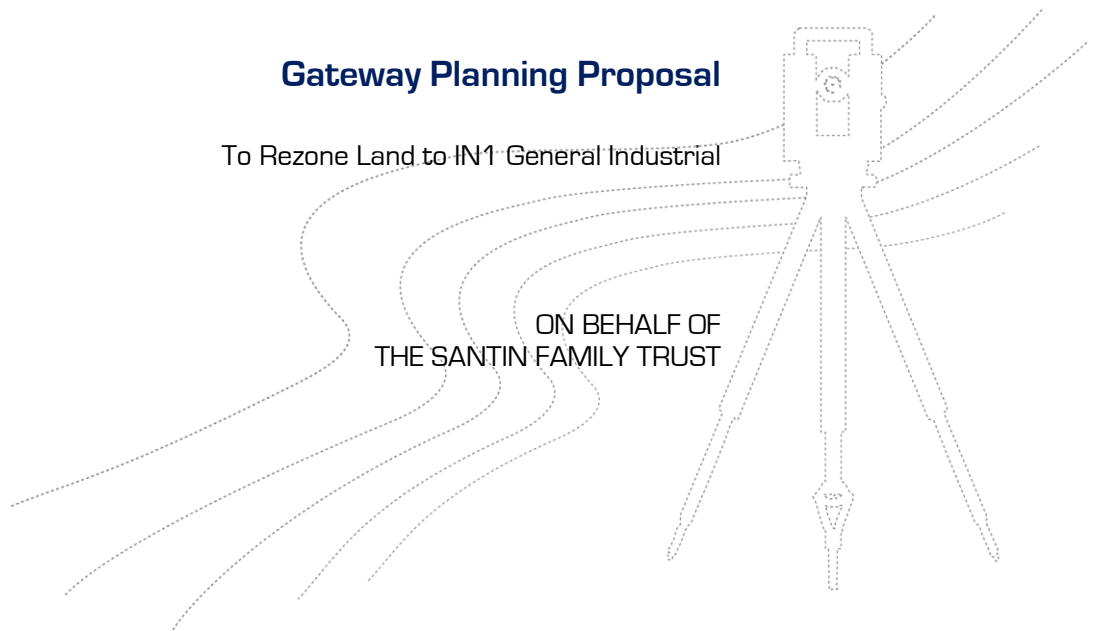


Gateway Planning Proposal

To Rezone Land to IN1 General Industrial

ON BEHALF OF
THE SANTIN FAMILY TRUST



Site: Lots 100 - 111 DP 755627
Bruxner Highway, Casino

Our Ref: 18/058

Date: April 2020



Document Control Sheet

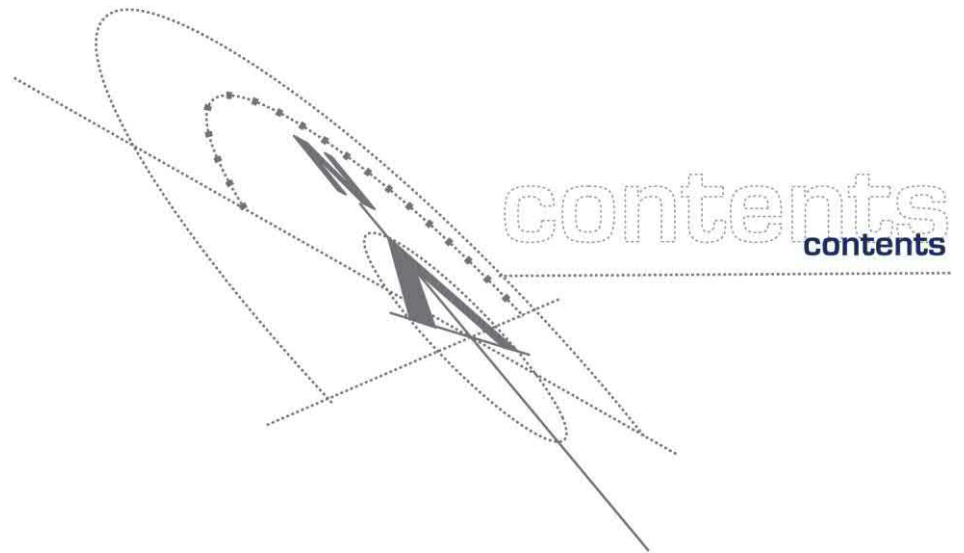
Document and Project Details				
Document Title:		Gateway Planning Proposal		
Author:		Luke Fittock		
Project Manager:		Damian Chapelle		
Date of Issue:		16 August 2018		
Job Reference:		18/058		
Project Outline:		This document presents a Planning Proposal to rezone the land to IN1 General Industrial in accordance with the RVLEP 2012.		
Document Distribution				
Date	Status	Distribution – Number of Copies		
		Client	Council	Other
27/08/18	Final	1	2	0
24/01/19	Final (Ver B)	1	2	0
09/04/20	Final (Ver C)	1	2	0
Documentation Verification				
Checked by:	L Fittock D Chapelle			

USAGE NOTE:

This document was prepared for the exclusive use of The Santin Family Trust for the development of land described herein and is not to be used for any other purpose or by any other person or corporation. Newton Denny Chapelle accepts no responsibility for any loss or damage suffered howsoever arising to any person or corporation who may use or rely on this document for a purpose other than that described above.

The maps, development plans and exhibits shown in this report are suitable only for the purposes of this report. No reliance should be placed on this information for any purpose other than for the purposes of this report. All dimensions, number, size and shape of lots/buildings as shown on plans in this document are subject to detailed engineering design plans and final survey and may vary subject to conditions of consent issued by Council.

The information contained in this report is based on independent research undertaken by Newton Denny Chapelle. To the best of our knowledge, it does not contain any false, misleading or incomplete information.



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ATTACHMENTS

- Attachment 1 – Deposited Plan 755627
- Attachment 2 – Preliminary Contaminated Land Assessment
- Attachment 3 – Assessment against State Environmental Planning Policies
- Attachment 4 – Assessment against Section 9.1 Ministerial Directions
- Attachment 5 – AHIMS
- Attachment 6 – Aboriginal Cultural Heritage Assessment
- Attachment 7 – Biodiversity Assessment
- Attachment 8 – Flood Impact Assessment
- Attachment 9 – Traffic Impact Assessment

PLANS

- Plan 1 – Location
- Plan 2 – Contour Survey
- Plan 3 – Site Analysis
- Plan 4 – Conceptual Development Layout
- Plan 5 – LEP Mapping

1. Background

1.1 Summary of Project

Newton Denny Chapelle has been engaged by *The Santin Family Trust* to prepare a Planning Proposal for land identified in the below **Table 1**, being located at Bruxner Highway, Casino.

This Planning Proposal has been completed in accordance with the Department of Planning & Environment's guide to preparing Planning Proposals. A Gateway Determination under Section 3.34 of the Environmental Planning and Assessment Act is sought.

The purpose of the Planning Proposal is to amend the town planning provisions applying to Lots 100 – 111 DP 755627 to rezone the land presently zoned RU1 – Primary Production to IN1 – General Industrial (refer **Plate 1**) in accordance with the provisions of the Richmond Valley Local Environmental Plan 2012. The Planning Proposal also seeks to amend the minimum lot size map to permit the creation of lots with a minimum lot size of 750m² within the area to be rezoned.

The subject land is identified within the North Coast Regional Plan (NCRP) 2036 as being within an 'Urban Growth Area' and an 'Investigation Area – Employment Land'. The lodgement of this Planning Proposal maintains the strategic consistency of the NCRP 2036.



Plate 1: Current land zoning under the Richmond Valley LEP 2012
[Source Richmond Valley LEP 2012]

1.2 Location and Nature of Subject Land and the Nature of Surrounding Rural Area

The subject land is located at Bruxner Highway, Casino as identified on **Plan 1** – Location and also within the below **Plate 2**. **Plate 3** provides a visual illustration of the subject land in the context of an aerial photo.

The land subject to this Planning Proposal is as follows in **Table 1**:

Table 1: Land Subject to the Planning Proposal

Property Address	Property Description
Bruxner Highway, Casino	Lots 100 - 111 DP 755627

The Deposited Plan (DP 755627) can be found within **Attachment 1** of this report.

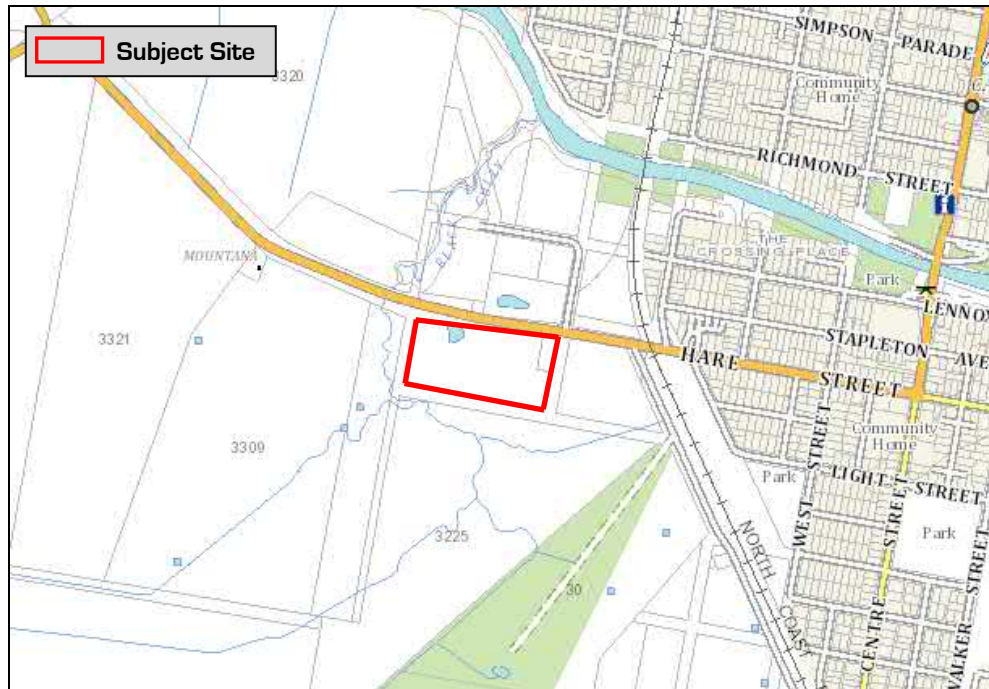


Plate 2: Subject land located at Bruxner Highway, Casino
(Source LPMA Six Viewer)



Plate 3: Aerial photo of the subject land (Source LPMA Six Viewer)

The property has road frontage to Bruxner Highway to the north, with rural land located to the east, south, and west generally characterised by grazing pursuits and rural dwellings. Directly opposite the eastern portion of the site, land on the northern side of the Bruxner Highway is zoned IN1 General Industrial which is currently occupied by Hurford's timber mill. The Casino Gun Club is located fronting Rifle Range Road to the south east of the subject land.

The subject property maintains an approximate combined land area of 6.9 hectares, is predominately grassland with the exception of various paddock trees. The site contains an old dwelling structure which is located on Lot 100 DP 755627 and a farm building situated on Lot 108 DP 755627. The dwelling has been approved for demolition via a Complying Development Certificate [CDC2020/0016].

Lot 111 DP 755627 has been approved via DA2012.0139.02 for the construction of shed, access and Heavy Vehicle Storage. Vehicular access into this development will be achieved through the construction of the Hotham Street road reserve which adjoins to the east.

The Preliminary Contaminated Land Assessment completed by Greg Alderson & Associates (**Attachment 2**) provides a site history summary which identifies the following:

"The history review found the following:

- *Building and structures have been present on the investigation area. In particular a dilapidated dwelling is present which is suspected of being a source of lead contamination and asbestos;*
- *Cropping or intensive agricultural uses have not occurred;*
- *Fill material or quarry material has been stockpiled on an area of the property".*

The physical features of the site, and topographical details are illustrated within a contour survey in **NDC Plan 2** with site levels obtained through LIDAR data.

The land is situated within the Casino Floodplain hazard with the flood hazard comprising a combination of Low Hazard, High Depth Hazard, and Rare High

Floodway Hazard. Pre-lodgement consultation with RVC has identified a 1 in 20 year flood level of RL 24.6 metres AHD and 1 in 100 year flood level of RL 25.9 metres AHD.

1.3 Site Analysis

NDC Plan 3 contained within this report identifies opportunities and constraints relating to the development potential of the land which include:

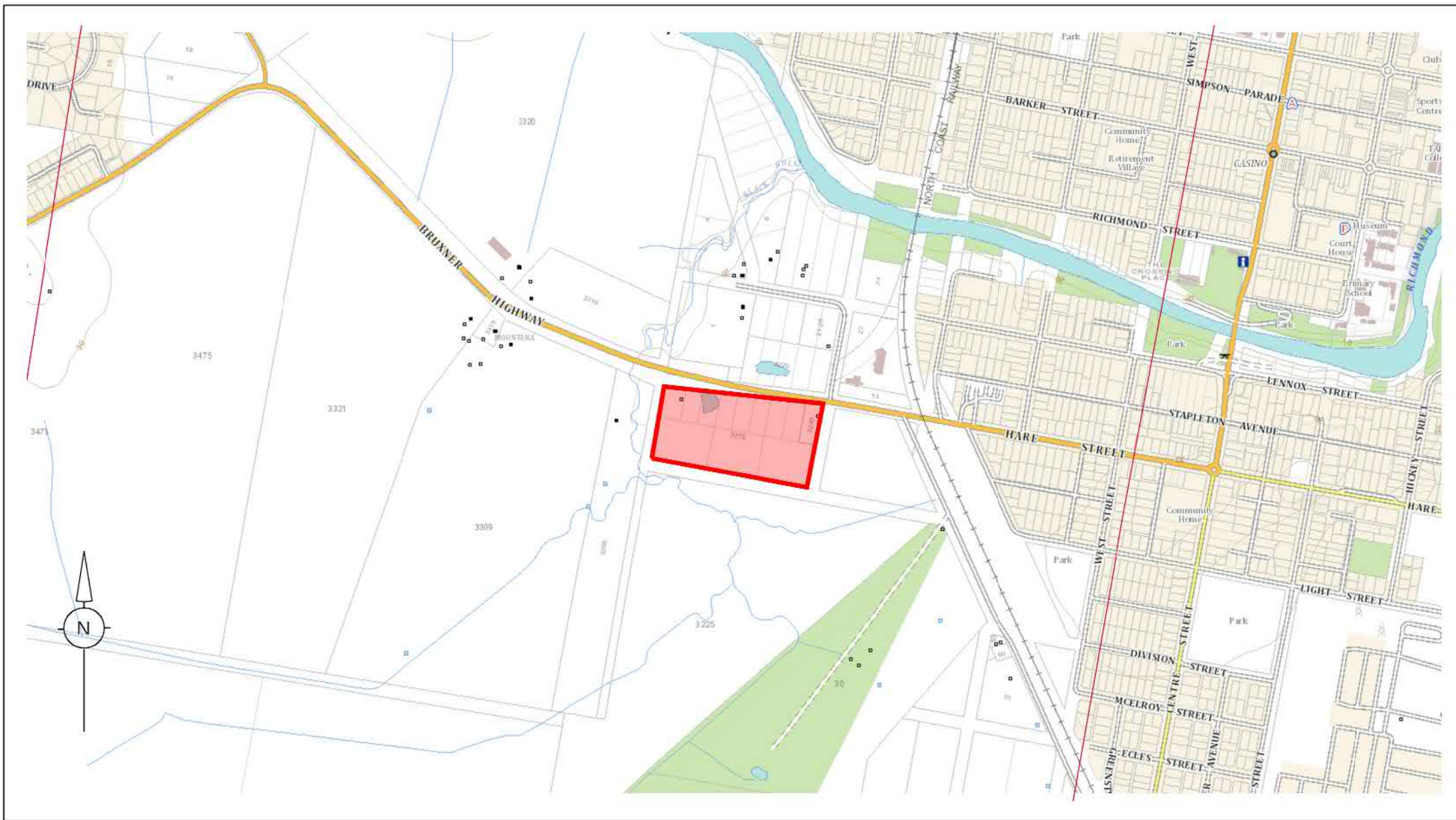
- Existing lot boundaries;
- Waterways;
- Flood Hazard Categories;
- Road frontage (Bruxner Highway);
- Adjoining road reserve (Hotham Street);
- Surrounding land uses;
- Power (DBYD).
- Telstra cable (DBYD)
- Mapped key fish habitat

The conceptual development layout presented at **NDC Plan 4** has had regard to the above constraints.

Pursuant to the Richmond Valley LEP 2012, the subject land is **not** mapped as:

- containing acid sulfate soils;
- containing a heritage item;
- being located within a drinking water catchment;
- containing terrestrial biodiversity; or
- containing land identified as a landslide risk.

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LEGEND:

SITE BOUNDARY

SOURCE PLAN: www.maps.six.nsw.gov.au - accessed 02.05.18

Document Set ID: 1577063 - earthmoving\planning\planning plans\ndc plans\cad files\18058 - santin earthmoving.dwg - plan 1 - location

Version: 1, Version Date: 05/05/2020

NBS
Newton Denny Chapelle
 Surveyors Planners Engineers

Email: office@newtondennychapelle.com.au
 LISMORE 31 Carrington St. Lismore 2480 PH: 6622 1011
 CASINO 100 Barker St. Casino 2470
 PH: 6662 5000
 ABN: 86 220 045 469

PLAN 1 - LOCATION

CLIENT: SANTIN EARTHMOVING

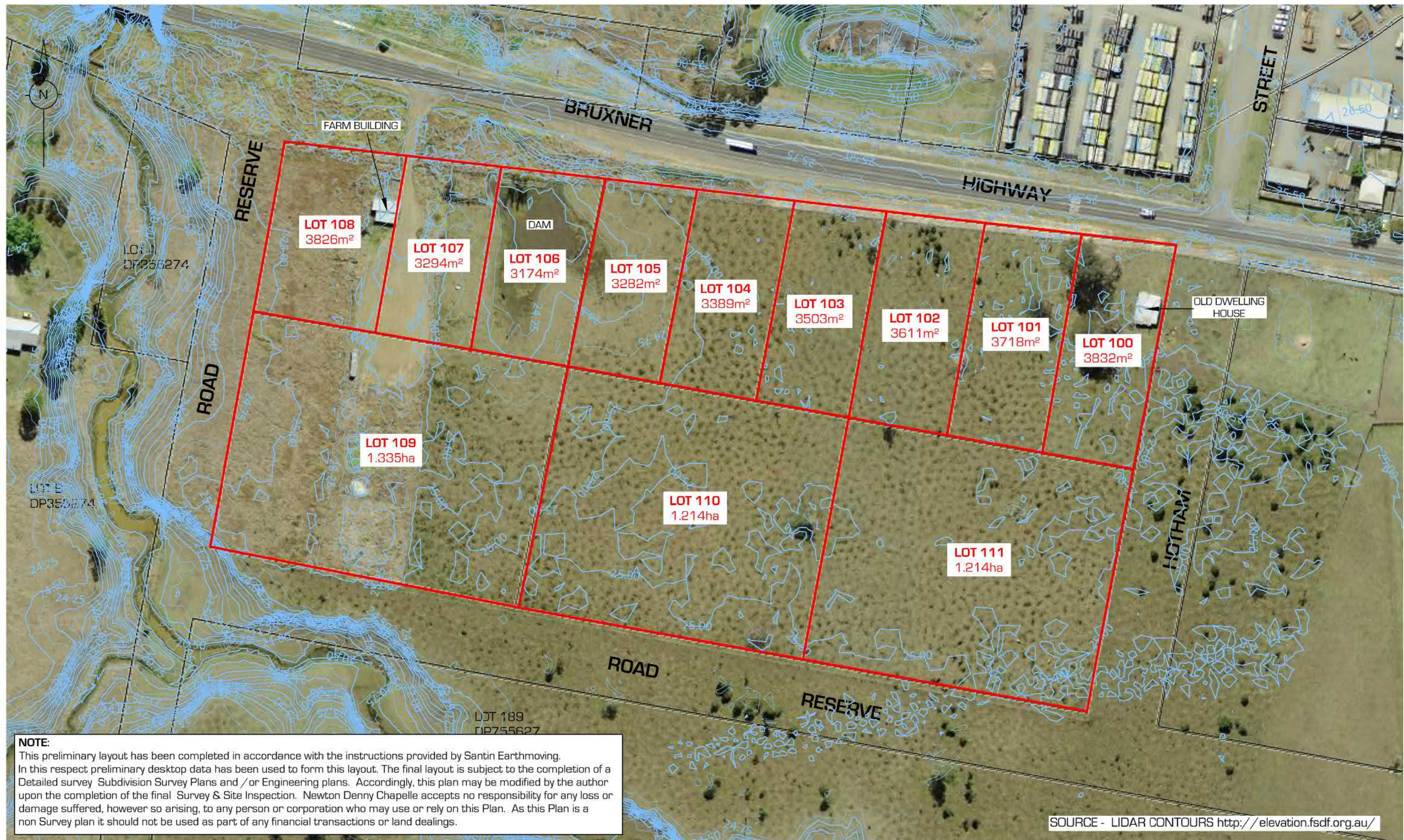
LOCATION: LOTS 100 - 111 DP 755627
 3243 BRUXNER HWY
 CASINO NSW

DATE: 11.07.18

SCALE: NTS

REF: 18/058

DRAWN: bk



NOTE:
This preliminary layout has been completed in accordance with the instructions provided by Santin Earthmoving. In this respect preliminary desktop data has been used to form this layout. The final layout is subject to the completion of a Detailed survey Subdivision Survey Plans and /or Engineering plans. Accordingly, this plan may be modified by the author upon the completion of the final Survey & Site Inspection. Newton Denny Chapelle accepts no responsibility for any loss or damage suffered, however so arising, to any person or corporation who may use or rely on this Plan. As this Plan is a non Survey plan it should not be used as part of any financial transactions or land dealings.

SOURCE - LIDAR CONTOURS <http://elevation.fscf.org.au/>

REV	DATE	AMENDMENT
A		
B		
C		
D		
E		

SOURCE PLAN: www.maps.six.nsw.gov.au - accessed 02.05.18

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Version: 1, Version Date: 05/05/2020

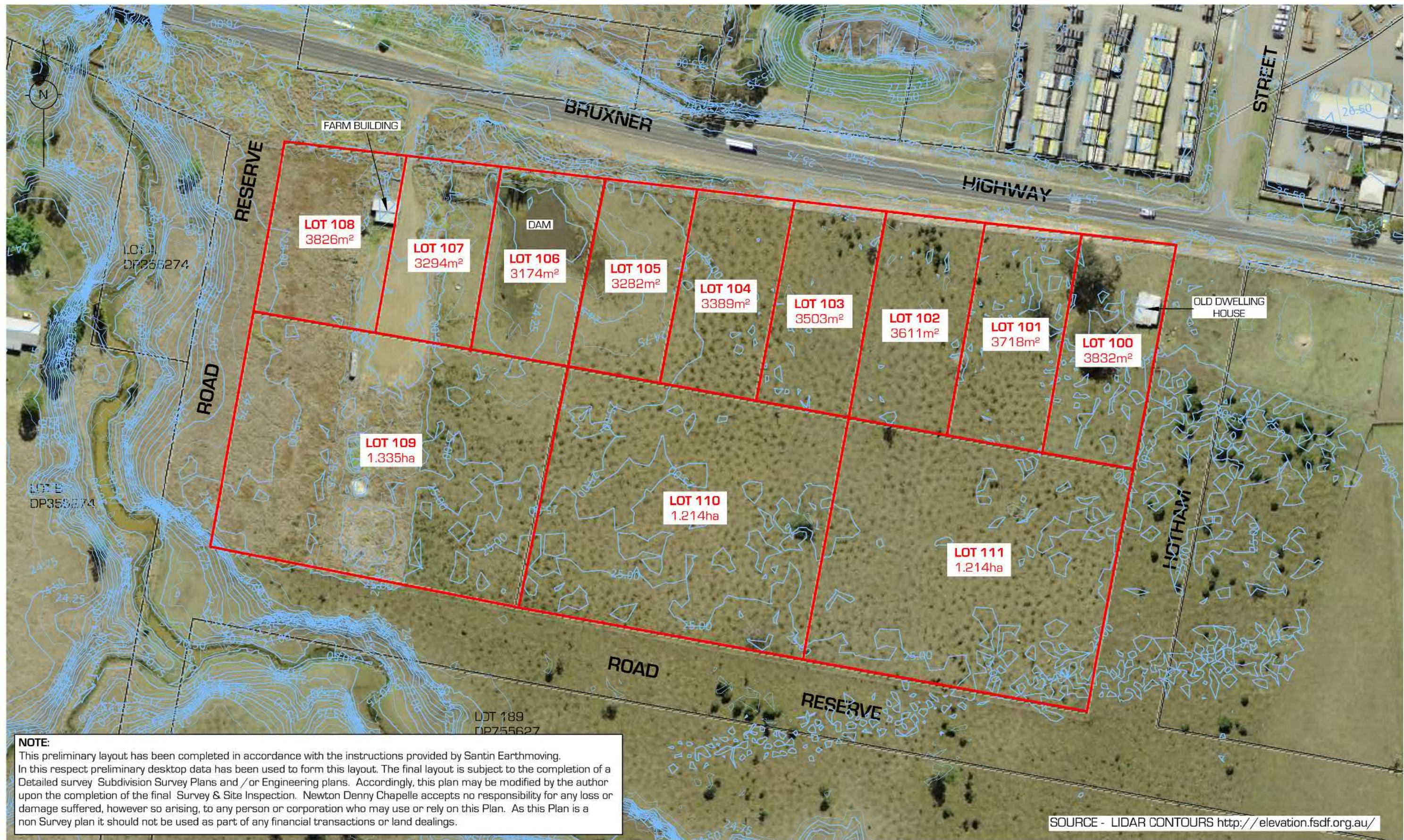
NDC
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LISMORE 31 Carrington St. Lismore 2480 PH: 6622 1011
CASINO 100 Barker St. Casino 2470
PH: 6662 5000
ABN: 86 220 045 469

PLAN 2 - CONTOUR SURVEY

CLIENT: SANTIN EARTHMOVING

LOCATION: LOTS 100 - 111 DP755627
3243 BRUXNER HIGHWAY
CASINO NSW

DATE: 11.07.18 **REF:** 18/058
SCALE: 1 : 1500 @ A3 **DRAWN:** bk



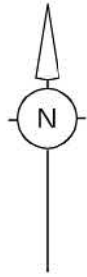
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SOURCE PLAN: www.maps.six.nsw.gov.au - accessed 02.05.18

Document Set ID: 1577063 santin earthmoving\planning\planning plans\ndc plans\cad files\18058 - santin earthmoving.dwg - plan 2- contour survey
Version: 1, Version Date: 05/05/2020

NDC
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LISMORE 31 Carrington St. Lismore 2480 PH: 6622 1011
CASINO 100 Barker St. Casino 2470
PH: 6662 5000
ABN: 86 220 045 469

PLAN 2 - CONTOUR SURVEY
CLIENT: SANTIN EARTHMOVING
LOCATION: LOTS 100 - 111 DP755627
3243 BRUXNER HIGHWAY
CASINO NSW
DATE: 11.07.18 **REF:** 18/058
SCALE: 1 : 1500 @ A3 **DRAWN:** bk

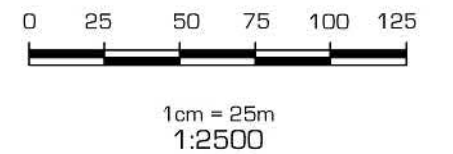


LEGEND

- FUTURE CONCEPT BUILDING ENVELOPE
- CONCEPTUAL INTERNAL CENTRAL ROAD ALIGNMENT
- AREA APPROVED FOR CONSTRUCTION OF SHED, ACCESS AND HEAVY VEHICLE STORAGE VIA DA 2012.0139.02
- 100m BUFFER

NOTE:

This preliminary layout has been completed in accordance with the instructions provided by Santin Earthmoving. In this respect preliminary desktop data has been used to form this layout. The final layout is subject to the completion of a Detailed survey Subdivision Survey Plans and /or Engineering plans. Accordingly, this plan may be modified by the author upon the completion of the final Survey & Site Inspection. Newton Denny Chapelle accepts no responsibility for any loss or damage suffered, however so arising, to any person or corporation who may use or rely on this Plan. As this Plan is a non Survey plan it should not be used as part of any financial transactions or land dealings.



REV	DATE	AMENDMENT
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B		
C		
D		
E		

SOURCE PLAN: www.maps.six.nsw.gov.au - accessed 02.05.18

Document Set ID: 1577063 santin earthmoving\planning\planning plans\ndc plans\cad files\18058 - santin earthmoving.dwg - plan 4 - concept development layout:
Version: 1, Version Date: 05/05/2020

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Email: office@newtondennychapelle.com.au
USMORE 31 Carrington St. Lismore 2480 PH: 6622 1011
CASINO 100 Barker St. Casino 2470
PH: 6662 5000
ABN: 86 220 045 469

PLAN 4 - CONCEPT DEVELOPMENT LAYOUT

CLIENT: SANTIN EARTHMOVING
LOCATION: LOTS 100 - 111 DP755627
3243 BRUXNER HIGHWAY
CASINO NSW

DATE: 11.07.18
SCALE: 1 : 2500 @ A3

REF: 18/058
DRAWN: bk

2. Planning Proposal

Part 1: Objectives and Intended Outcomes

The objective of the Planning Proposal is to change the town planning provisions applying to Lots 100 – 111 DP 755627 to rezone the land presently zoned RU1 – Primary Production to IN1 – General Industrial in accordance with the provisions of the Richmond Valley Local Environmental Plan 2012.

The Planning Proposal also seeks to amend the minimum lot size map to permit the creation of lots with a minimum lot size of 750m² within the area to be rezoned.

Intended Outcomes of the Planning Proposal

The aims of the Planning Proposal are outlined below:

1. To enable the opportunity of undertaking a range of land uses on the site that are not currently permitted on the land due to its current RU1 land zoning;
2. To enable suitable land to be developed for general industrial purposes and land uses permissible within the IN1 General Industrial zone;
3. To enable the opportunity to subdivide the land for industrial purposes with minimum lot sizes of 750m²;
4. To facilitate the implementation of growth management provisions within the North Coast Regional Plan.

For the purpose of this Planning Proposal, a conceptual development layout has been presented in **NDC Plan 4** which identifies a conceptual building envelope and internal central road alignment. Future development within this area will be subject to future development applications.

A proposed lot layout has not been designed at this early stage of the project. Future development within this area will be subject to future detailed designs and development applications which will determine the proposed number of subdivision lots and configurations.

Whilst future land uses will be subject to obtaining development consent in the future through the development application process, the intent of this Planning Proposal is not to enable either hazardous or offensive industry development on the land. In this regard Heavy Industry will be a prohibited land use within the IN1 General Industrial zone.

Part 2: Explanation of Provisions

2.1 Proposed Changes to the Richmond Valley LEP 2012

The land the subject to this Planning Proposal is currently zoned RU1 – Primary Production under the Richmond Valley Local Environmental Plan (RVLEP) 2012, and contains a minimum subdivision lot size requirement of 40 hectares.

The following amendments are required to the Richmond Valley LEP 2012 to enable the subdivision and development of the land for industrial purposes.

- **Acid Sulphate Soils Map** – No change.
- **Wetlands Map, Riparian Land and Waterways Map** – No change.
- **Drinking Water Catchment Map** – No change.
- **Dwelling Opportunity Map** – No change.
- **Heritage Map** – No change.
- **Height of Buildings Map** – No change.
- **Key Sites Map** – No change.
- **Land Application Map** – No change.
- **Land Reservation Acquisition Map** – No change.
- **Lot Size Map (Sheet LSZ-006A)** – Application of a 750m² minimum lot size for the area of land proposed to be rezoned in accordance with **NDC Plan 5**.
- **Land Zoning Map (Sheet LZN-006A)** – Application of an IN1 –General Industrial Zone in accordance with **NDC Plan 5**.
- **Terrestrial Biodiversity Map** – No change.
- **Landslide Risk Map** – No change.
- **Schedule 1 Additional Permitted Uses** – No change.

Part 3: Justification

Section A – Need for the Planning Proposal

1. Is the Planning Proposal a result of any strategic study or report?

Yes. The North Coast Regional Plan 2036 has been prepared by the Department of Planning and Environment to manage expected growth in a sustainable manner. The Regional Plan applies to the Far North Coast and Mid North Coast of NSW (being an area which stretches from Port Macquarie in the south to Tweed Heads in the north). The Plan includes Richmond Valley Council and is therefore applicable to the current proposal.

To provide stimulus to the lodgement of a Planning Proposal, the subject land is identified within the North Coast Regional Plan 2036 as being within an 'Urban Growth Area' and an 'Investigation Area – Employment Land' as shown below in Plate 4.

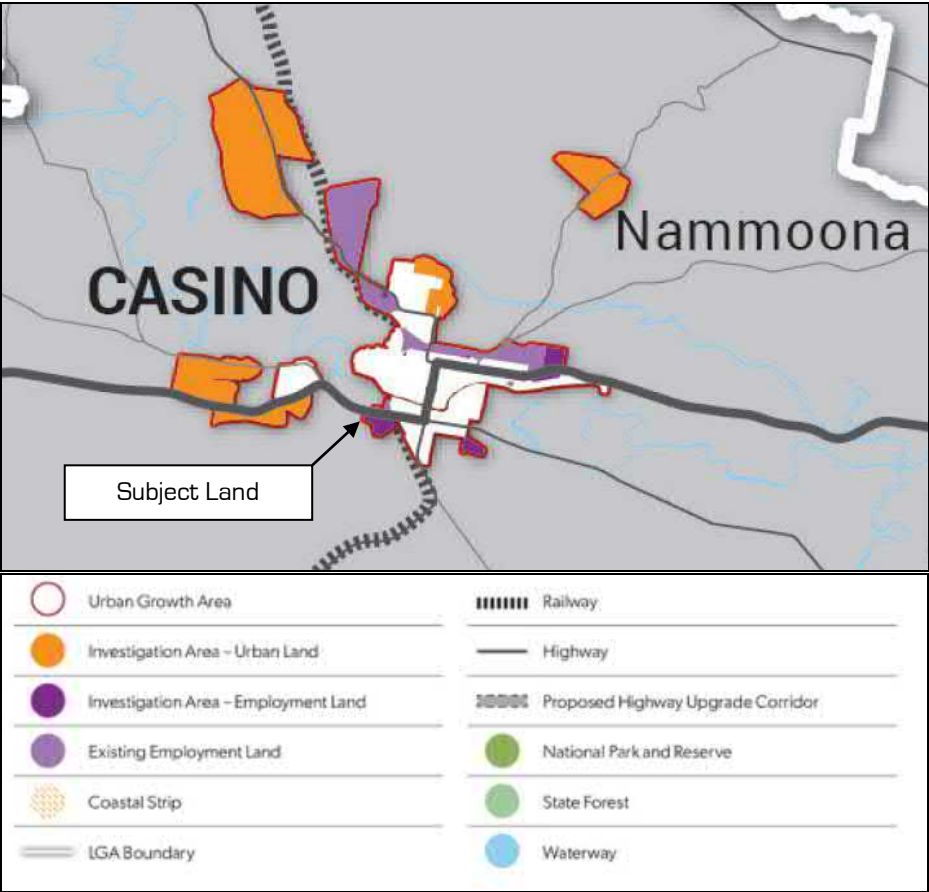


Plate 4 – Land identified in NCRP 2036

Image Source – NCRP 2036

2. Is the Planning Proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

Yes. Currently the subject land is zoned RU1 – Primary Production pursuant to the Richmond Valley LEP 2012. In order for a Development Application to be considered for a range of industrial and other developments on the land that are currently prohibited land uses, and to enable subdivision for industrial purposes with a minimum lot size of 750m², it is necessary to first amend the planning framework applying to the land. This is proposed to be done through rezoning the subject land from its current RU1 Primary Production land zoning to an IN1 – General Industrial land zone and to change the minimum lot size from 40 hectares to 750m².

Section B – Relationship to Strategic Planning Framework

3. Is the Planning Proposal consistent with the objectives and actions contained within the applicable regional or sub-regional strategy?

Yes. The Planning Proposal is consistent with the North Coast Regional Plan 2036 as follows.

NORTH COAST REGIONAL PLAN 2036

The North Coast Regional Plan 2036 has a number of Directions of relevance and can be satisfied by the current Planning Proposal:

Direction 1: Deliver environmentally sustainable growth

The land the subject to this planning proposal is identified within the North Coast Regional Plan 2036 as within an 'Urban Growth Area' and an 'Investigation Area – Employment Land' as shown above in **Plate 4**.

Direction 2: Enhance Biodiversity, Coastal and Aquatic Habitats, and Water Catchments

The subject land is not located within the coastal zone, nor is it mapped as being located within a drinking water catchment pursuant to the RVLEP 2012. The land is not mapped as containing terrestrial biodiversity within the RVLEP 2012, whilst Richmond Valley Council's koala habitat map does not identify koala habitat on the site.

Future design and development on the site will be required to be undertaken in a manner so as to prevent impacts on the identified key fish habitat (RVLEP 2012) located to the west and south west (refer **NDC Plan 3**). Future design and construction will also need to consider the impact on the dam located on Lot 106 DP 755627 and its role in the proposed site layout.

Direction 3: Manage Natural Hazards and Climate Change

The land is situated within the Casino Floodplain hazard with the flood hazard comprising a combination of Low Hazard, High Depth Hazard, and Rare High Floodway Hazard. Pre-lodgement consultation with RVC has identified a 1 in 20 year flood level of RL 24.6 metres AHD and 1 in 100 year flood level of RL 25.9 metres AHD.

The Richmond Valley DCP requires industrial and commercial development to have a floor level located above the 1 in 100 year ARI flood level.

The subject land ranges between approximately RL 24.25 – 25.25 metres AHD (LIDAR data) with future development required to comply with the requirements of the Casino Floodplain management plan which is as follows for industrial and commercial development within the above reference flood hazard categories:

Development Building Type	Requirement
Existing Lot – New Development	SF1 - No minimum fill required.
Subdivision	SF2 - For low hazard and high depth hazard – For commercial areas, the minimum fill level to be greater than or equal to the 100 year flood level. For industrial areas, the minimum fill level to be greater than or equal to the 10 year flood level.
Floor level	FL2a – All floor levels to be greater than or equal to the 100 year flood level.

The subject lands are not mapped as being bushfire prone on Council's adopted bushfire hazard map nor identified within the coastal zone.

The subject land is not identified as being an area of landslide risk within the RVLEP 2012 map.

Direction 6: Develop Successful Centres of Employment

The proposal is consistent with this direction particularly sub direction 6.6, as it will assist in delivering an adequate supply of employment land to support jobs growth.

Direction 11: Protect and enhance productive agricultural lands

The land the subject of this Planning Proposal is identified as Regionally Significant Farmland within the Northern Rivers Farmland Protection Project Final Map. However, the NCRP 2036 has identified the land as being within an 'Urban Growth Area' and an 'Investigation Area – Employment Land'. Accordingly, it is expected that in the future the Farmland Protection mapping will be updated to reflect the land as 'committed urban uses' as opposed to significant farmland.

The rezoning of the land to IN1 will enable development on the site such as rural industry that will support and complement the agricultural sector. This may include agricultural produce industries or businesses that provide for the regular servicing or repairing of plant or equipment used for the purposes of a rural enterprise.

With regard to 'Important Farmland' we note that Section 9.1 Planning Direction No.5.3 (which relates to mapped Farmland of State and Regional Significance on the NSW Far North Coast) specifically does not apply to land identified as an 'urban growth area' within the North Coast Regional Plan 2036 therefore does not apply to the subject land in this instance.

Direction 18: Respect and Protect the North Coast's Aboriginal Heritage

An AHIMS search completed as part of this Planning Proposal did not identify an Aboriginal site or place as being located within 1km of Lot 104 DP 755627.

An Aboriginal Cultural Heritage Assessment has been completed by Everick Heritage and can be found within **Attachment 6**, and a number of recommendations are contained within Section 8 of the report. The report concludes that having regard to the low archaeological potential for the Project Area and the outcomes of consultation with the Casino Boolangle LALC, the recommendations are cautionary in nature and considered sufficient for application in both planning proposal and development application stages.

Direction 19: Protect Historic Heritage

The Richmond Valley LEP 2012 mapping does not identify the subject land as containing a heritage item.

4. Is the Planning Proposal consistent with the local council's Community Strategic Plan, or other local strategic plan?

The subject land is not identified within the Casino Urban Land Release Strategy [16 August 2005] adopted by Richmond Valley Council.

Concerning Council's strategic intent for urban release areas and employment lands, the subject land is identified as 'Proposed Employment Lands' within Richmond Valley Council's 'Changes to Future Urban Growth Boundaries' document [Date 6 January 2015] as per **Plates 5 and 6** below.

The 'Changes to Future Urban Growth Boundaries' document [Date 6 January 2015] provides the following justification to identify this land as 'Employment Land':

The land sits opposite the Hurfords Sawmill which is zoned IN1 - General Industrial.

While the land is partially affected by flood it is within the standards established by the Casino Flood Study - Flood Control Matrix for non-residential development.

The land can readily be serviced by essential services and is buffered from nearby residential development by the North Coast Railway corridor.

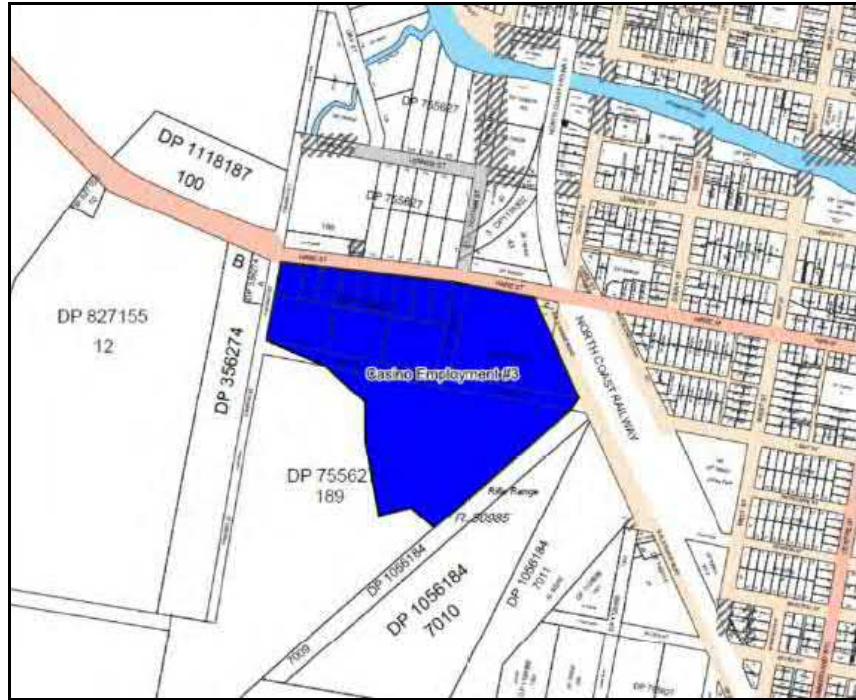


Plate 5 – Land identified as Employment Land

Image Source – Richmond Valley Council's 'Changes to Future Urban Growth Boundaries' document (Date 6 January 2015)



Plate 6 – Land identified as Employment Land

Image Source – Richmond Valley Council's 'Changes to Future Urban Growth Boundaries' document (Date 6 January 2015)

5. Is the Planning Proposal consistent with applicable State Environmental Planning Policies?

The Planning Proposal is consistent with the provisions of applicable State Environmental Planning Policies. An assessment of the project against these policies is provided within **Attachment 3**.

6. Is the Planning Proposal consistent with applicable Ministerial Directions (s. 117 directions)?

Comment: The Planning Proposal is consistent with the provisions of applicable Section 9.1 Ministerial Directions (previously S117 Ministerial Directions). An assessment of the project against these requirements is provided at **Attachment 4**.

Section C – Environmental, Social and Economic Impact

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?

Comment: The subject lands are predominately grassland and are not identified as containing Terrestrial Biodiversity within the RVLEP 2012 mapping.

Richmond Valley Council's koala habitat mapping does not identify koala habitat existing on the subject land.

The biodiversity assessment was completed by GeoLink to assess the biodiversity values of the subject lands in relation to the Planning Proposal. Whilst full reference should be made to the report contained within **Attachment 7**, the following key findings have been determined:

- No threatened flora species were recorded at the site;
- No threatened ecological communities (TECs) occur at the site.
- No significant habitat for threatened fauna occurs at the site;
- Given the degraded and highly modified vegetation at the site, the relative paucity of native vegetation and the lack of high conservation value habitat for flora or fauna, biodiversity values at the site are relatively low.

To minimise biodiversity impacts which may result from the proposed rezoning and future development of the site, the following measures should be considered (as recommended in Section 5.3 of the biodiversity assessment):

- Loss of native vegetation should be minimised wherever possible, in particular the large Forest Red Gums in the north-east corner of the site are worthy of retention;
- Where native vegetation, tree hollows and/or Koala habitat requires removal, compensation will be required.

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

Potential impacts are identified and discussed as follows:

a. Soils - Contamination & Acid Sulfate Soils

A stage 1 SEPP 55 assessment has been completed by Greg Alderson & Associates which is contained within **Attachment 2**.

The subject land is not identified as containing Acid Sulfate Soils pursuant to the Richmond Valley LEP 2012.

b. Bushfire

The subject land is not identified as containing bushfire hazard vegetation pursuant to bushfire hazard maps adopted by Richmond Valley Council.

c. Buffer Areas (Land Use Conflict)

The purpose of buffers for industrial development is to provide a level of visual screening and also to assist to reduce impacts including noise and other emissions that may occur from certain developments.

Whilst Council's DCP does not specify buffer distances from general/light industry to sensitive receivers such as dwellings, the Lismore DCP Part A: Chapter 11 – Buffer Areas has been consulted which requires the following recommended buffers:

Recommended Buffer		
	Minimum	Preferred
Light Industries	10 metres	20 metres
General Industries	20 metres	40 metres

NDC further consulted with Council's Strategic Planning department with regard to buffers, and following this consultation the conceptual building envelope on **NDC Plan 4** provides a minimum separation buffer of 100 metres from the nearest dwelling not associated with the development which is located on Lot B DP 356274.

Any future development application on the land will be required to address impacts associated with that specific land use with additional ameliorative measures to be adopted as necessary with regard to the management of potential impacts.

d. Cultural Heritage

An AHIMS search completed as part of this Planning Proposal (**Attachment 5**) did not identify an Aboriginal site or place as being located within 1km of Lot 104 DP 755627.

The Richmond Valley LEP 2012 mapping does not identify the subject land as containing a heritage item.

As provided earlier, an Aboriginal Cultural Heritage Assessment has been completed by Everick Heritage and can be found within **Attachment 6**.

e. Landscape and Visual Value

The landscape and visual character of the locality is rural and industrial with urban residential development located to the east of the North Coast Railway line. The property has road frontage to Bruxner Highway to the north, with rural land located to the east, south, and west generally characterised by grazing pursuits and rural dwellings. Directly opposite the eastern portion of the site, land on the northern side of the Bruxner Highway is zoned IN1 General Industrial which is currently occupied by Hurford's timber mill. The Casino Gun Club is located fronting Rifle Range Road to the south east of the subject land.

Lot 111 DP 755627 enjoys development approval via DA2012.0139.02 for the construction of a shed, access and Heavy Vehicle Storage.

It is envisaged that future land uses enabled via an IN1 land zoning will complement the existing non-residential uses identified above.

The size of the conceptual site layout shown on **NDC Plan 4** is such that there is substantial land available for site landscaping to enable future development on the site to achieve a good level of visual protection.

It is expected that future development applications on the land will be subject to landscaping conditions in accordance with Council's DCP landscaping requirements. It is noted that in relation to Lot 111 DP 755627, condition no. 4 of DA 2012.0139.02 required the following landscaping be provided on that lot prior to issue of the Occupation Certificate:

- A five (5) metre wide landscape area along the northern site boundary;
- A five (5) metre wide landscape area along approximately half the eastern and western boundaries;
- An outer row of eucalypt species and inner row of native shrubs planted at five (5) metre minimum spacing.

f. Stormwater Drainage and Water Quality

A Stormwater Management Plan (SWMP) will be required to be submitted upon finalisation of the Gateway Determination. The SWMP will outline how the stormwater quality (Water Sensitive Urban Design) and attenuation targets are achieved for the site.

It is anticipated that stormwater will be treated via a range of devices including:

- Litter Basket inserts and/or Gross Pollutant Traps.
- Sediment Basin and/or Bioretention Systems.

The development will treat and attenuate stormwater prior to its discharge from the site. It is anticipated that attenuation will be provided for the site via the existing farm dam. This dam will be modified to act as a self-draining attenuation

/ sediment basin. Sediment and erosion controls are to be implemented during construction.

g. Flooding

The land is situated within the Casino Floodplain hazard with the flood hazard comprising a combination of Low Hazard, High Depth Hazard, and Rare High Floodway Hazard. Pre-lodgement consultation with RVC has identified a 1 in 20 year flood level of RL 24.6 metres AHD and 1 in 100 year flood level of RL 25.9 metres AHD.

The Richmond Valley DCP requires industrial and commercial development to have a floor level located above the 1 in 100 year ARI flood level.

As identified above under Question 3, the subject land ranges between approximately RL 24.25 – 25.25 metres AHD (LIDAR data) with future development required to comply with the Richmond Valley DCP and the Casino Floodplain management plan for industrial and commercial development as follows:

Development Building Type	Requirement
Existing Lot – New Development	SF1 - No minimum fill required.
Subdivision	SF2 - For low hazard and high depth hazard – For commercial areas, the minimum fill level to be greater than or equal to the 100 year flood level. For industrial areas, the minimum fill level to be greater than or equal to the 10 year flood level.
Floor level	FL2a – All floor levels to be greater than or equal to the 100 year flood level.

A Flood Impact Assessment has been completed by Engeny Water Management and can be found within **Attachment 8**. Engeny note some limitations of Councils existing flood model due to the age of the model and the progression of technology. As suggested by NDC, Council has agreed to adopt the RMS Pacific Highway upgrade flood mitigation objectives. Based on the flood impacts outlined in Figure 1 of the Engeny report, localised impacts of 50mm in accordance with RMS objectives can be expected in some residential areas. The majority of the impacts are below this level.

h. Coastal Hazards

The development is not subject to SEPP [Coastal Management 2008].

i. Agriculture

The subject land is mapped as being Regionally Significant Farmland within the Northern Rivers Farmland Protection Project Final Map. Despite the mapping, the subject land is currently configured within 12 separate smaller titles with Lot 111 DP 755627 already approved for heavy vehicle storage under DA 2012.0139.02.

Despite the land being mapped as Regionally Significant, the proposal to rezone the land to IN1 General Industrial is justified as follows:

- The proposal satisfies Direction 11: Protect and Enhance Productive Agricultural Lands of the NCRP 2036 as submitted earlier within this report
- The subject land is identified as 'Proposed Employment Lands' within Richmond Valley Council's 'Changes to Future Urban Growth Boundaries' document (Date 6 January 2015);
- The subject land is identified within the North Coast Regional Plan 2036 as being within an 'Urban Growth Area' and an 'Investigation Area – Employment Land'.
- The proposal can adequately justify the inconsistency with Ministerial Direction 9.1 [previously S117] – Direction 1.2 Rural Zones as submitted in **Attachment 4**.

j. Geotechnical Assessment

Pursuant to the Richmond Valley LEP 2012, the subject land is not mapped as containing land identified as a landslide risk.

9. How has the Planning Proposal adequately addressed any social and economic effects?

The rezoning of the land to enable industrial and commercial orientated landuses will have positive social and economic effects, and this form of development will

satisfy Direction 1 of the North Coast Regional Plan being to 'deliver environmentally sustainable growth'. To this end, the subject land is located within an 'Urban Growth Area' and an 'Investigation Area – Employment Land' of the NCRP 2036.

The community benefit associated with the proposed development will be found in the provision of additional employment opportunities within the Richmond Valley LGA.

The proposal is considered to result in the creation of local employment opportunities through new jobs and multiplier effects on the local economy. The range of land uses that will be enabled through the rezoning of the land will provide local employment opportunities that will have flow-through effects through tradespeople to suppliers and capacity for increased retail expenditure.

No social impacts are envisaged in regard to cultural heritage matters having regard to the information provided above under Question 8 – d. Cultural Heritage.

Section D – State and Commonwealth Interests

10. Is there adequate public infrastructure for the Planning Proposal?

a. Sewer

The site can be serviced by either a new low pressure sewer network or traditional gravity sewer with new public pump station. Low pressure sewer networks are preferred for lower ET's. Both options will require a pressure sewer rising main to discharge into the existing Casino reticulated sewer network. There are several options for connection including:

- Direct injection into the Gays Hill rising main currently running within the Bruxner Highway Road Reserve adjacent to the site.
- Discharge into the existing gravity sewer manhole adjacent to the Hare Street / Diary Street intersection.
- Discharge into the existing gravity sewer manhole within Colches Street.

Sufficient sewer services can be provided for the site. The actual location/configuration is to be determined in consultation with Council during subsequent detailed design phases.

b. Water

A new water reticulation network will be provided within the development. It is anticipated that this main will be connected into the existing rising main within the Bruxner Highway Road Reserve.

c. Electricity Supply

Consultation will be required to be undertaken with the relevant authority to ensure power supply is adequate to meet the needs of the development at cost to the proponent.

d. Telecommunications

Consultation will be required to be undertaken with the relevant authority to ensure telecommunication capacity is adequate to meet the needs of the development at cost to the proponent.

e. Roads

The extension of Hotham Street south of the Bruxner Highway has been approved as part of DA2012/139. The design of the intersection is currently subject to the detailed design phase of the RMS WAD process.

A Traffic Impact Assessment has been completed by Ardill Payne & Partners and can be found within **Attachment 9**. The report concludes that “the future development of the site would increase the number of daily trips and peak hourly trips on the surrounding roads. The Level of Service experienced on the surrounding streets is within acceptable performance standards. The impact of the future development of the site on nearby intersections will be manageable.

A number of recommendations are contained within Section 6 of the traffic report as follows:

Recommendation 1:

Relocate the 100/60km/h speed zone change further west away from the new proposed intersection.

Recommendation 2:

Install appropriate signage and line-marking on the proposed and existing sides of the new four-way Hotham Street Intersection.

Recommendation 3:

Install appropriate advance warning signs on the Bruxner Highway for the new four-way Hotham Street Intersection.

11. What are the views of State and Commonwealth public authorities consulted in accordance with the Gateway Determination?

To be completed following receipt of the Gateway Determination.

Part 4: Mapping

The following changes are proposed to the mapping within the Richmond Valley Local Environmental Plan 2012.

- k. **Lot Size Map (Sheet LSZ-006A)** – Application of a 750m² minimum lot size for the area of land proposed to be rezoned in accordance with **NDC Plan 5**;
- ii. **Land Zoning Map (Sheet LZN-006A)** – Application of an IN1 – General Industrial Zone in accordance with **NDC Plan 5**.

This Planning Proposal includes a locality plan and aerial photo which clearly identifies the subject site.

Part 5: Community Consultation

The Gateway Determination will specify the community consultation that must be undertaken on the Planning Proposal.

It is expected that the Planning Proposal will be exhibited for a period of 28 days in accordance with standard procedures.

Part 6: Project Timeline

Plan Making Step	Estimated Completion
Council Resolution	February 2019
Gateway Determination (Anticipated)	April 2019
Government Agency Consultation	May 2020
Public Exhibition Period	July 2020
Submissions Assessment	August 2020
Council adopt Planning Proposal	September 2020
Anticipated date plan is made (if delegated)	November 2020
Forwarding of LEP Amendment to DP&E for notification (if delegated)	December 2020

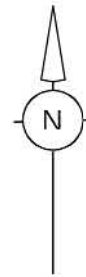
REFERENCES

- A Guide to Preparing Planning Proposals: NSW Planning and Environment 2016.
- North Coast Regional Plan 2036
- Richmond Valley Council's 'Changes to Future Urban Growth Boundaries' document (Date 6 January 2015)



EXISTING LAND ZONE

RU1 Primary Production



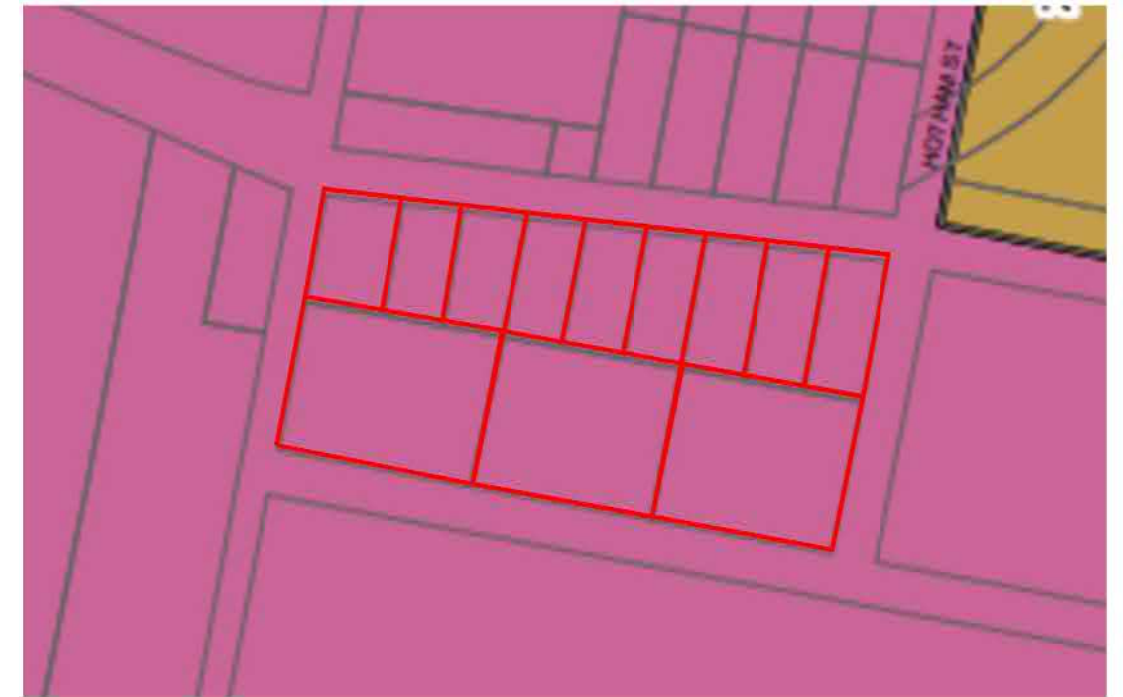
RICHMOND VALLY LOCAL ENVIRONMENTAL PLAN 2012 MAPPING

SITE BOUNDARY

SOURCE PLAN:
www.legislation.nsw.gov.au - accessed 08.05.18

- Lot size map - sheet LSZ_006A
- Land zoning map - sheet LZN_006A

NOTE:
This preliminary layout has been completed in accordance with the instructions provided by Santin Earthmoving.
In this respect preliminary desktop data has been used to form this layout. The final layout is subject to the completion of a Detailed survey Subdivision Survey Plans and /or Engineering plans. Accordingly, this plan may be modified by the author upon the completion of the final Survey & Site Inspection.
Newton Denny Chapelle accepts no responsibility for any loss or damage suffered, however so arising, to any person or corporation who may use or rely on this Plan. As this Plan is a non Survey plan it should not be used as part of any financial transactions or land dealings.



EXISTING LOT SIZE

AB 40ha



PROPOSED LAND ZONE

IN1 General Industrial



PROPOSED LOT SIZE

R 750m²

REV	DATE	AMENDMENT
A	11.07.18	
B	30.01.19	PROPOSED LAND ZONE & LOT SIZE
C		
D		
E		

SOURCE PLAN: www.maps.six.nsw.gov.au - accessed 02.05.18

Document Set ID: 1577063 [santin earthmoving\planning\planning plans\ndc plans\cad files\18058 - santin earthmoving.dwg - plan 5 - lep mapping](#)
Version: 1, Version Date: 05/05/2020

NDC
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LISMORE 31 Carrington St. Lismore 2480 PH: 6622 1011
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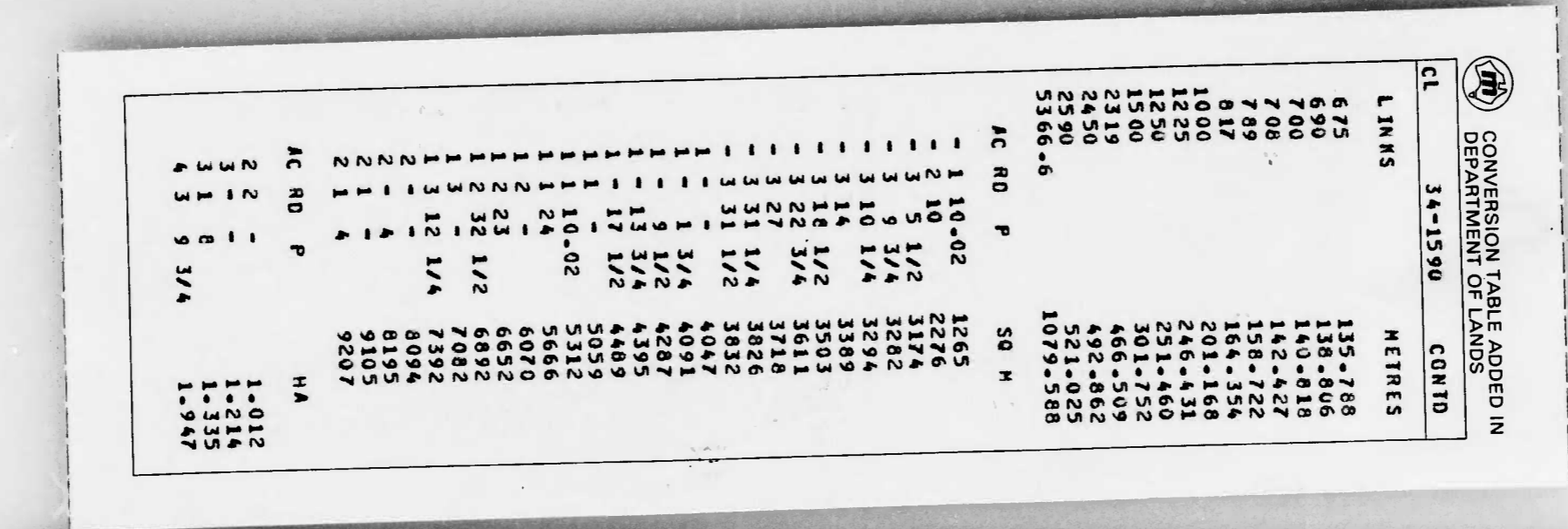
PLAN 5 - LEP MAPPING **REV B**
CLIENT: SANTIN EARTHMOVING
LOCATION: LOTS 100 - 111 DP755627
3243 BRUXNER HIGHWAY
CASINO NSW
DATE: 30.01.19
SCALE: 1 : 1500 @ A3
REF: 18/058
DRAWN: bk

© NEWTON DENNY CHAPELLE

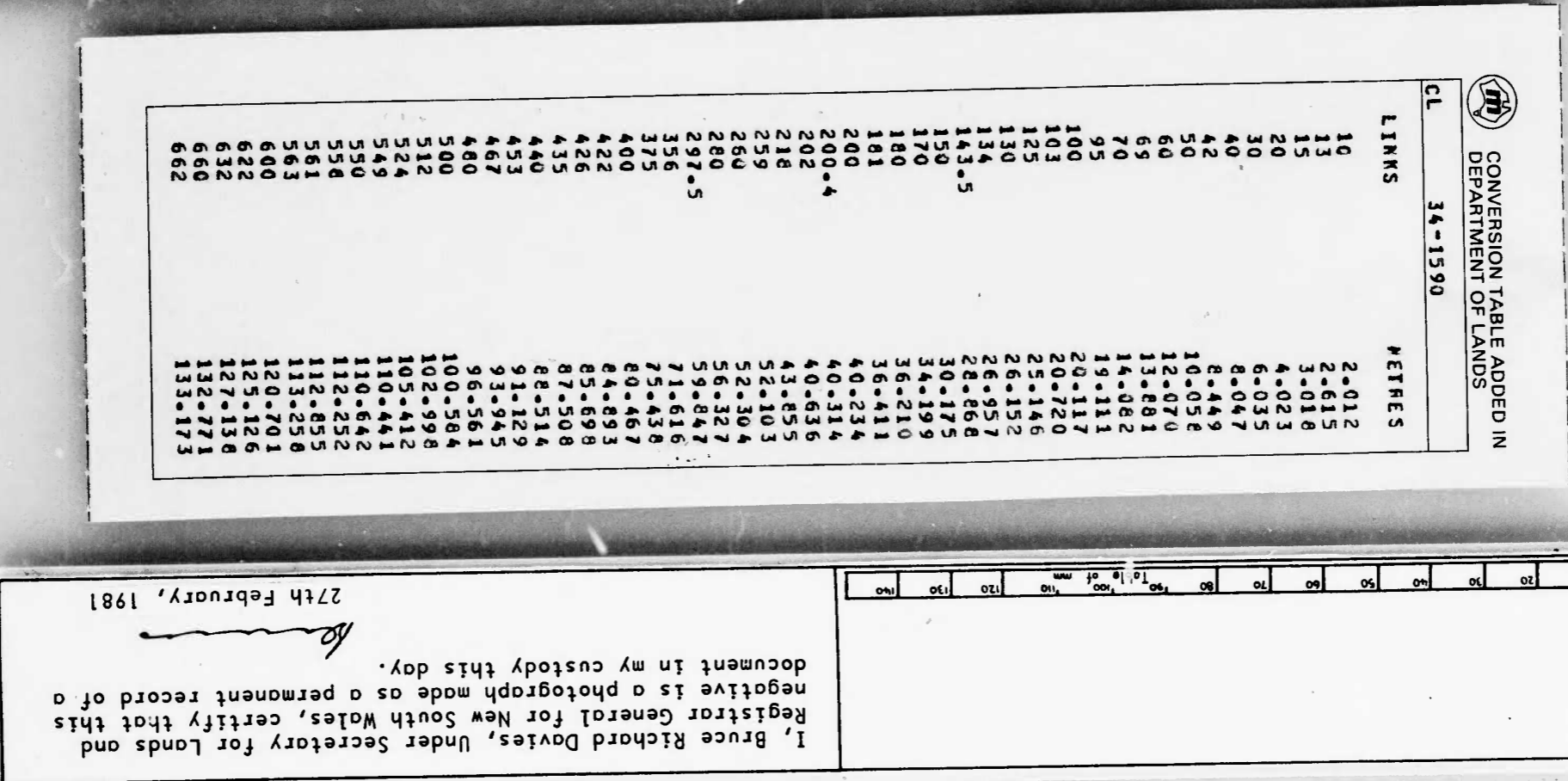


Attachment 1

Deposited Plan 755627



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100% of 100 100% of 100										





Attachment 2

Preliminary Contaminated Land Assessment



Greg Alderson & Associates

Chartered Professional Engineers and Scientists

Preliminary Contaminated Land Assessment

Proposed Rezoning

Lots 100-111 DP 755627, Bruxner Highway, Casino

For: Santin Earthmoving
Report No: 18342_sepp55.docx
Date: 19th April 2018

Greg Alderson & Associates

Chartered Professional Engineers and Scientists

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Document Information

Project
name

Proposed rezoning

Reference

18342_sepp55.docx

Revision
summary

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Greg Alderson & Associates

Chartered Professional Engineers and Scientists

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5.3.2. Stockpiles & imported material.....	14
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ATTACHMENTS

- Exhibit No. 1 – Site locality plan
- Exhibit No. 2 – Areas requiring detailed investigation

Greg Alderson & Associates

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EXECUTIVE SUMMARY

Greg Alderson and Associates have been commissioned by Santin Earthmoving to undertake a preliminary contaminated land assessment at Lots 100-111 DP 755627, Bruxner Highway, Casino. It is proposed that the subjects lots are to be rezoned from RU1 Primary Production to IN1 General Industrial.

A site history review was conducted for the investigation area. parish maps, aerial Imagery from the 1950's to recent and mapping from the 1980's was drawn upon for the site history. The history review found the following:

- Buildings and structures have been present on the investigation area. In particular a dilapidated dwelling is present which is suspected of being a source of lead contamination and asbestos;
- Cropping or intensive agricultural uses have not occurred;
- Fill material or quarry material has been stockpiled on an area of the property.

Due to the above findings, it was considered that a detail contaminated land investigation will be required for any development applications pertaining to these identified area will be required. **Exhibit No. 2** presents the areas that require detailed investigation. Despite the identification of potential contamination it is considered that the investigation area can be rezoned for industrial land use as the suspected contaminants are known to be able to be remediated or removed.

1. INTRODUCTION

Greg Alderson and Associates have been commissioned by Santin Earthmoving to undertake a preliminary contaminated land assessment at Lots 100-111 DP 755627, Bruxner Highway, Casino. The client is submitting a planning proposal for the rezoning of the subject allotments from RU1 Primary Production to IN1 General Industrial. As required under Section 7 of SEPP 55, this assessment was conducted to determine if the investigation area was contaminated from past or present land uses and if it is suitable for the proposed change of use associated with going from agricultural land use to industrial land use. The site was assessed for contamination in accordance with the requirements of the National Environmental Protection Measure 1999 (2013) (NEPM).

As this assessment is preliminary in nature no soil sampling has been undertaken. A review of the site history has been undertaken to determine if further investigation is required when development is proposed on the site. If the site history indicates a risk of contamination detailed (phase 2) investigation into land contamination will be required as part of any future Development Applications (DA's) relating to the land.

2. SCOPE OF WORK

This investigation is Tier 1 - preliminary site investigation. This assessment is required to determine if contamination of the site's soil has occurred from past land usage in accordance with NEPM 1999 (2013), DUAP and EPA (1998) and whether a detailed investigation is required if it is suspected that contamination is present. The investigation includes obtaining a history of land usage on the site through a review of aerial imagery and historic mapping.

The relevant guidelines used for the investigation are as follows:

- Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (1992);
- National Environmental Protection Measure 1999 (2013);
- Northern Rivers Regional Councils *Regional Policy for the Management of Contaminated Land* (2006);
- NSW OEH (2011) Guidelines for Consultants Reporting Contaminated Sites.

3. SITE IDENTIFICATION

The area subject to the planning proposal is Lots 100-111 DP 755627, Bruxner Highway, Casino. The centre of the investigation area is Latitude -28.870694 S and the Longitude is 153.032662 E. The subject site in its locality is presented in **Exhibit No. 1**.

4. HISTORY OF SITE

A review of historical Casino town maps (NSW Land Registry Services Parish Map Preservation Project) was undertaken. A town map from the late 1800's was sourced (Figure 1) and shows the subject lots 100-111 being formed and owned by various individuals. There is no evidence of the train line in this aerial image as the Casino-Grafton railway line was not constructed until 1905. The 1915 parish map (Figure 2) does show the presence of the railway line. It is not known if building had been constructed on the investigation area at this time.

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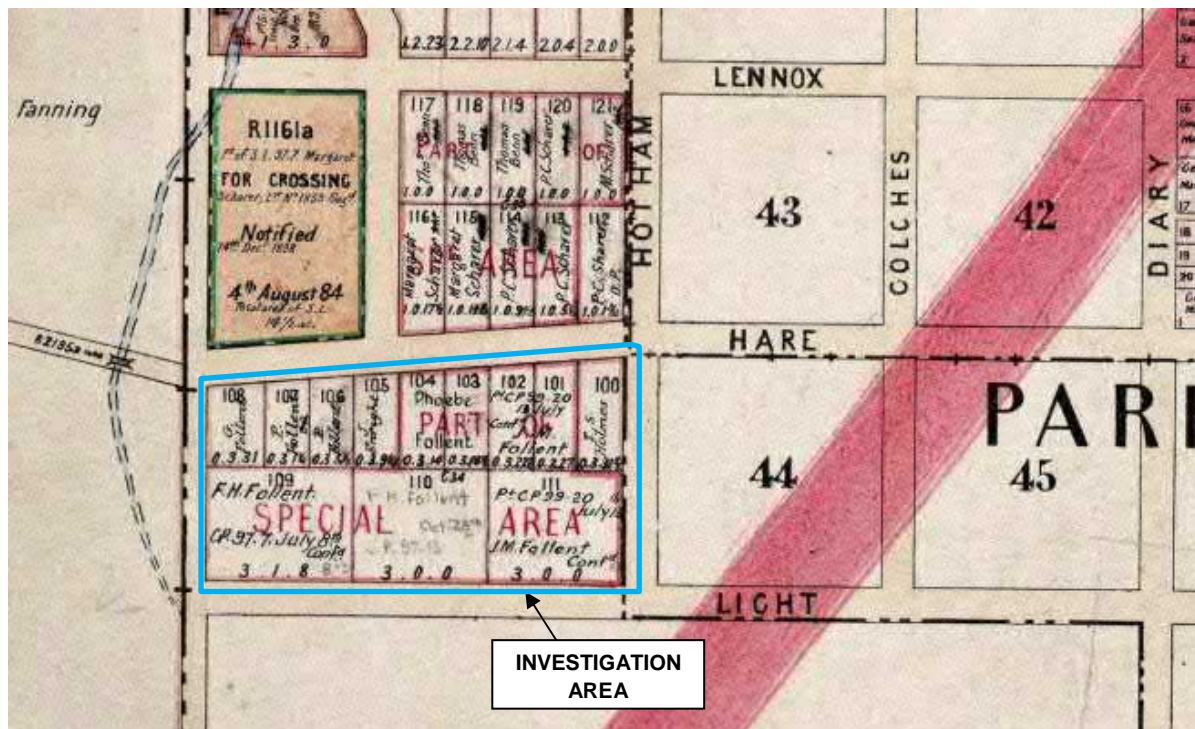


Figure 1. Late 1880's Parish map.



Figure 1. 1915 Parish map.

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Aerial imagery sourced from the NSW Department of Finance, Services & Innovation were sourced for contributing to a site history of the subject site. A 1958 aerial image (figure 3) shows the investigation area as having been cleared of native vegetation and being pasture grass. It is suspected that dairy farming was the land use as generally this was the regional land use of pastured areas prior to the 1970's.

It can be seen that the existing dwelling (now dilapidated) in the investigation area is present in 1958. This dwelling is located in the north eastern corner of the investigation area. There is also a very small associated outbuilding located to the south of the dwelling. There is also some unclear sign of ground disturbance in the western area of the investigation area however it is unknown what this is from this image.

It can also be seen that the sawmill existing to the north east of the investigation area. It is understood that this sawmill which is owned by the Hurford family would have been established some time after 1932 (Hurford's Hardwood, 2018). It can also be seen that construction on the never completed Casino-Tenterfield railway line had begun parallel to the northern boundary of the investigation area.

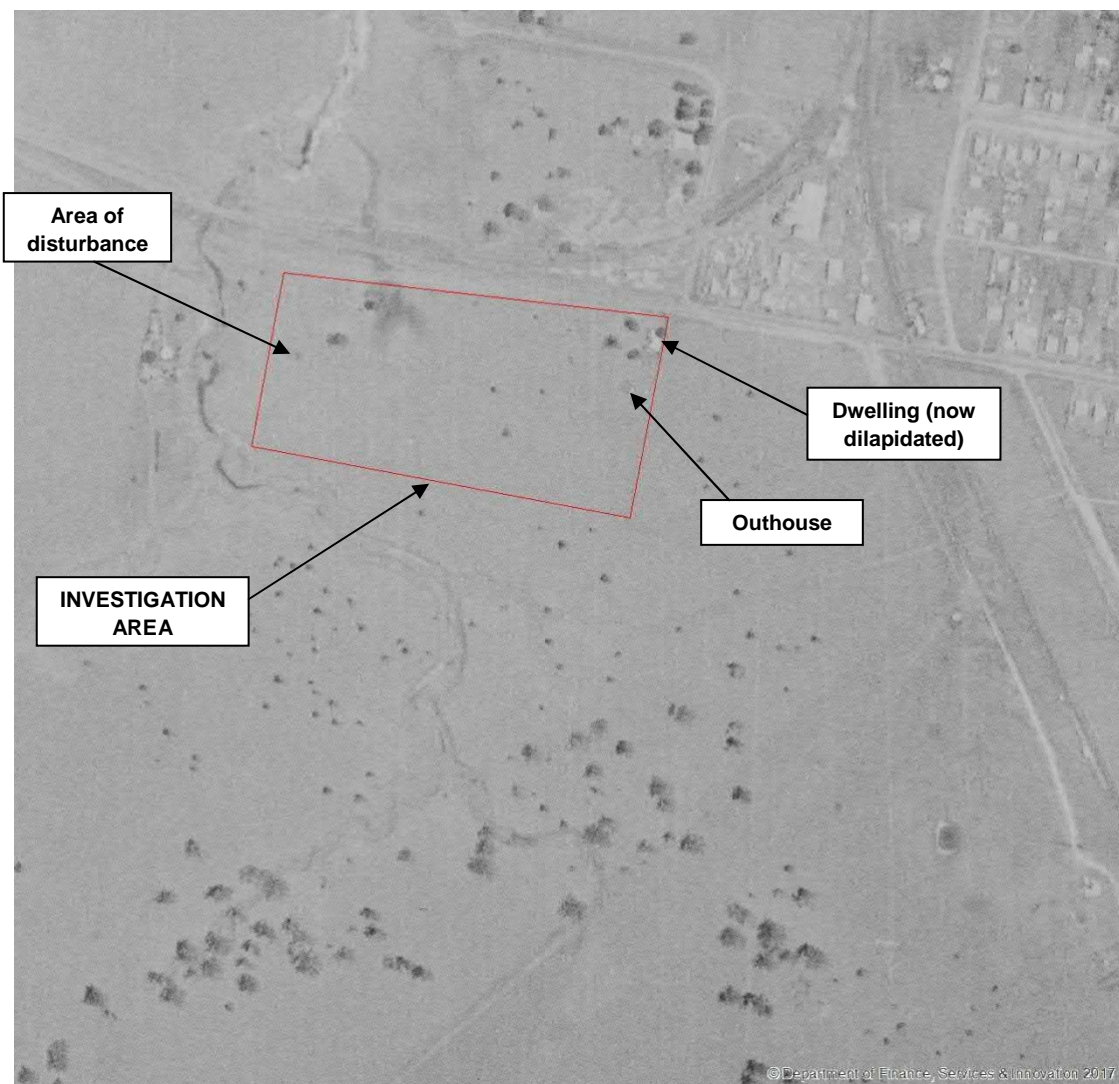


Figure 3. 1958 aerial imagery of investigation area

Figure 4 shows a 1967 aerial image sourced from the NSW Department of Finance, Services & Innovation. The image shows the low lying wet nature of the investigation area as tussock grasses cover most of the area forming a spotted pattern. It can be seen that structures were present in the north western area of the investigation area. The outhouse to the south of the dwelling is clearer in this image. It appears cattle grazing is still the predominant land use over the investigation area.

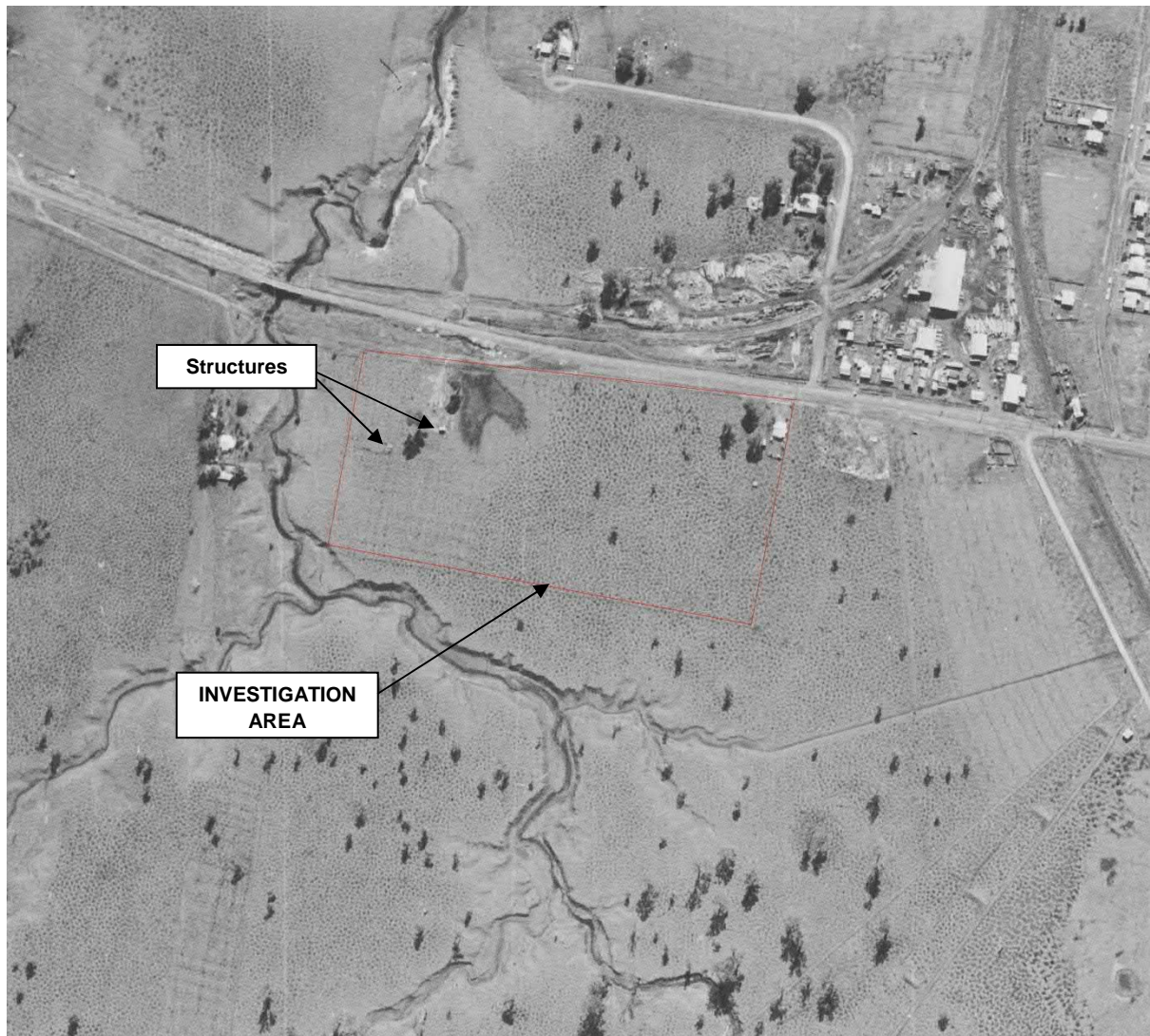


Figure 4. 1967 aerial imagery of investigation area

Figure 5 shows a 1971 aerial image sourced from the NSW Department of Finance, Services & Innovation. It appears that the structures present in the western area of the investigation clearly shown in the 1967 aerial image were removed by 1971. These may have been temporary structures of some form however their use is unknown.

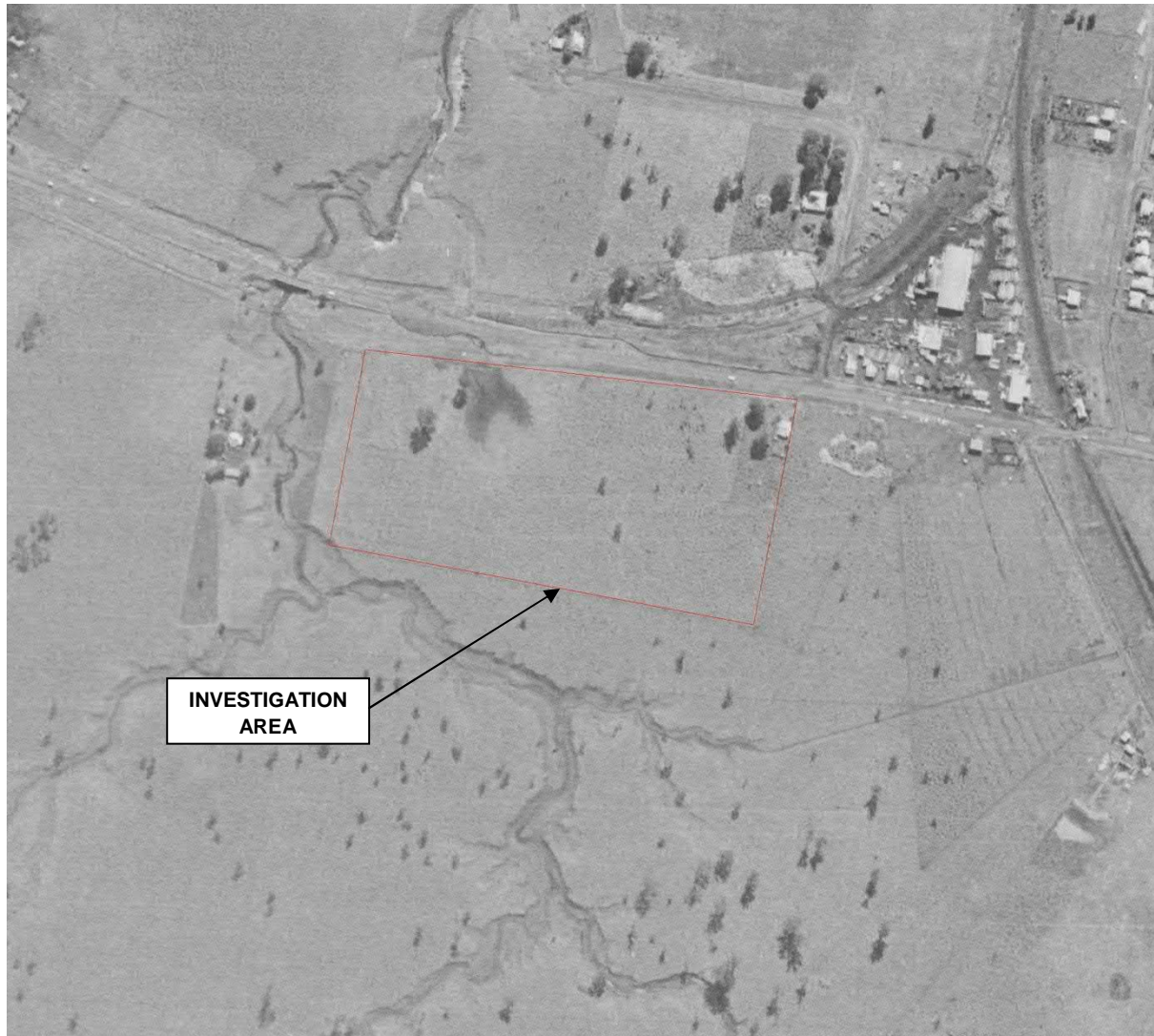


Figure 5. 1971 aerial imagery of investigation area

Figure 5 shows a 1979 aerial image sourced from the NSW Department of Finance, Services & Innovation. It appears that the investigation area remains relatively unchanged since 1971,



Figure 6. 1979 aerial imagery of investigation area

An excerpt from the 1986 Casino 9540-3-N CMA 1:25000 topographic map containing the investigation area and surrounding land is shown in figure 7. This map shows no land use occurring within the investigation area, only the dwelling being present in the north east corner of the investigation area. No cattle dips are shown as being present in reasonable proximity to the investigation area.



Figure 7. Topographic map excerpt.

Figure 8 presents an aerial image sourced from NSW Globe - Spatial Information Exchange (uses Google Earth base mapping). It can be seen that an area in the west of the investigation area is used for stockpiling soil or quarried material. A building is also present and is associated with this stockpiling. The remainder of the investigation area is being used for grazing cattle.

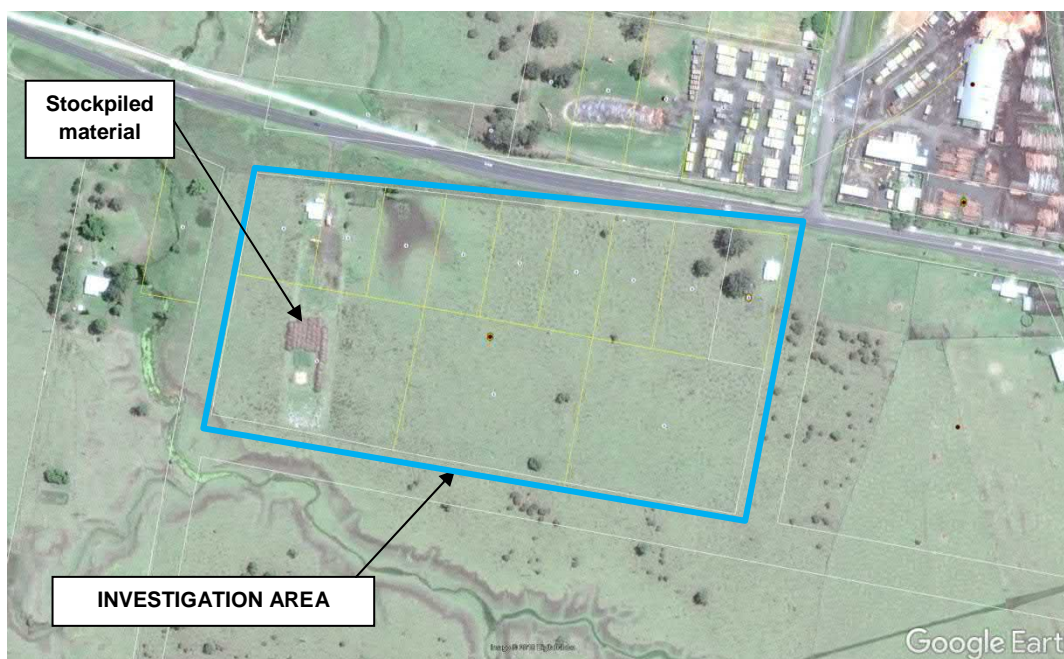


Figure 8. 2015 NSW Spatial Information Exchange.

5. SITE CONDITION AND SURROUNDING ENVIRONMENT

5.1. Site Investigation

Staff of this office investigated the subject site, which is accessed by the Bruxner Highway. The investigation occurred on the 3rd April 2018. An inspection of the existing dilapidated dwelling in the north east of the investigation area was undertaken.

5.2. General Site Condition

Generally the site is on flat low lying land. it is not known if the land is flood prone but it is not elevated across the investigation area. Vegetation of the investigation area consists of pasture grasses and occasional trees.

5.3. Signs of Contamination

From the site history and physical inspection a number of potential sources of contamination have been identified. The following sections describe these potential sources of contamination that will require detailed investigation as part of any development applications lodged in the future pertaining to the investigation area. **Exhibit No. 2** presents a plan highlighting the areas requiring detailed investigation.

5.3.1. Dilapidated dwelling and former structures

As these buildings were constructed prior to the 1960's it is likely that lead contamination is present. Lead based paints were in general use prior to the 1970's and weathering of the painted weatherboards often leads to lead contamination of the top soils generally up to five meters off the outside walls. Figure 9 shows the weathered nature of the paint on the outside walls. Soil testing will have to be undertaken as part of any detailed assessment to determine the extents and concentration of lead contamination around these buildings.



Figure 9. Weathered paint off dwelling.

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Asbestos is also suspected as being present in the dilapidated dwelling. Any future development requiring the disturbance of this building will require the fibro sheeting to be tested for confirmation of asbestos. Following confirmation a licensed asbestos removalist will be required to safely removal all asbestos. Following asbestos removal a asbestos clearance certificate will be required to be provided by a suitably qualified person so that the area can be cleared as safe. The removal and clearance of asbestos should occur first before any other parts of the building are disturbed. Figure 10 shows an example of the suspected asbestos.



Figure 10. Suspected asbestos in dilapidated dwelling.

From the site investigation piles of rubbish were also identified to the south and south west of the investigation area. Figure 11 shows an example of the main pile of rubbish, with building waste also being present in the burn pile in the left back ground of Figure 11. All rubbish will be required to be removed to a suitably licensed landfill prior to any construction certificates being issued as part of a DA process for future industrial use of this area.



Figure 11. Pile of rubbish adjacent to dwelling.

Other locations in the investigation area that were identified in the site history as once having structures on them should be subject to soil testing. A future DA for any of these areas should include a detailed investigation involving the testing of top soils for heavy metals including lead, and organochlorines and organophosphates that may have been used in termiticides. **Exhibit No. 2** identifies these areas.

5.3.2. Stockpiles & imported material

Prior to any industrial use of the investigation area the existing material that has been imported to the site must be determined to be uncontaminated. Figure 8 of this report shows an area being used for stockpiling soil or quarry material. It is likely that the area and volume of material has changed since this image however soil testing of any imported material or where it was stockpiled should be undertaken. **Exhibit No. 2** shows an indicative area requiring investigation however the final testing area will be determined by a site inspection at the time of detailed investigation.

6. CONCLUSION

A preliminary contaminated soil investigation was undertaken in the proposed development area of Lots 100-111 DP 755627, Bruxner Highway, Casino. As a planning proposal is being submitted for the rezoning of the land from RU1 Primary Production to IN1 General Industrial this preliminary contaminated land assessment was triggered under section 7 of SEPP 55.

A site history review was conducted for the investigation area. The history review found the following:

- Buildings and structures have been present on the investigation area. In particular a dilapidated dwelling is present which is suspected of being a source of lead contamination and asbestos;
- Cropping or intensive agricultural uses have not occurred;
- Fill material or quarry material has been stockpiled on an area of the property.

Due to the above findings, it was considered that a detail contaminated land investigation will be required for any development applications pertaining to these identified area will be required. **Exhibit No. 2** presents the areas that require detailed investigation. Despite the identification of potential contamination it is considered that the investigation area can be rezoned for industrial land use as the suspected contaminants are known to be able to be remediated or removed.

7. REFERENCES

Australian and New Zealand Environment and Conservation Council and National Health and Medical Research Council (1992). *Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites*.

Department of Urban Affairs and Planning and the Environment Protection Authority (1998). *Managing Land Contamination, Planning Guidelines SEPP 55 – Remediation of Land*.

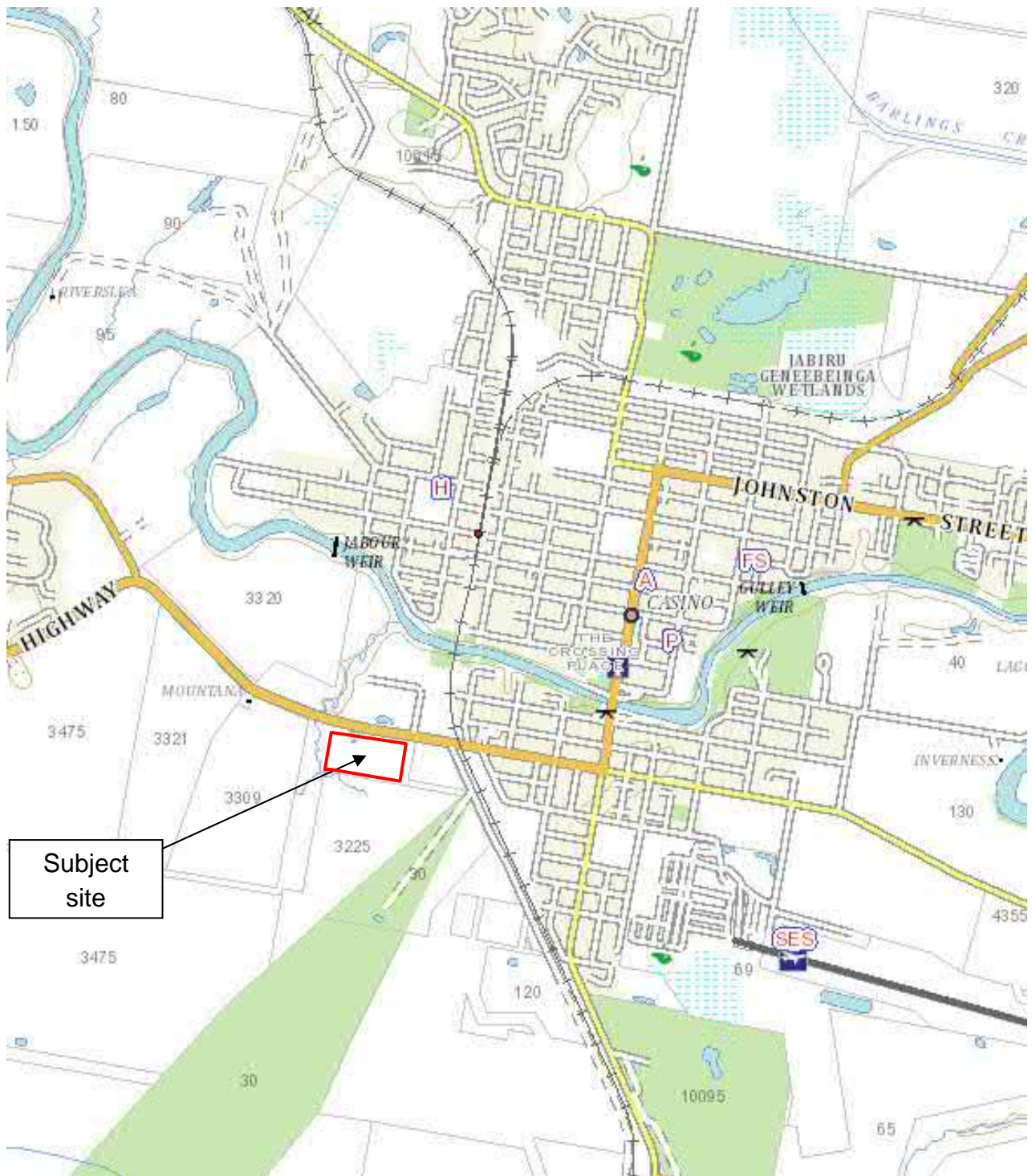
Hurfords Hardwood (2018). *The Hurford Story*. Sourced from <http://hardwood.com.au/> on the 19/4/2018.

National Environment Protection (Assessment of Site Contamination) Measure 1999 (2013).

NSW EPA (2000). *Guidelines for Consultants Reporting Contaminated Sites*. NSW EPA Sydney South

Greg Alderson & Associates

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Source: NSW LPI Spatial Information Exchange (2018)
Date 19/04/2018
Project No. 18342_sepp55.docx
Scale: NTS

GREG ALDERSON AND ASSOCIATES
ABN 58 594 160 789
43 Main Street Clunes NSW 2480
Phone: (02) 6629 1552
Email: office@aldersonassociates.com.au

Exhibit No. 1.
SITE LOCATION
Lots 100-111 DP 755627, Bruxner Highway, Casino



NOTES				THIS DRAWING IS CONFIDENTIAL AND IS THE PROPERTY OF GREG ALDERSON AND ASSOCIATES. IT MUST NOT BE DISCLOSED TO A THIRD PARTY, REPRODUCED, COPIED, OR LENT WITHOUT THE WRITTEN CONSENT OF THE PROPRIETOR.			
Area requiring detailed investigation for heavy metals, Organochlorines and Organophosphates. Visual inspection for asbestos required in fill materials and asbestos testing of fibrous sheeting testing required in dilapidated dwelling.				Z:\0085\18342_Santin Earthmoving\18342_sap055.dwg Tab: Layout1			
GREG ALDERSON & ASSOCIATES				Client: Santin Earthmoving			
ABN 58 594 160 789 43 Main Street Clunes NSW 2480 Ph: 02 6629 1552 Fax: 02 6629 1566 E: office@aldersonassociates.com.au Web: aldersonassociates.com.au				Site address: Lots 100-111 DP 755627 Bruxner Highway, Casino			
Drawn: DB		Source: Aerial Imagery from NSW Department of Finance, Services and Information (2017)		EXHIBIT NO: 2		Date: 19/04/19	
Scale: 1:1000		Original Size: A3		Project: PROPOSED REZONING		Revision: -	
Job Number: 18342							



Newton Denny Chapelle

SURVEYORS PLANNERS ENGINEERS

Attachment 3

Assessment against State Environmental Planning Policies

Assessment of State Environmental Planning Policies

State Environmental Planning Policy	Applies?	Comments
SEPP 1 Development Standards.	N/A	-
SEPP 19 Bushland in Urban Areas.	N/A	-
SEPP 21 Caravan Parks.	N/A	-
SEPP 30 Intensive Agriculture	N/A	-
SEPP 33 Hazardous & Offensive Development.	N/A	-
SEPP 36 Manufactured Home Estates.	N/A	-
SEPP 47 Moore Park Showground.	N/A	-
SEPP 50 Canal Estate Development.	N/A	-
SEPP 52 Farm Dams & Other Works in Land & Water Management Plan Areas.	N/A	-
SEPP 55 Remediation of Land.	Applies	A stage 1 SEPP 55 assessment has been completed by Greg Alderson & Associates which is contained within Attachment 2 .
SEPP 62 Sustainable Aquaculture.	N/A	-
SEPP 64 Advertising & Signage.	N/A	-
SEPP 65 Design Quality of Residential Flat Buildings.	N/A	-
SEPP 70 Affordable Housing (Revised Schemes).	N/A	-
SEPP (Affordable Rental Housing) 2009	N/A	-
SEPP (Building Sustainability Index: BASIX) 2004	N/A	-
SEPP (Coastal Management) 2018	N/A	-
SEPP (Educational Establishments and Child Care Facilities) 2017	N/A	-
SEPP (Exempt and Complying Development Codes) 2008	N/A	-
SEPP (Housing for Seniors or People with a Disability) 2004	N/A	-
SEPP (Infrastructure) 2007	N/A	In addressing Clause 104 – Traffic Generating Development the application relates to a planning proposal and therefore only a conceptual development layout has been presented in NDC Plan 4 which identifies a conceptual building envelope and internal road alignment. Future development within

State Environmental Planning Policy	Applies?	Comments
		this area will be subject to a future development application process which will determine the proposed number of subdivision lots and also the size/capacity of site specific land uses.
SEPP (Koala Habitat Protection) 2019		The Biodiversity Assessment contained within Attachment 7 addresses Koala Habitat.
SEPP (Integration and Repeals) 2016	N/A	
SEPP (Kosciuszko National Park – Alpine Resorts) 2007	N/A	-
SEPP (Kurnell Peninsula) 1989	N/A	-
SEPP (Mining, Petroleum Production and Extractive Industries) 2007	N/A	-
SEPP (Miscellaneous Consent Provisions) 2007	N/A	-
SEPP (Penrith Lakes Scheme) 1989	N/A	-
SEPP (Primary Production and Rural Development) 2019	Applies	<p>Reference should be made to the justified inconsistencies of Section 9.1 Directions 1.2 and 1.5 contained within Attachment 4 of the Planning Proposal.</p> <p>The Planning Proposal does not propose to rezone State Significant farmland identified within the Northern Rivers Farmland Protection Project Final Map 2005. The rezoning will involve 'regionally significant' farmland which has been justified against the relevant Section 9.1 Directions (Attachment 4).</p>
SEPP (State and Regional Development) 2011	N/A	-
SEPP (State Significant Precincts) 2005		
SEPP (Sydney Drinking Water Catchment) 2011	N/A	-
SEPP (Sydney Regional Growth Centres) 2006	N/A	-
SEPP (Three Ports) 2013	N/A	-
SEPP (Urban Renewal) 2010	N/A	-
SEPP (Vegetation in Non-Rural Areas) 2017		
SEPP (Western Sydney Employment Area) 2009	N/A	-
SEPP (Western Sydney Parklands) 2009	N/A	-



Attachment 4

Assessment against Section 9.1 Ministerial Directions

Assessment of S9.1 Ministerial Directions (Previously s.117 Directions)

Section 117 Direction	Applies?	Comments
1. Employment and Resources		
1.1 Business and Industrial Zones	Applies	<p>In relation to clause (4), the proposal is consistent with this direction for the following reasons:</p> <ul style="list-style-type: none"> • The objectives of the direction are satisfied. • The proposal will encourage employment growth on land identified as 'Proposed Employment Lands' within the Richmond Valley Council's 'Changes to Future Urban Growth Boundaries' document [Date 6 January 2015]. • The proposal retains the areas and locations of existing business and industrial zones within the Richmond Valley LGA. • The proposal does not reduce the total potential floor space area for employment uses and related public services in business zones. • The proposal does not reduce the total potential floor space area for industrial uses in industrial zones. • As submitted within the Planning Proposal report, the proposal is consistent with Direction 6 'Develop Successful Centres of Employment' of the NCRP 2036. In this regard the proposal will assist in delivering an adequate supply of employment land to support jobs growth. • As submitted against Question 3 in the Planning Proposal report, the Planning Proposal is consistent with the North Coast Regional Plan 2036. The land the subject to this planning proposal is identified within the North Coast Regional Plan 2036 as within an 'Urban Growth Area' and an 'Investigation Area - Employment Land'. <p>As noted above, concerning Council's strategic intent for urban release areas and employment lands, the subject land is identified as 'Proposed Employment Lands' within Richmond Valley Council's 'Changes to Future Urban Growth Boundaries' document [Date 6 January 2015].</p>
1.2 Rural Zones	Applies	<p>Justified Inconsistency</p> <p>The following grounds are submitted to justify the inconsistency so as to enable the rezoning of the land from RU1 Primary Production to IN1 General Industrial and to reduce the minimum subdivision lot size to 750m²:</p> <ul style="list-style-type: none"> • The proposal satisfies Direction 11: Protect and enhance productive agricultural lands' of the NCRP 2036 as submitted within the Planning Proposal report. • The subject land is identified as 'Proposed Employment Lands' within Richmond Valley Council's 'Changes to Future Urban Growth Boundaries' document [Date 6 January 2015];

		<ul style="list-style-type: none"> The subject land is identified within the North Coast Regional Plan 2036 as being within an 'Urban Growth Area' and an 'Investigation Area – Employment Land'. Upon review the historical land use history provided by Greg Alderson & Associates within Attachment 2, cropping or intensive agricultural uses have not occurred on the land. With regard to 'Important Farmland' we note that Section 9.1 Planning Direction No.5.3 (which relates to mapped Farmland of State and Regional Significance on the NSW Far North Coast) specifically does not apply to land identified as an 'urban growth area' within the North Coast Regional Plan 2036 therefore does not apply to the subject land in this instance.
1.3 Mining, Petroleum Production and Extractive Industries	N/A	
1.4 Oyster Aquaculture	N/A	-
1.5 Rural Lands	Applies	<p>Justified inconsistency</p> <p>The following points of justification are submitted:</p> <ul style="list-style-type: none"> The Planning Proposal is consistent with the North Coast Regional Plan 2036 as identified within Question 3 of this Planning Proposal. The subject land is identified as being within an 'Urban Growth Area' and an 'Investigation Area – Employment Land'. In regards to Council's strategic intent for urban release areas and employment lands, the subject land is identified as 'Proposed Employment Lands' within Richmond Valley Council's 'Changes to Future Urban Growth Boundaries' document [Date 6 January 2015]. The land the subject of this Planning Proposal is identified as Regionally Significant Farmland within the Northern Rivers Farmland Protection Project Final Map. However, the NCRP 2036 has identified the land as being within an 'Urban Growth Area' and an 'Investigation Area – Employment Land'. Accordingly, it is expected that in the future the Farmland Protection mapping will be updated to reflect the land as 'committed urban uses' as opposed to significant farmland. The rezoning of the land to IN1 will enable development on the site such as rural industry that will support and complement the agricultural sector. This may include agricultural produce industries or businesses that provide for the regular servicing or repairing of plant or equipment used for the purposes of a rural enterprise. The proposal satisfies Direction 11: Protect and Enhance Productive Agricultural Lands of the NCRP 2036 as submitted within the Planning Proposal report.

		<ul style="list-style-type: none"> • The proposal can adequately justify the inconsistency with Ministerial Direction 9.1 (previously S117) – Direction 1.2 Rural Zones. • Section 9.1 Planning Direction No.5.3 (which relates to mapped Farmland of State and Regional Significance on the NSW Far North Coast) specifically does not apply to land identified as an 'urban growth area' within the North Coast Regional Plan 2036 therefore does not apply to the subject land in this instance. • The relevant site and surrounding environmental aspects, natural and physical constraints have been identified within this report. Environmental technical assessment reports have been completed to confirm the suitability of the land for future industrial development and subdivision. The following reports have been completed to satisfy the Gateway Determination conditions: <ul style="list-style-type: none"> - A flood impact assessment (completed by Engeny); - Biodiversity Assessment (completed by GeoLink); - Traffic Impact Assessment (completed by Ardill Payne) - Aboriginal Cultural Heritage Assessment (completed by Everick Heritage Pty Ltd) • No issues have been identified concerning cultural heritage impacts. • Biodiversity and ecological values of the site have been addressed within the Biodiversity Assessment completed by GeoLink for the Planning Proposal. • Regarding the 'right to farm', given the strategic designation of the land identified earlier, the proposal is not considered to fragment or adversely impact on any existing agricultural land uses or reduce the potential long term viability of agricultural activity within the locality. • The proximity of the land to residential land uses not associated with the development, combined with the opportunity to afford industrial land use separation buffers will reduce the potential for future land use conflicts. • Social and economic impacts have been identified within this Planning Proposal. • SEPP (Primary Production and Rural Development) 2019 is considered in the Assessment Against State Environmental Planning Policies in Attachment 3 of the Planning Proposal. • Services to the development have been considered and addressed within Question 10 of this Planning Proposal.
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2. Environment and Heritage		
2.1 Environment Protection Zones	N/A	-
2.2 Coastal Management	N/A	-
2.3 Heritage Conservation	N/A	No issues are raised concerning cultural heritage matters having regard to the information provided above within this Planning Proposal under Question 8.
2.4 Recreation Vehicle Areas	N/A	-
2.5 Application of E2 and E3 Zones and Environmental Overlays in Far North Coast LEP's	N/A	-
3. Housing, Infrastructure and Urban Development		
3.1 Residential Zones	N/A	-
3.2 Caravan Parks and Manufactured Home Estates	N/A	-
3.3 Home Occupations	N/A	-
3.4 Integrated Land Use and Transport	Applies	<p>The proposal is consistent with the relevant location and design guidelines applicable to industrial development contained within the document 'Improving Transport Choice' as follows:</p> <ul style="list-style-type: none"> • The proposed industrial estate is located on the southern fringe of the Casino urban area. The proposed IN1 zoned estate will have capacity to: <ul style="list-style-type: none"> ○ contain industries that have legitimate needs for land and freight movement, and those with low employment densities; ○ support smaller, modern, light industrial uses; ○ design and provide an internal street network so as to be permeable for buses and pedestrians; ○ provide for pedestrian amenity within the internal street network such as footpaths and bus stops; ○ employ minimum setbacks from the street and between adjoining buildings; ○ design building layouts within the industrial lots so as to enable room for expansion, and staff and visitor parking can be accommodated at the rear of the lots.

		<p>The proposal is consistent with the relevant aims and objectives of 'The Right Place for Business and Services' document as follows:</p> <ul style="list-style-type: none"> • The subject site is not located within an isolated area. In this regard the proposal provides for an extension of the existing IN1 General Industrial zone situated on the south western fringe of the Casino urban area. An existing public bus route (Casino Bus Service – Gays Hill 671) already runs past the site to service the Gays Hill residential estate and discussion may be held with the service provider with respect to adding the new industrial estate to that particular route; • The adaption of the public bus route to the industrial estate will: <ul style="list-style-type: none"> ○ encourage people to travel on public transport to reduce car travel and reliance on cars; ○ minimise dispersed trip generating development that can only be accessed by cars. • The rezoning will create an industrial estate that enables the opportunity of undertaking a range of activities and services that are permissible within the IN1 General Industrial zone; • In response to Section E 'Application of the Policy to Rezoning and Development Assessment' in the Explanatory Notes section, the following is submitted: <ul style="list-style-type: none"> ○ The subject land is identified as 'Proposed Employment Lands' within Council's strategic document 'Changes to Future Urban Growth Boundaries' (Dated 6 January 2015); ○ The above referenced document identifies that the land can be readily serviced.
3.5 Development Near Licensed Aerodromes	N/A	-
3.6 Shooting Ranges	N/A	The south eastern corner of the subject land is located in the order of atleast 250 metres from the land occupied by the Casino Rifle Club which is located to the south east. In this regard, the land the subject of this Planning Proposal is not directly adjoining or adjacent to the Casino Rifle Club site.
4. Hazard and Risk		
4.1 Acid Sulfate Soils	N/A	The subject site is not mapped as containing Acid Sulfate Soils within the RVLEP 2012 mapping.
4.2 Mine Subsidence and Unstable Land	N/A	The subject site is not mapped as containing areas of landslide risk within the RVLEP 2012 mapping.

4.3 Flood Prone Land	Applies	<p>Justified Inconsistency</p> <p>The site is mapped as being flood prone.</p> <p>Clause (5) of the s9.1 direction states that a planning proposal must not rezone land within the flood planning areas from rural to industrial.</p> <p>Clause (6) of the s9.1 direction states that a planning proposal must not contain provisions that apply to the flood planning areas which:</p> <p><i>(a) Permit development in floodway areas;</i></p> <p><i>(b) Permit development that will result in significant flood impacts to other properties</i></p> <p><i>(c) Permit a significant increase in the development of that land</i></p> <p><i>(d) Are likely to result in a substantially increased requirement for government spending on flood mitigation measures, infrastructure or services, or</i></p> <p><i>(e) Permit development to be carried out without development consent except for the purposes of agriculture (not including dams, drainage canals, levees, buildings or structures in floodways or high hazard areas), roads or exempt development.</i></p> <p>To justify the inconsistency to rezone the land from RU1 Primary Production to IN1 General Industrial and to enable a reduced minimum lot size of 750m², the following is submitted:</p> <ul style="list-style-type: none"> Richmond Valley Council has adopted the Casino Flood Plain Risk Management Plan and Part H-1 Flood Planning of the Richmond Valley Development Control Plan which applies various design controls associated with the flood characteristics of the site. A future development application will need to address these provisions to the satisfaction of the consent authority. The land is situated within the Casino Floodplain hazard with the flood hazard comprising a combination of Low Hazard, High Depth Hazard, and Rare High Floodway Hazard. Pre-lodgement consultation with RVC has identified a 1 in 20 year flood level of RL 24.6 metres AHD and 1 in 100 year flood level of RL 25.9 metres AHD. The subject land ranges between approximately RL 24.25 – 25.25 metres AHD (LIDAR data). The Richmond Valley DCP requires industrial and commercial development to have a floor level located above the 1 in 100 year ARI flood level. Accordingly the land will require filling to comply with the requirements of the Casino Floodplain management plan. A Flood Impact Assessment has been completed by Engeny Water Management and can be found within Attachment 8. Engeny note some limitations of Councils existing flood model due to the age of the model and the progression of technology. As suggested by NDC, Council has agreed to adopt the RMS Pacific Highway upgrade flood mitigation objectives. Based on the flood impacts outlined in Figure 1 of the Engeny report, localised impacts
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		of 50mm in accordance with RMS objectives can be expected in some residential areas. The majority of the impacts are below this level.
4.4 Planning for Bushfire Protection	N/A	The subject land is not mapped as being bushfire prone on Council's adopted bushfire hazard map.
5. Regional Planning		
5.1 Implementation of Regional Strategies	Revoked	
5.2 Sydney Drinking Water Catchments	N/A	-
5.3 Farmland of State and Regional Significance on the NSW Far North Coast	N/A	Pursuant to clause (2) this Direction does not apply as the subject land is contained within the "urban growth area" mapped in the NCRP 2036.
5.4 Commercial and Retail Development along the Pacific Highway, North Coast	Revoked	-
5.5 Development in the Vicinity of Ellalong, Paxton and Milfield (Cessnock LGA).	Revoked	-
5.6 Sydney to Canberra Corridor	Revoked	-
5.7 Central Coast	Revoked	-
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	Applies	The consistency of the proposal with the North Coast Regional Plan 2036 is provided above within Section 2 under Question 3 of the Planning Proposal.
6. Local Plan Making		
6.1 Approval and Referral Requirements	Applies	No referral or concurrence requirements are proposed within the Planning Proposal.
6.2 Reserving Land for Public Purposes	N/A	-
6.3 Site Specific Provisions	N/A	-
7. Metropolitan Planning		
7.1 Implementation of A Plan for Growing Sydney	N/A	-
7.2 Implementation of	N/A	-

Greater Macarthur Land Release Investigation		
7.3 Parramatta Road Corridor Urban Transformation Strategy	N/A	-
7.4 Implementation of North West Priority Growth Area Land Use and Infrastructure Implementation Plan	N/A	-
7.5 Implementation of Greater Parramatta Priority Growth Area Interim Land Use and Infrastructure Implementation Plan	N/A	-
7.6 Implementation of Wilton Priority Growth Area Interim Land Use and Infrastructure Implementation Plan	N/A	-
7.7 Implementation of Glenfield to Macarthur Urban Renewal Corridor	N/A	-



Newton Denny Chapelle

SURVEYORS PLANNERS ENGINEERS

Attachment 5

AHIMS

Damian Chapelle

Date: 05 March 2018

Po Box 1138

LISMORE New South Wales 2480

Attention: Damian Chapelle

Email: dchapelle@newtondennychapelle.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 104, DP:DP755627 with a Buffer of 1000 meters, conducted by Damian Chapelle on 05 March 2018.

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. *

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 \(http://www.nsw.gov.au/gazette\)](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.



Attachment 6

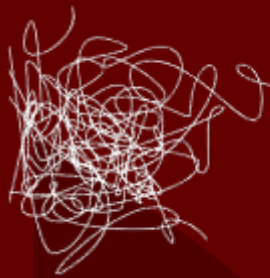
Aboriginal Cultural Heritage Assessment

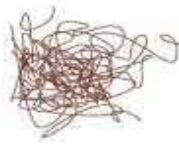


3243 BRUXNER HIGHWAY
CASINO, NSW
ABORIGINAL CULTURAL HERITAGE ASSESSMENT

PREPARED FOR SANTIN FAMILY TRUST

EVERICK HERITAGE
FEBRUARY 2020





Report Reference:

Hill, T. and M. Finlayson 2020 *Bruxner Highway, Casino, NSW: Aboriginal Cultural Heritage Assessment (February 2020)*. Everick Heritage Pty Ltd. Unpublished report prepared for Santin Family Trust.

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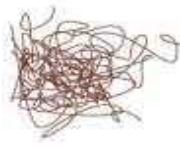
E: info@everick.com.au

Document Status:

Rev No.	Version	Author(s)	Amended Sections	Date	Authorised
5	Revisions	T. Hill	3, Appendix 1	6.02.2020	T. Hill

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EXECUTIVE SUMMARY

Everick Heritage Pty Ltd ('the Consultant') was commissioned by Santin Family Trust ('the Proponent') to undertake a cultural heritage assessment for the rezoning of land at 3243 Bruxner Highway, Casino, NSW (the Project). The Project Area is identified as Lots 100 – 111 DP755627 comprising approximately 6.9ha. The purpose of the Planning Proposal is to rezone the Project Area from rural (RU1) to industrial (IN1 – General Industrial) under the provisions of the *Richmond Valley Local Environmental Plan 2012*.

The intent of this cultural heritage assessment is to assess the suitability of the amended land use proposal in relation to potential impacts to Aboriginal (Indigenous) and non-Aboriginal (non-Indigenous) heritage. Should potentially significant heritage be identified, the assessment will consider higher level planning mechanisms through which such heritage can be adequately managed at the planning proposal and at the development application stage.

The brief for this project was to undertake a Cultural Heritage Assessment of a suitable standard to be submitted in support of the Project. In accordance with the relevant administrative and legislative standards for New South Wales (see Section 2 below), the methods employed in this assessment included:

- a) a search of relevant heritage registers;
- b) review of historical aerials;
- c) a site inspection conducted with a representative of the Casino Boolangle Local Aboriginal Land Council ('CBLALC');
- d) assessments of archaeological significance and impact; and
- e) report on findings and recommended management strategies.

The methods used for this assessment are in compliance with the Office of Environment and Heritage ('OEH') *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (2010) and all relevant legislation as described in Section 2 of this Report. The following report complies with the accepted methodology for undertaking a Due Diligence Assessment under the *National Parks and Wildlife Act 1974* ('NPW Act').

A basic search which was conducted on 27 May 2019 of the OEH Aboriginal Heritage Information Management System ('AHIMS') for the Project Area and a 1000 m radius surrounding the area (Service ID 246792). The search returned no (0) Aboriginal heritage listings. On the basis of this result, an extensive search was not conducted.

The Project Area is within the area administered for Aboriginal Cultural Heritage purposes by the Casino Boolangle LALC. A pedestrian survey for Aboriginal Cultural Heritage of the Project Area was undertaken by Brendon Torrens, Sites Officer of the Casino Boolangle LALC, with Principal (Coffs Harbour) Tim Hill of Everick Heritage, on the 28 June 2019.



No Aboriginal sites were identified during the survey. The areas of exposure and the subsequent proportion of the survey unit where site detection is possible, are low for archaeological assessments but common in this locality, where exposure percentages of less than 10% are the norm (Figure 8, Figure 9 and Figure 10). However, having consideration for the predictive model and views of Brendon Torrens on the potential for the Project Area to contain Aboriginal sites it is not considered that the significant constraint from grass cover would change the outcome of the site inspection. As such it is not considered that additional consultation with the Aboriginal community or archaeological investigation is required.

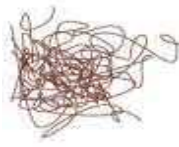
The site inspection identified a derelict residential dwelling which is consistent with the Edwardian or interwar period architectural style. The dwelling is derelict however is substantially intact. The interior appears to be close to original, with the only addition being the enclosure of the front verandah with a fibro sheet and aluminium louvre windows. The dwelling has a substantial rear skillion section above the kitchen and laundry. It is not considered that this dwelling is exemplar of the architectural style. Further, houses from the inter-war period are not uncommon in Casino. Based on the site inspection it is not considered that the dwelling would meet the local heritage significance criteria.

Having regard to the low archaeological potential for the Project Area and the outcomes of consultation with the Casino Boolangle LALC, the following recommendations are cautionary in nature and considered sufficient for application in both planning proposal and development application stages.

Recommendation 1: Aboriginal Objects Find Procedure

It is recommended that if it is suspected that Aboriginal Cultural Heritage has been uncovered as a result of development activities within the Project Area:

- a) work in the surrounding area is to stop immediately;
- a) a temporary fence is to be erected around the site, with a buffer zone of at least 10 metres around the known edge of the site;
- b) an appropriately qualified archaeological consultant is to be engaged to identify the material;
- c) if the material is found to be of Aboriginal origin, the Aboriginal community is to be consulted in a manner as outlined in the OEH guidelines: *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (2010); and
- d) should the works be deemed to have harmed the Aboriginal objects the OEH should be notified immediately via the EPA Enviro Hotline.



Recommendation 2: Aboriginal Human Remains

Although it is unlikely that human remains will be located at any stage during earthworks within the Project Area, should this event arise it is recommended that all works must halt in the immediate area to prevent any further impacts to the remains. The site should be cordoned off and the remains themselves should be left untouched. The nearest police station (Casino), the Casino Boolangle Local Aboriginal Land Council and the OEH Regional Office (Coffs Harbour) are all to be notified as soon as possible. If the remains are found to be of Aboriginal origin and the police do not wish to investigate the site for criminal activities, the Aboriginal community and the OEH should be consulted as to how the remains should be dealt with. Work may only resume after agreement is reached between all notified parties, provided it is in accordance with all parties' statutory obligations.

It is also recommended that in all dealings with Aboriginal human remains, the Proponent should use respectful language, bearing in mind that they are the remains of Aboriginal people rather than scientific specimens.

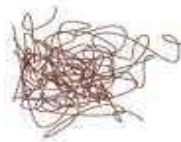
Recommendation 3: Conservation Principles

It is recommended that all effort must be taken to avoid any impacts on Aboriginal Cultural Heritage values at all stages during the development works. If impacts are unavoidable, mitigation measures should be negotiated between the Proponent, OEH and the Aboriginal community.



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DEFINITIONS

The following definitions apply to the terms used in this report:

Aboriginal Object means any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.

Aboriginal Place means any place declared to be an Aboriginal place (under s. 84 of the NPW Act) by the Minister administering the NPW Act, by order published in the NSW Government Gazette, because the Minister is of the opinion that the place is or was of special significance with respect to Aboriginal culture. It may or may not contain Aboriginal Objects.

ACHCRP Guidelines means the OEH *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (2010).

AHIMS means the Aboriginal Heritage Information Management System.

AHIP means Aboriginal Heritage Impact Permit.

Archaeological Code of Practice means the OEH *Archaeological Code of Practice for the Investigation of Aboriginal Objects in New South Wales* (2010).

Due Diligence Code means the OEH *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (2010).

CBLALC means Casino Boolangle Local Aboriginal Land Council.

GSV means Ground Surface Visibility.

LEP means the Local Environment Plan.

NDC means Newton Denny Chapelle Pty Ltd.

NPW Act means the *National Parks and Wildlife Act 1974* (NSW).

NPW Regulations means the *National Parks and Wildlife Regulations 2009* (NSW).

OEH means the New South Wales Office of Environment and Heritage.

Project Area means the land subject to this assessment, Lots 100 – 111 DP755627 along Bruxner Highway, Casino.

Proposed Works means all activities associated with and as an outcome of the planning proposal to which this report relates.

The Proponent means Santin Family Trust.

RVC means the Richmond Valley Council.

The Project means the Planning Proposal to rezone the Project Area from rural (RU1) to industrial (IN1 – General Industrial) under the provisions of the *Richmond Valley Local Environmental Plan 2012*.

The Consultant means qualified archaeological staff and/or contractors of Everick Heritage Pty Ltd.



1. INTRODUCTION

1.1 Purpose of the Archaeological Investigation

Everick Heritage Pty Ltd ('the Consultant') was commissioned by the Santin Family Trust ('the Proponent') to undertake a Cultural Heritage Assessment for the rezoning of approximately 6.9ha of land at 3243 Bruxner Highway, Casino, NSW (the Project). The Project Area is identified as Lots 100 – 111 DP755627 (Figure 1).

The intent of this cultural heritage assessment is to assess the suitability of the amended land use proposal in relation to potential impacts to Aboriginal Cultural Heritage and non-Aboriginal Cultural Heritage. Should potentially significant heritage be identified, the assessment will consider higher level planning mechanisms through which such heritage can be adequately managed at the planning proposal and at the development application stage.

1.2 Description of Planning Proposal

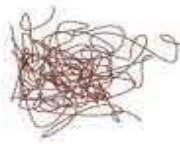
The purpose of the planning proposal is to rezone the Project Area being 3243 Bruxner Highway from rural (RU1) to industrial (IN1 – General Industrial) under the provisions of the *Richmond Valley Local Environmental Plan 2012*.

Whilst the current proposal relates to a planning proposal, the impact assessment assumes that future development applications may result in the total removal of soils with the potential to contain Aboriginal Objects. The heritage management recommendations have been structured with this level of impact in mind. Having regard to the low potential for the Project Area to contain Aboriginal Objects, the recommendations have been structured to address the rezoning application and any subsequent Development Applications.

1.3 Proponent, Project Brief & Methodology

The brief for this project was to undertake a Cultural Heritage Assessment of a suitable standard to be submitted in support of the Project. In accordance with the relevant administrative and legislative standards for New South Wales (see Section 2 below), the methods employed in this assessment included:

- a) a search of relevant heritage registers;
- b) a site inspection conducted with a representative of the Casino Boolangle Local Aboriginal Land Council ('LALC');
- c) assessments of archaeological significance and impact; and
- d) report on findings and recommended management strategies.



The methods used for this assessment are in compliance with the Office of Environment and Heritage ('OEH') *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (2010) and all relevant legislation as described in Section 2 of this Report. The following report complies with the accepted methodology for also undertaking a Due Diligence Assessment under the *National Parks and Wildlife Act 1974* ('NPW Act').

1.4 Report Authorship

The desktop study was undertaken by Everick Principal Tim Hill (Coffs Harbour) and Archaeologist Matt Finlayson. The field inspection was conducted by Tim Hill. This report was written by Tim Hill, Adrian Piper and Matt Finlayson. Technical review was completed by Tim Hill.

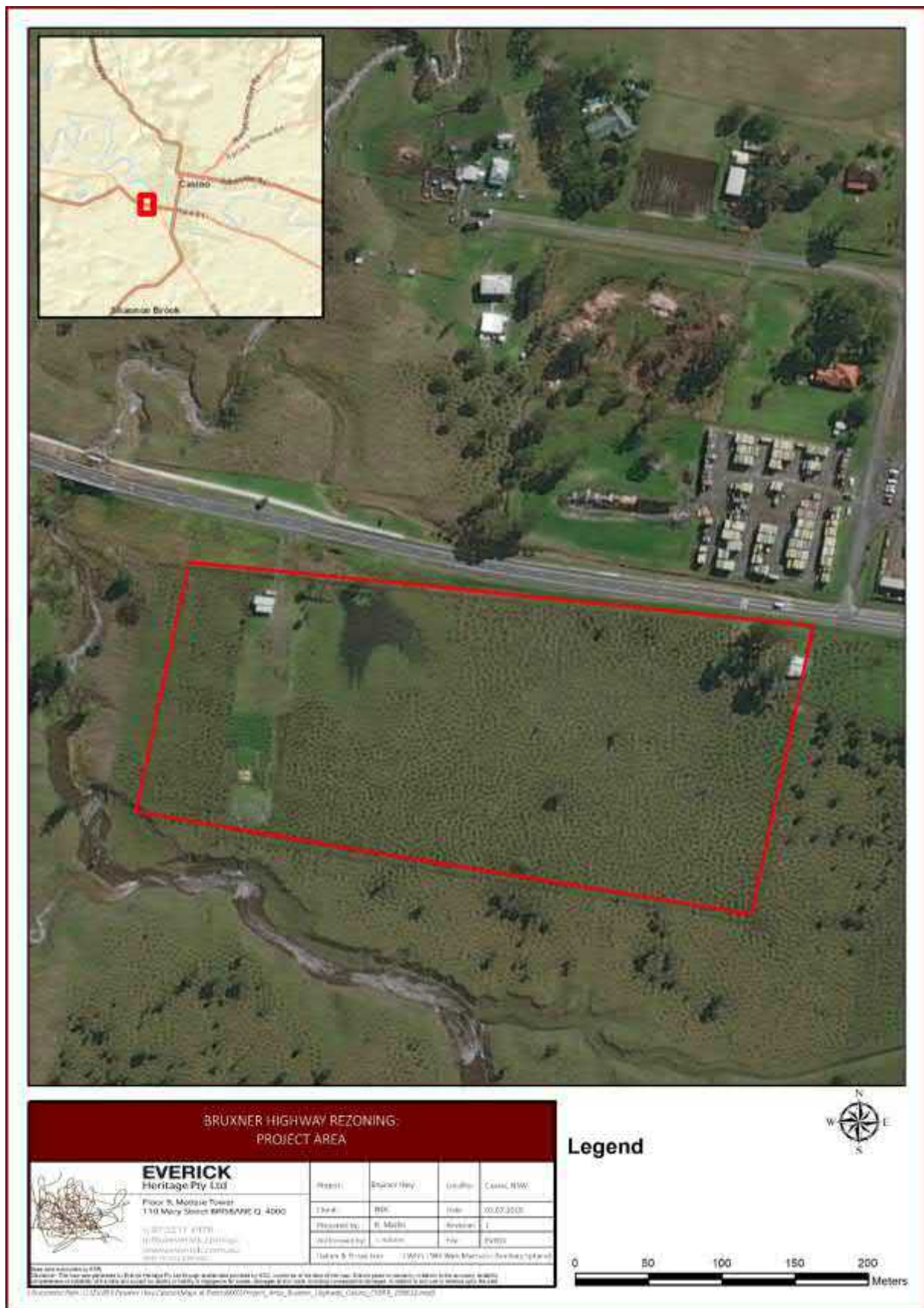
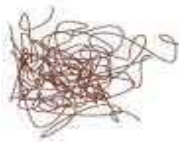
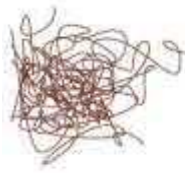


Figure 1: Regional Location of Project Area.



Figure 2: Planning Proposal.



2. LEGISLATIVE AND PLANNING CONTEXT

The primary State legislation concerning cultural heritage in New South Wales are the NPW Act 1974 (NSW) and the Council Local Environment Plans and Development Control Plans. The Commonwealth also has a role in the protection of nationally significant cultural heritage through the *Environmental Protection and Biodiversity Conservation Act 1999* (Cth), *The Protection of Movable Cultural Heritage Act 1986* (Cth) and the *Historic Shipwrecks Act 1976* (Cth).

For the purposes of this assessment the State and local legislation are most relevant. The consent authorities will be the Richmond Valley Council and, where a referral agency is required, the OEH. Approval from the OEH will also be required should the Project impact on identified Aboriginal Objects. The information below lists the legislative and policy framework within which this assessment is set.

2.1 The National Parks and Wildlife Act 1974 (NSW)

The *National Parks and Wildlife Act 1974* (NSW) (NPW Act) is the primary legislation concerning the identification and protection of Aboriginal cultural heritage. It provides for the management of both Aboriginal Objects and Aboriginal Places. Under the NPW Act, an Aboriginal Object is any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area, regardless of whether the evidence of habitation occurred before or after non-Aboriginal settlement of the land. This means that every Aboriginal Object, regardless of its size or seeming isolation from other Objects, is protected under the Act.

An Aboriginal Place is an area of particular significance to Aboriginal people which has been *declared* an Aboriginal Place by the Minister. The drafting of this legislation reflects the traditional focus on Objects, rather than on areas of significance such as story places and ceremonial grounds. However, a gradual shift in cultural heritage management practices is occurring towards recognising the value of identifying the significance of areas to Indigenous peoples beyond their physical attributes. With the introduction of the *National Parks and Wildlife Amendment Act 2010* (NSW) the former offence provisions under Section 86 of ‘disturbing’, ‘moving’, ‘removing’ or ‘taking possession’ of Aboriginal Objects or Places have been replaced by the new offence of ‘harming or desecrating’. The definition of ‘harm’ is ‘destroying, defacing or damaging an Object’. Importantly, in the context of the management recommendations in this assessment, harm to an Object that is ‘trivial or negligible’ will not constitute an offence.

The penalty for individuals who inadvertently harm Aboriginal Objects has been set at up to \$55,000, while for corporations it is \$220,000. Also introduced is the concept of ‘*circumstances of aggravation*’ which allows for harsher penalties (up to \$110,000) for individuals who inadvertently harm Aboriginal heritage in the course of



undertaking a commercial activity or have a record for committing similar offences. For those who knowingly harm Aboriginal cultural heritage, the penalty will rise substantially. The maximum penalty will be set at \$275,000 or one year imprisonment for individuals, while for corporations it will rise to \$1,100,000.

Where a land user has or is likely to undertake activities that will harm Aboriginal Objects, the Director General (OEH) has a range of enforcement powers, including stop work orders, interim protection orders and remediation orders. The amended regulations also allow for a number of penalties in support of these provisions. The NPW Act also now includes a range of defense provisions for unintentionally harming Aboriginal Objects:

- e) Undertaking activities that are prescribed as 'Low Impact'.
- f) Acting in accordance with the new Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (2010).
- g) Using a consulting archaeologist who correctly applies the OEH Code of Practice for Archaeological Conduct in New South Wales (2010) ('Archaeological Code of Practice').
- h) Acting in accordance with an Aboriginal Heritage Impact Permit ('AHIP').

The regulations allow for a range of low impact activities to be undertaken without the need to consult the OEH or a consulting archaeologist. Generally, those who undertake activities of this nature will not be committing an offence, even if they inadvertently harm Aboriginal Objects. These activities include:

- a) Maintenance – For example on existing roads and tracks, or on existing utilities such as underground power cables and sewage lines.
- b) Farming and Land Management – for land previously disturbed, activities such as cropping, grazing, bores, fencing, erosions control etc. *
- c) Removal of dead or dying vegetation - only if there is minimal ground disturbance.
- d) Environmental rehabilitation – weed removal, bush regeneration.
- e) Development in accordance with a Development Certificate issued under the EPA Act 1979 (provided the land is previously disturbed). *
- f) Downhole logging, sampling and coring using hand held equipment.
- g) Geochemical surveying, seismic surveying, costeaning or drilling. *

* This defense is only available where the land has been disturbed by previous activity. Disturbance is defined as a clear and observable change to the land's surface, including but not limited to land disturbed by the following: soil ploughing; urban development; rural infrastructure (such as dams and fences); roads, trails and walking tracks; pipelines, transmission lines; and storm water drainage and other similar infrastructure.



2.2 Due Diligence Code of Practice for the Protection of Aboriginal Objects 2010

The Due Diligence Code has been applied in Section 10 of this assessment. It operates by posing a series of questions for land users before they commence development. These questions are based around assessing previous ground disturbance. An activity will generally be unlikely to harm Aboriginal Objects where it:

- a) will cause no additional ground disturbance; or
- b) is in a developed area; or
- c) in a significantly disturbed area.

Where these criteria are not fulfilled, further assessment for Aboriginal Cultural Heritage will typically be required prior to commencing the activity.

2.3 The ACHCRP (2010)

The *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (2010) ('ACHCRP') provide an acceptable framework for conducting Aboriginal community consultation in preparation for impacts to Aboriginal cultural heritage. Proponents are required to follow them where a Project is likely to impact on cultural heritage and where required by Council. It is recommended by the OEH that all cultural heritage assessments involve this level of consultation, although it is not strictly a requirement unless it meets the above criteria. The ACHCRP Guidelines typically take a minimum of 90 days to complete. However, in complicated Projects this period may need to be extended by several months. The Guidelines require public notice of the assessment, preparation of a proposed methodology, undertaking site meetings and excavations where required, the production of a draft report, which is distributed to the registered Aboriginal groups and the production of a final report.

Although not strictly required, a thorough consultation process will treat the ACHCRP Guidelines as a minimum standard of community consultation. Generally, consultants must go to further effort to identify the significance of a given site to the Aboriginal community. This will likely include undertaking additional site inspections if requested by Aboriginal stakeholders, fully resourcing the community by providing copies of past archaeological and environmental assessments in the region and meeting with community members to seek their opinions of the site.



2.4 The Richmond Valley Local Environmental Plan 2012 and Richmond Valley Development Control Plan 2012

The Richmond Valley Local Environmental Plan 2012 ('LEP') provides statutory protection for items already listed as being of heritage significance (Schedule 5 – Environmental Heritage), that fall under the ambit of the *Heritage Act 1977* (NSW) and Aboriginal Objects under the *National Parks and Wildlife Act 1974* (NSW). It ensures that essential best practice components of the heritage decision making process are followed.

For listed heritage items, relics and heritage conservation areas, the following action can only be carried out with the consent of the Richmond Valley Shire Council:

- a) demolishing, defacing, damaging or moving a heritage item or a building, work, relic, tree or place within a heritage conservation area, or
- b) altering a heritage item or a building, work or relic within a heritage conservation area by making structural changes to its exterior, or
- c) altering a heritage item or a building, work or relic within a heritage conservation area by making non-structural changes to the detail, fabric, finish or appearance of its exterior, except changes resulting from any maintenance necessary for its ongoing protective care, which does not adversely affect its heritage significance, or
- d) moving a relic, or excavating land for the purpose of discovering, exposing or moving a relic, or
- e) erecting a building on, or subdividing, land on which a heritage item is located or which is within a heritage conservation area.

In addition, Council may not grant development consent without considering whether the lands contain potential Aboriginal archaeological deposits (Part 5.10 and Schedule 2).

The *Richmond Valley Development Control Plan 2012* (DCP 2012) refers to visual impacts to commercial and residential built heritage. The principle contribution the DCP 2012 makes is to expand on the issues Council must consider before granting a development consent that may impact on a heritage item. Visual Impacts to built heritage must assess the following:

- a) Heritage Significance – if the land on which development is proposed has any item of heritage significance.
- b) Heritage Items – adjoining or adjacent listed items.
- c) Heritage Area – if the development is proposed within an identified area.



- d) Adjoining or adjacent to a Significant Streetscape Element (defined as being more than forty years old and having largely original decorative embellishments)

2.5 The Heritage Act (1977) NSW

The *Heritage Act 1977* (NSW) ('Heritage Act') is aimed at identifying and protecting significant items of historic (as opposed to Aboriginal) cultural heritage. The focus of the legislation is on identifying places of either local or state heritage significance, and protecting them by registration on heritage registers. Significant historic heritage items are afforded little protection (other than at the discretion of councils) where they are not on a heritage register. Of note are the provisions allowing for interim heritage orders (Part 3), which grants the Minister or the Minister's delegates, (which importantly may include a local government agent) the power to enter a property and provide emergency protection for places that have not yet been put on a heritage register but that may be of local or State significance.

The *Heritage Act 1977* (NSW) also makes allowances for the protection of archaeological deposits and relics (Part 6). An archaeological 'relic' means any deposit, object or material evidence which relates to the settlement of the area, not being Aboriginal settlement. Importantly, a former requirement for an archaeological relic to be 50 years or older has recently been repealed. The focus is now on the item's potential heritage significance, not its age. As will be discussed below, it is highly unlikely that archaeological relics of significant historic sites are located within the Project Area.

2.6 The NSW Heritage Manual

The NSW Heritage Manual lists an 8-step process that is generally considered a best practice guide to assessing significant items. The process steps are:

- a) Summarise what is known about the item.
- b) Describe the previous and current uses of the item and the associations it may have to individuals or groups and its meaning for those people.
- c) Assess the significance using the NSW heritage criteria.
- d) Check if a sound analysis of the item's heritage significance can be made.
- e) Determine the item's level of significance.
- f) Prepare a succinct statement of heritage significance.
- g) Get feedback.



h) Write up the information.

Contrary to common belief, a significant heritage item need not be particularly 'old' (the exception to the rule being the definition of an Archaeological Relic discussed above). Rather, the focus is on identifying what aspects of a particular item may be significant. The NSW Heritage Manual contains a set of 7 assessment criteria that act as a guide to assessing significance. They are:

- **Criterion (a):** An item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area);
- **Criterion (b):** An item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area);
- **Criterion (c):** An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);
- **Criterion (d):** An item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons;
- **Criterion (e):** An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area);
- **Criterion (f):** An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area); and
- **Criterion (g):** An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places; or cultural or natural Environments.

An item is not to be excluded from the Register on the ground that items with similar characteristics have already been listed on the Register. While all criteria should be referred to during the assessment, only particularly complex items or places will be significant under all criteria. In many cases, items of environmental heritage will be significant under only one or two criteria.

2.7 ICOMOS Burra Charter

The International Council on Monuments and Sites (ICOMOS) is the peak body of professionals working in heritage conservation. ICOMOS has adopted the *Burra Charter* which describes acceptable standards for the assessment and management of items of cultural heritage significance in Australia. Although not a legal requirement, the *Burra Charter* has been adopted by Australian heritage professionals as a guide to assessing and managing heritage places and artefacts.



3. ABORIGINAL COMMUNITY CONSULTATION

3.1 Traditional Owner Knowledge

The Aboriginal Stakeholders are the primary determinants of the significance of their cultural heritage. Members of the Aboriginal community will be consulted, and will continue to be consulted, with regard to their concerns not only about known archaeological sites in the region, but also about cultural values such as areas with historic and spiritual significance, and other values relating to flora and fauna of the area.

Everick Heritage recognises that there is Traditional Owner knowledge associated with the region that may have to be treated in a confidential manner. Where there is potential for impacts upon Aboriginal heritage as a result of future development proposals, consultation under ACHCRP (2010) would apply.

3.2 Consultation with the Casino Boolangle LALC

Project information, including a site plan, was provided to the Casino Boolangle LALC by email on 19 June 2019. Casino Boolangle LALC Sites Officer Brendon Torrens undertook an inspection of the Project Area on the 28 June 2019, with Everick Principal (Coffs Harbour) Tim Hill. The Sites Officer is aware of places of particular cultural significance within the Casino/Richmond locality and Aboriginal archaeological sites in the vicinity of the Project Area and as such is qualified to undertake the site inspection.

A copy of the ACHA was forwarded to Casino Boolangle LALC on September 25 and October 16 2019, however no responses were received (see Appendix A).



4. ABORIGINAL CULTURAL HERITAGE DESKTOP REVIEW

4.1 The OEH Aboriginal Heritage Information Management System (AHIMS)

A basic search was conducted on 27 May 2019 of the OEH AHIMS for Aboriginal Cultural Heritage within a 1000 m radius of the Project Area (Service ID 423324 see Figure 3). The search returned no Aboriginal heritage listings and on the basis of this result, an extensive search was not requested.

Care should be taken when using the AHIMS database to reach conclusions about site prevalence or distribution. For example, a lack of sites in a given area should not be seen as evidence that the area was not occupied by Aboriginal people. It may simply be an indication that it has not been surveyed for heritage or that the survey was undertaken in areas or at times of poor ground surface visibility. Further, care needs to be taken when looking at the classification of sites.

4.2 Other Heritage Registers: Aboriginal & Historic Cultural Heritage

The following heritage registers were accessed on 12 June 2019:

- **The World Heritage List** (Australian Heritage Council): Contains no heritage listings within or within close proximity to the Project Area.
- **The National Heritage List** (Australian Heritage Council): Contains no heritage listings within or within close proximity to the Project Area.
- **Commonwealth Heritage List** (Australian Heritage Council): Contains no heritage listings within or within close proximity to the Project Area. The closest is the Casino Post Office which is approximately 1.3 km northeast of the Project Area.
- **Register of the National Estate** (Australian Heritage Council): Contains no heritage listings within or within close proximity to the Project Area. The closest is the Casino Courthouse which is approximately 1.3 km northeast of the Project Area.
- **The State Heritage Register and Inventory** (NSW Heritage Office): Contains no heritage listings in Section 1-3 (*NSW Heritage Act*) within the Project Area.
- **Richmond Valley Local Environment Plan 2012**: Contains no heritage listings within the Project Area under Schedule 5 of the LEP. The closest is at 2 Hotham Street 163 m north of the Project Area and is listed as a 'residence' (Item No 50).



Office of
Environment
& Heritage

AHIMS Web Services (AWS) Search Result

Purchase Order/Reference : EV859

Client Service ID : 423324

Everick Heritage Pty Ltd

Date: 27 May 2019

Level 9 Matisse Tower, 110 Mary Street

Brisbane Queensland 4000

Attention: Matthew Finlayson

Email: m.finlayson@everick.net.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot: 105, DP:DP755627 with a Buffer of 1000 meters, conducted by Matthew Finlayson on 27 May 2019.

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:

<input type="checkbox"/>	Aboriginal sites are recorded in or near the above location.
<input type="checkbox"/>	Aboriginal places have been declared in or near the above location. *

Figure 3: AHIMS basic search (#423324)

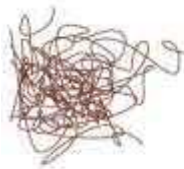


Figure 4: Richmond Valley LEP search results.



5. LANDSCAPE CONTEXT

5.1 Topography

The topography within the Project Area consists of a gentle slope to the west into Black Gully (Figure 5). The Project Area is described as floodplain and was obviously waterlogged in parts and subject to flooding.

5.2 Soils Landscapes and Vegetation

The Project Area has been mapped as the Leicester soil landscape (Figure 6, Morand 1994). The Leicester soil landscape is characterised by level to gently undulating, broad to extensive alluvial plains. These plains are of extremely low relief, with deep, poorly to moderately well-drained alluvial Black Earths and Structured Clays (Morand 1994:133). Extensively cleared open-forests are associated with this soil landscape with current vegetation consisting of closed sod grassland ground cover with isolated trees. Morand (1994:133) provides the following vegetation model for the Leicester soil landscape:

“Main grasses are kikuyu (*Pennisetum clandestinum*), paspalum (*Paspalum dilatatum*) and setaria (*Setaria sphacelata*). *Juncus* spp. occurs in wetter areas. Forest red gum (*Eucalyptus teriticornis*), cabbage gum (*Eucalyptus amplifolia*) and broad-leaved apple (*Angophora subvelutina*) occur as isolated trees throughout the landscape. Stands of open-forest line channels and are dominated by river oak (*Casuarina cunninghamiana*), silky oak (*Grevillea robusta*) and less commonly hoop pine (*Araucaria cunninghamii*). Camphor laurel (*Cinnamomum camphora*) is a common exotic (Morand 1994:133).”

The Project Area is currently clear of vegetation, excluding some mature trees in the north-east portion of the Project Area near the old residential dwelling.

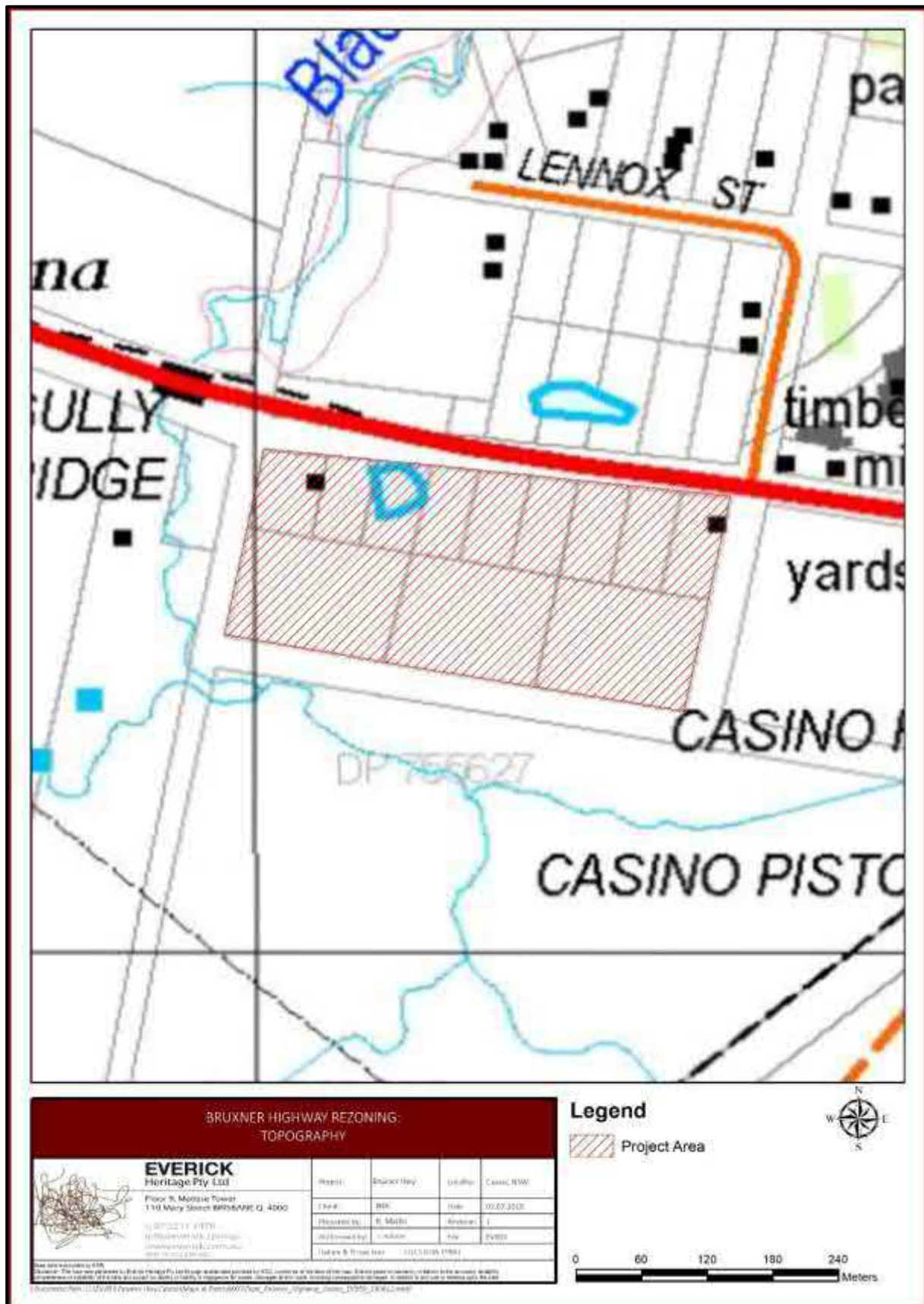
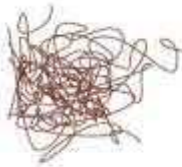


Figure 5: Topography of the Project Area.

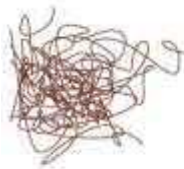


Figure 6: Soils Landscape.



6. ABORIGINAL CULTURAL CONTEXT

6.1 European history

Casino, originally known as 'The Falls', is considered the oldest settlement on the Richmond River. In 1840 Henry Clay and George Stapleton took up 30,000 acres of rich grazing land along the east bank of the Richmond River, and formed the station they named Cassino (Daley 1968:24). When inspected just a year later, they had already found a level track to Grafton, built a weatherboard house, outbuildings, a piggery, and had land under cultivation (Daley 1968:25). For a year Clay and Stapleton were the only squatters in the whole of the Richmond Valley (Daley 1968:25). However, by 1848 the area had also become the centre of the squatting runs of the Richmond and Upper Clarence (Richmond Valley Council 2007), with 21 stations taking up all the good grazing land on the Richmond (Daley 1968:43). During this period, cedar cutters arrived in the Richmond Valley, travelling overland when cedar became hard to get around the Clarence River. Camps were formed along the network of creeks that flowed through the valley, and schooners came up the river to load the logs (Daley 1968:33).

The village of Casino, in the heart of the prosperous grazing district and on the main road between Grafton, and Moreton Bay and Ipswich, became a popular settlement (Daley 1968:69). Nine and a half square miles around the village had been reserved to keep the squatters from encroaching, and allotments and farms were sold for above the minimum price (Daley 1968:69). The building of a Post Office in 1849 and a Courthouse in 1852 had proved the beginnings of a township, and by the late 1880s several substantial brick buildings demonstrated the growing importance of Casino in the region. In the 1900s the large squatting runs were subdivided into dairy farms and the construction of the railway brought additional prosperity (Richmond Valley Council 2007).

6.2 Ethnohistorical Summary

The Aboriginal people of the Casino area were part of a wider linguistic group, the Bundjalung which included about twenty dialects spoken between the Clarence and Logan Rivers extending west to Tenterfield (Crowley 1978:1). The concentration of Bundjalung dialects to the north compared to the fewer dialect groups of the adjoining southern Kumbainggiri led Crowley to suggest that the Bundjalung areas may have been colonised earlier than the Kumbainggiri allowing a greater number of dialects to develop. Crowley also suggested that coastal Bundjalung dialects varied significantly from inland Bundjalung dialects (Crowley 1991). Joshua Bray, a settler on the Tweed River travelled from the coast to the inland Bundjalung dialect country of the Upper Richmond and found that "The language of the Aborigines is sometimes completely different thirty miles away" (Bray 1899:193). The Casino area was occupied by people speaking the Galibal dialect. The Galibal dialect group occupied the area between the McPherson Range in the north, tributaries of the Richmond River (Shannon Brook & Mongogare



Creek) to the south, the Richmond Range to the west and the Tweed and Mackellar Ranges to the east (Crowley 1978). Land belonged to clan groups whose boundaries had been established in mythology (Creamer and Godwin 1984). A group of families might make up a clan or 'horde' which was a land holding group occupying a distinct territory. These clan territories have been described on the coastal plain by Ainsworth (1922) on the lower Richmond and Bray (1901) for the coastal and upper Tweed Valley. A loose confederation of clan groups recognised a wider social and linguistic association. Tindale (1974) places the Galibal dialect group within the territory of the 'Badjalang' which included the greater part of the Clarence and Richmond River floodplains.

6.3 Previous Indigenous Cultural Heritage/Archaeological Assessments

The purpose of a review of previous archaeological and broader Aboriginal cultural heritage assessments is to provide insights into the potential types and locations of sites to be found in the wider locality. However the information must be used bearing in mind the topography, access to food and material resources and impacts of European land uses. It is seldom that the background of assessment purpose, environmental, historical and social contexts between one area of assessment and another would allow the simple extrapolation of previous results to a current project assessment.

Cultural heritage assessments carried out in the vicinity of the Project Area include Piper (2004), Robins and Piper (2005), Piper (2009), Robins (2012) and Everick Heritage (2015). These reports can provide information on potential types and locations of sites to be found in the area. The first two assessments were conducted at a 4.5 km north-east of Casino off Spring Grove Road. The site proposed subdivision was situated on substantially cleared south facing hillslopes with ridges and gullies. The Piper (2004:26) assessment noted a low-density artefact scatter on a low ridge falling to the Richmond River flood plain. Further investigations the following year (Robins and Piper 2005) did not reveal any additional Aboriginal Cultural Heritage.

The Piper (2009) cultural heritage assessment was conducted at Nammoona, North Casino. An archaeological survey of the area was undertaken by the A Piper and Mr Bill Walker, the Sites Officer for the Casino Boolangle LALC. The survey identified two Aboriginal sites (Scarred Tree One (Nammoona 1) and Scarred Tree Two (Nammoona 2), which were registered with OEH AHIMS. Three scarred trees were recorded immediately beyond the study area boundaries. No other Aboriginal sites or items of historic (non-Indigenous) cultural heritage were located.

The Robins (et al 2012) assessment north-west of Casino was of a range of wastewater treatment infrastructure, including for the installation of pipes, treatment tanks and irrigation works. No Aboriginal Objects or Places were identified in this assessment. Ground Surface Visibility ('GSV') was poor to fair, with most of the subject lands being highly disturbed. During the assessment an artefact scatter also containing hearth stones was located on slopes



to the Richmond River. This site comprised a low-density artefact scatter on a river terrace located approximately 30 m west of the Richmond River.

The floodplain at the base of the slope was, before it was drained, an extensive area of wetland (Clarence Randall pers. comm. 2011). The site was thus located on relatively high ground between the Richmond River and the wetlands at the base of the hill. The site comprised approximately nine (9) artefacts, a river pebble and a number of hearth fragments. The artefacts comprised one (1) silcrete core, one (1) silcrete micro-core, one (1) silcrete retouched flake, two (2) silcrete flakes, one (1) silcrete pebble, and one (1) chalcedony micro-core. Scattered amongst the artefacts were numerous small fragments (maximum size c. 7 cm) of orange clay hearthstone fragments.

The site significance assessment concluded. This site, though small and disturbed, is an interesting one. Few archaeological sites have been recorded near the river in this locality, although it is a logical place for site location. It is close to permanent water and a range of resources from a number of different resources. The raw materials are diverse and from different localities. The chalcedony possibly comes from further east where sources of this material have been recorded. The silcrete is not local and possibly comes from the ranges to the north. Clay heat retainers are also not a common feature of sites in the region (Robins et al 2012:77-79).

Barton 1996 and 1998 conducted archaeological surveys over proposed quarry locations at Cedar Point five kilometres south of Kyogle. The study areas were grazing lands on a weathered basalt ridge overlooking the Richmond River floodplain. "...Two archaeological scarred trees were located in the Calill Quarry study area..." (Benton 1996: 6). Both scars were elongated in shape, on mahogany trees. A concurrent archaeological study at Chadburn quarry 5 km to the east of Kyogle found no archaeological sites.

A cultural heritage assessment at Dobies Bight in relation to a quarry expansion proposal over approximately 35ha of Kangaroo Creek sand stone based low back hills to the Richmond River floodplain, found no evidence of Aboriginal sites (Everick Heritage 2013).

A desktop study for Transgrid by Ozark summarised the Aboriginal sites data from DECCW as consisting of two clusters of sites at Casino and Dyraba to the west and commenting on the surprising lack of registered sites in an area of considerable development. The report makes reference to an Aboriginal resource gathering site at Greys Lane (DECCW#04-4-0124) on the south side of the Richmond River and a cluster of five scarred trees (DECCW # 04-4-0031-35) is recorded at Wooroowoolgen west of Casino. Clusters of rock shelter art painting, engraving and ceremonial sites are recorded at Dyraba (Ozark 2009: 12-13).



The Bora Ridge bora ring is located 7 km north-west of the Moonimba Ridge on a low spur onto the Richmond River floodplain. Sources indicate it was last used in approximately the 1890's. A Primary School occupied part of the ceremonial ring until its closure. The ring bank is now fenced but indistinguishable due to tree growth. McBryde refers to three bora rings at Casino one at north Casino, Bentley and one unnamed location at Casino. She also records literary references to bora rings at Busby's Flat and Wyan in the Richmond Ranges (McBryde 1974: 57).

The few sites recorded to date are as much a reflection of the lack of systematic archaeological surveys as the lack of archaeological sites. The Sites of Significance Survey Team recorded a large number of ceremonial, spiritual and natural mythological sites between 1974 and the 1980s. These include natural mythological sites, bora ceremonial areas, increase sites (djurbils) and various other types of sites, of which details remain confidential. The majority of these sites are located in the northern regions of the Galibal territory. A member of that team described the concentration of sites in the Bundjalung tribal area as, '... one of the densest concentrations of sites of significance to Aboriginal people in New South Wales' (Creamer: correspondence NPWS 1979).

6.4 Predictive Modelling

The predictive model is based upon the review of the results of previous assessments, archaeological and ethno-historical research, an assessment of relationships between landscapes and their Aboriginal land use potential, Aboriginal community information and the review of the current AHIMS site listings. Based on the previous heritage assessments and the advice from Mr Brendon Torrens it is considered that there is a low potential for the floodplain environments to contain Aboriginal sites. This is in part due to the nature of the floodplains which were typically swampland which was reclaimed through drainage works in the historic period and due to the extensive nature of soil accumulation from flooding which has increased as a result of de-forestation from historic land clearing and agriculture.



7. FIELD SURVEY: ABORIGINAL CULTURAL HERITAGE

7.1 Survey Team

The Project Area is within the area administered for Aboriginal cultural heritage purposes by the Casino Boolangle LALC. A pedestrian survey for Aboriginal cultural heritage of the Project Area was undertaken by Brendon Torrens Sites Officer of the Casino Boolangle LALC, with Everick heritage Principal (Coffs Harbour) Tim Hill, on the 28 June 2019.

7.2 Assessment Methods

The field assessment methods aimed to inspect exposed ground surfaces as conditions would allow; to record any archaeological material found and assess its significance; and assess the potential for concealed Aboriginal archaeological sites. The assessment also aims to establish if there are sites or areas of a non-archaeological nature significant to the Aboriginal community. At this stage of the assessment this is through consultation with Casino-Boolangle LALC.

Photographs were taken as a record of general features and conditions and to document the degree of surface visibility. Notes were made of the degree of surface visibility, the area of visibility, ground cover, land uses and any other relevant features. Hand held GPS (GDA 94 datum) was used to record the extent of survey coverage except where fence lines, google and topographic mapping provided clear reference points. Mapping and plans used in this assessment were provided by Newton Denny Chapelle Pty Ltd and represent the level of information provided to Everick Heritage Pty Ltd.

Archaeological features may include evidence of stone artefact scatters or individual artefacts, traces of bone (human and animal), shell deposits, scarred trees and ash-stained earth that might represent fireplaces. When artefacts are found their location was recorded with a GPS (using GDA 94 datum), photographed and generally described. A note is made of artefact types and their numbers. General characteristics of the artefacts are noted including raw material type and condition including the degree of weathering and heat cracking. The length, width and thickness of a number of artefacts are recorded. Woodland areas with 'old growth' trees would be inspected for evidence of Aboriginal scarring due to bark removal or holes/notches cut into bark and tap wood.



7.3 Constraints to Site Detection

The landform pattern of the Project Area is alluvial floodplain. For ease of ground coverage and for purposes of description the Project Area is treated as a single survey unit, however it is noted that the south-eastern corner had been subject to fill works and was excluded from the inspection. A summary of the landscape features and broad disturbance types are listed in Table 1.

Table 1: Summary of Environment and Ground Disturbance for Survey Units.

<i>Survey Unit</i>	<i>Environmental Description</i>	<i>Ground Disturbance Summary</i>
LANDFORM	Total Area: ca 6.9 ha.	Grazing farm shed with gravel
Alluvial floodplain	Slope classes: level to gently inclined towards Black Gully.	driveway. Approx. 30cm fill in south-east portion of Project Area.

An assessment of the constraints to site detection is made to assist in formulating a view as to the effectiveness of the field inspection to find Aboriginal sites and cultural materials. It also assists in the forming of a view of the likelihood of concealed sites, keeping in mind the potential attributes of the location to Aboriginal people and a specific knowledge of the disturbance impacts that European land uses and natural processes may have had on the 'survivability' of Aboriginal sites in a Project Area

The constraints to site detection are almost always most influenced by post European settlement land uses and seldom by natural erosion processes. The area of surface exposure and the degree of surface visibility within exposed surfaces are usually the product of 'recent' land uses e.g. land clearing, ploughing, road construction, natural erosion and accelerated (manmade) erosion (McDonald et .al. 1990:92).

In this case the major 'manmade' constraints to Aboriginal site survivability, if they exist, appear to be the impacts of land clearing, cut and fill works to manage waterlogging, grazing and an unknown degree of cultivation. A small dam has been excavated in the north of the Project Area near the Bruxner Highway. In terms of the Due Diligence Code, the majority of the Project Area has been disturbed.

7.4 Survey Coverage

To achieve as thorough and effective an archaeological field assessment as possible a systematic ground survey of all surfaces is the best method to achieve effective coverage. However, in the Project Area conditions due to closed ground covers of grass prevented a systematic search. Therefore, an opportunistic search of any exposed ground surfaces was the only means practically possible. These were limited to small shaded areas and cattle pads/ tracks (see Figure 7 for location of survey transects). Old growth trees near the old residential dwelling were inspected for evidence of Aboriginal scarring or carving.



Table 2 presents information on the extent to which survey data provides sufficient evidence for an evaluation of the distribution of archaeological materials across the Project Area. The evaluation of survey coverage provides a measure of the potential for each of the survey units to reveal archaeological evidence. The calculations in Table 2 do not provide an exact percentage of area, but a reasonable estimate.

Table 2: Survey Coverage.

Unit	Landform	Survey Unit Area (sq. m)	Visibility (%)	Exposure (%)	Effective Coverage Area (sq. m)	Effective Coverage (%)	Sites Found
1	Floodplain	4200	5	5	10.5	0.25	0

7.5 Survey results

No Aboriginal sites were identified during the survey. The areas of exposure and the subsequent proportion of the survey unit where site detection is possible, are low for archaeological assessments but common in this locality, where exposure percentages of less than 10% are the norm (Figure 8, Figure 9 and Figure 10). However, having consideration for the predictive model and views of Brendon Torrens on the potential for the Project Area to contain Aboriginal sites it is not considered that the significant constraint from grass cover would change the outcome of the site inspection. As such it is not considered that additional consultation with the Aboriginal community or archaeological investigation is required.

The site inspection identified a derelict residential dwelling which is consistent with the Edwardian or interwar period architectural style (Figure 11 and Figure 12). The dwelling is derelict however is substantially intact. The interior appears to be close to original, with the only addition being the enclosure of the front verandah with a fibro sheet and aluminium louver windows. The dwelling has a substantial rear skillion section above the kitchen and laundry. It is not considered that this dwelling is exemplar of the architectural style. Further, house from the inter-war period are not uncommon in Casino. Based on the site inspection it is not considered that the dwelling would meet the local heritage significance criteria.



Figure 7: Survey Transect map.



Figure 8: Conditions-open grazing land, view east showing waterlogged soils.



Figure 9: View south-east of the area of fill (not surveyed).



Figure 10View west showing typical ground cover.



Figure 11: Derelict residential dwelling showing northern profile.



Figure 12: Derelict residential dwelling showing western profile.



8. RECOMMENDATIONS – ABORIGINAL CULTURAL HERITAGE

Having regard to the low archaeological potential for the Project Area and the outcomes of consultation with the Casino Boolangle LALC, the following recommendations are cautionary in nature and considered sufficient for application in both planning proposal and development application stages.

Recommendation 1: Aboriginal Objects Find Procedure

It is recommended that if it is suspected that Aboriginal Cultural Heritage has been uncovered as a result of development activities within the Project Area:

- a) work in the surrounding area is to stop immediately;
- b) a temporary fence is to be erected around the site, with a buffer zone of at least 10 metres around the known edge of the site;
- c) an appropriately qualified archaeological consultant is to be engaged to identify the material;
- d) if the material is found to be of Aboriginal origin, the Aboriginal community is to be consulted in a manner as outlined in the OEH guidelines: *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (2010); and
- e) should the works be deemed to have harmed the Aboriginal objects the OEH should be notified immediately via the EPA Enviro Hotline.

Recommendation 2: Aboriginal Human Remains

Although it is unlikely that human remains will be located at any stage during earthworks within the Project Area, should this event arise it is recommended that all works must halt in the immediate area to prevent any further impacts to the remains. The site should be cordoned off and the remains themselves should be left untouched. The nearest police station (Casino), the Casino Boolangle Local Aboriginal Land Council and the OEH Regional Office (Coffs Harbour) are all to be notified as soon as possible. If the remains are found to be of Aboriginal origin and the police do not wish to investigate the site for criminal activities, the Aboriginal community and the OEH should be consulted as to how the remains should be dealt with. Work may only resume after agreement is reached between all notified parties, provided it is in accordance with all parties' statutory obligations.

It is also recommended that in all dealings with Aboriginal human remains, the Proponent should use respectful language, bearing in mind that they are the remains of Aboriginal people rather than scientific specimens.



Recommendation 3: Conservation Principles

It is recommended that all effort must be taken to avoid any impacts on Aboriginal Cultural Heritage values at all stages during the development works. If impacts are unavoidable, mitigation measures should be negotiated between the Proponent, OEH and the Aboriginal community.

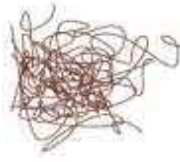


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APPENDIX A: CORRESPONDANCE WITH ABORIGINAL COMMUNITY

From: Tim Hill

Sent: Wednesday, October 16, 2019 9:27:10 PM

To: ceo@cblalc.com.au

Cc: Subject: FW: Santin Rezoning - Bruxner Highway, Casino

Hi Norma

Please see attached the ACHA for the Santin Rezoning proposal on the Bruxner Highway. Please give me a call if you have any questions. Can you please email back comments when you get a chance.

Ta

Tim Hill

BA (Hons)

Principal (Coffs Harbour)

Ph: (07) 3211 4478

Mob: 0422 309 822

From: Tim Hill

Sent: Wednesday, September 25, 2019 9:09:36 PM

To: ceo@cblalc.com.au

Cc: Subject: FW: Santin Rezoning - Bruxner Highway, Casino

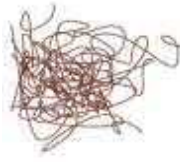
Hi Norma

Please see attached the ACHA for the Santin Rezoning proposal on the Bruxner Highway. Please give me a call if you have any questions. Can you please email back comments when you get a chance.

Ta

Tim Hill

BA (Hons)



Principal (Coffs Harbour)

Ph: (07) 3211 4478

Mob: 0422 309 822

From: Tim Hill

Sent: Friday, 21 June, 8:44 am

Subject: Fwd: Santin Rezoning - Bruxner Highway, Casino

To: ceo@cblalc.com.au

Hi Norma

Please see below- are we OK to come up next Friday?

Ta

Tim

Get [Outlook for Android](#)

From: Tim Hill

Sent: Wednesday, June 19, 2019 2:00:58 PM

To: ceo@cblalc.com.au

Cc: Matthew Finlayson; Luke Fittock

Subject: FW: Santin Rezoning - Bruxner Highway, Casino

Hi Norma

Further to our phone conversation just now, please see attached the supportive documentation for the cultural site inspection on the Bruxner Highway, Casino. Could you please confirm the availability of a sites officer for next Friday (28th) commencing at 9am.

Noted that you will be away, so if you could send through a phone number I will talk to the sites officer direct about times and locations etc.

Ta

Tim Hill

BA (Hons)

Principal (Coffs Harbour)

Ph: (07) 3211 4478

Mob: 0422 309 822

Everick Heritage Pty Ltd

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Brisbane - Townsville - Sydney - Coffs Harbour - Tweed Heads - Canberra - Alice Springs

Web: www.everick.com.au





Newton Denny Chapelle

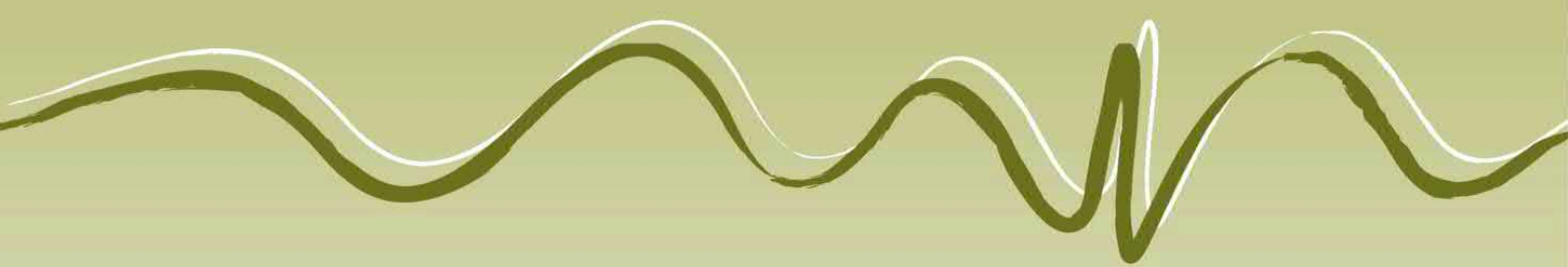
SURVEYORS PLANNERS ENGINEERS

Attachment 7

Biodiversity Assessment

Biodiversity Assessment

Lots 100-111 DP 755627 Bruxner Highway Casino – Proposed Rezoning



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Prepared for: Santin Family Trust
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<i>UPR</i>	<i>Description</i>	<i>Date Issued</i>	<i>Issued By</i>
3355-1003	First issue	28/05/2019	DGH



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Executive Summary

This Biodiversity Assessment was completed to support a Gateway Planning Proposal for the rezoning of Lots 100-111 DP 755627 Bruxner Highway, Casino (Richmond Valley Local Government Area) from Rural (RU1 - Primary Production) to Industrial (IN1 - General Industrial). The site comprises largely cleared land which has been filled in places and contains occasional scattered native and exotic paddock trees. The site does not contain land mapped as being of Biodiversity Value (as per the Office of Environment and Heritage (OEH) Biodiversity Values Map and Threshold Tool).

Results of field assessment are as follows:

- No threatened flora species were recorded at the site.
- No threatened ecological communities (TECs) occur at the site.
- No significant habitat for threatened fauna occurs at the site.

Given the degraded and highly modified vegetation at the site, the relative paucity of native vegetation and the lack of high conservation value habitat for flora or fauna, biodiversity values at the site are relatively low.

Review of statutory instruments relevant to the proposed rezoning was completed as follows:

- State Environmental Planning Policy (SEPP) 44 - Koala Habitat Protection: potential Koala habitat (as defined in SEPP 44) occurs at the site however the site is not considered to be core Koala habitat and therefore a Koala Plan of Management is not required.
- *Biodiversity Conservation Act 2016* (BC Act): rezoning and subsequent development of the site is unlikely to significantly affect threatened species or communities, and due to the limited native vegetation present, a Biodiversity Development Assessment Report (BDAR) is unlikely to be required.
- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act): review of Matters of Environmental Significance (MNES) listed in the Act indicates that rezoning and subsequent development of the site is unlikely to significantly affect threatened species or communities listed in the EPBC Act.



1. Introduction

1.1 Background

GeoLINK has been engaged to prepare a Biodiversity Assessment to assess the biodiversity values of Lots 100 -111 DP 755627 Bruxner Highway, Casino ('the site') to inform a Gateway Determination for rezoning of the subject property.

On this basis, this assessment has been prepared to:

- Identify any ecological constraints to the proposed rezoning (e.g. habitat for threatened species or communities listed in the *Biodiversity Conservation Act 2016* (BC Act) or *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act);
- Identify any significant trees or fauna habitat features of biodiversity importance; and
- Examine the proposal against relevant statutory requirements.

1.2 The Site

The site comprises Lots 100 -111 DP 755627 Bruxner Highway, Casino (Richmond Valley Local Government Area), parcels of vacant land comprising approximately 6.9 ha in area (refer to **Illustration 1.1**). The site flanks Black Gully and has been historically cleared for agriculture. It has been filled in places and generally lacks native vegetation with the exception of scattered paddock trees. The site contains an old dwelling, shed and cattle stockyards.

The site is currently zoned RU1 (Primary Production) under the Richmond Valley Local Environmental Plan (RVLEP) 2012.

Photographs of the site are provided at **Appendix A**.

1.3 Biodiversity Values

The site does not contain any areas of land mapped as being of Biodiversity Value (as per the OEH Biodiversity Values Map and Threshold Tool).

1.4 The Proposal

The proposal is to rezone Lots 100 – 11 DP 755627 from zoned RU1 (Primary Production) to IN1 (General Industrial). The proposal also seeks to amend the minimum lot size to permit the creation of lots with a minimum lot size of 750 m² within the area to be rezoned.



LEGEND

- Site boundary
- Farm dam
- Cadastre
- Watercourse

0 60



GeoLINK
environmental management and design

Biodiversity Assessment - Lots 100-111 DP 755627 Rezoning, Casino
3355-1004

The Site

Illustration 1.1



2. Methodology

2.1 Desktop Review

The following desktop review was completed prior to field assessment:

- A search of the BioNet Wildlife Atlas (20 km x 20 km grid centred on the site); completed May 2019.
- A search of the Protected Matters Search Tool (PMST) for Matters of National Environmental Significance (MNES) within a 10 km radius of the site; completed May 2019.
- Review of Biodiversity Value mapping (as per the OEH Biodiversity Values Map and Threshold Tool).

Details of the methodology used for field assessment are provided in **Section 2.2**. Results of database searches are attached at **Appendix B**.

2.2 Field Assessment

Field assessment was completed on 23 May 2019, using the following methodology:

- Walking survey to identify vegetation types and identify threatened flora or ecological communities listed in the BC Act or EPBC Act.
- Identification of hollow-bearing trees (or other significant habitat features) and potential habitat for threatened fauna.
- GPS location of mature trees occurring on the site.
- Rapid searches for Koala scats under preferred Koala feed trees.
- Opportunistic fauna survey.

Given that the site is highly disturbed and relatively small in area, the scope of assessment is considered adequate.



3. Vegetation

3.1 Desktop Analysis

3.1.1 Database search results

BioNet search results identified records of 15 threatened flora species (including eight species also listed in the EPBC Act) and up to 13 threatened ecological communities (six of which are listed under the EPBC Act) within the locality. PMST results identified habitat for 15 threatened flora species and two threatened ecological communities within the locality. Search results are provided at **Appendix B**.

3.2 Site Features

3.2.1 Vegetation

Native vegetation at the site has been historically cleared and is largely absent from the site with the exception of several mature paddock trees, including an aggregation of five large Forest Red Gum (*Eucalyptus tereticornis*) in the north-east corner of the site. Other native trees include two Swamp Box (*Lophostemon suaveolens*), an immature Moreton Bay Fig (*Ficus macrophylla*) and several shrubs of Narrow-leaved Paperbark (*Melaleuca alternifolia*).

Infrequent exotic trees include a Frangipani (*Plumeria* sp.), a Chinese Tallow Tree (*Triadica sebifera*) and several Pencil Willows (*Salix humboldtiana*). Trees occurring on the site are shown in **Illustration 3.1**.

Groundcover vegetation on the site comprises a mixture of exotic and native groundcover species dominated by Kikuyu (*Cenchrus clandestinus*), Buffalo Grass (*Stenotaphrum* sp) and Couch (*Cynodon dactylon*). Occasional occurrences of Common Sedge (*Juncus usitatus*) occur on the site with several environmental/ agricultural weeds including Fireweed (*Senecio madascariensis*) and Balloon Cotton Bush (*Gomphocarpus physocarpus*).

Vegetation at the site is not characteristic of any native plant community types (PCT) in the BioNet Vegetation Classification system.

A shallow farm dam occurs on the northern edge of the site property which is dominated by Spike-rush (*Eleocharis acuta*).

3.2.2 Threatened and significant flora

No threatened or significant flora species were confirmed at the site.

The site provides unsuitable habitat for the threatened flora species, Hairy Jointgrass (*Arthraxon hispidus*) and typical companion species (e.g. *Cenchrus purpurascens*, *Leersia hexandra*, *Hypolepis muelleri*, *Isachne globosa*, *Persicaria strigosa*, *Cuphea cathagenensis*) are absent.



3.2.3 Threatened ecological communities

No threatened ecological communities (TECs) occur. Although the periphery of the farm dam contains *Eleocharis acuta* which is a characteristic species of the Freshwater Wetlands on Coastal Floodplains TEC, this vegetation is not considered to be indicative of this TEC for the following reasons:

- Wetland vegetation in this area occurs from the opportunistic colonisation of a constructed farm dam.
- The Scientific Determination for this community states that: “*Artificial wetlands created on previously dry land specifically for purposes such as sewerage treatment, stormwater management and farm production, are not regarded as part of this community, although they may provide habitat for threatened species*”.

3.2.4 Noxious Weeds

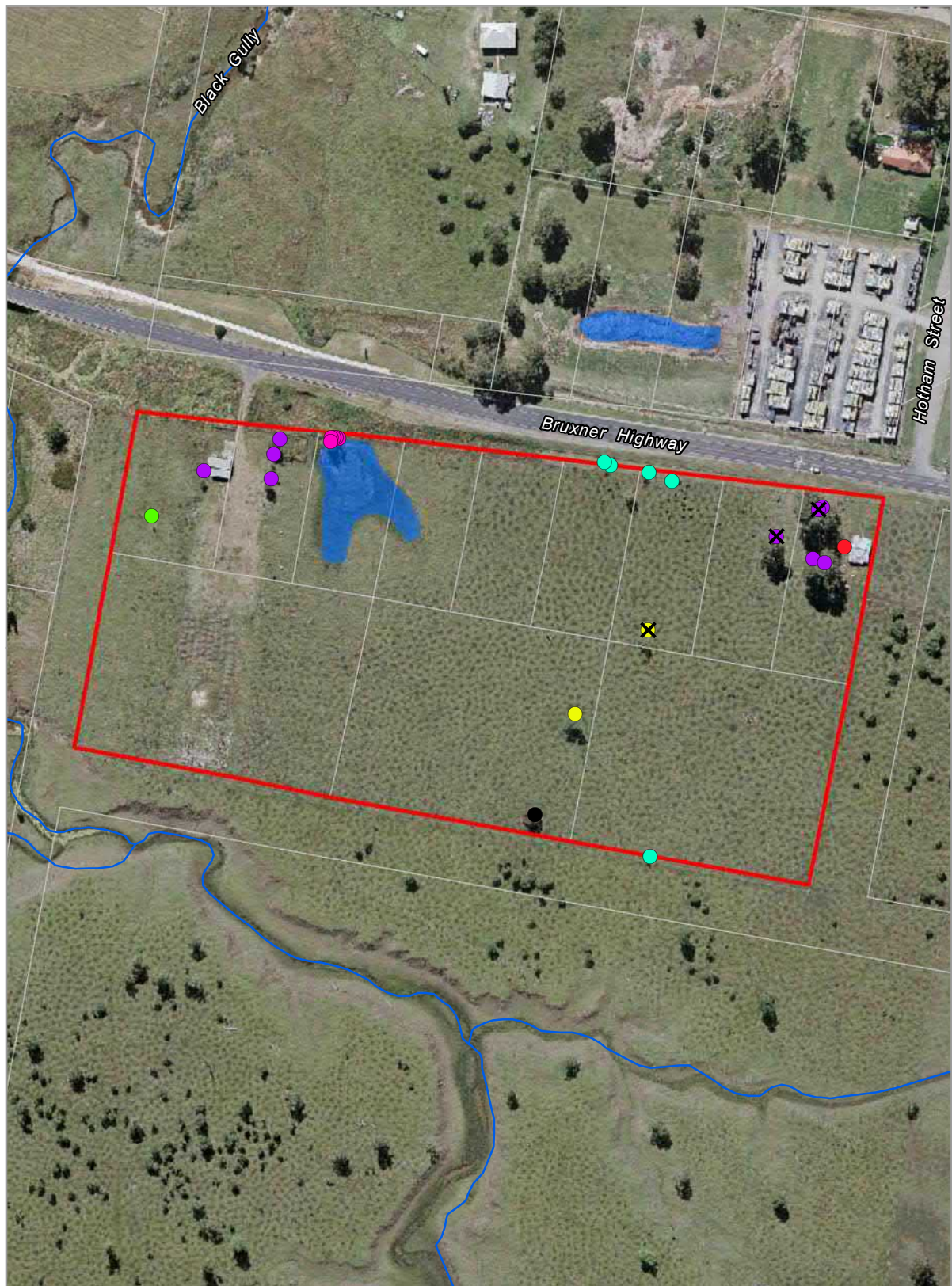
The site includes a number of agricultural and environmental weeds as well as the following Priority Weeds as listed in the *Biosecurity Act 2015*:

- Chinese Tallow Tree
- Pencil Willow (listed as *Salix* species)
- Fireweed (*Senecio madagascariensis*).

Relevant biosecurity duties must be enacted by land managers for weeds listed as Priority Weeds under the Biosecurity Act.

3.2.5 Condition

The site is highly modified and disturbed from historic clearing and grazing.



LEGEND

- | | |
|---|---|
| Site boundary | ● Forest Red Gum |
| Farm dam | ● Frangipani |
| Cadastre | ● Narrow-leaved Paperbark |
| — Watercourse | ● Moreton Bay Fig |
| X Hollow bearing tree | ● Chinese Tallow Tree |
| | ● Swamp Box |
| | ● Pencil Willow |

Vegetation Plan





4. Fauna Habitat

4.1 Desktop Analysis

4.1.1 Database search results

BioNet search results identified records of 39 threatened fauna species (including seven species also listed in the EPBC Act) within the locality. PMST results identified habitat for 24 threatened fauna species and 16 migratory fauna species within the locality (refer to search results at **Appendix B**).

4.2 Site Features

4.2.1 Habitat values

A range of common fauna species were recorded during the field assessment (e.g. Australian Magpie, Willie Wagtail, Magpie-lark and Crested Pigeon). The site provides habitat for a range of common 'open country' fauna species which utilise disturbed vegetation and rural environments, a common habitat type in the locality.

Three hollowing-bearing trees occur on the site (refer to **Illustration 3.1**) including two large Forest Red Gum in the north-east of the site which contain a number of small to large hollows. Given the disturbed nature of the site, these are most likely to be utilised on occasion by common fauna species including nesting/ denning birds and possums. Owing to a lack of native vegetation, the site provides relatively poor fauna resources for foraging and breeding in a local context.

The farm dam is unlikely to provide permanent habitat for aquatic fauna species given it is likely to become dry in periods with low rainfall. The shallow and degraded nature of the dam is such that it is unlikely to provide habitat for wetland fauna species for much of the time. After periods of higher rainfall the dam may provide a small area of foraging habitat for wetland birds.

4.2.2 Threatened and significant fauna habitat

No threatened fauna species were confirmed at the site. In general, the site provides poor quality habitat for threatened fauna due to the lack of native vegetation and associated habitat.

Forest Red Gum on the site are primary Koala feed trees. Scat searches undertaken beneath Forest Red Gums on the site did not identify any Koala scats. While a small number of Koala records occur in the vicinity of the site (BioNet) the relatively small number of records suggests that the site is used occasionally by Koalas rather than as permanent habitat.

Due to the occurrence of several flowering and fruiting trees in the myrtaceae family, potential foraging habitat for the Grey-headed Flying-fox occurs. While several species of microchiropteran bats may forage within the site on an opportunistic or seasonal basis, the proposal will not affect foraging habitat.



4.2.3 Potential for threatened species occurrence

Based on the desktop analysis and habitat present, two threatened fauna species have potential to occur at the site (refer to potential occurrence assessment at **Appendix C**).



5. Impacts and Mitigation

5.1 Biodiversity Constraints

Based on the results of the field assessment, there are few biodiversity constraints to rezoning of the site. While Koala feed trees (Forest Red Gum) occur on the site the lack of scats detected and small number of historical records suggest that the site would be used infrequently. Hollow-bearing trees occurring in the north-east portion of the site provide good quality nesting/ denning opportunities for common hollow obligate fauna species likely to occur in the locality.

5.2 Potential Impacts of Rezoning and Development

The rezoning (and future development) of the site may result in potential biodiversity impacts, which may include:

- Minor loss of native vegetation comprising up to 17 trees/ shrubs.
- Minor loss of potential Koala feed trees comprising up to nine Forest Red Gum ranging from 10 cm DBH to 120 cm DBH.
- Minor loss of hollow-bearing trees comprising up to three trees containing an estimated 13 hollows.
- Minor intensification of human occupation with regard to native fauna (e.g. minor increase in traffic movements).
- Introduction of weed species during the construction period.
- Disturbance to fauna during construction and ongoing occupation.
- Fauna roadkill from a minor increase in vehicular traffic (within a low speed [50 km/hr] zone).

These impacts are considered as being relatively low in the context of the site and can be managed with a relatively high confidence such that biodiversity impacts may be minimised.

5.3 Recommendations

To minimise biodiversity impacts which may result from the proposed rezoning and future development of the site, the following measures should be considered:

- Loss of native vegetation should be minimised wherever possible, in particular the large Forest Red Gums in the north-east corner of the site are worthy of retention.
- Where native vegetation, tree hollows and/or Koala habitat requires removal, compensation will be required (refer to **Section 5.4**).



5.4 Future Requirements

Based on the site assessment, the proposed rezoning would have relatively low impacts on biodiversity, due to historic clearing and the lack of native vegetation/ habit present at the site. In the event the rezoning proposal is accepted, the following requirements would need to be addressed for any future proposal to develop the site:

- Incorporate the recommendations in this assessment as part of future design/ layout where possible.
- Determine compensation requirements and/or vegetation management measures to offset the loss of native vegetation (in addition to Koala habitat) where relevant.
- Complete Tests of Significance ('five part tests') under Section 7.3 of the BC Act for threatened species known to occur or considered as having potential to occur at the site.



6. Statutory Requirements

The following sections examine the findings of the site assessment with regard to relevant statutory requirements which require consideration for the development application.

6.1 State Environmental Planning Policy (SEPP) 44 – Koala Habitat Protection

SEPP 44 applies to all LGAs listed under Schedule 1 of the Policy, which includes Richmond Valley LGA and where land is greater than one hectare in area. The Policy defines potential Koala habitat as areas of native vegetation where Schedule 2 trees constitute at least 15 per cent of the total number of trees in the upper or lower strata of the tree component. Schedule 2 listed Koala feed tree species include:

- Bimble Box (*Eucalyptus populnea*)
- Broad-leaved Scribbly Gum (*Eucalyptus haemastoma*)
- Forest Red Gum (*Eucalyptus tereticornis*)
- Large-fruited Grey Gum (*Eucalyptus punctata*)
- Ribbon Gum (*Eucalyptus viminalis*)
- River Red Gum (*Eucalyptus camaldulensis*)
- Scribbly Gum (*Eucalyptus signata*)
- Swamp Mahogany (*Eucalyptus robusta*)
- Tallowwood (*Eucalyptus microcorys*)
- White Box (*Eucalyptus albens*).

One Schedule 2 tree species occurs at the site (Forest Red Gum) and is the dominant species among paddock trees occurring on the site and therefore constitutes at least 15 per cent of the total number of trees in the upper or lower strata of the tree component. On this basis potential Koala habitat (as defined in the Policy) does occur on the site.

Core Koala habitat is defined by SEPP 44 as ‘an area of land with a resident population of Koalas, evidenced by attributes such as breeding females (that is, females with young) and recent sightings of and historical records of a population’.

Scat searches undertaken beneath Forest Red Gums at the site did not identify any Koala scats. While a small number of BioNet Koala records occur in the vicinity of the site, the relatively small number of records suggests that the site and general locality is used occasionally by Koalas rather than as permanent habitat. Accordingly, the site is not considered to be core Koala habitat and therefore a Koala Plan of Management is not required.

6.2 Biodiversity Conservation Act 2016 (BC Act)

The BC Act requires a test of significance (five-part test) when assessing whether an action, development or activity is likely to significantly affect threatened species, ecological communities or their habitats. Based on the potential for several threatened fauna species to occur at the site, tests of significance would be required for any future development of the site should the rezoning proceed.

Given that any future proposal to develop the site would be unlikely to require substantial native vegetation loss, and that the site is not mapped as containing biodiversity value land as per the Biodiversity Values Map and Threshold Tool, the Biodiversity Offsets Scheme (BOS) would not be triggered. It is noted that the minimum lot size for the site is currently 40 ha, and hence up to one hectare of native vegetation may be cleared before triggering the BOS.

On this basis, future rezoning and development of the site would not require a *Biodiversity Development Assessment Report* (BDAR).

6.3 Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

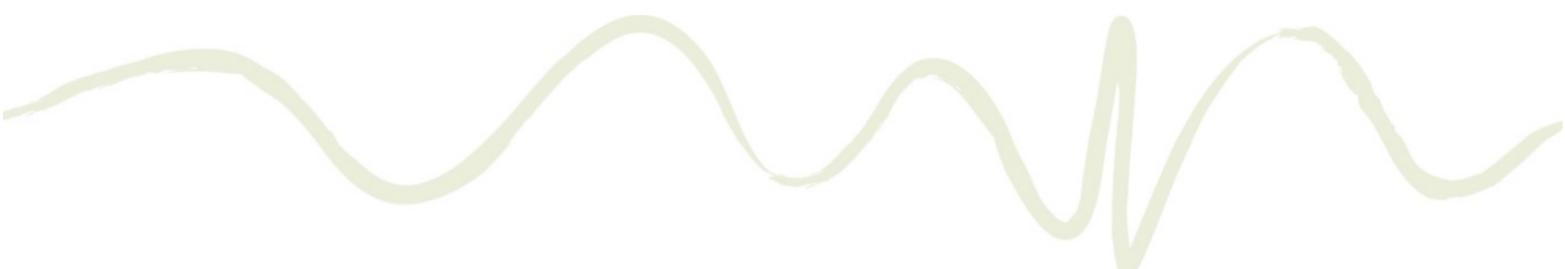
The EPBC Act protects/ regulates matters of national environmental significance (MNES), including:

- World heritage properties
- National heritage places
- Wetlands of international importance
- Nationally threatened species and ecological communities
- Migratory species
- Commonwealth marine areas
- The Great Barrier Reef Marine Park
- Nuclear actions (including uranium mining)
- A water resource, in relation to coal seam gas development and large coal mining development.

Based on the search results and site assessment, significant impacts to any MNES would not be likely to result from the proposal (refer to **Table 6.1**).

Table 6.1 Assessment of MNES

Matter	Potential impact
<i>Any impact on a World Heritage property?</i>	
No World Heritage properties occur within 10 km of the site.	Nil
<i>Any impact on a National Heritage place?</i>	
No National Heritage places occur within 10 km of the site.	Nil
<i>Any impact on a Wetland of International Importance?</i>	
No wetlands of international importance (Ramsar sites) occur within 10 km of the site.	Nil
<i>Any impact on the Great Barrier Reef Marine Park?</i>	
The Great Barrier Reef Marine park is distant from the site.	Nil
<i>Any impact on a Commonwealth marine area?</i>	
No Commonwealth marine areas occur within 10 km of the site.	Nil
<i>Any impact on nationally threatened species and ecological communities?</i>	
Habitat for two threatened ecological communities and 39 threatened species is identified within 10 km of the site. No threatened flora or ecological communities occur at the site. No listed threatened fauna species were recorded; the Grey-headed Flying-fox may use the site on an opportunistic or seasonal basis when myrtaceous trees are in flower. Given the relatively fragmented and disturbed habitat within the site, the proposal would be unlikely result in the removal of habitat important to any threatened fauna species in a local context and would not contribute significantly to any listed key threatening processes.	Negligible



Matter	Potential impact
<i>Any impact on Migratory species?</i>	
Habitat for 16 migratory species is identified within 10 km of the site. Given the relatively fragmented and disturbed habitat present, migratory species are unlikely to be significantly affected by the proposal.	Negligible



References

Department of the Environment (Cth) (2018). Protected Matters Search Tool: [Accessed 24/05/2019]

NSW Office of Environment and Heritage (2019). *NSW BioNet Database Search Tool*. [Accessed 24/05/2019].

Richmond Valley Council (2004). *Local Environment Plan*. Richmond Valley Council, Casino, NSW.



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Appendix A

Photographs



Plate 1. Central portion of the site facing east.



Plate 2. Degraded farm dam on the property.



Plate 3. Large hollow-bearing Forest Red Gum on the site.



Plate 4. Isolated paddock tree (Swamp Box) on the site with basal hollow.



Appendix B

Database Search Results

and cannot be considered a comprehensive inventory, and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1°; ^^ rounded to 0.01°). Copyright the State of NSW through the Office of Environment and Heritage. Search criteria : Public Report of all Valid Records of Threatened (listed on TSC Act 1995) or Commonwealth listed Animals in selected area [North: -28.77 West: 152.93 East: 153.13 South: -28.99] returned a total of 620 records of 39 species.

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Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Common status	Records	Info
Animalia	Reptilia	Elapidae	2645	<i>Cacophis harriettae</i>		White-crowned Snake	V,P		2	
Animalia	Aves	Anseranatidae	0199	<i>Anseranas semipalmata</i>		Magpie Goose	V,P		9	
Animalia	Aves	Anatidae	0216	<i>Oxyura australis</i>		Blue-billed Duck	V,P		6	
Animalia	Aves	Anatidae	0214	<i>Stictonetta naevosa</i>		Freckled Duck	V,P		13	
Animalia	Aves	Phaethontidae	0107	<i>Phaethon rubricauda</i>		Red-tailed Tropicbird	V,P	C	1	
Animalia	Aves	Ciconiidae	0183	<i>Ephippiorhynchus asiaticus</i>		Black-necked Stork	E1,P		149	
Animalia	Aves	Ardeidae	0197	<i>Botaurus poiciloptilus</i>		Australasian Bittern	E1,P	E	1	
Animalia	Aves	Ardeidae	0196	<i>Ixobrychus flavicollis</i>		Black Bittern	V,P		1	
Animalia	Aves	Accipitridae	0218	<i>Circus assimilis</i>		Spotted Harrier	V,P		1	
Animalia	Aves	Accipitridae	0226	<i>Haliaeetus leucogaster</i>		White-bellied Sea-Eagle	V,P	C	5	
Animalia	Aves	Accipitridae	8739	^ <i>Pandion cristatus</i>		Eastern Osprey	V,P,3		1	
Animalia	Aves	Burhinidae	0174	<i>Burhinus grallarius</i>		Bush Stone-curlew	E1,P		1	
Animalia	Aves	Jacaniidae	0171	<i>Irediparra gallinacea</i>		Comb-crested Jacana	V,P		18	
Animalia	Aves	Rostratulidae	0170	<i>Rostratula australis</i>		Australian Painted Snipe	E1,P	E	5	
Animalia	Aves	Scolopacidae	0161	<i>Calidris ferruginea</i>		Curlew Sandpiper	E1,P	CE,C,J,K	1	
Animalia	Aves	Scolopacidae	0152	<i>Limosa limosa</i>		Black-tailed Godwit	V,P	C,J,K	1	
Animalia	Aves	Turnicidae	0013	<i>Turnix maculosus</i>		Red-backed Button-quail	V,P		2	
Animalia	Aves	Cacatuidae	0265	^ <i>Calyptorhynchus lathami</i>		Glossy Black-Cockatoo	V,P,2		3	
Animalia	Aves	Strigidae	0246	^ <i>Ninox connivens</i>		Barking Owl	V,P,3		2	
Animalia	Aves	Tytonidae	0252	^ <i>Tyto longimembris</i>		Eastern Grass Owl	V,P,3		1	
Animalia	Aves	Tytonidae	0250	^ <i>Tyto novaehollandiae</i>		Masked Owl	V,P,3		1	
Animalia	Aves	Meliphagidae	0603	<i>Anthochaera phrygia</i>		Regent Honeyeater	E4A,P	CE	1	
Animalia	Aves	Campephagidae	0428	<i>Coracina lineata</i>		Barred Cuckoo-shrike	V,P		1	
Animalia	Aves	Monarchidae	0376	<i>Carterornis leucotis</i>		White-eared Monarch	V,P		1	
Animalia	Mammalia	Dasyuridae	1017	<i>Phascogale tapoatafa</i>		Brush-tailed Phascogale	V,P		6	
Animalia	Mammalia	Dasyuridae	1045	<i>Planigale maculata</i>		Common Planigale	V,P		10	
Animalia	Mammalia	Phascolarctidae	1162	<i>Phascolarctos cinereus</i>		Koala	V,P	V	78	
Animalia	Mammalia	Petauridae	1136	<i>Petaurus australis</i>		Yellow-bellied Glider	V,P		1	
Animalia	Mammalia	Petauridae	1137	<i>Petaurus norfolcensis</i>		Squirrel Glider	V,P		6	
Animalia	Mammalia	Pseudocheiridae	1133	<i>Petauroides volans</i>		Greater Glider	P	V	2	

Animalia	Mammalia	Potoroidae	1187	<i>Aepyprymnus rufescens</i>	Rufous Bettong	V,P	1	
Animalia	Mammalia	Macropodidae	1260	<i>Macropus dorsalis</i>	Black-striped Wallaby	E1,P	1	
Animalia	Mammalia	Macropodidae	1234	<i>Thylogale stigmatica</i>	Red-legged Pademelon	V,P	1	
Animalia	Mammalia	Pteropodidae	1280	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V,P V	268	
Animalia	Mammalia	Molossidae	1329	<i>Mormopterus norfolkensis</i>	Eastern Freetail-bat	V,P	8	
Animalia	Mammalia	Vespertilionidae	1372	<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	V,P	1	
Animalia	Mammalia	Vespertilionidae	1346	<i>Miniopterus australis</i>	Little Bentwing-bat	V,P	5	
Animalia	Mammalia	Vespertilionidae	1834	<i>Miniopterus schreibersii oceanensis</i>	Eastern Bentwing-bat	V,P	3	
Animalia	Mammalia	Vespertilionidae	1336	<i>Nyctophilus bifax</i>	Eastern Long-eared Bat	V,P	2	




Appendix C

Potential for Threatened Fauna Occurrence


Table C.1 Threatened Fauna Potential Occurrence Assessment*

*Migratory/pelagic marine species identified in the search results are not assessed as no habitat occurs at the site


Scientific name	Common name	BC Act	EPBC Act	Habitat requirement	Suitability of site habitat	Potential occurrence
Avifauna						
<i>Anseranas semipalmata</i>	Magpie Goose	V	-	Shallow wetlands (<1 m deep), large swamps and dams with dense growth of rushes or sedge.	Low.	Unlikely. Poor quality habitat on site
<i>Anthochaera phrygia</i>	Regent Honeyeater	CE	CE	Dry open forest and woodland with an abundance of nectar-producing eucalypts, particularly box-ironbark woodland, swamp mahogany forests, and riverine sheoak woodlands.	Low.	Unlikely. Poor quality habitat on site
<i>Botaurus poiciloptilus</i>	Australasian Bittern	E	E	Permanent freshwater wetlands with tall dense vegetation, particularly bullrushes and spikerushes.	Low.	Unlikely. No suitable habitat on site.
<i>Burhinus grallarius</i>	Bush Stone-curlew	E	-	Lightly timbered open forest and woodland, and partly cleared farmland with woodland remnants, preferring areas with dry leaf-litter, fallen timber and sparse ground cover.	Low.	Unlikely. The site is highly modified and poor quality habitat.
<i>Calidris ferruginea</i>	Curlew Sandpiper	CE	CE	Tidal mudflats, sandy ocean shores and occasionally inland freshwater or salt-lakes.	Low.	Unlikely. No suitable habitat present.
<i>Calyptorhynchus lathami</i>	Glossy Black-Cockatoo	V	-	Sheoaks in coastal forests and woodlands, timbered watercourses, and moist and dry eucalypt forests of the coast and the Great Divide up to 1000 m.	Low.	Unlikely. No suitable habitat present.
<i>Carterornis leucotis</i>	White-eared Monarch	V	-	Coastal rainforest, swamp forest and wet eucalypt forest, prefers edges where trees frequently covered with vines.	Low.	Unlikely. No suitable habitat present.
<i>Circus assimilis</i>	Spotted Harrier	V	-	Grassy open woodland, inland riparian woodland, grassland and shrub steppe.	Low	Unlikely. Poor quality habitat on site.
<i>Coracina lineata</i>	Barred Cuckoo-shrike	V	-	Rainforest, eucalypt woodlands, swamp woodlands and timber along watercourses.	Low.	Unlikely. No suitable habitat present.
<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork	E	-	Swamps, mangroves, mudflats, dry floodplains.	Low.	Unlikely. Poor quality habitat on site.
<i>Haliaeetus leucogaster</i>	White-bellied Sea-eagle	V	-	Coastal habitats and around terrestrial wetlands characterised by the presence of large areas of open water (larger rivers, swamps, lakes, ocean). Habitats may include freshwater swamps, lakes, reservoirs, billabongs, saltmarsh and sewage ponds in addition to bays and inlets, beaches, reefs, lagoons, estuaries and mangroves.	Low	Unlikely. Poor quality habitat on site.



Scientific name	Common name	BC Act	EPBC Act	Habitat requirement	Suitability of site habitat	Potential occurrence
<i>Irediparra gallinacea</i>	Comb-crested Jacana	V	-	Among vegetation floating on slow-moving rivers and permanent lagoons, swamps, lakes and dams.	Low.	Unlikely. No suitable habitat on site.
<i>Ixobrychus flavicollis</i>	Black Bittern	V	-	Dense vegetation fringing and in streams, swamps, tidal creeks and mudflats, particularly amongst swamp sheoaks and mangroves.	Low.	Unlikely. No suitable habitat present.
<i>Limosa limosa</i>	Black-tailed Godwit	V	-	Tidal mudflats, sandspits, swamps, shallow river-margins and reservoirs.	Low.	Unlikely. No suitable habitat present.
<i>Ninox connivens</i>	Barking Owl	V	-	Eucalypt woodland, open forest, swamp woodlands and timber along watercourses.	Low.	Unlikely. No suitable habitat present.
<i>Oxyura australis</i>	Blue-billed Duck	V	-	Deep water in large permanent wetlands and swamps with dense aquatic vegetation.	Low.	Unlikely. No suitable habitat present.
<i>Pandion cristatus</i>	Eastern Osprey	V	-	Littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands. Typically occur in coastal areas but occasionally travel inland along major rivers. Wetland habitats include inshore waters, reefs, bays, coastal cliffs, beaches, estuaries, mangrove swamps, broad rivers, reservoirs and large lakes and waterholes.	Low.	Unlikely. No suitable habitat present.
<i>Phaethon rubricauda</i>	Red-tailed Tropicbird	V	-	Marine, coastal cliffs and under bushes in tropical Australia.	Low.	Unlikely. No suitable habitat on the site.
<i>Rostratula australis</i>	Australian Painted Snipe	E	E	Well-vegetated shallows and margins of wetlands, dams, sewage ponds, wet pastures, marshy areas, irrigation systems, lignum, tea-tree scrub, and open timber.	Low	Unlikely. Poor quality habitat on site.
<i>Stictonetta naevosa</i>	Freckled Duck	V	-	Permanent freshwater swamps and creeks with heavy growth of Cumbungi, Lignum or Tea-tree. In drier times they move from ephemeral breeding swamps to more permanent waters such as lakes, reservoirs, farm dams and sewage ponds.	Low.	Unlikely. Poor quality habitat on site.
<i>Turnix maculosus</i>	Red-backed Button-quail	V	-	Grassland, sedgeland near creeks. Swamps and wetlands.	Low.	Unlikely. Poor quality habitat on site.
<i>Tyto longimembris</i>	Eastern Grass Owl	V	-	Areas of tall grass, including tussocks in swampy areas, grassy plains, swampy heath, cane grass, sedges on flood plains.	Low.	Unlikely. No suitable habitat on the site.
<i>Tyto novaehollandiae</i>	Masked Owl	V	-	Dry eucalypt forest and woodlands.	Low.	Unlikely. Poor quality habitat on site.




Scientific name	Common name	BC Act	EPBC Act	Habitat requirement	Suitability of site habitat	Potential occurrence
Mammals						
<i>Aepyprymnus rufescens</i>	Rufous Bettong	V	-	Tall moist eucalypt forest to open woodland with tussock grass understorey.	Low.	Unlikely. No suitable habitat on site.
<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	V	-	Moist and dry eucalypt forest and rainforest, particularly at high elevations.	Low.	Unlikely. Poor quality habitat on site.
<i>Macropus dorsalis</i>	Black-striped Wallaby	E	-	Dry rainforests and moist eucalypt forest with rainforest understorey or dense shrub layer.	Low.	Unlikely. Poor quality habitat on site.
<i>Miniopterus australis</i>	Little Bentwing-bat	V	-	Moist eucalypt forest, rainforest and dense coastal scrub.	Low.	Unlikely. Poor quality habitat on site.
<i>Miniopterus schreibersii oceanensis</i>	Eastern Bentwing-bat	V	-	Forest or woodland, roost in caves, old mines and stormwater channels.	Low.	Unlikely. Poor quality habitat on site.
<i>Mormopterus norfolkensis</i>	Eastern Freetail-bat	V	-	Occurs in dry sclerophyll forest and woodland east of the Great Dividing Range. Roosts in tree hollows.	Low.	Unlikely. No suitable habitat on the site.
<i>Nyctophilus bifax</i>	Eastern Long-eared Bat	V	-	Lowland subtropical rainforest and wet and swamp eucalypt forest, extending to adjacent moist eucalypt forest.	Low.	Unlikely. No suitable habitat on the site.
<i>Petauroides volans</i>	Greater Glider	-	V	Ranges and coastal plains of eastern Australia, where it inhabits a variety of eucalypt forests and woodlands.	Low.	Unlikely. Site lacks sufficient resources to support this species.
<i>Petaurus australis</i>	Yellow-bellied Glider	V	-	Tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils. Dens in tree hollows of large trees, often in family groups. Forest type preferences vary with latitude and elevation; mixed coastal forests to dry escarpment forests in the north; moist coastal gullies and creek flats to tall montane forests in the south.	Low.	Unlikely. Site lacks sufficient resources to support this species.
<i>Petaurus norfolcensis</i>	Squirrel Glider	V	-	Blackbutt, bloodwood and ironbark eucalypt forest with heath understorey in coastal areas, and box-ironbark woodlands and River Red Gum forest inland.	Low.	Unlikely. Site lacks sufficient resources to support this species.
<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	V	-	Drier forests and woodlands with hollow-bearing trees and sparse ground cover.	Low.	Unlikely. Site lacks sufficient resources to support this species.



Scientific name	Common name	BC Act	EPBC Act	Habitat requirement	Suitability of site habitat	Potential occurrence
<i>Phascolarctos cinereus</i>	Koala	V	V	Appropriate food trees in forests and woodlands, and treed urban areas.	Low.	Possible on occasion based on recent records in general locality.
<i>Planigale maculata</i>	Common Planigale	V	-	Rainforest, eucalypt forest, heathland, marshland, grassland and rocky areas with surface cover close to water.	Low.	Unlikely. Site lacks sufficient resources to support this species.
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V	V	Subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops.	Low.	Possible. Foraging resources present on site (Forest Red Gum).
<i>Thylogale stigmatica</i>	Red-legged Pademelon	V	-	Rainforest, vine scrub, moist eucalypt forest with dense understorey and ground cover.	Low	Unlikely. No suitable habitat on the site.
Reptiles						
<i>Cacophis harriettae</i>	White-crowned Snake	V	-	Low to mid-elevation dry eucalypt forest and woodland with well-developed litter layer.	Low	Unlikely. No suitable habitat on the site.

and cannot be considered a comprehensive inventory, and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1°; ^^ rounded to 0.01°). Copyright the State of NSW through the Office of Environment and Heritage. Search criteria : Public Report of all Valid Records of Threatened (listed on TSC Act 1995) or Commonwealth listed Plants in selected area [North: -28.77 West: 152.93 East: 153.13 South: -28.99] returned a total of 40 records of 15 species.

Report generated on 24/05/2019 3:06 PM

Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Common status	Records	Info
Plantae	Flora	Cyperaceae	7013	<i>Cyperus aquatilis</i>		Water Nutgrass	E1		2	
Plantae	Flora	Fabaceae (Faboideae)	2833	<i>Desmodium acanthocladum</i>		Thorny Pea	V	V	2	
Plantae	Flora	Fabaceae (Faboideae)	3030	<i>Sophora fraseri</i>		Brush Sophora	V	V	2	
Plantae	Flora	Fabaceae (Mimosoideae)	7757	<i>Archidendron hendersonii</i>		White Lace Flower	V		1	
Plantae	Flora	Lythraceae	11643	<i>Rotala tripartita</i>			E1		1	
Plantae	Flora	Myrtaceae	4096	<i>Eucalyptus glaucina</i>		Slaty Red Gum	V	V	10	
Plantae	Flora	Myrtaceae	11894	<i>Gossia fragrantissima</i>		Sweet Myrtle	E1	E	4	
Plantae	Flora	Myrtaceae	4255	<i>Melaleuca irbyana</i>		Weeping Paperbark	E1		4	
Plantae	Flora	Myrtaceae	4283	<i>Rhodamnia rubescens</i>		Scrub Turpentine	E4A		1	
Plantae	Flora	Myrtaceae	4284	<i>Rhodomyrtus psidioides</i>		Native Guava	E4A		3	
Plantae	Flora	Poaceae	4776	<i>Arthraxon hispidus</i>		Hairy Jointgrass	V	V	1	
Plantae	Flora	Polygalaceae	5260	<i>Polygala linariifolia</i>		Native Milkwort	E1		4	
Plantae	Flora	Proteaceae	5372	<i>Grevillea hilliana</i>		White Yiel Yiel	E1		1	
Plantae	Flora	Ranunculaceae	5494	<i>Clematis fawcettii</i>		Northern Clematis	V	V	2	
Plantae	Flora	Rubiaceae	6449	<i>Oldenlandia galioides</i>			E1		2	



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

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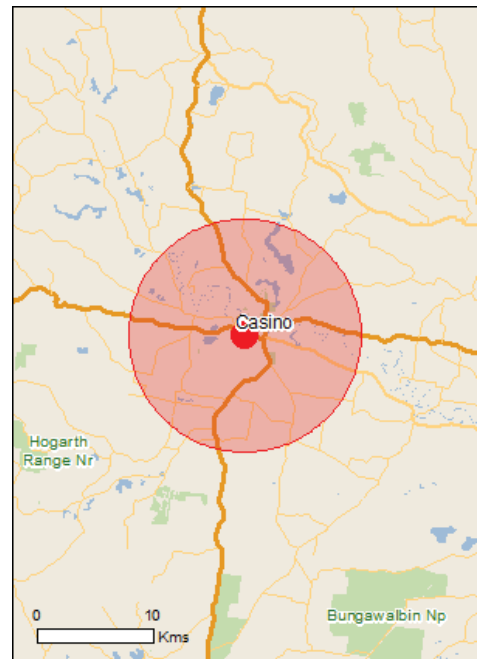
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[Caveat](#)

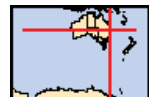
[Acknowledgements](#)



This map may contain data which are
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[Coordinates](#)

Buffer: 10.0Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	39
Listed Migratory Species:	16

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	5
Commonwealth Heritage Places:	1
Listed Marine Species:	22
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	None
Regional Forest Agreements:	1
Invasive Species:	34
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [\[Resource Information \]](#)

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community likely to occur within area

Listed Threatened Species [\[Resource Information \]](#)

Name	Status	Type of Presence
Birds		

Anthochaera phrygia		
Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area
Botaurus poiciloptilus		
Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Cyclopsitta diophthalma coxeni		
Coxen's Fig-Parrot [59714]	Endangered	Species or species habitat may occur within area
Dasyornis brachypterus		
Eastern Bristlebird [533]	Endangered	Species or species habitat known to occur within area
Erythrorchis radiatus		
Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Grantiella picta		
Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area
Lathamus discolor		
Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Rostratula australis		
Australian Painted-snipe, Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area

Name	Status	Type of Presence
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat may occur within area
Fish		
Maccullochella ikei Clarence River Cod, Eastern Freshwater Cod [26170]	Endangered	Species or species habitat likely to occur within area
Frogs		
Mixophyes fleayi Fleay's Frog [25960]	Endangered	Species or species habitat may occur within area
Insects		
Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area
Phyllodes imperialis smithersi Pink Underwing Moth [86084]	Endangered	Species or species habitat may occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat likely to occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat likely to occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Potorous tridactylus tridactylus Long-nosed Potoroo (SE mainland) [66645]	Vulnerable	Species or species habitat may occur within area
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
Plants		
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat may occur within area
Bosistoa transversa Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area
Bulbophyllum globuliforme Miniature Moss-orchid, Hoop Pine Orchid [6649]	Vulnerable	Species or species habitat may occur within area
Clematis fawcettii Stream Clematis [4311]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Desmodium acanthocladum Thorny Pea [17972]	Vulnerable	Species or species habitat may occur within area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus glaucina Slaty Red Gum [5670]	Vulnerable	Species or species habitat likely to occur within area
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat may occur within area
Macadamia tetraphylla Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581]	Vulnerable	Species or species habitat likely to occur within area
Marsdenia longiloba Clear Milkvine [2794]	Vulnerable	Species or species habitat likely to occur within area
Myrsine richmondensis Purple-leaf Muttonwood, Lismore Muttonwood [83888]	Endangered	Species or species habitat may occur within area
Owenia cepiodora Onionwood, Bog Onion, Onion Cedar [11344]	Vulnerable	Species or species habitat likely to occur within area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat likely to occur within area
Sophora fraseri [8836]	Vulnerable	Species or species habitat likely to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area
Reptiles		
Saiphos reticulatus Three-toed Snake-tooth Skink [88328]	Vulnerable	Species or species habitat may occur within area
Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat likely to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [\[Resource Information \]](#)

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Commonwealth Land - Australian Postal Commission
Commonwealth Land - Australian Telecommunications Commission
Commonwealth Land - Defence Service Homes Corporation
Commonwealth Land - Telstra Corporation Limited
Defence - CASINO GRES DEPOT (Army Training Depot) ; 41 RNSWR CASINO

Commonwealth Heritage Places [\[Resource Information \]](#)

Name	State	Status
Historic		
Casino Post Office	NSW	Listed place

Listed Marine Species [\[Resource Information \]](#)

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat likely to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Name	Threatened	Type of Presence
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area

Extra Information

Regional Forest Agreements [\[Resource Information \]](#)

Note that all areas with completed RFAs have been included.

Name	State
North East NSW RFA	New South Wales

Invasive Species [\[Resource Information \]](#)

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Pycnonotus jocosus Red-whiskered Bulbul [631]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area

Frogs

Name	Status	Type of Presence
Rhinella marina Cane Toad [83218]		Species or species habitat known to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Alternanthera philoxeroides Alligator Weed [11620]		Species or species habitat likely to occur within area
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171] Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera subsp. rotundata Bitou Bush [16332]		Species or species habitat likely to occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Hymenachne amplexicaulis Hymenachne, Olive Hymenachne, Water Stargrass, West Indian Grass, West Indian Marsh Grass [5716]		Species or species habitat likely to occur

Name	Status	Type of Presence
[31754] Lantana camara		within area
Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Pinus radiata		
Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate		
Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Sagittaria platyphylla		
Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		Species or species habitat likely to occur within area
Salvinia molesta		
Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Senecio madagascariensis		
Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area
Solanum elaeagnifolium		
Silver Nightshade, Silver-leaved Nightshade, White Horse Nettle, Silver-leaf Nightshade, Tomato Weed, White Nightshade, Bull-nettle, Prairie-berry, Satansbos, Silver-leaf Bitter-apple, Silverleaf-nettle, Trompillo [12323]		Species or species habitat likely to occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-28.87079 153.02945

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- [-Other groups and individuals](#)

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

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Newton Denny Chapelle

SURVEYORS PLANNERS ENGINEERS

Attachment 8

Flood Impact Assessment

SANTIN INVESTMENT TRUST

Santin Rezoning

Flood Impact Assessment



October 2019





M7236_001-REP-001-REV0

DISCLAIMER

This report has been prepared on behalf of and for the exclusive use of SANTIN INVESTMENT TRUST and is subject to and issued in accordance with SANTIN INVESTMENT TRUST instruction to Engeny Water Management (Engeny). The content of this report was based on previous information and studies supplied by SANTIN INVESTMENT TRUST

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M7236_001 SANTIN REZONING FLOOD STUDY						
\\EGIBRAPP02\management\$\Projects\M7000_Miscellaneous Clients\M7236 Santin Investment Trust\M7236_001 Santin Rezoning Flood Study\07 Deliv\Docs\Report\Revs\M7236_001-REP-001-0-Santin FIA.docx						
REV	DESCRIPTION	AUTHOR	REVIEWER	PROJECT MANAGER	APPROVER / PROJECT DIRECTOR	DATE
Rev 0	Client Issue	Cameron Fraser	Mark Page	Cameron Fraser	Mark Page	24 October 2019
Signatures						

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1. INTRODUCTION

1.1 Background

Engeny Water Management (Engeny) has been engaged by Santin Investment Trust to undertake a flood impact assessment to inform the development potential of Lots 100 – 111 DP 755627 (the site) in Casino. The Site is currently undeveloped and is located on the Bruxner Highway within the Richmond Valley Council (RVC) Local Government Area. Refer to Figure 1.1 below for the site locality.



Figure 1.1 Site Locality (Google Maps)

The site is likely to be affected by both regional flooding from the Richmond River and local flooding from Black Gully Creek. This preliminary assessment has aimed to determine whether undertaking filling works to achieve flood immunity for the entire site causes adverse regional or local flood impacts upon neighbouring properties and infrastructure.

It is noted that a construction certificate was granted by RVC on 23rd January 2018 to undertake filling works over Lot 111 DP 755627 for a proposed shed. These approved works have therefore been incorporated into the existing modelling scenario.

1.2 Scope

The scope of the flood impact assessment was as follows:

Regional Flooding

- Develop a TUFLOW 2D hydraulic flood model to represent the existing (approved fill) scenario, utilising RVC's current TUFLOW hydraulic model as a base, and simulate for the 5%, 2% and 1% AEP events.
- Update the TUFLOW 2D hydraulic flood model to incorporate a worst-case development fill scenario in line with Council's minimum flood planning levels and simulate for each flood event.
- Present flood impact mapping and results.

Local Flooding

- Development of a local hydrological model covering the Black Gully Creek catchment to the confluence with the Richmond River.
- Estimation of design hydrology for the Black Creek Gully catchment. Hydrology will be developed for the 10%, 2% and 1% AEP events. The design hydrology estimates will be validated against regional flood estimates.
- Development of a local 1D/2D TUFLOW hydraulic model of the site and surrounding areas to represent the existing (approved fill) scenario and simulate for each event.
- Update the local 1D/2D TUFLOW hydraulic model to incorporate a worst-case development fill scenario in line with Council's minimum flood planning levels and simulate for each event.
- Present flood impact mapping and results.

2. REGIONAL FLOOD IMPACT ASSESSMENT

The Richmond River Flood Model (2010) by BMT WBM was utilised to assess regional flood impacts in line with a worst-case (i.e. conservative) development fill scenario.

2.1 Base Model Background

DPIE (formerly OEH) has previously suggested that the Richmond River Flood Model (2010) by BMT WBM has not been calibrated for the Casino locality and that previous Casino specific studies should therefore be adopted for flood impact assessment in this area. The Casino models suggested by OEH are:

- Casino Flood Study, WBM, February 1998.
- Casino Floodplain Risk Management Plan, WBM, May 2002.
- Casino Floodplain Risk Management Study, WBM, May 2002.

Advice received from BMT WBM and a preliminary inspection of the legacy models highlighted that the Casino models have been calibrated to the Richmond River and Casino locality. However modelling software has radically evolved over the period of two decades and it would be difficult to undertake a flood impact assessment using the Casino models (circa 1998 and 2002) with any degree of certainty. As such, the Richmond River Flood Model (2010) was found to be the most accurate model to utilise for this assessment.

2.2 Existing Model Parameters

Modelling parameters associated with the Richmond River Flood Model were maintained with the addition of a uniform pad level of 25.9m AHD over Lot 111 DP 755627 to represent the approved filling works. A uniform pad level was included in the absence of a detailed earthworks design surface as shown in Figure 2.1 and presents a conservative fill extent.



Figure 2.1 Existing Approved Fill Extent

2.3 Developed Model Parameters

For the developed case model, the existing regional base model was updated to include the filling works necessary to achieve the minimum flood planning level across the entire site. Refer to Figure 2.2 for ultimate earthworks extents which assumed a universal elevation of 25.9m AHD.



Figure 2.2 Proposed Fill Extent

2.4 Flood Impact Results

A regional flood impact assessment has been undertaken in accordance with the 5%, 2% and 1% AEP Richmond River flood event. Associated flood mapping has been provided in Appendix A.

The modelling results indicate that the proposed development fill scenario is not predicted to be inundated up to and including the 1% AEP Richmond River flood event, however flood depth impacts of up to 50mm were observed within the surrounding Casino locality.

2.5 Base Model Limitations

There are several issues with the base case model that have provided results that are not representative or favourable with regards to potential flood impacts as a result of the development. The potential model issues are as follows:

- Casino floodplain conditions are not accurately represented due to limited modelling extents. Proximity of model boundary to subject site was considered to provide conservative peak flood level estimations.
- Model utilises 60m grid resolution which can cause key topographical features to be poorly represented and lead to an overestimation in flood impact extents.
- Model inflow locations are within close proximity to the subject site.

With reference to the issues outlined above, the Richmond River Flood Model is not considered an appropriate model to quantify regional flood impacts associated with development within the Casino locality. In order to achieve a more accurate representation of flood results within the Casino locality it is recommended that the model boundaries be extended, the grid resolution be reduced, and the model be calibrated for the Casino Area.

3. LOCAL FLOOD IMPACT ASSESSMENT

3.1 Hydrologic Model Parameters

Hydrologic modelling for the Black Creek Gully catchment was undertaken utilising XPRAFTS and developed for the 10%, 2% and 1% AEP design storm events and for storm durations ranging from 2 to 18 hours, in accordance with the latest revision of Australian Rainfall & Runoff (ARR 16) at the time of this assessment.

3.1.1 Catchment Data

A total catchment area of approximately 3800ha was defined and split into 13 sub-catchments based upon 2010 LiDAR data. Refer to Figure 3.1 for catchment delineation and Table 3.1 for adopted catchment parameters. Manning's roughness values of 0.015 and 0.05 were applied for impervious and pervious areas respectively.

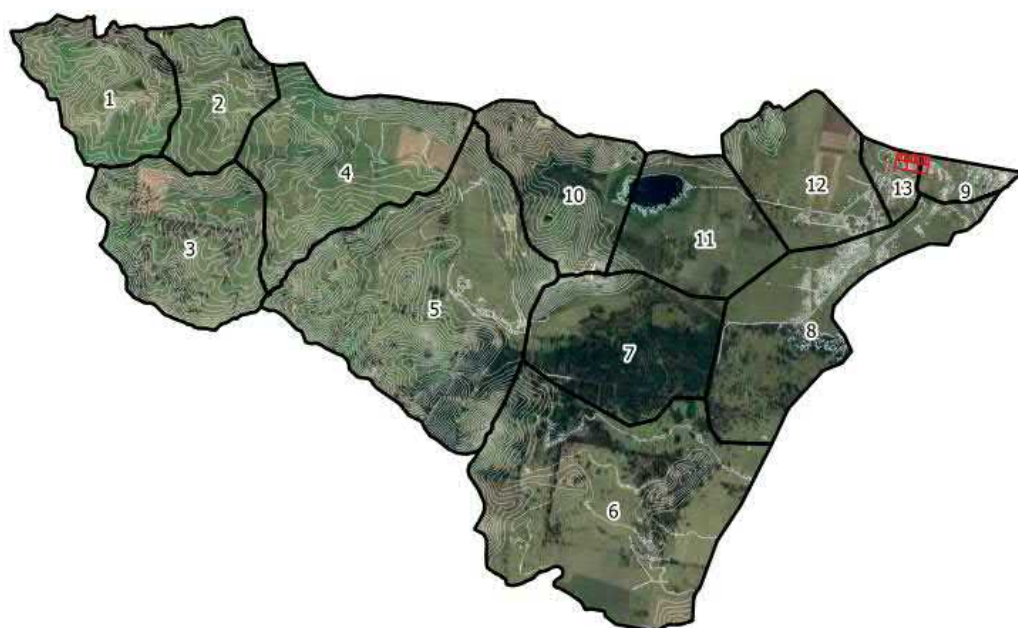


Figure 3.1 Local Sub-Catchment Delineation

Table 3.1 Local Catchment Parameters

Catchment No.	Area (ha)	Impervious Fraction (%)	Slope (%)
1	225	0	5
2	171	0	4

Catchment No.	Area (ha)	Impervious Fraction (%)	Slope (%)
3	308	0	6
4	369	0	3
5	650	0	6
6	660	0	2
7	301	0	3
8	328	0	2
9	44	25	2
10	232	0	4
11	237	0	1
12	228	0	2
13	43	0	3

3.1.2 Rainfall Data

Design rainfall data relative to the 10%, 2% and 1% AEP design storm events were sourced from the ARR 16 Online Data Hub. Refer to Table 3.2 below for adopted initial and continuing loss parameters. It is noted that these values have been derived in accordance with the NSW loss hierarchy.

Table 3.2 Adopted Initial and Continuing Loss Parameters

Storm Event	Initial Loss (mm)	Continuing Loss (mm)
10%	13	0.8
2%	10	0.8
1%	4	0.8

3.1.3 Model Validation

As the topography at the lower reaches of the local catchment is very flat and poorly defined, model validation was limited to upper sub-catchment peak flows (A=1700ha). The Regional

Flood Frequency Estimation (RFFE) technique was used for validation purposes and associated flows were generally found to closely correlate with peak mean XPRAFTS design flows. Refer to Figure 3.2 for upper catchment extents and Table 3.3 for a comparison of the total peak flow at the outlet of sub-catchment 5.

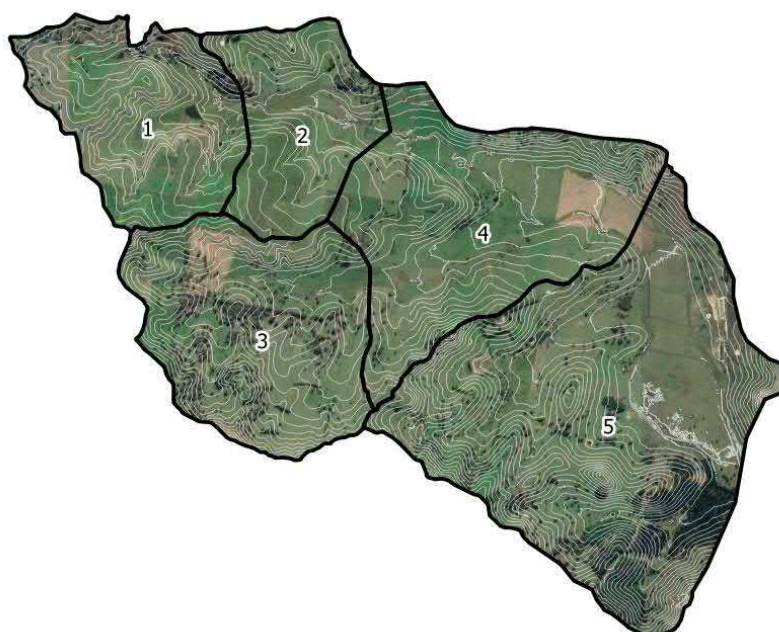


Figure 3.2 Model Validation Catchment Extent

Table 3.3 Peak Flow Validation

Storm Event	XPRAFTS Total Peak Flow (m ³ /s)	RFFE Total Peak Flow (m ³ /s)	Difference (%)
10%	101	63.6	37
2%	155	133	14
1%	181	175	3

3.2 Hydraulic Model Parameters

3.2.1 Existing Case

The hydraulic model extents are shown in Figure 3.3, additional hydraulic model parameters adopted for the existing scenario are as follows:

- A 10m cell size has been adopted to capture the 2d domain and is considered to adequately capture key topography within the model.

- Model bathymetry is relative to 2010 LiDAR data (1m DEM).
- In the absence of a detailed earthwork design surface representing the approved filling works over Lot 111 DP 755627, a uniform pad level of 25.9m AHD was incorporated over the entire lot area. Refer Figure 2.2.
- A downstream tailwater level representative of bank full flows for the Richmond River has been applied.
- The Bruxner Highway road bridge over Black Gully Creek has been modelled as a layered flow constriction and associated blockage properties have been applied based on model bathymetry, inspection of available satellite imagery and reference to DTMR's hydraulic modelling technical guideline.



Figure 3.3 Model Domain Extent

Ground roughness values were assigned based on inspection of available satellite imagery and are listed in Table 3.4.

Table 3.4 Roughness Values Adopted in the TUFLOW Model

Land Use Type	Manning's n value
Forested Area	0.07
Open Grassland	0.05

Land Use Type	Manning's n value
Road	0.015

3.3 Model Results

Refer to Table 3.5 for critical storm events for the site which present worst case conditions in respect to localised flooding. It is noted that the site is not subject to localised flooding up to and including the 1% AEP storm event and therefore no flood impacts are predicted to occur during localised flood events should filling works be undertaken over the entirety of the site. Refer to Appendix A for associated flood depth and elevation mapping.

Table 3.5 Critical Storm Event Summary

Storm Event	Duration (hours)	Ensemble Number	Maximum Flood Elevation Adjacent to Site (m AHD)
10%	12	10	22.9
2%	12	3	23.4
1%	12	3	23.7

4. CONCLUSION

Engeny was engaged to undertake a flood impact assessment, with respect to both regional and localised flooding conditions up to and including the 1% AEP storm event, to inform the development potential of Lots 100 – 111 DP 755627 in Casino.

The regional flood impact assessment utilised the Richmond River Flood Model (2010) developed by BMT WBM. Flood impacts of up to 50mm in the 1% AEP storm event were determined external to the site as a result of the proposed development.

Based on the results of the simulation, there were adverse impacts predicted by the flood impact assessment, however the model does not truly represent an appropriate extent of the floodplain. As such, the supplied model which was specified for use in this assessment is not considered to appropriately assess flood impacts associated with the proposed development. It is recommended that the Richmond River flood study model be reviewed, extended, updated and calibrated to the Casino area to provide an improvement in the accuracy of results.

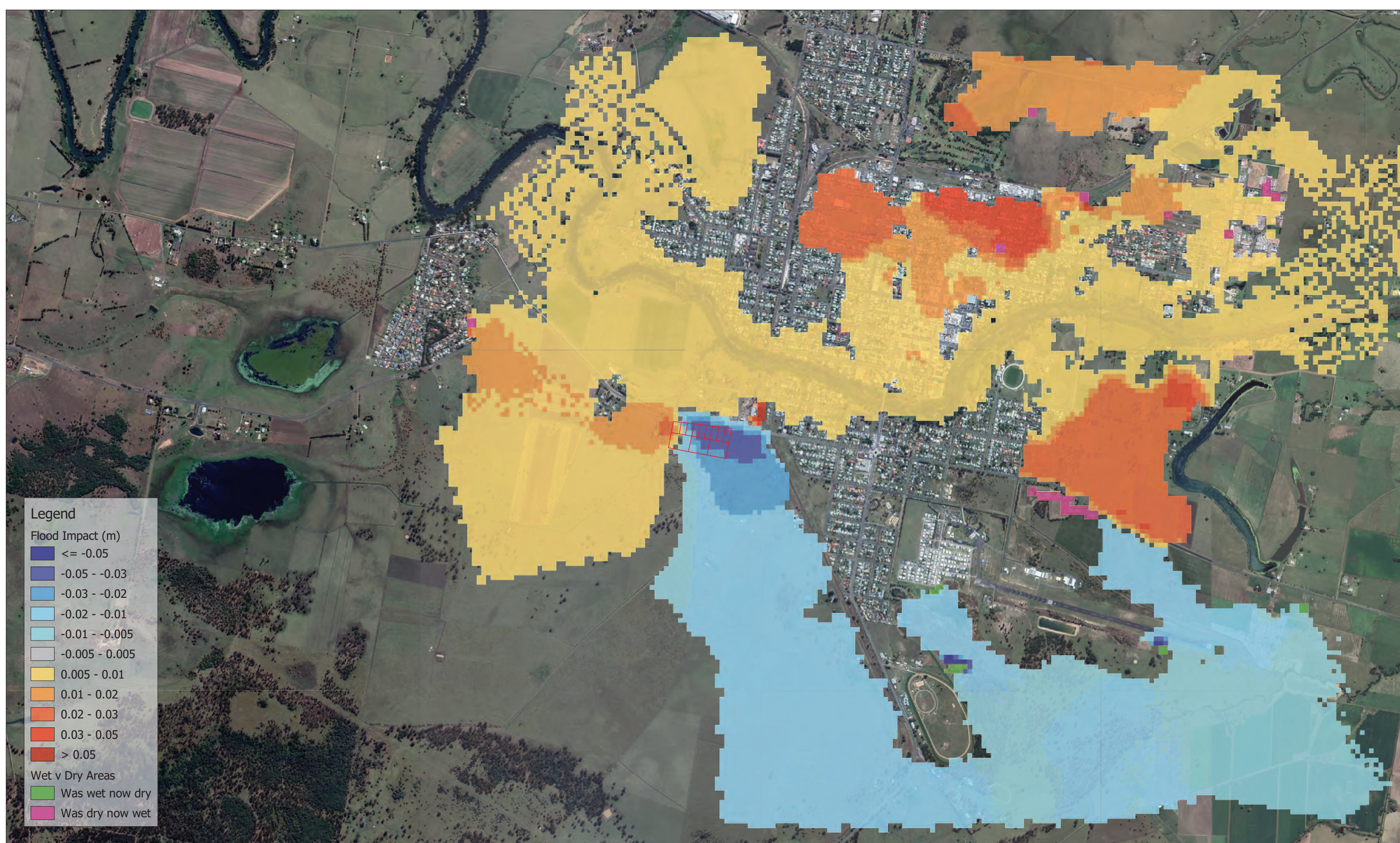
The localised flood impact assessment determined that the subject site is not affected by localised flooding up to and including the 1% AEP storm event and therefore no flood impacts were predicted to occur during localised flood events should filling works be undertaken over the entirety of the site.

5. QUALIFICATIONS

- a. In preparing this document, including all relevant calculation and modelling, Engeny Water Management (Engeny) has exercised the degree of skill, care and diligence normally exercised by members of the engineering profession and has acted in accordance with accepted practices of engineering principles.
- b. Engeny has used reasonable endeavours to inform itself of the parameters and requirements of the project and has taken reasonable steps to ensure that the works and document is as accurate and comprehensive as possible given the information upon which it has been based including information that may have been provided or obtained by any third party or external sources which has not been independently verified.
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 - (i) Additional sources of information not presently available (for whatever reason) are provided or become known to Engeny; or
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- g. This report does not provide legal advice.

APPENDIX A

Regional Flood Impact Mapping



Legend

Flood Impact (m)

- ≤ -0.05
- 0.05 - -0.03
- 0.03 - -0.02
- 0.02 - -0.01
- 0.01 - -0.005
- 0.005 - 0.005
- 0.005 - 0.01
- 0.01 - 0.02
- 0.02 - 0.03
- 0.03 - 0.05
- > 0.05

Wet v Dry Areas

- Was wet now dry
- Was dry now wet

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Version: 1, Version Date: 05/05/2020



Santin Investment Trust

0 200 400 600 800 m

Scale in metres (1:21500 @ A3)

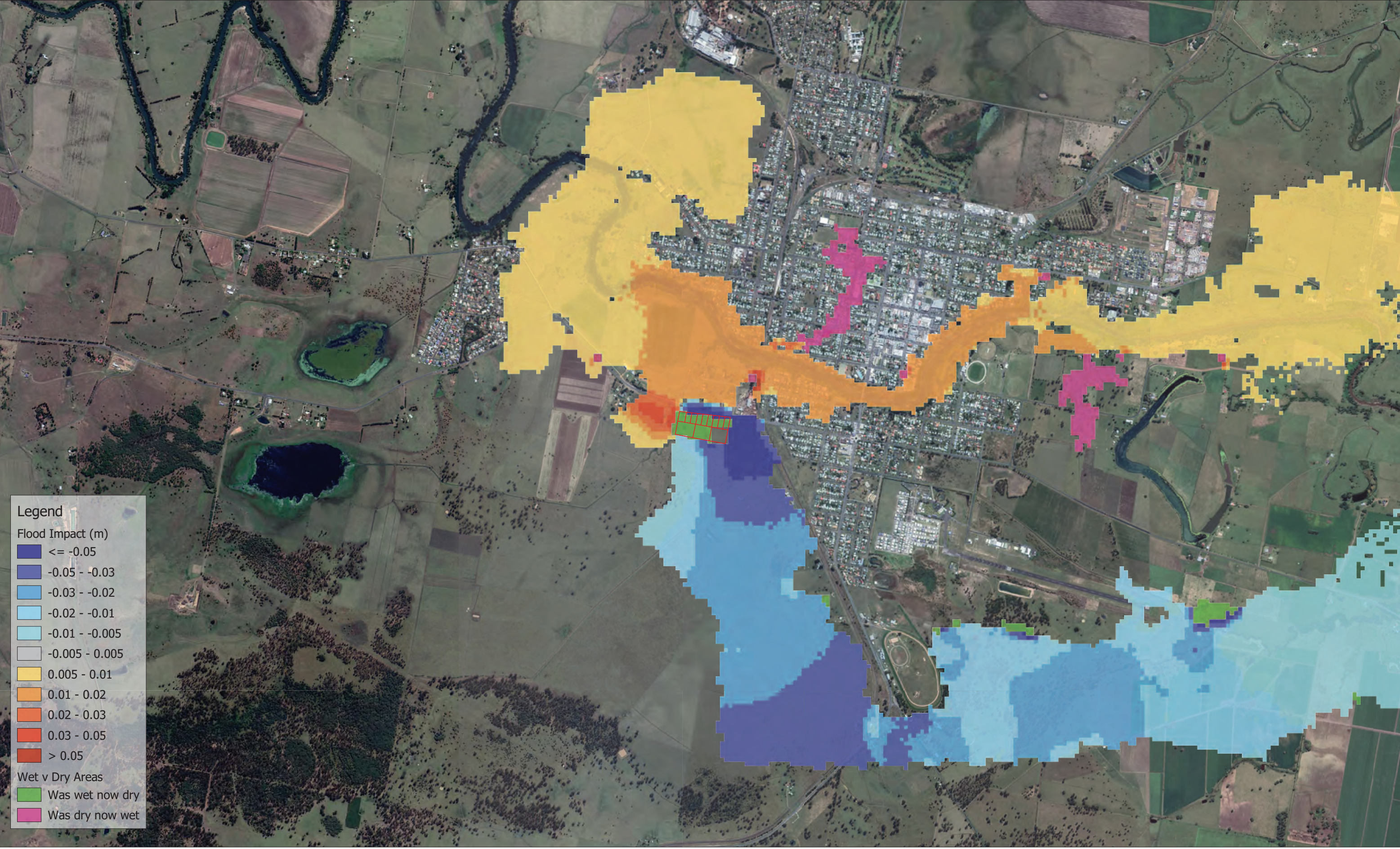
Map Projection: Tranverse Mercator
Horizontal Datum: Geocentric Datum of Australia
Vertical Datum: Australia Geodetic Datum
Grid: Australian Map Grid, Zone 55

Santin Rezoning Flood Study

Figure 1 - Regional 1% AEP Flood Impact Depths

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Date: 18 /10 /2019



Legend

Flood Impact (m)

- <= -0.05
- 0.05 - -0.03
- 0.03 - -0.02
- 0.02 - -0.01
- 0.01 - -0.005
- 0.005 - 0.005
- 0.005 - 0.01
- 0.01 - 0.02
- 0.02 - 0.03
- 0.03 - 0.05
- > 0.05

Wet v Dry Areas

- Was wet now dry
- Was dry now wet

Santin Investment Trust



Scale in metres (1:25000 @ A3)

Map Projection: Tranverse Mercator
Horizontal Datum: Geocentric Datum of Australia
Vertical Datum: Australia Geodetic Datum
Grid: Australian Map Grid, Zone 55

Santin Rezoning Flood Study

Figure 2 - Regional 2% AEP Flood Impact Depths

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Checked: MP
Date: 18 /10 /2019



Legend

Flood Impact (m)

- <= -0.05
- 0.05 - -0.03
- 0.03 - -0.02
- 0.02 - -0.01
- 0.01 - -0.005
- 0.005 - 0.005
- 0.005 - 0.01
- 0.01 - 0.02
- 0.02 - 0.03
- 0.03 - 0.05
- > 0.05

Wet v Dry Areas

- Was wet now dry
- Was dry now wet

APPENDIX B

Local Flood Mapping



Legend

Flood Elevation (m AHD)

[Dark Blue]	20.41
[Blue]	20.91
[Light Blue]	21.41
[Very Light Blue]	21.91
[Light Green]	22.41
[Yellow]	22.9
[Light Orange]	23.4
[Orange]	23.9
[Dark Orange]	24.4
[Red-Orange]	24.9
[Red]	25.4
[Dark Red]	>25.4



Legend

Flood Elevation (m AHD)

[Dark Blue]	20.41
[Blue]	20.91
[Light Blue]	21.41
[Very Light Blue]	21.91
[Light Green]	22.41
[Yellow]	22.9
[Light Orange]	23.4
[Orange]	23.9
[Dark Orange]	24.4
[Red-Orange]	24.9
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[Dark Red]	>25.4



Legend

Flood Elevation (m AHD)

[Dark Blue]	20.41
[Blue]	20.91
[Light Blue]	21.41
[Very Light Blue]	21.91
[Light Green]	22.41
[Yellow]	22.9
[Light Orange]	23.4
[Orange]	23.9
[Dark Orange]	24.4
[Red-Orange]	24.9
[Red]	25.4
[Dark Red]	>25.4





Legend

Flood Depth (m)

- 0.00 - 0.05
- 0.05 - 0.5
- 0.5 - 1.5
- 1.5 - 3
- >3

Subject Site



Legend

Flood Depth (m)

- 0.00 - 0.05
- 0.05 - 0.5
- 0.5 - 1.5
- 1.5 - 3
- >3

Subject Site

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0 100 200 300 400 m

Scale in metres (1:10000 @ A3)

Map Projection: Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia
Vertical Datum: Australia Geodetic Datum
Grid: Australian Map Grid, Zone 55

Santin Rezoning Flood Study

Figure 9 - Local 10% AEP Flood Depth

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Checked: MP
Date: 18/10/19



Newton Denny Chapelle

SURVEYORS PLANNERS ENGINEERS

Attachment 9

Traffic Impact Assessment

TRAFFIC IMPACT ASSESSMENT

Proposed Rezoning for Future Industrial Subdivision

Lots 100-111 DP 755627
Bruxner Highway
Casino

for:
Santin Investment Trust

June 2019

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Document Control Sheet



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1					

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1. Introduction

Ardill Payne & Partners (APP) has been engaged by Santin Investment Trust to prepare a Traffic Impact Assessment to accompany the lodgement of a Rezoning Application with Richmond Valley Council for the future industrial subdivision of lots 100-111 DP 755627 Bruxner Highway, Casino.

This report provides details regarding the current traffic, the level of service provided by surrounding roads and the impact development of the site would have on these roads.

1.1 The Site

The site is located approximately 1.4km southwest of the Casino CBD. The site is bordered by:

- Bruxner Highway and a saw mill to the north
- Flat cattle grazing fields to the south east and west

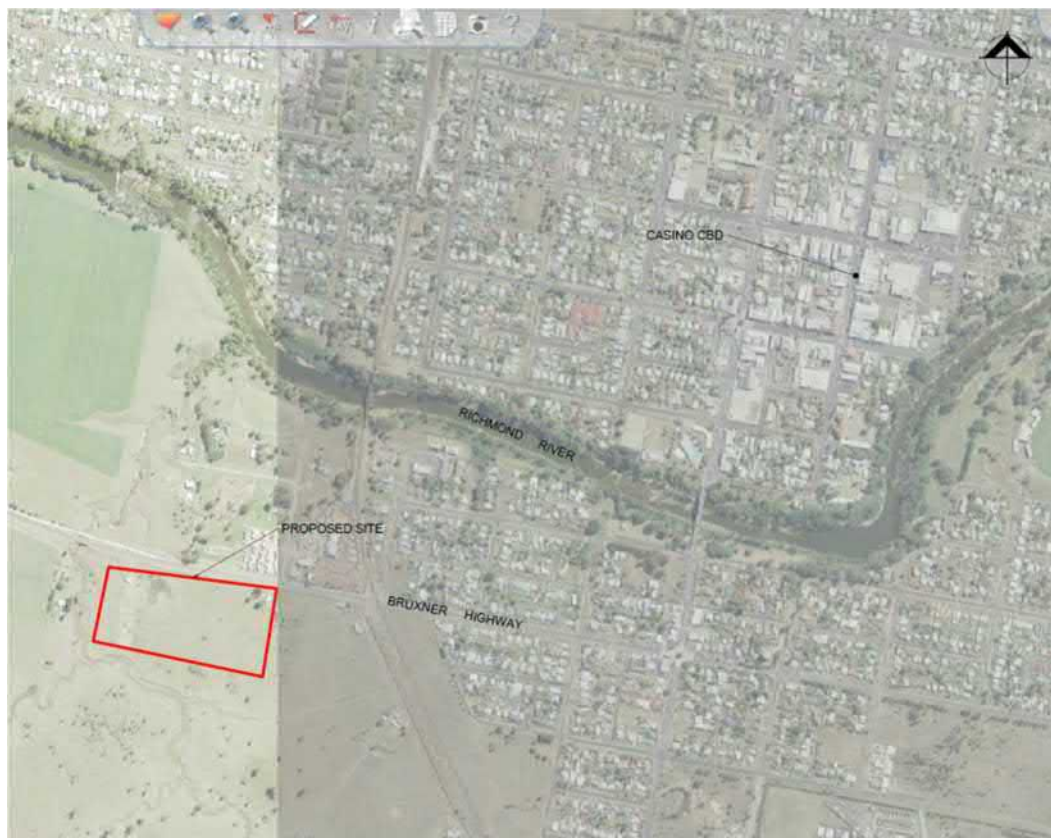


Figure 1: Site Locality

Table 1 describes the site details.

Table 1: Site Identification Details

Site Address	Bruxner Highway, Casino
Total Site Area	6.94 ha
Proposed Rezone Area	6.94 ha
Title	Lots 100-111 DP 755627
Local Government Area	Richmond Valley Council
Existing Land Use	The existing site is used for cattle grazing
Surrounding Environment	The surrounding area is primarily cattle grazing land with a saw mill and the Bruxner Highway located to the north of the site

1.2 The Proposal

The proponent proposes to rezone Lots 100-111 DP 755627 from RU1 Primary Production to IN1 General Industrial to permit future industrial subdivision of the land, with a minimum lot size of 750m². All lots in the future subdivision would have access to a new internal road off the extension of Hotham Street, which would have a new intersection with the Bruxner Highway. No lots would have direct vehicular access to the Bruxner Highway.

The estimated yield from the rezoned area of land, assuming an average lot size of 900m², is approx. 70 industrial lots. This traffic assessment will be based on 70 lots.

2. Existing Conditions

2.1 Bruxner Highway

Bruxner Highway is a 2 lane, 2-way state highway with a 9m wide bitumen sealed carriageway and a sealed shoulder both sides. The road has centre and edge line markings. The current posted speed limit past the site is 60km/h.

2.2 Hotham Street

Hotham Street south of the Bruxner Highway is currently an unformed road.

2.3 Public Transport

Northern Rivers Buslines 670/675 services operate from Monday to Friday past the site. The services operate from Lismore to Tenterfield. Rural school bus services use the Bruxner Highway for access to Casino.

2.4 Pedestrians and Cyclists

Pedestrian volumes in the area are very low and is typical of rural areas. There is a concrete footpath adjacent to the shoulder on the northern side of the Bruxner Highway, east of Hotham Street.

Cyclist numbers would be expected to be low. Some recreational cyclists may be encountered on weekends.

2.5 Accident History

Based on data obtained from the Transport for NSW Centre for Road Safety website, crash rates in the area for the period 2013 to 2016 are relatively low. There are only two recorded crashes on Bruxner Highway:

- One crash just west of the existing Bruxner Highway/Hotham Street intersection in 2016 - serious injury head-on collision during daylight hours with 3 people injured
- One crash occurred approximately 1 km north of the Bruxner Highway/Hotham Street intersection, the crash resulting in 1 person being seriously injured

3. Traffic Assessment

This traffic assessment has been prepared on the basis of an expected yield after rezoning of approx. 70 lots.

3.1 Existing Traffic Count – Bruxner Highway

A 2004 traffic count for Bruxner Highway was provided by Richmond Valley Council (3664 AADT). The count has been extrapolated at an annual growth rate of 1%, with the adjusted value shown in **Table 2** below.

Table 2: Existing Traffic Counts

Date	Street	Description	Count	Volume	%HV
2019	Bruxner Highway	0.5km west of Rifle Range Road	AADT	4,212	10%
			Av. Peak Hr*	421	

* Average Peak Hour rates are based on 10% of AADT.

3.2 Proposed Traffic Generation

Richmond Valley Council Development Control Plans do not have relevant traffic generation data. Therefore, this assessment is based on the RMS 'Guide to Traffic Generating Developments' (2002), and RMS Technical Direction TDT 2013/04a 'Guide to Traffic Generating Developments, Updated Traffic Surveys'. The RMS rates are summarised in **Table 3** below.

Table 3: Traffic Generation Rates

Development level	RMS Source	AADT	Peak Hour Vehicle Trips Volume
Warehouses	GTGD 2002	4/100m ² GFA	0.5/100m ² GFA
Factories	GTGD 2002	5/100m ² GFA	1/100m ² GFA
Industrial Estates (regional)	TDT 2013/04a	127.5-197.7 dvt/ha	13.2-18.4 pvt/ha

(According to the RMS Guide, a trip is defined as a one-way vehicular movement from one point to another excluding the return journey. Therefore, a return trip to/from a land use is counted as two trips).

Annual Average Daily Traffic (AADT) and peak vehicle trip volumes per hour generated by the future development of the site can be estimated based on the expected yield (approx. 70 industrial lots). A Gross Floor Area (GFA) of 500m² has been assumed for each of the industrial

lots. Based on the generation rates shown in **Table 3** above, the proposed traffic generation is summarized in **Table 4** below.

Table 4: Proposed Traffic Generation

Development level	Rate	Assumed GFA (m ²)	Predicted AADT	Predicted peak hourly traffic
Warehouse Units	70 lots	500	1400	175
Factories	70 lots	500	1750	350
Industrial Estates (regional)	6.94ha		885-1372	92-128
	Adopted Values		1400	175

3.3 Trip Distribution and Modal Split

Proposed subdivision traffic will travel to the Bruxner Highway via a new intersection with Hotham Street. From this intersection the predicted trip distribution are:

- 30% travel west along Bruxner Highway
- 70% travel east along Bruxner Highway towards Casino

Most vehicle trips will be by car or heavy vehicle.

4. Impacts of the Proposal

The impacts of the future development of the site are assessed in accordance with the RMS 'Guide to Traffic Generating Developments' (2002).

4.1 Impact on Traffic Efficiency

To aid interpretation of the impacts on traffic flows, the RMS Guide provides acceptable ranges of peak vehicle flows for various Levels of Service experienced on the road. The intention is to at least maintain the existing Level of Service for the streets adjacent to the site.

Mid-block road capacity Levels of Service are defined by the RMS for urban and rural areas and are shown in **Table 5 & 6**, with the highest Level of Service being Level A and service deteriorating to Level E.

Table 5: RMS LOS Urban Roads

Level of Service	One Lane (vph)
A	200
B	380
C	600
D	900
E	1400

Table 6: RMS LOS Rural Roads

Level of Service	Percent of Heavy Vehicle			
	0	5	10	15
B	630	590	560	530
C	1030	970	920	870
D	1630	1550	1480	1410
E	2630	2500	2390	2290

The following performance standards are recommended:

Weekday Peak Hour Flows

Major Roads: Level of Service C

Minor Roads: Level of Service C (desirable)

Recreational Peak Hours (weekends)

Major Roads: Level of Service D

Minor Roads: Level of Service D (desirable)

Table 7: Proposed Traffic Efficiency

Road	Existing veh/hr	Existing LOS	Proposed veh/hr	Proposed LOS
Bruxner Highway Eastbound	421	B	544	B
Bruxner Highway Westbound	421	B	474	B

As can be seen from the **Table 7** above the increased traffic and the directional split from the future development of the site doesn't increase the LOS on the Bruxner Highway according to RMS's LOS guide for rural roads.

4.2 Impact on Intersections

New intersections will be designed and constructed from the highway to Hotham Street, and from Hotham Street to the new internal road.

There will be little impact on other intersections.

4.3 Impact on Amenity

No residential streets will be directly impacted by the future development of the site. All traffic will travel to and from the site via the Bruxner Highway.

There will be some amenity impact for residences (urban and rural) fronting the highway due to the increase in traffic, but the impact will be diluted as it extends further from the site.

4.4 Impact on Safety

The only recorded accidents in the vicinity are recorded on the existing Bruxner Highway. There was one just west of the Hotham Street intersection.

The speed limit changes from 100km/h to 60km/h just 60m west of the proposed intersection. There will be additional turning traffic in the zone where vehicles are speeding up or slowing down. There is some justification for the 60km/h speed limit to be moved further west to ensure vehicles are travelling at 60km/h past the intersection.

A Design Road Safety Audit (RSA) of the proposed intersection was undertaken as a desktop study. The main findings from the RSA was that the construction of the new Hotham Street intersection will create a four-way intersection, and there are no existing controls on the existing part of the intersection. It is recommended that appropriate line-marking and signage be installed on the existing and proposed sides of the Hotham Street intersection. With this new intersection there is insufficient advance warning signs on the Bruxner Highway for the intersection ahead. It is recommended that appropriate advance warning signs be installed on the Bruxner Highway.

4.5 Impact on Public Transport

Most vehicle trips to and from the site will be by private car or heavy vehicles. The future development of the site has little potential to generate additional demand for public transport.

4.6 Impact on Pedestrians and Cyclists

There will be little impact on pedestrians and cyclists as the site is on the edge of town. Pedestrian and cyclist numbers are low.

4.7 Impact of Other Proposed Developments in the Vicinity

There are no other known development proposals in the area.

5. Design Standards

Northern Rivers Local Government (NRLG) '*Development Design Specification D1: Geometric Road Design (Urban and Rural)*' Section D1.31 Industrial Road Widths provides the following characteristics of an industrial road:

- Carriageway width = 13m wide
- Minimum verge = 3.5m wide
- Parallel parking is permitted on road

The proposed internal road and intersections will be designed in accordance with NRLG standards. The proposed Bruxner Highway/Hotham Street intersection will be designed in accordance with Austroads and NRLG standards.

6. Conclusion and Recommendations

It is concluded that the future development of the site would increase the number of daily trips and peak hourly trips on the surrounding roads. The Level of Service experienced on the surrounding streets is within acceptable performance standards. The impact of the future development of the site on nearby intersections will be manageable.

With the implementation of the recommendations listed below, the roads will have the capacity to safely and efficiently service the traffic that will be generated by the future development of the site.

Recommendation 1:

Relocate the 100/60km/h speed zone change further west away from the new proposed intersection.

Recommendation 2:

Install appropriate signage and line-marking on the proposed and existing sides of the new four-way Hotham Street Intersection.

Recommendation 3:

Install appropriate advance warning signs on the Bruxner Highway for the new four-way Hotham Street intersection.

7. Scope of Engagement

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