to 2000m^2 or 4000m^2 with connection to reticulated services (e.g.: opposite AREC on Ulan Road, Bombira subdivision, and the developed Hill Sixty subdivision). Constraints analysis specifically for 2ha lots was not included in the CLUS.

Current demand for 2ha lots cannot be met from current zoned areas or areas identified in the CLUS for 2ha lots. Reference to land identified as suitable for lifestyle opportunity areas in the CLUS and the constraints assessment undertaken is a valuable planning reference for this proposal. The opportunity areas were prioritised for rural lifestyle development and investigated for constraint, so it is assumed that the CLUS provides a good assessment of sites that would be suitable for lifestyle developments, today. The landowner believes this land should be considered for development prior to inclusion of additional land referred to in other planning proposals under consideration by Council that are inconsistent with the opportunity and constraints assessment already undertaken in the CLUS.

With this in mind, the planning proposal has further stemmed from the recommendations for Mudgee's Urban Release areas as identified within *"Mudgee and Gulgong Urban Release Strategy"*, prepared for Mid-Western Regional Council by Hill PDA Consulting December 2014 (URS). The development of this land is aligned to the 'Guiding Principles' of the Strategy. The URS outlines a need for 2ha rural residential type opportunities, which this proposal will serve to address in part.

Gap analysis found insufficient land zoned in Mudgee's urban release areas to meet long term 20 year demand for general residential lots (450-1000sqm) and 2ha lots. The analysis in the URS concluded that further land may need to be released in the long term to accommodate demand in the 10-20 year period if high levels of demand for 2ha lots were sustained. This proposal provides Council with an option to address this demand based on identified lifestyle opportunities.

The planning proposal would seek amendment to the LEP, whereby the land would be considered for living opportunities of 2ha minimum rather than the current 12ha minimum lot size. The site is located close to Mudgee Town and is a logical continuation of existing 2ha lot development adjoining to the north. The land is suitable for consideration as the existing adjoining 2ha lots are testament to the success of the type of living arrangement at the locality.

The land would be able to fulfil the staging of release i.e. 0-5 year estimate to satisfy approximately half of the recommended number of additional lots in accordance with the URS findings. (Note the URS includes Urban Release Area 22 (Burrundulla/Spring Flat) for 2ha development, which has not been endorsed by MWRC (this land was included by Hill PDA as a planning proposal known at the time). A release of 49 lots in 0-5 years and a further 49 lots in 5-10 years was recommended in relation to a new release area). Comparatively, this proposal will supply approximately 21 x 2ha lots in the 0-5 year stage.

The planning proposal provides an opportunity to utilise the land which is currently zoned R5 and suited to lower density residential subdivision, being capable of providing diversity in lot sizes and staged release of land.

The following attributes support the planning proposal:

Ownership:

The land is not constrained by involvement of multiple landowners and staging future development is feasibly implemented at the site.

Servicing:

The property offers land that can supply large lots (with sustainable water supply) with the majority of the land not mapped as groundwater vulnerable. Utility and telecommunication services are nearby with existing 2ha development and extension of services to 'Broadview Estate'.

Road Access:

The land has good road linkages. With frontage to Broadhead and Robertson Road, there are several opportunities to safely provide a new road. The close vicinity of the Mudgee CBD via sealed road increases the attractiveness for such residential development. The site is approximately 13mins drive to the Mudgee Post Office.

Environmental Aspects:

The topography is conducive to un-serviced development, capable of supporting lots of minimum 2ha. The land lends itself to good yields which will provide good return on investment in road infrastructure. Elevated building sites with good views are a unique offering in this location. Bushfire risk and potential for Aboriginal heritage would need further consideration at a DA stage.

A condition of the Gateway Determination required Council to amend the Comprehensive Land Use Strategy with the inclusion of criteria for rural residential development with a minimum area of 2 hectares. After consultation with Department of Planning and Environment, Council exhibited draft criteria in 2016 and adopted in February 2017. MWRC Council report states that the intention of adopting the criteria, was to provide an interim measure to ensure that all 2 hectare rural residential development opportunities may be captured, until the Comprehensive Land Use Strategy is reviewed to strategically identify land for rural residential opportunities, with a 2 hectare minimum.

These criteria are addressed below with reference to the proposal.

The following criteria must be applied for identification of Rural Residential Development with a two hectare minimum in the Mid-Western regional Local Government area.

The land:

1. **Can be managed to avoid land use conflict.**

   Rural residential development should have regard to the surrounding agricultural land use and must provide a buffer to agricultural land.

The land has historically been used for grazing. The lots are of a size to allow for future housing to be located at suitable separation distances from ongoing agricultural activities. The proposal can be adopted with a legal restriction or zoning buffer to be created at the interface with the rural zoned land to the south if required. Rural residential and large lot residential development to the north does not require buffers.

2. Is unconstrained by flooding, as it is above the flood planning level of the 1 in 100 ARI

The area is not affected by flooding and has unconstrained flood free access out of the property and/or locality.

The land is unconstrained by flooding. Riparian buffers are depicted on the concept plan as per widths in current DPI-Water guidelines.

3. Can be connected to the existing road network by sealed road access.

The area can be connected to the existing sealed road network by sealed road access and is fully serviced by a sealed road.

The land can be connected to the existing sealed road network with some work to Broadhead Road seal expected.

4. Is not visually intrusive

There is no impact on the visual amenity or sensitive corridors identified in the CLUS on the Mudgee Town Structure Plan.

The site is not visually intrusive or likely to impact on any significant vista.

5. Will not undermine future residential land opportunities

It should be located on land that is not, or unlikely to be suitable for general residential land at some point in the future.

The subject land is outside the future urban investigation areas (and Future Residential Growth Areas as mapped in the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007).* The proposal does not undermine future residential land opportunities but is compatible development being further supportive of infrastructure outlay.

6. Will not adversely impact on the groundwater system

Mudgee is fully within an area identified by the NSW Department of Primary Industries – Water as being significant in terms of groundwater vulnerability. Any development, and in particular un-serviced development needs to demonstrate that it will not adversely impact on the groundwater system.

A site and soil evaluation for onsite wastewater management for the future proposed subdivision would be appropriate at the DA stage as approx. 25% of the land is mapped as groundwater vulnerable.
With adequate land area available for the required disposal areas, no adverse impact on the groundwater system in the future is identified.

With regard to water supply, the level of reliance on groundwater to supplement rainwater (roof catchments) for water supply is discussed further below.

7. Can be justified in terms of supply and demand

Reference should be made to the Urban Release Strategy in terms of the likely anticipated demand (excluding land zoned but having a 2,000-4,000 square metre option subject to servicing).

This proposed development is a response to the demand for the style of development and residential living opportunity. The relationship to the recorded demand in the URS has been discussed in section A Q1 of this planning proposal and acknowledged by MWRC by the previous support of the proposal and subsequent Gateway Determination. The development can be justified in terms of supply and demand. The URS refers to identification of insufficient land zoned in Mudgee's urban release areas to meet long term need for 2ha lots. A supply and demand analysis for Mudgee in the URS identified that land supply for 2ha residential lots would be exhausted after just 9 years. This proposal will be able to proceed without reliance of other land to be developed prior to this land becoming available and is suitable for meeting the timing of estimated land requirements.

8. Can be managed to reduce bushfire hazard

Bushfire hazard in the area can be appropriately managed or reduced.

The land is partially within a mapped bushfire prone area (cat 2). However the whole site is outside the bushfire hazard area. Development is able to proceed with appropriate fire protection measures for rural dwellings including asset protection zones and adequate water storage for fire-fighting.

9. Should avoid Biophysical Strategic Agricultural Land

Reference should be made to BSAL mapping which identifies the existence of any BSAL at the site of potential development.

The NSW Government mapped Biophysical Strategic Agricultural land. The maps adopted are made available on the official NSW legislation website in connection with the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 Policy. The land is not affected by BSAL mapping.

10. Has access to sustainable water supply.

The proposed lot must demonstrate the provision of a sustainable water supply. A sustainable water supply can be achieved by various means including the provision of reticulated water, roof catchment or accessing water from a river, lake or aquifer in accordance with the Water Management Act 2000, Department of Primary Industries – Water 'How much water do I need for my rural property' provides on methodology to calculate a required supply.

It is proposed that a sustainable water supply can be provided. The finer details can be demonstrated for the future rural residential subdivision at the DA stage, water supply is most likely to be through the roof water catchment and a supplementary supply provided through a community bore.

The landowner provided records of bore test for existing bore (this bore or a new bore within the same aquifer could be utilised as a future community bore). This historic bore is currently sought to be licenced. The bore is located within Lot 2 of the concept plan near existing residence. The bore flow test result is attached to this proposal. The results show yield at a rate of 2640L/hr (See **Attachment 2 -** details prepared by Corbett Pumps and Irrigations).

Calculation for the assumed water demand have been based on the DPI – Water guidelines (see below).

Calculation of supply with reference to **Department of Primary Industries – Water 'How much water do I need for my rural property':**

STOCK WATER	**Description**	**1. Consumption rate (m^3 / head)**	**2. Your stock numbers**	**1. x 2. = Sub total m^3**
Zero stock for rural residential lots		0	0	0
DOMESTIC WATER	**Description**	**m^3 per person or area**	**Persons / area**	**Sub total m^3**
Household	House – without septic	51	-	-
	House – with septic	64	4	256
	Septic only	13	-	-
House Garden	For each 1000 m^2 or 0.1 ha			
	Coastal / Tablelands	200	1000m^2	200
	Slopes	400		-
	Plains	600		-
	Western	800		-
FARMING		**m^3/ unit**	**No of Units**	**Sub total m^3**
Dairy, Piggery, Dip Crop Spraying	0	0	-	0
Fire Fighting	Based on a single event: - Buildings per m^2	0.125	300	37.6
	- Grass per m^2	0.075	-	-
			Total Net Annual Water Requirement	**m^3**
			TOTAL	493.6
			_____ **m3 ÷ 1000 =** _____ **Megalitres (ML)**	0.49ML/yr

Assumptions and notes regarding future water supply:

- The information in the DPI- Water guideline does not address estimating peak daily requirements, which would be considered for the future reticulation system design.
- The assumed roof of an average 4 bedroom house with attached garage is approx. 300m^2.
- The DPI – Water annual household requirement equates to an average approx. 1200L/day (including garden). (No reliance on greywater has been assumed for gardens).
- A sustainable supply of household water could be able to be provided through many means, including a reticulated community bore supply and roof water.
- A separate static supply for fire-fighting would be required (assumed min 10,000L) which should be full at the construction of a dwelling.
- The annual average rainfall for Mudgee is 684.5mm.
- The existing nearby registered bores with NSW Office of Water Work Summaries are also noted for comparison:
    - Lic.80BL115088 (within previous Fairview property, now Broadview Estate) – Yield 1.51L/s.
    - Lic.80WA704896 (229-233 Robertson Road existing 2ha development) – Yield 0.51L/s. .

(Refer to **Attachment 3** for Bore Log Details).

Comments:

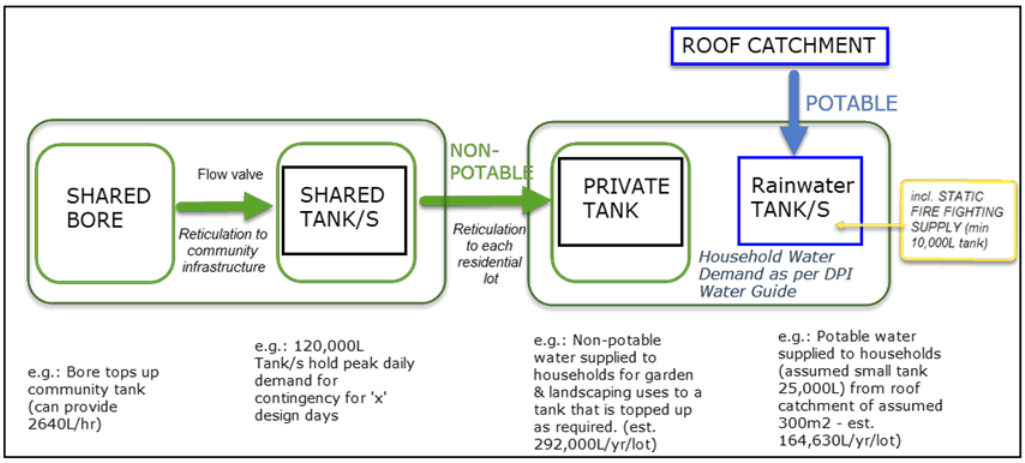
Based on the DPI Water guideline, '*How much water do I need for my rural property*', reliance on rainwater alone will not satisfy demand for household water.

However based on the Mudgee region rainfall & a tank of 25,000L capacity, with the assumed roof area - the rainwater tank will save approx. 164,630L annually from reliance on a bore supply (0.164ML).

The pump test on the existing bore supply demonstrated that a future community bore supply would be secure and able to meet the demands of the subdivision proposed. Based on all the lots developed (i.e. 21 lots), the bore testing demonstrates community bore water would meet the supplementary water demand (0.292ML/year/lot). Water analysis was undertaken of the existing bore and compared to the expected beneficial uses (and ANZECC guidelines). The bore water is not relied upon for potable water. No restrictions are envisaged for use of the bore water for domestic gardens (refer to Water Quality Analysis in **Attachment 2**). The electrical conductivity is considered to be high for use on some irrigated crops, however this is expected in the Mudgee landscape and not a limiting factor for residential development.

The future reticulated system will be able to accommodate the peak daily requirements. An engineer's design, at the DA stage, will confirm suitable pump size and community storage/reticulation to ensure the system is able to accommodate the demand and ensure water metering and quality monitoring capability.

Separate tank for fire-fighting to be installed or a designated volume in addition to the capacity assumed above for household water use. An overview of how a sustainable water supply would incorporate the shared bore is depicted below.



Mudgee and Gulgong Urban Release Strategy (URS)

The inclusion of the subject land in an amendment to the MWR LEP 2012 is consistent with the 'Guiding Principles' for release of residential land. See below:

Guiding Principles

- **Encourage higher density residential development in Mudgee and Gulgong town centres** – N/A (this principle relates to development of town centres)
- **Rely on areas already zoned and nominated for residential development in the first instance to meet future demand** – The URS identifies the lack of current available zoned land for 2ha developments, though this site is already zoned R5 Large Lot Residential. The intention is to amend the Lot Size Map to offer a new land release area to address future growth.
- **Maximise use of existing Council infrastructure** – The future un-serviced (water and reticulated sewer) 2ha development is aligned with this principle. The expenditure towards road and utility services would be maximised in the locality.
- **Encourage and meet demand for a diverse range of housing types and lots sizes** – As a new development the staging of release is conducive to ensuring the market receives 2ha lots providing a range of lots sizes in South Mudgee.
- **Facilitate orderly and coordinated approach to residential growth** – The location of the property represents a logical location for a residential release area adjoining existing 2ha lots and the new 'Broadview Estate' and is compatible with surrounding land uses. The timing of release can be informed by supply and demand monitoring by the developer in a staged development.
- **Ensure a pipeline supply buffer exists** - Council should have 5 years' worth of land zoned for each residential type as a buffer to avoid future shortage. This proposal is able provide land in logical stages and adhere to release triggers. This development on its own does not meet the predicted land supply required as determined in the URS for the 0-5yr staging.
- **Protect employment lands and high value agricultural land** – The subject land is in close proximity to the township of Mudgee and developed residential lifestyle lots. The land is not prime agricultural land. The proposal will align with this principle. Topographic attributes and roads separate the site from other rural land.
- **Avoid environmentally sensitive areas and natural hazards** - Residential growth should not encroach on areas identified as environmentally sensitive areas or natural hazards. The concept design has demonstrated that environmentally sensitive design can be implemented at the site.

Mid-Western Region Towards 2030 Community Plan

The goals of the Community Plan have been reviewed. The release of land can be staged to ensure affordability of housing is not adversely affected by over release in Mudgee. The proposal does not compromise the main entrance corridor to the Mudgee Township. The proposal will support the goal of providing a vibrant town.

The planning proposal presents opportunity for high amenity community whereby development is appropriately located and sensitive to surrounding land uses and environmental aspects.

Mid-Western Regional - Economic Development Strategy

Mid-Western Regional Council has prepared an Economic Development Strategy (EDS) outlining a future economic direction for the Regional in the next 10 years, to June 2020. The EDS provides a broad framework for the various lead agencies and stakeholders involved in economic development to identify their roles and engage in economic development initiatives for the Region. The planning proposal will have negligible impact on economic development.

Q.5. Is the planning proposal consistent with applicable state environmental planning policies?

Yes. The Planning Proposal is considered to be consistent with applicable State Environmental Planning Policies as discussed below.

SEPP	Applicable/Consistency
1 – Development Standards	Not relevant to planning proposal.
14 – Coastal Wetlands	Not relevant to planning proposal.
19 – Bushland in Urban Areas	Not relevant to planning proposal.
21 – Caravan Parks	Not relevant to planning proposal.
26 – Littoral Rainforests	Not relevant to planning proposal.
30 – Intensive Agriculture	Not relevant to planning proposal.
33 – Hazardous and Offensive Development	Not relevant to planning proposal.
36 – Manufactured Home Estates	Not relevant to planning proposal.
44 - Koala Habitat Protection	Not relevant to planning proposal.
47 – Moore Park Showground	Not relevant to planning proposal.
50 – Canal Estate Development	Not relevant to planning proposal.
52 – Farm Dams and other works in Land and Water Management Plan Areas	Not relevant to planning proposal.
55 – Remediation of Land	Proposal is consistent. *See comments below.*
62 – Sustainable Aquaculture	Not relevant to planning proposal.
64 – Advertising and Signage	Not relevant to planning proposal.
65 – Design Quality of Residential Flat Development	Not relevant to planning proposal.
70 – Affordable Housing (Revised Schemes)	Not relevant to planning proposal.
71 – Coastal Protection	Not relevant to planning proposal.
Affordable Rental Housing 2009	Not relevant to planning proposal. Through the provision of a variety of housing choices, the housing options in Mudgee will potentially cater to a range of income levels. The development

SEPP	Applicable/Consistency
	proposal is not to adversely affect rental housing.
Building Sustainability Index BASIX 2004	Future development for housing will be required to address the provisions of BASIX.
Exempt and Complying Development Codes 2008	Not relevant to planning proposal.
Housing for Seniors or People with a Disability 2004	Future development will be able to deliver accessible housing.
Infrastructure 2007	Not relevant to planning proposal.
Integration and Repeals 2016	Not relevant to planning proposal.
Kurnell Peninsula 1989	Does not apply to MWRC LGA.
Kosciusko National Park – Alpine Resorts 2007	Not relevant to planning proposal.
Mining and Petroleum Production and Extractive Industries 2007	Relevant mapping has been referred to in this proposal.
Miscellaneous Consent Provisions 2007	Not relevant to planning proposal.
Penrith Lakes Scheme 1989	Does not apply to land within MWRC LGA.
Rural Lands 2008	The proposal is consistent with the Rural Planning Principles including due consideration of impacts on services and infrastructure and appropriate location when providing for rural housing. The proposal is consistent with the Rural Subdivision Principles, i.e. the proposal recognises and addresses the minimisation of rural land use conflicts, particularly between residential land uses and other rural land uses.
State and Regional Development 2011	Not relevant to planning proposal. The planning proposal does not include any state significant development.
State Significant Precincts 2005	Not relevant to planning proposal.

SEPP	Applicable/Consistency
Sydney Drinking Water Catchment 2011	Does not apply to land within MWRC LGA.
Sydney Region Growth Centres 2006	Does not apply to land within MWRC LGA.
Three Ports 2013	Does not apply to land within MWRC LGA.
Urban Renewal 2010	Does not apply to land within MWRC LGA.
Western Sydney Employment Area 2009	Not relevant to planning proposal.
Western Sydney Parklands 2009	Not relevant to planning proposal.

State Environmental Planning Policy No. 55 – Remediation of Land

State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55) applies to the whole of the State of NSW and is required to be considered in a rezoning proposal under Clause 6 of SEPP 55. Given the previous use of the site (i.e. residential component and historical grazing) the likelihood of contamination indicating the land is not suitable for the proposed concept is minimal.

Any localised surface soil contamination will require remediation before the land can be used for residential development. Should remediation be required, it is anticipated that this can occur at future development application stage. The Planning Proposal is consistent with SEPP 55.

Q.6. Is the proposal consistent with applicable Ministerial directions (s.117 directions)?

Section 117 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) enables the Minister for Planning and Infrastructure to issue directions regarding the content of LEPs to the extent that the content must achieve or give effect to particular principles, aims, objectives or policies set out in those directions.

The proposal is consistent with those 117 Directions that are relevant to the site. An overview of applicable directions and compliance is included in **Table 1**.

Table 1: Section 117 Ministerial directions

	Section 117 Ministerial directions	Compliance of Planning Proposal
1.1	Business and Industrial Zones	N/A
1.2	Rural Zones	The current zoning of the land is R5 Large Lot Residential, which aims to provide residential housing in a rural setting. The zoning is not sought to be amended and is suitable for the proposed lot size amendment.
1.3	Mining, Petroleum Production and Extractive Industries	No mining or extractive industry occurs in vicinity to the development site (within an urban residential zone). Consideration of mapped industry and resource lands has not identified any affected resources. The subject land is surrounded by residential zoned land.
1.4	Oyster Aquaculture	N/A
1.5	Rural Lands	The objectives of this direction are to protect the agricultural production value of rural land, and facilitate the orderly and economic development of rural lands for rural and related purposes. The proposal is not predicted to restrict rural land activities.
2.1	Environment Protection Zones	N/A
2.2	Coastal Protection	N/A
2.3	Heritage Conservation	No items of European heritage are identified in vicinity of the subject site. The planning proposal adopts measures that facilitate the conservation of environmental heritage. Due diligence and mitigation measures are to be followed that will ensure the protection of any unknown Aboriginal heritage items occurring within vicinity of the future development lands. An AHIMS Search has been undertaken and attached to this proposal.

	Section 117 Ministerial directions	Compliance of Planning Proposal
2.4	Recreation Vehicle Areas	N/A
2.5	E2 & E3 zones and Environmental Overlays in Far North Coast LEPs	N/A
3.1	Residential Zones	The planning proposal will create a 2ha lifestyle lot release area for the Mudgee Township and will contribute to future residential land supply in accordance with a demand quantified in the URS.
3.2	Caravan Parks and Manufactured Home Estates	N/A
3.3	Home Occupations	The planning proposal is consistent with this Direction, and the capacity for any future dwelling to accommodate small businesses will not be hindered.
3.4	Integrating Land Use and Transport	The proposal has considered the existing infrastructure, residential development patterns, and local transport issues when developing the concept plan for future subdivision. The proposal is consistent with the direction.
3.5	Development Near Licensed Aerodromes	N/A
3.6	Shooting Ranges	N/A
4.1	Acid Sulfate Soils	N/A
4.2	Mine Subsidence and Unstable Land	N/A
4.3	Flood Prone Land	N/A
4.4	Planning for Bushfire Protection	Mid-Western Regional LGA has a bushfire prone land map prepared under s146 of the Environmental Planning and Assessment Act 1979. The planning proposal is partially affected by the mapped bushfire prone land. Further consideration would be required at the DA stage.
5.1	Implementation of Regional Strategies	N/A. The Direction applies to land within the land applicable to the areas of the Far North Coast; Lower Hunter; South Coast; Sydney–Canberra Corridor; Central Coast and Mid North Coast.
5.2	Sydney Drinking Water Catchment	N/A
5.3	Farmland of State and Regional Significance on the NSW Far North Coast	N/A

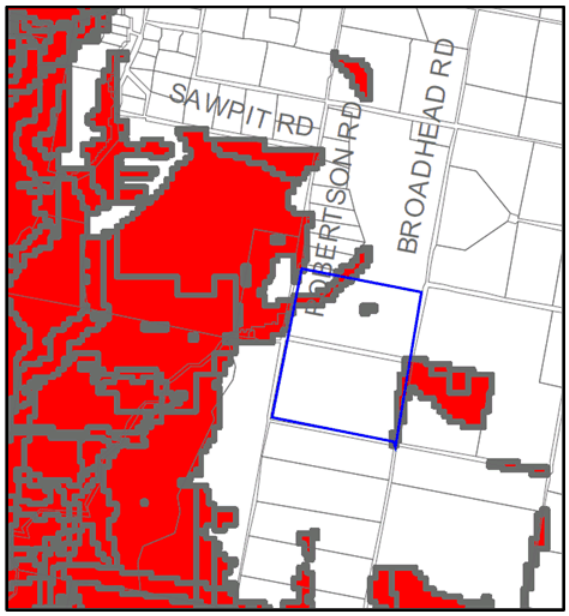
	Section 117 Ministerial directions	Compliance of Planning Proposal
5.4	Commercial and Retail Development along the Pacific Highway, North Coast	N/A
5.8	Second Sydney Airport: Badgerys Creek	N/A
5.9	North West Rail Link Corridor Strategy	N/A
5.10	Implementation of Regional Plans	The subject land falls within the area of Central West and Orana Regional Plan. At the time of original proposal the plan was in draft form. The proposal was consistent with the regional strategy as exhibited and at the time was in the submission review period. The Central West and Orana Regional Plan 2036 was implemented Jun 2017. The Plan is the NSW Government's strategy for guiding land use planning decisions for the Central West and Orana region for the next 20 years. The proposal maintains consistency with the Regional Plan as discussed in this planning proposal.
6.1	Approval and Referral Requirements	This direction is to ensure that LEP provisions encourage the efficient and appropriate assessment of development. The planning proposal does not include LEP provisions requiring concurrence, consultation or referral.
6.2	Reserving Land for Public Purposes	N/A – Land for public purposes is not included in the development concept. Drainage lines and buffers can be incorporated into easements within private land.
6.3	Site Specific Provisions	N/A – the proposed LEP amendment does not require site specific provisions.
7.1	Implementation of a Plan for Growing Sydney	N/A
7.2	Implementation of Greater Macarthur Land Release Investigation	N/A

SECTION C - Environmental, Social and Economic Impact

Q.7. Is there any likelihood that Critical Habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?

The map below depicts the site in regard to the MWR LEP 2012 Sensitivity Biodiversity mapping. The land has minor constraint due to biodiversity with the majority of the land historically cleared for grazing purposes. This mapped land occurs within the road reserve and riparian corridor for Sawpit Gully. The Concept Plan has avoided disturbance of these vegetated areas.

The planning proposal is not likely to cause any impact on critical habitat or threatened species, populations or ecological communities. Site specific native flora and fauna survey is not warranted at this stage.



(Excerpt MWR LEP 2012 – Sensitivity Biodiversity Map (sheet BIO_006))

Q.8. Are there any other likely environmental effects as a result of the planning proposal and how are they proposed to be managed?

With reference to *A Guide to Preparing Planning Proposals*, technical studies to address an identified issue should be undertaken following the initial Gateway determination. Such studies together with community and public authority consultation can explore the mitigation of any potential impacts.

The planning proposal constraints assessment has not identified any specific technical assessment that would be required.

Heritage

Heritage aspects relevant to the site have been considered. Attached to this proposal the AHIMS search results carried out for the wider locality (see **Attachment 4**). With a buffer of 1km, 18 recorded items are known for the locality. The consideration of the likelihood for occurrence of Aboriginal heritage and due diligence assessment processes will be able to be carried out in the future at DA stage. The occurrence of heritage would be able to be managed in the future and the development impacts assessed as a development layout is finalised.

Groundwater Vulnerability

The land is partially mapped as 'groundwater vulnerable' similarly to the majority of the Mudgee Township. The MWR LEP 2012 has provisions to ensure measures would be engaged that ensure good design, and effluent disposal through a water cycle management plan be carried out within a development application process.

Noting the requirements of Clause 6.4 of Mid-Western LEP 2012, a future DA for subdivision of the site may include a study to further consider potential groundwater impacts. The proposed lots have sufficient area available to install an on-site effluent management system in accordance with the current guidelines and Australian Standard.

Q.9. How has the planning proposal adequately addressed any social and economic effects?

The planning proposal is in response to the gap analysis and recommendations to accommodate growth for Mudgee into the future. Mudgee has experienced a dynamic population growth influenced by mining activity in the region. Housing demand has also been subject to the drivers of mining industry growth, population/dynamics changes, and a growing need for housing diversity. The proposal addresses the possible social and economic effects of failing to maintain an adequate and timely land release.

Mudgee has had a limited supply of 2ha lots (and greater) and a growing demand. With this in mind it is difficult to predict the demand for such lots into the future. The predicted demand is addressed in the URS:

*"**Large Lot Residential (2ha and over)***

Demand for larger residential lots (2ha and greater) in Mudgee's urban release areas is projected to average 7 lot per annum or 37 lots over 5 years. If land is released in accordance with the recommendations of the Strategy there will be between 76 and 88 large residential lots available every five years until the year 2025. This level of supply will create a buffer of 43 to 51 lots over that period which is sufficient to meet the required 5 year buffer of 37 lots. The analysis indicates that further land may need to be released in the long term to accommodate demand in the 10-20 year period if high levels of demand for 2ha lots were sustained." Pg 88

The URS recommendations include release of up to 88 lots of 2ha lots in a 2015+ timeframe. Alternative planning proposals, including 2ha lots, were submitted to Council in 2014 and the subsequent moratorium on further planning proposals was issued by Council pending the finalisation of the URS. With the document now endorsed, reliance is made upon the findings with regard to demand and housing needs. This proposal represents a feasible alternative to supply considering the unique topographical aspects of this development site and lack of constraints.

The URS quantifies the demand, and the CLUS supports diversity in housing options. The strategy indicates that the lack of diversity in housing types arguably affects the ability of a diverse population, such as found in Mudgee, to find accommodation to suitably meet their needs. A supply of land is best sourced from varied locations and distances from town. To achieve the sought social and economic outcomes, it is believed that Council should address the current limited exiting supply of zoned land, and facilitate release of the number of predicted lots, however within a variety of settings. The subject land would offer a rural residential lifestyle choice which offers a unique setting.

The property is not constrained by multiple owners and the delivery to the market is readily achieved. Market trends reported in the draft URS indicate a growing demand and limited supply of larger lot residential blocks around 2 hectares. The development site represents residential lifestyle development delivered in a coordinated manner with economic benefits of adjoining to similarly developed land. This ensures future development can proceed without foreseeable land use conflicts and unreasonable infrastructure costs.

1.3 SECTION D - State and Commonwealth interests

Q.10. Is there adequate public infrastructure for the planning proposal?

The site has current electricity and telecommunication services that would be assessed for extension to service additional lots. Servicing of public infrastructure will require consultation with appropriate public authorities at the design stage.

The proposal will generate increased volumes of traffic which will warrant due engineering assessment of the existing road system. The current provisions within MWRC DCP 2013 will be able to be met in any new roads and lot design. This can be addressed at DA stage.

The level of servicing is commensurate to expectations for 2ha lifestyle lots. The current LEP provisions and adopted servicing requirements imposed by MWRC in the past have set 2ha as the min lot size without connection to water and sewer services. Lots of areas less than 2ha are expected to be connected to reticulated services and the lot size maps reflect this. Consistent with this adopted development standard, the land is not proposed to be serviced by reticulated sewer. Potential for servicing with town water supply was further investigated with Council following initial consultation with NSW DPI-Water. This service was identified to have issues regarding maintaining an appropriate water quality and associated costs to Council and is not considered feasible at this time (due to the supply of Council of potable water only). The proposed water supply for this amended planning proposal is through a reticulated supply from a community bore and rainwater from roof catchments.

There is adequate public infrastructure for the planning proposal. The future subdivision will also attract s94 contributions payable to Council.

Q.11. What are the views of State and Commonwealth Public Authorities consulted in accordance with the gateway determination, and have they resulted in any variations to the Planning proposal?

Consultation with NSW Department of Primary Industries – Water (DPI – Water), NSW Office of Environment and Heritage (OEH) has been carried out by MWRC and has led to further investigations supporting variation to the proposal.

Key views and concerns are summarised below:

Groundwater vulnerability –

- Achieving 250m buffer distances between effluent disposal areas and a domestic bore supply were raised as concerns.

Locating any new community bore will be considerate to the buffers required to ensure minimal risk is posed from onsite effluent disposal. The proposal to supplement rainwater from roof catchments with a community bore will reduce the buffers from potential future bores required to be assumed. This will ensure that buffer distances are met and a 2ha lot area can be achieved.

Sustainable water supply –

- The DPI-Water Guideline – '*How much water do I need for my rural property*' was established as the requirement for water demand.

The Planning Proposal has been amended primarily with regard to demonstrating a sustainable water supply. As noted, the implementation of reticulated town water supply was investigated; and has not been pursued. The lots size is proposed to be mapped as 5ha with provision to be reduced to 2ha with the demonstration of sustainable water supply. The proposal continues to seek development of 2ha lots as originally proposed. Pump tests for existing bores and usage were investigated within the aquifer. With the ability to locate a new bore (meeting buffer distances and within a community title -association land) such is proposed that a sustainable water supply can be demonstrated with rainwater from roof catchments in conjunction with a reticulated supply from a community bore.

Riparian Land

The DPI-Water comments refer to the Guidelines for Controlled Activities on Waterfront Land (DPI 2012). Appropriate buffer distances have been depicted in the concept plan and consideration of buffer distances has been made. The watercourse and buffers can be incorporated into lots as easements, without burdening Council with public reserve land.

PART 4 - Mapping

MWRC has a SI LEP in force and mapping should be carried out consistently with the requirements of the Standard technical requirements for LEP maps. The land subject to the planning proposal is included within Land Zoning Map (Sheet LZN_006E) which is depicted in **Figure 3**. The land is currently zoned R5 Large Lot Residential, which is consistent with the objectives of the 2ha lots development.

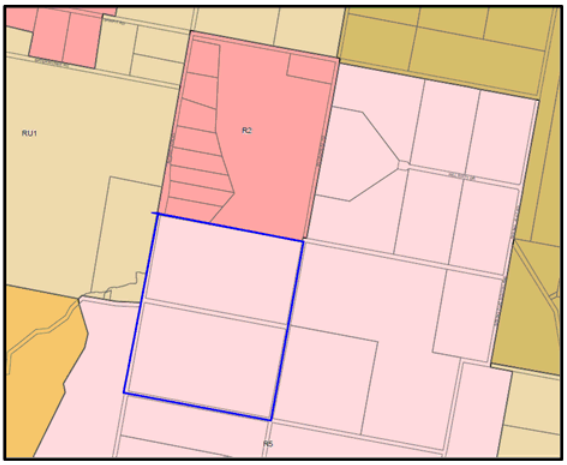


Figure 3: No Proposed change to zoning map (excerpt Land Zoning Map - Sheet LZN_006E)

The corresponding lot size map is proposed to be amended to allow the minimum 2ha lot size proposed. The land is included within Lot Size Map (Sheet LSZ_006E) which is proposed to be amended (see **Figure 4**).

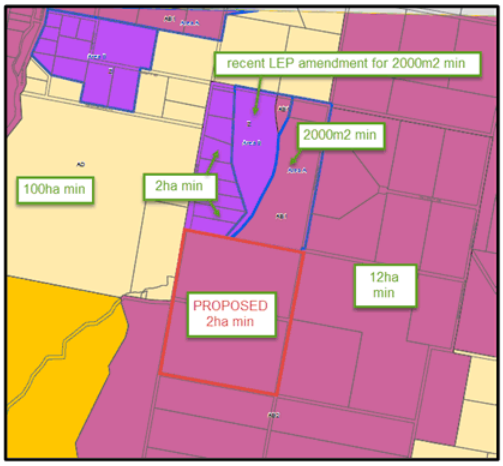


Figure 4: Excerpt Lot Size map (Sheet LSZ_006) showing location of proposed 2ha lot size amendment

PART 5 - Community Consultation

Community consultation for the Planning Proposal would be undertaken in accordance with the consultation requirements set out in *A guide to preparing local environmental plans* (DoP 2009).

The consultation requirements for this Planning Proposal were confirmed by the Department of Planning and Infrastructure (DP&I) at the gateway determination. Condition 1 required consultation with the NSW Office of Water to determine the suitability of a 2ha minimum and impacts on groundwater having regard to water supply. The approval of DP&E was required to be satisfied that the issues were addressed prior to placing the proposal on exhibition.

This amended proposal addresses the minimum lot size and potential for groundwater impacts and provision of a sustainable water supply.

PART 6 – Project Timeline

This will be prepared with MWRC.

Attachments:

Attachment 1 – Concept Plan

Attachment 2 - Fairview Bore test by Corbett Pumps and Irrigations and Water quality testing (ALS GLOBAL)

Attachment 3 – Bore Log Details

Attachment 4 – AHIMS Search result

CONCLUSION

This Planning Proposal relates to an amendment to *Mid-Western Regional Local Environmental Plan 2012* for the relevant Lot Size Map to that part of Lot 4 DP1206488, Broadhead Road, Mudgee, south of 'Broadview Estate'. The aim of this report has been to describe the strategic merit and site suitability for the proposed amendment to the lot size map to accommodate 2ha rural residential lifestyle development.

The planning proposal has included the concept plan to highlight the following:

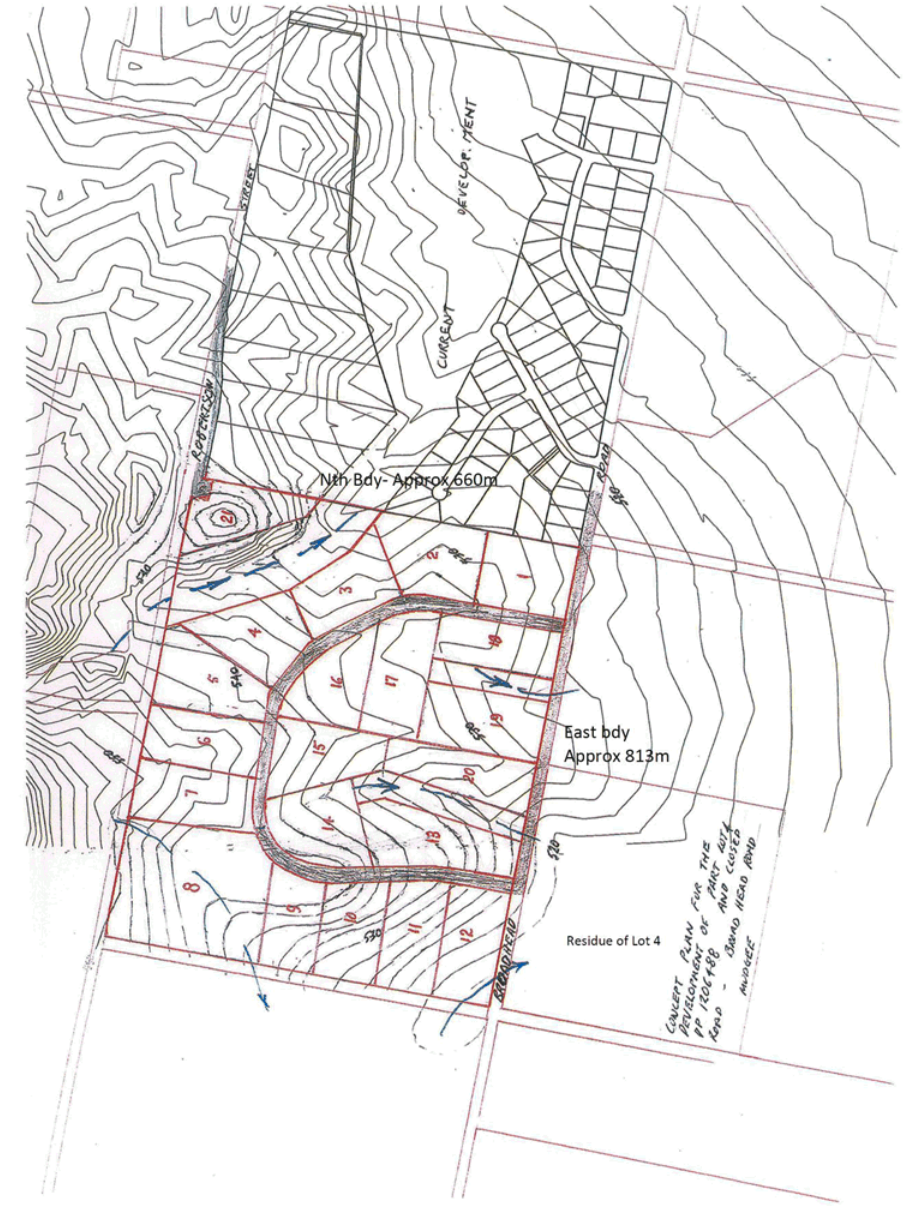
- Estimation of lot yield from the land;
- Feasibility of suitable building sites avoiding environmentally sensitive areas (watercourses);
- Layout of development and integration with existing road layouts; and
- Demonstrate that building sites are available that would avoid ridge lines and facilitate sites with varied views ideal for 2ha lifestyle developments.

The URS reviews land available with a 20 years+ timeframe, as such this proposal is not considered premature at this time, especially considering the identified demand for this form of development. In accordance with the guiding principles of the URS, Council should maintain 5 years' worth of land zoned for each residential type as a buffer to avoid future shortage. It is acknowledged that with limited current supply it is difficult to ascertain what that demand might be over the next five years. It is envisaged that the timing of this type of development, i.e. Large Lot Residential, could be in 0-5 year timeframe without being hindered by multiple landowners.

Development is proposed that will involve the facilitation of 2ha lots, only with the demonstration of a sustainable water supply. The land will have contiguity with neighbouring 2ha developed lots and 'Broadview Estate'. This proposal is able to partially meet the predicted demand for 2ha lots and is close to Mudgee. The development site represents residential lifestyle development delivered in a coordinated manner. This ensures future development can proceed without foreseeable land use conflicts and unreasonable infrastructure costs.

Overall, the planning proposal has made consideration of what style of lifestyle the 2ha lot is associated with, and presents land which is ideal for this type of development. The slopes lend to varied views and access to northerly aspect, the land is close to existing sealed road, and does not take up valuable agricultural land. The support of this planning proposal will ensure the successful future development of the wider Mudgee community and is not hindered by environmental constraint.

Attachment 1 - Concept Plan


Nth Bdy- Approx 660m
East bdy
Approx 813m
Residue of Lot 4
BROADHEAD ROAD
CURRENT DEVELOPMENT

Attachment 2 – Fairview Bore test by Corbett Pumps and Irrigations and Water Quality Analysis (ALS GLOBAL)

CORBETT
Pumps and Irrigation

M: 0417 546 768 **P:** 02 6372 7887 **F:** 02 6372 0801
E: pumpacorbett@hotmail.com
PO Box 647, Mudgee, NSW 2850 **ABN:** 36 140 021 501

20 September 2017

Peter Consadine
Broadhead Rd
MUDGEE NSW 2850

RE: 2ND FLOW TEST

As per your request for a second flow test, this time the test was conducted over 24hrs directly at the pump through 1" open ended poly pipe rather the hose tap at the back of the house.

The testing started on Tuesday the 18th September 2017 at 3pm and ended at 3pm on Wednesday the 19th September.

The flow was checked every hour until 7pm and left it run through the night and checked at 7am the following morning and measured hourly until 10am and then measured at 2pm and 3pm to end the flow test.

Test results as follows:

3pm	18/9/17	13.6 sec per 10 litres
4pm	18/9/17	13.6
5pm	18/9/17	13.7
6pm	18/9/17	13.6
7pm	18/9/17	13.7
7am	19/9/17	13.5
8am	19/9/17	13.6
9am	19/9/17	13.8
10am	19/9/17	13.6
2pm	19/9/17	13.5
3pm	19/9/17	13.5

This is an average of 13.6 seconds per 10 litres.

44 litres per minute, 2640 litres per hour, 63360 litres per 24hours

David Corbett

Corbett Pumps & Irrigation

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ME1701432**	Page	: 1 of 4
Client	: **MUDGEE CASH CLIENT**	Laboratory	: Environmental Division Mudgee
Contact	: Peter Consadine	Contact	: Mary Monds
Address	: 6 Avisford court MUDGEE NSW 2850	Address	: 1/29 Sydney Road Mudgee NSW AUSTRALIA 2850
Telephone	: ----	Telephone	: 02 6372 6735
Project	: Comprehensive Water Quality Package	Date Samples Received	: 18-Oct-2017 08:35
Order number	: ----	Date Analysis Commenced	: 18-Oct-2017
C-O-C number	: ----	Issue Date	: 25-Oct-2017 16:57
Sampler	: Peter Consadine (Client Sampler)		
Site	:		
Quote number	: ----		
No. of samples received	: 1		
No. of samples analysed	: 1		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ashesh Patel	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Mary Monds	Environmental Services Representative	Laboratory - Mudgee, Mudgee, NSW

RIGHT SOLUTIONS | RIGHT PARTNER

Page	: 2 of 4
Work Order	: ME1701432
Client	: MUDGEE CASH CLIENT
Project	: Comprehensive Water Quality Package

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Samples were received outside of recommended ALS holding times for analysis of pH. Results should be scrutinised accordingly.
- Only approved EPA methods for the analysis of water pollutants in New South Wales are used: pH by classical APHA 4500 H+B and in-house EA005; EC by classical APHA 2510 and in-house EA010.
- Test MW004-CTAG: NATA accreditation does not cover the performance of this service.
- Only approved EPA methods for the analysis of water pollutants in New South Wales are used: Alkalinity – by classical using APHA 2320 B and in-house ED037 & P; Alkalinity - bicarbonate by classical using APHA 2320 B and in-house ED037 & P; Alkalinity - carbonate by classical using APHA 2320 B and in-house ED037 & P; Alkalinity - hydroxide by classical using APHA 2320 B and in-house ED037 & P; Sulfate by discrete analyser using APHA 4500 SO42- and in-house ED041G; Chloride by discrete analyser using APHA 4500Cl- E and in-house ED045G; are conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911.
- Only approved EPA methods for the analysis of water pollutants in New South Wales are used: Cations - using APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM (2013) Schedule B(3); Total Harness/SAR by ED093F; Total Metals using APHA 3125; USEPA SW846 - 6020 and in-house EG020; Fluoride by classical using APHA 4500 F- C and in-house EK040 & P; Nitrogen - nitrate by discrete analyser using EK058G; Ionic Balance by EN055; are conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911.
- Test MUD-WAT: NATA accreditation does not cover the performance of this service.

Page : 3 of 4
Work Order : ME1701432
Client : MUDGEE CASH CLIENT
Project : Comprehensive Water Quality Package

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	1	-----	-----	-----	-----
				Client sampling date / time	17-Oct-2017 12:00	-----	-----	-----	-----
Compound	CAS Number	LOR	Unit		ME1701432-001	--------	--------	--------	--------
					Result	-----	-----	-----	-----
EA005: pH									
pH Value	-----	0.01	pH Unit		6.5	-----	-----	-----	-----
EA010: Conductivity									
Electrical Conductivity @ 25°C	-----	1	µS/cm		1060	-----	-----	-----	-----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	-----	-----	-----	-----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	-----	-----	-----	-----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		304	-----	-----	-----	-----
Total Alkalinity as CaCO3	-----	1	mg/L		304	-----	-----	-----	-----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		78	-----	-----	-----	-----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		142	-----	-----	-----	-----
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		68	-----	-----	-----	-----
Magnesium	7439-95-4	1	mg/L		58	-----	-----	-----	-----
Sodium	7440-23-5	1	mg/L		88	-----	-----	-----	-----
Potassium	7440-09-7	1	mg/L		2	-----	-----	-----	-----
ED093F: SAR and Hardness Calculations									
Total Hardness as CaCO3	-----	1	mg/L		296	-----	-----	-----	-----
Sodium Adsorption Ratio	-----	0.01	-		1.90	-----	-----	-----	-----
EG020T: Total Metals by ICP-MS									
Iron	7439-89-6	0.05	mg/L		0.36	-----	-----	-----	-----
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		0.3	-----	-----	-----	-----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		0.10	-----	-----	-----	-----
EN055: Ionic Balance									
Total Anions	-----	0.01	meq/L		11.7	-----	-----	-----	-----
Total Cations	-----	0.01	meq/L		12.0	-----	-----	-----	-----
Ionic Balance	-----	0.01	%		1.44	-----	-----	-----	-----
MUD-WAT: Calculated Methods (Department of Agriculture)									
ø CaCO3 Saturation Index	-----	0.1	-		-0.4	-----	-----	-----	-----
MW004-CTAG: E.coli by Colitag									

Page	: 4 of 4
Work Order	: ME1701432
Client	: MUDGEE CASH CLIENT
Project	: Comprehensive Water Quality Package

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	1	----	----	----	----
			Client sampling date / time	17-Oct-2017 12:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ME1701432-001	--------	--------	--------	--------
				Result	----	----	----	----
MW004-CTAG: E.coli by Colitag - Continued								
ø *Escherichia coli*	----	1	Detection in 100mL	Not detected	----	----	----	----
MW004-CTAG: Total Coliforms by Colitag								
ø Total Coliforms	----	1	Detection in 100mL	Not detected	----	----	----	----

Attachment 3 – Bore Log Details

NSW Office of Water
Work Summary

GW051958

Licence: 80BL115088 **Licence Status:** CONVERTED

Authorised Purpose(s): STOCK
Intended Purpose(s): STOCK

Work Type: Bore
Work Status:
Construct.Method: Rotary Air
Owner Type: Private

Commenced Date:
Completion Date: 01/07/1980

Final Depth: 45.70 m
Drilled Depth: 45.70 m

Contractor Name:
Driller:
Assistant Driller:

Property: FAIRVIEW
GWMA: -
GW Zone: -

Standing Water Level (m):
Salinity Description: Good
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	WELLI	WELLI.031	29
Licensed:	WELLINGTON	MUDGEE	Whole Lot //

Region: 80 - Macquarie-Western
River Basin: 421 - MACQUARIE RIVER
Area/District:

CMA Map: 8832-4S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: (Unknown)

Northing: 6386444.0
Easting: 743167.0

Latitude: 32°37'58.4"S
Longitude: 149°35'31.2"E

GS Map: -

MGA Zone: 0

Coordinate Source: GD.,ACC.MAP

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1	1	Casing	Threaded Steel	-0.30	25.90	165			Driven into Hole
1	1	Opening	Slots - Vertical	22.90	24.40	165		1	Oxy-Acetylene Slotted, A: 2.00mm

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
22.90	24.40	1.50	Fractured	15.20		1.51			

Geologists Log
Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.30	0.30	Topsoil	Topsoil	

0.30	4.60	4.30	Clay	Clay	
4.60	25.90	21.30	Shale Decomposed Water Supply	Shale	
25.90	45.70	19.80	Shale	Shale	

Remarks

***** End of GW051958 *****

NSW Office of Water
Work Summary

GW804982

Licence: 80WA704896 **Licence Status:** CURRENT

Authorised Purpose(s): DOMESTIC
Intended Purpose(s): DOMESTIC

Work Type: Bore
Work Status: Supply Obtained
Construct.Method: Rotary Air
Owner Type: Private

Commenced Date:
Completion Date: 28/01/2013

Final Depth: 40.00 m
Drilled Depth: 40.00 m

Contractor Name: MCKECHNIE DRILLING PTY LTD
Driller: Malcolm Dexter Mckechnie
Assistant Driller: B McKechnie

Property: "DEILEN PARK" BROADVIEW ESTATE 229-233 ROBERTSON ROAD SPRING FLAT 2850 NSW
GWMA:
GW Zone:

Standing Water Level: 23.000
Salinity:
Yield: 0.500

Site Details

Site Chosen By:

County **Parish** **Cadastre**
Form A: WELLI WELLI.31 4//1150667
Licensed:

Region: 80 - Macquarie-Western
River Basin: 421 - MACQUARIE RIVER
Area/District:

CMA Map: 8832-4S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown

Northing: 6386685.0
Easting: 742925.0

Latitude: 32°37'50.7"S
Longitude: 149°35'21.7"E

GS Map: -

MGA Zone: 0

Coordinate Source: GIS - Geographic Information System

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	40.00	200			Rotary Air
1		Annulus	Waterworn/Rounded	0.00	40.00	200	125		Graded, Q:2.000m3, PL:Poured/Shovelled
1	1	Casing	Pvc Class 9	0.00	40.00	125	117		Seated on Bottom, Riveted, S: 34.00-40.00m
1	1	Opening	Slots - Vertical	26.00	38.00	125		1	Mechanically Slotted, PVC Class 9, Riveted, SL: 200.0mm, A: 2.00mm

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
32.00	34.00	2.00	Unknown	23.00		0.50		02:00:00	

Geologists Log
Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	1.00	1.00	Topsoil	Topsoil	
1.00	40.00	39.00	Shale	Shale	

Remarks

28/01/2013: Form A Remarks:
Nat Carling, 11-Apr-2013; Coordinates based on location map provided with the Form-A.

***** End of GW804982 *****

Attachment 4 – AHIMS Search Result

Office of Environment & Heritage
NSW GOVERNMENT

AHIMS Web Services (AWS)
Search Result

Purchase Order/Reference : Consadine 1km
Client Service ID : 170141

Minespex Pty Ltd
Units 1 and 2 73 Market Street
Mudgee New South Wales 2850
Attention: Emma Yule

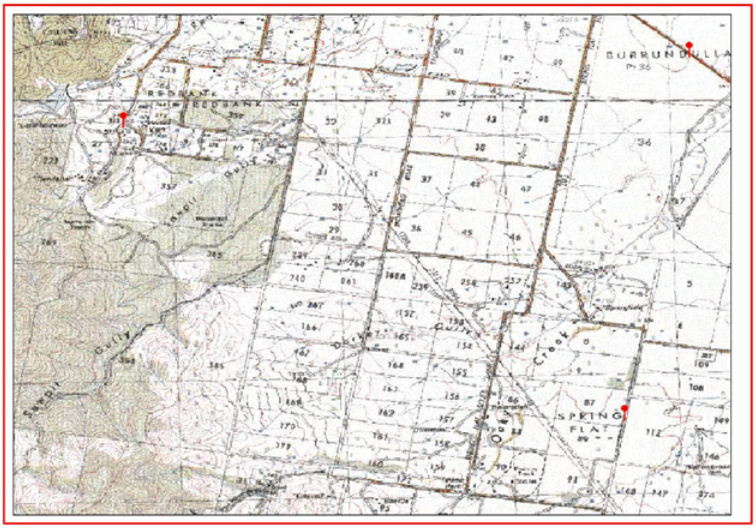
Email: emma.yule@minespex.com.au

Date: 23 April 2015

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 9, DP:DP1150667 with a Buffer of 1000 meters, conducted by Emma Yule on 23 April 2015.

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 the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

18	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 (http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit 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 be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage 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.

3 Marist Place, Parramatta NSW 2150
Locked Bag 5020 Parramatta NSW 2220
Tel: (02) 9585 6380 Fax: (02) 9873 8599

ABN 30 841 387 271
Email: ahims@environment.nsw.gov.au
Web: www.environment.nsw.gov.au

Map Scale: 1:15,200

Broadhead Planning Proposal

Part Lot 4 DP 1206488

Mid-Western Regional Council

Friday, 9 March 2018

NSW RURAL FIRE SERVICE

NSW GOVERNMENT

The General Manager
Mid-Western Regional Council
PO Box 156
MUDGEE NSW 2850

Your reference: PP_2015_MIDWR_003_00
Our reference: L13/0024

20 July 2017

Attention: Sarah Armstrong

Dear Sir/Madam,

Planning Proposal to amend Mid-Western Regional LEP 2012 – Lot 4 DP 1206488 Broadhead Road, Mudgee

Reference is made to Council's correspondence dated 27 June 2017 seeking comment in relation to abovementioned planning proposal to amend the Mid-Western Regional LEP 2012 to allow for the rezoning of the site to R2 Low Density Residential and the minimum lot size to be 2 hectares.

The New South Wales Rural Fire Service (NSW RFS) has reviewed the proposal with regard to Section 4.4 of the directions issued in accordance with Section 117(2) of the *Environmental Planning and Assessment Act 1979*.

The objectives of the direction are:

(a) *to protect life, property and the environment from bush fire hazards, by discouraging the establishment of incompatible land uses in bush fire prone areas, and*
(b) *to encourage sound management of bush fire prone areas.*

The direction provides that a planning proposal must:

(a) *have regard to Planning for Bushfire Protection 2006,*
(b) *introduce controls that avoid placing inappropriate developments in hazardous areas, and*
(c) *ensure that bushfire hazard reduction is not prohibited within the APZ.*

Based upon an assessment of the information provided, the NSW RFS raises no objections to the proposal subject to a requirement that the future subdivision of the land complies with *Planning for Bush Fire Protection 2006*. This includes, but is not limited to:

- Provision of Asset Protection Zones (APZs) within the proposed lots in accordance with Table A2.4;
- Access to be provided in accordance with the design specifications set out in section 4.1.3; and,
- Services to be provided in accordance with section 4.1.3.

If you have any queries regarding this advice, please contact Matthew Apps, Development Assessment and Planning Officer, on 1300 NSW RFS.

Yours sincerely,

Nika Fomin
Manager, Planning and Environment Services (East)

Postal address
NSW Rural Fire Service
Records Management
Locked Bag 17
GRANVILLE NSW 2141

Street address
NSW Rural Fire Service
Planning and Environment Services (East)
42 Lamb Street
GLENDENNING NSW 2761

T 1300 NSW RFS
F (02) 8741 5433
E pes@rfs.nsw.gov.au
www.rfs.nsw.gov.au

NSW GOVERNMENT Planning & Environment

IRF18/175

Mr Brad Cam
General Manager
Mid-Western Regional Council
PO Box 156
Mudgee NSW 2850

Attention: Sarah Armstrong Manager, Strategic Planning

Dear Mr Cam

Subject: Planning proposal (PP_2016_MIDWR_002_00), Lots 3 and 4 DP 1069441 Springflat Road, Mudgee – request to proceed to community consultation.

I refer to the subject matter and your letter dated 21 December 2017 with regard to planning proposal (PP_2016_MIDWR_002_00) and the updated information about the water supply.

In accordance with condition 1 of Gateway determination issued on 24 May 2016 (as since altered), I can confirm that Council has worked with the Department of Primary Industries - Water and provided adequate information to satisfy this condition in relation to proposed lot size, water supply and impacts on groundwater.

An important issue for Council is to ensure that the water supply volumes to the future residential development are available if/when irrigation demands occur.

Mid-Western Regional Council may now proceed to community consultation of the planning proposal in accordance with the remaining conditions of the Gateway determination.

Please include this letter and Council correspondence dated 21 December 2017 including the updated planning proposal as part of the community consultation package.

Should you have any queries in regard to this matter, I have arranged for Wayne Garnsey, Team Leader to assist you. Mr Garnsey can be contacted on (02) 68412180.

Yours sincerely

Damien Pfeiffer 19.1.18
Director Regions, Western

188 Macquarie Street Dubbo NSW 2830 | PO Box 58 Dubbo NSW 2830 | planning.nsw.gov.au

NSW GOVERNMENT | Planning & Environment

Mr Brad Cam
General Manager
Mid-Western Regional Council
PO Box 156
Mudgee NSW 2850

16/04744

Dear Mr Cam

Re: Planning Proposal (PP_2016_MIDWR_002_00) to amend the Mid-Western Regional LEP 2012 - Lots 3 & 4 DP 1069441, Spring Flat Road, Burrundulla, Mudgee.

I am writing in response to your Council's letter dated 8 March 2016 requesting a Gateway determination under section 56(1) of the Environmental Planning and Assessment Act 1979 (EP&A Act) with respect to the planning proposal to amend the Mid-Western Regional LEP 2012 to rezone land at Lots 3 & 4 DP 1069441, Spring Flat Road, Burrundulla, Mudgee and amend the minimum lot size.

As a delegate of the Minister for Planning, I have determined the planning proposal should proceed subject to the conditions in the attached Gateway determination **(Attachment 1)**.

The inconsistencies with section 117 Directions 1.2 Rural Zones and 1.3 Mining, Petroleum and Extractive Industries is considered as being of minor significance in this case. Inconsistency with 1.5 Rural Lands has been justified by the Mudgee-Gulgong Urban Release Strategy 2014. No further work is required in this regard.

Please note that Condition No 2 of the Gateway determination requires Council to progress the proposed amendment to the Mid Western Comprehensive Land Use Strategy 2010 to insert criteria for assessing the suitability of land for 2 hectare rural residential use as proposed in PP_2015_MIDWR_003_00.

The Minister delegated his plan making powers to Councils in October 2012. It is noted that Council has accepted this delegation. I have considered the nature of Council's planning proposal and have decided to issue an authorisation for Council to exercise delegation to make this plan **(Attachment 2)**.

The amending Local Environmental Plan (LEP) is to be finalised within 9 months of the week following the date of the Gateway determination. Council should aim to commence the exhibition of the planning proposal as soon as possible. Council's request to draft and finalise the LEP should be made directly to Parliamentary Counsel's Office (parliamentary.counsel@pco.nsw.gov.au) 10 weeks prior to the projected publication date.

LAN 90073

Department of Planning & Environment
188 Macquarie Street Dubbo NSW 2830 | PO Box 58 Dubbo NSW 2830 | T 02 6841 2180 | F 02 6884 8483 | www.planning.nsw.gov.au

A copy of the request should be forwarded to the Department of Planning and Environment (westernregion@planning.nsw.gov.au) for administrative purposes.

The amended LEP maps and GIS data is to be uploaded to the Departments FTP site at ftp://lepup:lep_upload@203.3.194.247/ and the map information emailed to: pocgis@planning.nsw.gov.au and a copy to westernregion@planning.nsw.gov.au

The State Government is committed to reducing the time taken to complete LEPs by tailoring the steps in the process to the complexity of the proposal, and by providing clear and publicly available justification for each plan at an early stage. In order to meet these commitments, the Minister may take action under section 54(2)(d) of the EP&A Act if the time frames outlined in this determination are not met.

In accordance with "A guide for the preparation of local environmental plans", Attachment 5 – Delegated plan making reporting template **(Attachment 3)** is enclosed for Council's information. Table 2 of the attachment is to be completed and forward to westernregion@planning.nsw.gov.au when requesting the planning proposal to be notified.

Should you have any queries in regard to this matter, I have arranged for Megan Jones, Planning Officer to assist you. Ms Jones can be contacted on (02) 6841 2180.

Yours sincerely,

a w alb 24-5-2016

Ashley Albury
General Manager, Western Region

Enclosures: Attachment 1 – Gateway Determination
Attachment 2 – Written Authorisation to Exercise Delegation
Attachment 3 – Delegated Plan Making Reporting Template

NSW GOVERNMENT | Planning & Environment

Gateway Determination

Planning Proposal (Department Ref: PP_2016_MIDWR_002_00): to amend the Mid-Western Regional LEP 2012 - rezone land at Lots 3 & 4 DP 1069441, Spring Flat Road, Burrundulla, Mudgee and amend the minimum lot size.

I, the Director Regions, Western at the Department of Planning and Environment as delegate of the Minister for Planning, have determined under section 56(2) of the Environmental Planning and assessment Act, 1979 that an amendment to the Mid-Western Regional Local Environmental Plan 2012 (LEP) to rezone land at Lots 3 & 4 DP 1069441, Spring Flat Road, Burrundulla, Mudgee and amend the minimum lot size should proceed subject to the following conditions:

1. Prior to community consultation, consultation is required with the Department of Primary Industries - Water to determine an appropriate minimum lot size for the land having regard to water supply and impacts on groundwater. The planning proposal is not to be placed on exhibition until the Department is satisfied that the matter has been adequately addressed.

2. Prior to community consultation, the proposed amendment to the Mid Western Comprehensive Land Use Strategy 2010 to insert criteria for assessing the suitability of land for 2 hectare rural residential use, as proposed in (PP_2015_MIDWR_003_00), must be progressed to a stage suitable for community consultation. This proposed amendment requires approval of the Department of Planning and Environment.

3. Community consultation is required under sections 56(2)(c) and 57 of the Environmental Planning and Assessment Act 1979 (EP&A Act) as follows:

    a) The planning proposal is required to be made publicly available on exhibition for 28 days as described in A Guide to Preparing LEPs (Department of Planning and Infrastructure 2013).
    b) The relevant planning authority must comply with the notice requirements for public exhibition of planning proposals and the specifications for material that must be made publicly available along with planning proposals as identified in section 5.5.2 of A Guide to Preparing LEPs.

4. Consultation is required with the following State Agencies under Section 56 (2)(d) of the EP&A Act and/or to comply with the requirements of relevant section 117 Directions:

    (a) Department of Primary Industries - Water
    (b) Roads and Maritime Services
    (c) Office of Environment and Heritage

Each public authority is to be provided with a copy of the planning proposal and any relevant supporting material, and given at least 21 days to comment on the planning proposal prior to community consultation.

5. A public hearing is not required to be held into the matter by any person or body under section 56(2)(e) of the EP&A Act. This does not discharge Council from any obligation it may otherwise have to conduct a public hearing (for example, in response to a submission or if reclassifying land).

6. Prior to submission of the planning proposal under Section 59 of the EP&A Act, the LEP maps must be prepared and be compliant with the Department's 'Standard Technical Requirements for LEP maps'.

7. The timeframe for completing the LEP is to be 9 months from the week following the date of the Gateway determination.

Dated 24th day of May 2016.

Ashley Albury
Director Regions, Western
Planning Services

Delegate of the Minister for Planning

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WRITTEN AUTHORISATION TO EXERCISE DELEGATION

Mid-Western Regional Council is authorised to exercise the functions of the Minister for Planning under section 59 of the *Environmental Planning and Assessment Act 1979* that are delegated to it by instrument of delegation dated 10 October 2014, in relation to the following planning proposal:

Number	Name
PP_2016_MIDWR_002_00	To amend the Mid-Western Regional LEP 2012 - rezone land at Lots 3 & 4 DP 1069441, Spring Flat Road, Burrundulla, Mudgee and amend the minimum lot size.

In exercising the Minister's functions under section 59, Council must comply with the Department's "*A guideline for the preparation of local environmental plans*" and "*A guide to preparing planning proposals*".

Dated 24 May 2016

Ashley Albury
Director Regions, Western
Planning Services
Department of Planning and Environment

Delegate of the Minister for Planning

Attachment 5 – Delegated plan making reporting template

Reporting template for delegated LEP amendments

Notes:

- Planning proposal number will be provided by the department following receipt of the planning proposal
- The department will fill in the details of Tables 1 and 3
- RPA is to fill in details for Table 2
- If the planning proposal is exhibited more than once, the RPA should add additional rows to **Table 2** to include this information
- The RPA must notify the relevant contact officer in the regional office in writing of the dates as they occur to ensure the department's publicly accessible LEP Tracking System is kept up to date
- A copy of this completed report must be provided to the department with the RPA's request to have the LEP notified

Table 1 – To be completed by the department

Stage	Date/Details
Planning Proposal Number	**PP_2015_MIDWR_003_00**
Date Sent to Department under s56	**20 April 2016**
Date considered at LEP Review Panel	**Considered by the Ministers Delegate**
Gateway determination date	**13 May 2016**

Table 2 – To be completed by the RPA

Stage	Date/Details	Notified Reg Off
Dates draft LEP exhibited		
Date of public hearing (if held)		
Date sent to PCO seeking Opinion		
Date Opinion received		
Date Council Resolved to Adopt LEP		
Date LEP made by GM (or other) under delegation		
Date sent to DP&I requesting notification		

Table 3 – To be completed by the department

Stage	Date/Details
Notification Date and details	

Additional relevant information:

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Planning Proposal

Lots 3 & 4 DP1069441, south Mudgee
(Land bound by Spring Flat Road and Sydney Road)

Burrundulla Pty Limited

structural engineering
project management
residential design
civil engineering
registered surveyors
commercial design
geotechnical engineering
town planning
graphic representations
environmental drilling
construction management
mechanical engineering
industrial design
environmental consulting
nata accredited
testing laboratory
electrical engineering
interior design

t 1300138 657
e generalenquiry@barnson.com.au
w www.barnson.com.au

Dubbo . Mudgee . Bathurst . Parkes

Dec-17
(Our Reference: 19429 - rezoning - P01_J)

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APPENDICES

Appendix A – Maps
Appendix B – Plans
Appendix C – Archaeological Assessment and AHIMS search
Appendix D – Groundwater and Salinity Study

EXECUTIVE SUMMARY

This submission is made by Barnson Pty Ltd to Mid-Western Regional Council on behalf of the Burrundulla Pty Limited, seeking support in principle for the rezoning of rural land under the Mid-Western Regional Local Environmental Plan 2012. The proposal seeks Council's support to rezone approximately 54.72ha of the southern part of the site from the RU4 - Primary Production Small Lots zone to R5 – Large Lot Residential zone, with a corresponding minimum lot size of 2ha. The remaining 71.12ha of the northern part of the site is proposed to remain zoned RU4 – Primary Production.

The subject land is located in the south Mudgee area and consists of two (2) lots with a total area of 139ha, being Lots 3 & 4 DP1069441 located on the southern side of Sydney Road. The subject land extends to the north and south of Sydney Road / Castlereagh Highway and has frontage to Spring Flat Road along its western boundary.

The submission follows a review of Council's Mudgee and Gulgong Urban Release Strategy (URS) 2014 which includes the proposal, recommending a minimum lot size of 2ha per lot, with Council supporting it for release from 2015+ as resolved at its meeting of 5 November 2014. The land was initially considered for rezoning in 2013 following a review of the Mid-Western Regional Comprehensive Land Use Strategy (2009) which identified Spring Flat Road as a 'hard edge' for urban growth in the south side of the town "*because it provides a clear edge between urban and rural uses*".

The Strategy identifies land north of Spring Flat Road as an opportunity for large lot residential subdivision to 4,000m^2. The subject land, which adjoins this edge defined by Spring Flat Road is considered a suitable extension of future large lot residential subdivision as submitted in this proposal.

Based on a preliminary assessment, the subject is predominantly cleared and limited in productivity to low intensity grazing such that its highest and best use is not being economically achieved. The subject land has sealed road frontage to Spring Flat Road and is recognised for its suitability for large lot rural residential subdivision with a minimum lot size of 2ha as an extension to the southern boundary for the area identified as potential large lot residential along Spring Flat Road.

The submission consists of two copies of this report, including:

- Planning Report prepared by Barnson Pty Ltd;
- Maps and Plans by Mid-Western Regional Council and Barnson;
- Aboriginal Archaeology Assessment by Mudgee Local Aboriginal Lands Council
- Preliminary Site Investigation prepared by Barnson
- Groundwater and Salinity Study

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1.0 OVERVIEW OF SITE CHARACTERISTICS

1.1 Site Location

The subject land extends south of Sydney Road / Castlereagh Highway and has frontage to Spring Flat Road along its western boundary. Refer to **Figure 1** - location plan.

***Figure 1** - aerial view location plan of site, located on the south-eastern edge of Mudgee*

1.2 Property Description & Zonings

The subject land consists of two (2) lots legally described as:

- Lot 3 DP1069441 located on the southern side of Sydney Road and eastern side of Spring Flat Road;
- Lot 4 DP1069441 located on the southern side of Sydney Road.

The subject land is currently zoned RU4 - Primary Production Small Lots pursuant to the Mid-Western Regional Local Environmental Plan 2012 (the LEP). Refer to LEP map, in **Appendix A**.

The proposed rezoning is for 54.72 ha of the site to R5 - Large Lot Residential, with a minimum lot size of 2ha pursuant to the LEP. Refer to proposed plan of subdivision at **Appendix B.** Land ownership is described in **Table 1**.

Table 1: Property description, lot size and preferred zoning

Description		Area
Existing		
Lot 3	DP1069441	15ha
Lot 4	DP1069441	124ha
Total area		**139ha (desktop cadastre)**
Proposal		
Proposed R5 – Large Lot Residential zone		54.72ha
Remaining RU4 zone		83.1ha

1.3 Landform and Topography

Soils of the site are included in the group 'Craigmore', these soils generally occur within and around Mudgee, and on the eastern and western side of the Cudgegong River. Soil types within the group include: Non-calcic Brown Soils and Red Earths on very old Quaternary alluvium. Yellow Podzolic-Solodic Soils intergrades on lower areas and some leached loams on lower terraces adjacent to major streams (Lawrie, B.W. and Murphy, J.W. (1998), Soil Landscapes of the Dubbo 1:250 000 Sheet, Department of Land and Water Conservation of NSW, Sydney).

In broad geological terms, the area lies upon Quaternary rocks described as *'alluvial silt, clay, sand with variable humic content, sporadic peddle to cobble sized unconsolidated conglomeratic lenses'*. Underlying this series of rocks is the Narrabeen and Sydney Basin Groups of rocks of Triassic and Permian ages (NSW Mineral Resources, 1:100 000 Geological Map, 2000).

A description on salinity is not available.

The subject land generally has a mild fall to the northeast with surface runoff draining into minor streams that traverse the site into Oakey Creek, which meanders adjacent to the eastern boundary of Lot 4, flowing in a northerly direction into the Cudgegong River. Some surface runoff is captured by two 'off line' dams which located towards the middle of the site. The near level form of the land ensures that future development will require minimal earthworks thereby preserving the natural drainage regime across the site.

1.4 Land-uses

The subject land is cleared, with Lot 4 featuring two farm sheds towards its eastern boundary. The land is currently used as low intensity grazing land featuring cattle and sheep. Advice from the owners on past land uses is that the land has a long history of livestock grazing, with no portion of the land ever established for intensive agriculture purposes. Refer to **Photos 1 - 3.**

The known history of the site is also documented in the Preliminary Site Investigation report prepared under separate cover by Barnson. This report finds that the proposed area of rezoning (which excludes the shearing shed and surrounds at the south-eastern corner) is considered suitable for the proposal.

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Photo 1: *View from south-eastern corner of Lot 4 looking north-west from Sydney Road. Scar Tree can be seen left of centre surrounded by a herd of cattle*

Photo 2: *View from Spring Flat Road at south-western corner of Lot 3 looking north east, noting farm sheds to right side of picture*

Photo 3: *View from Spring Flat Road at south-western corner of Lot 3 looking north, noting western boundary fence and tree corridor along western boundary*

1.5 Surrounding Development

The surrounding development is summarised as follows:

- To the north on the opposite side of Sydney Road is pastoral grazing land which extends east to Burrundulla Road and north to the Water Treatment Plant and Pumping Station;
- To the south-east is farmland used for livestock grazing and viticulture;
- To the south is a number of small rural lots used for livestock grazing and housing;
- To the west on the opposite side of Spring Flat Road is a number of small rural lots used for livestock grazing and an olive grove.

Refer to Aerial Map in **Appendix A**.

Noting the mix of land uses in the surrounds and its fragmented state, the proposed rezoning of 54.72ha of the land to R5 - Large Lot Residential, with a minimum lot size of 2ha is considered to provide a compatible density and land use that is unlikely to result in any significant conflicts with adjoining land uses, nor adversely impact on sustainable agricultural practices in the locality.

1.6 Flora and Fauna

The subject land is predominantly cleared having a long established use as low intensity grazing land. Corridors / stands of established eucalypt trees are noted across the subject land, with a corridor along the western boundary of Lot 3 fronting Spring Flat Road, a corridor forming the riparian zone along Oakey Creek, corridors along either side of Sydney Road and stands towards the south-western corner of Lot 4. Vegetation apart from these is limited to grasses.

No fauna was observed onsite, however it is acknowledged that the site may be inhabited on occasion by roaming kangaroos and certain avian species. Based upon this it is unlikely that any flora shall be disturbed as part of any future development relating to the possible rezoning of the site, and no core habitat for local fauna will be threatened.

1.7 Heritage

There are no heritage items listed for the subject site in the New South Wales Heritage Register (NSW Heritage Council, 2010) or the Mid-Western Local Environmental Plan 2012.

The National Parks and Wildlife Act 1974 provides for the protection of Aboriginal relics/sites across New South Wales regardless of significance, land tenure and whether or not they are recorded in the NPWS Sites Register. It is an offence to knowingly damage, deface, cause or permit the destruction of an Aboriginal relic or place without the prior written consent of the director general of NPWS.

An Archaeology Assessment including detailed site investigation has been carried out by the Mudgee Local Aboriginal Lands Council and is attached at **Appendix C.** The investigation located a Scar Tree towards the south eastern corner of the site with the assessment recommending retention of this tree. As a result the proposed boundary for rezoning as shown on the Concept Plan has been positioned to locate the Scar Tree on land to be transferred through boundary adjustment to the southern neighbouring rural lot, which is also owned by the applicant. The use of this neighbouring land remains for agricultural purposes.

Apart from the findings of the Archaeology Assessment, no Aboriginal heritage items or sites have been recorded at or near the subject site in the New South Wales Heritage Register (NSW Heritage Council, 2010). Refer to **Appendix C** for searches conducted utilising the Aboriginal Heritage Information Management System (AHIMS).

1.8 Flooding

Oakey Creek and its tributaries traverse through Lot 4, flowing north towards the Cudgegong River, however it is not considered a significant watercourse. A check of Council's Flood Map in the Mudgee Local Creeks Flood Study 2008 confirms that the site is not flood prone land, noting it is above the 1:100 year ARI flood level and Probable Maximum Flood Event as shown on the Map. The land however is identified as groundwater vulnerable on Council's "Groundwater Vulnerability Map", therefore effluent disposal requires consideration (refer to **Section 2.3** and **Section 3.2** for further comment).

1.9 Noise

Noise measurements of background levels have not been undertaken onsite. The main contributor to noise in the vicinity is considered to be created by traffic movement along Sydney Road and use of farming machinery on neighbouring farmland.

From inspection, noise levels generated by traffic along Sydney Road and from operation of farming machinery in the surrounds are relatively low such that low density residential development may be carried out on the land subject to adequate setback / separation.

1.10 Services

Water & sewer - The proposed rezoning of 54.72 ha of the site to low density residential with a minimum lot size of 2ha is premised upon incorporating reticulated water supply and on-site effluent disposal.

Water supply shall be via a reticulated main from a Community Water Supply Scheme, utilising a well on Lot 1 DP 810562.

Stormwater - Noting on-site rainwater harvesting is proposed for water supply to future housing development, best practice stormwater management features may be incorporated such as nutrient reduction measures, on site detention and filtration for use as potable water and landscape irrigation.

Power / communications - Both electricity and telecommunications services are available to the subject land.

1.11 Access

The subject land has sealed road access with frontage to Sydney Road and Spring Flat Road. Access via Spring Flat Road as a collector road may be achieved and is preferable so as to avoid direct entry / egress from Sydney Road which is a classified State Main Road.

As part of any future development of the site, a new road will form part of the land subdivision which will require provision of an intersections with Spring Flat Road as indicated in the Concept Plan attached at **Appendix B**. Additional detail can be provided as required by Council.

1.12 Bushfire

A review of Mid-Western Regional Council's Bushfire Prone Land Map (as provided by NSW Rural Fire Service) confirms that both portions of the subject site are substantially clear from the boundaries of bushfire prone land. Refer to Map **in Appendix B**.

Notwithstanding, with a predominant vegetation classification of **Grasslands** some level of bushfire risk is acknowledged. Future development of the land as large lot residential would result in a transformation of the site to **Managed land** thereby reducing the risk of grassfires.

2.0 PROPOSED DEVELOPMENT

2.1 General

The proposal seeks Mid-Western Regional Council's support to rezone approximately 54.72 ha of the subject land from the RU4 - Primary Production Small Lots zone to R5 – Large Lot Residential zone, with a corresponding minimum lot size of 2ha pursuant to the Mid-Western Regional Local Environmental Plan 2012. The remaining 70.12ha of the site is proposed to remain zoned RU4 – Primary Production.

The intention of rezoning the land in this manner is to permit the future subdivision of the land and its development for rural residential purposes consistent with the objectives of the R5 - Large Lot Residential zone.

Significantly, the land (Lots 3 & 4 DP 1069441) adjoins an area on the western side of Spring Flat Road that is zoned part RU4 - Primary Production Small Lots and part R5 - Large Lot Residential, which is identified as a 'hard edge' for urban growth in the Mid-Western Regional Comprehensive Land Use Strategy (2009). This is "*because it provides a clear edge between urban and rural uses*".

The Strategy identifies land north (or west) of Spring Flat Road as an opportunity for large lot residential subdivision to 4,000m^2 which is understood to be achievable subject to provision of reticulated water and sewer as per the minimum lot size provisions applying to the Bombira rural - residential locality on the north side of Mudgee (reference LEP Cl.4.1(3)(a)). It is noted that in Bombira, a minimum lot size of 2ha otherwise applies where on-site effluent disposal and water supply is otherwise proposed, which is consistent with the principles of this Planning Proposal.

2.2 Lot Yield

The subject land comprises of two lots having a total area of approximately 139 hectares. Under the current RU4 - Primary Production Small Lots zone, the minimum lot size is 20ha whereby a compliant subdivision would permit a maximum of 6 lots, subject to demonstrating that the land is both suitable and viable for intensive agriculture. As indicated in the Land Capability Map contained in Council's Strategy, the land is a combination of Class 1, 2 and 3 suitable to crop planting (but not suited to continuous cultivation) and livestock grazing, however if subdivided into 6 x 20ha+ lots in separate ownership, such activities would not likely be viable given insufficient area.

The land is cleared and vacant with sealed main road frontage and is therefore well placed to support subdivision and future rural residential development which is consistent with the principle of adopting a 'hard edge' to residential development extending into the south of Mudgee, as recognised in Council's Comprehensive Land Use Strategy.

The proposed minimum lot size of 2ha per lot is consistent with the recommendations of the Mudgee and Gulgong Urban Release Strategy. Accordingly the minimum lot size to accompany this proposal is 2ha. Based on this minimum lot size, the potential lot yield is indicated in **Table 2**, as follows.

Table 2: Potential Lot Yield

Lot	DP	Owner	Lot Size	Existing RU4 zone
3 & 4	1069441	Burrundulla P/L	139ha	6 lots @ 20ha+/lot
				Proposed R5 zone
Consolidated lot		Burrundulla P/L	139ha	
- Oakey Ck offset areas**		Burrundulla P/L	- 10.33 ha*	
- farmland & buildings		Burrundulla P/L (Lot 34)	- 4.63 ha	
- area remaining as RU4 zoning		Burrundulla P/L	- 70.12 ha	
NET AREA		Individual owners	54.72ha	25 lots @ 2ha/lot
Proposed lot yield			**54.72ha**	**25 lots @ 2ha+/lot**

** Approximate measurement ** for potential transfer*

With a 7.6ha buffer along Oakey Creek for potential future transfer to the southern neighbouring land (by way of boundary adjustment), the total developable area to be rezoned is approximately 54.72ha with a maximum potential lot yield calculated to be 25 lots.

The subdivision yield is to be finalised following rezoning whereupon a detailed plan of proposed subdivision and services shall be prepared.

2.3 Water supply and effluent disposal

Council's Urban Release Strategy 2014 recommends that Council undertake further analysis into costs of providing reticulated water and sewer to service future subdivision of the subject site, following its rezoning. As part of initial consultation with Council, it was identified that Council's current planning controls require reticulated water and sewer for subdivision of land in the R2 – Low Density Residential zone with a corresponding minimum lot size of 4,000m^2 (or 2,000m^2 for some R2 zoned areas). In comparison the proposal seeks a minimum lot size of 2ha, providing a maximum yield of 1/5th that could be achieved with a lot minimum lot size of 4,000m^2.

2.3.1 Sewerage Disposal

It is proposed that on-site effluent disposal systems be installed at each new lot. The final design of the systems shall conform with AS1547:2010, On-site domestic wastewater management. As per table K1 of AS1547:2010, for sites that maybe groundwater vulnerable, a secondary (aerated) treatment system is recommended.

For a secondary (aerated) treatment system, all household wastewater flows to the septic tank where settlement and primary breakdown of material takes place. It then flows into a second tank where the treatment system is installed and by aeration, converts it into biologically clean clear odour-free water. The water is then lightly disinfected before it is automatically irrigated onto the garden and/or lawn through a sprinkler system, or it can be disposed of below ground if required.

The hydrogeological study has been prepared and demonstrates the land is suitable for onsite effluent disposal without impacting on groundwater. A copy of the Groundwater and Salinity Study is attached as Appendix D.

2.3.2 Water supply

It is proposed that non-potable water shall be provided to each proposed allotment via a Community Water Supply Scheme, utilising a well located on Lot 1 DP 810562. The Scheme is to be administered and monitored by a Body Corporate and shall be established on a registered plan of subdivision prior to commencement. A Groundwater Works Summary was obtained for the subject well, and is summarized as follows:

- GW800454 is located on Lot 1 DP 810562. The well was drilled to a final depth of 7.90m. No details on standing water levels or water bearing zones were provided in the Groundwater Works Summary.

The well is subject to an approval issued under the *Water Management Act 2000*, and is identified as 80CA718675. The type of approval was for 'water supply works and water use', issued on 4 October 2012, with an expiry date of 12 March 2027. The water source is derived from the Cudgegong Alluvial Groundwater system.

The well is also subject to a Water Access Licence (WAL) under the *Water Management Act 2000*, and is identified as WAL34145. The Annual Extraction Allocation under the WAL is 1,246 megalitres per annum.

A twenty-four (24) hour single rate pump test, prepared by Western Bore Testing & Pump Services indicates that the well is capable of a continual supply of 9.09 litres per second (32,730 litres per hour). A water Certificate of Analysis has also been provided in support of the subject Planning Proposal, prepared by ALS Environmental.

It is anticipated that each proposed lot will be entitled to use up to 1.5 megalitres per annum via a pressurised pipeline from the well. The flow rate to each lot will be metered and restricted to 10 litres per minute. It is considered that the capacity of the well is capable of catering for all proposed lots.

It is proposed to use the reticulated water from the abovementioned well for non-potable use (i.e. landscaping, general purpose etc). Potable water supply shall be harvested using rainwater tanks in conjunction with future residential use of the proposed lots.

Refer to **Appendix E** for additional details regarding water supply.

3.0 SITE OPPORTUNITIES – SUBSTANTIAL PUBLIC BENEFIT

3.1 Existing constraints and opportunities to development

The land subject to the proposed rezoning is approximately 54.72ha of the site and is currently zoned RU4 - Primary Production Small Lots under the provisions of the Mid-Western Regional Local Environmental Plan 2012, with a minimum lot size of 20ha. This minimum lot size carries over from the previous Interim LEP 2008 whereby the land was zoned Intensive Agriculture with a minimum lot size of 20ha.

Whilst most agriculture zoned land surrounding Mudgee has been retained from the previous Interim LEP in terms of zoning and minimum lot size, over the past 5 years Mudgee has experienced significant growth in housing with limited supply of large lot residential / rural-residential land to accommodate future demands for this.

The current zoning as RU4 - Primary Production Small Lots effectively limits the use of the land to its current use as grazing land. The current zone and corresponding minimum lot size of 20ha which advocates intensive agriculture enterprise is not considered the highest and best use of the subject site. This is due to declining financial returns on intensive agriculture enterprises and the high costs of licensed commercial water supply for such enterprises, noting the land has never been used for intensive agriculture enterprises. Further, the classification of the land which is advised as Classes 1, 2 and 3 is suitable to crop planting (but not suited to continuous cultivation) and livestock grazing, however if subdivided into 6 x 20ha+ lots in separate ownership, such activities would not likely be viable given insufficient area.

The resultant current use as low intensity grazing land is lower in cost than intensive agriculture enterprises, however also lower in potential return and is therefore not considered the highest and best use of the land given the strong demand for housing in Mudgee.

It is also noted that as housing development extends south from the existing urban edge towards Spring Flat Road (as advocated by Council's Strategy), this will increase likely land use conflict with existing agricultural enterprises. Land on the western side of Spring Flat Road which is zoned RU4 - Primary Production Small Lots (and further south R5 - Large Lot Residential) is constrained from agricultural enterprise due to its heavily fragmented nature with lots in separate ownership and ranging generally in size from 6ha - 12ha (ie. large lot rural residential) with their use mostly limited to low intensity grazing. Consequently the subject site with sealed road frontage to Spring Flat Road is recognised for its suitability for large lot rural residential subdivision, as an extension to and as the southern boundary for the area identified as potential large lot residential along the western side of Spring Flat Road.

As low density housing on lots of 2ha or more, this subdivision density would suitably act to provide a buffer between agricultural enterprises on land to the south and housing to the west.

3.2 Consideration of proposed zoning

3.2.1 Objectives of R5 Large Lot Residential zone

The proposed rezoning of approximately 54.72ha of the subject land from the RU4 - Primary Production Small Lots zone to R5 – Large Lot Residential zone, with a corresponding minimum lot size of 2ha permits a wide range of rural, residential and non-residential related development as indicated in the 'Permitted with consent' land use table for the zone:

Aquaculture; Bed and breakfast accommodation; Cellar door premises; Dual occupancies; Dwelling houses; Garden centres; Home industries; Intensive plant agriculture; Landscaping material supplies; Markets; Neighbourhood shops; Plant nurseries; Roadside stalls; Secondary dwellings; Serviced apartments; Waste or resource transfer stations; Water recycling facilities; (plus any used not specified as prohibited)

Consideration of the rezoning proposal against the zone objectives is provided as follows:

Objectives of zone

- *To provide residential housing in a rural setting while preserving, and minimising impacts on, environmentally sensitive locations and scenic quality.*

Comment - The proposal provides an indicative supply of 25 rural-residential lots ranging from 2ha minimum within an existing rural area near the southern urban edge of Mudgee. By virtue of the relatively large lot areas proposed, the scenic quality of the existing rural landscape may be preserved including retention of its established tree corridors along Spring Flat Rd and Oakey Creek where transfer of this land with a boundary adjustment is proposed.

Being mostly cleared land, few trees will require removal and future landscaping associated with rural-residential housing should serve to enhance scenic value. Lots containing existing stands of established trees will not require these to be cleared given the ample area available to locate and build a dwelling with all-weather access. The relatively flat nature of the land and its central position within the valley floor of Mudgee also ensures that distant views of the hills to the east and west and their scenic quality will not be affected.

- *To ensure that large residential lots do not hinder the proper and orderly development of urban areas in the future.*

Comment - Council's Strategy identifies land west of Spring Flat Road as an opportunity for large lot residential subdivision to 4,000m^2, forming a 'hard edge' to the town.

The proposed rezoning of the land to R5 - Large Lot Residential would not affect this outcome as advocated by the Strategy, whilst with a 2ha minimum lot size it would suitably create a low density residential buffer area or soft 'transition zone' between such development on the western side of Spring Flat Road and existing agricultural enterprises to the south of the site. The key merit of this is that its future development as a soft transition zone with 2ha lots envisages a more visually sensitive outcome than a 'hard edge' with smaller 4,000m^2 lots as advocated by the Strategy west of Spring Flat Road.

- *To ensure that development in the area does not unreasonably increase the demand for public services or public facilities.*

The site has sealed road access from Spring Flat Road and sealed road frontage to Sydney Road. Given this existing road network, traffic generation resulting from the future development of 25 rural-residential lots is not considered excessive in terms of the traffic capacities and existing traffic generation on these roads.

The proposed minimum lot size of 2ha is premised upon a future low density rural residential subdivision not requiring connection to water and sewer mains services, notwithstanding the subdivision may be designed to enable provision of such services as they extend from south Mudgee in the future in accordance with Council's Strategy.

In terms of demands on community services, rates and developer contributions collected from future subdivision would assist towards funding such services. The future initial development of 25 rural-residential homes does not represent a significant increase to Mudgee's housing stocks such that community services could reasonably accommodate such growth.

- *To minimise conflict between land uses within this zone and land uses within adjoining zones.*

Comment - Land use in the surrounds is predominantly characterised by low intensity livestock grazing, with some intensive agriculture including viticulture and olive groves. It is noted that the subject site has a long standing history in its use as low intensity grazing land.

Given the predominance of low intensity grazing on the site and surrounds, and Council's Strategy advocating low density residential development to the west of Spring Flat Road, the proposed 2ha minimum lot size would suitably create a low density residential transition zone between such development on the north side of Spring Flat Road and existing agricultural enterprises to the south.

By providing such a transition zone, or 'soft edge' (rather than a 'hard edge' as advocated by the Strategy), land use conflict between agricultural activities to the south and higher density residential development to the west (as per the Strategy) may be minimised. As such the proposed rezoning would not conflict with future development or use of the surrounds, subject to sufficient setbacks being provided which may be determined at the Development Application stage for subdivision, whilst also providing a low density residential buffer to existing agricultural enterprises to the south.

3.2.2 Other LEP provisions for consideration

Clause 6.4 - Groundwater vulnerability

Cl.6.4 requires Council's consideration in the determination of a Development Application (DA) for development on land that is groundwater vulnerable. A Groundwater and Salinity Study was conducted by Envirowest Consulting and is presented in Appendix D.

3.3 Land use conflict

As discussed in **Sections 3.1 and 3.2** above, the proposed 2ha minimum lot size is intended at providing a transition zone between future low density residential development to the north, and existing agricultural activities to the south. Noting that Council's LEP and Strategy adopt low density residential development to the north and south of the existing Mudgee township as a transition to rural surrounds (including Bombira where a minimum of 2ha applies), the proposal would maintain this principle.

With the subdivision plan being a concept plan only and not the subject of a Development Application, the plan may be revised as necessary subject to Council's and the Minister's endorsement of the Planning Proposal.

To address industrial operational noise caused by farming machinery, a future plan of subdivision could include measures such as:

- a rear setback control requiring a minimum prescribed setback (to be determined) from each boundary;
- nominated building envelopes for future housing on each lot.

Compared with the recent industrial and residential subdivision along Depot Road and Lions Drive in south Mudgee the proposal is less sensitive to noise impacts by virtue of the proposed low density of housing lots, such that land use conflict in this regard may be satisfactorily managed.

With regard to existing agriculture to the south, the proposed low density residential zoning with lots of 2ha or more would suitably act to provide a buffer between agricultural enterprises on land to the south. As such, this approach is adopted by Council's LEP whereby low density residential development to the north and south of the existing Mudgee township provide a suitable transition to rural surrounds.

To address potential impacts from existing agriculture of crop spraying, a future plan of subdivision could include a rear setback control and / or nominated building envelopes similar to those suggested above. Noting the Planning Proposal does not seek formal approval of the proposed subdivision plan, the plan may be revised at Development Application stage subject to the proposed rezoning of the land being endorsed by Council and the Minister.

3.4 Summary of opportunities and constraints

The main planning opportunities relating to the proposed rezoning of the subject land, include the following:

Location - The site is located on the southern edge of Mudgee with neighbouring land to the west of Spring Flat Road identified in Council's Strategy for large lot residential subdivision to 4,000m^2. Due to the fragmented form and multiple ownership of this neighbouring land, its future rezoning and development may be delayed thereby increasing demand for other rural land available and suitable for large lot residential development. The location of the site in this regard close to the urban edge of Mudgee makes it suitable for large lot residential development, providing a transition to larger lot farm land to the south.

Environment - The site is predominantly cleared in its current state as grazing land, with no likely presence of any threatened or endangered flora and fauna.

Land use compatibility with surrounds - The surrounding lands comprise a mix of land uses including grazing lands, large lot residential subdivision, and a cellar door / café. Based upon this mix of land uses, the proposed rezoning of the land to large lot residential and its future rural-residential use is considered compatible with the surrounding land uses.

Potential land supply - An indicative supply of 25 rural-residential lots as shown in the Concept Plan will provide a positive contribution to Mudgee's future supply of rural-residential land.

Access - The subject land has sealed road access from Spring Flat Road. The proposed Concept Plan provides for access to be achieved from within the site for most lots, and ensures that no individual driveways to Sydney Road / Castlereagh Highway are required.

Services – The proposal requests on-site effluent disposal and on-site water supply, which is assessed as achievable based on the minimum lot size of 2ha. Stormwater shall be collected on site for domestic consumption and irrigation purposes. Both electricity and telecommunications services are also available to the subject land.

Land use suitability - The subject site is located on the southern edge of Mudgee and benefits from sealed main road access via Spring Flat Road, with close proximity to the Castlereagh Highway / Sydney Road, whilst being physically removed from sensitive conservation lands to the east and west.

No physical constraints are identified that would hinder the future subdivision and development of the land for rural - residential purposes, noting:

a) The subject land provides an opportunity to be designed in such a manner as to ensure visual and acoustic privacy, both from within the development and its surrounds;

b) Based on the Preliminary Site Investigation, the subject land proposed for rezoning has no known contamination issues, noting that the shearing shed and its surrounds have been excluded from the proposed rezoning area. The proposed rezoning area has not been occupied by any activity with the potential to cause any significant soil contamination;

c) There are no obvious signs of salinity over the subject land;

d) The subject land does not appear to be flood prone land;

e) The site is located outside the boundaries of Bushfire Prone Lands to the west;

f) The site does not contain any known items of heritage significance, nor is it located close to any known items of heritage;

g) The tree corridor associated with the riparian zone for Oakey Creek may be retained in one lot with the future option of transferring this land to the southern neighbouring land by way of a boundary adjustment.

h) The subject land is not identified as prime agricultural land that would be viable for subdivision into 20ha lots (as permitted under the current RU4 zoning) that would support sustainable agricultural enterprise given their combined classification as Classes 1, 2 and 3 land and limited area;

i) It is also unlikely that additional land can be acquired to make the subject land worthwhile for sustainable agricultural use;

j) The proposed rezoning of approximately 54.72ha of the subject land to R5 - Large Lot Residential with a minimum lot size of 2ha is considered a higher and more appropriate use of the subject land, in that it provides an opportunity for a development capable of providing a positive physical, social and economic contribution to the Mudgee, noting its limited existing rural-residential land supply.

4.0 STRATEGIC CONTEXT

4.1 Contribution to Land Supply

Due to its location and few constraints the subject land can be readily incorporated into Council's plans for future large lot residential development in Mudgee.

From review of residential development in Mudgee it is apparent the town has experienced significant residential growth over the past 5 - 10 years including the development of large lot rural residential land in Bombira on the north side of Mudgee, with few vacant lots. The result is that there appears to be scope for supporting further large lot rural - residential development consistent with the principles of Council's Land Use Strategy. The Strategy identifies a take up rate of 6 - 8 rural residential lots/year, whereby the Concept Plan for 25 lots would provide between 3 - 4 years of land supply.

4.2 Key Council Strategies

The rationale for supporting the rezoning can be found in Council's key planning strategies and instruments. The following is a brief summary of local government planning strategies and instruments which are relevant to future planning of the site:

4.2.1 Mudgee and Gulgong Urban Release Strategy 2014

The site is identified for future rezoning and release as part of Council's Urban Release Strategy 2014 (URS). The URS identifies the site within Urban Release Area No.22, with a recommended minimum lot size of 2ha and recommended release from 2020+.

Following Council's endorsement of the draft URS for public exhibition at its Meeting of 20 August 2014, two submissions were made regarding the proposal by Raine & Horne and the proponent. Both submissions sought rezoning of the land in accordance with the Planning Proposal, within revised timing for its release from 2015+ which Council endorsed in its review of submissions at its Meeting of 5 November 2014, hence the timing of this submission.

4.2.2 Mid-Western Regional Comprehensive Land Use Strategy

The Mid-Western Regional Comprehensive Land Use Strategy ("the Strategy") dated October 2009 provides *"a basis for identifying options...to meet long term urban and rural growth needs... and provide direction for targeted growth in specific areas."*

The Strategy prepared by Parsons Brinkerhoff consultants was adopted in 2009. In relation to the South Mudgee area, the Strategy specifically recognises Spring Flat Road as the boundary for future low density residential development to the south of Mudgee, with a minimum of 4,000m^2/ lot, subject to connection to reticulated water and sewer. The proposed rezoning represents a minor variation to the Strategy in that the proposal seeks only to shift the boundary of future residential from land west of Spring Flat Road to land with frontage to Spring Flat Road, whilst proposing on-site effluent disposal and water supply as detailed in **Section 2.3** of this report. On this basis it is considered generally consistent with the principles of the Strategy as applied to South Mudgee / Spring Flat Road area.

4.2.3 Mid-Western Regional Local Environmental Plan 2012

The general objectives of the plan support the rezoning of approximately 54.72ha of the subject land to R5 - Large Lot Residential for rural-residential type development, as the land is appropriately located having regard to environmental constraints, accessibility and existing land-use patterns. The general objectives also support the rezoning of the site for large lot rural residential as it achieves orderly and efficient development of the site. Consideration of the zone objectives as provided in **Section 4.2** of this report indicate that future subdivision and rural - residential development of the land may be carried out in an orderly manner without adversely impacting on the surrounds.

4.3 Section 117 Directions

Pursuant to Section 117(2) of the *Environmental Planning and Assessment Act, 1979*, any relevant planning direction issued by the Minister must be followed by Council upon determining to prepare a new Local Environmental Plan (LEP) or an amendment to its LEP as initiated by a Planning Proposal.

The directions that are relevant to the proposal are identified as follows:

- Direction 1.2 - Rural Zones
- Direction 1.5 - Rural Lands

4.3.1 Direction 1.2 - Rural Zones

Consideration is given to this direction whereby the proposal seeks rezoning of rural land to permit large lot residential subdivision. As stated, the objective of this direction is *to protect the agricultural production value of rural land.*

In circumstances where a Planning Proposal is not consistent with this Direction and not identified for potential rezoning under the Council's Strategy, a study in support of the proposal is required *which gives justification to the objectives of this direction.*

As discussed in this report, the subject land is not identified as prime agricultural land that would be viable for subdivision into 20ha lots (as permitted under the current RU4 zoning) that would support sustainable agricultural enterprise given their combined classification as Classes 1, 2 and 3 land, and limited area. The land in its current state has a relatively low level of agricultural production noting its use for low intensity grazing.

Given the land's relatively low productivity and that 20ha lot subdivision as permitted under its zoning would likely reduce such productivity, it is submitted that the current zoning reflects a relatively low productive value of the land. Based on this, its rezoning of 54.72ha of the subject land to R5 - Large lot residential would not result in a significant loss of productive agricultural land in the region.

4.3.2 Direction 1.5 - Rural Lands

Consideration is given to this direction which applies where *a planning proposal affects land within an existing rural zone*, and where the proposal *changes the existing minimum lot size on land within a rural zone.*

The direction requires the proposal to be consistent with the rural planning and subdivision principles listed in *State Environmental Planning Policy (Rural Lands)* 2008. Notwithstanding, a planning proposal may be inconsistent with the Direction (and the SEPP) if the proposal is justified by a strategy that identifies the land for future rezoning (that the proposal is consistent with), and the strategy has been endorsed by the Department of Planning.

In the circumstances of this Planning Proposal for rezoning of 54.72ha of the site to R5 - Large lot residential, the site is identified for such rezoning and development under the Mid-Western Urban Release Strategy 2014, as discussed in **Section 4.2.1**. Accordingly this report requests Council's consideration of the proposal as consistent with its Strategy.

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5.0 CONCLUSION

Rezoning of the land is generally consistent with the objectives set out in Council's planning instruments, and planning strategies including the Mid-Western Regional Comprehensive Land Use Strategy, the Mudgee and Gulgong Urban Release Strategy 2014, and the Mid-Western Regional Local Environmental Plan 2012. Rezoning of 54.72ha of the subject land to R5 - Large Lot Residential under the LEP would facilitate a future large lot rural - residential subdivision in close proximity to existing services and facilities.

The site presents few physical constraints to development. It would result in:

- Development that is suitable in the locality;
- Development that would be compatible with adjoining and adjacent land uses, including potential large lot residential development on the western side of Spring Flat Road;
- Development that shall support demand for low density rural residential housing that provide for rural lifestyle;
- Development to ensure appropriate and sufficient supply of rural-residential land in and around Mudgee.

Council is encouraged to support this Planning Proposal and take all necessary steps to amend the Mid-Western Regional Local Environmental Plan 2012 to rezone 54.72ha of the subject land to R5 - Large Lot Residential with a minimum lot size of 2ha, thereby enabling rural-residential subdivision and development of the subject land.

We would be happy to meet with Council representatives to discuss this matter further and should Council require any further information please contact the undersigned at our Mudgee office.

Yours faithfully

BARNSON PTY LTD

Luke Morris
BE MIEAust CPEng (Reg)
DIRECTOR

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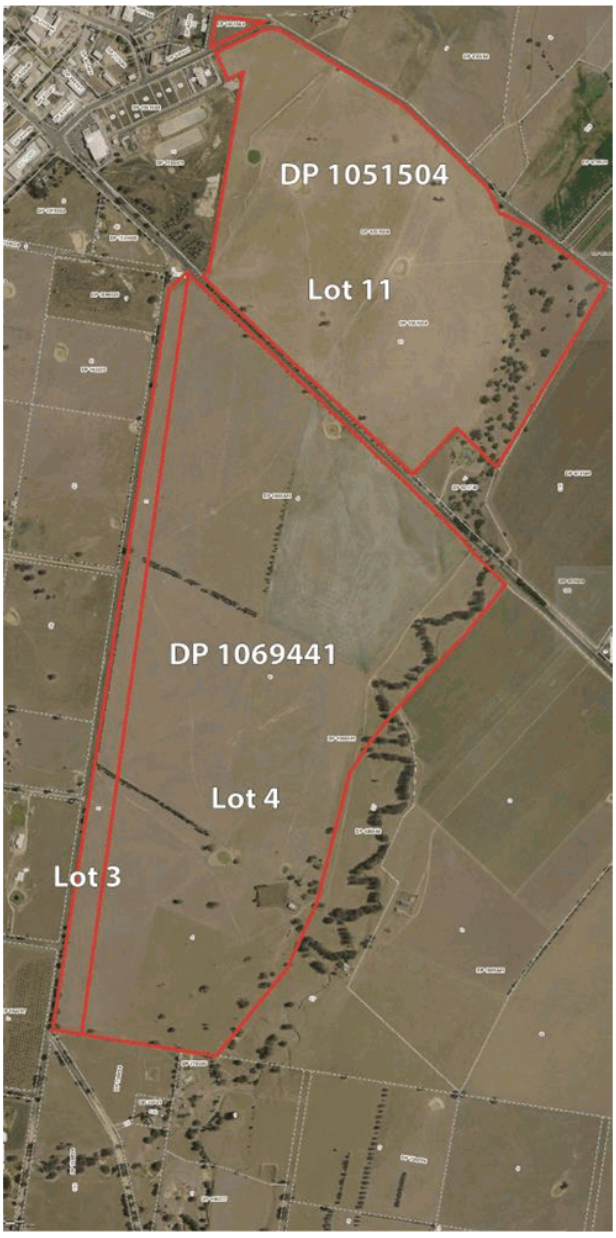
Appendix A



Aerial Map - subject land and surrounds.

Lot 11 forms part of "Burrundulla" holding but is excluded for the purposes of this Planning Proposal

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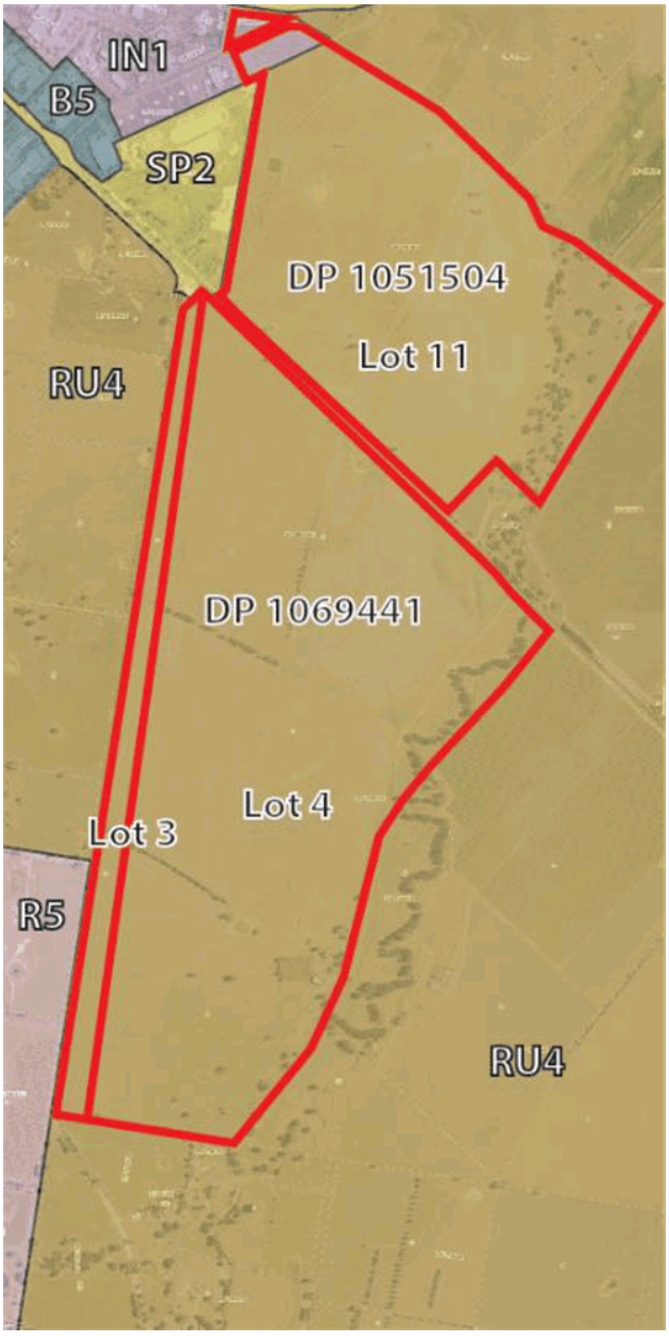

Zoning Map - Indicating existing zoning of subject site and surrounds as RU4 - Primary Production Small Lots, minimum lot size - 20ha, pursuant to Mid-Western Regional LEP 2012.

Lot 11 forms part of "Burrundulla" holding but is excluded for the purposes of this Planning Proposal

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Appendix B - Concept Plan of subdivision

Concept Plan for 25 lots

PROPOSED SUBDIVISION PLAN

SCALE: 1:600
CONTOURS NOT SHOWN

NOTES

1. BEARINGS AND DISTANCES ARE BY TITLE AND/OR DEED ONLY. NO BOUNDARY INVESTIGATION HAS BEEN CARRIED OUT.
2. SERVICES SHOWN HEREON HAVE BEEN DETERMINED FROM VISUAL EVIDENCE ONLY. PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON THE SITE THE RELEVANT AUTHORITY SHOULD BE CONTACTED TO ESTABLISH DETAILED LOCATION AND DEPTH.

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Offices Located
Dubbo, Mudgee, Parkes & Bathurst

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Dubbo - Head Office
Accredited Laboratories Dubbo & Bathurst

Client: BURRUNDULLA PTY LTD

Project:
PROPOSED PLAN OF SUBDIVISION,
LOTS 3 & 4, DP1069441,
MUDGEE, NSW.

Drawing Title:
PROPOSED PLAN OF SUBDIVISION

Design	Drawn
LM	LM
Check	QA
JS	JS

Drawing Sheet
A3 - Scales as noted

Rev	Date	Amendment
E	13.11.17	AMENDED LOT LAYOUT
D	12.04.16	AMENDED LOT LAYOUT
C	27.03.16	AMENDED LOT LAYOUT
B	17.10.13	AMENDED FOR SCAR TREE
A	20.09.13	ISSUED FOR APPROVAL

Certification

Drawing Number
19429–L01

Revision
E

Appendix C

Archaeological Assessment and AHIMS search results

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NSW Office of Environment & Heritage

AHIMS Web Services (AWS)
Search Result

Your Ref Number :
Client Service ID : 97855

Cheryl Brown

Date: 15 April 2013

PO Box 1967
Hurstville New South Wales 2220

Attention: Cheryl Brown

Email: cheryl.brown@environment.nsw.gov.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 4, DP:DP1069441 with a Buffer of 50 meters, conducted by Cheryl Brown on 15 April 2013.

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 the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

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Office of Environment & Heritage
NSW

AHIMS Web Services (AWS)
Search Result

Your Ref Number :
Client Service ID : 97854

Cheryl Brown

Date: 15 April 2013

PO Box 1967
Hurstville New South Wales 2220

Attention: Cheryl Brown

Email: cheryl.brown@environment.nsw.gov.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 3, DP:DP1069441 with a Buffer of 50 meters, conducted by Cheryl Brown on 15 April 2013.

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 the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

Appendix D

Groundwater and Salinity Study

Groundwater and salinity study

Lot 3 & 4 DP1069441, Spring Flat Road, Mudgee NSW

Ref: R6151s
Date: 8 October 2015

Envirowest Consulting *Pty Ltd* ABN 18 103 955 246
• 9 Cameron Place, PO Box 8158, Orange NSW 2800 • Tel (02) 6361 4954 •
• Fax (02) 6360 3960 • Email admin@envirowest.net.au • Web www.envirowest.net.au •

Environmental
Geotechnical
Asbestos
Services

Client:	Burrundulla Pty Ltd c/- Barnson Pty Ltd 4/108 110 Market Street Mudgee NSW 2850
Assessor:	Dave Langston BNEWS Environmental Scientist
Checked by:	Leah Desborough BEnvSc Senior Environmental Scientist
Authorising Officer:	Greg Madafiglio PhD Senior Environmental Scientist
Report number:	R6151s
Date:	8 October 2015

Executive summary

Background

A large lot residential subdivision is proposed at Lots 3 and 4 DP1069441 Spring Flat Road, Mudgee NSW. The final subdivision design will have a minimum lot size of 2ha and access roads. The lots will be serviced by on-site effluent management systems. Historical land-use of the site is agriculture and grazing. The site is located in a groundwater vulnerable area and Mid-Western Regional Council have requested a hydrogeological assessment to determine the potential impacts on groundwater from the proposed development.

Objectives of the investigation

A site investigation was undertaken to assess the existing salinity conditions of the soil and groundwater and determine the impact of the development on groundwater.

Investigation

A soil and groundwater investigation was undertaken of the site. An initial investigation and desktop review was undertaken to collect existing information on groundwater and around the site and assess the likelihood of salinity across the site. A detailed investigation was undertaken on 28 and 29 July 2015.

The detailed site investigation included landscape description, soil investigation, laboratory analysis and groundwater investigation. The soil profile investigation was undertaken by constructing 69 boreholes up to 12m in depth. Representative soil samples were collected and analysed for pH, electrical conductivity, colour, dispersion, texture, chlorides and exchangeable sodium percentage.

Soil moisture levels under land-use scenarios were modelled using rainfall data to estimate infiltration. Soil moisture and infiltration was simulated by the CLASS U3M-1D model with daily rainfall inputs from 1980 to 2014. Surface water flow containing sediment, nitrogen and phosphorus were modelled using land-use balances.

The impact of the development on water infiltration and salinity was discussed and best practice procedures recommended which will minimise the effects on groundwater.

Conclusions

The existing land-use is pasture. No bare areas from salinity were identified. The erosion hazard and erodibility is low.

Soils on the site comprised topsoil of grey to brown silty clay over grey, brown sandy clays, with rounded quartz rich river gravels and weathered metasediment. Quaternary alluvium are located on the flats. The Mudgee (LEP) maps indicate the site is located within a vulnerable groundwater area.

The Mid-Western Regional Council has classified the site as a *'high risk'* area based on original groundwater investigations which were commissioned to create a classifying system based on the hydrogeological landscape. The scale and input factors are believed to be the reason why the Piambong Creek HGL was given the *'high risk'* category.

Recent work by DPI has revised the original Piambong Creek HGL and created the Biraganbil HGL.

The site is located within the Biraganil hydro-geological landscape and has a moderate land salinity, salt export, water quality classification and likelihood of occurrence with high confidence level.

The investigation identified that topsoils samples were determined to be non-saline. Subsoils over the site were classified as non-saline to slightly saline with electrical conductivity of less than 4dS/m.

Majority of soils were non-saline to slightly saline. Moderately saline soils were encountered in MW3 and 4 at a depth greater than 1.0m in small soil substrates.

Infiltration of groundwater over most of the site will not result in mobilisation of salts. Groundwater was encountered in MW2 located in the north eastern section of the site from 10m. Electrical conductivity of groundwater from MW2 was 5.12mg/L which is classed as low salinity. No groundwater was identified in MW1, MW3 and MW4 to a depth of 15m in sandy to gravelly clay.

No groundwater discharge areas were identified on the site.

Modelling of soil moisture levels over the past 34 years indicated variations in infiltration occur with the amount of rainfall pre and post development. Infiltration under the three land-use scenarios will be reduced in the development. Reduced soil moisture is a result of the increase in runoff due to impermeable areas (roads, roofs, driveways) and increase in deep rooted vegetation extracting soil moisture from depth. The establishment of trees by future owners will offset any additional infiltration from lawn over watering.

The risk of surface contamination from the proposed land-use is less than the current land-use. From the nutrient and sediment modelling the nutrient activities will be reduced as a result of reduced agricultural activates. On-site effluent application systems will be sized to ensure no infiltration. Nutrients will be utilised by vegetation. Site-specific on-site effluent assessments should be undertaken for each lot.

No impact on groundwater is expected from the development if recommendations are adopted. A slight increase in soil moisture is experienced at 3m depth post development under the effluent and lawn irrigation area which is less than 10% of the total development site. The slight increase in moisture will be mitigated by additional tree planting. The development will not impact on quantity or quality of both unconfined and confined aquifers.

Recommendations

Planning and development controls are recommended to prevent mobilisation of salt in the soil and groundwater resulting in on and off-site impacts. Controls include:

- Establishment of parkland areas with native species which do not require irrigation
- Plantings of deep rooted vegetation along roads
- Design road levels similar to natural soil levels to minimise excavations
- Wastewater systems to comprise surface and sub-surface irrigation

Contents

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1. Introduction

A large lot residential subdivision is proposed Lots 3 and 4 DP1069441 Spring Flat Road, Mudgee NSW. The subdivision will include residential lots, access roads. A groundwater and salinity assessment is required as part of the development process.

2. Scope of work

Envirowest Consulting Pty Ltd was commissioned by Barnson on the behalf of Burrundulla Pty Ltd, to undertake a groundwater investigation and salinity study of Lots 3 and 4 DP1069441 Spring Flat Road Mudgee NSW. The objective was to assess the existing conditions and possible future impact of the proposed development on soil, groundwater and salinity.

3. Site identification

Address	Lots 3 and 4 DP1069441 Spring Flat Road Mudgee NSW 2850
Client	c/ Barnson 4/108 110 Market Street Mudgee NSW 2850
Deposited plans	Lots 3 and 4 DP1069441
Universal grid reference	UTM Zone 55H, 744837mE, 6387079mN
Locality map	Figure 1
Site plan	Figure 2
Photographs	Figure 10
Area	Approximately 139 hectares
Dates of inspection and assessment	28 and 29 July 2015

4. Proposed development

The proposed development is a residential subdivision. A preliminary lot layout has been proposed. The proposed lots will have hard surface areas comprising roofs and driveways where rainfall will run-off into stormwater pipes and permeable areas comprising lawns and gardens where infiltration into the soil will occur. Roads, footpaths and a stormwater system will be constructed throughout the estate. The existing dams on the property will be remediated and a new stormwater system created to transfer stormwater off the estate to Oaky Creek.

5. Site condition and surrounding environment

5.1 Land-use

The current land-use is stock grazing on semi-improved pasture. The site is currently vacant.

5.2 Vegetation

The site has been cleared of native tree species. Eucalypts occur along fence lines and as isolated species across the site. Pasture species are native grasses and legumes with weeds. The weed species include Mallow weed, cape weed, clover, couch grass, flatweed and khaki weed.

5.3 Topography

The site is predominantly located on a mid-slope. Aspect is predominantly north east and slopes are gently inclined and generally less than 2%. Elevation ranges between 469 and 2495 metres above sea level. The lowest elevation occurs on the northern boundary and along the eastern boundary where Oaky Creek traverses the site. No groundwater seepage or discharge areas were observed on the site.

5.4 Soils and geology

The site is located within the Craigmore Soil Landscape. Soil in the Craigmore landscape consists of non-calcic brown soils and Red earths on very old Quaternary alluvium. Yellow podzolic-solodic soils intergrades on lower lying areas.

Lithology of the site is dominantly alluvial deposits consisting of metasediments from the Capertee Rise.

Soils on the site comprised topsoil of dark, grey to brown silty clay, sandy clay to clay loam over grey, light to dark brown silty clay, grey, yellow brown to dark brown, brownish red sandy clay, dark greyish brown gravelly clay with rounded quartz rich river gravels and weathered metasediments with depth and horizons of light brown light clay. Predominantly the site is composed of Quaternary alluvium on the flats of the site.

5.5 Surface water

Three dams have been formed within the site and are fed by the natural slope of the site forming a shallow drainage line running south-west to north-east. Surface water over the site predominantly flows north east and into Oaky Creek.

The Oaky Creek empties into the Macquarie River approximately 3.7km north-west of the site.

5.6 Groundwater

The Department of Primary Industries Office of Water identifies the site within the Cudgegong Valley Alluvium Groundwater Management Unit. The management unit has an area of 38km^2 with approximately 2.54 GL consumed per year. Average salinity levels are less than 1500mg/L.

A search of the NSW DPI groundwater database located 26 bores within 1.5km of the site. These bores are predominantly located around the site except south east. Bores are licensed for domestic, irrigation, monitoring, stock and public/municipal supplies. The groundwater in the area can be dived into two general aquifer types. A shallow unconfined gravel dominated aquifer which is confined to areas of drainage lines, creeks and seasonal springs. The deeper aquifer is at a depth greater than 20m in shale and or limestone.

Unconfined groundwater was identified in the monitoring well (MW2) constructed near Oakly Creek at a depth of greater than 10m.

6. Groundwater and soil salinity investigation

The groundwater and soil salinity investigation comprised a desktop study, field assessment and soil analysis. The desktop study included a review of soil landscape maps, hydro-geological landscapes and groundwater databases. Soil moisture modelling was also undertaken.

The field assessment included an initial site investigation and detailed profile descriptions and soil analysis in a grid pattern over the site. The soil and landscape information collected provided an adequate description of the physical processes on the site to enable salinity issues to be identified and managed.

6.1 Soil landscape maps

Soil landscape data was reviewed for information regarding soil types in the locality, occurrence of salinity, erosion and sodic soils.

6.2 Groundwater

An investigation of registered bores in the area was undertaken to determine the depth and salinity of the groundwater. The groundwater information was obtained from a review of the NSW Department of Primary Industries, Office of Water.

Water criteria for salinity are presented in Tables 1 and 2. The conversion from EC (dS/m) to total dissolved solids or TDS (mg/L) is undertaken by applying the conversion factor of 640 for an average concentration of salts present (Lillicrap and McGhie 2002).

Table 1. Drinking water criteria for salinity (ADWG 2004)

Criteria	EC (dS/m)	Total dissolved solids -Salinity (mg/L)
Good quality drinking water	0.78	500
Acceptable based on taste	0.78-1.56	500-1000
Unsatisfactory taste	1.56	Greater than 1000
Seawater	Greater than 55	-

Table 2a. Total dissolved solids of water for agricultural use (Reid 1990)

Class	Description	Total dissolved solids -Salinity (mg/L)
1	Low salinity	0-175
2	Medium salinity	175-500
3	High salinity	500-1500
4	Very high salinity	1500-3500
5	Extremely high salinity	>3500

Table 2b Guidelines on salinity class determination (Dubbo City Council Urban Salinity Plan)

Electrical conductivity (dS/m)	Salinity class
>15	Extreme
6-15	High
2-6	Moderate
0-2	Low

6.3 Mudgee LEP (2012) Groundwater Vulnerability

The Mudgee LEP (2012) Groundwater Vulnerability – describes the area within the site as vulnerable to depletion and contamination as a result of development. A further report entitled *Rural, Residential, Industrial & Residential Strategy* (2003) compiled by Andrews Neil on behalf of the Mudgee Shire Council reference the *Salinity Risk Assessment of the Central West Catchment* (2000) which classified the site as part of the Piambong Creek catchment area and a salinity hazard rating of high. The report may include areas that are not a saline risk: the classification was determined from soil and geological maps and has limitations of scale.

6.4 Hydro-geological landscapes

Recent work revised the broad classification the Piambong Creek defined in 2000 and focused on detail investigations and creation of new HGLS. The relevant HGL under the revitalised hydro-geological landscape data is the Biraganbil Hydrogeological Landscape. The new vulnerability mapping utilises the DRASTIC technique which is a composite description of all the major geologic and hydro-geologic factors that affect and control groundwater movement into, through and out of an area. It involves the overlaying of various hydro-geological settings via a Geographical Information System (GIS). Each hydro-geological setting describes topography, soil type, bedrock type, estimate of rainfall and net recharge depth to watertable (DTWT), aquifer yield, relative conductivity and any particular features associated with the setting that are available (Figure 6).

6.5 Hydraulic model

An unsaturated moisture movement model is appropriate to evaluate the hydraulic flows of the existing and proposed land-use. The moisture model selected was CLASS U3M-1D as released by CRC Catchment Hydrology (Vaze *et al*. 2004).

6.6.1 Inputs

The model inputs are daily rainfall and evaporation. The model used climate data from 1980 to 2014 (SILO) under pre and post land-use scenarios (Table 3) to predict soil moisture and excess soil moisture. The pre development land-use of the development area is comprised of improved pasture. The post development land-use comprised rural-residential lots and roadways. The vegetated areas will be planted to trees as offset for possible over irrigation of lawns.

The model input data was rainfall and evaporation for the inferred climate at Mudgee as obtained from SILO. Six land-use scenarios (Table 3) were applied across the time period for pre and post development scenarios in the land-use areas.

Table 3. Land-use in the soil moisture model

Land-use	Pre development (ha)	Post development (ha)	Rainfall parameter
Improved grazing	139	0	100% Rainfall
Urban	0	122	Evaporation plus 1mm/day
Road verges	0	1.35	Rainfall (allowance for road runoff)
Roads	0	4.4	Run off site
Urban-open space (parkland)	0	0	100% Rainfall in permeable areas
Tree areas	0	0	Rainfall plus 1mm/day (allowance for lawn overwatering)
Total	139	128	

Other parameters applied in the model are soil type and depth and default values (Table 4).

Table 4. Model parameters

Parameter	Data/description
Soil profile	Layer 1 2000-6000 Layer 2 1200-2000 Layer 3 100-1200 Layer 4 0-100 (topsoil)
Land-use	Pasture, lawn, verges – pasture, default climate
Soil hydraulic parameters	Layer 1 Sandy clay loam Layer 2 Sandy clay Layer 3 Sandy clay Layer 4 Silty loam (topsoil) CLASS U3M-1D
Time step	Default
Root distribution	Default

6.6.2 Outputs

The outputs from the model are soil moisture and excess soil moisture by layer in 10 cm increments. Excess soil moisture is the lateral drainage component and is the difference between available moisture and saturated soil moisture.

6.7 Nutrient model

A simulation model was developed to predict surface runoff, sediment loss, nitrogen and phosphorus export, pre and post development. Land-use of the site was divided into pasture, sealed roads, residential and road verges. The area for each land-use pre and post development was estimated from site walkover, topographical map, subdivision plans and an aerial photograph. The site was classified into the different land-use areas pre and post development. These areas are summarised in Table 5.

Table 5. Land use areas for nutrient model

Land-use areas (ha)	Pre	Post
Improved grazing	126	0
Disturbed landscapes	8.4	0
Remediated gullies	0	0
Roads (earth)	4	0
Roads (sealed)	0	4.4
Lawns (irrigated)	0	10.6
Urban	0	112
Road verges	0	1.35
Trees	0	0
Total	139	128

Land-use on site are as follows;

- *Improved grazing* is the main pre-development land-use. Superphosphate is regularly applied and clovers and other pasture species sown to improve pasture. The pasture area is assumed to be improved for sediment loss and feed.
- *Disturbed landscapes* refers to the drainage line that has been established with addition of contour banks and minimal earthworks to accommodate dams on site.

- *Remediated gullies* is the section along the drainage line which will be improved post development.
- *Roads (earth)* is a calculation of farm tracks and roads that have been created on site pre development.
- *Roads (sealed)* is a calculation of culverted roads that will be on-site post development.
- *Lawns* were calculated estimating average lot size. Building lots were estimated to have an area of 0.4 ha, it was therefore estimated that on average there could potentially be 0.2 ha of lawn.
- *Urban* refers to community areas or parks.
- *Road verges* were estimated to be approximately 3m wide.
- *Trees* refers to vegetation cover over the site which is recommended.

Sediment, nitrogen and phosphorus export was estimated for low, median and high scenarios for each land-use class as detailed in Appendix 1 (Chafer 2003).

6.8 On-site effluent

An assessment for suitability of typical on-site effluent system was undertaken over the site. Site-specific on-site effluent assessments should be undertaken for each lot. Inspection of topography and soil profile was undertaken across the site to enable recommendation of suitable treatment and application system. Calculations for effluent application area was based on organic matter, nitrogen and phosphorus levels. Wastewater flows were based on a four bedroom household using tank water. Assessment of the site was undertaken as per AS NZS1547-2012 *On-site domestic wastewater management*.

6.9 Initial site investigation

An initial site investigation was conducted by collecting information on vegetation, slope, bare areas and other indicators of salinity at four locations across the site (Figure 2).

6.10 Detailed profile descriptions and laboratory analysis

Fourteen boreholes were constructed with an EVH truck mounted hydraulic drilling rig with solid auger on 28 and 29 June May 2015 to provide information on the soil profiles and enable sampling. The boreholes were constructed at various local elevations on the site (Figure 3). Deep boreholes were constructed along the drainage line to a depth of 18m (MW1, MW2, MW3 and MW4). The deep boreholes were located to intercept shallow groundwater. A 50mm diameter monitoring well was installed in BH1 (MW1), BH2 (MW2), BH3 (MW3) and BH4 (MW4). Ten boreholes were drilled up to a depth of 2 metres. Soil samples were collected from MW1, MW2, MW3 and MW4 at 100mm, 200mm, 300mm, 500mm, and 500mm intervals to the depth of the borehole and are expected to provide an adequate description of subsoil salinity conditions.

The soil profile was described for colour, texture and moisture. Representative soil samples were analysed for pH, electrical conductivity and dispersion.

Soil electrical conductivity (EC) results of the 1:5 (soil:water suspension) were converted to saturated extracts (ECe). EC values are converted to ECe by using a multiplier factor (Charman and Murphy, 1991), which is dependent on the soil texture (Table 6). Saline soils are defined as those with an electrical conductivity (ECe) greater than 4 dS/m (Charman and Murphy, 2001). Soil salinity ratings and effects on plant growth are presented in Table 7.

Table 6. ECe texture based conversion factors (Charman and Murphy 2001)

Soil texture	Conversion factor
Loamy sand, clayey sand, sand	23
Sandy loam, fine sandy loam, light sandy clay loam	14
Loam, loam fine sandy, silt loam, sandy clay loam	9.5
Clay loam, silty clay loam, fine sandy clay loam	8.6
Sandy clay, silty clay, light clay	7.5
Light medium clay, medium clay, heavy clay	5.8

Table 7. Soil salinity ratings based on ECe readings

Salinity rating	ECe (dS/m)*	Effects on Plants
Non saline (NS)	0-2	Salinity effects negligible
Slightly saline (SS)	2-4	Very salt sensitive plant growth restricted
Moderately saline (MS)	4-8	Salt sensitive plant growth restricted
Highly saline (HS)	8-16	Only salt tolerant plants unaffected
Extremely saline (ES)	>16	Only extremely tolerant plants unaffected

*ECe - Electrical conductivity of a saturated extract

Soil with ECe below 2 dS/m will have negligible effects on plant growth and soil stability. Soil with ECe of between 2 and 4 dS/m may restrict very salt sensitive plant growth. Soil with ECe between 4 and 8 dS/m will restrict the growth of salt sensitive plants.

Samples were analysed for dispersion using the Emerson aggregate test. Table 8 details the eight dispersion classes.

Table 8. Emerson dispersion classes

Class	Description
1	Highly dispersive (slakes, complete dispersion)
2	Moderately dispersive, slakes, some dispersion
3	Slightly dispersive, slakes, some dispersion after remoulding
4	Non-dispersive, slakes, carbonate or gypsum present
5	Non-dispersive, slakes, dispersion in shaken suspension
6	Non-dispersive, slakes, flocculates in shaken suspension
7	Non-dispersive, no slaking, swells in water
8	Non-dispersive, no slaking, does not swell in water

7. Results and discussion

7.1 Soil landscape maps

The site is located within the Craigmore Soil Landscape. Soil in the Craigmore landscape consists of non-calcic brown soils and Red earths on very old Quaternary alluvium. Yellow podzolic-solodic soils intergrades on lower lying areas.

Lithology of the site is dominantly alluvial deposits consisting of metasediments from the Capertee Rise.

Soils on the site comprised topsoil of dark, grey to brown silty clay, sandy clay to clay loam over grey, light to dark brown silty clay, grey, yellow brown to dark brown, brownish red sandy clay, dark greyish brown gravelly clay with rounded quartz rich river gravels and weathered metasediments with depth and horizons of light brown light clay. Predominantly the site is composed of Quaternary alluvium on the flats of the site.

7.2 Mudgee LEP (2012) Groundwater Vulnerability

The *Rural, Residential, Industrial & Residential Strategy* (2003) and *Salinity Risk Assessment of the Central West Catchment* (2000) classified the site as part of the Piambong Creek catchment

area and a salinity hazard rating of high. This classification has been revised due to recent work which maps at a higher detail. The revised HGL that covers the site is the Biraganbil Hydro-geological Landscape outlined in section 7.2.

7.2 Hydro-geological landscapes

The majority of the site is located within the Biraganbil Hydro-geological Landscape. The site and associated hydro-geological landscapes are depicted in Figure 6.

Lithology of the Biraganbil Hydro-geological Landscape consists of felsic volcanic sediments in the Mudgee and Gulgon area. Felsic volcanic sediments in this HGLS are slightly to moderately weathered with shallow vertically bedded sediments a common feature on steep hill crests and ridges. Lower colluvial slopes consist of clays, coarse sands and minor gravels. Valley floors consist of scattered gravels within a sandy and clay matrix.

Soils are mainly Red Podzolic Sands on mid to upper slopes and Yellow Soloth Soils on lower slopes and in depressions. Local surface water catchments are medium (100-1000 Ha). Recharge to the groundwater system is deep and catchment wide. Streams are generally ephemeral and receive discharge from groundwater as base flow.

Recharge is seasonal however there is a lag in groundwater discharge response due to climatic patterns. Depth to water table typically ranges form 25-40m with a low specific yield.

The Biraganil HGL has a moderate land salinity, salt export, water quality classification and likelihood of occurrence with high confidence level.

7.3 Groundwater

7.3.1 OEH registered bores

Twenty six registered water bores were identified within a 1.5km radius of the site on the NSW Government Department of Primary Industries website (2015) (Figure 7). Data known about each bore from the Department of Primary Industries website is summarised in Appendix 3. Bores are predominantly located surrounding the site, except to the south east of the site.

The bores are predominantly located around the site except south east. Bores are licensed for domestic, irrigation, monitoring, stock and public/municipal supplies.

Water-bearing zones (WBZ's) and standing water levels were recorded for approximately 18 bores. The Department of Primary Industries website shows that SWL's and WBZ's in bores (for which data was recorded) indicate two possible aquifer types in the area. One aquifer shows a shallow unconfined gravel dominated aquifer which is confined to areas of drainage lines, creeks and seasonal springs. The deeper aquifer is at a depth greater than 20m in shale and or limestone. (Appendix 5 and Figure 7).

A salinity description was recorded for six bores. All were considered to contain non-saline water, with descriptions of 'good', '0-500ppm' and '500-1000ppm'. '

7.3.2 On-site groundwater

Groundwater was encountered in a monitoring well constructed on site (MW2) at a depth of 10 metres in sandy clay. The standing water level was 13.365m and total electrical conductivity of 0.008 dS/m (approximately 5.21mg/L) which is considered low salinity.

MW2 was located in the north-eastern section of the site (Figure 3) adjacent to the Oaky Creek drainage line which flows through the site north to south. The creek is currently dry and is usually a seasonal water body but has not flowed for a number of years. Bore are located along this drainage line. Bores are suspected of being recharged from the subsurface flows associated with the creek.

Unconfined groundwater may occur along the drainage line following periods of high rainfall.

7.4 Site investigation

The site has a historical land-use of grazing. Minor amounts of cropping are expected to have occurred on the site.

The site has been cleared of native tree species. Eucalypts occur along fence lines and as isolated species across the site. Pasture species are native grasses and legumes with weeds. The weed species include Mallow weed, cape weed, clover, couch grass, flatweed and khaki weed. Vegetation cover was greater than 80% across the majority of the site. Bare areas were due to farm tracks and desiccation resulting from low rainfalls.

The majority of the site was very gently sloping towards the north-east with slopes ranging from 0 to 2%.

No bare areas or indicators of salinity were observed on the site.

7.5 Soil characteristics

Boreholes were constructed to depths of 2.0m. Monitoring wells were constructed to depths up to 18.0m with all wells greater than 15.0m. Borelogs are presented in Appendix 6.

7.5.1 Texture and colour

Soils on the site comprised topsoil of dark, grey to brown silty clay, sandy clay to clay loam over grey, light to dark brown silty clay, grey, yellow brown to dark brown, brownish red sandy clay, dark greyish brown gravelly clay with rounded quartz rich river gravels and weathered metasediments with depth and horizons of light brown light clay. Predominantly the site is composed of Quaternary alluvium on the flats of the site (Table 9 and Appendix 6).

The soil was generally dry to moist throughout the profile. No mottling or indicators of seasonally shallow groundwater were observered.

7.5.2 Salinity (electrical conductivity)

All topsoils samples were determined to be non-saline. Subsoils in the majority of the site were classified as non-saline to slightly saline with electrical conductivity of less than 4dS/m (Figure 3).

The electrical conductivity of subsoils samples collected in the boreholes 1, 2, 3 and 4 (MW1-MW4) were in the non-saline to slightly saline range. Only BH3 between 9 and 11.5m contained soil in the moderately saline range. (Table 9).

Table 9. Soil colour, texture, pH, EC and ECe (detailed profile descriptions)

Borehole No – MW1depth (mm) (monitoring well)	Soil colour	Soil texture	pH	EC1:5	ECe (dS/m)	Emerson aggregate test
1-100 (MW1)	Olive	Silty clay	6.05	0.05	0.38	3
1-200 (MW1)	Olive	Sandy clay loam	6.23	0.3	0.29	2
1-300 (MW1)	Olive	Sandy clay loam	5.88	0.3	0.29	2
1-500 (MW1)	Yellowish brown	Sandy clay loam	6.26	0.08	0.75	2
1-1000 (MW1)	Yellowish red	Sandy clay	7.06	0.10	0.98	1
1-1500 (MW1)	Yellowish red	Sandy clay	7.40	0.11	0.83	2
1-2000 (MW1)	Yellowish red	Sandy clay	7.66	0.16	1.2	2
1-2500 (MW1)	Yellowish red	Loam fine sandy	7.75	0.17	1.62	2
1-3000 (MW1)	Yellowish red	Loam fine sandy	8.29	0.26	2.47	2
1-3500 (MW1)	Yellowish red	Gravelly sandy loam	8.05	0.11	1.54	2
1-4000 (MW1)	Yellowish red	Gravelly sandy loam	8.17	0.10	1.4	2
1-4500 (MW1)	Reddish yellow	Gravelly sandy loam	8.00	0.07	0.98	2
1-5000 (MW1)	Yellowish red	Gravelly clayey sand	7.81	0.09	2.16	2
1-5500 (MW1)	Yellowish red	Gravelly clayey sand	7.53	0.08	1.92	2
1-6000 (MW1)	Yellowish red	Gravelly clayey sand	7.58	0.09	2.16	2
1-6500(MW1)	Yellowish brown	Gravelly clayey sand	7.67	0.07	1.68	2
1-7000 (MW1)	Brownish yellow	Gravelly sandy loam	8.13	0.09	1.26	2
1-7500 (MW1)	Yellow	Gravelly sandy loam	8.36	0.09	1.26	2
1-8000 (MW1)	Brownish yellow	Gravelly sandy loam	8.51	0.14	1.96	2
1-8500 (MW1)	Brownish yellow	Gravelly clayey sand	8.47	0.14	3.36	3
1-9000 (MW1)	Brownish yellow	Gravelly clayey sand	8.67	0.16	3.84	3
1-9500(MW1)	Yellow	Sandy clayey loam	8.63	0.12	1.14	3
1-10000(MW1)	Yellow	Sandy clay loam	8.60	0.13	1.24	3
1-10500(MW1)	Olive yellow	Clay loam	8.37	0.10	0.86	3
1-11000(MW1)	Olive yellow	Silty clay loam	8.21	0.10	0.86	2
1-11500(MW1)	Yellow	Silty clay loam	8.27	0.10	0.86	2
1-12000(MW1)	Olive yellow	Silty clay loam	8.23	0.09	0.77	3
1-12500(MW1)	Olive yellow	Silty clay loam	8.12	0.08	0.77	2
1-13000(MW1)	Olive yellow	Silty clay loam	8.16	0.09	0.77	3
1-13500(MW1)	Yellow	Silty clay loam	7.98	0.08	0.77	5
1-14000(MW1)	Olive yellow	Silty clay	8.00	0.11	0.83	2
1-14500(MW1)	Olive yellow	Silty clay loam	8.09	0.08	0.77	2
1-15000(MW1)	Olive yellow	Silty clay	8.01	0.07	0.53	2
1-15500(MW1)	Olive yellow	Silty clay	8.09	0.07	0.53	3
1-16000(MW1)	Olive yellow	Clay loam	7.92	0.07	0.60	3
1-16500(MW1)	Olive yellow	Clay loam	7.95	0.07	0.6	3
1-17000(MW1)	Olive yellow	Silty clay loam	7.60	0.06	0.52	5
1-17500(MW1)	Olive yellow	Clayey sand	7.87	0.07	1.61	5
1-18000(MW1)	Olive yellow	Clayey sand	7.90	0.07	1.61	5
2-100 (MW2)	Dark yellowish brown	Clay loam	5.79	0.06	0.52	2
2-200 (MW2)	Yellowish red	Clay loam	6.09	0.03	0.26	2
2-300 (MW2)	Red	Clay loam	6.11	0.05	0.43	5
2-500 (MW2)	Red	Clay loam	6.21	0.06	0.52	5
2-1000 (MW2)	Red	Clayey sand	6.61	0.03	0.69	5
2-1500 (MW2)	Red	Clayey sand	6.68	0.03	0.69	5
2-2000 (MW2)	Red	Gravelly clayey sand	6.48	0.02	0.46	5
2-2500 (MW2)	Yellowish red	Gravelly sandy loam	6.66	0.02	0.28	5
2-3000 (MW2)	Yellowish red	Gravelly sandy loam	6.93	0.02	0.28	5
2-3500 (MW2)	Reddish yellow	Gravelly clayey sand	6.84	0.02	0.46	5
2-4000 (MW2)	Yellowish red	Gravelly clayey sand	7.10	0.02	0.46	5
2-4500 (MW2)	Yellowish red	Gravelly clayey sand	7.23	0.02	0.46	5
2-5000 (MW2)	Reddish yellow	Gravelly loamy sand	7.15	0.02	0.29	5
2-5500 (MW2)	Yellowish red	Gravelly sandy clayey loam	7.12	0.03	0.29	2
2-6000 (MW2)	Strong brown	Sandy clayey loam	7.44	0.03	0.69	2
2-6500 (MW2)	Strong brown	Gravelly clayey sand	7.52	0.03	0.69	2

2-7000 (MW2)	Reddish yellow	Gravelly clayey sand	7.48	0.03	0.46	2
2-7500 (MW2)	Brownish yellow	Gravelly clayey sand	6.89	0.02	0.92	3
2-8000 (MW2)	Yellowish brown	Gravelly clayey sand	7.23	0.04	0.15	2
2-8500 (MW2)	Yellowish brown	Gravelly sandy clay	7.31	0.03	0.23	2
2-9000 (MW2)	Yellowish brown	Gravelly sandy clay	7.38	0.04	0.3	2
2-9500 (MW2)	Strong brown	Gravelly clayey sand	7.32	0.02	0.46	3
2-10000(MW2)	Strong brown	Gravelly sandy clay	7.32	0.03	0.23	3
2-10500(MW2)	Strong brown	Gravelly sandy clay	7.21	0.03	0.23	3
2-11000(MW2)	Strong brown	Gravelly sandy clay	7.11	0.04	0.3	2
2-11500(MW2)	Yellow	Light clay	7.04	0.04	0.3	5
2-12000(MW2)	Yellow	Light clay	7.08	0.04	0.5	5
2-12500(MW2)	Yellow	Light clay	6.59	0.05	0.38	5
2-13000(MW2)	Yellow	Light clay	6.77	0.03	0.23	3
2-13500(MW2)	Yellow	Light clay	6.35	0.04	0.3	5
2-14000(MW2)	Reddish yellow	Light clay	6.55	0.05	0.38	5
2-14500(MW2)	Reddish yellow	Light clay	6.72	0.04	0.3	5
2-15000(MW2)	Reddish yellow	Light clay	6.79	0.03	0.23	5
2-15500(MW2)	Brownish yellow	Sandy clay	6.83	0.03	0.23	5
2-16000(MW2)	Brownish yellow	Sandy clay	6.72	0.03	0.23	5
2-16500(MW2)	Brownish yellow	Sandy clay	6.70	0.04	0.3	5
2-17000(MW2)	Brownish yellow	Gravelly sandy clay	6.68	0.04	0.3	5
2-17500(MW2)	Yellow	Sandy clay	6.71	0.04	0.3	5
2-18000(MW2)	Yellow	Sandy clay	6.86	0.04	0.3	5
3-100 (MW3)	Dark brown	Sandy clay loam	4.72	0.02	0.19	2
3-200 (MW3)	Brown	Loam fine sandy	4.84	0.02	0.28	2
3-300 (MW3)	Red	Silty clay	5.96	0.03	0.23	1
3-500 (MW3)	Red	Silty clay	5.86	0.18	1.35	1
3-1000 (MW3)	Yellowish red	Silty clay	7.50	0.45	3.38	1
3-1500 (MW3)	Yellowish red	Sandy clay	7.62	0.42	3.15	1
3-2000 (MW3)	Strong brown	Sandy clay loam	8.08	0.26	2.47	1
3-2500 (MW3)	Yellowish brown	Silty clay	7.96	0.22	1.65	1
3-3000 (MW3)	Yellowish brown	Silty clay	7.98	0.24	1.8	1
3-3500 (MW3)	Yellowish brown	Gravelly sandy clayey loam	8.12	0.22	2.09	1
3-4000 (MW3)	Yellowish brown	Gravelly sandy clayey loam	7.80	0.23	2.19	1
3-4500 (MW3)	Brownish yellow	Sandy clay loam	8.23	0.26	2.47	1
3-5000 (MW3)	Brownish yellow	Gravelly sandy clay	8.54	0.26	1.95	1
3-5500 (MW3)	Strong brown	Gravelly sandy clay	8.48	0.24	1.8	1
3-6000 (MW3)	Yellowish brown	Gravelly sandy clay	8.45	0.20	1.5	1
3-6500 (MW3)	Yellowish brown	Gravelly sandy clay	8.46	0.25	1.88	1
3-7000 (MW3)	Yellowish brown	Gravelly sandy clay	8.66	0.19	1.43	1
3-7500 (MW3)	Yellowish brown	Gravelly sandy clay	8.71	0.21	1.58	1
3-8000 (MW3)	Yellowish red	Gravelly sandy clay	8.94	0.44	3.3	1
3-8500 (MW3)	Yellowish red	Gravelly sandy clay	8.78	0.41	3.08	1
3-9000 (MW3)	Reddish yellow	Gravelly sandy clay	9.06	0.61	4.58	1
3-9500 (MW3)	Reddish yellow	Gravelly sandy clay	8.79	0.51	3.83	1
3-10000 (MW3)	Yellowish red	Gravelly sandy clay	8.93	0.57	4.28	1
3-10500(MW3)	Yellowish red	Gravelly sandy clay	8.96	0.53	3.98	1
3-11000(MW3)	Brownish yellow	Gravelly sandy clay	9.15	0.58	4.35	1
3-11500(MW3)	Brownish yellow	Gravelly sandy clay	9.07	0.55	4.13	1
3-12000(MW3)	Brownish yellow	Gravelly sandy clay	8.83	0.52	3.9	1
3-12500(MW3)	Brownish yellow	Gravelly sandy clay	8.39	0.28	2.1	1
3-13000(MW3)	Brownish yellow	Gravelly sandy clay	8.65	0.29	2.18	1
3-13500(MW3)	Brownish yellow	Gravelly sandy clay	8.66	0.29	2.18	1
3-14000(MW3)	Yellowish brown	Gravelly sandy clay	8.70	0.29	2.18	1
3-14500(MW3)	Yellowish brown	Gravelly sandy clay	8.38	0.37	2.78	1
3-15000(MW3)	Yellowish brown	Gravelly sandy clay	8.36	0.25	1.88	3
3-15500(MW3)	Yellowish brown	Gravelly sandy clay	8.39	0.20	1.5	3
3-16000(MW3)	Brownish yellow	Gravelly sandy clay	8.32	0.21	1.43	3
3-16500(MW3)	Brownish yellow	Gravelly sandy clay	8.10	0.19	1.43	3
3-17000(MW3)	Brownish yellow	Gravelly sandy clay	8.40	0.19	1.43	3

3-17500(MW3)	Brownish yellow	Sandy clay	8.40	0.19	1.43	3
3-18000(MW3)	Brownish yellow	Sandy clay	8.40	0.22	1.65	3
4-100(MW4)	Dark brown	Loam fine sandy	4.58	0.04	0.56	5
4-200(MW4)	Light brownish grey	Loam fine sandy	4.75	0.02	0.28	5
4-300(MW4)	Light grey	Sandy clay loam	6.05	0.02	0.19	2
4-500(MW4)	Yellowish red	Clayey sand with gravel	6.75	0.07	1.61	2
4-1000(MW4)	Yellow	Fine sandy clay loam	5.45	0.25	2.15	1
4-1500(MW4)	Brownish yellow	Clayey sand with gravel	6.10	0.21	4.83	1
4-2000(MW4)	Yellowish brown	Sandy clay with gravel	6.28	0.31	2.33	1
4-2500(MW4)	Yellowish brown	Sandy clay	6.94	0.34	2.55	2
4-3000(MW4)	Yellowish brown	Sandy clay	6.93	0.36	2.7	2
4-3500(MW4)	Yellowish brown	Sandy clay with gravel	7.17	0.28	2.1	2
4-4000(MW4)	Yellowish brown	Sandy clay with gravel	7.40	0.34	2.55	2
4-4500(MW4)	Yellowish brown	Sandy clay with gravel	7.38	0.38	2.85	2
4-5000(MW4)	Yellowish brown	Sandy clay with gravel	7.75	0.36	2.7	1
4-5500(MW4)	Yellowish brown	Sandy clay with gravel	7.54	0.34	2.55	1
4-6000(MW4)	Yellowish brown	Sandy clay	7.61	0.36	2.7	1
4-6500(MW4)	Yellowish brown	Sandy clay	7.48	0.30	2.25	1
4-7000(MW4)	Reddish brown	Sandy clay	8.20	0.40	3	1
4-7500(MW4)	Reddish brown	Sandy clay	8.02	0.35	2.63	1
4-8000(MW4)	Dark yellowish brown	Sandy clay	7.38	0.31	2.33	1
4-8500(MW4)	Yellowish brown	Sandy clay	7.53	0.35	2.63	2
4-9000(MW4)	Yellowish brown	Sandy clay with gravel	7.66	0.30	2.25	2
4-9500(MW4)	Yellowish brown	Sandy clay with gravel	7.90	0.26	1.95	2
4-10000(MW4)	Yellowish brown	Sandy clay with gravel	7.95	0.22	1.65	2
4-10500(MW4)	Yellowish brown	Sandy clay with gravel	8.17	0.22	1.65	2
4-11000(MW4)	Brownish yellow	Sandy clay with gravel	7.96	0.28	2.1	3
4-11500(MW4)	Brownish yellow	Sandy clay with gravel	8.01	0.24	1.8	2
4-12000(MW4)	Brownish yellow	Sandy clay with gravel	8.11	0.30	2.25	2
4-12500(MW4)	Brownish yellow	Sandy clay with gravel	8.20	0.27	2.03	2
4-13000(MW4)	Brownish yellow	Sandy clay with gravel	8.16	0.37	2.28	2
4-13500(MW4)	Brownish yellow	Light clay	8.04	0.32	2.4	2
4-14000(MW4)	Brownish yellow	Sandy clay	7.52	0.28	2.1	2
4-14500(MW4)	Brownish yellow	Sandy clay	7.53	0.25	1.88	2
4-15000(MW4)	Brownish yellow	Sandy clay	7.65	0.26	1.95	2
4-15500(MW4)	Olive yellow	Sandy clay	7.59	0.23	1.73	2
4-16000(MW4)	Olive yellow	Sandy clay with gravel	8.02	0.25	1.88	5
4-16500(MW4)	Olive yellow	Sandy clay with gravel	7.75	0.23	1.73	2
4-17000(MW4)	Olive yellow	Sandy clay with gravel	7.69	0.22	1.65	2
4-17500(MW4)	Olive yellow	Sandy clay with gravel	7.11	0.20	1.5	2
4-18000(MW4)	Olive yellow	Sandy clay with gravel	7.40	0.17	1.28	5

7.5.3 pH

The topsoil was slightly acidic (Table 9). The pH generally increased with increasing depth. Subsoil was generally neutral to slightly alkaline.

7.5.4 Emerson aggregate test

Topsoil on site was generally non-dispersive to moderately dispersive and subsoil on the site ranged from highly dispersive to non-dispersive with depth (Table 9).

7.6 Indicators of salinity

7.6.1 Bare soil

No bare soil resulting from sheet erosion or salinity were present on site

7.6.2 Salt crystals

No salt crystals present on site.

7.6.3 Vegetation indicators
No highly salt tolerant plant species are present on site.

7.6.4 Die back
No vegetation or tree die back was observed on or surrounding the site.

7.6.5 Effects on buildings
The existing dwelling located east of the site has no evidence of salinity impact.

7.6.6 Conditions of roads
No evidence of surface undulations or break-up of bitumen on the roads surrounding the site.

7.7 Soil moisture model
The soil moisture varies with rainfall in all land-use scenarios of the CLASS U3M model. Soil moisture at 1m depth under pastoral and residential land-use are saturated seasonally or under periods of high rainfall (Figure 9). At the 3 metres soil depth in the pastoral residential land-uses the soils are not saturated in the simulation period. (Figure 10).

No excess soil moisture is observed at 3m depth in pastoral land-use. It is a reasonable assumption that lateral moisture movement will occur on the clayey subsoils of low permeability and unsaturated flows will be utilized by trees located in buffer areas.

Management of areas with elevated salinity with permanent vegetation will prevent mobilization of salts in the surface or subsurface (Table 10).

Table 10. Excess soil moisture at 3m depth from the simulation

Land-use	Total excess moisture at 3m 1980 to 2014 (m/m^3)
Pasture (Pre-development)	0
Lawn + irrigation (post-development)	0.35 (0.35%)

7.8 Nitrogen
Nitrogen soil levels in the grazing system are typically low with concentrated areas around animal wastes. Nitrogen fertilisers are also used in cropping operations and biological synthesis occurs in legumes. Off-site movement occurs from sediment loss. Water soluble nitrogen has potential to leach into the groundwater.

Post development sources of nitrogen are from fertilisers applied to lawns. Post development fertilisation will only occur in a small proportion of the site that is lawns and gardens. Nitrogen fertilisation is not expected to occur on the road verge. Nitrogen fertiliser will not be required in native gardens. The impact from lawn fertilisers will be less than the impact of animal wastes. Maintained gardens and lawns will have the capacity to utilise the nitrogen applied. The impact of nitrogen fertiliser post development will be reduced.

The nutrient balance indicates the development will decrease nitrogen export by 824 kg/year under the median scenarios (Table 11). Reduced pasture area has resulted in a decrease in the nitrogen loss.

Table 11. Land-use nitrogen export pre and post development (kg/year)

Land-use areas	Pre-development	Post-development	Impact
Native bushlands	0.00	0.00	0.00
Disturbed landscapes	100.8	0.00	100.80
Remediated gullies	0.00	0.00	0.00
Improved pasture	1121.4	0.00	1121.4
Unimproved pasture	0.00	0.00	0.00
Roads (sealed)	0.00	26.4	-26.40
Roads (earth)	8.80	0.00	8.80
Urban (lawns)	0.00	22.0	-22.00
Urban (open space)	0.00	358.40	-358.40
TOTAL	**1231.0**	**406.80**	**824.2**

7.9 Phosphorus

The main phosphorus sources pre-development are from animal waste and fertilisers. Cattle and sheep are currently grazed on the site. Off-site movement of phosphorus will occur in sediments and susceptible times are when vegetation cover is low.

Stock numbers will decrease in the post development land-use. Domestic pet numbers on the site are expected to increase. The majority of domestic pet scats are expected to be disposed to landfill by collection of the scats by owners or removal with kitty litter. The result will be a decrease contribution of phosphorus on the site.

Phosphorus binds to soil and the primary method of movement is in sediments. Vegetation cover is expected to be higher post development resulting in filtering of runoff, reduced sediment loads exported and consequently lower phosphorus export.

The nutrient balance indicates the development will decrease phosphorus export by 141 kg/year under the median scenarios (Table 12). Riparian planting and wetland design can reduce phosphorus levels at stormwater discharge areas.

Table 12. Land-use phosphorus exports pre and post development (kg/year)

Land-use areas	Pre-development	Post-development	Impact
Native bushlands	0.00	0.00	0.00
Disturbed landscapes	10.42	0.00	10.42
Remediated gullies	0.00	0.00	0.00
Improved pasture	170.10	0.00	170.10
Unimproved pasture	0.00	0.00	0.00
Roads (sealed)	0.00	7.92	-7.92
Roads (earth)	6.88	0.00	6.88
Urban (lawns)	0.00	19.29	-19.29
Urban (open spaces)	0.00	19.04	-19.04
TOTAL	**187.40**	**46.25**	**141.14**

7.10 Sediment

The nutrient balance indicates the development will reduce sediment by 29,052 kg/year under the median scenario (Table 13). Sediments are reduced due to the decrease in contribution from the pasture area.

Table 13. Land-use sediment export pre and post development (kg/year)

Land-use areas	Pre-development	Post-development	Impact
Native bushlands	0.00	0.00	0.00
Disturbed landscapes	7308.0	0.00	7308.0
Remediated gullies	0.00	0.00	0.00
Improved pasture	65520	0.00	65520.0
Unimproved pasture	0.00	0.00	0.00
Roads (sealed)	0.00	836.0	-836.0
Roads (earth)	560.0	0.00	560.0
Urban (lawns)	0.00	3180.0	-3180.0
Urban (open spaces)	0.00	40320.0	-40320.0
TOTAL	**73,388.00**	**44,336.00**	**29,052.00**

7.1 Effluent application

Waste water calculations were based on a four bedroom household using tank water. Calculations indicate that approximately 600L/day waste water would be created. Based on the soil textures and to limit nutrients reaching the groundwater table, surface or sub-surface irrigation application systems would be the recommended application system to be used for the proposed 2ha lot subdivision. An overview of the systems and benefits are included in Table 10.

The application area needed to adequately dispose of waste water based on phosphorus, nitrogen and organic matter would be 444m^2 (Appendix 2 and 3). Proposed lot sizes are adequate for effective effluent disposal (Figure 14).

Irrigation application systems will minimise environmental impacts by creating a greater buffer distance to groundwater that can be achieved by absorption systems. Irrigation systems will utilise evapotranspiration as part of effluent disposal.

Table 14. Preferred application system

Application system	Treatment system	Site limitations of the application system	Modifications to mitigate constraints	Suitability and benefits
Surface irrigation	Secondary	Waterways Property boundaries	Required buffer distance from intermittent and permanent water ways and property boundaries	Yes, system above the groundwater table, possible nutrient removal systems can be applied by owners, effluent distributed over a large application area allowing even distribution.
Sub-surface	Secondary	Waterways Property boundaries	Required buffer distance from intermittent and permanent water ways and property boundaries	Yes, system above the groundwater table, possible nutrient removal systems can be applied by owners, effluent distributed over a large application area allowing even distribution.

7.12 Garden fertilisers and chemicals

Minor usage of herbicides may occur post development on lawns. All fertilisers and agricultural chemicals will be utilised by the vegetation or degrade rapidly in the environment. No impact on surface water or groundwater will occur.

No industrial activities including bulk storage or use of chemicals will occur in the development.

7.13 Other contaminants

7.13.1 Greywater reuse

NSW Health approves the following methods for greywater reuse:

- Bucketing: Generally only small volumes of greywater are reused and the action is unlikely to occur during wet weather. Risk of overwatering and therefore impact on groundwater is low.
- Greywater diversion devices: Does not require Council approval if conditions relating to installation and use are met. Conditions include undertaking checks and maintenance of the irrigation system, use biodegradable detergents low in phosphorus, sodium, boron and chloride, no irrigation during rain, undertake a water balance prior to installation, monitor soil and plant response to irrigation, do not overwater and notify the local water utility of the device. Notification to the local water utility (Mudgee City Council) ensures Council is aware the system is in place and can check on compliance. Conditions ensure the water is used sustainably with minimal impact on the groundwater.
- Greywater treatment system: Requires approval from Council. Council can regulate the suitability and number of systems in the locality and check on the satisfactory operation of the system. Regulation of the system ensures minimal impact on groundwater.

7.13.2 Car washing

Minor washing of cars by householders is expected to be undertaken post development. Most car owner clean cars in commercial washing bays. Small numbers of cars will be washed either on permeable areas resulting in infiltration or non-permeable areas with water moving into the reticulated stormwater system and off-site. Water and detergents infiltrating permeable areas will be utilised by vegetation. Some deeper infiltration may occur but volumes are not expected to be significant. Car washing is not expected to occur during rain.

8. Soil and water impact assessment

8.1 Soil

Surface soil was non-saline. Subsoils in the majority of the site were classified as non-saline to slightly saline. Moderate saline subsoil was at a depth greater than 1.0m. Excavation works from the development are not expected to intercept the saline subsoil, following adoption of the recommendations in this report

8.2 Water

8.2.1 Surface water

Runoff will be directed into a stormwater system. The pipes will discharge into the drainage line which will be modified to form a stormwater management system. The existing dams located on site which are fed by contour banks will be decommissioned. If stormwater retention basins are required on site they will be lined and vegetation planted to minimise the interaction between the groundwater and stormwater management system.

8.2.2 Groundwater

8.2.2.1 Recharge

Groundwater recharge has potential to increase as a result of irrigation of lawns. Modelling has shown under a number of scenarios that soil moisture increases will not be significant and the proposed planting of deep-rooted vegetation as street trees, parkland and along the drainage lines will aid in the extraction of soil moisture within the profile and reduce the occurrence of deep infiltration. The increase in infiltration in the north-east area from lawn areas will be utilized by trees planted downslope along the drainage line.

Additional infiltration in the non-saline areas from possible over irrigation of lawn will not contribute to salinity. Large areas of impervious surface (roads and roof areas) will increase in rainfall runoff and reduce infiltration. Deep infiltration of groundwater within the area is expected to be similar pre and post development.

8.2.2.2 Discharge

No shallow groundwater discharge areas were identified on the site. It is possible the drainage line that traverses the site in the south west of the site is a drainage area at times of high rainfall. Effective stormwater design and tree planting will lower the groundwater table and move surface water off site limiting the influence of the development on site.

8.2.2.3 Clause 6.1 of the Mudgee LEP 2012

(1) The objective of this clause is to provide for the appropriate management of land that is subject to salinity and the minimisation and mitigation of adverse impacts from development that contributes to salinity.

Response: The development and groundwater at the site is described in the Groundwater and Salinity report prepared by Envirowest Consulting Pty Ltd (Report number R6151s).

(2) Before determining a development application for development that, in the opinion of the consent authority, may affect the process of salinisation or is proposed to be carried out on land affected by groundwater salinity, the consent authority must consider the following:

(a) whether the development is likely to have any adverse impact on salinity processes on the land;

(b) whether salinity is likely to have an impact on the development;

(c) Any appropriate measures proposed to avoid, minimise or mitigate the potential impacts of the development.

Response:
The development has a low potential to adversely affect groundwater and groundwater dependent ecosystems. Groundwater and groundwater dependent ecosystems may be impacted by use of fertilisers on lawns and gardens, greywater reuse and car washing. The post development impact is expected to be similar or less than under the pre-development agricultural land-use.

Post development lawn inputs will only occur in a small proportion of the site that is lawns and gardens. Nitrogen fertiliser will not be required in native gardens. The impact from lawn fertilisers will be managed by riparian vegetation and stormwater design which will removed any potential increase in nitrogen rich fertilizers. Maintained gardens and lawns will have the capacity to utilise the nitrogen applied. The impact of nitrogen inputs post development will be reduced.

The post development scenario is expected to result in a decrease in contribution of phosphorus, nitrogen and suspended sediments. Fertilizer use in the residential subdivision with be less than the agricultural land-use. Stock numbers will decrease in the post development land-use while domestic pet numbers on the site are expected to increase. The majority of domestic pet scats are expected to be disposed to landfill by collection of the scats by owners or removal with kitty litter disposed as refuse to landfill.

Minor usage of herbicides may occur post development on lawns. All fertilisers and agricultural chemicals are not residual and will be utilised by the vegetation or degrade rapidly in the environment. No impact on surface water or groundwater will occur.

NSW Health approves the following methods for greywater reuse:

- Bucketing: Generally only small volumes of greywater are reused and the action is unlikely to occur during wet weather. Risk of overwatering and therefore impact on groundwater is low.
- Greywater diversion devices: Does not require Council approval if conditions relating to installation and use are met. Conditions include undertaking checks and maintenance of the irrigation system, use biodegradable detergents low in phosphorus, sodium, boron and chloride, no irrigation during rain, undertake a water balance prior to installation, monitor soil and plant response to irrigation, do not overwater and notify the local water utility of the device. Notification to the local water utility (Mudgee City Council) ensures Council is aware the system is in place and can check on compliance. Conditions ensure the water is used sustainably with minimal impact on the groundwater.
- Greywater treatment system: Requires approval from Council. Council can regulate the suitability and number of systems in the locality and check on the satisfactory operation of the system. Regulation of the system ensures minimal impact on groundwater.

Minor washing of cars by householders is expected to be undertaken post development. Most car owners clean cars in commercial washing bays. Small numbers of cars will be washed either on permeable areas resulting in infiltration or non-permeable areas with water moving into the reticulated stormwater system and off-site. Water and detergents infiltrating permeable areas will be utilised by vegetation. Some deeper infiltration may occur but volumes are not expected to be significant. Car washing is not expected to occur during rain.

No industrial activities including bulk storage or use of chemicals will occur in the development.

(3) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that:

(a) The development is designed, sited and will be managed to avoid any significant adverse environmental impact, or
(b) If that impact cannot be avoided by adopting feasible alternatives – the development is designed, sited and will be managed to minimise that impact, or
(c) If that impact cannot be minimised – the development will be managed to mitigate that impact.

No impacts from the development are expected if additional implementations are adopted. Offset contingences have also been proposed to provide additional assurance.

Mitigation measures will be adopted within the development to off-set the unlikely impacts on groundwater quality. The mitigation measures will comprise planting of deep-rooted vegetation off-sets in proposed open space adjacent the development and along Oaky Creek. Additional planting will occur depending on stormwater design. The vegetation will intercept groundwater and nutrients and will reduce the potential impact on groundwater quality.

Deep-rooted vegetation comprising native species selected from the species list provided in DCC Water Wise and Salt Tolerant Plants list (no date) will be planted in proposed open space. Trees

will also be planted along road verges as part of the street scaping which will additionally mitigate any impact.

8.3 Vegetation

Most of the site contains annual species which are shallow rooted. No impact from saline soils and groundwater on the vegetation was observed.

Pasture grasses will be replaced with introduced garden species including deep rooted perennials. Garden species to be planted will be shallow rooted or salt tolerant and no impact on growth is expected. Trees will be planted in open spaces and along Oaky Creek. The proposed residential development will contain irrigated and unirrigated lawns with plantings of shrubs and trees. Ecowise gardens of native and drought tolerant species will be promoted in the development. Costs associated with irrigation will ensure overwatering and leaching does not occur. On-site shallow groundwater is not expected to be a viable source of irrigation water due to the unreliable shallow groundwater aquifer. The use of fertiliser and herbicides on lawn will be utilised by plants and will not move out of the rooting zone.

The new land-use will contain a mix of shallow and deep rooted vegetation. Species planted in lawns will utilise soil moisture all year round compared to the current pasture species mix which are mostly summer active only. Trees will be planted along roadways and garden areas.

8.4 Infrastructure

Non to slightly saline soils were identified to a depth of 1.0m across the majority of the site which is below the footing depth for residential buildings. Moderately saline soils were identified from 1.0m in areas of the assessment area. Excavations are expected to not be at depths greater than 1.0m. Groundwater is present at depths greater than building depths. No special construction requirements addressing salinity are expected to be required for infrastructure including roads and buildings in the remainder of the site.

8.5 Pollution risk control

The subsoil is clay with depth of greater than 10 metres to groundwater. The soil layer provides significant filtration and absorption capacity to reduce contamination loading.

Occasional fertilizer and chemical use is expected from the residential land-use. Fertilisers will be utilised by plants. All agricultural chemicals degrade rapidly in the environment. No impact on surface water or groundwater will occur.

The site currently has a grazing land-use. Waste from the animals contains significant nutrients and pathogens which has potential to move in surface water flows.

Stock will be excluded in the post development land-use. Domestic pet numbers on the site are expected to increase. The majority of domestic pet scats are expected to be disposed to landfill by collection of the scats by owners or removal with kitty litter. The result will be a decrease contribution by animals to nutrients on the site.
Vegetation cover around the dwellings and in the nature strips will provide a biofilter resulting in reduced sediment loads exported. Nutrient impact on surface water will be reduced post development.

The site area is considered important as it forms part of the Macquarie River catchment. ANZECC (2000) has determined water quality indicators for river systems in regard to various environmental values (Table 15). The environmental values relate to the protection of:

- aquatic ecosystems
- aquatic foods
- primary contact recreation
- secondary contact recreation
- drinking water
- visual amenity
- irrigation water supplies
- homestead water supplies
- livestock water supplies
- human consumption of fish

The irrigation water quality indicators are considered appropriate for the catchment. The potential impact of the development on each water quality indicator has been assessed (Table 15). Potential issues relate to current and future land-use and management of the site.

The impact of the development on each water quality indicator will be negligible.

8.6 Earthworks

Minimal earthworks are expected for the development. The roads will be designed to ensure road levels are as close as possible to the existing natural levels to ensure saline-subsoils are not exposed. Subsoils in the majority of the site were classified as non-saline to slightly saline.

8.7 Other impacts of the development

Nil

Table 15. Impacts of development on water quality (Environmental objectives)

Indicator	Objective	Impact of development
Nitrogen	5 mg/L	Nitrogen may be applied to the site as fertilisers. Nitrogen will be used by plants, digested by microbes or volatilised into the atmosphere. Infiltration for nitrogen into the subsoil and impact on groundwater systems will not occur. AWTS systems can create effluent with significant nitrogen concentration. The on-site application area is designed to apply the effluent over a sufficient area to prevent off-site movement. Nitrogen will be used by plants, digested by microbes or volatilised into the atmosphere. Infiltration for nitrogen into the subsoil and impact on groundwater systems will not occur. Maintenance of groundcover by minimal cultivation and no grazing are important factors in reducing nitrogen export. Nutrient modelling indicates nitrogen will decrease on site.
Faecal coliform	<10 cfu/100mL to 10,000cfu/100mL	Effluent treatment from AWTS can include disinfection and impact will be negligible. No impact on faecal coliform levels is expected to result from the development.
Aluminium	5 mg/L	No impact.
Iron	0.2 mg/L	No impact.
Manganese	0.2 mg/L	No impact.
Dissolved oxygen	>6.5 mg/L	No effluent applied to the site. Vegetated areas are expected to be managed. No impact.

Phosphorus	0.05mg/L	Phosphorus may be applied to the site as fertilisers or in domestic pet scats. Domestic pet scats are expected to be removed by collection by owners or disposal of kitty litter and will not significantly contribute to phosphorus levels on the site. Phosphorus will be used by plants and absorbed in the soil. AWTS systems can create effluent with significant phosphorus concentration. The on-site application area is designed to apply the effluent over a sufficient area to prevent off-site movement. Phosphorus will be used by plants and absorbed in the soil. Nutrient modelling indicates phosphorous will decrease on site post development. Riparian planting and will additionally reduce phosphorus levels at stormwater discharge areas.
pH	between 6.0 and 8.5	Fertilisers have a declining influence on pH and effects off-site will be negligible.
Cyanobacteria	-	Cyanobacteria are dependent on the levels of nitrogen, phosphorus and water temperature. The development will not increase nitrogen and phosphorus therefore will have negligible impact. No cyanobacteria are present in fertilisers.
Conductivity	-	Exposure of saline soils and off-site movement will be minimised by adoption of recommendations including minimising depth of cut and implementation of erosion and sediment control plans. No impact expected.
Turbidity	-	Negligible impact due to small size of the development and the absence of any disturbed areas on site. Effluent from AWTS is typically low in suspended solids.

9. Management recommendation

9.1 Design

The development water and soil design will include:

- Promote plantings of deep rooted vegetation along roads and public space
- Establishment of parkland areas with native species which do not require irrigation
- Design road levels similar to natural soil levels to minimise excavations
- Lots should be designed to ensure adequate area available for irrigation while maintaining required buffer distances

9.2 Buildings

Soil saturated extract electrical conductivity (EC_e) was determined to be less than 1.61 dS/m in the soil samples tested within the expected footing depth range of 0.6m (exposure classification B2). The lowest soil pH was 4.6 (exposure classification B1). Design characteristic strength for concrete is a minimum 32MPa and minimum curing requirement is continuous curing for at least 7 days will be required for the most aggressive sites (Appendix 4). Minimum reinforcement cover for concrete in soils is 50mm (Appendix 4). Site specific testing should be undertaken to classify the soil for footing design and construction in accordance with AS2870-2011 and confirm exposure classification (Appendix 4).

9.3 Exposure classification for concrete

Soil saturated extract electrical conductivity (EC_e) was determined to be <4dS/m in the soil samples tested (Table 9). The soil pH ranged between 4.6 and 9.1. Exposure classification for concrete is B1. Minimum design characteristic strength for concrete is 32MPa and minimum curing requirement is continuous curing for at least 7 days (Appendix 4). Minimum reinforcement cover for concrete in soils is 50mm (Appendix 4).

10. Conclusions

The existing land-use is pasture. No bare areas from salinity were identified. The erosion hazard and erodibility is low.

Soils on the site comprised topsoil of grey to brown silty clay over grey, brown sandy clays, with rounded quartz rich river gravels and weathered metasediment. Quaternary alluvium are located on the flats. The Mudgee (LEP) maps indicate the site is located within a vulnerable groundwater area.

The Mid-Western Regional Council has classified the site as a *'high risk'* area based on original groundwater investigations which were commissioned to create a classifying system based on the hydrogeological landscape. The scale and input factors are believed to be the reason why the Piambong Creek HGL was given the *'high risk'* category.

Recent work by DPI has revised the original Piambong Creek HGL and created the Biraganbil HGL.

The site is located within the Biraganil hydro-geological landscape and has a moderate land salinity, salt export, water quality classification and likelihood of occurrence with high confidence level.

The investigation identified that topsoils samples were determined to be non-saline. Subsoils over the site were classified as non-saline to slightly saline with electrical conductivity of less than 4dS/m.

Majority of soils were non-saline to slightly saline. Moderately saline soils were encountered in MW3 and 4 at a depth greater than 1.0m in small soil substrates.

Infiltration of groundwater over most of the site will not result in mobilisation of salts. Groundwater was encountered in MW2 located in the north eastern section of the site from 10m. Electrical conductivity of groundwater from MW2 was 5.12mg/L which is classed as low salinity. No groundwater was identified in MW1, MW3 and MW4 to a depth of 15m in sandy to gravelly clay.

No groundwater discharge areas were identified on the site.

Modelling of soil moisture levels over the past 34 years indicated variations in infiltration occur with the amount of rainfall pre and post development. Infiltration under the three land-use scenarios will be reduced in the development. Reduced soil moisture is a result of the increase in runoff due to impermeable areas (roads, roofs, driveways) and increase in deep rooted vegetation extracting soil moisture from depth. The establishment of trees by future owners will offset any additional infiltration from lawn over watering.

The risk of surface contamination from the proposed land-use is less than the current land-use. From the nutrient and sediment modelling the nutrient activities will be reduced as a result of reduced agricultural activates. On-site effluent application systems will be sized to ensure no infiltration. Nutrients will be utilised by vegetation. Site-specific on-site effluent assessments should be undertaken for each lot.

No impact on groundwater is expected from the development if recommendations are adopted. A slight increase in soil moisture is experienced at 3m depth post development under the effluent and lawn irrigation area which is less than 10% of the total development site. The slight increase in

moisture will be mitigated by additional tree planting. The development will not impact on quantity or quality of both unconfined and confined aquifers.

11. Recommendations

Planning and development controls are recommended to prevent mobilisation of salt in the soil and groundwater resulting in on and off-site impacts. Controls include:

- Establishment of parkland areas with native species which do not require irrigation
- Plantings of deep rooted vegetation along roads
- Design road levels similar to natural soil levels to minimise excavations
- Wastewater systems to comprise surface and sub-surface irrigation

11. Report limitations and intellectual property

This report has been prepared for the use of the client to achieve the objectives given the clients requirements. The level of confidence of the conclusion reached is governed by the scope of the investigation and the availability and quality of existing data. Where limitations or uncertainties are known, they are identified in the report. No liability can be accepted for failure to identify conditions or issues which arise in the future and which could not reasonably have been predicted using the scope of the investigation and the information obtained.

The investigation identifies the actual subsurface conditions only at those points where samples are taken, when they are taken. Data derived through sampling and subsequent laboratory testing is interpreted by geologists, engineers or scientists who then render an opinion about overall conditions, the nature and extent of likely impacts of the proposed development, and appropriate remediation measures. Actual conditions may differ from those inferred to exist, because no professional, no matter how well qualified, and no sub surface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock or time. The actual interface between materials may be far more gradual or abrupt than a report indicates. Actual conditions in areas not sampled may differ from predictions. It is thus import to understand the limitations of the investigation and recognise that we are not responsible for these limitations.

12. References

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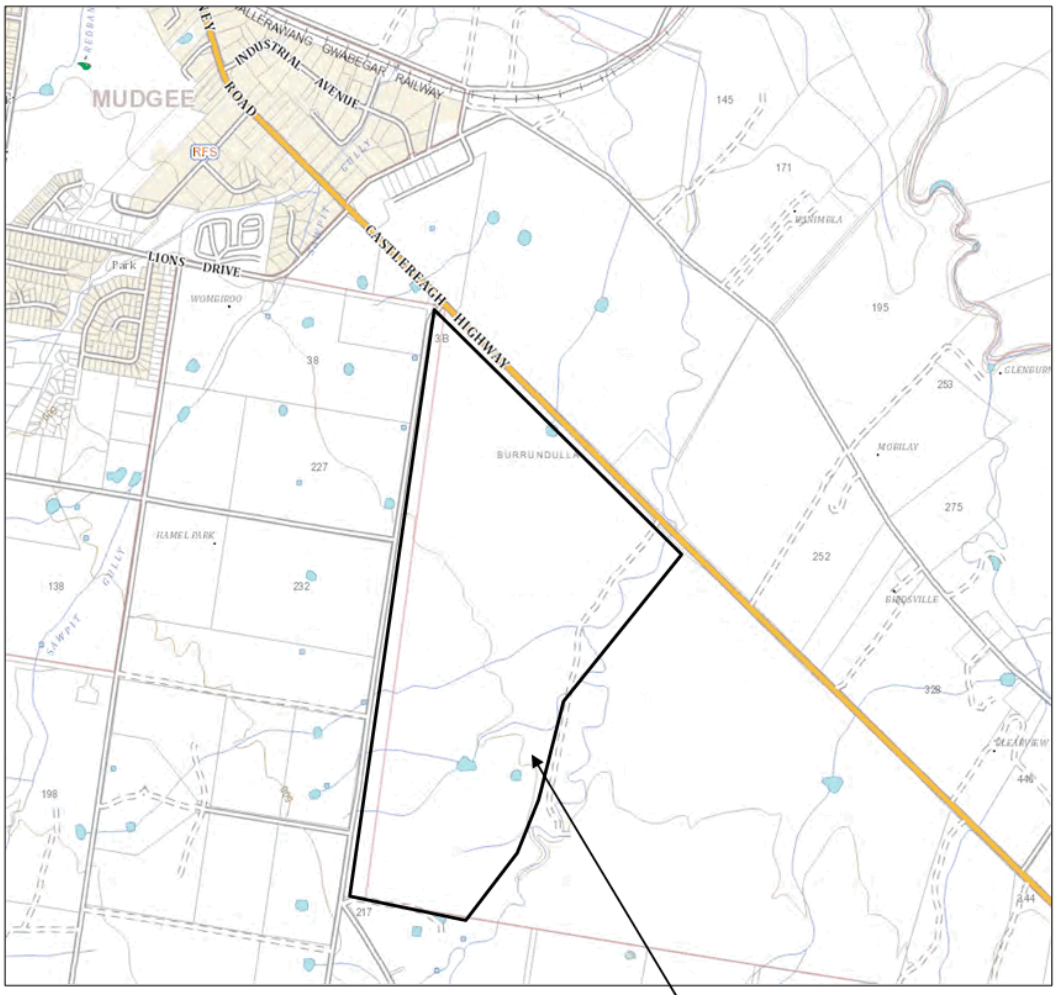
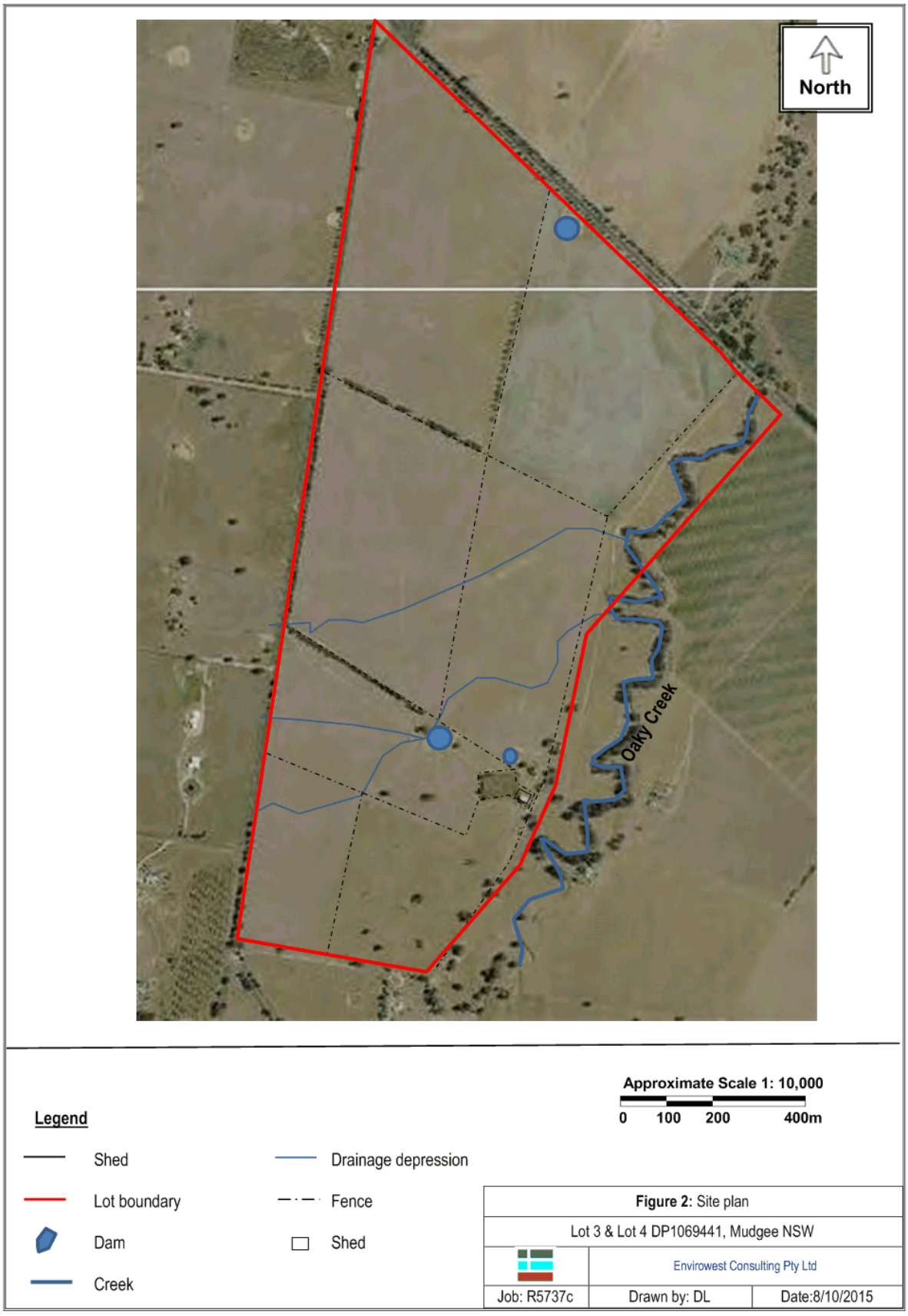
Figures

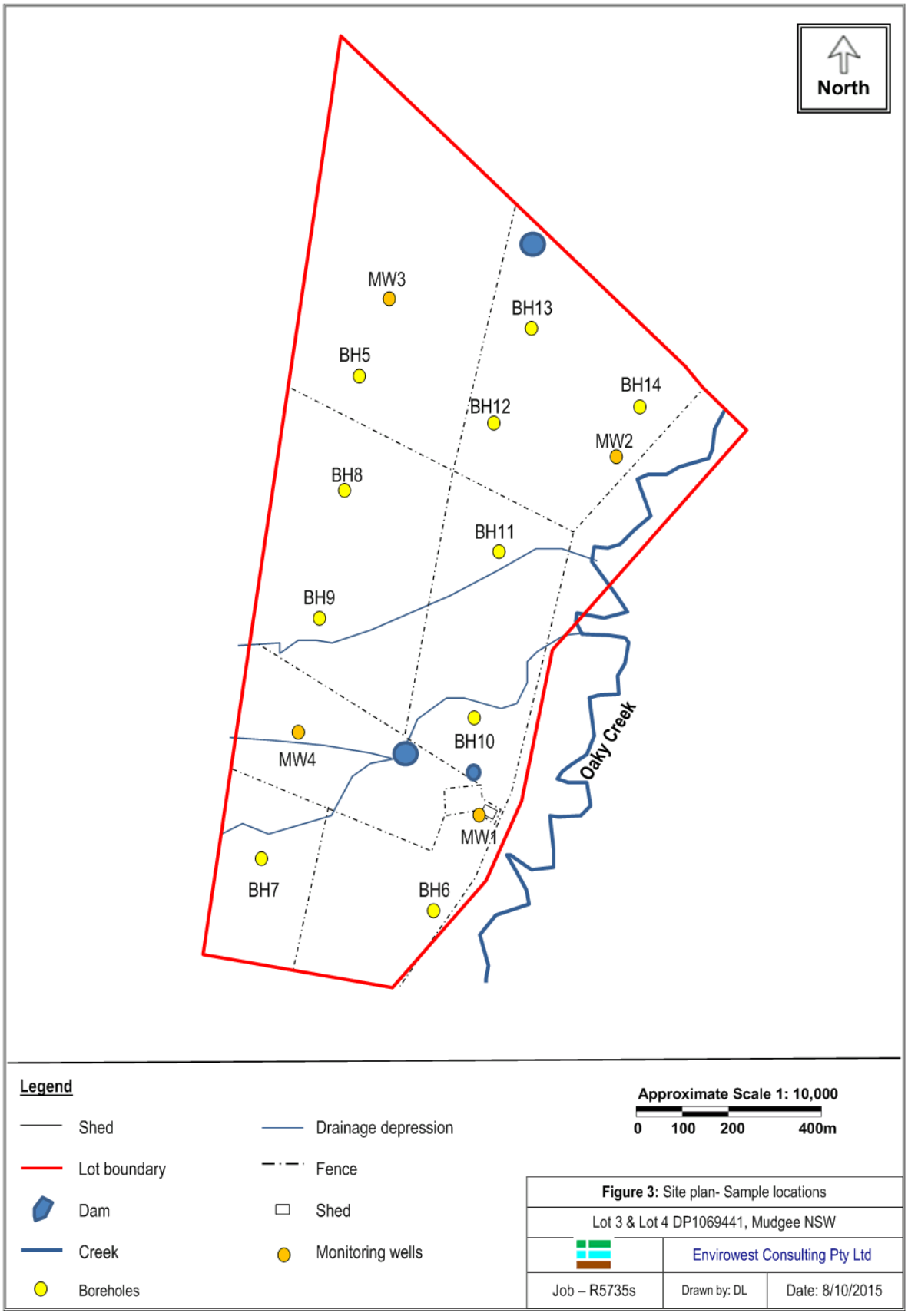
North



Investigation area

Figure 1: Locality plan		
Lot 3 & Lot 4 DP1069441, Mudgee NSW		
	Envirowest Consulting Pty Ltd	
Job – R6151s	Drawn by: DL	Date: 8/10/2015


North
Oaky Creek
Approximate Scale 1: 10,000
0 100 200 400m
Legend
Shed
Lot boundary
Dam
Creek
Drainage depression
Fence
Shed
Figure 2: Site plan
Lot 3 & Lot 4 DP1069441, Mudgee NSW
Envirowest Consulting Pty Ltd
Job: R5737c
Drawn by: DL
Date:8/10/2015


North
MW3
BH13
BH5
BH14
BH12
MW2
BH8
BH11
BH9
BH10
MW4
Oaky Creek
MW1
BH7
BH6
Legend
Shed
Lot boundary
Dam
Creek
Boreholes
Drainage depression
Fence
Shed
Monitoring wells
Approximate Scale 1: 10,000
0 100 200 400m
Figure 3: Site plan- Sample locations
Lot 3 & Lot 4 DP1069441, Mudgee NSW
Envirowest Consulting Pty Ltd
Job – R5735s
Drawn by: DL
Date: 8/10/2015

Salinity Risk Assessment for the Central West Catchment Final Outcomes

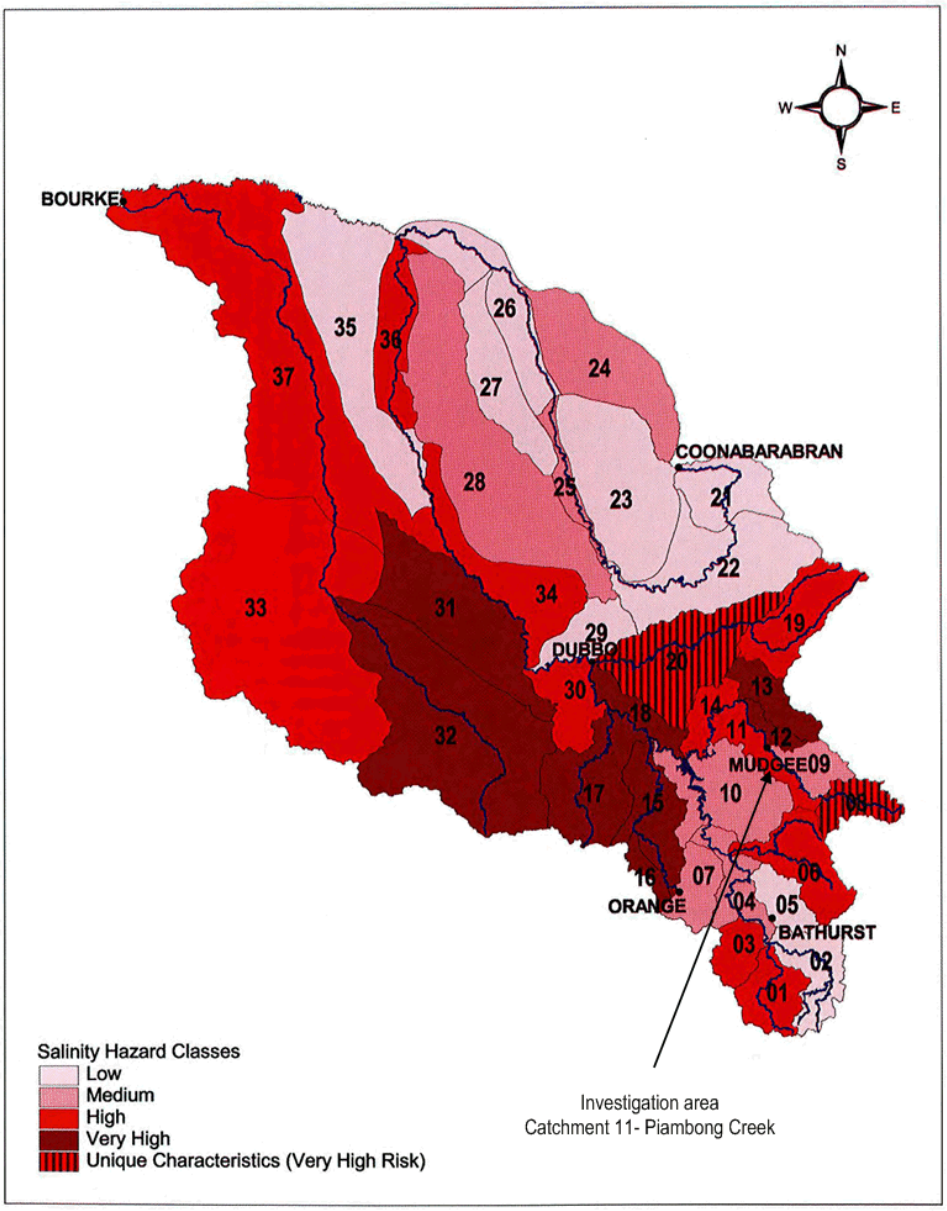


Figure 4: Salinity Risk Assessment of the Central West Catchment (2000)		
Lot 3 & Lot 4 DP1069441, Mudgee NSW		
	Envirowest Consulting Pty Ltd	
Job: R6151s	Drawn by: DL	Date: 8/10/2015

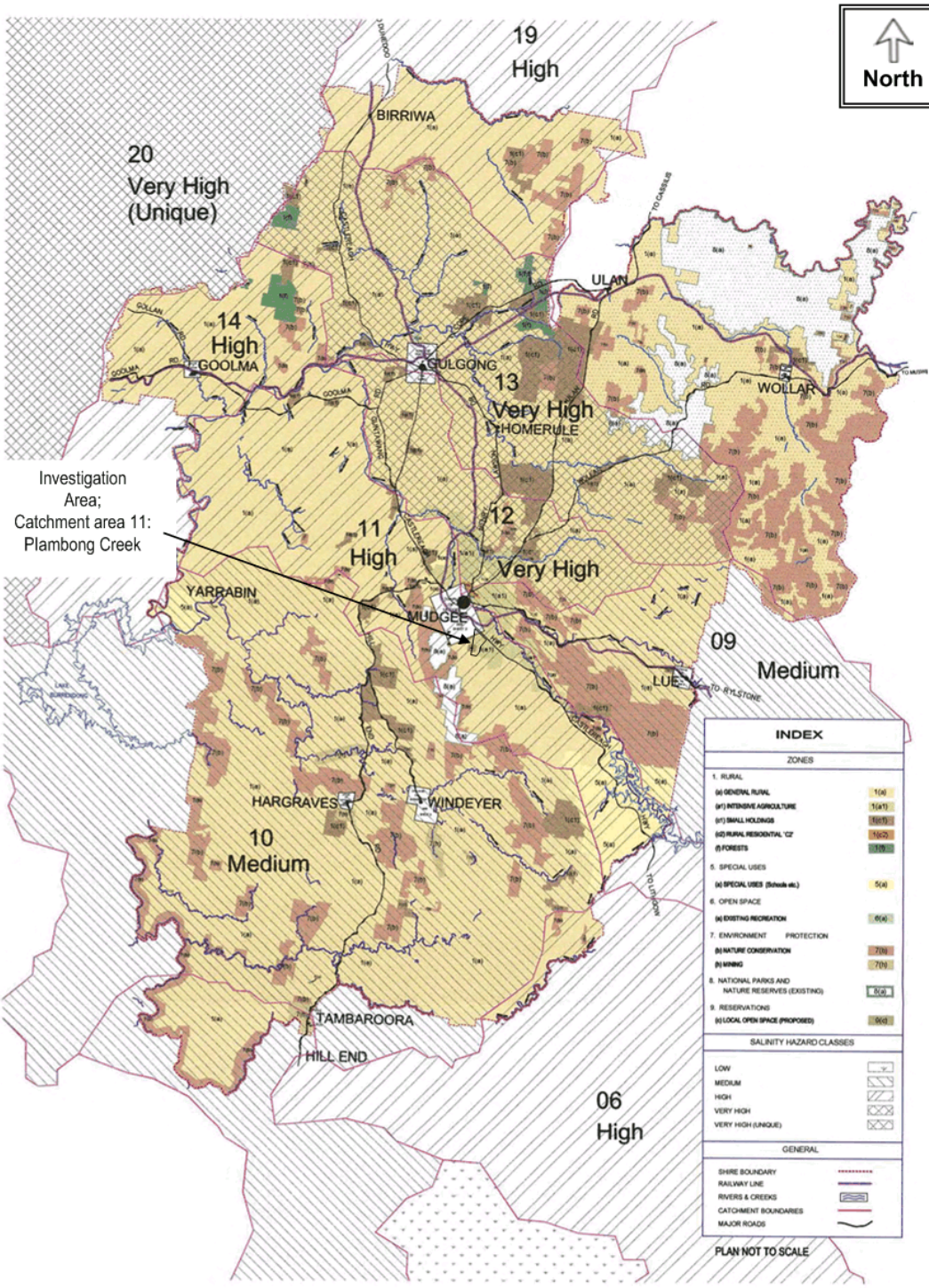
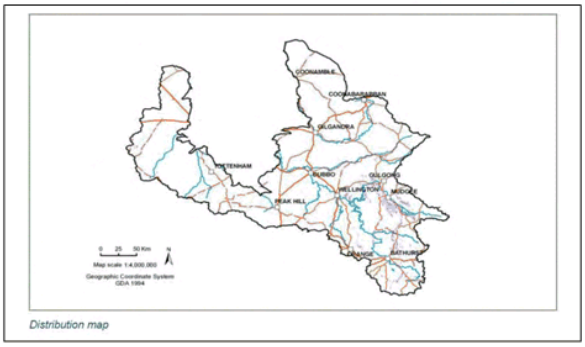


Figure 5: Mudgee Salinity Background Study (2002)		
Lot 3 & Lot 4 DP1069441, Mudgee NSW		
	Envirowest Consulting Pty Ltd	
Job: R6151s	Drawn by: DL	Date: 8/10/2015

HGLS 29. Biraganbil Hydrogeological Landscape System

LOCALITIES	Gulgong, Mudgee
TYPE AREA	Biraganbil
GRID REFERENCE	725000mE 6419000mN
GEOLOGY SHEET	Dubbo 1:250,000
CONFIDENCE LEVEL	HIGH

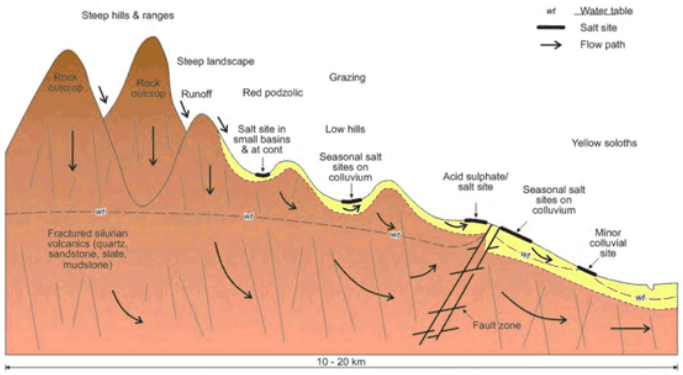


Distribution map

HAZARD

HAZARD ASSESSMENT	Limited potential impact	Significant potential impact	Severe potential impact
High likelihood of occurrence			
Moderate likelihood of occurrence		Biraganbil	
Low likelihood of occurrence			

LANDSCAPE ATTRIBUTES



Conceptual Hydrogeological Landscape cross-section showing the distribution of regolith, landforms, salt sites and flow paths.

Figure 6: Revised HGL 29. Biraganbil Hydrogeological Landscape System

Lot 3 & Lot 4 DP1069441, Mudgee NSW

Envirowest Consulting Pty Ltd

Job: R6151s	Drawn by: DL	Date: 8/10/2015

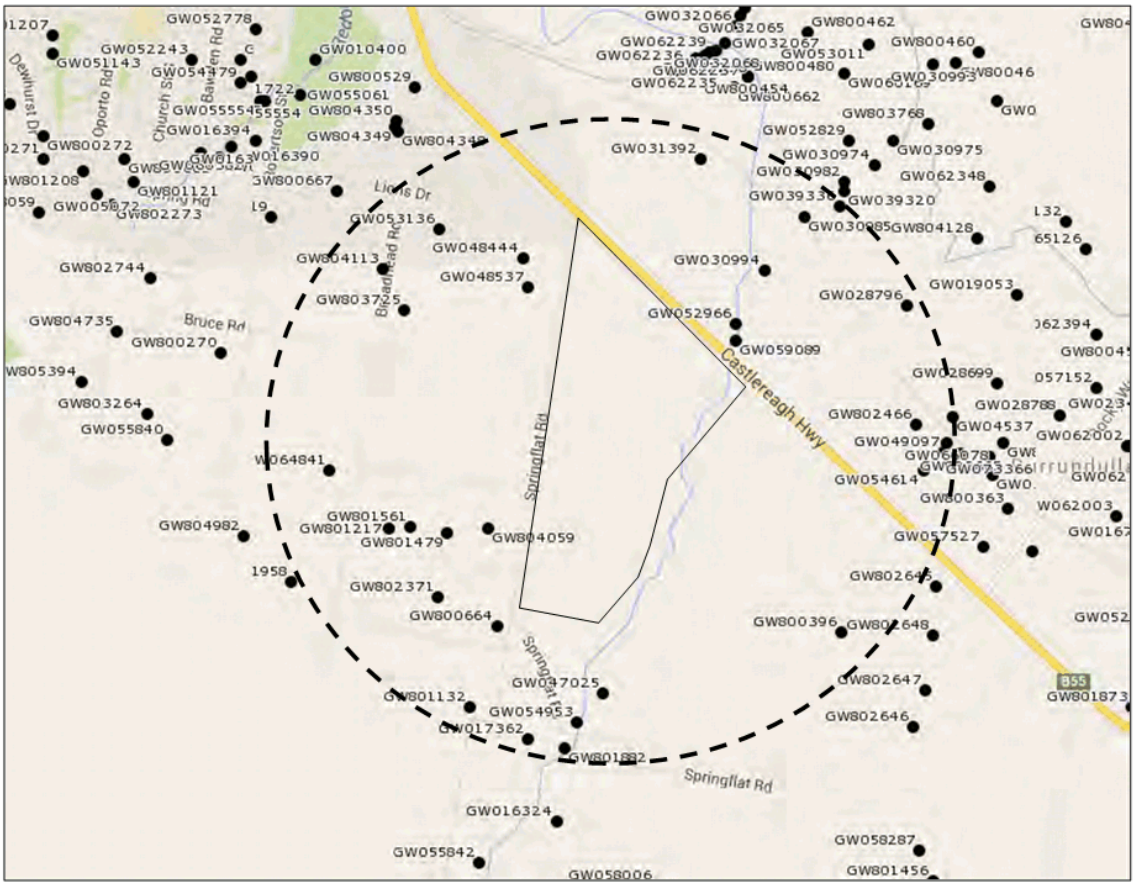
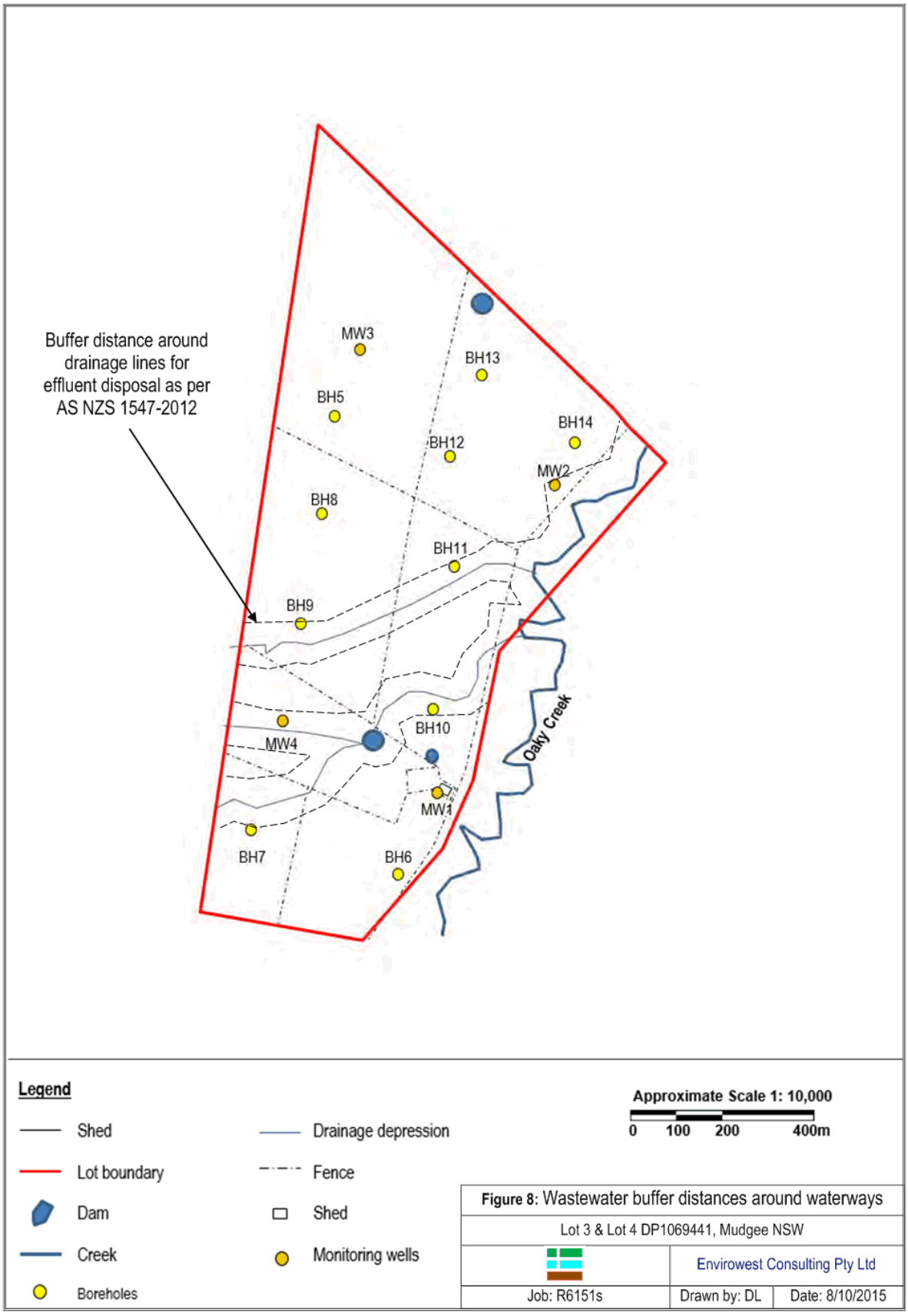


Figure 7: Location of groundwater bores within 1.5km of the site		
Lot 3 & Lot 4 DP1069441, Mudgee NSW		
	Envirowest Consulting Pty Ltd	
Job: R6151s	Drawn by: DL	Date: 8/10/2015


Buffer distance around drainage lines for effluent disposal as per AS NZS 1547-2012
MW3
BH13
BH5
BH14
BH12
MW2
BH8
BH11
BH9
BH10
MW4
Oaky Creek
MW1
BH7
BH6
Legend
Shed
Lot boundary
Dam
Creek
Boreholes
Drainage depression
Fence
Shed
Monitoring wells
Approximate Scale 1: 10,000
0 100 200 400m
Figure 8: Wastewater buffer distances around waterways
Lot 3 & Lot 4 DP1069441, Mudgee NSW
Envirowest Consulting Pty Ltd
Job: R6151s
Drawn by: DL
Date: 8/10/2015

Page 40

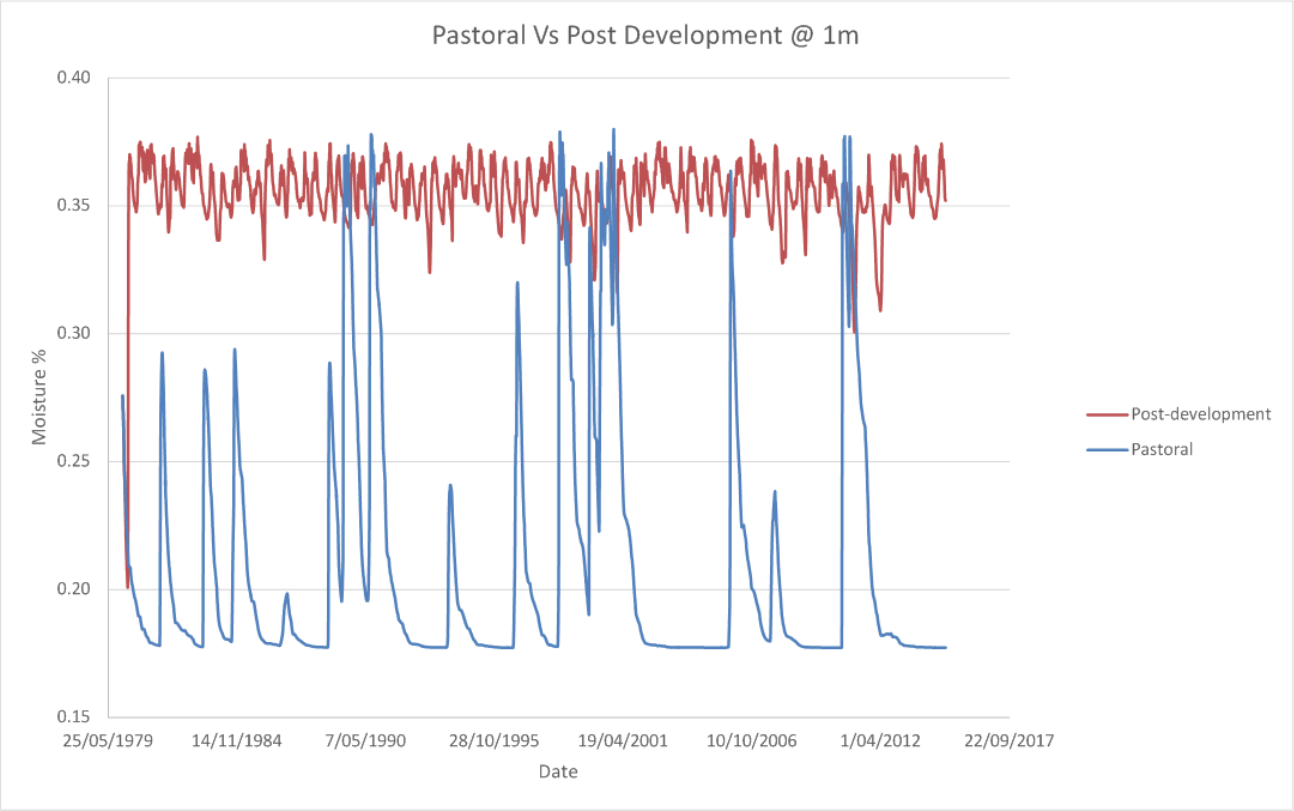


Figure 9. Soil Moisture at 1m		
Lot 3 & Lot 4 DP1069441, Mudgee NSW		
	Envirowest Consulting Pty Ltd	
Job – R6151s	Drawn by: DL	Date: 8/10/2015

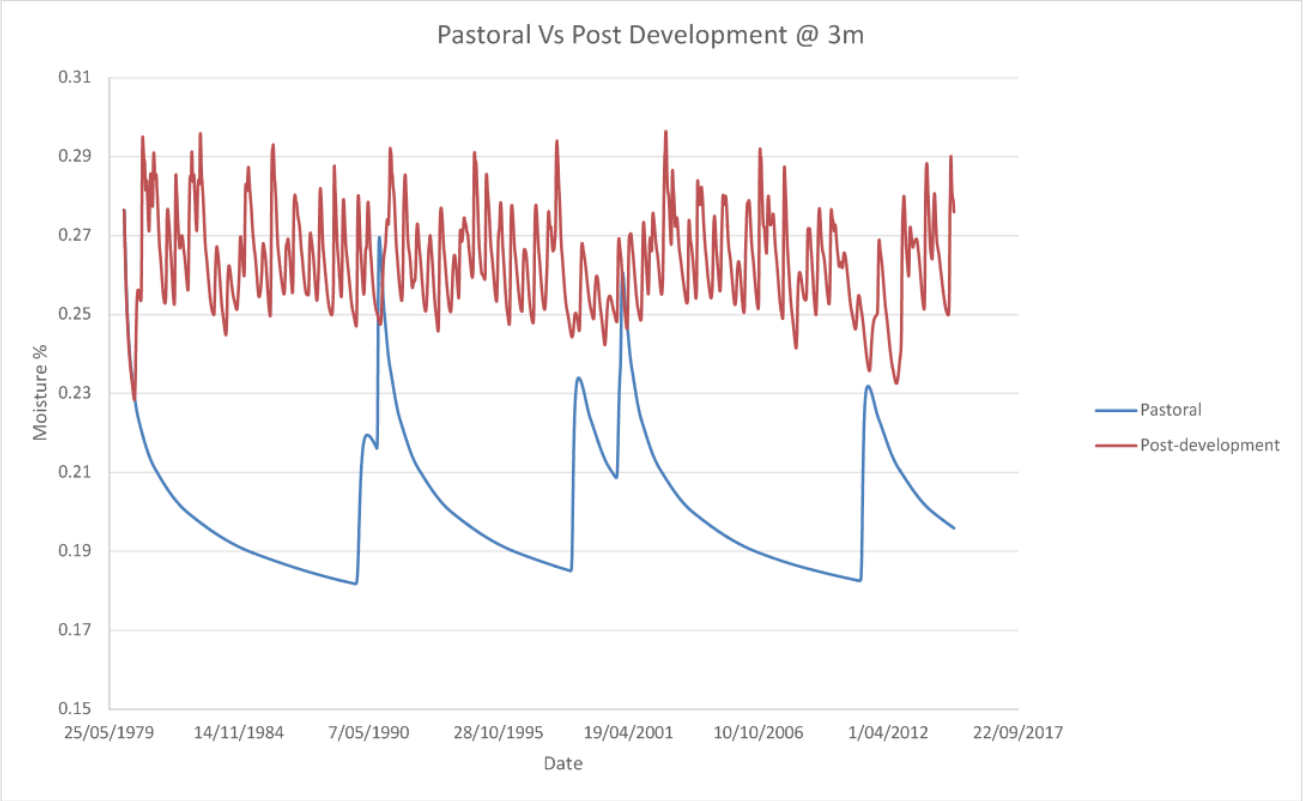


Figure 10. Soil Moisture at 3m		
Lot 3 & Lot 4 DP1069441, Mudgee NSW		
	Envirowest Consulting Pty Ltd	
Job – R6151s	Drawn by: DL	Date: 8/10/2015

Figure 11. Photographs of the site

Looking north across paddocks

North over shearing shed and yards

Looking west over area

Appendices

Appendix 1. Nutrient and sediment modelling
Appendix 2. Monthly water balance determines the wastewater application area required
Appendix 3. Effluent area requirement from organic matter and nutrient balances
Appendix 4. Aggressive soils, extract from Australia Standards, AS 2870-2011, 2011
Appendix 5. Details of registered bores within 1km of the site – NSW Department of Primary Industries
Appendix 6. Field and laboratory sheets
Appendix 7. Reference methods for soil testing

Appendix 1. Nutrient and sediment modelling
Land-use export rates for sediments, nitrogen and phosphorus mg/kg/year (Chafer 2003)

	Suspended sediment (kg/ha/yr)		
Land use class	Low	Median	High
Native bushland	20	40	60
Disturbed landscapes	330	870	2290
Remediated gullies	165	435	1145
Cropped	420	570	720
Pine plantations	65	380	680
Improved pasture	140	520	870
Unimproved pasture	140	190	230
Roads (sealed)	140	190	230
Roads (earth)	25	140	500
Urban	30	300	1200
Urban (open space)	160	360	1000
Rural residential	140	190	230
Industrial	180	200	4800
Commercial	180	200	4800
Golf course	0	10	20
Orchard	490	680	870

	Total Nitrogen (kg/ha/yr)		
Land use class	Low	Median	High
Native bushland	0.9	2.4	4
Disturbed landscapes	4.2	12	20
Remediated gullies	2.1	6	10
Cropped	4.2	8.9	13.5
Pine plantations	0.8	2.9	8.3
Improved pasture	4.2	8.9	13.5
Unimproved pasture	1.3	3.2	5.1
Roads (sealed)	2	6	10
Roads (earth)	1.3	2.2	3.1
Urban	2.2	6.1	10
Urban (open space)	1.3	3.2	5.1
Rural residential	2.2	6.1	10
Industrial	4	7.4	10
Commercial	4	7.4	10
Golf course	0	3.2	5
Orchard	1.7	8.9	5

	Total Phosphorus		
Land use class	Low	Median	High
Native bushland	0.01	0.13	0.25
Disturbed landscapes	0.3	1.24	2.2
Remediated gullies	0.15	0.62	1.1
Cropped	0.5	1.35	2.2
Pine plantations	0.1	1.16	2.5
Improved pasture	0.5	1.35	2.2
Unimproved pasture	0.1	0.17	0.25
Roads (sealed)	0.3	1.8	3.4
Roads (earth)	0.3	1.72	3.2
Urban	0.2	1.82	3.6
Urban (open space)	0.1	0.17	0.25
Rural residential	0.2	1.72	3.6
Industrial	1.4	1.82	2.2
Commercial	1.4	1.8	2.2
Golf course	0	0.3	3.6
Orchard	0.1	0.3	0.5

Sediment export kg/yr

LOW	PRE	POST	IMPACT
Native bushland	0.00	0.00	0.00
Disturbed landscapes	2772.00	0.00	2772.00
Remediated gullies	0.00	0.00	0.00
Cropped	0.00	0.00	0.00
Pine plantations	0.00	0.00	0.00
Improved pasture	17640.00	0.00	17640.00
Unimproved pasture	0.00	0.00	0.00
Roads (sealed)	0.00	616.00	-616.00
Roads (earth)	100.00	0.00	100.00
Urban	0.00	318.00	-318.00
Urban (open space)	0.00	17920.00	-17920.00
Rural residential	0.00	0.00	0.00
Industrial	0.00	0.00	0.00
Commercial	0.00	0.00	0.00
Golf course	0.00	0.00	0.00
Orchard	0.00	0.00	0.00
TOTAL	**20512.00**	**18854.00**	**1658.00**

MEDIAN	PRE	POST	IMPACT
Native bushland	0.00	0.00	0.00
Disturbed landscapes	7308.00	0.00	7308.00
Remediated gullies	0.00	0.00	0.00
Cropped	0.00	0.00	0.00
Pine plantations	0.00	0.00	0.00
Improved pasture	65520.00	0.00	65520.00
Unimproved pasture	0.00	0.00	0.00
Roads (sealed)	0.00	836.00	-836.00
Roads (earth)	560.00	0.00	560.00
Urban	0.00	3180.00	-3180.00
Urban (open space)	0.00	40320.00	-40320.00
Rural residential	0.00	0.00	0.00
Industrial	0.00	0.00	0.00
Commercial	0.00	0.00	0.00
Golf course	0.00	0.00	0.00
Orchard	0.00	0.00	0.00
TOTAL	**73388.00**	**44336.00**	**29052.00**

HIGH	PRE	POST	IMPACT
Native bushland	0.00	0.00	0.00
Disturbed landscapes	19236.00	0.00	19236.00
Remediated gullies	0.00	0.00	0.00
Cropped	0.00	0.00	0.00
Pine plantations	0.00	0.00	0.00
Improved pasture	109620.00	0.00	109620.00
Unimproved pasture	0.00	0.00	0.00
Roads (sealed)	0.00	1012.00	-1012.00
Roads (earth)	2000.00	0.00	2000.00
Urban	0.00	12720.00	-12720.00
Urban (open space)	0.00	112000.00	-112000.00
Rural residential	0.00	0.00	0.00
Industrial	0.00	0.00	0.00
Commercial	0.00	0.00	0.00
Golf course	0.00	0.00	0.00
Orchard	0.00	0.00	0.00
TOTAL	**130856.00**	**125732.00**	**5124.00**

Total Nitrogen kg/yr

LOW	PRE	POST	IMPACT
Native bushland	0.00	0.00	0.00
Disturbed landscapes	35.28	0.00	35.28
Remediated gullies	0.00	0.00	0.00
Cropped	0.00	0.00	0.00
Pine plantations	0.00	0.00	0.00
Improved pasture	529.20	0.00	529.20
Unimproved pasture	0.00	0.00	0.00
Roads (sealed)	0.00	8.80	-8.80
Roads (earth)	5.20	0.00	5.20
Urban	0.00	23.32	-23.32
Urban (open space)	0.00	145.60	-145.60
Rural residential	0.00	0.00	0.00
Industrial	0.00	0.00	0.00
Commercial	0.00	0.00	0.00
Golf course	0.00	0.00	0.00
Orchard	0.00	0.00	0.00
TOTAL	**569.68**	**177.72**	**391.96**

MEDIAN	PRE	POST	IMPACT
Native bushland	0.00	0.00	0.00
Disturbed landscapes	100.80	0.00	100.80
Remediated gullies	0.00	0.00	0.00
Cropped	0.00	0.00	0.00
Pine plantations	0.00	0.00	0.00
Improved pasture	1121.40	0.00	1121.40
Unimproved pasture	0.00	0.00	0.00
Roads (sealed)	0.00	26.40	-26.40
Roads (earth)	8.80	0.00	8.80
Urban	0.00	22.00	-22.00
Urban (open space)	0.00	358.40	-358.40
Rural residential	0.00	0.00	0.00
Industrial	0.00	0.00	0.00
Commercial	0.00	0.00	0.00
Golf course	0.00	0.00	0.00
Orchard	0.00	0.00	0.00
TOTAL	**1231.00**	**406.80**	**824.20**

HIGH	PRE	POST	IMPACT
Native bushland	0.00	0.00	0.00
Disturbed landscapes	168.00	0.00	168.00
Remediated gullies	0.00	0.00	0.00
Cropped	0.00	0.00	0.00
Pine plantations	0.00	0.00	0.00
Improved pasture	1701.00	0.00	1701.00
Unimproved pasture	0.00	0.00	0.00
Roads (sealed)	0.00	44.00	-44.00
Roads (earth)	12.40	0.00	12.40
Urban	0.00	106.00	-106.00
Urban (open space)	0.00	571.20	-571.20
Rural residential	0.00	0.00	0.00
Industrial	0.00	0.00	0.00
Commercial	0.00	0.00	0.00
Golf course	0.00	0.00	0.00
Orchard	0.00	0.00	0.00
TOTAL	**1881.40**	**721.20**	**1160.20**

Total Phosphorus kg/yr

LOW	PRE	POST	IMPACT
Native bushland	0.00	0.00	0.00
Disturbed landscapes	2.52	0.00	2.52
Remediated gullies	0.00	0.00	0.00
Cropped	0.00	0.00	0.00
Pine plantations	0.00	0.00	0.00
Improved pasture	63.00	0.00	63.00
Unimproved pasture	0.00	0.00	0.00
Roads (sealed)	0.00	1.32	-1.32
Roads (earth)	1.20	0.00	1.20
Urban	0.00	2.12	-2.12
Urban (open space)	0.00	11.20	-11.20
Rural residential	0.00	0.00	0.00
Industrial	0.00	0.00	0.00
Commercial	0.00	0.00	0.00
Golf course	0.00	0.00	0.00
Orchard	0.00	0.00	0.00
TOTAL	**66.72**	**14.64**	**52.08**

MEDIAN	PRE	POST	IMPACT
Native bushland	0.00	0.00	0.00
Disturbed landscapes	10.42	0.00	10.42
Remediated gullies	0.00	0.00	0.00
Cropped	0.00	0.00	0.00
Pine plantations	0.00	0.00	0.00
Improved pasture	170.10	0.00	170.10
Unimproved pasture	0.00	0.00	0.00
Roads (sealed)	0.00	7.92	-7.92
Roads (earth)	6.88	0.00	6.88
Urban	0.00	19.29	-19.29
Urban (open space)	0.00	19.04	-19.04
Rural residential	0.00	0.00	0.00
Industrial	0.00	0.00	0.00
Commercial	0.00	0.00	0.00
Golf course	0.00	0.00	0.00
Orchard	0.00	0.00	0.00
TOTAL	**187.40**	**46.25**	**141.14**

HIGH	PRE	POST	IMPACT
Native bushland	0.00	0.00	0.00
Disturbed landscapes	18.48	0.00	18.48
Remediated gullies	0.00	0.00	0.00
Cropped	0.00	0.00	0.00
Pine plantations	0.00	0.00	0.00
Improved pasture	277.20	0.00	277.20
Unimproved pasture	0.00	0.00	0.00
Roads (sealed)	0.00	14.96	-14.96
Roads (earth)	12.80	0.00	12.80
Urban	0.00	38.16	-38.16
Urban (open space)	0.00	28.00	-28.00
Rural residential	0.00	0.00	0.00
Industrial	0.00	0.00	0.00
Commercial	0.00	0.00	0.00
Golf course	0.00	0.00	0.00
Orchard	0.00	0.00	0.00
TOTAL	**308.48**	**81.12**	**227.36**

Appendix 2. Monthly water balance determine the wastewater application area required (irrigation systems)

Design wastewater flow	Q	L/day	600	120	L/person/day	5 persons
Design percolation rate	R	mm/wk	28	4	mm/day	
Land area	L	m2	84			
Effective precipitation	EP		0.9	(10% runoff)		

Parameter	Symbol	Formula	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	total
days in month	D		days	31	28	31	30	31	30	31	31	30	31	30	31	365
Precipitation	P		mm/month	70	72	46	32	36	41	42	36	49	56	78	72	629
Evaporation	E		mm/month	272.8	221.2	195.3	126	77.5	48	52.7	74.4	102	158.1	207	220	1755
Crop factor	C		-	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	10.8
Inputs																
Effective Precipitation	EP		mm/month	62.73	64.62	41.4	28.98	32.13	37.17	37.62	32.22	43.83	50.4	70.2	64.8	566
Effluent irrigation	W	QXD/L	mm/month	221.4	200.0	221.4	214.3	221.4	214.3	221.4	221.4	214.3	221.4	214.3	221.4	2607
Inputs		P+W	mm/month	284.2	264.6	262.8	243.3	253.6	251.5	259.0	253.6	258.1	271.8	284.5	286.2	3173
Outputs																
Evaportranspiration	ET	ExC	mm/month	245.52	199.1	175.8	113.4	69.8	43.2	47.4	67.0	91.8	142.3	186.3	198.0	1580
Percolation	B	R/7xD	mm/month	124.0	112.0	124.0	120.0	124.0	120.0	124.0	124.0	120.0	124.0	120.0	124.0	1460
Outputs		ET+B	mm/month	369.5	311.1	299.8	233.4	193.8	163.2	171.4	191.0	211.8	266.3	306.3	322.0	3040
Storage	S	(EP+W)-(ET+B)	mm/month	-85.4	-46.5	-36.9	9.9	59.8	88.3	87.6	62.7	46.3	5.5	-21.8	-35.8	
Cumulative storage	M		mm	0.0	0.0	0.0	9.9	69.7	157.9	245.5	308.2	354.6	360.1	338.3	302.5	

Storage	V	largest M	mm	360.1
		Soil storage	mm	376.0
		Storage required	mm	-15.9
		VxL/1000	m^3	**-1.3**
Irrigation area			m^2	**84**

	water holding capacity	depth (mm)	Totals(mm)
Topsoil	34%	100	34
Subsoil	38%	900	342
			376

Appendix 3. Estimation area requirement from organic matter and nutrient balances (irrigation systems)

Estimated effluent flow	(Q)	600	L/day
Soil depth		1	m

Organic matter balance

BOD (C)	20	mg/L
treated wastewater flow rate (Q)	600	L/day
critical loading rate of BOD (Lx)	3000	$mg/m^2/day$
land area required (A)	**4.0**	m^2

Nitrogen balance

nutrient concentration	37	mg/L
treated wastewater flow rate	600	L/day
critical loading rate of nutrient	50	$mg/m^2/day$
land area required (A)	**444**	m^2

Determination of nitrogen criitical loading rate

Nitrogen load (kg/year)	8.1	kg/year			
Loss 20% denitrification	6.5	kg/year			
Load to soil	146.0	kg/ha/year	assumed irr. area from table	444	m2
Vegetation usage	200.0	kg/ha/year			
Residual (potential leaching)	-54.0	kg/ha/year			

Typical nitrogen uptake (Myers et al. 1984)		
Pastures	300 kg/ha/year	82 mg/m2/day
Pine	350 kg/ha/year	96 mg/m2/day
Eucalypts	180 kg/ha/year	49 mg/m2/day

Phosphorus balance

Phosphorus sorption capacity per metre=			9,000	kg/ha	
Phosphorus sorption capacity of profile=			9,000	kg/ha	
Soil factor			0.33		
Critical loading=		3 $mg/m^2/day$			
P concentation*=		12	mg/L		
P adsorbed=	phosphorus sorption capacity x soil factor				
	2970				
	0.297	kg/m^2			
Puptake=	critical loading x days/year x	50	years		
	54750				
	0.0548	kg/m^2			
Pgenerated=	total phosphorus concentration x wastewater volume in			50	years
	131400000				
	131	kg			
	Pgenerated / (Padsorbed + Puptake)				
Land area required	**373.6**	**m^2**			

Phosphorus sorption

High- 14,400 (900 mg/kg)
Medium- 9,600 (600 mg/kg)
Low- 4,800 (300 mg/kg)

Appendix 4. Aggressive soils, extract from Australian Standards, *AS 2870-2011*, 2011

Exposure classification for concrete in saline soils

Saturated extract electrical conductivity (EC_e), dS/m	Exposure classification
<4	A1
4-8	A2
8-16	B1
>16	B2

Notes:
1. Guidance on concrete in saline soils can be found in CCAA T56
2. Exposure classifications are from AS 3600
3. The currently accepted method of determining the salinity level of the soil is by measuring the extract electrical conductivity (*EC*) of a soil and water mixture in deciSiemens per metre (dS/m) and using conversion factors that allow for the soil texture, to determine the saturated extract electrical conductivity (EC_e)
4. The division between a non-saline and saline soil is generally regarded as an EC_e value of 4dS/m, therefore no increase in the minimum concrete strength is required below this value

Exposure classification for concrete in sulfate soils

Exposure conditions			Exposure classification	
Sulfates (expressed as SO_4)*		pH	Soil conditions A**	Soil conditions B†
In soil (ppm)	In groundwater (ppm)			
<5,000	<1,000	>5.5	A2	A1
5,000-10,000	1,000-3,000	4.5-5.5	B1	A2
10,000-20,000	3,000-10,000	4-4.5	B2	B1
>20,000	>10,000	<4	C2	B2

* Approximately 100ppm SO_4 = 80ppm SO_3
** Soil conditions A – high permeability soils (e.g. sands and gravels) that are in groundwater
† Soil conditions B – low permeability soils (e.g. silts and clays) or all soils above groundwater

Minimum design characteristic strength (f_c') and curing requirements for concrete

Exposure classification	Minimum f_c' MPa	Minimum initial curing requirement
A1	20	Cure continuously for at least 3 days
A2	25	
B1	32	Cure continuously for at least 7 days
B2	40	
C1	≥50	
C2	≥50	

Minimum reinforcement cover for concrete

Exposure classification	Minimum cover in saline soils * mm	Minimum cover in sulfate soils ** (mm)
A1	See Clause 5.3.2	40
A2	45	50
B1	50	60
B2	55	65
C1	†	70
C2	†	85

* Where a damp-proofing membrane is installed, the minimum reinforcement cover in saline soils may be reduced to 30mm.
** Where a damp-proofing membrane is installed, the minimum reinforcement cover in sulfate soils may be reduced by 10mm.
† Saline soils have a maximum exposure classification of B2.

Appendix 5. Details of registered bores within 1km of the site – NSW Department of Primary Industries- Office of Water.

Bore record No. (Figure 9)	Eastings	Northings	Drilled / Completed depth (m)	Salinity description	Water bearing zones (m)	Standing water level (m)	Date drilled and or tested	Purpose
GW031392	745385	6388609	-	-	-	-	1968	Stock
GW030994	745709	6388015	14.5	-	-	-	1982	Public/ Municipal
GW030985	745925	6388287	16.3	0-500ppm	8-12.5/13-15	-	1982	Public/ Municipal
GW039336	746109	6388344	14.4	-	2.5-12.5	-	1984	Public/ Municipal
GW052966	745546	6387742	-	-	13.7-13.7	-	1980	Domestic
GW059089	745544	6387649	13.7	-	-	-	1975	Stock/ Irrigation/ Domestic
GW028796	746453	6387808	7.3	501-1000ppm	3.9-7.2	-	1967	Irrigation
GW802466	746482	6387189	50.3	-	33.5-50.29	24.38	1999	Irrigation
GW054614	746518	6386947	68.6	-	-	-	1986	Stock/ Domestic
GW047025	744794	6385818	12.2	-	6.1-9.1	-	1977	Irrigation/ Stock/ Domestic
GW054953	744666	6385667	32.9	Good	26.8-27.7	-	1981	Stock/ Domestic
GW801882	744588	6385534	48	-	20-22/28-29/32-33/45-47	12	2002	Stock/ Domestic
GW017362	744397	6385581	7	-	-	-	-	Stock/ Domestic
GW801132	744093	6385759	60	-	-	-	-	Stock/ Domestic
GW800664	744253	6386184	68.6	Good	21.3-35/ 44.2-44.5	-	1998	Domestic
GW802371	743938	6386334	45	-	31-40	12	2000	Stock/ Domestic
GW801479	744001	6386675	56	-	25-26/47-48	-	1999	Stock/ Domestic
GW804059	744214	6386698	66	-	61.1-62	40	2005	Stock/ Domestic
GW801561	743803	6386714	60	-	38.1-56.4	-	1999	Stock/ Domestic
GW801217	743645	6386708	56	-	46-47	20	1999	Stock/ Domestic
GW064841	743389	6387024	22.8	-	0-13.7/19.8-22.8	-	1989	Stock/ Farming
GW053136	743994	6388273	60.9	501-1000ppm	19-57.5	-	1980	Stock/ Irrigation/ Domestic
GW803825	743799	6387857	7.5	972.8mg/L	3.9-7.5	4.74	2008	Monitoring/ Bore
GW804113	743690	6388076	-	-	-	-	2009	Domestic
GW048444	744433	6388108	28.4	-	-	-	-	Stock/ Domestic
GW048537	744456	6387953	12.5	-	7-10	-	1978	Stock

Appendix 6. Field and laboratory sheets

Salinity assessment

Client: Burrundulla Pty Ltd.			**Job no:** 6151	**Date:** 29/7/15	
Address:	Springflat				
Borehole:	BH5	**GPS:**	55H 744 725mE 6387 619mN		

Surface description

Slope:	0-1%	Aspect:	North East
Morphological type:	low-slope		
Land-use:	Grazing		
Disturbance:	Nil		
Erosion:	Nil		
Coarse fragments:	Nil		
Surface cover:	Reed, Couch, love grass		
% surface cover	90%		
Salinity:	Nil		

Sub-surface description

Sample method: EVH		Logged by: DL					
Depth (mm)	Soil description (texture, colour, coarse fragments, mottles, roots, structure)	Sample	M/D	pH (1:5 water)	EC (dS/m)	ECe	Emerson aggregate test
0 to 100	Dark brown silty clay loam		M				
100 to 200	Light brown silty clay		M				
200 to 500	Light grey silty clay		M				
500 to 850	Light brownish orange silty clay/ light clay		M				
			M				
850-1500	Light brown silty clay with rounded river gravel		M				
1500-2000	Light brown clayey gravel with weathered rock						
EOH							
Notes:							

Salinity assessment

Client: Burrundulla Pty Ltd.			**Job no:** 6151	**Date:**	29/7/15
Address:	Springflat				
Borehole:	BH6	**GPS:**	55H 744 877mE 6386 358mN		

Surface description

Slope:	0-1%	Aspect:	North East
Morphological type:	low-slope		
Land-use:	Grazing		
Disturbance:	Moderate		
Erosion:	Low		
Coarse fragments:	Nil		
Surface cover:	Oates		
% surface cover	90%		
Salinity:	Nil		

Sub-surface description

Sample method: EVH		Logged by: DL					
Depth (mm)	Soil description (texture, colour, coarse fragments, mottles, roots, structure)	Sample	M/D	pH (1:5 water)	EC (dS/m)	ECe	Emerson aggregate test
0 to 300	Dark brown silty clay loam		M				
300-1500	Dark brown clayey gravel with rounded river gravel and metasediments		M				
1500-2000	Light brown silty gravel with weathered rock fragments		D				
EOH							
Notes:							

Salinity assessment

Client: Burrundulla Pty Ltd.			**Job no:** 6151	**Date:** 30/7/15	
Address:	Springflat				
Borehole:	BH7	**GPS:**	7444569mE 6386587mN		

Surface description

Slope:	0-1%	Aspect:	North East
Morphological type:	low-slope		
Land-use:	Grazing		
Disturbance:	Low		
Erosion:	Low		
Coarse fragments:	Moderate, coarse gravels and metasediments		
Surface cover:	Oates		
% surface cover	90%		
Salinity:	Nil		

Sub-surface description

Sample method: EVH		Logged by: DL					
Depth (mm)	Soil description (texture, colour, coarse fragments, mottles, roots, structure)	Sample	M/D	pH (1:5 water)	EC (dS/m)	ECe	Emerson aggregate test
0 to 200	Dark brown silty clay loam		M				
200 to 700	Dark brownish red silty clay		M				
700 to 1200	Light brown silty clay trace gravel		M				
1200 to 2000	Light brown silty clay with trace river gravel and metasediments		M				
EOH							
Notes:							

Salinity assessment

Client: Burrundulla Pty Ltd.			**Job no:** 6151	**Date:** 30/7/15	
Address:	Springflat				
Borehole:	BH8	**GPS:**	744692mE 6387 309mN		

Surface description

Slope:	0-1%	Aspect:	North East
Morphological type:	low-slope		
Land-use:	Grazing		
Disturbance:	Low		
Erosion:	Low		
Coarse fragments:	Nil		
Surface cover:	Clover, Plantain Couch, Native grasses		
% surface cover	90%		
Salinity:	Nil		

Sub-surface description

Sample method: EVH		Logged by: DL					
Depth (mm)	Soil description (texture, colour, coarse fragments, mottles, roots, structure)	Sample	M/D	pH (1:5 water)	EC (dS/m)	ECe	Emerson aggregate test
0 to 200	Dark brown silty clay loam		M				
200 to 750	Dark brownish red silty clay		M				
750 to 1700	Light brown silty clay with trace gravel		M				
1700 to 2000	Light brown gravelly clay with rounded river gravel and weathered		M				
EOH							
Notes:							

Salinity assessment

Client: Burrundulla Pty Ltd.			**Job no:** 6151	**Date:** 30/7/15	
Address:	Springflat				
Borehole:	BH9	**GPS:**	744 587mE 6387 019mN		

Surface description

Slope:	0-1%	Aspect:	North East
Morphological type:	low-slope		
Land-use:	Grazing		
Disturbance:	Low		
Erosion:	Low		
Coarse fragments:	Metasediments		
Surface cover:	Clover, Couch, Plantain Love grass, Red gum		
% surface cover	90%		
Salinity:	Nil		

Sub-surface description

Sample method: EVH		Logged by: DL					
Depth (mm)	Soil description (texture, colour, coarse fragments, mottles, roots, structure)	Sample	M/D	pH (1:5 water)	EC (dS/m)	ECe	Emerson aggregate test
0 to 100	Dark brown silty clay loam		M				
100 to 300	Light grey silty clay		M				
300 to 800	Light brown silty clay with trace gravel		M				
800 to 1200	Light Brownish red sandy clay with trace weathered rock and river gravel		M				
1200 to 2000	Light brown silty sand with weathered metasediments and river gravel.		M				
EOH							
Notes:							

Salinity assessment

Client: Burrundulla Pty Ltd.			**Job no:** 6151	**Date:**	30/7/15
Address:	Springflat				
Borehole:	BH10	**GPS:**	744 958mE 6386 807mN		

Surface description

Slope:	0-1%	Aspect:	North East
Morphological type:	low-slope		
Land-use:	Grazing		
Disturbance:	Low		
Erosion:	Low		
Coarse fragments:	Nil		
Surface cover:	Clover, Milk weed, Kikuyu		
% surface cover	90%		
Salinity:	Nil		

Sub-surface description

Sample method: EVH		Logged by: DL					
Depth (mm)	Soil description (texture, colour, coarse fragments, mottles, roots, structure)	Sample	M/D	pH (1:5 water)	EC (dS/m)	ECe	Emerson aggregate test
0 to 100	Dark brown silty clay loam		M				
100 to 400	Light grey silty clay		M				
400 to 800	Dark brownish red silty clay		M				
800 to 2000	Dark brownish red silty clay with trace river gravel		M				
EOH							
Notes:							

Salinity assessment

Client: Burrundulla Pty Ltd.			**Job no:** 6151	**Date:** 30/7/15	
Address:	Springflat				
Borehole:	BH11	**GPS:**	745 041mE 6387 120mN		

Surface description

Slope:	0-1%	Aspect:	North East
Morphological type:	lower-slope		
Land-use:	Grazing		
Disturbance:	Low		
Erosion:	Nil		
Coarse fragments:	Nil		
Surface cover:	Clover, Milk weed, Kikuyu, Couch, Succulent		
% surface cover	90%		
Salinity:	Nil		

Sub-surface description

Sample method: EVH		Logged by: DL					
Depth (mm)	Soil description (texture, colour, coarse fragments, mottles, roots, structure)	Sample	M/D	pH (1:5 water)	EC (dS/m)	ECe	Emerson aggregate test
0 to 100	Dark brown silty clay loam		M				
100 to 300	Light grey silty clay		M				
300 to 1100	Light brown silty clay		M				
1100 to 1800	Light brown silty clay with trace river gravel and metasediment.		M				
1800 to 2000	Light brownish red silty clay with trace gravel.		M				
EOH							
Notes:							

Salinity assessment

Client: Burrundulla Pty Ltd.			**Job no:** 6151	**Date:** 30/7/15	
Address:	Springflat				
Borehole:	BH12	**GPS:**	745 025mE 6387 491mN		

Surface description

Slope:	0-1%	Aspect:	North East
Morphological type:	lower-slope		
Land-use:	Grazing		
Disturbance:	Low		
Erosion:	Nil		
Coarse fragments:	Nil		
Surface cover:	Succulent, couch, thistle, plantain		
% surface cover	90%		
Salinity:	Nil		

Sub-surface description

Sample method: EVH		Logged by: DL					
Depth (mm)	Soil description (texture, colour, coarse fragments, mottles, roots, structure)	Sample	M/D	pH (1:5 water)	EC (dS/m)	ECe	Emerson aggregate test
0 to 100	Dark Brown silty clay loam		M				
100 to 300	Light grey silty clay		M				
30 to 1200	Dark brownish red silty clay		M				
1200 to 2000	Dark brown sandy clay with weathered metasediments and rounded river gravels.		M				
EOH							
Notes:							

Salinity assessment

Client: Burrundulla Pty Ltd.			**Job no:** 6151	**Date:** 30/7/15	
Address:	Springflat				
Borehole:	BH13	**GPS:**	745 136mE 6387 729mN		

Surface description

Slope:	0-1%	Aspect:	North East
Morphological type:	lower-slope		
Land-use:	Grazing		
Disturbance:	Nil		
Erosion:	Nil		
Coarse fragments:	Nil		
Surface cover:	Succulent, couch, thistle, plantain		
% surface cover	90%		
Salinity:	Nil		

Sub-surface description

Sample method: EVH		Logged by: DL					
Depth (mm)	Soil description (texture, colour, coarse fragments, mottles, roots, structure)	Sample	M/D	pH (1:5 water)	EC (dS/m)	ECe	Emerson aggregate test
0 to 100	Dark brown silty clay loam		M				
100 to 800	Dark brown silty clay		M				
800 to 1600	Dark brownish red sandy clay with trace rounded river gravel and weathered metasediment		M				
1600 to 2000	Light brown silty clay with trace gravel		M				
EOH							
Notes:							

Salinity assessment

Client: Burrundulla Pty Ltd.			**Job no:** 6151	**Date:** 30/7/15	
Address:	Springflat				
Borehole:	BH14	**GPS:**	745 356mE 6387 513mN		

Surface description

Slope:	0-1%	Aspect:	North East
Morphological type:	lower-slope		
Land-use:	Grazing		
Disturbance:	Nil		
Erosion:	Nil		
Coarse fragments:	Nil		
Surface cover:	Succulent, couch, thistle, plantain		
% surface cover	90%		
Salinity:	Nil		

Sub-surface description

Sample method: EVH		Logged by: DL					
Depth (mm)	Soil description (texture, colour, coarse fragments, mottles, roots, structure)	Sample	M/D	pH (1:5 water)	EC (dS/m)	ECe	Emerson aggregate test
0 to 100	Dark brown silty clay loam		M				
100 to 300	Light grey silty clay		M				
300 to 1000	Dark brownish red silty clay with trace gravel		M				
1000 to 1500	Dark red sandy clay with trace river gravel and weathered rock		M				
1500 to 2000	Light reddish brown clayey gravel with weathered metasediments and trace river gravel.		M				
EOH							
Notes:							

Appendix 7. Reference methods for soil testing

Reference Methods:

Colour: Munsell (2000) In 'Munsell Soil Colour Charts' (Gretag Macbeth: NY)

Field texture: McDonald RC, Isbell RF, Speight JG, Walker, Hopkins MS (1990) Australian Soil and Land Survey Field Handbook pp.115-124 (Inkata Press: Melbourne)

PH: AS1289.4.3.1-1997 Method of testing soil for engineering purposes – Soil Chemical Tests-Determination of the pH value of a soil – Electrometric method

Salinity: Rayment GE and Higginson FR (1992) Australian Laboratory Handbook of Soil and Water Chemical Methods (Method 3A1, pp.15-16) (Inkata Press Melbourne) Electrical conductivity of saturated extract is based on conversions of EC (1:5) and soil texture class, to give a more accurate assessment of soil salinity hazard (Salavich PG and Peterson GH (1993) Estimating the electrical conductivity of soil paste extracts from 1:5 soil water suspensions and texture. Australian Journal of Soil Research 31

Appendix E

Water Supply Details

NSW Office of Water
Work Summary

GW800454

Licence: 80BL133035 **Licence Status:** CONVERTED

Authorised Purpose(s): IRRIGATION
Intended Purpose(s): IRRIGATION

Work Type: Well
Work Status:
Construct.Method:
Owner Type: Private

Commenced Date: **Final Depth:** 7.90 m
Completion Date: 01/01/1956 **Drilled Depth:**

Contractor Name:
Driller:
Assistant Driller:

Property: BURRUNDULLA BURRUNDULLA MUDGEE 2850 NSW **Standing Water Level:**
GWMA: 010 - CUDGEGONG VALLEY **Salinity:**
GW Zone: 001 - CUDGEGONG RIVER **Yield:**

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	WELLI	WELLI.031	183
Licensed:	WELLINGTON	MUDGEE	Whole Lot 1//810562

Region: 80 - Macquarie-Western **CMA Map:** 8832-4N
River Basin: 421 - MACQUARIE RIVER **Grid Zone:** **Scale:**
Area/District:

Elevation: 0.00 m (A.H.D.) **Northing:** 6389032.0 **Latitude:** 32°36'32.4"S
Elevation Source: Unknown **Easting:** 745640.0 **Longitude:** 149°37'03.6"E

GS Map: - **MGA Zone:** 0 **Coordinate Source:** Map Interpretation

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	7.90	1200			Unknown
1	1	Casing	Concrete	0.00	0.00	1200			

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)

Geologists Log
Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments

Remarks

04/06/1998: As per Brian Gardoll's survey.

***** End of GW800454 *****

Information about a water licence or approval

Use this tool to search for information about water licences and approvals issued under the *Water Act 1912* or *Water Management Act 2000*.

Select the type of licence or approval and enter the licence or approval number:

- **Water access licence (WAL):** a WAL number starts with the letters 'WAL' followed by several numbers; a WAL also has a reference number that starts with a two digit number, followed by 'AL' and then several numbers.
- **1912 water licence:** a water licence number starts with a two digit number, followed by a two letter code and then several numbers. Note: a PT reference number cannot be entered.
- **Approval:** an approval number starts with a two digit number, followed by a two letter code (WA, UA, CA or FW) and then several numbers.

Search for information about either a:

- ○ Water access licence (WAL) issued under the *Water Management Act 2000*
- ○ *Water Act 1912* Licences and Authorities
- ◉ **Approval issued under the *Water Management Act 2000***

Approval Number 80 ▼ CA ▼ 718675

Notes: The search results will list the conditions imposed on the approval and also list the number/s of any water access licence/s that nominate the water supply works associated with the approval.

This search tool does not include information about controlled activity approvals. Information publicly available from a register of controlled activity approvals is available at our local offices.

Find out if a *Water Act 1912* licence has been converted

- ○ Water licence conversion status

« Previous Search Print Export

Search Results

Kind of Approval	Issue Date	Expiry Date	Approval Number	Status	Water Source
Water Supply Works And Water Use	04-OCT-2012	12-MAR-2027	80CA718675	Current	Cudgegong Alluvial Groundwater Source

Work Type	Description	No of Works	Location (Lot/DP)
Extraction Works Gw	Bore	1	Lot 7, DP 445944
Extraction Works Gw	Well	1	Lot 1, DP 1133741

Extraction Works Gw	Well	1	Lot 1, DP 810562

Use Purpose(s)

Irrigation

Location(s)

Lot 12, DP 445944
Lot 37, DP 445944
Lot 7, DP 445944
Lot 9, DP 445944
Lot 1, DP 810562
Lot 101, DP 871569
Lot 11, DP 1051504
Lot 3, DP 1069441
Lot 4, DP 1069441
Lot 5, DP 1069441
Lot 6, DP 1069441
Lot 2, DP 1119981
Lot 1, DP 1133741

Water Access Licences nominating these works

Reference Number	WAL Number
80AL718674	34145

- Conditions

Plan Conditions

Water sharing plan Macquarie Bogan Unregulated and Alluvial Water Sources

Take of water

MW0655-00001 Any water supply work authorised by this approval must take water in compliance with the conditions of the access licence under which water is being taken.

Water management works

MW0097-00001 If contaminated water is found above the production aquifer during the construction of the water supply work authorised by this approval, the licensed driller must:
A. notify the relevant licensor in writing within 48 hours of becoming aware of the contaminated water, and
B. adhere to the Minimum Construction Requirements for Water Bores in Australia (2012), as amended or replaced from time to time.

MW0491-00001 When a water supply work authorised by this approval is to be abandoned or replaced, the approval holder must contact the relevant licensor in writing to verify whether the work must be decommissioned.

The work is to be decommissioned, unless the approval holder receives notice from the Minister not to do so.

Within sixty (60) days of decommissioning, the approval holder must notify the relevant licensor in writing that the work has been decommissioned.

MW0487-00001 The water supply work authorised by this approval must be constructed within three (3) years from the date this approval is granted.

MW0044-00001 A. When a water supply work authorised by this approval is to be abandoned or replaced, the approval holder must contact the relevant licensor in writing to verify whether the work must be decommissioned.

B. The work is to be decommissioned, unless the approval holder receives notice from the Minister not to do so.

C. When decommissioning the work the approval holder must:
i. comply with the minimum requirements for decommissioning bores prescribed in the Minimum Construction Requirements for Water Bores in Australia (2012), as amended or replaced from time to time, and
ii. notify the relevant licensor in writing within sixty (60) days of decommissioning that the work has been decommissioned.

Monitoring and recording

MW0481-00001 A logbook must be kept and maintained at the authorised work site or on the property for each water supply work authorised by this approval, unless the work is metered and fitted with a data logger.

MW0484-00001 Before water is taken through the water supply work authorised by this approval, confirmation must be recorded in the logbook that cease to take conditions do not apply and water may be taken.

The method of confirming that water may be taken, such as visual inspection, internet search, must also be recorded in the logbook.

If water may be taken, the:
A. date, and
B. time of the confirmation, and
C. flow rate or water level at the reference point in the water source
must be recorded in the logbook.

MW0482-00001 Where a water meter is installed on a water supply work authorised by this approval, the meter reading must be recorded in the logbook before taking water. This reading must be recorded every time water is to be taken.

Reporting

MW0051-00001 Once the approval holder becomes aware of a breach of any condition on this approval, the approval holder must notify the Minister as soon as practicable. The Minister must be notified by:
A. email: water.enquiries@dpi.nsw.gov.au,
or
B. telephone: 1800 353 104. Any notification by telephone must also be confirmed in writing within seven (7) business days of the telephone call.

MK0485-00001 Within sixty (60) days of completing construction of the water supply work authorised by this approval, the approval holder must provide a completed Form A for that work to the relevant licensor.

Other Conditions

Water management works

DK0888-00001 Any water supply work authorised by this approval used for the purpose of conveying, diverting or storing water must be constructed or installed to allow free passage of floodwaters flowing into or from a river or lake.

DS2349-00001 The approval holder must make all reasonable efforts not to allow any used water to discharge, by any means including surface or subsurface drains or pipes, into or onto:
- any adjoining public or crown road;
- any other person's land;
- any Crown land;
- any river, creek or watercourse or aquifer.

Environmental matters

DS2558-00001 Vegetation may only be cleared to the minimum extent required for the construction of the water supply work, which means that the minimum area is cleared to allow:

A. construction of the water supply work; and
B. access for appropriate equipment and personnel to maintain the work(s).

Information about a water licence or approval

Use this tool to search for information about water licences and approvals issued under the *Water Act 1912* or *Water Management Act 2000*.

Select the type of licence or approval and enter the licence or approval number:

- **Water access licence (WAL):** a WAL number starts with the letters 'WAL' followed by several numbers; a WAL also has a reference number that starts with a two digit number, followed by 'AL' and then several numbers.
- **1912 water licence:** a water licence number starts with a two digit number, followed by a two letter code and then several numbers. Note: a PT reference number cannot be entered.
- **Approval:** an approval number starts with a two digit number, followed by a two letter code (WA, UA, CA or FW) and then several numbers.

Search for information about either a:

◉ **Water access licence (WAL) issued under the *Water Management Act 2000***

Water Access Licence (WAL) Number WAL 34145

A WAL number starts with the letters 'WAL' followed by several numbers

Can't find your WAL number? Do you have a reference number? A reference number starts with a two digit number, followed by 'AL' and then several numbers. Use the following tool to find your WAL by entering your reference number. Enter the reference number to find the WAL number.

Notes:

The search results will list the conditions imposed on the water access licence. Any approved water supply work/s nominated on the water access licence are identified by the approval number/s for the work/s.

The information about a water access licence provided in the search results is a summary and may not always be up to date. If you require full and up to date details about a particular water access licence (including current holders, share and extraction component details, encumbrances and notations) you should search the Water Access Licence Register administered by Land and Property Information.

○ *Water Act 1912* Licences and Authorities

○ Approval issued under the *Water Management Act 2000*

Find out if a *Water Act 1912* licence has been converted

○ Water licence conversion status

«Previous Search Print Export

Search Results

Category [Subcategory]	Status	Water Source	Tenure Type	Management Zone	Share Components (units or ML)
Aquifer [High Security]	Current	Cudgegong Alluvial Groundwater Source	Continuing	Cudgegong Alluvial Management Zone	1,246.00

Extraction Times or Rates

Subject to conditions water may be taken at any time or rate

Nominated Work Approval(s)

80CA718675

- Conditions

Plan Conditions

Water sharing plan **Macquarie Bogan Unregulated and Alluvial Water Sources**

Take of water

MW0604-00001	Water allocations remaining in the account for this access licence must not be carried over from one water year to the next water year.
MW0603-00001	The total volume of water taken under this access licence in any water year must not exceed a volume equal to: A. the sum of water in the account from the available water determination for the current year, plus B. the net amount of water assigned to or from the account under a water allocation assignment, plus C. any water re-credited by the Minister to the account.
MW0605-00001	Water must be taken in compliance with the conditions of the approval for the nominated work on this access licence through which water is to be taken.

Monitoring and recording

MW2338-00001	The completed logbook must be retained for five (5) years from the last date recorded in the logbook.
MW2336-00001	The purpose or purposes for which water is taken, as well as details of the type of crop, area cropped, and dates of planting and harvesting, must be recorded in the logbook each time water is taken.
MW2337-00001	The following information must be recorded in the logbook for each period of time that water is taken: A. date, volume of water, start and end time when water was taken as well as the pump capacity per unit of time, and B. the access licence number under which the water is taken, and C. the approval number under which the water is taken, and D. the volume of water taken for domestic consumption and/or stock watering.
MW0606-00001	The volume of water taken in the water year must be recorded in the logbook at the end of each water year. The maximum volume of water permitted to be taken in that water year must also be recorded in the logbook.
MW2339-00001	A logbook must be kept, unless the work is metered and fitted with a data logger. The logbook must be produced for inspection when requested by the relevant licensor.

	Reporting
MW0051-00002	Once the licence holder becomes aware of a breach of any condition on this access licence, the licence holder must notify the Minister as soon as practicable. The Minister must be notified by: A. email: water.enquiries@dpi.nsw.gov.au, or B. telephone: 1800 353 104. Any notification by telephone must also be confirmed in writing within seven (7) business days of the telephone call.

Other Conditions

NIL

Disclaimer: The NSW Office of Water does not warrant the data is current nor does it warrant that the data or the data capturing processes are free from corruption or error.

Privacy: The information provided is limited to meet the requirements of section 57 of the *Privacy and Personal Information Act 1998*.

Exporting and printing: Search results show a maximum of 50 rows per page. Search results can only be printed page by page.

More information: Should you require further information or technical assistance, please submit your request to water.enquiries@dpi.nsw.gov.au or contact 1800 353 104.

WESTERN BORE TESTING SOLAR & PUMP SERVICES
PO BOX 7168 DUBBO GROVE NSW 2830

Single Rate Pumping Test (Pump Drawdown)

Owner: CHRIS COX

Location: "BURRUNDULLA" MUDGEE Km's Travelled:

Bore Licence: Bore No: Bore Size: 2 METRE WELL

Date of Test: 14/15-11-17 Test No: Tested by: KM

Description of Reference Point: TOP OF CONCRETE WELL

Height of reference point above ground surface (m): GROUND LEVEL

Depth of Bore (m): 7.52 Depth to Screens /slots (m): TOP BOTTOM Depth of Pump intake (m): 7

Pump Type: SP46-3 Hour metre No. + hours: N/A

Method of measuring discharge: 3" WATER METER WITH DIGITAL LOGGER

Actual Time	Time since Pumping Started		Depth to Water From reference point	Flow Metre Reading	Pumping Rate		Remarks
	Hours	Minutes	Metres		LPM	GPH	
2.00	0	0	**4.28 SWL**				Started test
2.01		1	4.43	36.36			
2.03		3	4.68	35.82			
2.05		5	4.93	35.82			
2.10		10	5.38	35.29			
2.15		15	5.56	35.12			
2.20		20	5.74	34.95			
2.30		30	6.00	34.95			Slight increase
2.45		45	6.24	34.95			
3.00	1	60	6.33	35.12			Reduce flow
3.30		90	6.13	33.03			
4.00	2	120	6.13	33.03			
5.00	3	180	6.18	33.18			
6.00	4	240	6.19	33.03			
7.00	5	300	6.21	33.03			
8.00	6	360	6.23	33.03			
10.00	8	480	6.23	33.03			
12.00	10	600	6.25	32.73			
2.00	12	720	6.27	32.73			
5.00	15	900	6.27	32.73			
8.00	18	1080	6.28	32.73			
11.00	21	1260	6.29	32.73			Water sample taken
2.00	24	1440	6.29	32.73			

MOB: 0457 488 228
0407 967 529

email: westernboretesting@bigpond.com

WESTERN BORE TESTING SOLAR & PUMP SERVICES
PO BOX 7168 DUBBO GROVE NSW 2830

Recovery Records after Single Rate Pumping

Owner: CHRIS COX Date of Test: 14/15-11-17 Test No:

Actual Time	Time since Pumping Stopped		Depth to Water From reference point	Remarks
	Hours	Minutes	Metres	
2.00	0	0	**6.29 DDL**	Started recovery
2.01		1	6.08	
2.03		3	5.81	
2.05		5	5.57	
2.10		10	5.16	
2.15		15	4.89	
2.20		20	4.70	
2.30		30	4.55	Good recovery
2.45		45	4.41	
	1	60		
		90		
	2	120		
	3	180		
	4	240		
	5	300		
	6	360		
	8	540		
	10	600		
	12	720		
	15	900		
	18	1080		
	21	1260		
	24	1440		

Estimated Bore Capability:

Litres Per Second	**(L/S):**	9.09
Litres Per Minute	**(LPM):**	545.5
Litres Per Hour	**(LPH):**	32,730
Gallons Per Hour	**(GPH):**	7,209
Standing Water Level	**(MTRS):**	4.28
Draw Down Level	**(MTRS):**	6.29

MOB: 0457 488 228
0407 967 529
email: westernboretesting@bigpond.com

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ME1701601**	Page	: 1 of 4
Client	: **MUDGEE CASH CLIENT**	Laboratory	: Environmental Division Mudgee
Contact	: Steve Harding	Contact	: Mary Monds
Address	: 28 Sydney Road Mudgee NSW 2850	Address	: 1/29 Sydney Road Mudgee NSW AUSTRALIA 2850
Telephone	: 1300727422	Telephone	: 02 6372 6735
Project	: Comprehensive Water Package	Date Samples Received	: 21-Nov-2017 16:24
Order number	: ----	Date Analysis Commenced	: 22-Nov-2017
C-O-C number	: ----	Issue Date	: 06-Dec-2017 15:38
Sampler	: Client Sampler		
Site	:		
Quote number	: ----		
No. of samples received	: 1		
No. of samples analysed	: 1		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ashesh Patel	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Mary Monds	Environmental Services Representative	Laboratory - Mudgee, Mudgee, NSW

Page	: 2 of 4
Work Order	: ME1701601
Client	: MUDGEE CASH CLIENT
Project	: Comprehensive Water Package

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Samples were received outside of recommended ALS holding times for analysis of pH & MW004. Results should be scrutinised accordingly.
- Only approved EPA methods for the analysis of water pollutants in New South Wales are used: pH by classical APHA 4500 H+B and in-house EA005; EC by classical APHA 2510 and in-house EA010.
- Test MW004-CTAG: NATA accreditation does not cover the performance of this service.
- Only approved EPA methods for the analysis of water pollutants in New South Wales are used: Alkalinity – by classical using APHA 2320 B and in-house ED037 & P; Alkalinity - bicarbonate by classical using APHA 2320 B and in-house ED037 & P; Alkalinity - carbonate by classical using APHA 2320 B and in-house ED037 & P; Alkalinity - hydroxide by classical using APHA 2320 B and in-house ED037 & P; Sulfate by discrete analyser using APHA 4500 SO42- and in-house ED041G; Chloride by discrete analyser using APHA 4500Cl- E and in-house ED045G; are conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911.
- Only approved EPA methods for the analysis of water pollutants in New South Wales are used: Cations - using APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM (2013) Schedule B(3); Total Hardness/SAR by ED093F; Total Metals using APHA 3125; USEPA SW846 - 6020 and in-house EG020; Fluoride by classical using APHA 4500 F- C and in-house EK040 & P; Nitrogen - nitrite by discrete analyser using EK057G; Nitrogen - oxidised (NOx) by discrete analyser using EK059G; Ionic Balance by EN055; are conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911.
- Test MUD-WAT: NATA accreditation does not cover the performance of this service.

Page : 3 of 4
Work Order : ME1701601
Client : MUDGEE CASH CLIENT
Project : Comprehensive Water Package

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Sub-division Well	-----	-----	-----	-----
				Client sampling date / time	[15-Nov-2017]	-----	-----	-----	-----
Compound	CAS Number	LOR	Unit		ME1701601-001	--------	--------	--------	--------
					Result	----	----	----	----
EA005: pH									
pH Value	----	0.01	pH Unit		6.8	----	----	----	----
EA010: Conductivity									
Electrical Conductivity @ 25°C	----	1	µS/cm		485	----	----	----	----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		115	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L		115	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		44	----	----	----	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		49	----	----	----	----
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		38	----	----	----	----
Magnesium	7439-95-4	1	mg/L		14	----	----	----	----
Sodium	7440-23-5	1	mg/L		32	----	----	----	----
Potassium	7440-09-7	1	mg/L		2	----	----	----	----
ED093F: SAR and Hardness Calculations									
Total Hardness as CaCO3	----	1	mg/L		152	----	----	----	----
Sodium Adsorption Ratio	----	0.01	-		1.13	----	----	----	----
EG020T: Total Metals by ICP-MS									
Iron	7439-89-6	0.05	mg/L		0.38	----	----	----	----
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		0.1	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		1.40	----	----	----	----
EN055: Ionic Balance									
Total Anions	----	0.01	meq/L		4.60	----	----	----	----
Total Cations	----	0.01	meq/L		4.49	----	----	----	----
Ionic Balance	----	0.01	%		1.15	----	----	----	----
MUD-WAT: Calculated Methods (Department of Agriculture)									

Page	: 4 of 4
Work Order	: ME1701601
Client	: MUDGEE CASH CLIENT
Project	: Comprehensive Water Package

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Sub-division Well	-----	-----	-----	-----
				Client sampling date / time	[15-Nov-2017]	-----	-----	-----	-----
Compound	CAS Number	LOR	Unit		ME1701601-001	--------	--------	--------	--------
					Result	----	----	----	----
MUD-WAT: Calculated Methods (Department of Agriculture) - Continued									
ø **CaCO3 Saturation Index**	----	0.1	-		**-0.8**	-----	-----	-----	-----
MW004-CTAG: E.coli by Colitag									
ø ***Escherichia coli***	----	1	Detection in 100mL		**Not detected**	-----	-----	-----	-----
MW004-CTAG: Total Coliforms by Colitag									
ø **Total Coliforms**	----	1	Detection in 100mL		**Detected**	-----	-----	-----	-----

ALS Environmental Division | Mudgee Laboratory | Commercial-in-Confidence

Guidelines for interpretation of Comprehensive Water Package				
ME17.1601		The test results likely to cause problems are highlighted.		
Characteristic	Health	Aesthetic	Soil	Comments
pH	*	6.5 - 8.5	5.5 - 7.0	While extreme pH values (less than 4 & greater than 11) may adversely affect health, there is no definite health guideline. Values less than 6.5 may be corrosive; values greater than 8.5 may cause scale and taste problems. New concrete tanks and cement-motar lined pipes can significantly increase pH and a value up to 9.2 may be tolerated.
Electrical Conductivity	**	< 1000	7000	*Animals can not drink water greater than:* *Cattle - 10,000 µS/cm Sheep - 13,000 µS/cm* *Horses - 7,000 µS/cm Poultry - 4,000 µS/cm*
Alkalinity	**	**	125	Drinking water with increased alkalinity (pH >8.5) can lead to encrustation of plumbing fittings and pipes. A pH >11 may cause corrosion and >8 can decrease the efficiency of chlorine disinfection.
Sulfate	500	250		Occurs naturally in water. May have a laxative effect / gut upset above 500 mg/L, and have corrosive effects.
Chloride	**	250mg/L	150	Chlorides are widely distributed in nature as salts of sodium (NaCl), potassium (KCl), and calcium (CaCl2). Chloride increases the electrical conductivity of water and thus increases its corrosivity.
Calcium	**	200		Individuals most at risk to high Calcium intake have kidney stones, heart disease and diabetes. Individuals most at risk to high Magnesium intake hypertension, heart disease, pre-eclampisa, diabetes and atherosclerosis. See Hardness.
Sodium	**	Sodium = 180	120	Individuals most at risk to high Sodium and Potassium intake have kidney disease or renal insufficiency, heart disease, diabetes.
Hardness	**	200	300	Caused by calcium and magnesium salts. Hard water is difficult to lather. Values above 200 may cause gut upsets. Values less than 60 mg/L CaCO3 indicate soft but possibly corrosive water, values 200 - 500 mg/L CaCO3 indicate increasing scaling problems with values greater than 500 mg/L CaCO3 indicating severe scaling
Sodium Absorption Ratio [Sodicity]			3	If the SAR is greater than 3, the water is sodic and is a potential hazard to soils. Sodic soils are likely to disperse, that is, break down into individual clay particles that block pore spaces. This dispersion causes poor water infiltration, slow internal drainage, surface crusting and germination problems. If dispersion occurs in the subsoil, the soil may become almost impermeable and be a poor environment for growing plants.
Iron	*	0.3	4	Occurs naturally in water, usually at less than 1 mg/L, but up to 100 mg/L in oxygen-depleted ground water. High concentrations stain laundry and fittings. Iron bacteria cause pump blockages, taste/odour issues and corrosion.
Fluoride	1.5		1	Occurs naturally in some water from fluoride-containing rocks. Often addede to town water at up to 1 mg/L to protect against dental caries. However, >1.5mg/L can cause dental fluorosis; >4mg/L can cause skeletal fluorosis.
Nitrate	50	**	25	Occurs naturally in water. May be high in ground water from intensive farming and sewage effluent. Values below 50 mg/L will protect bottle-fed infants under 3 months from methemoglobinemia, above 3 months 100mg/L are tolerated.
Calcium Carbonate Saturation Index		.+1	. + Result: causes hard water and scaling. Greater than +1.0 is moderate, greater than +1.5 is severe.	
		-1	. - Result causes corrosion; Less than -1.0 is moderate, greater than -1.5 is severe.	
Characteristic		Health	Aesthetic	Comments
Heterotrophic Plate Count		*	*	An indicator of general bacterial quality. A result greater than 100 cols/mL result should be investigated and the water sterilized before drinking.
E Coli, Faecal Coliform		Less than 1 col/100mL	Less than 1 col/100mL	No sample should contain any E Coli. If E Coli is detected then the following steps should be taken immeditaley: a) Immediately stop drinking the water, even in the shower / bathroom. b) Disinfection of the water should be increased; boil drinking water, add chlorine or suitable product. c) Investigate the water source to determine the contamination source AND eliminate, e.g. dead mammal, sewage. d) A repeat sample should be taken from the same site and retested for E Coli and Total Coliforms. If the repeat sample is: i) Negative for both E Coli and Total Coliforms, step b) should still be completed. ii) Positive for either E Coli or Total Coliforms, repeat steps a) to d) again.
Total Coliforms		Less than 1 col/100mL	Less than 1 col/100mL	No sample should contain Coliforms. If Coliforms are detected, then the following action should be taken immediatley: a) Immediately stop drinking the water, even in the shower / bathroom. b) Disinfection of the water should be increased; boil drinking water, add chlorine or suitable product. A repeat sample should be taken from the same sample site and tested again.

** No health-based guideline is necessary.

Reference: National Water Quality Management Strategy Australian Drinking Water Guidelines 1996 National Health And Medical Research Council

For more information and solutions visit: http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0013/164101/Farm-water-quality-and-treatment.pdf
http://www.waternsw.com.au/__data/assets/pdf_file/0008/113687/FarmDamFinalLR.pdf

345 Spring Flat Rd
MUDGEE NSW 2850
February 2018

PRIVATE & CONFIDENTIAL

General Manager
Mid-Western Regional Council
PO Box 156
MUDGEE NSW 2850

Dear Mr Cam

We refer to the Proposed DA with no. (PP_2016_MIDWR_002_00) Lots 3 and 4 DP 1069441 - Spring Flat Road, Mudgee.

We have a number of concerns with the proposed development and its potential impact on the Spring Flat area.

- Spring Flat road although they intend to use the existing sealed road as part of their development, this road is too narrow without a middle line is dangerous enough with people driving in the middle of the road forcing oncoming traffic to go off the rough edges. With this first stage proposed development of 25 blocks there will be at least 50 or more vehicles using this road plus a large number of trucks during the development stage of the subdivision and the building of each individual residences. This will be compounded if stage two is developed. We feel that the road needs widening to accommodate any additional traffic.

- With the proposed development is the Council intending to have Garbage collection to these individual blocks or are they expected to use the Queen Pinch Rd garbage depot. If this is the case it will place extra pressure on the existing facility which most weekends is overloaded with waste dumped on the ground and paper and plastic blowing everywhere. Council is unable to stop Mudgee town residences not only using the depot at the moment but having their loads covered leaving their rubbish littering the road. Also if the residences use this facility there will be extra pressure on the dirt section of the Spring Flat road, which currently, with the extra tip traffic from town, deteriorates rapidity after each grade.

- We are also concerned with the proposed development will have on the water table in the Spring Flat area. With utilizing a well located on Lot 1 to supply the first stage of the development of 25 lots, are they proposing to use the same well for stage 2 of the development. Also these 25 individual blocks may intend to sink their own bores and if this is the case it will effect the water level for existing bores especially in drought times. We also feel that this well should be tested again as we have had no replenishment rain and the water level of bores around are dropping and going dry. Why can't this proposed development be supplied by the town reticulation system.

- I believe the area concerned has now been rezoned from Intensive Agriculture to accommodate smaller blocks. Is this a blanket plan for adjoining areas.

We are available to discuss these issues at your convenience.

Please do not publish or distribute the contents of this letter or our private details.

Regards

Kerry and Marlene Hunt

Ph. 0428888734

LAN0000043

26th February 2018

P.O. Box 470
Mudgee NSW 2850

The General Manager
Planning and Development Department
Mid-Western Regional Council
PO Box 156
MUDGEE NSW 2850

Dear Sir,

We wish to object strongly to the proposal to rezone Lot 3 DP1069441, Springflat Road, Mudgee and the proposed subdivision.

We are long-time residents of Springflat, and are the most affected with now 4 blocks adjoining our boundary. Our residence is approximately 50 metres from the proposed subdivision's southern boundary. We now have a lovely scenic view north, but with this proposed subdivision, all we will see is houses and backyards. We raise the following in support of this objection;

Is there a need for more residential blocks?
With the implementation of Broadhead Road, Menah, Caerleon and Ulan Road (MAAS) subdivisions, there would appear to be little requirement for additional urban blocks.

Location
Springflat Road has been identified as a "hard edge" for urban growth in Mid-Western Regional Council's Comprehensive Land Use Strategy (2009) "because it provides a clear edge between urban and rural uses".
This decision was well thought out, as it protects the land on the eastern side of Springflat Road from subdivision (Lot 3 DP 1069441).
This land has long been considered some of the better grazing land in the Mudgee district i.e. Burrundulla and the Springflat area. This is indicated in the Land Capability Map contained in Council's Comprehensive Land Use Strategy as a combination of Class 1, 2 and 3 suitable for crop planting and livestock grazing.
When the Comprehensive Land Use Strategy 2009 was implemented it was suggested that urban development would occur on the northern side of Mudgee where land was not of the quality for grazing as that of the southern side e.g. Burrundulla.

Land Use
Some of our land, approximately 50 acres, which joins the southern boundary of the proposed subdivision, has provided an income from grazing of approximately $11,000, $10,000, $12,000 for the last three financial years. Adjoining land to the south is characterised by low intensity grazing, viticulture and olive groves. It is evident, therefore, that these so called life style blocks currently are productive. This is as opposed to no productivity from the proposed 2ha residential blocks.

Water
The Mudgee LEP (2012) Groundwater Vulnerability describes the area within the development as "vulnerable to depletion and contamination as a result of development".
We have a shallow well on our property which provides domestic water to two residences and families plus stock water. The level of this well is subject to climate change.

The NSW Department of Primary Industries, Office of Water website identified 26 registered water bores within a radius of 1.5kms of the subdivision. One of these bores is on our property. This bore becomes dry each summer unless a wet season occurs.
It is reasonable to assume that many of the proposed residents of the subdivision will wish to sink bores. Should this occur, it will undoubtedly have an adverse effect on our well and bore. No doubt this will also affect those of other current block holders.

Water Runoff
The proposed subdivision slopes generally northeast to Oakey Creek. This has a seasonal flow. During a wet season the runoff is substantial and will be increased from roofs and driveways, etc., from the subdivision. Oakey Creek flows into the Mudgee water supply area and could contain contamination from gardens, car washing, etc.
The report by Environment Consulting Pty Ltd states "planning and development controls are recommended to prevent immobilisation of salt in the soil and groundwater resulting in, on and off site impacts and include:

- Establishment of parkland areas with native species which do not require irrigation
- Planting of deep rooted vegetation along roads
- Design road levels similar to natural soil levels to minimise excavations
- Wastewater systems to comprise surface and subsurface irrigation" (page 4).

Is Council prepared to undertake these recommendations should the subdivision be approved?

Access
This is proposed to be from the Springflat Road which is a narrow strip of bitumen currently showing signs of deteriorating. The bitumen ceases at the southern end of the subdivision and becomes a gravel surface badly in need of attention. This leads to the Queens Pinch Waste Disposal Station which will be utilised by residents of the subdivision. Substantial reforming, etc. will be required as it is currently an accident hazard. There has been a marked increase in traffic over the past few years, with a lot of town residents also using the Queens Pinch Waste Disposal Station.

Dogs
Our sheep have been harassed, and some killed, by town dogs.
Should 25 residences be erected on our boundary, it is expected the occupants will have dogs. Should our sheep be injured or killed by dogs from the subdivision, legal action could result and could involve Council for approving the subdivision in a grazing locality.

Noise and Spraying
Residents of the proposed subdivision will be subject to rural noise levels such as tractors, motorbikes, chainsaws, etc. Also, has consideration been given to the drift of chemicals used in weed spraying, sheep jetting, etc.

In conclusion, we object to the rezoning of prime agricultural land and the proposed subdivision of 2ha size lots, but would agree with larger 10ha sized lots, which would at least be productive.

We hope you give this objection due consideration and disallow this rezoning and proposed subdivision.

Yours Sincerely

H and A Johnson

Thu 1/03/2018 11:08 PM

Harold <johnsons217@bigpond.com>

Proposed rezoning of Lot 3 DP1069441

To Sarah Armstrong

Cc Council

Retention Policy Inbox - 18 Months (1 year, 5 months) Expires 23/08/2019

Attention Sarah Armstrong

Please add this to our previous letter of objection to the proposed rezoning and subdivision, Burrundulla and Springflat Road. We would like Council to note that we are not totally opposed to the subdivision, but do not agree with the proposed positioning and size of the blocks on the southern boundary (our northern boundary). The present plan indicates 4 lots adjoining our boundary and access road to our dwelling. We would like to point out that our dwelling is approximately 50metres only, from this boundary.

We would like to suggest an alternate plan be considered where lots could run parallel to the Springflat Road towards the Castlereagh Highway, leaving an area between the blocks and Oakey Creek for prime agricultural use, satisfying both needs. A loop road would not be necessary. Please find enclosed photos illustrating the productivity of this prime agricultural land. (It is not third rate agricultural land).

Sincerely Harold and Annie Johnson

Looking north from our boundary over the proposed subdivision

Looking northeast over the subdivision

The General Manager,
Mid-Western Regional Council,
Market Street, Mudgee NSW 2850.

Submission with respect to Planning-Proposal – dp1206 4882/ Mid-Western Regional Council

Application lodged by Burrundulla Pty Ltd with respect to proposal to rezone a 54.72 ha parcel of land in Spring Flat Road, Spring Flat, from RU4 to R5 (Large Lot Residential).

Dear Sir / Madam,

Our company is the beneficial owner of a 22.5Ha parcel of land in Spring Flat Road,Spring Flat known as 38 Spring Flat Road.We write to express our strong support for the proposal, part of which we note, was identified in the Mudgee and Gulgong Urban Release Strategy 2014 which we understand Council considered and adopted in November 2014.

Our only disappointment is that while 56 X 2Ha lots were identified in this Strategy in this precinct, (Area 22) only 25 of these 56 lots are currently proposed to be rezoned,and these lots are located at the Southern end of this Area instead of the Northern end of Area 22 (adjoining Sydney Road). It is our view that the first 25 lots lots could be sold sooner than they might otherwise be, if they had been located close to Sydney Road.

We understand that the reason why Council in his wisdom elected to support the release of the 25 lots currently proposed, in preference to the 31 lots adjacent to Sydney Road was because of concerns about the possible adverse visual impact that 2 Ha. lots could have had, if development all those lots had not been controlled by suitable covenants and /or obscured by landscaping.

As the potential developer of a 205 home DA approved retirement village at No. 38 Spring Flat Road, our company would be as concerned as Council would be, if there was any possibility of any adverse visual impact on any development in Sydney Road, at the entrance to our town that did not reflect favourably on our town.

We do however respectfully submit, that there is no reason why Council could not have conditioned any rezoning of the RU4 land on the Eastern side of Spring Flat Road adjacent to Sydney Road, with conditions that could have required the establishment of an approved landscape plan, that the residents within the release area could have been responsible for maintaining in perpetuity. In this event the visual impact of the development could have set a standard that any town would be proud of.

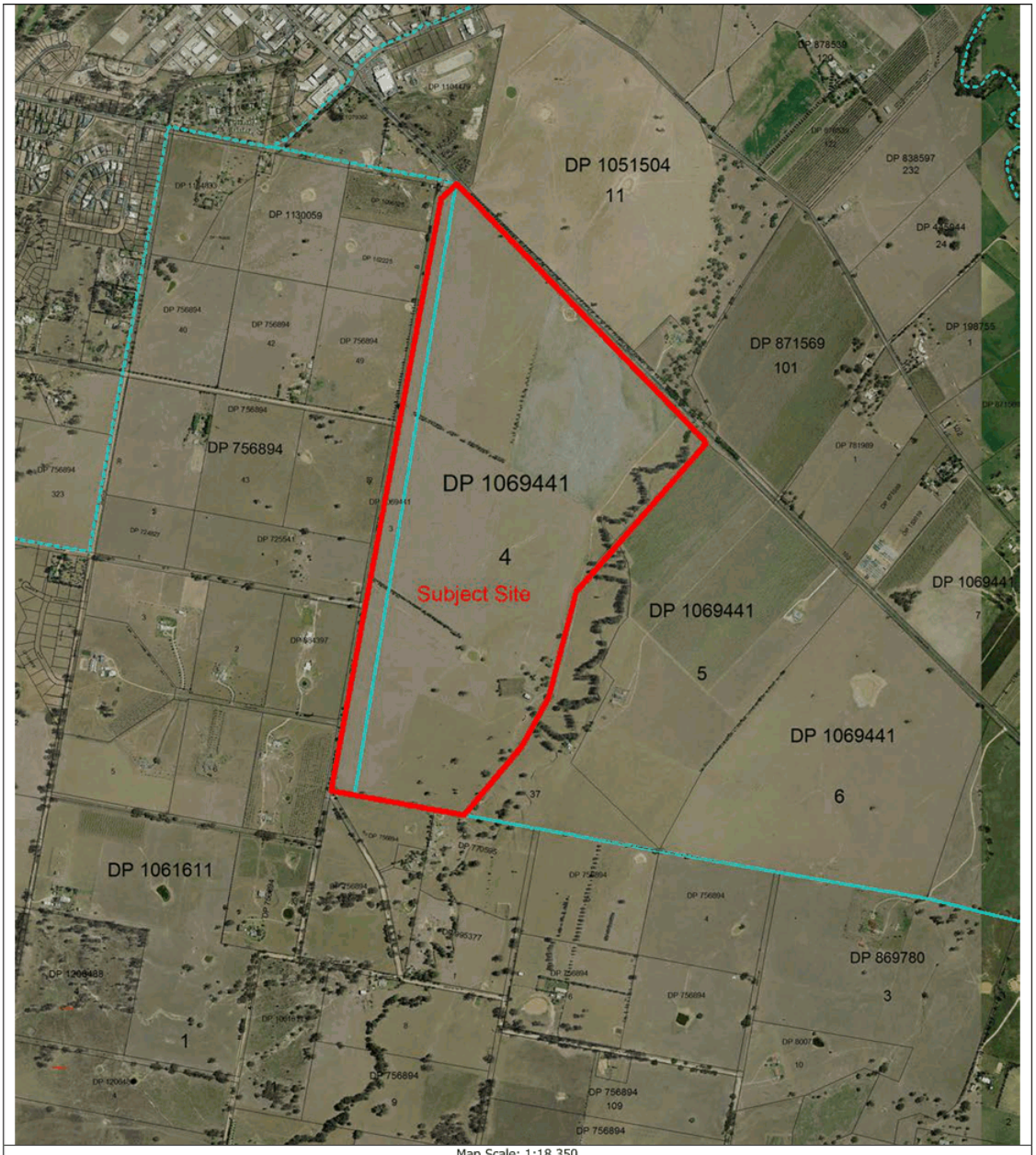
It will be our hope that when the rezoning of the RU4 land in the Northern end of Area 22 is made in the future, Council will not miss the opportunity, of conditioning that rezoning upon an innovative landscape plan for Sydney Road.

In the meantime we note that the rezoning of this proposed 54.72 ha of RU4 land to R5 large lot residential will significantly enhance Mudgee's rate base, and free up land that is not suited for continuous cultivation.(agricultural classifications 1,2, and 3).

We commend Council for supporting the rezoning of land that by its lot size, will provide a buffer between more intense agricultural land uses further to the East of the proposed rezoning, and the potential future residential and educational pursuits envisaged on the western side of Spring Flat Road.

Yours faithfully,

Geoffrey Cox, Managing Director, GX Nominees Pty Ltd.



Map Scale: 1:18,350

N
W E
S

Spring Flat Road Planning Proposal

Lots 3 and 4 DP 1069441

Locality Map

Mid-Western REGIONAL COUNCIL

Friday, 9 March 2018

NSW GOVERNMENT Planning & Environment

IRF18/175

Mr Brad Cam
General Manager
Mid-Western Regional Council
PO Box 156
Mudgee NSW 2850

Attention: Sarah Armstrong Manager, Strategic Planning

Dear Mr Cam

Subject: Planning proposal (PP_2016_MIDWR_002_00), Lots 3 and 4 DP 1069441 Springflat Road, Mudgee – request to proceed to community consultation.

I refer to the subject matter and your letter dated 21 December 2017 with regard to planning proposal (PP_2016_MIDWR_002_00) and the updated information about the water supply.

In accordance with condition 1 of Gateway determination issued on 24 May 2016 (as since altered), I can confirm that Council has worked with the Department of Primary Industries - Water and provided adequate information to satisfy this condition in relation to proposed lot size, water supply and impacts on groundwater.

An important issue for Council is to ensure that the water supply volumes to the future residential development are available if/when irrigation demands occur.

Mid-Western Regional Council may now proceed to community consultation of the planning proposal in accordance with the remaining conditions of the Gateway determination.

Please include this letter and Council correspondence dated 21 December 2017 including the updated planning proposal as part of the community consultation package.

Should you have any queries in regard to this matter, I have arranged for Wayne Garnsey, Team Leader to assist you. Mr Garnsey can be contacted on (02) 68412180.

Yours sincerely

Damien Pfeiffer 19.1.18
Director Regions, Western

Transport Roads & Maritime Services

19 July 2017

SF2017/139036; WST17/00103/01

The General Manager
Mid-Western Council
PO Box 156
Mudgee NSW 2850

Dear Sir

PP_2016_MIDWR_002_00; Lot 3 & 4 DP 1069441; Spring Flat Road, Burrundulla;
Amendment to Mid-Western Local Environmental Plan 2011

Thank you for your letter dated 26 June 2017 advising Roads and Maritime Services of a Gateway Determination for PP_2016_MIDWR_002_00 and inviting comments.

The submitted documentation has been reviewed. Roads and Maritime notes the proposal includes the following:

- Re-zone Lots 3 & 4 DP 1069441 from RU4 Primary Production to R5 Large Lot Residential.
- Re-zone a 20 metre wide corridor adjacent to Sydney Road (HW 18) to RE1 Public Recreation.
- That a minimum lot size of 2 hectare apply to the proposed residential land.

Roads and Maritime does not object in principle to the proposed amendments, and will await submission of development applications for review as required. The following comments are provided for Council's consideration:

- To minimise the impact on classified roads, access to developments should be obtained from local roads wherever possible.
- Safe Intersection Sight Distance (SISD), and appropriate intersection treatments, in accordance with Part 4a of *Austroads Guide to Road Design* need to be provided at intersections along the access routes to the subject lands.

I trust this information is of assistance. Please keep Roads and Maritime informed on the progress of the proposed amendments. Should you wish to discuss this matter further, please contact the Andrew McIntyre on 02 6861 1453.

Yours faithfully,

Kellee McGilvray
Acting Network & Safety Manager
Western

Roads and Maritime Services

51-55 Currajong Street Parkes NSW 2870 |
PO Box 334 Parkes NSW 2870 DX 20256 |

www.rms.nsw.gov.au | 13 22 13

2018-2019 Rate Estimate Analysis - Rate Model 1

2.3% Increase distributed evenly across all Categories

Background to Rate Model

Total 2018/2019 rate revenue projected in this model is **$18,443,853** being an overall increase of **2.3%** (The maximum increase prescribed by IPART).

Council is required to make a number of adjustments in addition to the IPART increase in order to comply with rate pegging requirements. Following is a full summary of the calculation of the 2018/2019 Notional General Income in accordance with rate pegging requirements :-

$18,024,785.09	- 2017/2018 rate income based on current valuations
$2,079.39	- Added to restore Council's rate base due to LV OBJECTIONS during 2017/2018
$0.00	- Added to restore Council's rate base due to income lost from new CONSERVATION AGREEMENTS during 2017/2018
$18,026,864.48	**- 2018/2019 Notional General Income**
$414,617.88	- Added General Variation - 2.3% IPART approved increase for 2018/2019
$291.00	- Added 2017/2018 Result - CATCH-UP permissible revenue not levied in 2017/2018
$2,079.39	- Added to CATCH-UP Income lost in 2017-2018 due to LV OBJECTIONS
$0.00	- LESS excess in 2017/2018 due to CATCH-UP of rate revenue lost in 2016/2017 due to LV OBJECTIONS
$18,443,852.75	**- 2018/2019 Notional General Income Yield**

This model distributes the rate revenue described above as follows :-.
Business, Farmland Residential & Mining categories all increase by 2.3% overall.
Minimum rates for all categories have increased by the maximum 2.3% to $659.47, with the exception of the Business-Rylstone Aeropark sub-Category which has increased by 2.3% to $216.49.

Rating Impacts from Valuation Changes

Rates for the 2018/2019 year will be based on land values with a base date of 1/7/2016, the same base date as used in 2017/2018. As a result, the rates amounts payable by individual assessments will show little variation from the 2.3% IPART increase.

The Valuer General has forcast significant changes to land valuations of Mining - Mining Coal assessments due to a change in the methodology used to assess those land values. The amended valuations have not yet been issued to Council, and are therefore not included in this rate model.

At this stage, there remains uncertainty as to when these values will be issued, and how Council will be required to treat them in calculating the Notional General Income Yield.

The following tables and graphs provide a more detailed analysis of the rate revenue proposed by this model and the effect of the updated land valuations on individual properties within each of the categories.

2018-2019 Rate Estimate Analysis - Rate Model 1

Category / Sub-category	No of Assts	REVENUE 2017/2018 Actual	REVENUE 2018/2019 Projected	Difference	% variation	LAND VALUE 2017/2018 2016 LV BD	LAND VALUE 2018/2019 2016 LV BD	Difference	% variation	RATES / MINIMUMS Rate In $ 2017/2018	Minimum 2017/2018	NEW Rate In $ 2018/2019	NEW Minimum 2018/2019	Minimum LV cut-offf
RYLSTONE AEROPARK	*49*	*13,640*	*13,955*	*315*	*2.3%*	*786,250*	*786,250*	*0*	*0.0%*	0.960363	211.62	**0.982503**	**216.49**	22,035
BUSINESS	649	1,406,476	1,438,895	32,419	2.3%	140,079,740	140,079,740	0	0.0%	0.960363	644.64	**0.982503**	**659.47**	67,121
FARMLAND	1900	4,532,538	4,637,918	105,380	2.3%	750,172,637	750,172,637	0	0.0%	0.600666	644.64	**0.614634**	**659.47**	107,295
MINING COAL	9	2,126,780	2,176,226	49,447	2.3%	25,769,364	25,769,364	0	0.0%	8.253132	644.64	**8.445013**	**659.47**	7,809
MINING	2	37,015	37,876	861	2.3%	448,500	448,500	0	0.0%	8.253132	644.64	**8.445013**	**659.47**	*7,809*
RESIDENTIAL RURAL	*3867*	*3,780,299*	*3,868,377*	*88,078*	*2.3%*	*537,616,591*	*537,616,591*	0	0.0%	0.639177	644.64	***0.654125***	**659.47**	*100,817*
RESIDENTIAL URBAN	*7202*	*6,128,038*	*6,270,606*	*142,568*	*2.3%*	*845,633,194*	*845,633,194*	0	0.0%	0.639177	644.64	***0.654125***	**659.47**	*100,817*
RESIDENTIAL	11069	9,908,337	10,138,983	230,646	2.3%	1,383,249,785	1,383,249,785	0	0.0%	0.639177	644.64	**0.654125**	**659.47**	100,817
TOTAL	**13,678**	**18,024,787**	**18,443,853**	**419,066**	**2.3%**	**2,300,506,276**	**2,300,506,276**	**0**	**0.0%**					

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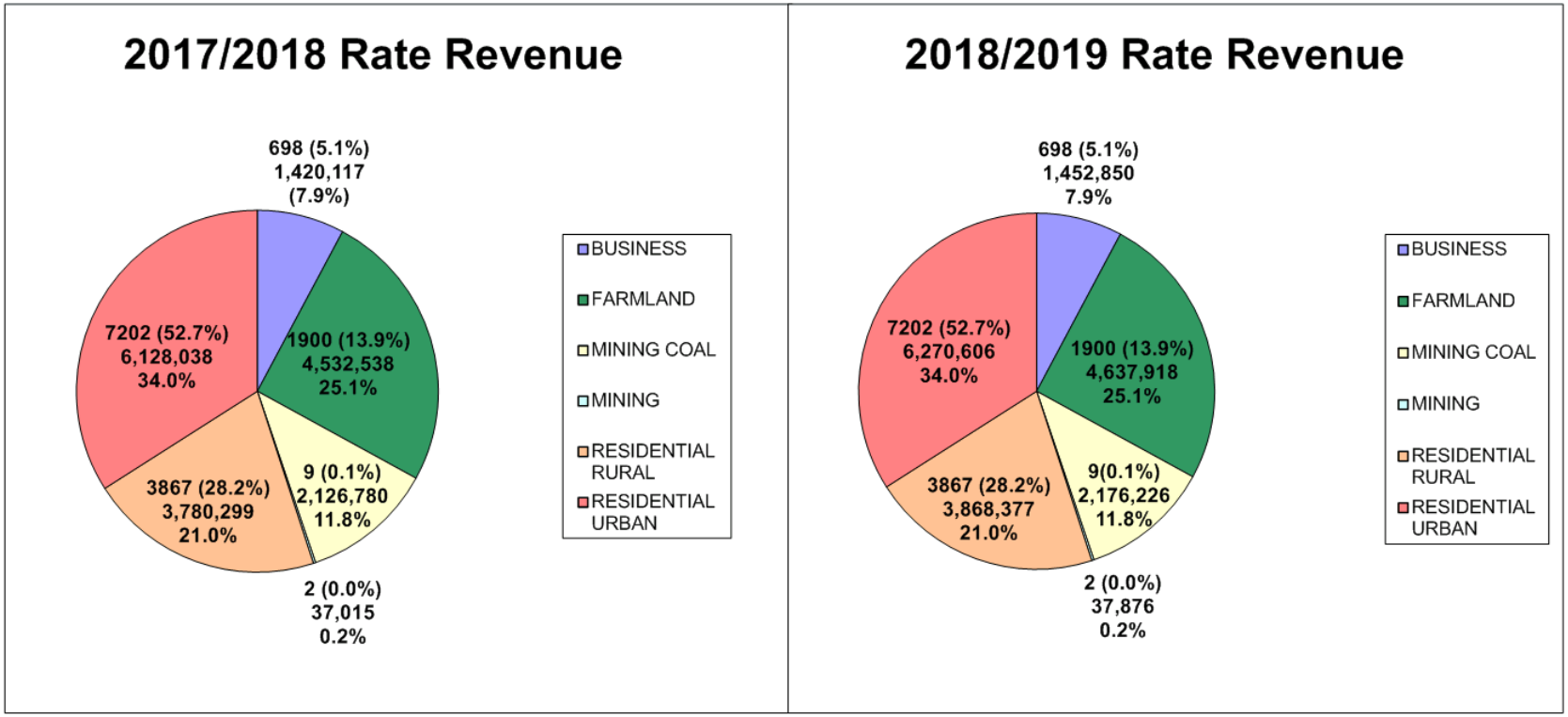
Graph Information
2018-2019 Rate Estimate Analysis - Rate Model 1



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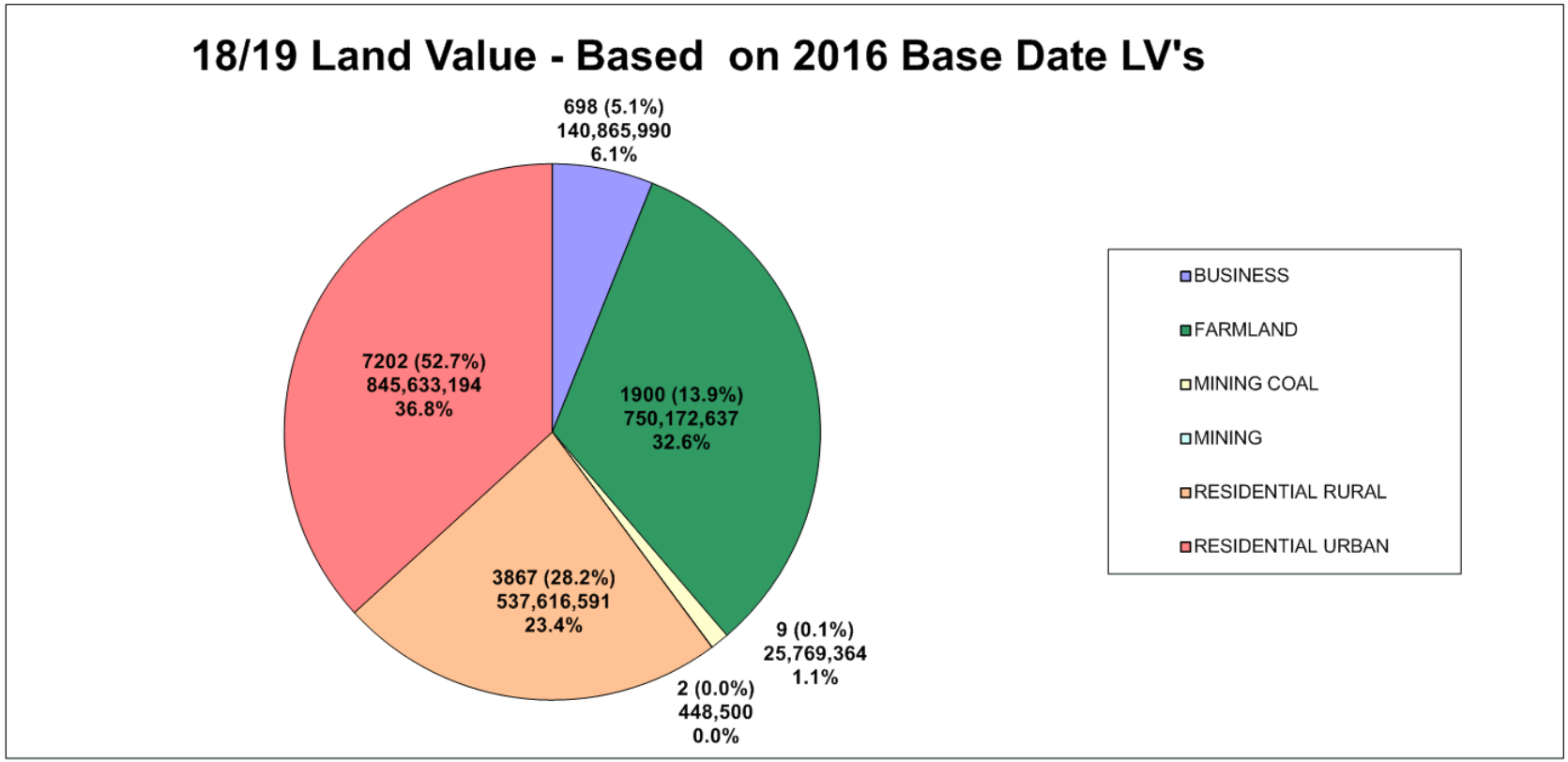
Graph Information
2018-2019 Rate Estimate Analysis - Rate Model 1



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Business

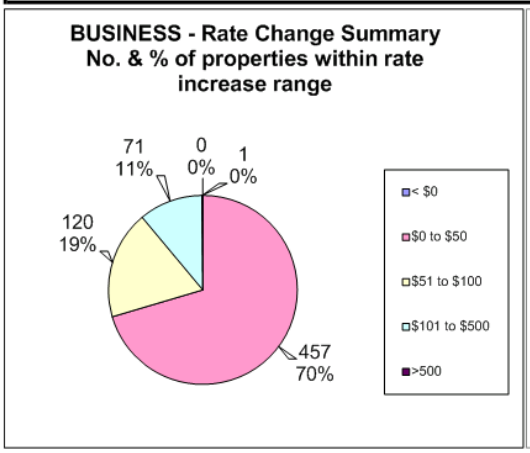
Basic Statistics

	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	215,839	215,839	50	2,167	2,217
Median	0	143,000	143,000	32	1,373	1,405
Highest	0	2,390,000	2,390,000	529	22,953	23,482
Lowest	0	410	410	15	645	659

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	205
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	133
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	119
	$51 to $100	52
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	0
	$51 to $100	68
	$101 to $500	47
	>500	0
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	24
	>500	1



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Business - Rylstone Aero Park

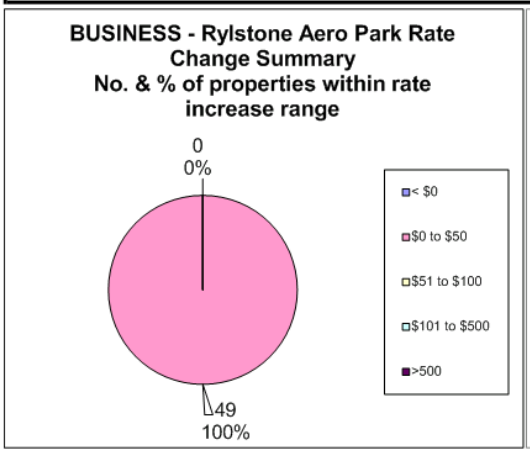
Basic Statistics

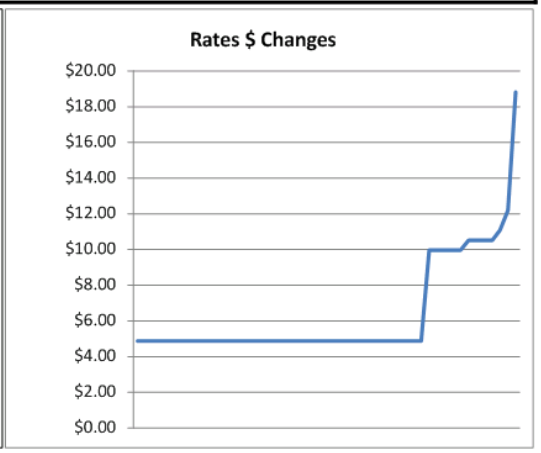
	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	16,046	16,046	6	278	285
Median	0	5,750	5,750	5	212	216
Highest	0	85,000	85,000	19	816	835
Lowest	0	1,000	1,000	5	212	216

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	48
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	1
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0





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Farmland

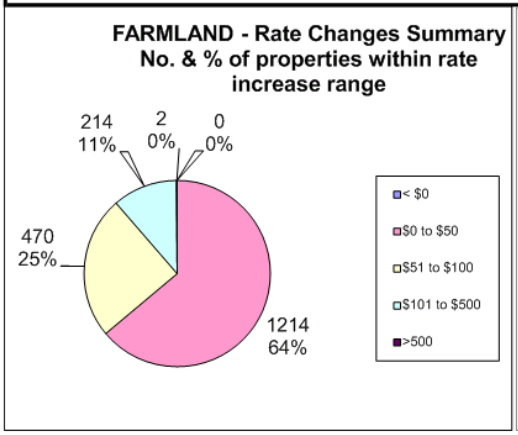
Basic Statistics

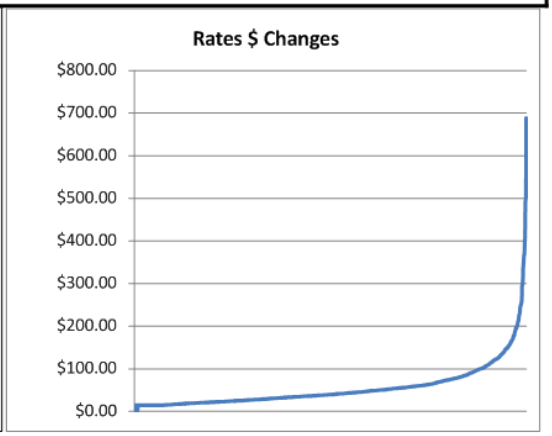
	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	394,828	394,828	55	2,386	2,441
Median	0	283,000	283,000	40	1,700	1,739
Highest	0	4,930,000	4,930,000	689	29,613	30,301
Lowest	0	900	900	2	67	69

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	51
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	293
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	666
	$51 to $100	0
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	204
	$51 to $100	470
	$101 to $500	15
	>500	0
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	199
	>500	2





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Mining Coal

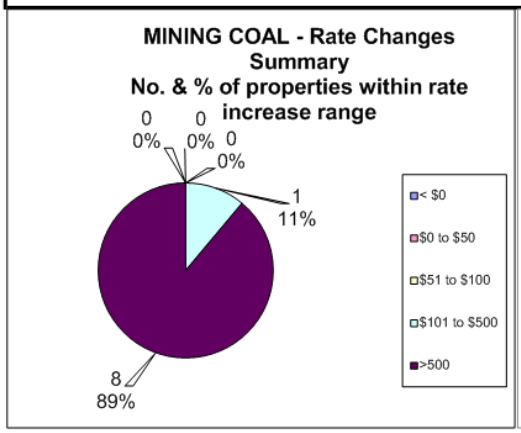
Basic Statistics

	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	2,863,263	2,863,263	5,494	236,309	241,803
Median	0	588,000	588,000	1,128	48,528	49,657
Highest	0	8,420,000	8,420,000	16,156	694,914	711,070
Lowest	0	169,000	169,000	324	13,948	14,272

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	1
	>500	2
300,001 to 750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	2
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	4



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Mining

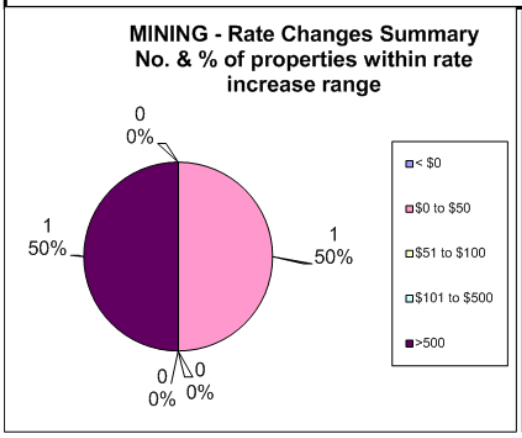
Basic Statistics

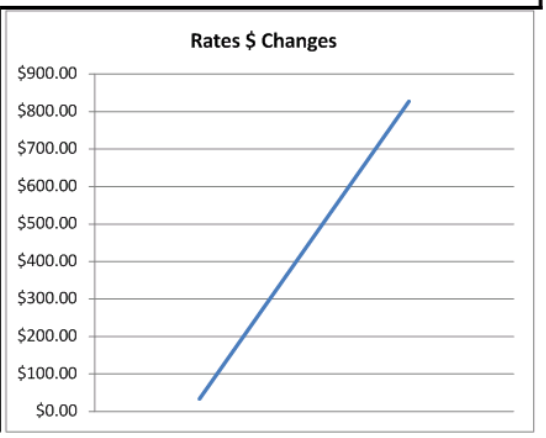
	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	224,250	224,250	430	18,508	18,938
Median	0	224,250	224,250	430	18,508	18,938
Highest	0	431,000	431,000	827	35,571	36,398
Lowest	0	17,500	17,500	34	1,444	1,478

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	1
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	1
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0





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Residential Rural

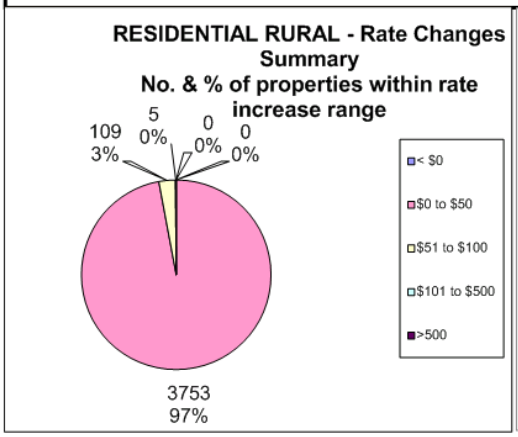
Basic Statistics

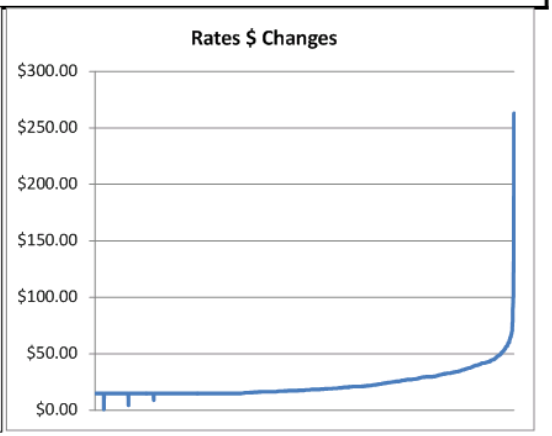
	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	139,027	139,027	23	978	1,000
Median	0	119,000	119,000	18	761	778
Highest	0	1,760,000	1,760,000	263	11,250	11,513
Lowest	0	400	400	1	29	30

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	774
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	1806
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	1102
	$51 to $100	0
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	71
	$51 to $100	109
	$101 to $500	1
	>500	0
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	4
	>500	0





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Residential Urban

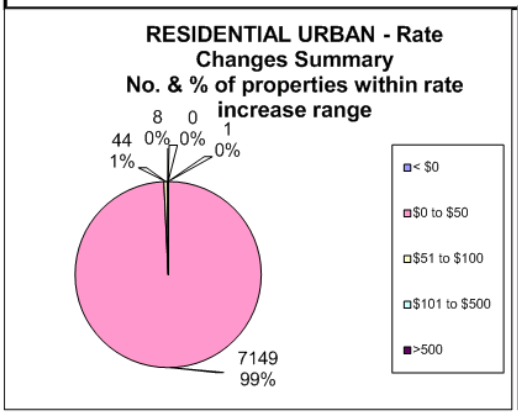
Basic Statistics

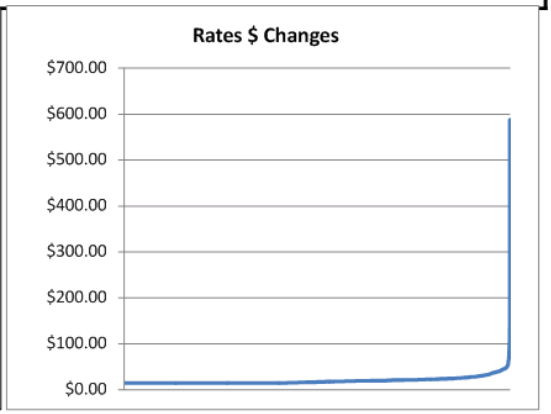
	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	117,416	117,416	20	851	871
Median	0	112,000	112,000	17	716	733
Highest	0	3,934,200	3,934,200	588	25,147	25,735
Lowest	0	280	280	15	645	659

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	1679
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	3991
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	1410
	$51 to $100	0
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	69
	$51 to $100	44
	$101 to $500	4
	>500	0
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	4
	>500	1





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2018-2019 Rate Estimate Analysis - Rate Model 2

2.3% Overall - 0% for Farmland Category - Balance distributed evenly across all other Categories

Background to Rate Model

Total 2018/2019 rate revenue projected in this model is **$18,443,853** being an overall increase of **2.3%** (The maximum increase prescribed by IPART).

Council is required to make a number of adjustments in addition to the IPART increase in order to comply with rate pegging requirements. Following is a full summary of the calculation of the 2018/2019 Notional General Income in accordance with rate pegging requirements :-

$18,024,785.09	- 2017/2018 rate income based on current valuations
$2,079.39	- Added to restore Council's rate base due to LV OBJECTIONS during 2017/2018
$0.00	- Added to restore Council's rate base due to income lost from new CONSERVATION AGREEMENTS during 2017/2018
$18,026,864.48	**- 2018/2019 Notional General Income**
$414,617.88	- Added General Variation - 2.3% IPART approved increase for 2018/2019
$291.00	- Added 2017/2018 Result - CATCH-UP permissible revenue not levied in 2017/2018
$2,079.39	- Added to CATCH-UP Income lost in 2017-2018 due to LV OBJECTIONS
$0.00	- LESS excess in 2017/2018 due to CATCH-UP of rate revenue lost in 2016/2017 due to LV OBJECTIONS
$18,443,852.75	**- 2018/2019 Notional General Income Yield**

This model distributes the rate revenue described above as follows :-.
Zero increase for the Farmland category, Business, Residential & Mining categories all increase by 3.1% overall.
Minimum rates for all categories have increased by the maximum 2.3% to $659.47, with the exception of the Business-Rylstone Aeropark sub-Category which has increased by 2.3% to $216.49

Rating Impacts from Valuation Changes

Rates for the 2018/2019 year will be based on land values with a base date of 1/7/2016, the same base date as used in 2017/2018. As a result, the rates amounts payable by individual assessments will show little variation from the 2.3% IPART increase.

The Valuer General has forcast significant changes to land valuations of Mining - Mining Coal assessments due to a change in the methodology used to assess those land values. The amended valuations have not yet been issued to Council, and are therefore not included in this rate model.

At this stage, there remains uncertainty as to when these values will be issued, and how Council will be required to treat them in calculating the Notional General Income Yield.

The following tables and graphs provide a more detailed analysis of the rate revenue proposed by this model and the effect of the updated land valuations on individual properties within each of the categories.

2018-2019 Rate Estimate Analysis - Rate Model 2

Category / Sub-category	No of Assts	REVENUE 2017/2018 Actual	REVENUE 2018/2019 Projected	REVENUE Difference	REVENUE % variation	LAND VALUE 2017/2018 2016 LV BD	LAND VALUE 2018/2019 2016 LV BD	LAND VALUE Difference	LAND VALUE % variation	RATES / MINIMUMS Rate In $ 2017/2018	RATES / MINIMUMS Minimum 2017/2018	RATES / MINIMUMS NEW Rate In $ 2018/2019	RATES / MINIMUMS NEW Minimum 2018/2019	RATES / MINIMUMS Minimum LV cut-offf
RYLSTONE AEROPARK	*49*	*13,640*	*14,003*	*363*	*2.7%*	*786,250*	*786,250*	*0*	*0.0%*	0.960363	211.62	**0.990515**	**216.49**	21,856
BUSINESS	649	1,406,476	1,449,638	43,162	3.1%	140,079,740	140,079,740	0	0.0%	0.960363	644.64	**0.990515**	**659.47**	66,579
FARMLAND	1900	4,532,538	4,532,538	0	0.0%	750,172,637	750,172,637	0	0.0%	0.600666	644.64	**0.600373**	**659.47**	109,843
MINING COAL	9	2,126,780	2,192,390	65,611	3.1%	25,769,364	25,769,364	0	0.0%	8.253132	644.64	**8.507740**	**659.47**	7,751
MINING	2	37,015	38,157	1,142	3.1%	448,500	448,500	0	0.0%	8.253132	644.64	**8.507740**	**659.47**	*7,751*
RESIDENTIAL RURAL	*3867*	*3,780,299*	*3,900,537*	*120,238*	*3.2%*	*537,616,591*	*537,616,591*	0	0.0%	0.639177	644.64	***0.661172***	**659.47**	*99,743*
RESIDENTIAL URBAN	*7202*	*6,128,038*	*6,316,589*	*188,551*	*3.1%*	*845,633,194*	*845,633,194*	0	0.0%	0.639177	644.64	***0.661172***	**659.47**	*99,743*
RESIDENTIAL	11069	9,908,337	10,217,126	308,789	3.1%	1,383,249,785	1,383,249,785	0	0.0%	0.639177	644.64	**0.661172**	**659.47**	99,743
TOTAL	**13,678**	**18,024,787**	**18,443,853**	**419,066**	**2.3%**	**2,300,506,276**	**2,300,506,276**	**0**	**0.0%**					

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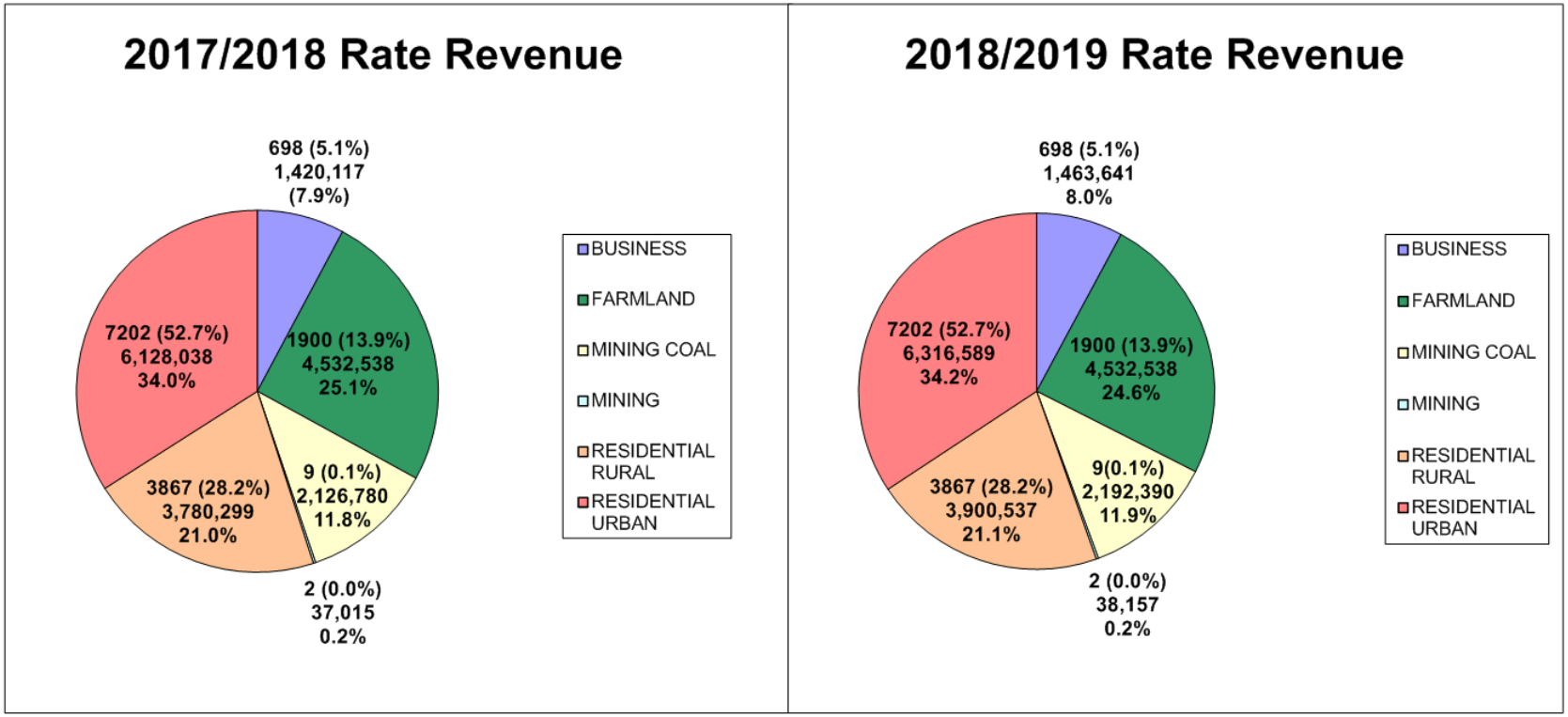
Graph Information
2018-2019 Rate Estimate Analysis - Rate Model 2



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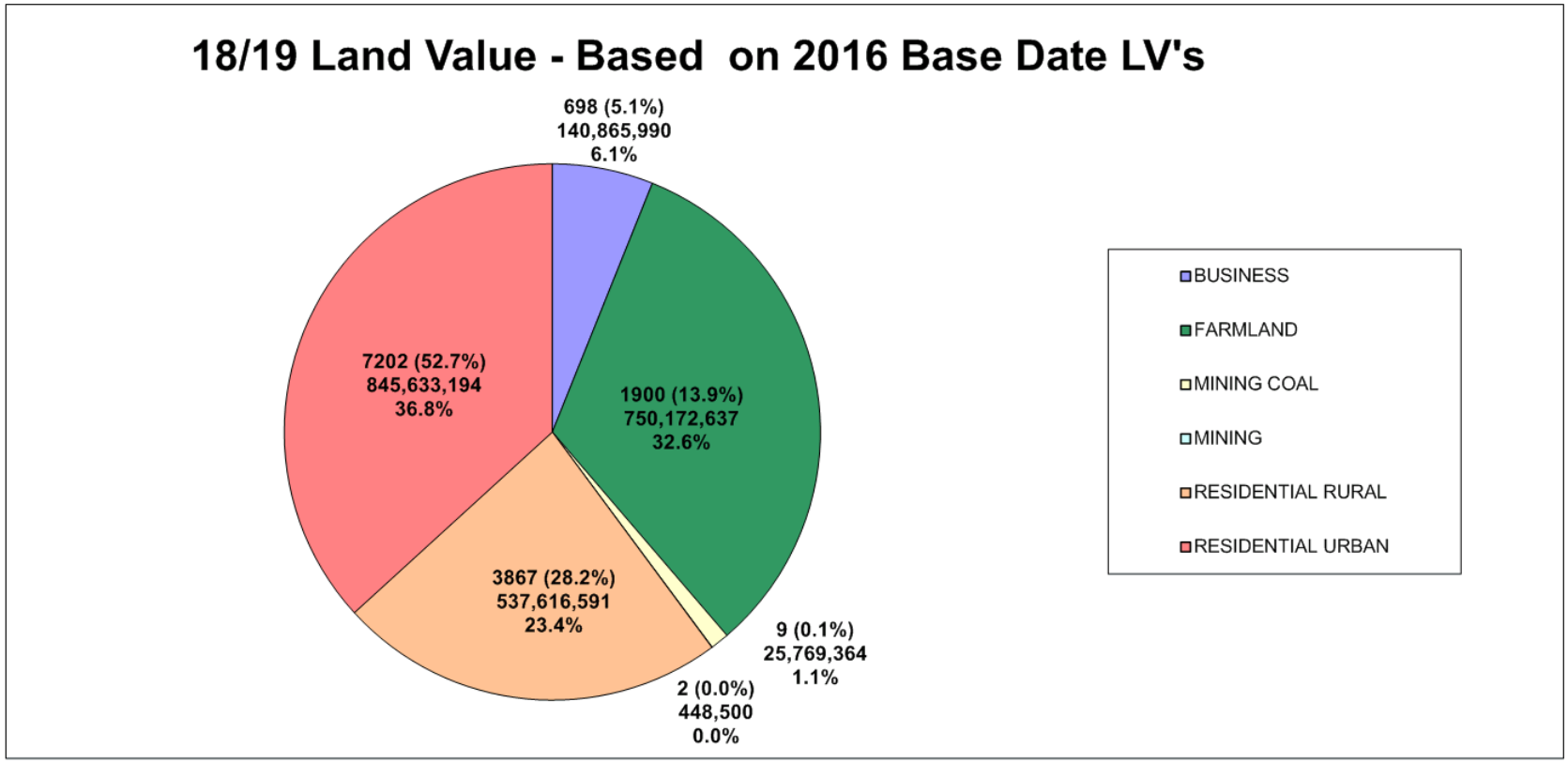
Graph Information
2018-2019 Rate Estimate Analysis - Rate Model 2



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Business

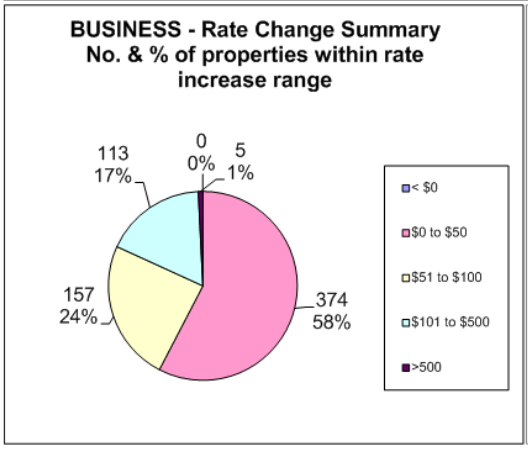
Basic Statistics

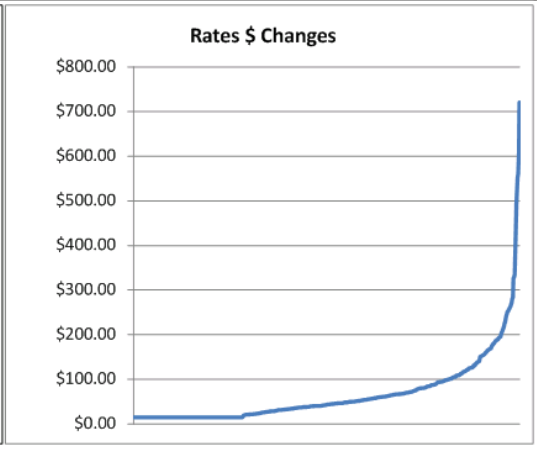
	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	215,839	215,839	67	2,167	2,234
Median	0	143,000	143,000	43	1,373	1,416
Highest	0	2,390,000	2,390,000	721	22,953	23,673
Lowest	0	410	410	15	645	659

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	205
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	133
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	36
	$51 to $100	135
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	0
	$51 to $100	22
	$101 to $500	93
	>500	0
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	20
	>500	5





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Business - Rylstone Aero Park

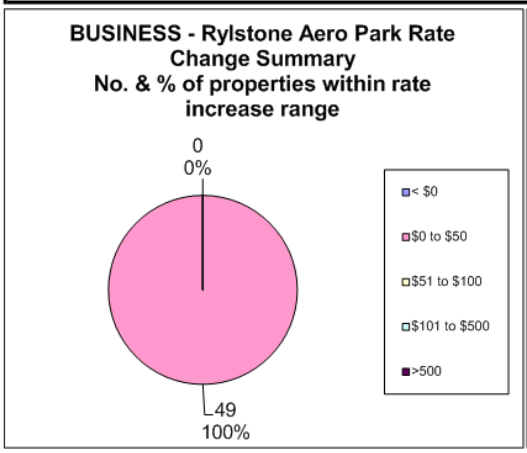
Basic Statistics

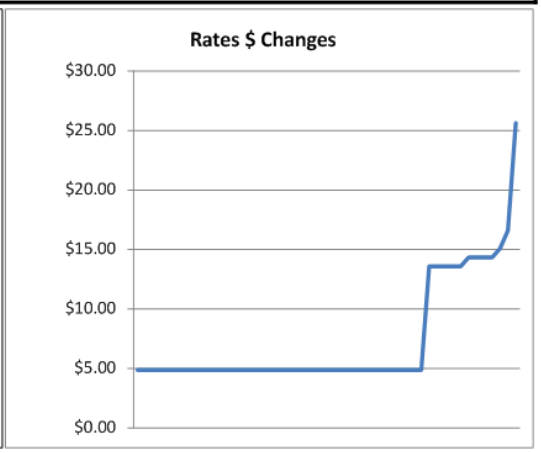
	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	16,046	16,046	7	278	286
Median	0	5,750	5,750	5	212	216
Highest	0	85,000	85,000	26	816	842
Lowest	0	1,000	1,000	5	212	216

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	48
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	1
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0





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Farmland

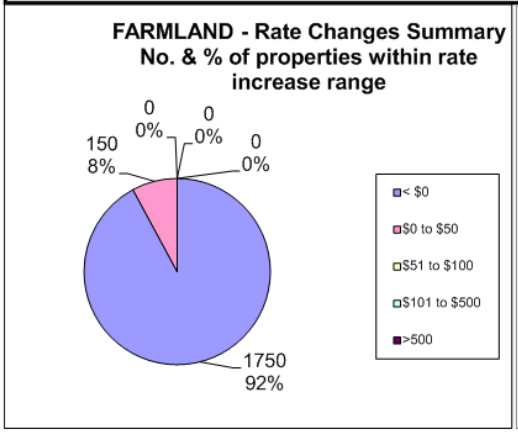
Basic Statistics

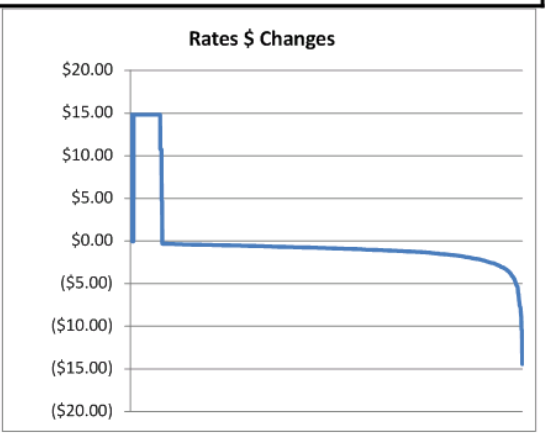
	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	394,828	394,828	-0	2,386	2,386
Median	0	283,000	283,000	-1	1,700	1,699
Highest	0	4,930,000	4,930,000	15	29,613	29,598
Lowest	0	900	900	-14	67	67

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	4
	$0 to $50	47
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	190
	$0 to $50	103
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	666
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	689
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
>750,000	< $0	201
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0





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Mining Coal

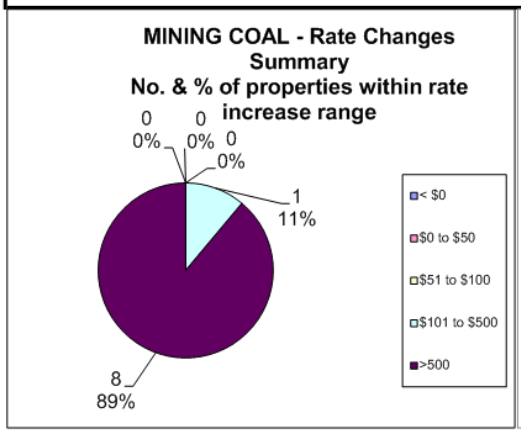
Basic Statistics

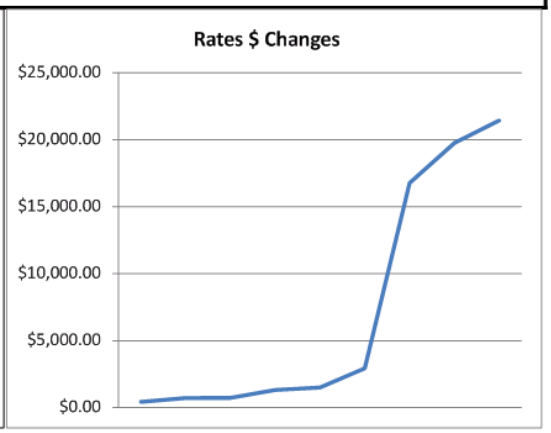
	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	2,863,263	2,863,263	7,290	236,309	243,599
Median	0	588,000	588,000	1,497	48,528	50,026
Highest	0	8,420,000	8,420,000	21,438	694,914	716,352
Lowest	0	169,000	169,000	430	13,948	14,378

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	1
	>500	2
300,001 to 750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	2
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	4





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Mining

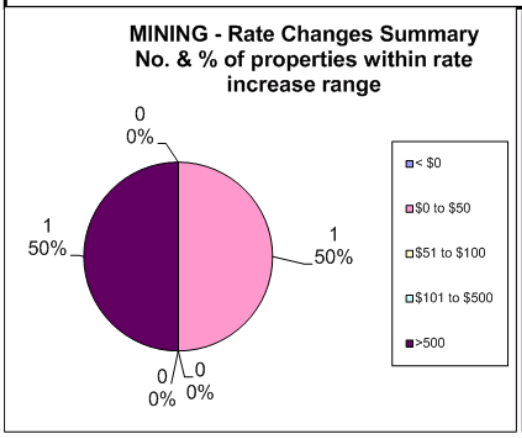
Basic Statistics

	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	224,250	224,250	571	18,508	19,079
Median	0	224,250	224,250	571	18,508	19,079
Highest	0	431,000	431,000	1,097	35,571	36,668
Lowest	0	17,500	17,500	45	1,444	1,489

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	1
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	1
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0



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Residential Rural

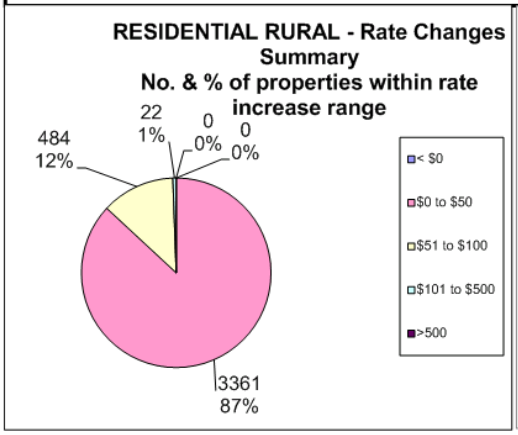
Basic Statistics

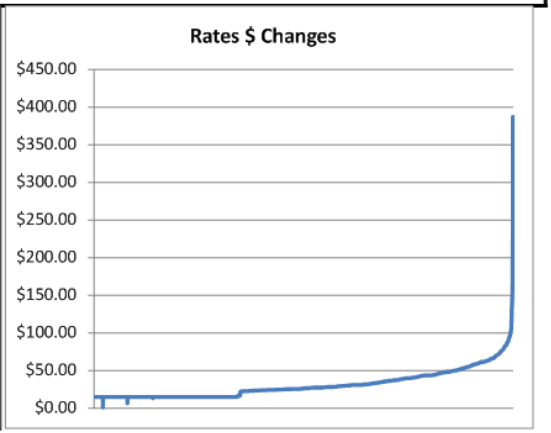
	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	139,027	139,027	31	978	1,009
Median	0	119,000	119,000	26	761	787
Highest	0	1,760,000	1,760,000	387	11,250	11,637
Lowest	0	400	400	1	29	30

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	774
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	1806
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	781
	$51 to $100	321
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	0
	$51 to $100	163
	$101 to $500	18
	>500	0
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	4
	>500	0





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Residential Urban

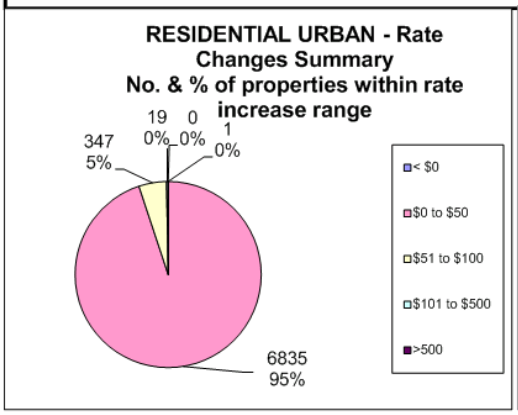
Basic Statistics

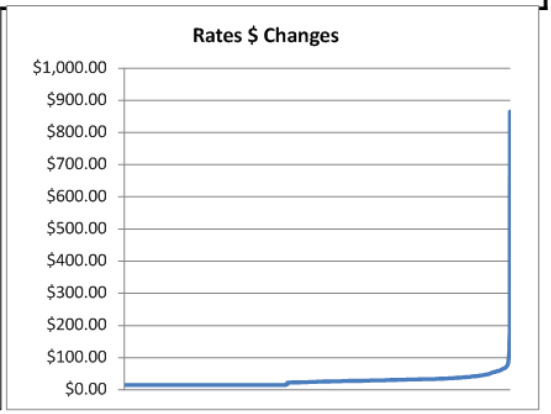
	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	117,416	117,416	26	851	877
Median	0	112,000	112,000	25	716	741
Highest	0	3,934,200	3,934,200	865	25,147	26,012
Lowest	0	280	280	15	645	659

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	1679
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	3991
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	1165
	$51 to $100	245
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	0
	$51 to $100	102
	$101 to $500	15
	>500	0
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	4
	>500	1





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2018-2019 Rate Estimate Analysis - Rate Model 3
Rates Reference Group Proposal from February 2016

2.3% Overall - Reduce Existing Farmland Category by 2% this revenue distributed evenly to the Business, Residential & Mining categories.
The 2.3% rate pegging increase is then applied across all categories, including Farmland.

Background to Rate Model

Total 2018/2019 rate revenue projected in this model is **$18,443,853** being an overall increase of **2.3%** (The maximum increase prescribed by IPART).

Council is required to make a number of adjustments in addition to the IPART increase in order to comply with rate pegging requirements. Following is a full summary of the calculation of the 2018/2019 Notional General Income in accordance with rate pegging requirements :-

$18,024,785.09	- 2017/2018 rate income based on current valuations
$2,079.39	- Added to restore Council's rate base due to LV OBJECTIONS during 2017/2018
$0.00	- Added to restore Council's rate base due to income lost from new CONSERVATION AGREEMENTS during 2017/2018
$18,026,864.48	**- 2018/2019 Notional General Income**
$414,617.88	- Added General Variation - 2.3% IPART approved increase for 2018/2019
$291.00	- Added 2017/2018 Result - CATCH-UP permissible revenue not levied in 2017/2018
$2,079.39	- Added to CATCH-UP Income lost in 2017-2018 due to LV OBJECTIONS
$0.00	- LESS excess in 2017/2018 due to CATCH-UP of rate revenue lost in 2016/2017 due to LV OBJECTIONS
$18,443,852.75	**- 2018/2019 Notional General Income Yield**

This model distributes the rate revenue described above as follows :-.
This model reflects the recommendation made by the rate reference group in February 2016.
2% decrease in current revenue for the Farmland category with this revenue distributed evenly to the Business, Residential & Mining categories.
The 2.3% rate pegging increase is then applied across all categories, including Farmland.
Minimum rates for all categories have increased by the maximum 2.3% to $659.47, with the exception of the Business-Rylstone Aeropark sub-Category which has increased by 2.3% to $216.49

Rating Impacts from Valuation Changes

Rates for the 2018/2019 year will be based on land values with a base date of 1/7/2016, the same base date as used in 2017/2018. As a result, the rates amounts payable by individual assessments will show little variation from the 2.3% IPART increase.

The Valuer General has forcast significant changes to land valuations of Mining - Mining Coal assessments due to a change in the methodology used to assess those land values. The amended valuations have not yet been issued to Council, and are therefore not included in this rate model.

At this stage, there remains uncertainty as to when these values will be issued, and how Council will be required to treat them in calculating the Notional General Income Yield.

The following tables and graphs provide a more detailed analysis of the rate revenue proposed by this model and the effect of the updated land valuations on individual

properties within each of the categories.

2018-2019 Rate Estimate Analysis - Rate Model 3

Category / Sub-category	No of Assts	REVENUE 2017/2018 Actual	2018/2019 Projected	Difference	% variation	LAND VALUE 2017/2018 2016 LV BD	2018/2019 2016 LV BD	Difference	% variation	RATES / MINIMUMS Rate In $ 2017/2018	Minimum 2017/2018	NEW Rate In $ 2018/2019	NEW Minimum 2018/2019	Minimum LV cut-offf
RYLSTONE AEROPARK	*49*	*13,640*	*13,998*	*357*	*2.6%*	*786,250*	*786,250*	*0*	*0.0%*	0.960363	211.62	**0.989586**	**216.49**	21,877
BUSINESS	649	1,406,476	1,448,392	41,916	3.0%	140,079,740	140,079,740	0	0.0%	0.960363	644.64	**0.989586**	**659.47**	66,641
FARMLAND	1900	4,532,538	4,547,266	14,728	0.3%	750,172,637	750,172,637	0	0.0%	0.600666	644.64	**0.602367**	**659.47**	109,480
MINING COAL	9	2,126,780	2,190,515	63,736	3.0%	25,769,364	25,769,364	0	0.0%	8.253132	644.64	**8.500464**	**659.47**	7,758
MINING	2	37,015	38,125	1,109	3.0%	448,500	448,500	0	0.0%	8.253132	644.64	**8.500464**	**659.47**	*7,758*
RESIDENTIAL RURAL	*3867*	*3,780,299*	*3,895,773*	*115,474*	*3.05%*	*537,616,591*	*537,616,591*	0	0.0%	0.639177	644.64	***0.660133***	**659.47**	*99,900*
RESIDENTIAL URBAN	*7202*	*6,128,038*	*6,309,783*	*181,745*	*2.97%*	*845,633,194*	*845,633,194*	0	0.0%	0.639177	644.64	***0.660133***	**659.47**	*99,900*
RESIDENTIAL	11069	9,908,337	10,205,557	297,219	3.0%	1,383,249,785	1,383,249,785	0	0.0%	0.639177	644.64	**0.660133**	**659.47**	99,900
TOTAL	**13,678**	**18,024,787**	**18,443,852**	**419,065**	**2.3%**	**2,300,506,276**	**2,300,506,276**	**0**	**0.0%**					

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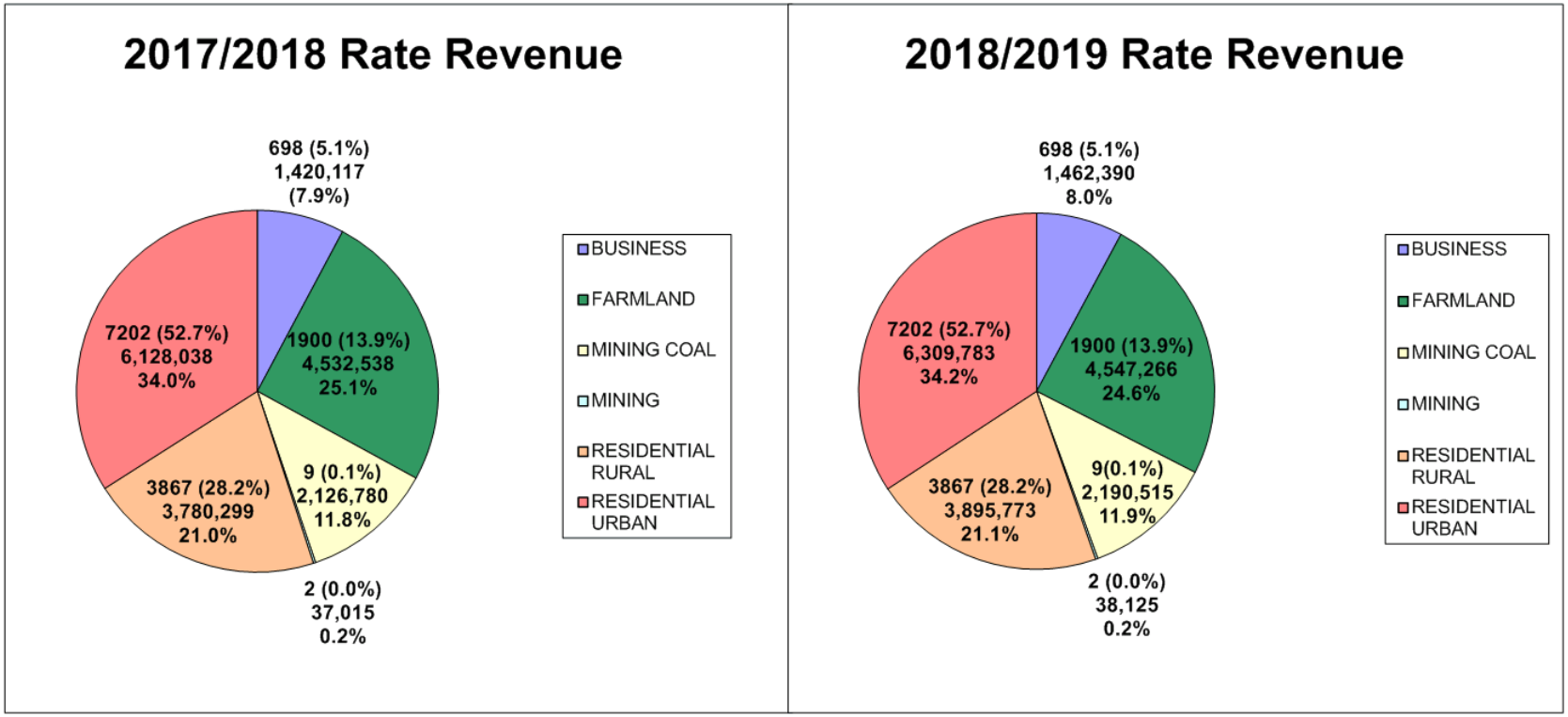
Graph Information
2018-2019 Rate Estimate Analysis - Rate Model 3



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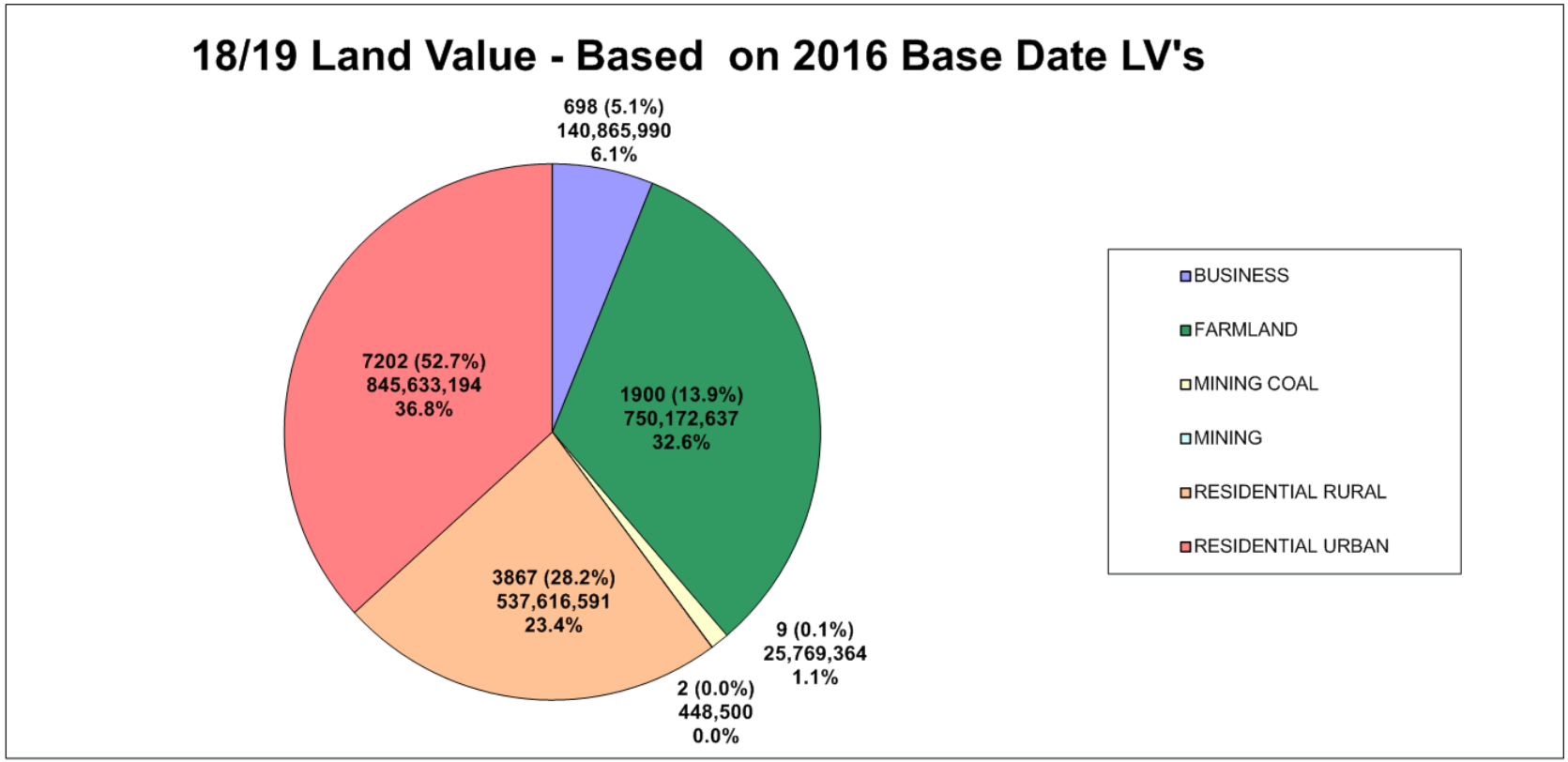
Graph Information
2018-2019 Rate Estimate Analysis - Rate Model 3



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Business

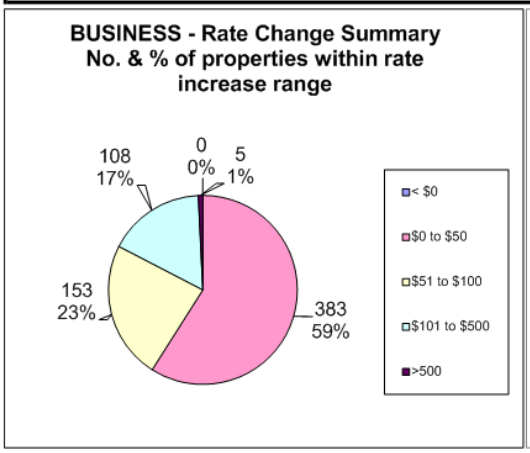
Basic Statistics

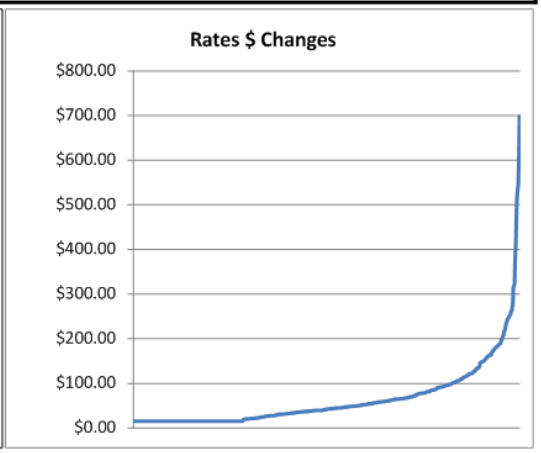
	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	215,839	215,839	65	2,167	2,232
Median	0	143,000	143,000	42	1,373	1,415
Highest	0	2,390,000	2,390,000	698	22,953	23,651
Lowest	0	410	410	15	645	659

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	205
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	133
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	45
	$51 to $100	126
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	0
	$51 to $100	27
	$101 to $500	88
	>500	0
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	20
	>500	5





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Business - Rylstone Aero Park

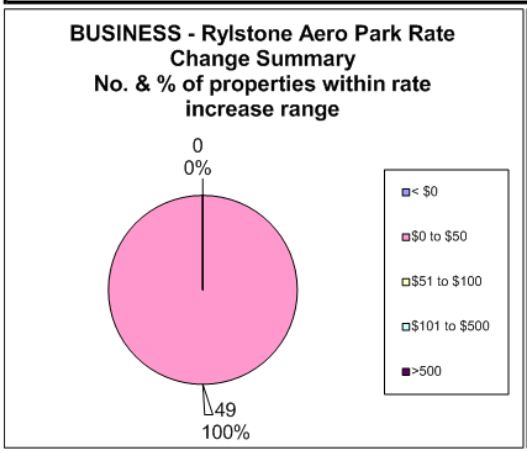
Basic Statistics

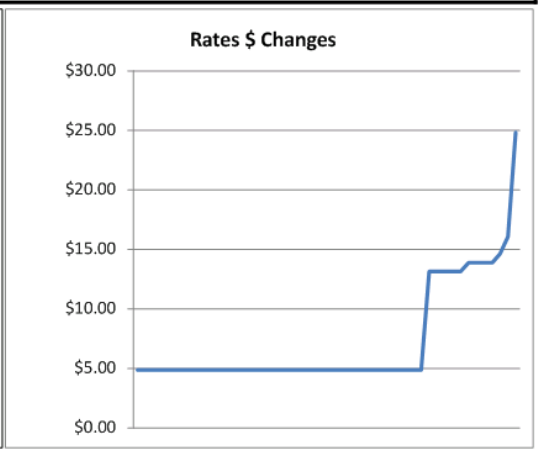
	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	16,046	16,046	7	278	286
Median	0	5,750	5,750	5	212	216
Highest	0	85,000	85,000	25	816	841
Lowest	0	1,000	1,000	5	212	216

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	48
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	1
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0





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Farmland

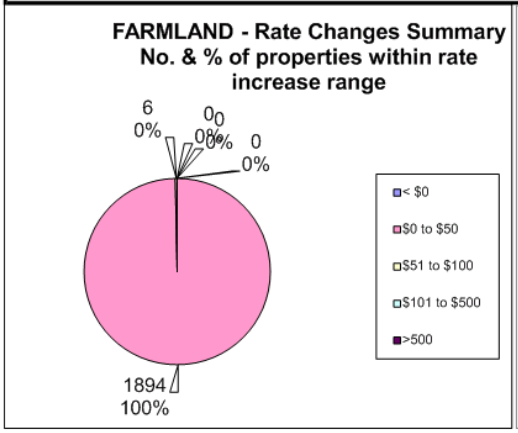
Basic Statistics

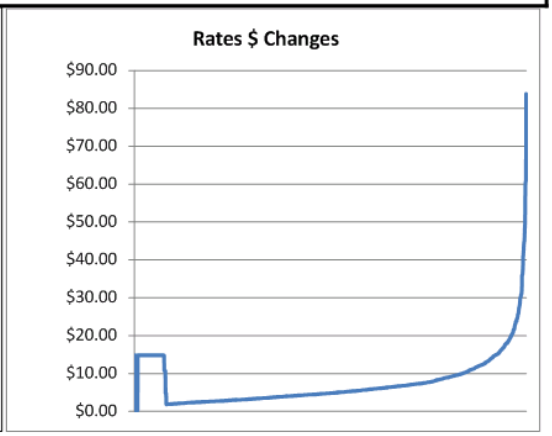
	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	394,828	394,828	8	2,386	2,393
Median	0	283,000	283,000	6	1,700	1,705
Highest	0	4,930,000	4,930,000	84	29,613	29,697
Lowest	0	900	900	0	67	68

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	51
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	293
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	666
	$51 to $100	0
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	689
	$51 to $100	0
	$101 to $500	0
	>500	0
>750,000	< $0	0
	$0 to $50	195
	$51 to $100	6
	$101 to $500	0
	>500	0





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Mining Coal

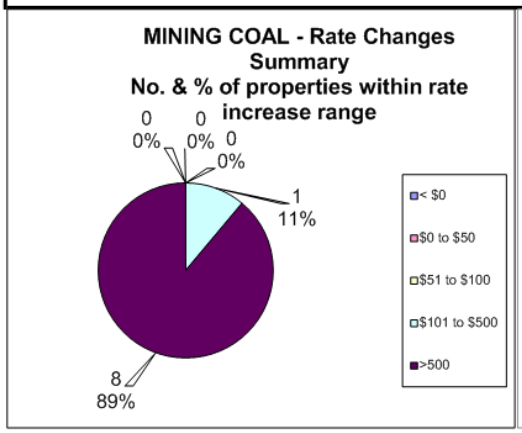
Basic Statistics

	$ Change All Properties	Land Value 2016 Base Date LV	2016 Base Date LV	$ Change All Properties	Rates Estimate 17/18 Rates $	18/19 Rates $
Average	0	2,863,263	2,863,263	7,082	236,309	243,391
Median	0	588,000	588,000	1,454	48,528	49,983
Highest	0	8,420,000	8,420,000	20,825	694,914	715,739
Lowest	0	169,000	169,000	418	13,948	14,366

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	1
	>500	2
300,001 to 750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	2
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	4



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Mining

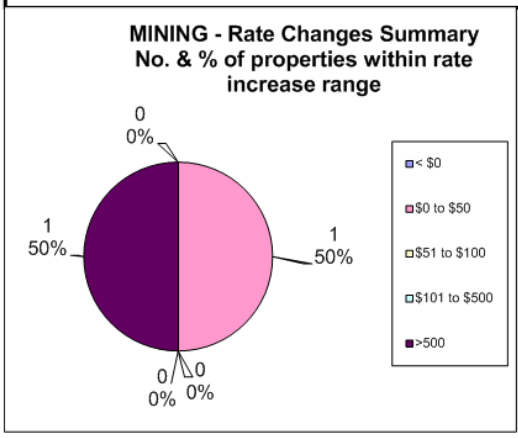
Basic Statistics

	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	224,250	224,250	555	18,508	19,062
Median	0	224,250	224,250	555	18,508	19,062
Highest	0	431,000	431,000	1,066	35,571	36,637
Lowest	0	17,500	17,500	43	1,444	1,488

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	1
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	1
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0



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Residential Rural

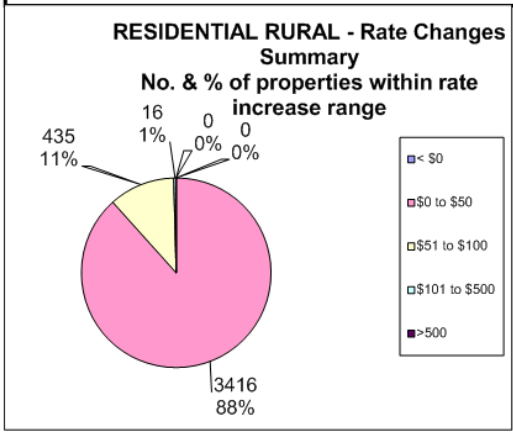
Basic Statistics

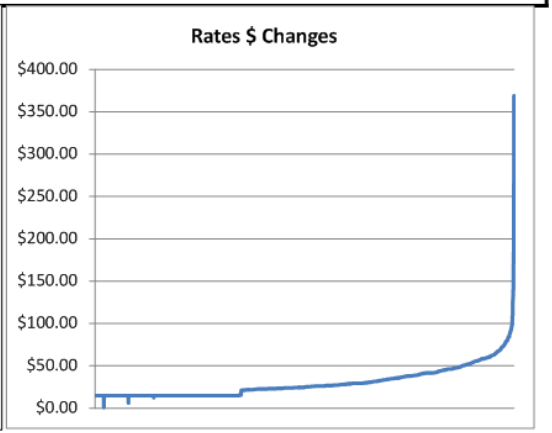
	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	139,027	139,027	30	978	1,007
Median	0	119,000	119,000	25	761	786
Highest	0	1,760,000	1,760,000	369	11,250	11,618
Lowest	0	400	400	1	29	30

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	774
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	1806
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	836
	$51 to $100	266
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	0
	$51 to $100	169
	$101 to $500	12
	>500	0
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	4
	>500	0





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Residential Urban

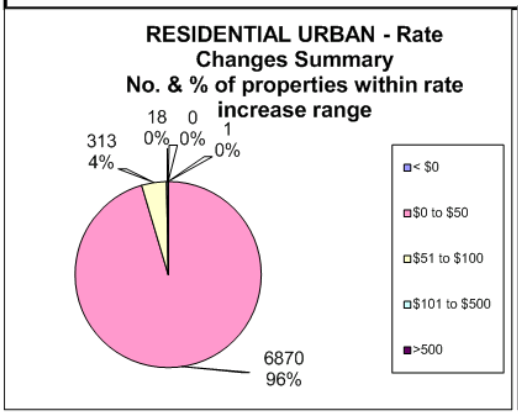
Basic Statistics

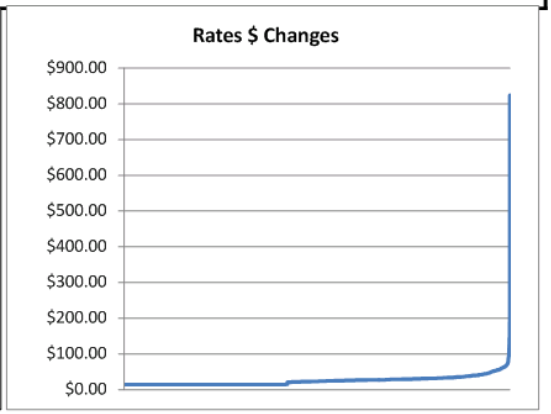
	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	117,416	117,416	25	851	876
Median	0	112,000	112,000	23	716	739
Highest	0	3,934,200	3,934,200	824	25,147	25,971
Lowest	0	280	280	15	645	659

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	1679
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	3991
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	1200
	$51 to $100	210
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	0
	$51 to $100	103
	$101 to $500	14
	>500	0
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	4
	>500	1





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2018-2019 Rate Estimate Analysis - Rate Model 4

2.3% Overall - Residential & Business Increase 1%, Balance distributed evenly over Farmland & Mining

Background to Rate Model

Total 2018/2019 rate revenue projected in this model is **$18,443,853** being an overall increase of **2.3%** (The maximum increase prescribed by IPART).

Council is required to make a number of adjustments in addition to the IPART increase in order to comply with rate pegging requirements. Following is a full summary of the calculation of the 2018/2019 Notional General Income in accordance with rate pegging requirements :-

$18,024,785.09	- 2017/2018 rate income based on current valuations
$2,079.39	- Added to restore Council's rate base due to LV OBJECTIONS during 2017/2018
$0.00	- Added to restore Council's rate base due to income lost from new CONSERVATION AGREEMENTS during 2017/2018
$18,026,864.48	**- 2018/2019 Notional General Income**
$414,617.88	- Added General Variation - 2.3% IPART approved increase for 2018/2019
$291.00	- Added 2017/2018 Result - CATCH-UP permissible revenue not levied in 2017/2018
$2,079.39	- Added to CATCH-UP Income lost in 2017-2018 due to LV OBJECTIONS
$0.00	- LESS excess in 2017/2018 due to CATCH-UP of rate revenue lost in 2016/2017 due to LV OBJECTIONS
$18,443,852.75	**- 2018/2019 Notional General Income Yield**

This model distributes the rate revenue described above as follows :-.
1% increase for the Business and residential categories with the balance distributed evenly to the Farmland & Mining categories, being a 4.5% increase.
Minimum rates for all categories have increased by the maximum 2.3% to $659.47, with the exception of the Business-Rylstone Aeropark sub-Category which has increased by 2.3% to $216.49

Rating Impacts from Valuation Changes

Rates for the 2018/2019 year will be based on land values with a base date of 1/7/2016, the same base date as used in 2017/2018. As a result, the rates amounts payable by individual assessments will show little variation from the 2.3% IPART increase.

The Valuer General has forcast significant changes to land valuations of Mining - Mining Coal assessments due to a change in the methodology used to assess those land values. The amended valuations have not yet been issued to Council, and are therefore not included in this rate model.

At this stage, there remains uncertainty as to when these values will be issued, and how Council will be required to treat them in calculating the Notional General Income Yield.

The following tables and graphs provide a more detailed analysis of the rate revenue proposed by this model and the effect of the updated land valuations on individual properties within each of the categories.

2018-2019 Rate Estimate Analysis - Rate Model 4

Category / Sub-category	No of Assts	REVENUE 2017/2018 Actual	REVENUE 2018/2019 Projected	REVENUE Difference	REVENUE % variation	LAND VALUE 2017/2018 2016 LV BD	LAND VALUE 2018/2019 2016 LV BD	LAND VALUE Difference	LAND VALUE % variation	RATES / MINIMUMS Rate In $ 2017/2018	RATES / MINIMUMS Minimum 2017/2018	RATES / MINIMUMS NEW Rate In $ 2018/2019	RATES / MINIMUMS NEW Minimum 2018/2019	RATES / MINIMUMS Minimum LV cut-offf
RYLSTONE AEROPARK	*49*	*13,640*	*13,870*	*230*	*1.7%*	*786,250*	*786,250*	*0*	*0.0%*	0.960363	211.62	**0.968515**	**216.49**	22,353
BUSINESS	649	1,406,476	1,420,168	13,691	1.0%	140,079,740	140,079,740	0	0.0%	0.960363	644.64	**0.968515**	**659.47**	68,091
FARMLAND	1900	4,532,538	4,737,611	205,073	4.5%	750,172,637	750,172,637	0	0.0%	0.600666	644.64	**0.628110**	**659.47**	104,993
MINING COAL	9	2,126,780	2,223,004	96,225	4.5%	25,769,364	25,769,364	0	0.0%	8.253132	644.64	**8.626540**	**659.47**	7,645
MINING	2	37,015	38,690	1,675	4.5%	448,500	448,500	0	0.0%	8.253132	644.64	**8.626540**	**659.47**	*7,645*
RESIDENTIAL RURAL	*3867*	*3,780,299*	*3,815,374*	*35,075*	*0.93%*	*537,616,591*	*537,616,591*	0	0.0%	0.639177	644.64	***0.642443***	**659.47**	*102,650*
RESIDENTIAL URBAN	*7202*	*6,128,038*	*6,195,136*	*67,098*	*1.09%*	*845,633,194*	*845,633,194*	0	0.0%	0.639177	644.64	***0.642443***	**659.47**	*102,650*
RESIDENTIAL	11069	9,908,337	10,010,510	102,173	1.0%	1,383,249,785	1,383,249,785	0	0.0%	0.639177	644.64	**0.642443**	**659.47**	102,650
TOTAL	**13,678**	**18,024,787**	**18,443,853**	**419,067**	**2.3%**	**2,300,506,276**	**2,300,506,276**	**0**	**0.0%**					

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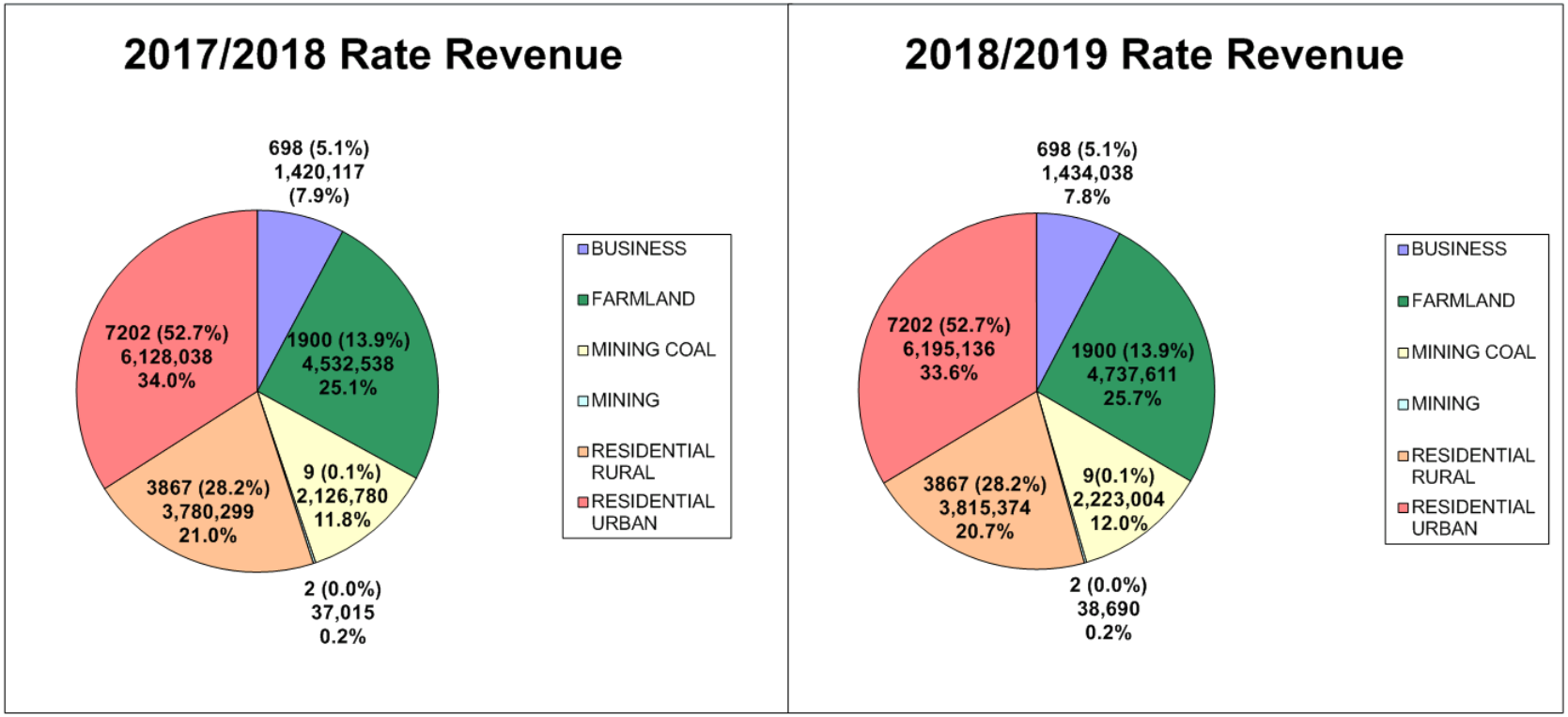
Graph Information
2018-2019 Rate Estimate Analysis - Rate Model 4



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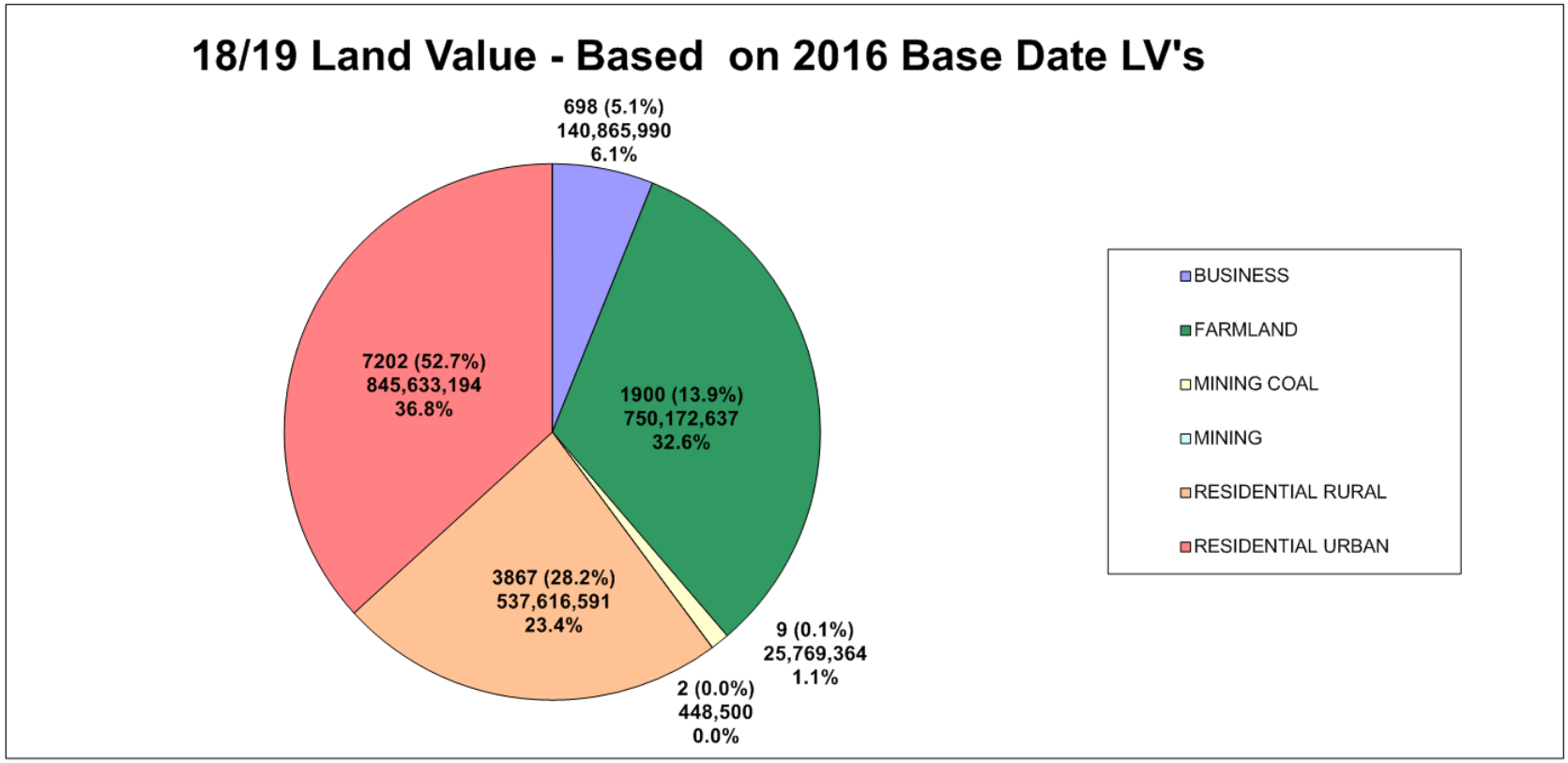
Graph Information
2018-2019 Rate Estimate Analysis - Rate Model 4



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Business

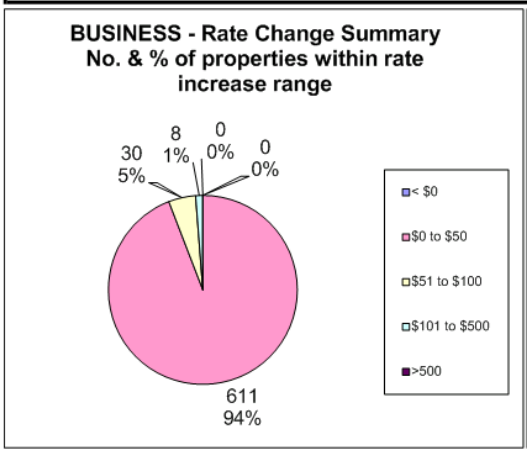
Basic Statistics

	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	215,839	215,839	21	2,167	2,188
Median	0	143,000	143,000	15	1,373	1,385
Highest	0	2,390,000	2,390,000	195	22,953	23,148
Lowest	0	410	410	6	645	659

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	205
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	133
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	171
	$51 to $100	0
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	102
	$51 to $100	13
	$101 to $500	0
	>500	0
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	17
	$101 to $500	8
	>500	0



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Business - Rylstone Aero Park

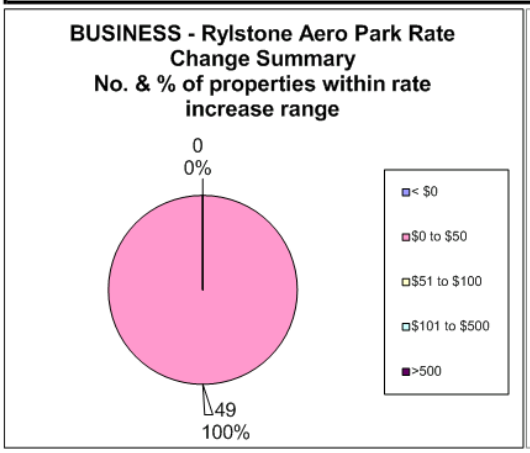
Basic Statistics

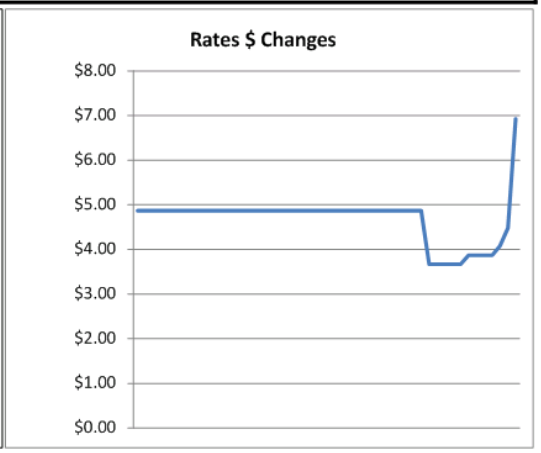
	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	16,046	16,046	5	278	283
Median	0	5,750	5,750	5	212	216
Highest	0	85,000	85,000	7	816	823
Lowest	0	1,000	1,000	4	212	216

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	48
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	1
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0





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Farmland

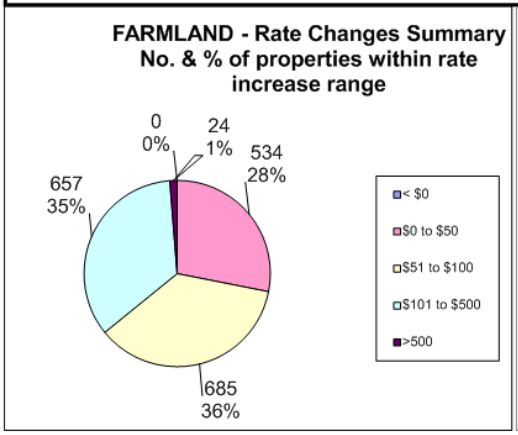
Basic Statistics

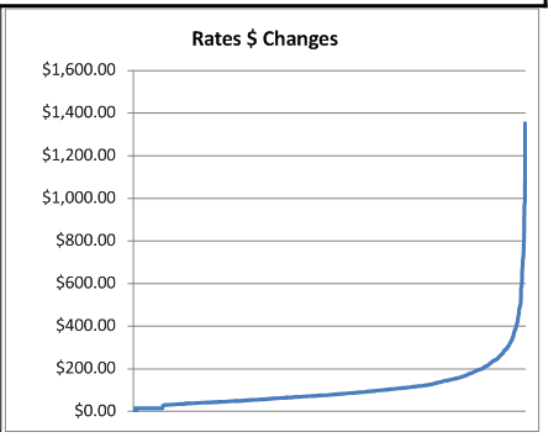
	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	394,828	394,828	108	2,386	2,493
Median	0	283,000	283,000	78	1,700	1,778
Highest	0	4,930,000	4,930,000	1,353	29,613	30,966
Lowest	0	900	900	3	67	70

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	51
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	293
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	190
	$51 to $100	476
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	0
	$51 to $100	209
	$101 to $500	480
	>500	0
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	177
	>500	24





Mining Coal

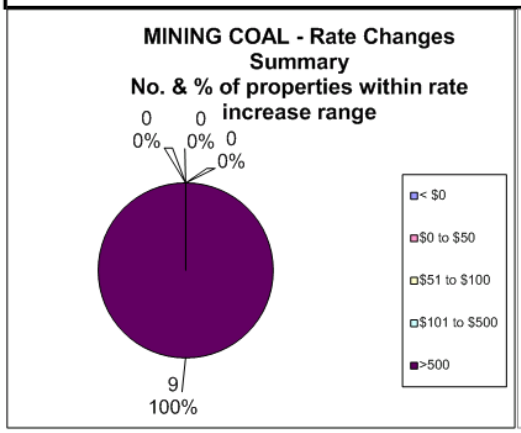
Basic Statistics

	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	2,863,263	2,863,263	10,692	236,309	247,000
Median	0	588,000	588,000	2,196	48,528	50,724
Highest	0	8,420,000	8,420,000	31,441	694,914	726,355
Lowest	0	169,000	169,000	631	13,948	14,579

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	3
300,001 to 750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	2
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	4



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Mining

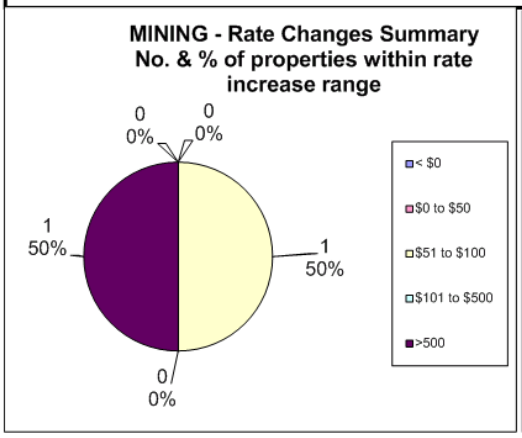
Basic Statistics

	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	224,250	224,250	837	18,508	19,345
Median	0	224,250	224,250	837	18,508	19,345
Highest	0	431,000	431,000	1,609	35,571	37,180
Lowest	0	17,500	17,500	65	1,444	1,510

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	0
	$51 to $100	1
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	1
>750,000	< $0	0
	$0 to $50	0
	$51 to $100	0
	$101 to $500	0
	>500	0



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Residential Rural

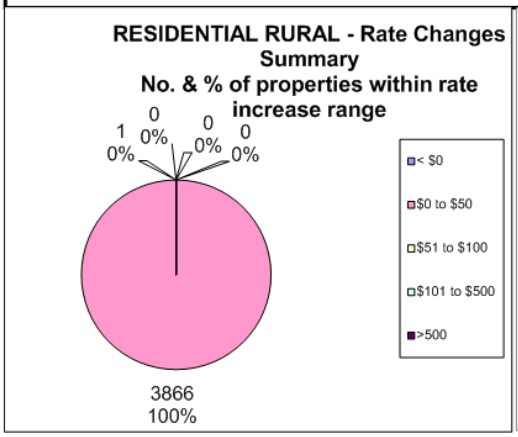
Basic Statistics

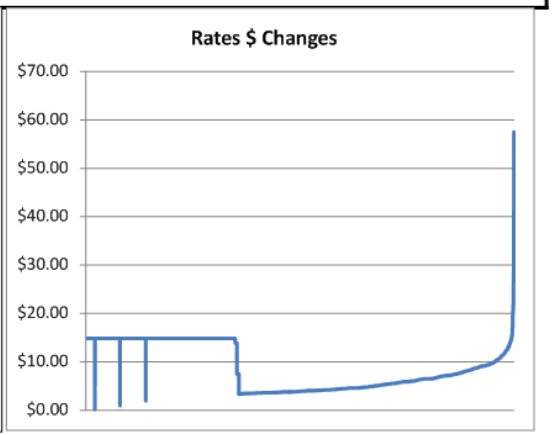
	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	139,027	139,027	9	978	987
Median	0	119,000	119,000	7	761	765
Highest	0	1,760,000	1,760,000	57	11,250	11,307
Lowest	0	400	400	0	29	29

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	774
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	1806
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	1102
	$51 to $100	0
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	181
	$51 to $100	0
	$101 to $500	0
	>500	0
>750,000	< $0	0
	$0 to $50	3
	$51 to $100	1
	$101 to $500	0
	>500	0





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Residential Urban

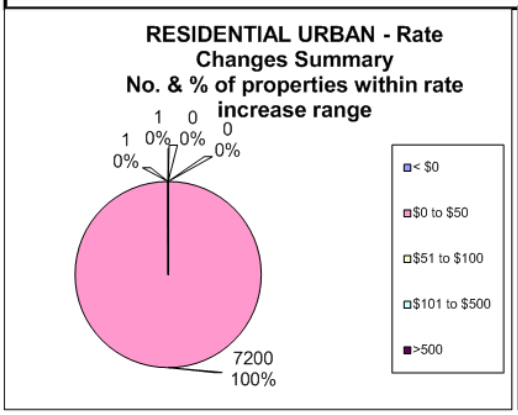
Basic Statistics

	Land Value			Rates Estimate		
	$ Change All Properties	2016 Base Date LV	2016 Base Date LV	$ Change All Properties	17/18 Rates $	18/19 Rates $
Average	0	117,416	117,416	9	851	860
Median	0	112,000	112,000	7	716	720
Highest	0	3,934,200	3,934,200	128	25,147	25,275
Lowest	0	280	280	3	645	659

NB. The figures shown above relate to data for all properties and are not calculated from the differences shown between 17/18 & 18/19 LV & rates

Range Analysis

LV Range	Rate Range - 2018/19 Estimate - 2016 LV's $ Change	No. Props
0 to 75,000	< $0	0
	$0 to $50	1679
	$51 to $100	0
	$101 to $500	0
	>500	0
75,001 to 150,000	< $0	0
	$0 to $50	3991
	$51 to $100	0
	$101 to $500	0
	>500	0
150,001 to 300,000	< $0	0
	$0 to $50	1410
	$51 to $100	0
	$101 to $500	0
	>500	0
300,001 to 750,000	< $0	0
	$0 to $50	117
	$51 to $100	0
	$101 to $500	0
	>500	0
>750,000	< $0	0
	$0 to $50	3
	$51 to $100	1
	$101 to $500	1
	>500	0



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