RDC ENGINEERS | AGRICULTURAL ENVIRONMENTAL PROJECT MANAGEMENT

PO Box 1223
Toowoomba QLD 4350
info@rdcengineers.com.au
ABN 37 627 163 071

Our ref: D1-130-RRED-IAI-DA-20220604

4 June 2022

Chief Executive Officer
Charters Towers Regional Council
PO Box 189
CHARTERS TOWERS QLD 4820

Dear Sir/Madam,

Re CHANGE APPLICATION (OTHER CHANGE) – DEVELOPMENT PERMIT FOR MATERIAL CHANGE OF USE FOR "INTENSIVE ANIMAL INDUSTRY" (BEEF CATTLE FEEDLOT) AND ENVIRONMENTALLY RELEVANT ACTIVITY (ERA 2 1(b)), 5291 FLINDERS HIGHWAY, REID RIVER – LOT 1 RP743456, LOT 2 RP743456 AND LOT 600 SP310657 (COUNCIL REF: MC18/63; 1210848)

I act for the applicant Reid River Export Depot Pty Ltd as trustee for the Reid River Unit Trust in regards to the above matter.

Please find enclosed the following documentation associated with a Change Application (Other Change) which seeks to make change to a Development Permit for Material Change of Use on land at 5291 Flinders Highway, Reid River, being that land described as Lot 1 on RP743456, Lot 2 on RP743456 and Lot 600 on SP310657:

a) Application forms
   - Change application Form 5 – Change application details;
   - DA Form 1 – Development application details;
   - Development application Form 1 – Application details – Attachment for an application for an environmental authority; and
   - Written consent of the land owner.

b) Supporting information including mandatory plans.

Should you require any additional information or clarification in relation to this matter, please contact the undersigned.

Yours sincerely

Rod Davis
Director

M 0427 629203
E Rod.Davis@rdcengineers.com.au | **W** www.rdcengineers.com.au

Change application form

Planning Act Form 5 (version 1.2 effective 7 February 2020) made under Section 282 of the Planning Act 2016.

This form is to be used for a change application made under section 78 of the *Planning Act 2016*. It is important when making a change application to be aware of whether the application is for a minor change that will be assessed under section 81 of the *Planning Act 2016* or for an other change that will be assessed under section 82 of the *Planning Act 2016*.

An applicant must complete all parts of this form, and provide any supporting information that the form identifies as being required to accompany the change application, unless stated otherwise. Additional pages may be attached if there is insufficient space on the form to complete any part.

***Note**: All terms used in this form have the meaning given under the Planning Act 2016, the Planning Regulation 2017, or the Development Assessment Rules (DA Rules).*

PART 1 – APPLICANT DETAILS

1) Applicant details	
Applicant name(s) (*individual or company full name*)	Reid River Export Depot Pty Ltd as trustee for the Reid River Unit Trust c:\ RDC Engineers Pty Ltd
Contact name *(only applicable for companies)*	Paul Heil (Reid River Export Depot Pty Ltd) / Rod Davis (RDC Engineers Pty Ltd)
Postal address *(P.O. Box or street address)*	PO Box 2499
Suburb	IDALIA
State	QLD
Postcode	4811
Country	Australia
Email address *(non-mandatory)*	Paul Heil paul@reidriverexport.com.au Rod Davis rod.davis@rdcengineers.com.au
Mobile number *(non-mandatory)*	Paul Heil (0427 201 295) / Rod Davis (0427 629 203)
Applicant's reference number(s) *(if applicable)*	D1-130

2) Owner's consent - Is written consent of the owner required for this change application?

***Note**: Section 79(1A) of the Planning Act 2016 states the requirements in relation to owner's consent.*

☒ Yes – the written consent of the owner(s) is attached to this change application

☐ No

PART 2 – LOCATION DETAILS

3) Location of the premises *(complete 3.1) or 3.2), and 3.3) as applicable)*

3.1) Street address and lot on plan

☒ Street address **AND** lot on plan (*all lots must be listed*), ***or***

☐ Street address **AND** lot on plan for an adjoining or adjacent property of the premises *(appropriate for development in water but adjoining or adjacent to land e.g. jetty, pontoon. All lots must be listed).*

a)	Unit No.	Street No.	Street Name and Type	Suburb
		5291	Flinders Highway	Reid River
	Postcode	Lot No.	Plan Type and Number *(e.g. RP, SP)*	Local Government Area(s)
	4816	1	RP743456	Charters Towers Regional Council
b)	Unit No.	Street No.	Street Name and Type	Suburb

		5291	Flinders Highway	Reid River
	Postcode	Lot No.	Plan Type and Number *(e.g. RP, SP)*	Local Government Area(s)
	4816	2	RP743456	Charters Towers Regional Council
c)	Unit No.	Street No.	Street Name and Type	Suburb
		5291	Flinders Highway	Reid River
	Postcode	Lot No.	Plan Type and Number *(e.g. RP, SP)*	Local Government Area(s)
	4816	600	SP310657	Charters Towers Regional Council

3.2) Coordinates of premises *(appropriate for development in remote areas, over part of a lot or in water not adjoining or adjacent to land e.g. channel dredging in Moreton Bay)*

***Note**: Place each set of coordinates in a separate row.*

☐ Coordinates of premises by longitude and latitude

Longitude(s)	Latitude(s)	Datum	Local Government Area(s) *(if applicable)*
		☐ WGS84 ☐ GDA94 ☐ Other:	

☐ Coordinates of premises by easting and northing

Easting(s)	Northing(s)	Zone Ref.	Datum	Local Government Area(s) *(if applicable)*
		☐ 54 ☐ 55 ☐ 56	☐ WGS84 ☐ GDA94 ☐ Other:	

3.3) Additional premises

☐ Additional premises are relevant to the original development approval and the details of these premises have been attached in a schedule to this application

☒ Not required

PART 3 – RESPONSIBLE ENTITY DETAILS

4) Identify the responsible entity that will be assessing this change application

***Note**: see section 78(3) of the Planning Act 2016*

Charters Towers Regional Council

PART 4 – CHANGE DETAILS

5) Provide details of the existing development approval subject to this change application

Approval type	Reference number	Date issued	Assessment manager/approval entity
☒ Development permit ☐ Preliminary approval	MC18/63 - 1210848	20 September 2018	Charters Towers Regional Council
☐ Development permit ☐ Preliminary approval			

6) Type of change proposed

6.1) Provide a brief description of the changes proposed to the development approval *(e.g. changing a development approval for a five unit apartment building to provide for a six unit apartment building)*:

Changing a development approval for Undefined Use (Cattle holding yards)) to provide for an Intensive Animal Industry (Beef cattle feedlot)

6.2) What type of change does this application propose?
☐ Minor change application – proceed to Part 5 ☒ Other change application – proceed to Part 6

PART 5 – MINOR CHANGE APPLICATION REQUIREMENTS

7) Are there any affected entities for this change application		
☐ No – proceed to Part 7 ☐ Yes – list all affected entities below and proceed to Part 7 ***Note**: section 80(1) of the Planning Act 2016 states that the person making the change application must give notice of the proposal and the details of the change to each affected entity as identified in section 80(2) of the Planning Act 2016.*		
Affected entity	Pre-request response provided? (*where a pre-request response notice for the application has been given, a copy of the notice must accompany this change application)*	Date notice given *(where no pre-request response provided)*
	☐ No ☐ Yes – pre-request response is attached to this change application	
	☐ No ☐ Yes – pre-request response is attached to this change application	
	☐ No ☐ Yes – pre-request response is attached to this change application	

PART 6 – OTHER CHANGE APPLICATION REQUIREMENTS

***Note**: To complete this part it will be necessary for you to complete parts of DA Form 1 – Development application details and in some instances parts of DA Form 2 – Building work details, as mentioned below. These forms are available at https://planning.dsdmip.qld.gov.au.*

8) Location details - Are there any additional premises included in this change application that were not part of the original development approval?
☐ No ☒ Yes

9) Development details
9.1) Is there any change to the type of development, approval type, or level of assessment in this change application?
☐ No ☒ Yes – the completed Sections 1 and 2 of Part 3 (Development details) of *DA Form 1 – Development application details* as these sections relate to the new or changed aspects of development are provided with this application.
9.2) Does the change application involve building work?
☒ No ☐ Yes – the completed Part 5 (Building work details) of *DA Form 2 – Building work details* as it relates to the change application is provided with this application.

10) Referral details – Does the change application require referral for any referral requirements? ***Note**: The application must be referred to each referral agency triggered by the change application as if the change application was the original development application including the proposed change.*
☐ No ☒ Yes – the completed Part 5 (Referral details) of *DA Form 1 – Development application details* as it relates to the change application is provided with this application. Where referral is required for matters relating to building work the Referral checklist for building work is also completed.

11) Information request under Part 3 of the DA Rules

☒ I agree to receive an information request if determined necessary for this change application

☐ I do not agree to accept an information request for this change application

***Note**: By not agreeing to accept an information request I, the applicant, acknowledge:*

- *that this change application will be assessed and decided based on the information provided when making this change application and the assessment manager and any referral agencies relevant to the change application are not obligated under the DA Rules to accept any additional information provided by the applicant for the change application unless agreed to by the relevant parties*
- *Part 3 of the DA Rules will still apply if the application is an application listed under section 11.3 of the DA Rules.*

Further advice about information requests is contained in the DA Forms Guide: Forms 1 and 2.

12) Further details

☒ Part 7 of *DA Form 1 – Development application details* is completed as if the change application was a development application and is provided with this application.

PART 7 – CHECKLIST AND APPLICANT DECLARATION

13) Change application checklist

I have identified the: • responsible entity in 4); and • for a minor change, any affected entities; and • for an other change all relevant referral requirement(s) in 10) ***Note**: See the Planning Regulation 2017 for referral requirements*	☒ Yes
For an other change application, the relevant sections of *DA Form 1 – Development application details* have been completed and is attached to this application	☒ Yes ☐ Not applicable
For an other change application, where building work is associated with the change application, the relevant sections of *DA Form 2 – Building work details* have been completed and is attached to this application	☐ Yes ☒ Not applicable
Supporting information addressing any applicable assessment benchmarks is attached to this application ***Note**: This includes any templates provided under 23.6 and 23.7 of DA Form 1 – Development application details that are relevant as a result of the change application, a planning report and any technical reports required by the relevant categorising instrument(s) (e.g. the local government planning scheme, State Planning Policy, State Development Assessment Provisions). For further information, see DA Forms Guide: Planning report template.*	☒ Yes
Relevant plans of the development are attached to this development application ***Note**: Relevant plans are required to be submitted for all relevant aspects of this change application. For further information, see DA Forms Guide: Relevant plans.*	☒ Yes

14) Applicant declaration

☒ By making this change application, I declare that all information in this change application is true and correct.

☒ Where an email address is provided in Part 1 of this form, I consent to receive future electronic communications from the responsible entity and any relevant affected entity or referral agency for the change application where written information is required or permitted pursuant to sections 11 and 12 of the *Electronic Transactions Act 2001*.

***Note**: It is unlawful to intentionally provide false or misleading information.*

Privacy – Personal information collected in this form will be used by the responsible entity and/or chosen assessment manager, any relevant affected entity or referral agency and/or building certifier (including any professional advisers which may be engaged by those entities) while processing, assessing and deciding the change application.

All information relating to this change application may be available for inspection and purchase, and/or published on the assessment manager's and/or referral agency's website.

Personal information will not be disclosed for a purpose unrelated to the *Planning Act 2016*, Planning Regulation 2017 and the DA Rules except where:

- such disclosure is in accordance with the provisions about public access to documents contained in the *Planning Act 2016* and the Planning Regulation 2017, and the access rules made under the *Planning Act 2016* and Planning Regulation 2017; or
- required by other legislation (including the *Right to Information Act 2009*); or
- otherwise required by law.

This information may be stored in relevant databases. The information collected will be retained as required by the *Public Records Act 2002*.

PART 8 – FOR COMPLETION OF THE ASSESSMENT MANAGER – FOR OFFICE USE ONLY

Date received: | Reference number(s):

QLeave notification and payment *Note: For completion by assessment manager if applicable*			
Description of the work			
QLeave project number			
Amount paid ($)		Date paid (dd/mm/yy)	
Date receipted form sighted by assessment manager			
Name of officer who sighted the form			

DA Form 1 – Development application details

Approved form (version 1.3 effective 28 September 2020) made under section 282 of the Planning Act 2016.

This form **must** be used to make a development application **involving code assessment or impact assessment**, except when applying for development involving only building work.

For a development application involving **building work only**, use *DA Form 2 – Building work details*.

For a development application involving **building work associated with any other type of assessable development (i.e. material change of use, operational work or reconfiguring a lot)**, use this form (*DA Form 1*) **and** parts 4 to 6 of *DA Form 2 – Building work details.*

Unless stated otherwise, all parts of this form **must** be completed in full and all required supporting information **must** accompany the development application.

One or more additional pages may be attached as a schedule to this development application if there is insufficient space on the form to include all the necessary information.

This form and any other form relevant to the development application must be used to make a development application relating to strategic port land and Brisbane core port land under the *Transport Infrastructure Act 1994*, and airport land under the *Airport Assets (Restructuring and Disposal) Act 2008.* For the purpose of assessing a development application relating to strategic port land and Brisbane core port land, any reference to a planning scheme is taken to mean a land use plan for the strategic port land, Brisbane port land use plan for Brisbane core port land, or a land use plan for airport land.

Note: *All terms used in this form have the meaning given under the Planning Act 2016, the Planning Regulation 2017, or the Development Assessment Rules (DA Rules).*

PART 1 – APPLICANT DETAILS

1) Applicant details	
Applicant name(s) *(individual or company full name)*	Reid River Export Depot Pty Ltd as trustee for the Reid River Unit Trust c\ RDC Engineers Pty Ltd
Contact name *(only applicable for companies)*	Paul Heil (Reid River Export Depot Pty Ltd) / Rod Davis (RDC Engineers Pty Ltd)
Postal address *(P.O. Box or street address)*	5291 Flinders Highway
Suburb	Reid River
State	QLD
Postcode	4816
Country	Australia
Contact number	Paul Heil (0427 201 295) / Rod Davis (0427 629 203)
Email address *(non-mandatory)*	Paul Heil paul@reidriverexport.com.au Rod Davis rod.davis@rdcengineers.com.au
Mobile number *(non-mandatory)*	Paul Heil (0427 201 295) / Rod Davis (0427 629 203)
Fax number *(non-mandatory)*	
Applicant's reference number(s) *(if applicable)*	D1-130

2) Owner's consent
2.1) Is written consent of the owner required for this development application?
☐ Yes – the written consent of the owner(s) is attached to this development application ☐ No – proceed to 3)

PART 2 – LOCATION DETAILS

3) Location of the premises *(complete 3.1) or 3.2), and 3.3) as applicable)*

***Note**: Provide details below and attach a site plan for any or all premises part of the development application. For further information, see DA Forms Guide: Relevant plans.*

3.1) Street address and lot on plan

☐ Street address **AND** lot on plan (*all lots must be listed*), ***or***

☐ Street address **AND** lot on plan for an adjoining or adjacent property of the premises *(appropriate for development in water but adjoining or adjacent to land e.g. jetty, pontoon. All lots must be listed).*

a)	Unit No.	Street No.	Street Name and Type	Suburb
	Postcode	Lot No.	Plan Type and Number *(e.g. RP, SP)*	Local Government Area(s)
b)	Unit No.	Street No.	Street Name and Type	Suburb
	Postcode	Lot No.	Plan Type and Number *(e.g. RP, SP)*	Local Government Area(s)

3.2) Coordinates of premises *(appropriate for development in remote areas, over part of a lot or in water not adjoining or adjacent to land e.g. channel dredging in Moreton Bay)*

***Note**: Place each set of coordinates in a separate row.*

☐ Coordinates of premises by longitude and latitude

Longitude(s)	Latitude(s)	Datum	Local Government Area(s) *(if applicable)*
		☐ WGS84 ☐ GDA94 ☐ Other:	

☐ Coordinates of premises by easting and northing

Easting(s)	Northing(s)	Zone Ref.	Datum	Local Government Area(s) *(if applicable)*
		☐ 54 ☐ 55 ☐ 56	☐ WGS84 ☐ GDA94 ☐ Other:	

3.3) Additional premises

☐ Additional premises are relevant to this development application and the details of these premises have been attached in a schedule to this development application

☐ Not required

4) Identify any of the following that apply to the premises and provide any relevant details

☐ In or adjacent to a water body or watercourse or in or above an aquifer

Name of water body, watercourse or aquifer:

☐ On strategic port land under the *Transport Infrastructure Act 1994*

Lot on plan description of strategic port land:

Name of port authority for the lot:

☐ In a tidal area

Name of local government for the tidal area *(if applicable)*:

Name of port authority for tidal area *(if applicable)*:

☐ On airport land under the *Airport Assets (Restructuring and Disposal) Act 2008*

Name of airport:	
☐ Listed on the Environmental Management Register (EMR) under the *Environmental Protection Act 1994*	
EMR site identification:	
☐ Listed on the Contaminated Land Register (CLR) under the *Environmental Protection Act 1994*	
CLR site identification:	

5) Are there any existing easements over the premises?

Note: Easement uses vary throughout Queensland and are to be identified correctly and accurately. For further information on easements and how they may affect the proposed development, see DA Forms Guide.

☐ Yes – All easement locations, types and dimensions are included in plans submitted with this development application

☐ No

PART 3 – DEVELOPMENT DETAILS

Section 1 – Aspects of development

6.1) Provide details about the first development aspect

a) What is the type of development? *(tick only one box)*

☒ Material change of use ☐ Reconfiguring a lot ☐ Operational work ☐ Building work

b) What is the approval type? *(tick only one box)*

☒ Development permit ☐ Preliminary approval ☐ Preliminary approval that includes a variation approval

c) What is the level of assessment?

☐ Code assessment ☒ Impact assessment *(requires public notification)*

d) Provide a brief description of the proposal *(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots)*:

d) Provide a brief description of the proposal *(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots)*:
Material Change of Use for Intensive Animal Industry. Proposed beef cattle feedlot with a capacity of up to 3,075SCUs

e) Relevant plans

***Note**: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms guide: Relevant plans.*

☒ Relevant plans of the proposed development are attached to the development application

6.2) Provide details about the second development aspect

a) What is the type of development? *(tick only one box)*

☐ Material change of use ☐ Reconfiguring a lot ☐ Operational work ☐ Building work

b) What is the approval type? *(tick only one box)*

☐ Development permit ☐ Preliminary approval ☐ Preliminary approval that includes a variation approval

c) What is the level of assessment?

☐ Code assessment ☐ Impact assessment *(requires public notification)*

d) Provide a brief description of the proposal *(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots)*:

e) Relevant plans

***Note**: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms Guide: Relevant plans.*

☐ Relevant plans of the proposed development are attached to the development application

6.3) Additional aspects of development
☐ Additional aspects of development are relevant to this development application and the details for these aspects that would be required under Part 3 Section 1 of this form have been attached to this development application
☐ Not required

Section 2 – Further development details

7) Does the proposed development application involve any of the following?	
Material change of use	☒ Yes – complete division 1 if assessable against a local planning instrument
Reconfiguring a lot	☐ Yes – complete division 2
Operational work	☐ Yes – complete division 3
Building work	☐ Yes – complete *DA Form 2 – Building work details*

Division 1 – Material change of use

***Note**: This division is only required to be completed if any part of the development application involves a material change of use assessable against a local planning instrument.*

8.1) Describe the proposed material change of use			
Provide a general description of the proposed use	Provide the planning scheme definition *(include each definition in a new row)*	Number of dwelling units *(if applicable)*	Gross floor area (m^2) *(if applicable)*
Proposed beef cattle feedlot with a capacity of up to 3,075SCUs	Intensive Animal Industry	NA	Refer to plans

8.2) Does the proposed use involve the use of existing buildings on the premises?
☒ Yes
☐ No

Division 2 – Reconfiguring a lot

***Note**: This division is only required to be completed if any part of the development application involves reconfiguring a lot.*

9.1) What is the total number of existing lots making up the premises?

9.2) What is the nature of the lot reconfiguration? *(tick all applicable boxes)*	
☐ Subdivision *(complete 10))*	☐ Dividing land into parts by agreement *(complete 11))*
☐ Boundary realignment *(complete 12))*	☐ Creating or changing an easement giving access to a lot from a constructed road *(complete 13))*

10) Subdivision				
10.1) For this development, how many lots are being created and what is the intended use of those lots:				
Intended use of lots created	Residential	Commercial	Industrial	Other, please specify:
Number of lots created				

10.2) Will the subdivision be staged?	
☐ Yes – provide additional details below ☐ No	
How many stages will the works include?	
What stage(s) will this development application apply to?	

11) Dividing land into parts by agreement – how many parts are being created and what is the intended use of the parts?				
Intended use of parts created	Residential	Commercial	Industrial	Other, please specify:
Number of parts created				

12) Boundary realignment			
12.1) What are the current and proposed areas for each lot comprising the premises?			
Current lot		Proposed lot	
Lot on plan description	Area (m^2)	Lot on plan description	Area (m^2)
12.2) What is the reason for the boundary realignment?			

13) What are the dimensions and nature of any existing easements being changed and/or any proposed easement? *(attach schedule if there are more than two easements)*				
Existing or proposed?	Width (m)	Length (m)	Purpose of the easement? *(e.g. pedestrian access)*	Identify the land/lot(s) benefitted by the easement

Division 3 – Operational work

***Note**: This division is only required to be completed if any part of the development application involves operational work.*

14.1) What is the nature of the operational work?		
☐ Road work	☐ Stormwater	☐ Water infrastructure
☐ Drainage work	☐ Earthworks	☐ Sewage infrastructure
☐ Landscaping	☐ Signage	☐ Clearing vegetation
☐ Other – please specify:		
14.2) Is the operational work necessary to facilitate the creation of new lots? *(e.g. subdivision)*		
☐ Yes – specify number of new lots:		
☐ No		
14.3) What is the monetary value of the proposed operational work? *(include GST, materials and labour)*		

PART 4 – ASSESSMENT MANAGER DETAILS

15) Identify the assessment manager(s) who will be assessing this development application
Charters Towers Regional Council
16) Has the local government agreed to apply a superseded planning scheme for this development application?
☐ Yes – a copy of the decision notice is attached to this development application
☐ The local government is taken to have agreed to the superseded planning scheme request – relevant documents attached
☒ No

PART 5 – REFERRAL DETAILS

17) Does this development application include any aspects that have any referral requirements?
***Note**: A development application will require referral if prescribed by the* Planning Regulation 2017.

☐ No, there are no referral requirements relevant to any development aspects identified in this development application – proceed to Part 6

Matters requiring referral to the **Chief Executive of the *Planning Act 2016*:**

☐ Clearing native vegetation
☐ Contaminated land *(unexploded ordnance)*
☒ Environmentally relevant activities (ERA) *(only if the ERA has not been devolved to a local government)*
☐ Fisheries – aquaculture
☐ Fisheries – declared fish habitat area
☐ Fisheries – marine plants
☐ Fisheries – waterway barrier works
☐ Hazardous chemical facilities
☐ Heritage places – Queensland heritage place *(on or near a Queensland heritage place)*
☐ Infrastructure-related referrals – designated premises
☒ Infrastructure-related referrals – state transport infrastructure
☒ Infrastructure-related referrals – State transport corridor and future State transport corridor
☐ Infrastructure-related referrals – State-controlled transport tunnels and future state-controlled transport tunnels
☐ Infrastructure-related referrals – near a state-controlled road intersection
☐ Koala habitat in SEQ region – interfering with koala habitat in koala habitat areas outside koala priority areas
☐ Koala habitat in SEQ region – key resource areas
☐ Ports – Brisbane core port land – near a State transport corridor or future State transport corridor
☐ Ports – Brisbane core port land – environmentally relevant activity (ERA)
☐ Ports – Brisbane core port land – tidal works or work in a coastal management district
☐ Ports – Brisbane core port land – hazardous chemical facility
☐ Ports – Brisbane core port land – taking or interfering with water
☐ Ports – Brisbane core port land – referable dams
☐ Ports – Brisbane core port land – fisheries
☐ Ports – Land within Port of Brisbane's port limits *(below high-water mark)*
☐ SEQ development area
☐ SEQ regional landscape and rural production area or SEQ rural living area – tourist activity or sport and recreation activity
☐ SEQ regional landscape and rural production area or SEQ rural living area – community activity
☐ SEQ regional landscape and rural production area or SEQ rural living area – indoor recreation
☐ SEQ regional landscape and rural production area or SEQ rural living area – urban activity
☐ SEQ regional landscape and rural production area or SEQ rural living area – combined use
☐ Tidal works or works in a coastal management district
☐ Reconfiguring a lot in a coastal management district or for a canal
☐ Erosion prone area in a coastal management district
☐ Urban design
☐ Water-related development – taking or interfering with water
☐ Water-related development – removing quarry material *(from a watercourse or lake)*
☐ Water-related development – referable dams
☐ Water-related development –levees *(category 3 levees only)*
☐ Wetland protection area

Matters requiring referral to the **local government:**

☐ Airport land
☐ Environmentally relevant activities (ERA) (*only if the ERA has been devolved to local government)*

☐ Heritage places – Local heritage places

Matters requiring referral to the **Chief Executive of the distribution entity or transmission entity:**
☐ Infrastructure-related referrals – Electricity infrastructure

Matters requiring referral to:
- The **Chief Executive of the holder of the licence**, if not an individual
- The **holder of the licence**, if the holder of the licence is an individual

☐ Infrastructure-related referrals – Oil and gas infrastructure

Matters requiring referral to the **Brisbane City Council:**
☐ Ports – Brisbane core port land

Matters requiring referral to the **Minister responsible for administering the *Transport Infrastructure Act 1994*:**
☐ Ports – Brisbane core port land *(where inconsistent with the Brisbane port LUP for transport reasons)*
☐ Ports – Strategic port land

Matters requiring referral to the **relevant port operator**, if applicant is not port operator**:**
☐ Ports – Land within Port of Brisbane's port limits *(below high-water mark)*

Matters requiring referral to the **Chief Executive of the relevant port authority:**
☐ Ports – Land within limits of another port *(below high-water mark)*

Matters requiring referral to the **Gold Coast Waterways Authority:**
☐ Tidal works or work in a coastal management district *(in Gold Coast waters)*

Matters requiring referral to the **Queensland Fire and Emergency Service:**
☐ Tidal works or work in a coastal management district *(involving a marina (more than six vessel berths))*

18) Has any referral agency provided a referral response for this development application?

☐ Yes – referral response(s) received and listed below are attached to this development application
☒ No

Referral requirement	Referral agency	Date of referral response

Identify and describe any changes made to the proposed development application that was the subject of the referral response and this development application, or include details in a schedule to this development application *(if applicable).*

PART 6 – INFORMATION REQUEST

19) Information request under Part 3 of the DA Rules

☒ I agree to receive an information request if determined necessary for this development application
☐ I do not agree to accept an information request for this development application

***Note**: By not agreeing to accept an information request I, the applicant, acknowledge:*

- *that this development application will be assessed and decided based on the information provided when making this development application and the assessment manager and any referral agencies relevant to the development application are not obligated under the DA Rules to accept any additional information provided by the applicant for the development application unless agreed to by the relevant parties*
- *Part 3 of the DA Rules will still apply if the application is an application listed under section 11.3 of the DA Rules.*

Further advice about information requests is contained in the DA Forms Guide.

PART 7 – FURTHER DETAILS

20) Are there any associated development applications or current approvals? *(e.g. a preliminary approval)*

☒ Yes – provide details below or include details in a schedule to this development application
☒ No

List of approval/development application references	Reference number	Date	Assessment manager
☒ Approval ☐ Development application	MC18/63 - 1210848	20 September 2018	Charters Towers Regional Council
☐ Approval ☐ Development application			

21) Has the portable long service leave levy been paid? *(only applicable to development applications involving building work or operational work)*

☐ Yes – a copy of the receipted QLeave form is attached to this development application
☐ No – I, the applicant will provide evidence that the portable long service leave levy has been paid before the assessment manager decides the development application. I acknowledge that the assessment manager may give a development approval only if I provide evidence that the portable long service leave levy has been paid
☒ Not applicable *(e.g. building and construction work is less than $150,000 excluding GST)*

Amount paid	Date paid (dd/mm/yy)	QLeave levy number (A, B or E)
$		

22) Is this development application in response to a show cause notice or required as a result of an enforcement notice?

☐ Yes – show cause or enforcement notice is attached
☒ No

23) Further legislative requirements

Environmentally relevant activities

23.1) Is this development application also taken to be an application for an environmental authority for an **Environmentally Relevant Activity (ERA)** under section 115 of the *Environmental Protection Act 1994*?

☒ Yes – the required attachment (form ESR/2015/1791) for an application for an environmental authority accompanies this development application, and details are provided in the table below
☐ No

***Note**: Application for an environmental authority can be found by searching "ESR/2015/1791" as a search term at www.qld.gov.au. An ERA requires an environmental authority to operate. See www.business.qld.gov.au for further information.*

Proposed ERA number:	2	Proposed ERA threshold:	1(b)
Proposed ERA name:	Intensive animal feedlotting – Cattle feedlotting – more than 1,000 but less than 10,000 standard cattle units		

☐ Multiple ERAs are applicable to this development application and the details have been attached in a schedule to this development application.

Hazardous chemical facilities

23.2) Is this development application for a **hazardous chemical facility**?

☐ Yes – *Form 69: Notification of a facility exceeding 10% of schedule 15 threshold* is attached to this development application
☒ No

***Note**: See www.business.qld.gov.au for further information about hazardous chemical notifications.*

Clearing native vegetation

23.3) Does this development application involve **clearing native vegetation** that requires written confirmation that the chief executive of the *Vegetation Management Act 1999* is satisfied the clearing is for a relevant purpose under section 22A of the *Vegetation Management Act 1999*?

☐ Yes – this development application includes written confirmation from the chief executive of the *Vegetation Management Act 1999* (s22A determination)

☒ No

***Note**: 1. Where a development application for operational work or material change of use requires a s22A determination and this is not included, the development application is prohibited development.*

2. See https://www.qld.gov.au/environment/land/vegetation/applying for further information on how to obtain a s22A determination.

Environmental offsets

23.4) Is this development application taken to be a prescribed activity that may have a significant residual impact on a **prescribed environmental matter** under the *Environmental Offsets Act 2014*?

☐ Yes – I acknowledge that an environmental offset must be provided for any prescribed activity assessed as having a significant residual impact on a prescribed environmental matter

☒ No

***Note**: The environmental offset section of the Queensland Government's website can be accessed at www.qld.gov.au for further information on environmental offsets.*

Koala habitat in SEQ Region

23.5) Does this development application involve a material change of use, reconfiguring a lot or operational work which is assessable development under Schedule 10, Part 10 of the Planning Regulation 2017?

☐ Yes – the development application involves premises in the koala habitat area in the koala priority area

☐ Yes – the development application involves premises in the koala habitat area outside the koala priority area

☒ No

***Note**: If a koala habitat area determination has been obtained for this premises and is current over the land, it should be provided as part of this development application. See koala habitat area guidance materials at www.des.qld.gov.au for further information.*

Water resources

23.6) Does this development application involve **taking or interfering with underground water through an artesian or subartesian bore, taking or interfering with water in a watercourse, lake or spring, or taking overland flow water under the *Water Act 2000***?

☐ Yes – the relevant template is completed and attached to this development application and I acknowledge that a relevant authorisation or licence under the *Water Act 2000* may be required prior to commencing development

☒ No

***Note**: Contact the Department of Natural Resources, Mines and Energy at www.dnrme.qld.gov.au for further information.*

DA templates are available from https://planning.dsdmip.qld.gov.au/. If the development application involves:

- *Taking or interfering with underground water through an artesian or subartesian bore: complete DA Form 1 Template 1*
- *Taking or interfering with water in a watercourse, lake or spring: complete DA Form1 Template 2*
- *Taking overland flow water: complete DA Form 1 Template 3.*

Waterway barrier works

23.7) Does this application involve **waterway barrier works?**

☐ Yes – the relevant template is completed and attached to this development application

☒ No

DA templates are available from https://planning.dsdmip.qld.gov.au/. For a development application involving waterway barrier works, complete DA Form 1 Template 4.

Marine activities

23.8) Does this development application involve **aquaculture, works within a declared fish habitat area or removal, disturbance or destruction of marine plants?**

☐ Yes – an associated *resource* allocation authority is attached to this development application, if required under the *Fisheries Act 1994*

☒ No

***Note**: See guidance materials at www.daf.qld.gov.au for further information.*

Quarry materials from a watercourse or lake

23.9) Does this development application involve the **removal of quarry materials from a watercourse or lake** under the *Water Act 2000?*

☐ Yes – I acknowledge that a quarry material allocation notice must be obtained prior to commencing development
☒ No

***Note**: Contact the Department of Natural Resources, Mines and Energy at www.dnrme.qld.gov.au and www.business.qld.gov.au for further information.*

Quarry materials from land under tidal waters

23.10) Does this development application involve the **removal of quarry materials from land under tidal water** under the *Coastal Protection and Management Act 1995?*

☐ Yes – I acknowledge that a quarry material allocation notice must be obtained prior to commencing development
☒ No

***Note**: Contact the Department of Environment and Science at www.des.qld.gov.au for further information.*

Referable dams

23.11) Does this development application involve a **referable dam** required to be failure impact assessed under section 343 of the *Water Supply (Safety and Reliability) Act 2008* (the Water Supply Act)?

☐ Yes – the 'Notice Accepting a Failure Impact Assessment' from the chief executive administering the Water Supply Act is attached to this development application
☒ No

***Note**: See guidance materials at www.dnrme.qld.gov.au for further information.*

Tidal work or development within a coastal management district

23.12) Does this development application involve **tidal work or development in a coastal management district**?

☐ Yes – the following is included with this development application:
- ☐ Evidence the proposal meets the code for assessable development that is prescribed tidal work *(only required if application involves prescribed tidal work)*
- ☐ A certificate of title

☒ No

***Note**: See guidance materials at www.des.qld.gov.au for further information.*

Queensland and local heritage places

23.13) Does this development application propose development on or adjoining a place entered in the **Queensland heritage register** or on a place entered in a local government's **Local Heritage Register**?

☐ Yes – details of the heritage place are provided in the table below
☒ No

***Note**: See guidance materials at www.des.qld.gov.au for information requirements regarding development of Queensland heritage places.*

Name of the heritage place:		Place ID:	

Brothels

23.14) Does this development application involve a **material change of use for a brothel**?

☐ Yes – this development application demonstrates how the proposal meets the code for a development application for a brothel under Schedule 3 of the *Prostitution Regulation 2014*
☒ No

Decision under section 62 of the *Transport Infrastructure Act 1994*

23.15) Does this development application involve new or changed access to a state-controlled road?

☐ Yes – this application will be taken to be an application for a decision under section 62 of the *Transport Infrastructure Act 1994* (subject to the conditions in section 75 of the *Transport Infrastructure Act 1994* being satisfied)
☒ No

Walkable neighbourhoods assessment benchmarks under Schedule 12A of the Planning Regulation

23.16) Does this development application involve reconfiguring a lot into 2 or more lots in certain residential zones (except rural residential zones), where at least one road is created or extended?

☐ Yes – Schedule 12A is applicable to the development application and the assessment benchmarks contained in schedule 12A have been considered

☒ No

Note: *See guidance materials at www.planning.dsdmip.qld.gov.au for further information.*

PART 8 – CHECKLIST AND APPLICANT DECLARATION

24) Development application checklist	
I have identified the assessment manager in question 15 and all relevant referral requirement(s) in question 17 ***Note***: *See the Planning Regulation 2017 for referral requirements*	☒ Yes
If building work is associated with the proposed development, Parts 4 to 6 of *DA Form 2 – Building work details* have been completed and attached to this development application	☐ Yes ☒ Not applicable
Supporting information addressing any applicable assessment benchmarks is with the development application ***Note***: *This is a mandatory requirement and includes any relevant templates under question 23, a planning report and any technical reports required by the relevant categorising instruments (e.g. local government planning schemes, State Planning Policy, State Development Assessment Provisions). For further information, see DA Forms Guide: Planning Report Template.*	☒ Yes
Relevant plans of the development are attached to this development application ***Note***: *Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms Guide: Relevant plans.*	☒ Yes
The portable long service leave levy for QLeave has been paid, or will be paid before a development permit is issued (*see 21*)	☐ Yes ☒ Not applicable

25) Applicant declaration

☒ By making this development application, I declare that all information in this development application is true and correct

☒ Where an email address is provided in Part 1 of this form, I consent to receive future electronic communications from the assessment manager and any referral agency for the development application where written information is required or permitted pursuant to sections 11 and 12 of the *Electronic Transactions Act 2001*

Note: *It is unlawful to intentionally provide false or misleading information.*

Privacy – Personal information collected in this form will be used by the assessment manager and/or chosen assessment manager, any relevant referral agency and/or building certifier (including any professional advisers which may be engaged by those entities) while processing, assessing and deciding the development application. All information relating to this development application may be available for inspection and purchase, and/or published on the assessment manager's and/or referral agency's website.

Personal information will not be disclosed for a purpose unrelated to the *Planning Act 2016*, Planning Regulation 2017 and the DA Rules except where:

- such disclosure is in accordance with the provisions about public access to documents contained in the *Planning Act 2016* and the Planning Regulation 2017, and the access rules made under the *Planning Act 2016* and Planning Regulation 2017; or
- required by other legislation (including the *Right to Information Act 2009*); or
- otherwise required by law.

This information may be stored in relevant databases. The information collected will be retained as required by the *Public Records Act 2002.*

PART 9 – FOR COMPLETION OF THE ASSESSMENT MANAGER – FOR OFFICE USE ONLY

Date received: | Reference number(s):

Notification of engagement of alternative assessment manager	
Prescribed assessment manager	
Name of chosen assessment manager	
Date chosen assessment manager engaged	
Contact number of chosen assessment manager	
Relevant licence number(s) of chosen assessment manager	

QLeave notification and payment *Note: For completion by assessment manager if applicable*			
Description of the work			
QLeave project number			
Amount paid ($)		Date paid (dd/mm/yy)	
Date receipted form sighted by assessment manager			
Name of officer who sighted the form			

Company owner's consent to the making of a development application under the *Planning Act 2016*

I, **Paul Andrew Heil**

Director of the company mentioned below.

Of **Reid River Land Holdings Pty Ltd (ACN 623 669 367) as trustee for JDH Unit Trust (ABN 83 627 005 630)**

the company being the owner of the premises identified as follows:

5291 Flinders Highway, Reid River being that land described as Lot 1 on RP743456; Lot 2 RP743456 and Lot 600 SP310657

consent to the making of a development application under the *Planning Act 2016* by:

Reid River Export Depot Pty Ltd as trustee for Reid River Unit Trust c/- RDC Engineers Pty Ltd

on the premises described above for:

A Change Application (Other Change) pursuant to section 78 of the Planning Act 2016 to change existing approval (Material change of use – Undefined Use (Cattle holding yards)) to provide for a Material change of use for Intensive Animal Industry (Beef cattle feedlot)

Company Name and ACN: **Reid River Land Holdings Pty Ltd (ACN 623 669 367) as trustee for JDH Unit Trust (ABN 83 627 005 630)**

Paul Heil Signature of Director	..... Signature of Director/Secretary
31/5/22 Date	..... Date

The Planning Act 2016 is administered by the Department of Local Government, Infrastructure and Planning, Queensland Government.

Application form

Environmental Protection Act 1994

Development application Form 1 - Application details—attachment for an application for an environmental authority

This form is to be attached to the Development application Form 1 - Application details *when making a development application for prescribed environmentally relevant activities (ERAs). Under section 115 of the* Environmental Protection Act 1994 *(EP Act) the development approval application is taken to be an application for an environmental authority for the prescribed ERAs.*

It is recommended that prior to making an application for an environmentally relevant activity (ERA), you read the information on what to provide with an application. This information is located on the Business Queensland website (formerly the Queensland Government's Business and Industry Portal) at www.business.qld.gov.au (use the search term "Environmental licence"). This website also has a diagnostic tool called the "forms and fees finder" which will help identify any fees and supporting information you need to make an application.

Only use this application form if you are applying for a new environmental authority (EA) where:

- ☑ All applicants are registered suitable operators[1].
- ☑ The ERA/s being applied for do not form part of an ERA project under an existing EA.
- ☑ If more than one ERA is being applied for, the ERAs must be carried out as part of a single integrated operation:
  - the ERAs will be carried out under the day to day management of a single responsible individual (e.g. a site manager or operations manager); and
  - all of the ERAs are operationally interrelated, that is, the operation cannot function without all of the ERAs. Separate applications will need to be made for the ERAs that cannot be carried out as a single integrated operation; and
  - the ERA/s are, or will be, carried out at one or more places; and
  - the places where the ERAs will be carried out are close enough to make the integrated day to day management of the activities feasible.
- ☑ The ERA/s being applied for are prescribed under section 19 of the *Environmental Protection Act 1994* (EP Act).
- ☑ If any of the ERAs being applied for are to be carried out on a parcel of land within a state development area and a particular use for the parcel of land is not stated in the approved development scheme, you have applied for, or hold a current approval for the use under section 84(4)(b) of the *State Development and Public Works Organisation Act 1971.*
- ☑ The application is not to dredge or extract more than 10,000 tonnes of material a year in the North Stradbroke Island region.

[1] If you are not a registered suitable operator you cannot apply for a new environmental authority. To become a registered suitable operator apply online through Connect at www.qld.gov.au/environmentconnect or request the form "Application to be a registered suitable operator - ESR/2015/1771" by emailing palm@des.qld.gov.au or phoning 1300 130 372 (option 4).

Queensland Government

Privacy statement

Where ERAs are administered by the Queensland Government:

> The Department of Environment and Science and Department of Agriculture and Fisheries are collecting the information on this form to process your application for an EA. The collection is authorised under Chapter 5 of the EP Act.
>
> Please note that the administering authority is required to keep this application on a register of documents open for inspection by members of the public under section 540 of the EP Act, and must permit a person to take extracts from the register pursuant to section 542 of the EP Act. Your personal information will not be otherwise disclosed to any other parties unless authorised or required by law. For queries about privacy matters please email privacy@des.qld.gov.au or telephone: 13 74 68.

Where ERAs are administered by a local government:

> Contact the local government for their privacy information.

Pre-lodgement meeting

If you would like to have a pre-lodgement meeting:

- for prescribed ERAs 2, 3 and 4—contact the Department of Agriculture and Fisheries by email at livestockregulator@daf.qld.gov.au
- for local government administered ERAs, contact the local government
- for any other ERA—please complete and lodge the form "Application for pre-lodgement services" (ESR/2015/1664[2]), prior to lodging this standard application for an environmental authority.

[2] This application form is available at www.qld.gov.au, using the publication number ESR/2015/1664 as a search term.

The fields marked with an asterisk * are mandatory, if they are not completed then your application may be considered not properly made under section 128 of the *Environmental Protection Act 1994*.

1. Applicant details

To nominate a site or application contact for this application please provide details at Questions 14 and 15.

Is there more than one applicant? *	☒ No—provide applicant's details below. ☐ Yes—provide the principal applicant's details below and all other applicants' details in Attachment 1—*"Joint applicants and appointment of principal applicant"*

Name - individual or contact person if applicant is a organisation* Paul Andrew Heil	Suitable Operator Reference Number* RSO100220868
Organisation name, including any trading name (*if an organisation) Reid River Export Depot Pty Ltd as trustee for the Reid River Unit Trust	ABN/ACN (*if an organisation) 623 197 124
Residential or registered business address (not a post office box)* 5291 Flinders Highway, Reid River QLD 4816	Phone* 0427 201 295
Postal address (if same as above, write "AS ABOVE")* PO Box 2499, IDALIA QLD 4811	Facsimile
Email* paul@reidriverexport.com.au	☒ Indicate if you want to receive correspondence via email

1.1 Nomination of an agent for this application

I/we nominate the below agent to act on my/our behalf and to receive correspondence relating to this application.

Do you want to nominate an agent for this application?* ☒ No → Go to *Question* ***Error! Reference source not found.*** ☐ Yes → Complete the agent's details here.	
Name of agent – individual or contact person if agent is an organisation	
Organisation name, including trading name if an organisation	ABN/ACN (if an organisation)
Postal address	Phone
Email	☐ Indicate if you do not want to receive correspondence via email

2. Details of the ERA(s) being applied for

Complete the table below by advising which ERA(s) you are applying for. If the ERA has eligibility criteria and standard conditions[3], identify whether you can comply with them. Select "N/A" where there are no eligibility criteria and standard conditions for that ERA. If you cannot comply with all of the applicable standard conditions, select "no" and attach details of the standard conditions you cannot comply with.

[3] ERAs with eligibility criteria and standard conditions are listed at: www.business.qld.gov.au (use the search term "eligibility criteria").

ERA number*	Threshold*	Name of ERA*	I can comply with the eligibility criteria*	I can comply with all the standard conditions*
2	1(b)	Cattle feedlotting	☐ Yes ☒ N/A	☒ Yes ☐ No
			☐ Yes ☐ N/A	☐ Yes ☐ No
			☐ Yes ☐ N/A	☐ Yes ☐ No
			☐ Yes ☐ N/A	☐ Yes ☐ No
			☐ Yes ☐ N/A	☐ Yes ☐ No
			☐ Yes ☐ N/A	☐ Yes ☐ No
			☐ Yes ☐ N/A	☐ Yes ☐ No
			☐ Yes ☐ N/A	☐ Yes ☐ No

☐ I have attached details of the standard conditions that I cannot comply with.

3. Description of land where the ERA/s will be carried out

Where activities will be undertaken at more than one location, provide details in Appendix 2.

Number*	Street Name*	Suburb/Town*	Postcode*
5291	Flinders Highway	Reid River	4816
Real Property Description*		Specific area within the location ie GPS or other descriptor*	
Lot 1 Plan RP743456			
Port (*if applicable)		Project Name (*if applicable)	
		Reid River Feedlot	

4. Details of contaminated land

Is there a site management plan in effect for contaminated land that relates to the land that is the subject of this application?*

☒ No	Go to *Question 5*.		
☐ Yes	Description of land*		
	Lot and plan number(s)		Local Government Area*
	Lot Plan Lot Plan Lot Plan Lot Plan		

5. Existing environmental authorities at the location

Do you have any existing environmental authorities at this location?*

☒ No	Go to *Question 6.*	
☐ Yes	Existing EA number(s)*	Certification*
		☐ I certify that the ERA(s) being applied for do not form part of any existing environmental authority/ies

6. Other related approvals

To avoid the possibility of your environmental authority application being invalid, you need to ensure any other required applications have been made prior to lodging this application. If you are not sure what approvals are required you should contact the planning area of your local government authority or if the area is within a State development area, visit the Department of State Development, Manufacturing, Infrastructure and Planning website at: www.dsdmip.qld.gov.au (search for state development area).

Are you required to obtain any of the following approvals to conduct the ERA(s)?* • e.g. An approval for the use of land under the *State Development and Public Works Organisation Act 1971*					
☐ No	Go to *Question 7*				
☒ Yes	Approval name*	Legislation*	Application number*	Date lodged*	Approval status*
	Development Permit - MCU	Planning Act 2016	TBA	02/06/22	Pending

7. Environmental offsets

An environmental offset, under the *Environmental Offsets Act 2014*, may be required for an ERA where, despite all reasonable measures to avoid and minimise impacts on certain environmental matters, there is still likely to be significant residual impact on one or more of those matters.
You must verify the presence, whether temporary or permanent, of those environmental matters. For more information refer to the Queensland Environmental Offsets Policy and the Siginifcant Residual Impact Guideline at the Queensland Government website at www.qld.gov.au, using the search term “environmental offsets”.

Will the ERA(s) being applied for result in a significant residual impact to a matter of State environmental significance (MSES)?*	
☒ No	Go to *Question 8*.
☐ Yes	You **must** attach supporting information that: 1. Details the magnitude and duration of the likely significant residual impact on each prescribed environmental matter (other than matters of local environmental significance) for the entire activity; and 2. Demonstrates that all reasonable measures to avoid and minimise impacts on each of those matters will be undertaken.

7.1 Notice of election

Has a notice of election been submitted to the administering authority, or is being submitted as part of this application?	
☒ No	Go to *Question 7.2*.
☐ Yes	☐ You can attach the notice of election, if it has not been submitted to the department. Go to *Question 7.3*.

7.2 Staged environmental offsets

Offset delivery can be staged, however for this to occur, the condition of any approved environmental authority needs to state that both the activity and the offset may be staged. As part of your notice of election for each stage under the *Environmental Offsets Act 2014*, you are required to provide a detailed assessment of the quantum of impact of that stage and the offset obligation requirement to be delivered for that stage.

Will the proposed ERA(s) and delivery of an environmental offset be undertaken in stages?	
☒ No	Go to *Question 7.3*

☐ Yes	You **must** attach supporting information that details of how the activity/activities are proposed to be staged.

7.3 Nature conservation environmental offset

Has another authority issued under the *Nature Conservation Act 1992* required an environmental offset for the same, or substantially the same, impact and the same, or substantially the same, MSES?	
☒ No	Go to *Question 7.4*
☐ Yes	Provide permit number:

7.4 Marine parks environmental offset

Has marine park permit issued under the *Marine Parks Act 2004* required an environmental offset for the same, or substantially the same, impact and the same, or substantially the same, MSES?	
☒ No	Go to *Question 8*
☐ Yes	☐ You **must** attach a copy of the marine park permit to this application.

8. Matters of national environmental significance

There are currently nine matters of national environmental significance (MNES) which have been defined in the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)* (EPBC Act). These are:

- world heritage properties
- national heritage places
- wetlands of international importance (listed under the Ramsar Convention)
- listed threatened species and ecological communities
- migratory species protected under international agreements
- Commonwealth marine areas
- the Great Barrier Reef Marine Park
- nuclear actions (including uranium mines)
- a water resource, in relation to coal seam gas development and large coal mining development

To determine whether the proposed ERA(s) will have a significant impact on MNES and for referral requirements, please refer to the guidance provided by the Federal Government's Department of Environment on **www.environment.gov.au**.

Would the carrying out of the proposed ERA(s) be likely to have a significant impact on a MNES?*	
☒ No	Go to *Question 9*.
☐ Yes	Has the proposal been referred to the Federal Department of Environment for formal assessment and approval? ☐ No → Go to *Question 9.* ☐ Yes → Go to *Question 8.1*.

8.1 EPBC Act approval for environmental offsets

Has an approval issued under the EPBC Act required an environmental offset for the same, or substantially the same, impact and the same, or substantially the same, MSES?	
☒ No	Go to *Question 9*.
☐ Yes	I have attached a copy of the approval under the EPBC Act.
	Are there any MNES which were assessed under the EPBC Act which are the same, or substantially the same as an MSES, but that were not conditioned in the approval? ☐ No → Go to Question *9* ☐ Yes → List these MNES:

9. Environmental impact statement under the *State Development and Public Works Organisation Act 1971*

Certain stages of the EA application process may not apply if the proposed activities were assessed as part of a coordinated project declared under the *State Development and Public Works Organisation Act 1971* (State Development Act), you are only required to answer Questions 9 to 9.1 if you have a current CG's evaluation report for the project.

Has an environmental impact statement (EIS) process under State Development Act been completed?*	
☒ No	Go to *Question 10*.
☐ Yes	What is the title and project name of the completed EIS?*
	☐ The EIS was **completed for all activities** that are the subject of this application. ☐ The environmental risks or the way the activity/activities are proposed to be carried out **have not changed** since the EIS was completed. ☐ The environmental risks or the way the activity/activities are proposed to be carried out **have changed** since the EIS was completed.
	☐ The EIS was **not completed for all activities** that are the subject of this application. ☐ The environmental risks or the way the activity/activities are proposed to be carried out **have not changed** since the EIS was completed. ☐ The environmental risks or the way the activity/activities are proposed to be carried out **have changed** since the EIS was completed.
	Was the EIS completed for all activities that are the subject of this application?*
	☐ No — Please list the activities that were not included in the EIS or attach documentation with this information to this application: ☐ I have attached the required supporting information.
	☐ Yes

9.1 Coordinator-General's conditions

Are there CG's conditions that relate to the ERA(s) being applied for?*	
☒ No →	Go to *Question 10*.
☐ Yes →	Name of the CG's evaluation report:

10. Assessment of the environmental impact

This question is **not applicable if** an EIS process under the State Development Act has been completed for all the ERA(s) that are the subject of this application and the environmental risks of the activities **and** the way they are proposed to be carried out has not changed since the EIS was completed.
You must attach to this application an assessment of the likely impact of each ERA on environmental values (*if applicable), including:

- a description of the environmental values likely to be affected by each relevant activity
- details of any emissions or releases likely to be generated by each relevant activity
- a description of the risk and likely magnitude of impacts on the environmental values
- details of the management practices proposed to be implemented to prevent or minimise adverse impacts
- details of how the land the subject of the application will be rehabilitated after each relevant activity ceases

☒ I have attached an assessment of the environmental impact and specific supporting information.

11. Details of waste management

Describe the proposed measures for minimising and managing waste generated by the activity/ies below *
All effluent captured within sedimentation ponds and a holding pond pending sustainable utilisation to land on-site. All solid waste stockpiled in a dedicated area within a controlled drainage area pending sustainable utilisation on-site.

☐ I have attached the proposed measures.

12. Take effect date (when fees will commence being charged)

You may nominate when the EA will take effect should it be approved. The date the environmental authority takes effect will be the date from which you can commence the activities as well as the date your annual fees will commence to be charged (your anniversary date). Under section 200 of the EP Act, if a development permit for a material change of use under the *Planning Act 2016* or a State development area (SDA) approval is required in order to carry out the ERA the EA cannot take effect until the development permit or SDA approval takes effect (known as taking effect pending development approval).

Do you want the EA to take effect on the decision date, nominated date, or pending development approval?*	
☒ Decision date	The take effect date will be the date of the decision.
☐ Nominated date	Details of nominated take effect date:

13. Nomination of site contact

An alternative contact nominated by the legal person which holds, or will in future hold, a relevant authority issued by the department. The department may direct correspondence relating to actual or potential compliance matters to the site contact.

Do you want to nominate a site contact?*		☐ No ☒ Yes, provide details below
Title* Mr	First Name* Paul	Surname* Heil
Email Address* paul@reidriverexport.com.au		☒ Indicate if you want to receive correspondence via email
Phone 0427 201 295		

14. Nomination of application contact

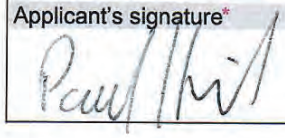
An alternative contact nominated by the legal person which has submitted, or will in future submit, applications to be assessed by the department. All departmental correspondence relating to the assessment of applications

will be directed to the application contact, however, if the application results in the issuing of a relevant authority, the relevant authority will be sent to the applicant.

Name or Position*
Paul Heil
Primary Phone*
0427 201 295
Secondary Phone
Email Address*
paul@reidriverexport.com.au

15. Applicant declaration

I declare that the information I have provided is true and correct. I understand that it is an offence under the *Environmental Protection Act 1994* to give information that I know is false, misleading or incomplete.
I will comply with all conditions on my environmental authority as well as any relevant provisions in the *Environmental Protection Act 1994*.
I understand that I am responsible for managing the environmental impacts of these activities, and that approval of this application is not an endorsement by the administering authority of the effectiveness of the management practices proposed or implemented.

Applicant's full name*	Applicant's position*
Paul Andrew Heil	Director
Applicant's signature*	**Date***
	31/05/2022

Submit attachment, together with any additional information, with all relevant Development application Forms to the assessment manager for the development application.

Attachment 1

Joint applicants and appointment of principal applicant

We are joint applicants for this environmental authority application and hereby appoint _____ as the principal applicant to receive statutory documents relating to this application.

Name - individual or contact person if applicant is an organisation*	Suitable Operator Reference Number*
Organisation name, including trading name (*if an organisation)	ABN/ACN (*if an organisation)
Residential or registered business address (not a post office box)*	Phone*
Postal address (if same as above, state "AS ABOVE") *	Facsimile
Email*	☐ Indicate if you want to receive correspondence via email
Signature*	Date*

Name - individual or contact person if applicant is an organisation*	Suitable Operator Reference Number*
Organisation name including trading name (*if an organisation)	ABN/ACN (*if an organisation)
Residential or registered business address (not a post office box)*	Phone*
Postal address (if same as above, state "AS ABOVE")*	Facsimile
Email*	☐ Indicate if you want to receive correspondence via email
Signature*	Date*

Name - individual or contact person if applicant is an organisation*	Suitable Operator Reference Number*
Business name including trading name (*if an organisation)	ABN/ACN (*if an organisation)
Residential or registered business address (not a post office box)*	Phone*
Postal address (if same as above, state "AS ABOVE")*	Facsimile
Email*	☐ Indicate if you want to receive correspondence via email
Signature*	Date*

Attachment 2

List of locations where the ERA(s) will be carried out.

Where there is more than one location list all locations and which ERA(s) will be conducted at each location.

Number*	Street Name*	Suburb/Town*	Postcode*	ERA/s*
5291	Flinders Highway	Reid River	4816	2 1(b)
Real Property Description*		Specific area within the location ie GPS or other descriptor (*if applicable e.g. dredging)		
Lot 2 Plan RP743456				

Number*	Street Name*	Suburb/Town*	Postcode*	ERA/s*
5291	Flinders Highway	Reid River	4816	2 1(b)
Real Property Description*		Specific area within the location ie GPS or other descriptor (*if applicable e.g. dredging)		
Lot 600 Plan SP310657				

Number*	Street Name*	Suburb/Town*	Postcode*	ERA/s*
Real Property Description*		Specific area within the location ie GPS or other descriptor (*if applicable e.g. dredging)		
Lot Plan				

Number*	Street Name*	Suburb/Town*	Postcode*	ERA/s*
Real Property Description*		Specific area within the location ie GPS or other descriptor (*if applicable e.g. dredging)		
Lot Plan				

Number*	Street Name*	Suburb/Town*	Postcode*	ERA/s*
Real Property Description*		Specific area within the location ie GPS or other descriptor (*if applicable e.g. dredging)		
Lot Plan				

Number*	Street Name*	Suburb/Town*	Postcode*	ERA/s*
Real Property Description*		Specific area within the location ie GPS or other descriptor (*if applicable e.g. dredging)		
Lot Plan				

Number*	Street Name*	Suburb/Town*	Postcode*	ERA/s*
Real Property Description*		Specific area within the location ie GPS or other descriptor (*if applicable e.g. dredging)		
Lot Plan				

Change Application (Other) – Material Change of Use for Intensive Animal Industry (Beef cattle feedlot) on the property "Runway Station"

"Runway Station"
5291 Flinders Highway
REID RIVER QLD 4816

Reid River Export Depot Pty Ltd
as trustee for the Reid River Unit Trust
PO Box 2499
IDALIA QLD 4811

[June 2022]

RDC ENGINEERS
AGRICULTURAL
ENVIRONMENTAL
PROJECT MANAGEMENT

PO Box 1223
TOOWOOMBA QLD 4350

rdcengineers.com.au

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Project No:	D1-130

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V1R2	Reid River Export Depot Pty Ltd as trustee/CTRC/SARA	Electronic	-

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List of abbreviations

AEP	Annual Exceedance Probability
AHD	Australian Height Datum
AMP	Activity Management Plan
ARI	Average Recurrence Interval
AS	Australian Standard
AUSVETPLAN	Australian Veterinary Emergency Plan
BoM	Bureau of Meteorology
CDA	Controlled Drainage Area
CEMP	Construction Environmental Management Plan
CTRC	Charters Towers Regional Council
DA	Development Application
DAF	Queensland Department of Agriculture and Fisheries
DEEDI	Queensland Department of Employment, Economic Development and Innovation
DEHP	Queensland Department of Environment and Heritage Protection
DES	Queensland Department of Environment and Science
DERM	Queensland Department of Environment and Resource Management
DILGP	Queensland Department of Infrastructure, Local Government and Planning
DSDMIP	Queensland Department of State Development, Manufacturing, Infrastructure and Planning
DNRM	Queensland Department of Natural Resources and Mines
DNRME	Queensland Department of Natural Resources, Mines and Energy
DPI	Queensland Department of Primary Industries
DPIF	Queensland Department of Primary Industries and Fisheries
DRDM&W	Queensland Department of Regional Development, Manufacturing & Water
DoR	Queensland Department of Resources
DTMR	Queensland Department of Transport and Main Roads
EA	Environmental Authority
EMP	Environmental Management Plan
EMS	Environmental Management System
GHG	Greenhouse Gases
H:V	Horizontal Units in Proportion to Vertical Units
LGA	Local Government Area
MLA	Meat and Livestock Australia
MSES	Matters of State Environmental Significance
MNES	Matters of National Environmental Significance
NFAS	National Feedlot Accreditation Scheme
PASS	Potential Acid Sulfate Soils
SCU	Standard Cattle Unit
TAPM	The Air Pollution Model

Executive summary

Reid River Export Depot Pty Ltd currently operate a pre-export quarantine facility for the purpose of preparing livestock for live export on the property "Runway Station" in the Reid River region approximately 26 km by road northeast of Mingela and 60 km south of Townsville within the Charters Towers Regional Council area.

Reid River Export Depot Pty Ltd has current development approval from the Charters Towers Regional Council (Reference No MC18/63) for Undefined Use (Cattle Holding Yards). The pre-export quarantine facility has approval under Section 120(2) of the Export Control Act 2020 (Export Control Act), as an establishment where livestock of the species and numbers specified in the Certificate of Registration (LAE343) may be assembled and held prior to export.

Reid River Export Depot Pty Ltd assemble and hold cattle destined for live export for up to 10 days in the facility prior to delivery and loading onto livestock carrier vessels. The facility typically operates on an all-in / all-out consignment process where cattle are assembled over a 10 day period, fed a maintenance ration, prepared into shipping lines then transported to port of Townsville for loading onto a vessel. Few cattle are held for more than 10 days. The cattle throughput is dependent on the schedule, frequency and capacity of each livestock carrier vessel.

Due to the nature of the live export industry and fluctuations in consignments, Reid River Export Depot Pty Ltd wish to establish a cattle feedlot within the existing facility up to a maximum capacity of 3,075 standard cattle units.

The establishment of a beef cattle feedlot on the property will provide flexibility to the pre-export quarantine enterprise through diversification, by value adding to the built infrastructure, taking advantage of fluctuations in cattle and commodity prices and as a drought mitigation strategy.

The establishment of the proposed development would require a material change of use of the subject land as the proposed use is defined as "Intensive Animal Industry" under the *Charters Towers Regional Town Plan*.

This report has been prepared in support of a change application (other change) for:

(i) Development Permit for Change Approval - Material Change of Use for Intensive Animal Industry located on "Runway Station", 5291 Flinders Highway, Reid River. The proposal comprises a change to the development approval for Material Change of Use – Undefined use (Cattle Holding Yard). Accordingly, the application constitutes a change application (other change) pursuant to section 82 of the *Planning Act 2016*; and

(ii) Development Permit for Material Change of Use for the following Environmentally Relevant Activities (ERAs) as defined under the *Environmental Protection Regulation 2019*:

- ERA 2, 1(b): Cattle feedlotting – more than 1,000 but less than 10,000 standard cattle units

This report provides an examination of the existing environment, an overview of the design, layout, operation and construction of the existing and proposed development and an environmental risk assessment to assess, mitigate, and monitor environmental risks associated with the proposed development.

This report addresses the merits of the proposed development and its compliance with regard to the provisions of the *Environmental Protection Act 1994, State Planning Policy 2017 and Charters Towers Regional Town Plan* (Charters Towers Regional Council, 2020).

Site address:	5291 Flinders Highway, Reid River, QLD 4811
Real property description:	Lot 1 on RP743456; Lot 2 on RP743456; Lot 600 on SP310657
Assessment manager:	Charters Towers Regional Council – Charters Towers Regional Town Plan Version 2 2020
Site area:	222.9 ha
Zone:	Rural
Existing use:	Undefined use (Cattle Holding Yard) – Cattle destined for live export
Approvals sought:	Development Permit for Change Approval - Material Change of Use - Intensive Animal Industry; and Development Permit for a Material Change of Use – Environmentally Relevant Activity ERA 2, 1(b): Cattle feedlotting – more than 1,000 but less than 10,000 standard cattle units
Level of assessment:	Impact Assessable

The proposed change is defined as “Intensive Animal Industry” under the Charters Towers Regional Town Plan 2020 and is a consistent use and impact assessable development within the subject land’s land use zoning (Rural zone).

Consequently, a development permit for change approval - Material Change of Use is required to authorise the establishment and operation of the proposed development on the subject land.

1 Background

1.1 Introduction

Reid River Export Depot Pty Ltd currently operate a pre-export quarantine facility on the property "Runway Station" in the Reid River region approximately 26 km by road northeast of Mingela and 60 km south of Townsville within the Charters Towers Regional Council area.

Reid River Export Depot Pty Ltd has current development approval under the Charters Towers Regional Council (Reference No MC18/63) for Undefined Use (Cattle Holding Yards) dated 25 September 2018. Reid River Export Depot Pty Ltd has approval for the pre-quarantine facility under Section 120(2) of the Export Control Act 2020 (Export Control Act), as an establishment where livestock of the species and numbers specified in the Certificate of Registration (LAE343) may be assembled and held prior to export.

The existing development is located on land described as Lot 600 on SP310657 formerly Lots 1 – 10 RP715678, 5291 Flinders Highway, Reid River and is known as Reid River Export Depot.

Reid River Export Depot Pty Ltd consigns live cattle to overseas markets. Upon receipt of exporter notification of a pending shipment, Reid River Export Depot Pty Ltd begin sourcing quality livestock in advance of the shipment.

Livestock are received into the Reid River Export Depot, in order to undergo pre export quarantine and isolation. Livestock are assembled at the premises, where the husbandry and management practices ensure that the livestock are adequately prepared for the export voyage.

The objective of the pre-export quarantine facility is to prepare cattle for shipping by adapting them to the feed ration (shipping pellets) fed on the vessel and adjusted to eating out of bunks; quarantining for a minimum of two days; undertaking veterinary checks and ensuring all cattle a fit to load onto the vessel and preparing cattle into shipping lines (weight, sex, type, horns etc).

Once the livestock carrier vessel has berthed and is ready to receive livestock, cattle are transported by livestock vehicle from the pre-export quarantine facility to the vessel on a continuous basis until the vessel is loaded.

The pre-export quarantine facility has approval for 17,005 head at 400 kg held for under 30 days and 7,545 head at 400 kg held for over 30 days. The existing development has a constructed pen area of 4.92 ha along with an associated controlled drainage area which includes sedimentation ponds and holding pond.

The pre-export quarantine facility employs about 10 full time equivalent personnel and operates for 12 months of the year.

The pre-export quarantine facility is normally used for short-term maintenance feeding of cattle for live export using pellets and hay. However, Reid River Export Depot Pty Ltd see an

opportunity for extended production feeding on a higher energy ration if the opportunity arises to put weight onto cattle to achieve minimum live export weight requirements during drought periods; production feeding of live export cattle to add additional weight before sale to live exporters or slaughter.

Consequently, Reid River Export Depot Pty Ltd wish to establish an opportunity production feeding enterprise within the existing facility up to a maximum capacity of 3,075 standard cattle units.

Consequently, the establishment of a beef cattle feedlot involves a material increase in the intensity or scale of the existing use on the subject land and accordingly comprises a Material Change of Use pursuant to Schedule 2 of the *Planning Act 2016.*

The proposed development is defined as "Intensive Animal Industry" under the *Charters Towers Regional Town Plan* (Charters Towers Regional Council, 2020) and is a consistent use and impact assessable development within the subject land's land use zoning (Rural zone). Consequently, a development permit for change approval - Material Change of Use for Intensive Animal Industry is required to authorise the establishment and operation of the proposed development on the subject land.

This report has been prepared in support of a change application (other change) for:

(i) Development Permit for Change Approval - Material Change of Use for Intensive Animal Industry located on "Runway Station", 5291 Flinders Highway, Reid River. The proposal comprises a change to the development approval for Material Change of Use – Undefined use (Cattle Holding Yard). Accordingly, the application constitutes a change application (other change) pursuant to section 82 of the *Planning Act 2016*; and

(ii) Development Permit for Material Change of Use for the following Environmentally Relevant Activities (ERAs) as defined under the *Environmental Protection Regulation 2019*:

- ERA 2, 1(b): Cattle feedlotting – more than 1,000 but less than 10,000 standard cattle units

This report provides an examination of the existing environment, an overview of the design, layout, operation and construction of the proposed development and an environmental risk assessment.

This report addresses the merits of the proposed development with regard to the provisions of the *Environmental Protection Act 1994*, the *Charters Towers Regional Town Plan* and *State Planning Policy 2017* in relation to planning and environmental aspects.

1.2 Proposed development outline

Reid River Export Depot Pty Ltd wish to establish a production feeding enterprise within the existing pre-quarantine export facility. The proposed development shall have a maximum capacity of 3,075 standard cattle units. The proposed development shall be operated in a

manner that will allow flexibility of use with the ability to increase or decrease the number of animals within the development in line with market and economic factors and live export requirements.

The proposed development complex would occupy the footprint of the existing cattle holding yards and include the following components in a functional configuration:

- Water reticulation infrastructure – A reliable and uninterrupted supply of clean water of the required volume to sustain operations is required;
- Pens - Fenced areas are required for accommodating beef cattle (production pens). Due to the small scale of the proposed development cattle arriving to or being dispatched from the development shall be held in the existing livestock handling facility;
- Internal road – An access road shall be constructed to the proposed development site from the existing development;
- Controlled drainage area – Rainfall runoff from areas such as pens that has a high organic matter and therefore a high pollution potential is controlled within a system that collects and conveys this runoff to a sedimentation system and holding pond prior to environmentally sustainable utilisation;
- Drainage system - The controlled drainage area contains a system including catch drains, sedimentation system and holding pond for conveying stormwater, allow entrained sediment to 'settle out' and capture and storage of the stormwater from the controlled drainage area until it can be sustainably utilised; and
- Solid waste and effluent management areas – Solids wastes such as manure and mortalities shall be temporarily stockpiled and processed within the solid waste stockpile and carcass composting area prior to utilisation on-site. Effluent is stored in the holding pond pending application to the effluent utilisation area.

The proposed development also includes an associated 100 ha of cropping land for solid waste and effluent utilisation. Solid wastes generated are applied to an on-site utilisation area. Any solid wastes not utilised on-site are removed off-site. When available, effluent is applied to land via irrigation within a dedicated effluent utilisation area.

The proposed development shall be developed in one stage.

Further description of the various elements of the proposed development is provided in section 5.

The proposed development shall be designed, constructed and managed equivalent to a Class One beef cattle feedlot. A Class One beef cattle feedlot has highest standard of design, operation, maintenance, pad management and cleaning frequency. A Class One beef cattle feedlot is defined in section 5.1.

2 Site and locality

2.1 Subject land

The subject land on which the development is proposed is located approximately 26 km by road northeast of Mingela and 60 km south of Townsville in North Queensland.

The subject land has primary frontage to the Flinders Highway (sealed) of approximately 325 m and the Reid River of approximately 2 km. The subject land is the site of the former WWII Reid River airfield.

Figure 1 is a locality plan highlighting the subject land to state and local roads and the nearby township of Inglewood.

2.1.1 Real property description

The subject land comprises three (3) cadastral portions separated in part by land designated as roads. The subject land is part of the property "Runway Station". The real property description of the subject land is provided in Table 1. The total area of the subject land is approximately 222.9 ha (~550 acres). The subject land is in the Charters Towers Regional Council (CTRC) local government area. Figure 2 is a cadastral plan highlighting the cadastral parcels that comprise the subject land.

Table 1 – Subject land – Real property description

Property Name	Lot No.	Plan No.	Easements	County	Parish	Area ha
"Runway Station"	1	RP743456	Nil	Elphinstone	Cardington	0.2499
"Runway Station"	2	RP743456	A/RP808273	Elphinstone	Cardington	24.080
"Runway Station"	600	SP310657	Nil	Elphinstone	Cardington	198.587
Total area						222.92

2.1.1.1 Easement

The subject land contains an easement in gross No 601328258 (T521486P) 12/02/1991 as shown in Figure 2 and listed on the Certificate of Title for Lot 2 RP743456, burdening the land to Lot 1 on RP743456 over easement A on RP808273.

2.1.1.2 Land designated as road

The subject land does contain land designated as road under the Land Act 1994 as shown in Figure 2.

Adjoining the western boundary of the subject land is the named and formed road being the Flinders Highway (sealed).

Land designated as road also bisects the centre of the subject land and extends from the subject land boundary in the south to the northern boundary and from east to west. Whilst a road is not constructed on any of the parcels designated as road, these parcels are still defined as road under the Land Act 1994 and are owned by the State of Queensland.

The parcels of land adjoining land designated as road on the subject land are shown in Table 2 and Figure 2.

Table 2 – Subject land – Land designated as road

Property Name	Road Boundary Adjoining Parcel		Opposite Road Boundary Adjoining Parcel	
	Lot No.	Plan No.	Lot No	Plan No
"Runway Station"	600	SP310657	600	SP310657

2.1.1.3 Stock route

A stock route (Stock Route ID 343CHAR) is declared on the land designated as road which adjoins the southern boundary of the subject land under the *Stock Route Management Act* 2002.

2.1.1.4 Tenure

The subject land is owned by Reid River Land Holdings Pty Ltd (ACN 623 669 367) as trustee for the JDH Unit Trust (ABN 83 627 005 630) in freehold land tenure.

The certificate of title for each land parcel that comprises the subject land on which the development is proposed is provided in Appendix A.

DATE PLOTTED: 4 June 2022 BY: - RDC Engineers PTY LTD

LEGEND

SUBJECT LAND BOUNDARY

NOTES

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RDC ENGINEERS | AGRICULTURAL ENVIRONMENTAL PROJECT MANAGEMENT

ABN 37 627 163 071
PO BOX 1223
TOOWOOMBA QLD 4350

M: 0427 829 203
E: info@rdcengineers.com.au

REV.	DATE	REVISION DESCRIPTION	DRAWN	CHECK	APPROVED
A	29/05/22	DRAFT ISSUE TO CLIENT	RJD	RJD	RJD
B	04/06/22	FINAL ISSUE FOR LODGEMENT TO CTRC	RJD	RJD	RJD

SCALE	1:440,000 (A3)
DRAWN	RJD
DATE	04/06/2022
CHECKED	RJD
DATE	04/06/2022
APPROVED	RJD
DATE	04/06/2022

CLIENT: REID RIVER EXPORT DEPOT PTY LTD AS TRUSTEE

PROJECT: PROPOSED INTENSIVE ANIMAL INDUSTRY DEVELOPMENT

TITLE: DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE
SUBJECT LAND - LOCALITY PLAN

REPORT REFERENCE	SUPPLIED DRAWING NUMBER		DRAWING NUMBER	REV.
FIGURE 1		A3	D1-130-00-01	B

FILE PATH: C:\RDC Engineers\RDCE - Projects\01-139 Reid River FeedLot\05 - ACAD MasterPlan\05.1 Drawings - CURRENT FILE NAME: D1-130-00-MASTERPLAN-220228 v8.dwg

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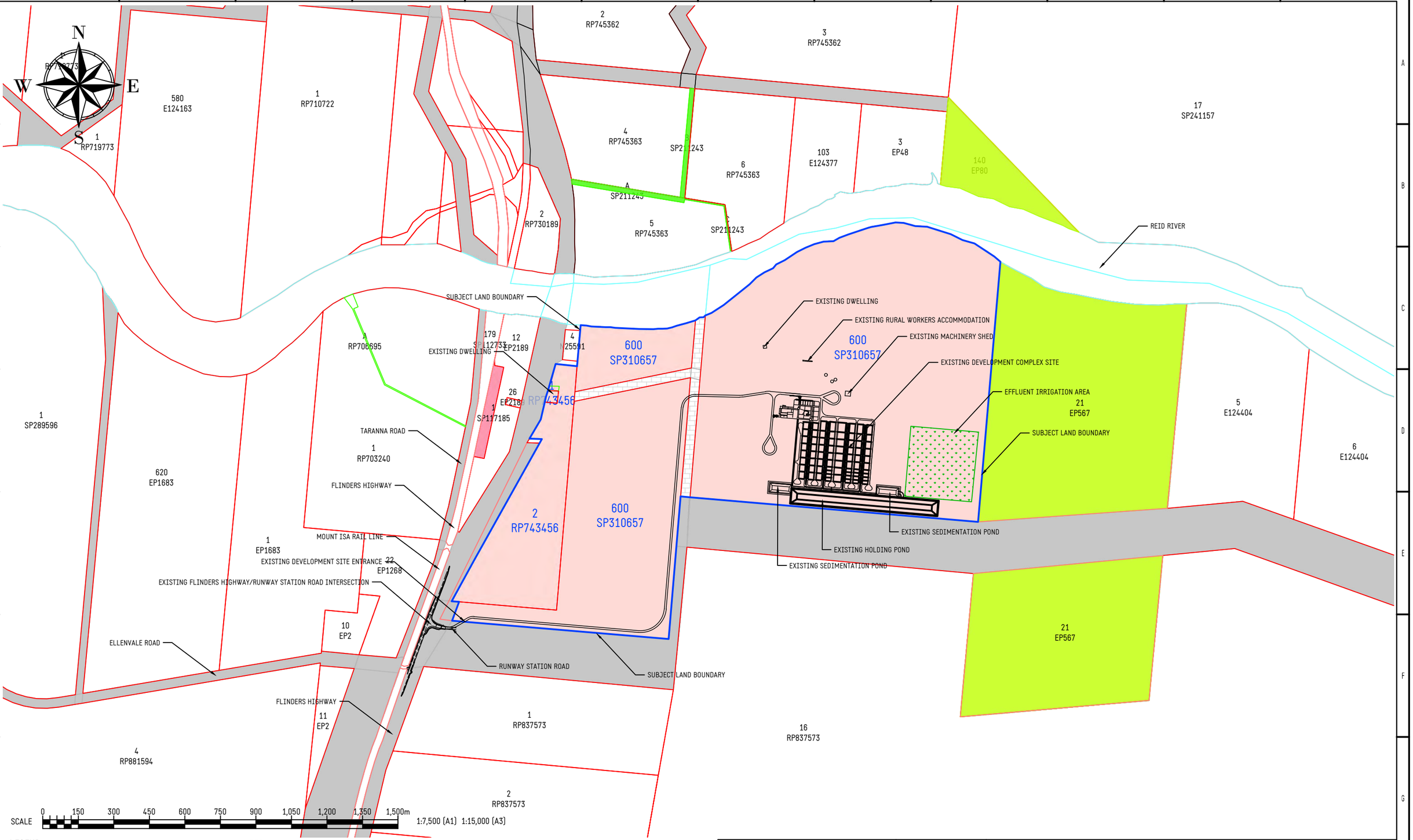

LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- SUBJECT LAND AREA
- LAND DESIGNATED AS ROAD
- LAND DESIGNATED AS ROAD - PURCHASED
- EASEMENT
- LANDS LEASE
- RAILWAY
- RESERVE

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RDC ENGINEERS
AGRICULTURAL
ENVIRONMENTAL
PROJECT MANAGEMENT
ABN 37 627 163 071
PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 629 203
E: info@rdcengineers.com.au

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DATE	04/06/2022

CLIENT: REID RIVER EXPORT DEPOT PTY LTD AS TRUSTEE
PROJECT: PROPOSED INTENSIVE ANIMAL INDUSTRY DEVELOPMENT
TITLE: DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE
SUBJECT LAND - CADASTRAL PLAN

REPORT REFERENCE	SUPPLIED DRAWING NUMBER		DRAWING NUMBER	REV.
FIGURE 2		A3	D1-130-00-02	B

FILE PATH: C:\RDC Engineers\RDCE - Projects\D1-130 Reid River Feedlot\05 - ACAD MasterPlan\05.1 Drawings - CURRENT FILE NAME: D1-130-00-MASTERPLAN-220228 v8.dwg

2.1.2 Current land use

Historically, the subject land was part of the site of the WWII Reid River airfield and has been predominantly cleared of native woodland vegetation and developed since that time for low intensity beef cattle grazing and horticulture (mango and finger lime orchard).

The current land use on the subject land comprises rural activities including dryland fodder production, low intensity beef cattle grazing on native and improved pastures, and the pre-quarantine export facility. The subject land has infrastructure improvements to support these land uses, including:

- Cropping land;
- Stock-proof fencing;
- Watering and cattle handling facilities; and
- Pre-quarantine export facility – Feed storage, water storage, holding pens, cattle handling facility, sedimentation pond(s), holding pond etc.

Further, the Motorsports facility known as Runway Station Trail Rides which is located some 1,500 m east of the pre-quarantine export facility is accessed through the subject land and shares the same access point off the Flinders Highway.

Figure 3 is an aerial photograph showing the subject land and illustrating the current land use. Photograph 1, Photograph 2 and Photograph 3 further illustrate the current land use of the subject land and developed infrastructure.

Photograph 1 – Subject land – Current land use – Pre-quarantine export facility

Photograph 2 – Subject land – Current land use – Dryland cropping

Photograph 3 – Subject land – Current land use – Native vegetation

2.2 Surrounding land use

2.2.1 Surrounding locality

The subject land is in the Reid River district, a pastoral area approximately 26 km by road northeast of Mingela and 20 km south of Woodstock.

The area is characterised by agricultural pursuits predominantly extensive grazing of beef cattle. There are small isolated areas of horticulture and irrigated cropping along several of the minor waterways becoming more extensive along the lower reaches of the Haughton River and Burdekin Delta. There are extensive areas of remnant vegetation remaining and several nature reserves. Several extractive industries also exist in the locality with quarrying of hard rock and mining of calcium-bearing lime.

There are several intensive livestock industries being beef cattle feedlots co-located with pre-quarantine export facilities in the locality.

The closest rural residential lifestyle properties to the proposed development are located some 10 km to the north around the township of Woodstock.

2.2.2 Adjoining and neighbouring properties

The subject land is co-located with rural properties that are engaged in similar agricultural pursuits such as extensive grazing of beef cattle and surrounded by land located within the rural planning area of the *Charters Towers Region Town Plan*. The closest intensive animal industry (beef cattle feedlot) to the proposed development is the Calcium Feedlot (500 SCUs) and Dingo Park Feedlot (30,000 SCUs) located some 10 km and 17 km respectively to the north and northeast of the subject land. There are no poultry or piggery facilities in the local area.

To the west of the subject land there is one rural dwelling house located on the eastern side and adjacent to the Flinders Highway. There is one rural dwelling house located on the western side of the Mount Isa Line which is owned by the Railway Manager.

To the east of the subject land is a motorsports facility (Runway Station trail rides) and ancillary camping which was approved by the Charters Towers Regional Council in March 2021.

For part of its length, the Reid River forms the northern boundary of the subject land. There is one rural dwelling house located on the northern bank of the Reid River to the northwest of the proposed development.

The prevailing pattern of land use on properties adjoining the subject land may be summarised as follows:

- Low intensity beef cattle livestock grazing (north, south and west);
- Motorsports facility (east); and
- Remnant vegetation (north, south and east);

Adjoining land parcels to the north, south, east and west range in size from 0.8-1,600 ha in area. Several adjoining land parcels are also a part of the property "Runway Station".

Photograph 4 to Photograph 8 and further illustrate the land use surrounding the subject land.

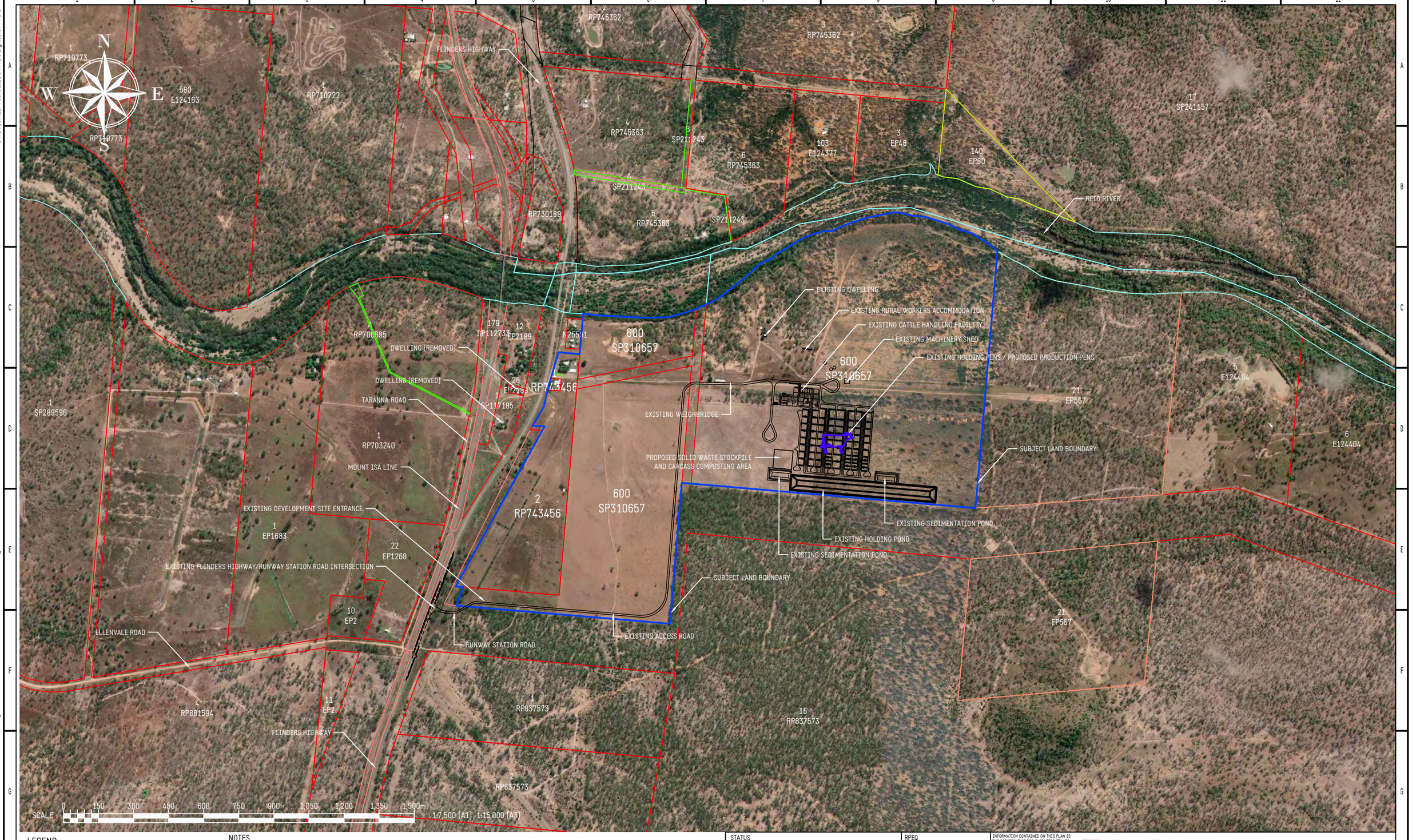
Photograph 4 – Land use of neighbouring properties (south) – Extensive grazing

Photograph 5 – Land use of adjoining properties (east) – Motorsports facility

Photograph 6 – Land use of adjoining properties (north, south and east) – Extensive grazing and remnant vegetation areas

Photograph 7 – Land use of adjoining properties (north) – Reid River riparian areas

Photograph 8 – Land use of adjoining properties (west) – Rural dwelling



LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- UNDEFINED USE - CATTLE HOLDING YARDS

NOTES

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RDC ENGINEERS
AGRICULTURAL ENVIRONMENTAL PROJECT MANAGEMENT
ABN 37 627 163 071
PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 629 203
E: info@rdcengineers.com.au

REV.	DATE	REVISION DESCRIPTION	DRAWN	CHECK	APPROVED
A	29/05/22	DRAFT ISSUE TO CLIENT	RJD	RJD	RJD
B	04/06/22	FINAL ISSUE FOR LODGEMENT TO CTRC	RJD	RJD	RJD

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DRAWN	RJD
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DATE	04/06/2022
APPROVED	RJD
DATE	04/06/2022

CLIENT: REID RIVER EXPORT DEPOT PTY LTD AS TRUSTEE
PROJECT: PROPOSED INTENSIVE ANIMAL INDUSTRY DEVELOPMENT
TITLE: DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE SUBJECT LAND - AERIAL PLAN

REPORT REFERENCE: FIGURE 3
SUPPLIED DRAWING NUMBER:
A3
DRAWING NUMBER: D1-130-00-03
REV.: B

DATE PLOTTED: 4 June 2022 BY: - RDC Engineers PTY LTD
FILE NAME: D1-130-00-MASTERPLAN-220228 v8.dwg
FILE PATH: C:\RDC Engineers\RDCE - Projects\D1-130 Reid River Feedlot\05 - ACAD MasterPlan\05.1 Drawings - CURRENT

3 Existing utilities

3.1 Electricity

There is currently overhead electricity HV line supplied to the subject land as shown in Photograph 9. Single phase and three phase overhead supply is provided to the subject land dwelling, existing development and workshop respectively. A diesel powered generator also provides standby power in the event of interruption to the overhead supply for the dwelling and existing development.

Photograph 9 – Subject land – Overhead supply electricity infrastructure

3.2 Water

The subject land is in a rural area and not in a Charters Towers Regional Council reticulated water supply area.

Currently, groundwater and surface water are used as the water supply sources for the existing stock and domestic and commercial uses on the subject land. Photograph 10 illustrates one of the overland flow dams on the subject land.

Groundwater for the purposes of stock intensive water is sourced from unregulated groundwater source in accordance with the Water Plan (Burdekin) 2007.

Photograph 10 – Subject land – Overland flow dam

3.3 Sewerage

There is no sewer reticulation to the subject land.

3.4 Telecommunications

The dwelling on the subject land is connected to reticulated telecommunications services.

The subject land has good mobile phone service coverage.

4 Existing development

4.1 Introduction

Reid River Export Depot Pty Ltd own and operate a pre-export quarantine facility for cattle destined for live export on the property "Runway Station". The pre-export quarantine facility is known as Reid River Export Depot.

Reid River Export Depot Pty Ltd has current development approval under the Charters Towers Regional Council (Reference No MC18/63) for Undefined Use (Cattle Holding Yards). Reid River Export Depot Pty Ltd has approval for the pre-quarantine facility

The pre-export quarantine facility has approval under Section 120(2) of the Export Control Act 2020 (Export Control Act), as an establishment where up to 17,005 head at 400 kg can be assembled and held for under 30 days and 7,545 head at 400 kg can be assembled and held for over 30 days prior to export in accordance with the Certificate of Registration (LAE343). The existing development has a constructed pen area of 4.92 ha along with an associated controlled drainage area which includes sedimentation ponds and holding pond.

Reid River Export Depot Pty Ltd consigns live cattle to overseas markets. Upon receipt of exporter notification of a pending shipment, Reid River Export Depot Pty Ltd begin sourcing quality livestock in advance of the shipment.

Livestock are received into the Reid River Export Depot, in order to undergo pre export quarantine and isolation. Livestock are received over a 2-6 day period with an average holding time of 9 days within the facility. Livestock are assembled at the premises, where the husbandry and management practices ensure that the livestock are adequately prepared for the voyage.

The minimum length of time that cattle must remain in the pre-export quarantine facility prior to departure for the port is 2 clear days for short or long–haul voyages, or 3 clear days for extended long–haul voyages. For any clear day on which animals are subject to a feed or water curfew, an additional clear day is required. The number of clear days exclude the first day (arrival day) and last day (departure day).

The objective of the pre-export quarantine facility is to prepare cattle for shipping by adapting them to the feed ration (shipping pellets) fed on the vessel and adjusted to eating out of bunks; quarantining for a minimum of two days; undertaking veterinary checks and ensuring all cattle a fit to load onto the vessel and preparing cattle into shipping lines (weight, sex, type, horns etc).

Prior to exiting the facility, livestock are inspected by both an accredited third party veterinarian as well as a veterinarian from the Australian Quarantine and Inspection Service, who must issue a "permit to leave for loading" before the consignment can be moved to the port of Townsville.

Once the livestock carrier vessel has berthed and is ready to receive livestock, cattle are transported by livestock vehicle from the pre-export quarantine facility to the vessel on a continuous basis until the vessel is loaded.

The pre-export quarantine facility was constructed in 2019. The existing development complex occupies a footprint of approximately 4.98 ha and includes the following components in a functional configuration:

- Water supply/storage and reticulation – Water is sourced from groundwater and delivered to storage tanks prior to reticulation around the existing development complex;
- Pens - Fenced areas are developed for holding beef cattle (holding pens);
- Access and internal roads – An internal roadway connects the feed processing and administrative infrastructure to the complex for feed delivery, administrative and waste management operations;
- Controlled drainage area – Two controlled drainage areas are constructed where stormwater runoff from areas such as holding pens and cattle handling facility and cattle lanes is collected and conveyed to the sedimentation pond and holding pond prior to environmentally sustainable utilisation; and
- Solid and effluent management areas – Solids wastes such as manure and mortalities are temporarily stockpiled and processed within the solid waste stockpile and carcass composting area prior to utilisation off-site. Effluent is stored in the holding pond pending application to the effluent utilisation area when available.

In addition to the development complex area there is a effluent utilisation area associated with the existing development. Typically, all solid wastes generated are removed off-site for sustainable reuse. When available, effluent is applied to land via irrigation within a dedicated liquid waste utilisation area on the subject land. However, due to the low rainfall received since the development was constructed there has been insufficient effluent available for utilisation.

Grain and commodity storage, administrative and maintenance activities are undertaken within built infrastructure located on the development site.

4.2 Configuration

The approved layout of the existing development is shown on Figure 4. There are two controlled drainage areas with associated holding pens, catch drains, sedimentation ponds and holding pond. Grain and commodity storage is located within a dedicated commodity building located to the north of the cattle holding pens.

4.2.1 Pens

Pens have been constructed for holding cattle (holding pens). Cattle arriving to or being transferred from the facility (induction/dispatch pens) and sick cattle (hospital pens) are temporarily held in the cattle handling facility.

The existing development has an approved total holding pen area of 4.98 ha. The development has generally been constructed in accordance with approved plans. The as-constructed development comprises seventy pens as shown on Figure 4 each with a width of 15 m and 30 m and a depth of 25 m and 35 m. Photograph 11 illustrates a row of holding pens.

Photograph 11 – Existing development – Holding pens

4.2.2 Stocking density

The existing development has an approved average stocking density of the holding pen area of about 6.6 m^2/head when holding cattle for longer than 30 days.

4.2.3 Shade

Shade structures have been installed over the beef cattle production pens to reduce the impact of heat wave conditions on cattle. The shade comprises a continuous strip of shade cloth material mounted on a steel frame and cable structure and is shown in Photograph 12.

Photograph 12 – Existing development – Holding pen shade infrastructure

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LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- CONTOUR - MAJOR (5m)
- CONTOUR - MINOR (1m)

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RDC ENGINEERS
AGRICULTURAL
ENVIRONMENTAL
PROJECT MANAGEMENT
ABN 37 627 163 071
PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 829 203
E: info@rdcengineers.com.au

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TITLE: DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE
EXISTING DEVELOPMENT - DEVELOPMENT LAYOUT

REPORT REFERENCE	SUPPLIED DRAWING NUMBER		DRAWING NUMBER	REV.
FIGURE 4		A3	D1-130-00-04	B

4.3 Cattle management

4.3.1 Market types

Typically, cattle are destined for southeast Asia countries such as Vietnam, Philippines, Malaysia and Indonesia. Cattle for live export need to be a minimum of 200 kg and maximum of 850 kg in weight. Each market has their own weight specifications with the Indonesian market requiring lighter cattle around an average of 450 kg (maximum average weight, per consignment) and Vietnam heavier cattle around 550 kg.

Premium quality Bos Indicus and Bos Indicus cross cattle are the breed of cattle destined for live export.

Cattle are transported to the existing development at about the entry weight of the consignment market. The cattle are fed a maintenance ration comprising hay and grain pellets on average for 7-10 days prior to transport from the existing development and loading onto the vessel.

The normal procedure followed for receiving cattle into the existing development includes the following.

As livestock are unloaded they are inspected for signs of stress and general health and to ensure they are eligible for export. Those livestock failing to meet specifications are drafted from the receival and either returned immediately to the vendor or held in isolation pending their return.

Livestock information such as details arrival date and time, property of origin, vendor, type and number and weight is recorded in the livestock management system.

Injured or weak animals are moved to a hospital pen maintaining as much segregation according to size, sex, horned/polled as possible. All sick or injured cattle are given immediate treatment according to veterinary advice. If necessary, they are retained in the hospital pens adjacent to the cattle handling facility. Once treated cattle recover, they are returned to an appropriate holding pen. Animals deemed ineligible for export will either be returned to the Vendor or placed in an isolated pen pending their return to the vendor or alternative disposal pathway.

After induction, cattle are allocated to a holding pen in accordance with penning management procedures, and pen allocation details are recorded in the livestock management system. Photograph 13 illustrates the existing livestock handling facility.

Low-stress handling techniques are employed to minimise stress, bruising and hide damage.

Excessive noise and movement of cattle within the feeding period is avoided along with handling of cattle during adverse weather conditions (e.g. very hot and humid weather).

Cattle are provided with an adequate supply of feed and water.

On the dispatch date, cattle are loaded onto the livestock transport vehicle at a suitable density. Cattle are transported in a manner that protects their welfare and which considers climatic conditions. Transport operators adhere to the Australian Animal Welfare Standards and Guidelines – Land Transport of Livestock (AHA, 2012).

Photograph 13 – Existing development – Livestock handling facility

4.3.2 Cattle numbers

The number of cattle transiting through the existing development is dependent on the following factors:

- Number of consignments;
- Available space within the facility; and
- mortality rates.

Based on the live export market the estimated number of incoming and outgoing cattle from the existing development in 2020 was 125,438 head as shown in Table 3. Total cattle transiting through the development was approximately of cattle.

Typically, the existing development operates for 12 months of the year.

Table 3 – Existing development – Estimated cattle throughput (2020)

Parameter	Units	Market type
		Live Export
Entry weight	kg	~500
Exit weight	kg	~510
Days on feed	Days	~9.8
Mortality rate (No in/No Out)	%	~0.1
Incoming cattle	No per year	~125,545
Outgoing cattle	No per year	~125,428

4.4 Feed management

Rations are prepared on-site in a dedicated facility, with associated commodity storage, handling and ration delivery infrastructure.

The ration contains a maintenance 'export shipper' pellet, roughage (fibre), molasses and water. The maintenance pellet is a hay/grain pellet specifically formulated for live export cattle and is the same as the pellets fed during the sea voyage. Roughage is essential in the diet to enable normal rumen activity and is provided by hay or straw commodities. As the ration is a maintenance ration, no mineral/vitamin premixes are added to the ration.

Cereal grains such as barley and wheat are the predominant grains used in the pellet.

Cattle are fed a daily minimum of 2.5% of body weight and are fed on an ad lib basis, i.e. they always have access to palatable feed. The ratio of pellets and hay used in the ration is determined by consultation with the exporter.

The approximate annual amount of feed commodities required for the existing development in 2020 are listed in Table 4. Total annual feed commodity usage is estimated to be approximately 5,075 t.

Table 4 – Existing development – Annual commodity usage (2020)

Parameter	Type	Units	Market Type
			Live Export
Grain	Pellets	t/year	4,800
Roughage	Hay (oaten)	t/year	6,500
Liquids	Molasses	t/year	1,200

The maintenance pellets are stored on-site in a dedicated shed and do not require further processing on-site as shown in Photograph 14 and Photograph 16.

Hay is stored in a shed and in the open adjacent to the maintenance pellet shed as shown in Photograph 15 and is not pre-processed by tub-grinding prior to being added to the feed wagon.

The maintenance pellets, hay and molasses are loaded directly into a tractor-drawn feed wagon. The tractor-drawn feed wagon has on-board mixing equipment as shown in Photograph 17. The ration is then dispensed into the feed bunks directly from the tractor-drawn feed wagon.

Photograph 14 – Existing development – Conditioner pellet storage infrastructure

Photograph 15 – Existing development – Hay storage

Photograph 16 – Existing development – Commodity storage

Photograph 17 – Existing development – Feed-out wagon

4.5 Water supply, storage and usage

The existing development depends on a supply of water of sufficient quantity, quality and reliability. Most of the water used is for cattle to drink.

Water for the existing development is currently sourced from unregulated groundwater sources via four production bores. Each bore is equipped with a pump driven by solar, diesel or electric motor. From the combination of yield and pump capacity, each bore is capable of delivering 8,000 litres to 18,000 litres per hour.

Water storage tanks located at the highest elevation on the subject land temporarily stored water prior to being reticulated around the development using an underground polyethylene pipe network under gravity.

In all holding pens, drinking water is delivered to the water troughs using an automatic float valve to minimise wastage. Cattle have continuous access to fresh water.

Photograph 18 – Existing development – Water supply storage

4.6 Controlled drainage area

Stormwater runoff from areas such as holding pens and solid waste stockpile and carcass composting areas has a high organic matter and therefore a high pollution potential. This runoff is controlled within an area, known as the controlled drainage area, that collects and conveys this runoff to sedimentation pond(s) and a holding pond prior to environmentally acceptable utilisation.

The controlled drainage area of the existing development includes the following elements:

- holding pens;
- cattle lane;
- run-off catch drain;
- sedimentation system; and
- holding pond.

Figure 4 shows the controlled drainage area layout of the existing development. Photograph 20 illustrates the controlled drainage area of the existing development.

Photograph 19 – Existing development – Drainage infrastructure – Sedimentation pond

Photograph 20 – Existing development – Drainage infrastructure – Holding pond

4.7 Solid waste management

Regular cleaning and maintenance in and around the holding pens, cattle lanes and catch drains of the existing development is undertaken in accordance with development conditions and best management practice. Table 5 outlines the typically program for solid waste management.

Table 5 – Existing development – Schedule for solid waste management

Activity	Frequency and / or Action
Visual assessment of manure pack depth	Weekly
Removal of spilt feed /feed residues	Daily
Elimination of wet patches in pens	Monthly
Repairs to potholes in pens	Monthly
Under fence cleaning	Monthly (or after manure obstructs pen drainage)
Pen cleaning	Monthly
Pen surface inspections	After runoff events and repaired as required
Diversion banks and drains	After runoff events and repaired as required

Pen cleaning and maintenance is undertaken at intervals not exceeding 4 weeks. Manure is removed from the pens and stored in the manure stockpile and carcase composting area prior to removal for utilisation.

The sedimentation pond is cleaned and maintained as soon as practically possible following the deposition of a significant amount of sediment.

4.7.1 Utilisation

The existing development has an area of 100 ha on which crops such as Buffel, Urochloa and Secca are grown for hay production. This area is within close proximity to the existing development as shown in Figure 4. Currently, solid waste is spread on adjoining land which is owned by the applicant. There has been insufficient effluent available for irrigation to date.

4.8 Liquid waste management

4.8.1 Effluent storage

A holding pond has been designed and constructed to store stormwater runoff from the controlled drainage area as shown on Figure 4 and Photograph 21.

Photograph 21 – Existing development – Holding pond

4.8.2 Effluent utilisation

Due to the low rainfall since the commencement of operations, there has been insufficient volume of effluent generated for utilisation to land. The effluent that has been generated has evaporated from the holding pond.

The existing development has an area of about 8.7 ha available for effluent utilisation as shown in Figure 4.

4.8.3 Sewage

As the existing development is in a rural area and cannot be connected to a reticulated sewerage system an on-site domestic sewage management system is used. The existing homestead and accommodation dwellings have an on-site domestic sewage treatment and disposal system designed in accordance with Australian Standard AS1547 and have plumbing approval from the Charters Towers Regional Council.

4.9 Workforce

The existing development provides employment for ten (10) full time equivalent personnel. This includes staff undertaking administrative, livestock handling, feed storage, preparation and delivery and waste management activities.

Accommodation is provided onsite for the Manager and 8 operational personnel. On-site worker's accommodation enables personnel to stay on-site for the duration of a working week and eliminate the need to commute. As the Manager is the owner and operator of the existing development, the existing dwelling on the subject land is the Manager's Residence.

It is expected that the employees will reside in either Charters Towers or Townsville and at the outset of operations, will commute to the holding facilities each day.

All staff are trained to uphold strong guidelines in meat quality, animal health and welfare and environment.

4.10 Hours of operation

During the receivals and holding phase, the existing development typically operates 12 hours per day between 7.00 am and 5.00 pm, 5 days per week including public holidays. Staff are on-site 24 hours a day, 7 days a week. A skeleton workforce is maintained on a weekend to feed and water livestock.

Cattle receivals for the shipment are generally aggregated over 3 to 7 days. Depending on the size of the ship the average holding time of livestock in the existing development is about 10 days.

However, when a ship arrives and the dispatch of cattle to the ship commences, operation of the facility and staff may be required for up to 24 hours a day until the ship is loaded.

Periodically, heavy vehicle movements do occur outside of normal operating hours (e.g. in summer), as it is desirable to transport cattle either at night or in the early hours of the morning for animal welfare reasons.

As far as practical, delivery of feed commodities occurs between 7:00am and 4:00pm on Monday to Friday.

The existing development typically operates 12 months of the year.

4.11 Access and internal roadways

Access to the existing development is from a dedicated entrance off Runway Station Road approximately 1.5 km south of the Reid River road bridge crossing and some 250 m north of Ellenvale Road as shown in Photograph 22.

The dedicated entrance was a DTMR condition of the approval for the existing development by the Charters Towers Regional Council (Reference No MC18/63) in September 2018. The approved intersection plan is provided in Figure 5. The intersection was constructed in July 2019 by a prequalified DTMR contractor (HEH Civil Pty Ltd).

The subject land entrance has been designed to provide an efficient, functional and safe access to the existing development site and has been constructed to DTMR standard design specifications for the type of traffic generated by the existing development.

The access point is on a straight section of road to the south and north with a slight horizontal curve to the east. As the haulage routes are split towards both Charters Towers and Townsville there is good visibility for vehicles entering and exiting the subject land in both directions as shown in Photograph 23 and Photograph 24.

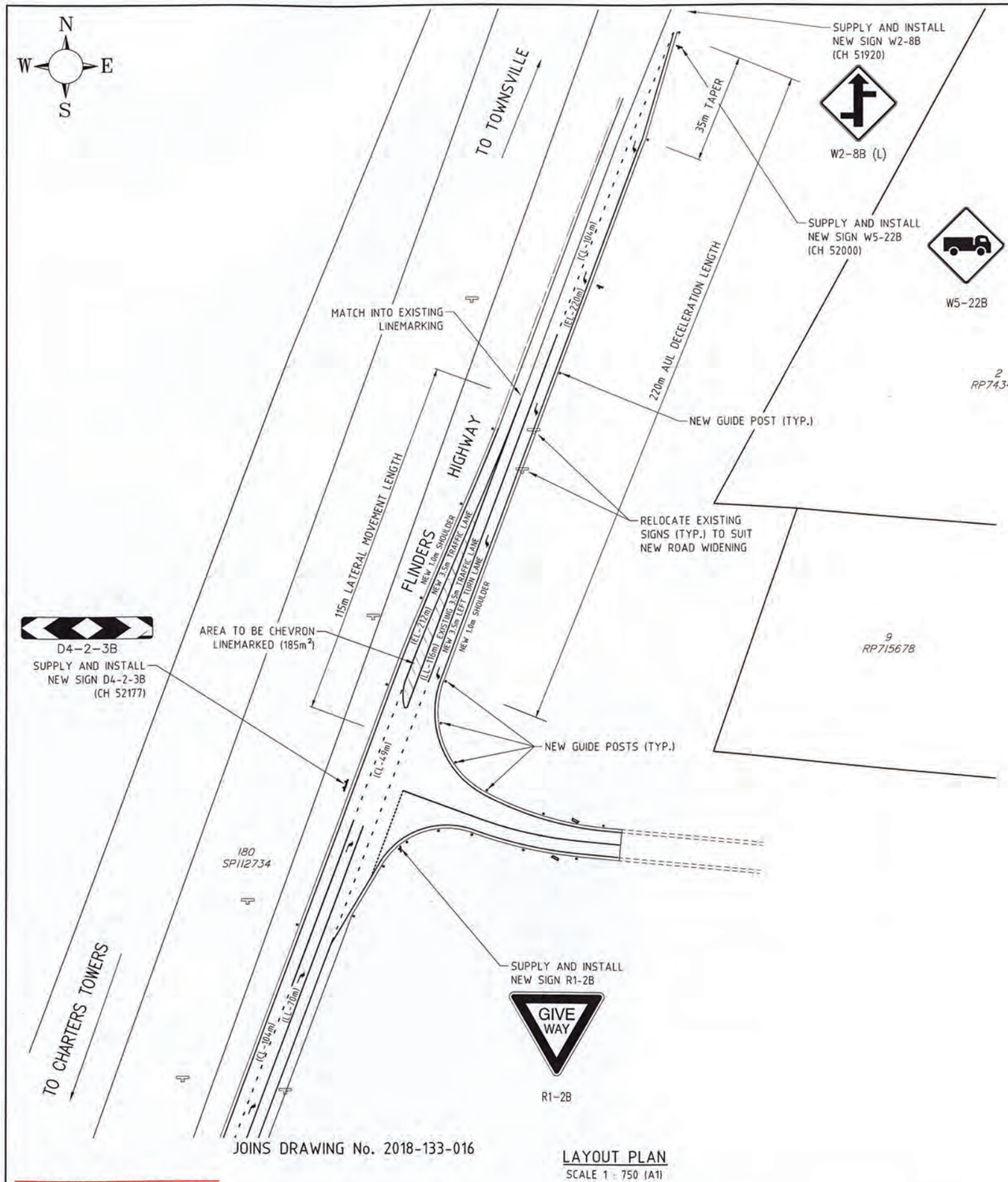
An internal road connects the subject land entrance to the existing development. There is one entrance for both light and heavy vehicles.

Figure 4 illustrates the existing subject land access to the Flinders Highway and the internal road connecting to the existing development. The internal road is an unsealed gravel road which provides access in all weather conditions.

Photograph 22 – Existing development – Subject land entrance

Photograph 23 – Flinders Highway / Runway Station road intersection – Looking north

Photograph 24 – Flinders Highway / Runway Station road intersection – Looking south



LAYOUT PLAN
SCALE 1 : 750 (A1)

The works shown on this drawing are a factual representation of the works constructed.
Signature ..... Date 20/11/19
Name B. BURTON
Title P.M.

HEH CIVIL

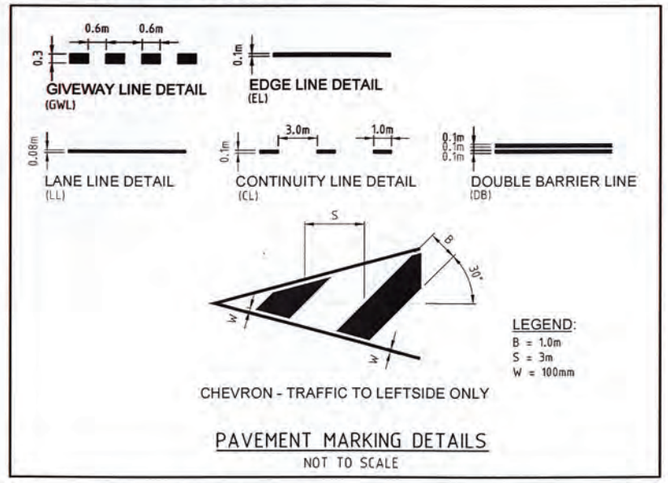
NOTE:
LOCATION AND SPACING OF ALL GUIDE POSTS TO BE IN ACCORDANCE WITH MUTCD.

R.R.P.M. TABLE

SYMBOL	TYPE	SPACING
	White Bi-directional	24m
	White Uni-directional	24m
	Red Uni-directional	24m
	Yellow Bi-directional	24m
	Yellow Uni-directional	24m
	Blue Bi-directional	24m
	Blue Uni-directional	24m

NOTES:

1. ROAD CONTROL LINES REMOVED FOR CLARITY.
2. PRIOR TO INSTALLATION OF SIGNS, THE CONTRACTOR SHALL CHECK FOR POSSIBLE SERVICE CONFLICTS, AND IF PRESENT, NOTIFY THE RELEVANT SERVICE AUTHORITY.
3. ALL SETOUT TO BE CONFIRMED ON SITE.
4. ALL EXISTING SIGNS NOT CONFLICTING WITH PROPOSED WORKS ARE TO REMAIN.
5. ALL PAVEMENT MARKING AND SIGNAGE IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT QUEENSLAND MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
6. NEW PAVEMENT MARKING SHALL JOIN SMOOTHLY TO EXISTING WHERE REQUIRED.
7. RRPMS:
   ALL PAVEMENT MARKINGS AND LINES TO BE SUPPLEMENTED WITH RETRO-REFLECTIVE RAISED PAVEMENT MARKERS IN ACCORDANCE WITH THE CURRENT "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES - PART 2". PLACEMENT TO BE IN ACCORDANCE WITH MUTCD.
8. ALL EXISTING REDUNDANT SIGNS TO BE REMOVED/RELOCATED.
9. PROVIDE ROAD EDGE POSTS IN ACCORDANCE WITH MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).



PAVEMENT MARKING DETAILS
NOT TO SCALE

15 0 15 30 45 60 75m
SCALE 1:750 @ A1 SCALE 1:1500 @ A3

ISSUE FOR CONSTRUCTION

REVISIONS	No.	BY	DATE	DESCRIPTION
	1	F.N.	27/11/18	DTMR AMENDMENTS
	0	S.B.Y.	26/10/18	ISSUE FOR CONSTRUCTION

HORIZ. DATUM	MGA	
VERT. DATUM	AHD	
DRG. FILE	2018133-017	DATE
DESIGN	B.L./F.N.	26/10/18
DRAWN	S.B.Y.	26/10/18

CERTIFICATION
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m 0400 699 979
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REID RIVER LAND HOLDINGS PTY LTD

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NEW INTERSECTION
SIGNAGE AND LINEMARKING LAYOUT – PLAN 2 OF 2

SCALE	AS SHOWN
SHEET	
REVISION	0 1
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FIGURE 5

4.12 Traffic and transport

Traffic generated by the existing development consists of heavy vehicles bringing feed commodities to the site (see section 4.4 for details of feed usage) and livestock trucks transporting cattle to and from the site (see section 4.3.2 for details of cattle in and out).

Eight (8) staff are able to be accommodated on-site within the existing dwelling and workers accommodation on the subject land.

There are no cattle bred on the subject land and therefore walked into the existing development.

Livestock are transported in accordance with the Queensland compulsory code of practice for land transport of livestock under the *Animal Care and Protection Act 2001* and Land Transport of Livestock (Animal Health Australia (AHA) 2012).

4.12.1 Haulage routes

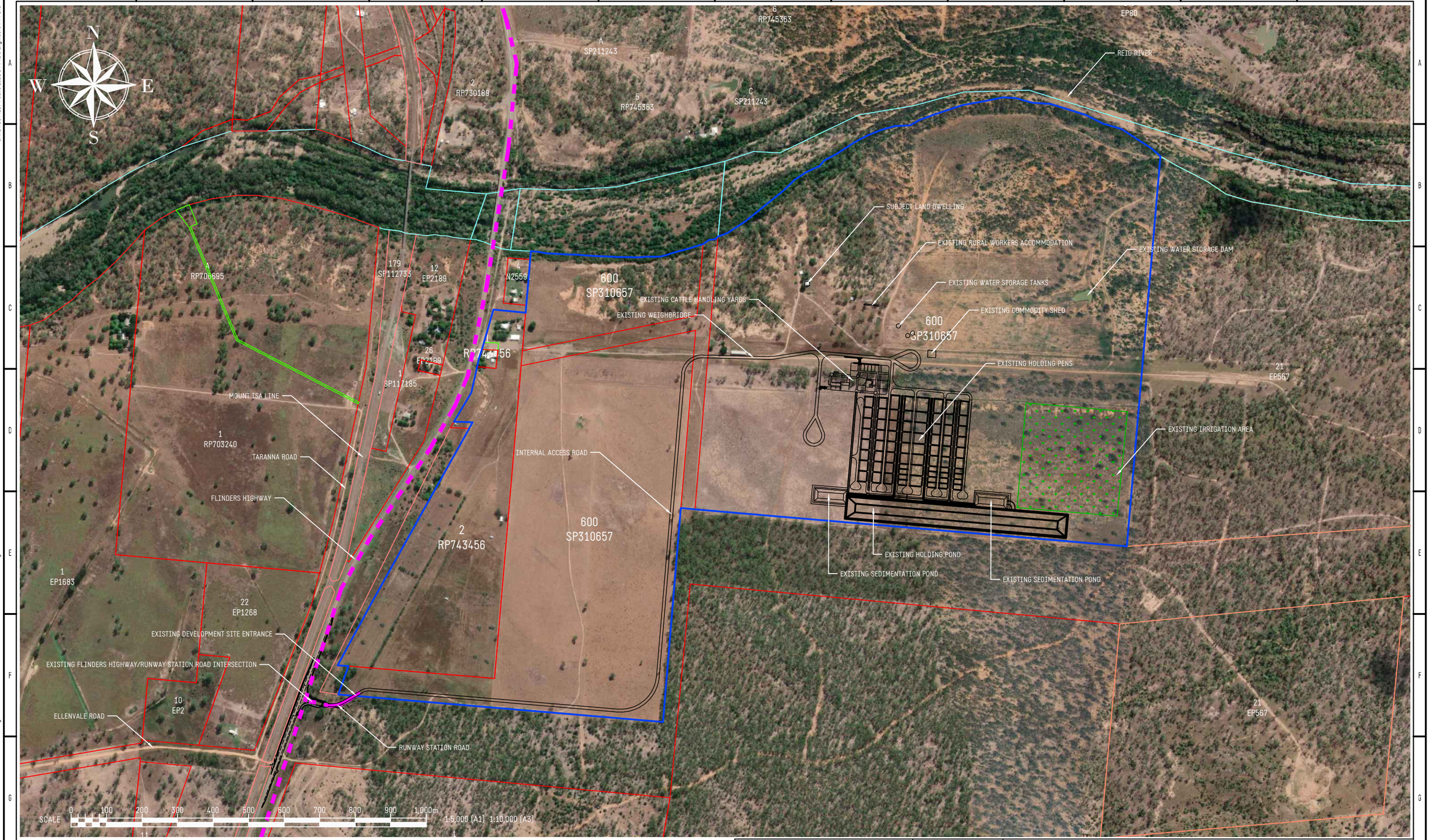
There are two haulage routes to the existing development. These are:

- Route A - from the west via the Flinders Highway to the proposed development. Route A is used by heavy vehicles transporting cattle, commodities and light vehicles used by support services such as livestock buyers etc. Route A is a state-controlled road for all of its length and the Flinders Highway is approved for B-Double, Type 1 and Type 2 Road Trains use (RT2 route). Type 2 Road Trains with a prime mover towing three trailers up to 53.5 m in length regularly service the existing development along Route A. Route A is the principal haulage route and is accessible in all-weather conditions.

Type 2 Road Train means a road train using either a rigid truck hauling unit towing two trailers when the combination length is not longer than 47.5m or a road train using a prime mover hauling unit towing three or four trailers when the combination length is not longer than 53.5m. AB-triple combinations longer than 36.5 m and up to a length of 44.0 m are categorised as a Type 2 road train.

- Route B - from the east via the Flinders Highway to the proposed development. Route B is used by heavy vehicles transporting cattle from the development to the wharf for loading onto ships, feed commodities and light vehicles used by support services such as nutritionists, livestock buyers etc. Route B is a state-controlled road for all of its length and the Flinders Highway is approved for B-Double, Type 1 and Type 2 Road Train use (TT2 route). Type 2 Road Trains with a prime mover towing three trailers up to 53.5 m in length regularly service the existing development along Route B. Route B is the principal haulage route and is accessible in all-weather conditions.

The haulage routes are shown on Figure 6. Each route is a well-maintained, state-controlled road.



LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- APPROVED ACCESS ROUTE

NOTES

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PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 829 203
E: info@rdcengineers.com.au

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PROJECT: PROPOSED INTENSIVE ANIMAL INDUSTRY DEVELOPMENT
TITLE: DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE
EXISTING DEVELOPMENT - HAULAGE ROUTES

REPORT REFERENCE	SUPPLIED DRAWING NUMBER		DRAWING NUMBER	REV.
FIGURE 6		A3	D1-130-00-06	B

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4.12.2 Traffic generation

The traffic movements for the existing development in the year 2020 are summarised in Table 6. One vehicle movement is defined as inbound and outbound trip. The existing development generates some 5,294 heavy vehicle movements per year or about 14.5 heavy vehicle per day.

Table 6 – Existing development – Traffic movements (2020)

Activity	Vehicle Type and (Distribution)	GVM t	Capacity	Movements per day	Movements per week	Movements per year
Incoming cattle	Type 2 Road Train (6 deck)	115.5	120 head	5.15	36.18	1881
	B-Double (3 deck)	64.5	60 head	1.15	8.04	418
Outgoing cattle	Type 2 Road Train (6 deck)	115.5	110 head	6.25	43.86	2281
	B-Double (3 deck)	64.5	104 head	0.0	0.0	0.0
Feed commodities						
Grain (Pellets)	Type 2 Road Train	63 t	0.22	0.22	1.54	80
Grain (Pellets)	Type 1 Road Train	49.5 t	0.22	0.22	1.54	80
Protein	Type 1 Road Train	49.5 t	0.00	0.0	0.0	0
Roughages (Hay)	Type 2 Road Train	55 t	0.65	0.65	4.55	236
Liquids (Molasses)	B-Double tanker	39.5 t	0.17	0.17	1.17	61
Supplements	Type 1 Road Train tanker	55 t	0.00	0.0	0.0	0.0
Outgoing solid waste	Semi-trailer	23.4 t	0.70	0.70	4.93	256
Employees	Light vehicles	<4.5	-	10.08	70.77	3680
Support services	Light vehicles	<4.5	-	2.74	19.23	1000
Total	Total light and heavy vehicles			27.32	191.80	9974
Total	Total heavy vehicles			14.50	101.80	5294

5 Proposed development

Reid River Export Depot Pty Ltd wish to wish to gain development approval for a beef cattle feedlot on the subject land.

The proposed development shall be a conventional outdoor feedlot with permanent production pen area with adjoining feed alleys in which the beef cattle are housed in the open air and provided with their daily feed and water requirements. The proposed development shall have a capacity for keeping up to 3,075 SCUs when fully developed. The pen area shall incorporate water, feed and shade infrastructure.

The proposed development shall utilise existing built infrastructure and no staging is proposed.

5.1 Design

5.1.1 Design philosophy

The design philosophy of the proposed development has been informed by a deep understanding of the intrinsic purpose, the environmental context and the drivers of performance of a beef cattle feedlot. This holistic approach enables ecologic and economic sustainability to be integrated into the design, construction and management (when approved) of the development.

Consequently, the *National Guidelines for Beef Cattle Feedlots in Australia* (MLA, 2012b) and *Reference manual for the establishment and operation of feedlots in Queensland* (Skerman, 2000) have been used as the guiding reference for the design, construction and management of the proposed development respectively.

Skerman (2000) outline four feedlot classes for the establishment and operation of a beef cattle feedlot respectively with design and operational standards becoming progressively more stringent moving from Class 4 to Class 1.

The design, construction and management of the beef cattle feedlot is consistent with relevant legislation, environmental standards, codes of practice and guidelines as outlined in section 8.2.2.3.1.2.

The beef cattle feedlot would be designed, constructed and maintained as a Class 1 standard, the highest standards of design, construction and management.

Figure 8 illustrates the location of the proposed development on the subject land.

5.1.2 Beef cattle feedlot

The *National Guidelines for Beef Cattle Feedlots in Australia* (MLA, 2012b) and *Reference manual for the establishment and operation of feedlots in Queensland* (Skerman, 2000) have been used as the guiding reference for the design, construction and management of the beef cattle feedlot.

The location of the beef cattle feedlot has been specifically selected for the following reasons:

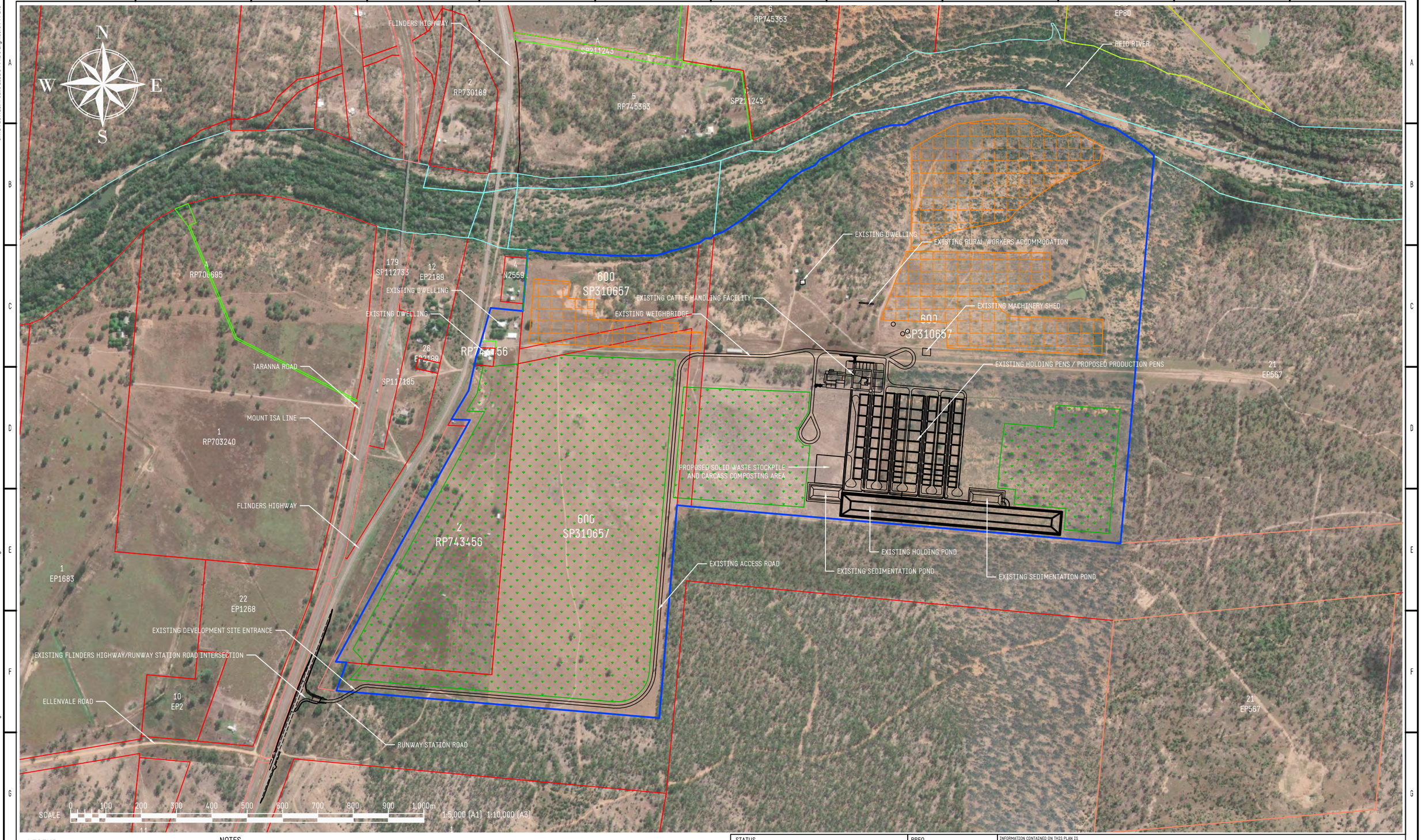
- Proximity to existing infrastructure including cattle handling facility, water supply and access roads;
- Within that part of the subject land not containing regulated vegetation;
- Flat topography on highest ground adjoining low area suitable for drainage infrastructure, requiring relatively minor earthworks to construct;
- Separation from the more environmentally sensitive areas to the north, east and south of the subject land; and
- Separation from nearby residential land uses.

5.1.2.1 Layout, design and specification

The beef cattle feedlot has been designed to:

- maximise operational efficiency;
- maximise cattle performance;
- minimise environmental impact;
- minimise waste;
- maximise worker health and safety;
- maximise cattle welfare; and
- minimise capital and operational costs.

The layout of the beef cattle feedlot is shown in Figure 8. A detailed description of the various functional elements of the beef cattle feedlot is outlined in the following sections.



LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- EFFLUENT UTILISATION AREA (85Ha)
- SOLID WASTE UTILISATION AREA (30Ha)

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PO BOX 1223
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M: 0427 629 203
E: info@rdcengineers.com.au

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PROJECT: PROPOSED INTENSIVE ANIMAL INDUSTRY DEVELOPMENT
TITLE: DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE
PROPOSED DEVELOPMENT - DEVELOPMENT LAYOUT

REPORT REFERENCE	SUPPLIED DRAWING NUMBER	A3	DRAWING NUMBER	REV.
FIGURE 7			D1-130-00-07	B

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5.1.2.2 Capacity

5.1.2.2.1 Standard Cattle Unit (SCU)

The term 'Standard Cattle Unit' (SCU) is used in Queensland to describe the stocking capacity of a beef cattle feedlot in accordance with the weight of cattle turned off from the facility, rather than the number of head. A standard cattle unit is an animal of 600 kg liveweight (Skerman, 2000). This term enables the stocking capacity of beef cattle feedlots to be expressed in line with the average weight of cattle within the facility, rather than the number of head. This concept is based on the understanding that manure production increases with cattle liveweight.

Each animal can be converted to a SCU equivalent based on their metabolic liveweight and the following formula:

SCU scaling factor = $(\text{Animal liveweight}/600)^{0.75}$

The SCU scaling factor for various average liveweight for beef cattle is provided in Table 7.

Table 7 – Standard Cattle Unit conversion factor (MLA, 2012a)

Average liveweight (kg)	SCU Scaling factor
350	0.68
400	0.74
450	0.81
500	0.87
550	0.94
600	1.00
650	1.06
700	1.12

The proposed development comprises a beef cattle feedlot and shall have a total capacity of 3,075 standard cattle units (SCUs) once fully developed. As outlined in section 5.2.5, the proposed development shall not be staged as the existing infrastructure shall be used as the development complex.

5.1.2.3 Pen configuration

The layout and siting of the beef cattle production pens and associated drainage systems are shown in Figure 8. The configuration and design details of the beef cattle production pens are outlined in the following sections.

5.1.2.3.1 Stocking density

Stocking density will have a significant influence on the environmental performance of the proposed development since it partly determines the average moisture content of the surface of the pen. Every day, beef cattle add moisture to the pen surface by depositing manure (faeces and urine).

The National Feedlot Code of Practice (MLA, 2012a) recommends a maximum stocking density of 25 m^2 per Standard Cattle Unit (SCU) for beef cattle feedlots. Stocking densities higher than 20 m^2 per SCU can lead to increased pen dust loads and require higher capacity for drainage system infrastructure such as sedimentation pond(s) and holding ponds.

The proposed production pen area has been based on an average stocking density of 16.75 m^2/SCU and a capacity no greater than 3,075 SCUs.

Operationally, the production pens may be managed at different stocking densities to manage the health, welfare and beef production of cattle and achieves a balance between a pen surface that is, on average, too dry and one that is too wet for the local climate and cattle size.

5.1.2.3.2 Feed bunk

The beef cattle shall be provided with their daily feed requirements and water.

As the feed ration shall generally be processed on-site and fed out more than once a day an open feed bunk (troughs) system shall be used. Further, all types of rations, including those moist or containing large amounts of coarsely chopped fibre, can be fed in troughs.

Pre-cast 6 m length open feed bunks set in a continuous line or continuous slip form concrete bunks shall be located on the outside, along the entire length of the higher end of the pen with frontage to the feed road.

The feed bunks will have a 2.5 m wide concrete apron that extends into the pen as shown in Figure 9. A concrete apron prevents wearing of the pen surface within this high-use area. The apron will slope away from the bunk to facilitate drainage at the same slope as the pen slope. The concrete apron shall be constructed to withstand the loading of cleaning equipment.

5.1.2.3.3 Pen capacity

The capacity of the beef cattle production pens is sized to match multiples of deck sizes of livestock transport vehicles. A Type 2 Road Train of six decks would carry about twenty five (25) 450 kg feeder cattle per deck giving a total load of 150 head. A B-Double of 3 decks would carry about eighteen (18) per deck of 725 kg finished animals.

The proposed development has beef cattle production pen sizes of about 42 head.

5.1.2.3.4 Pen area

For the proposed beef cattle production pens, the combination of selected design parameters and allowance for herringbone gate arrangements translates into pen areas ranging in size from about 740 m^2 to 995 m^2. Each pen has been constructed with a nominal bunk length (width) of 30 m or 40 m. Each pen has been constructed with a depth of 25 m or 35 m.

Figure 8 shows the layout of a typical beef cattle production pen.

5.1.2.3.5 Pen orientation

The orientation of the beef cattle production pens has been dictated by the site layout and natural surface topography. The feed alley and pen row for the proposed beef cattle production pens shall run north-south as shown in Figure 7.

5.1.2.3.6 Pen configuration

The proposed development shall have a bunk-to-bunk pen configuration as shown in Figure 9. The bunk-to-bunk design has two parallel rows of pens separated and serviced by a common feed road. The feed road shall be located on the higher side or at the 'feed bunk' of the pens. Both rows of pens drain away from the feed road to a cattle lane and catch drain towards the 'back' of the pens as shown in Figure 9. Each row has a separate cattle lane and catch drain.

The bunk-to-bunk design was selected as this layout is best suited to the site with its relatively low natural gradient (i.e. <2%) along the length of the feed road.

5.1.2.3.7 Pen slope

Pen slope is the fall of the pen surface perpendicular to the feed bunk. A pen also has down-slope because of the lateral slope of the catch drain. Hence, as there is a combined pen and drain slope across the site, the maximum pen slope is not perpendicular to the feed bunk. The magnitude of this slope and its angle from perpendicular to the bunk will depend on the relative magnitude of each of the pen and drain slopes.

A pen slope of between 2% and 4% will ensure quick drainage of rainfall, but without runoff scouring excessive amounts of manure from the pen surface.

The beef cattle production pens have been designed and constructed with a pen slope of 2.5% or 4% which falls to lateral catch drains with a slope in the order of 0.5%. The pens slope from west to east and east to west.

5.1.2.3.8 Water trough

Prefabricated concrete water troughs have been installed along the dividing fence lines between two pens. The troughs are situated towards the drain-end of the pens. This allows dirty water released during trough cleaning or as a result of spills to be directed out of the pen and into the catch drains by underground pipes. This will prevent the pen floors from being wetted during trough cleaning. Troughs are also likely to have less feed deposited. Water troughs in this location can be located easily by new cattle traversing the perimeter of the pen.

Concrete aprons at least 2.5 m wide will be constructed around all water troughs as shown in Figure 9. The aprons will be reinforced to withstand the loading of pen cleaning equipment.

5.1.2.3.9 Shade

Whilst beef cattle have a remarkable ability to cope with environmental stress, a combination of high temperature and humidity, with high levels of solar radiation and minimal air movement, can exceed the animal's ability to dissipate body heat. Therefore, excessive heat load (EHL) in feedlot cattle during summer months can result in significant production losses, animal welfare problems and, under extreme conditions, the death of cattle.

The Australian lot feeding industry has recently launched an initiative to encourage all feedlots to provide cattle with access to shade by 2026. Consequently, shade structures shall be installed as one strategy to reduce the impact of heat load conditions on the cattle and improve animal welfare.

The pen layout orientation in a north-south direction considers the orientation of shade structures such that the pattern of the shade underneath maximises drying of the pen surface, and the local climate and prevailing winds that assist in ventilation and cooling.

The type and nature of support structures and shade material has not been selected and designed at this stage. However, it is anticipated that the shade structures shall be similar to the layout and design installed in the existing development as shown in Photograph 12.

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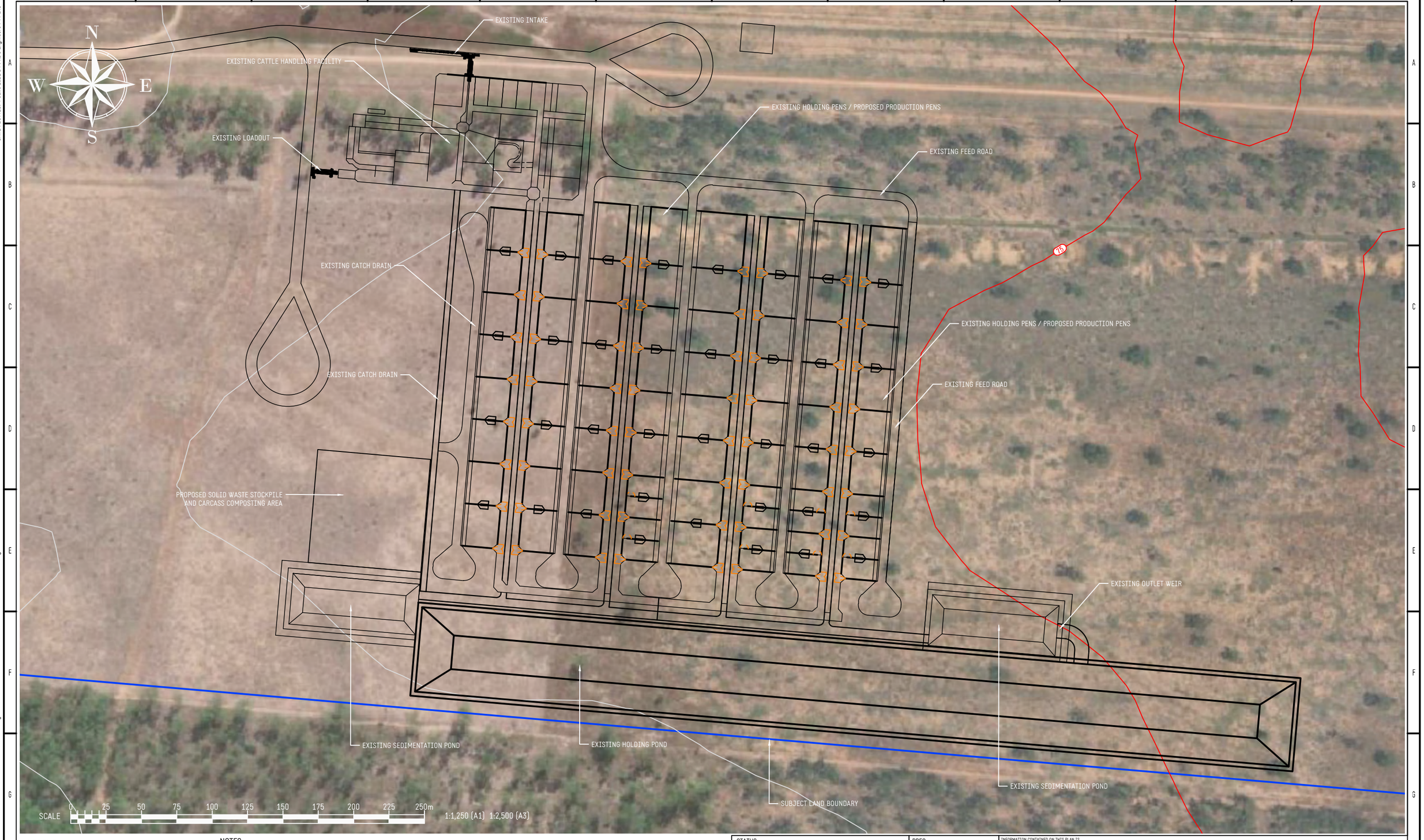

LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- CONTOUR - MAJOR (5m)
- CONTOUR - MINOR (1m)

NOTES

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ABN 37 627 163 071
PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 629 203
E: info@rdcengineers.com.au

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FIGURE 8		A3	D1-130-00-08	B

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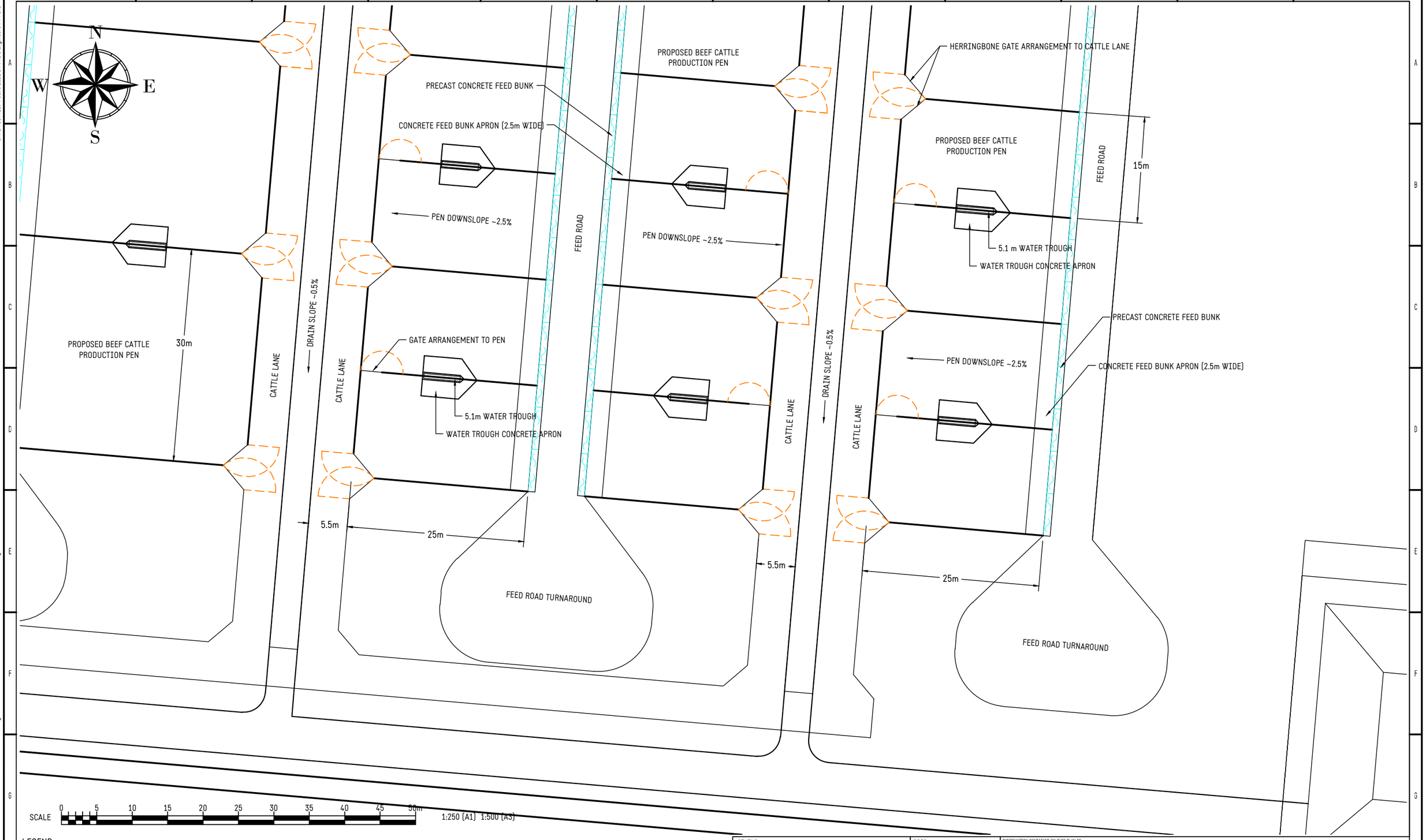

SCALE 0 5 10 15 20 25 30 35 40 45 50m

1:250 (A1) 1:500 (A3)

LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY

BEEF CATTLE PRODUCTON PEN DETAILS

STOCKING DENSITY - ~16.75 m^2/SCU
PEN WIDTH - 30 m
BUNK LENGTH - 30 m
PEN DEPTH - 25 m
BUNK SPACE PER SCU - ~715mm
PEN AREA - 740 m^2

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TOOWOOMBA QLD 4350
M: 0427 629 203
E: info@rdcengineers.com.au

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PROJECT PROPOSED INTENSIVE ANIMAL INDUSTRY DEVELOPMENT

TITLE DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE
PROPOSED DEVELOPMENT - PRODUCTION PEN DETAILS

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FIGURE 9		A3	D1-130-00-09	B

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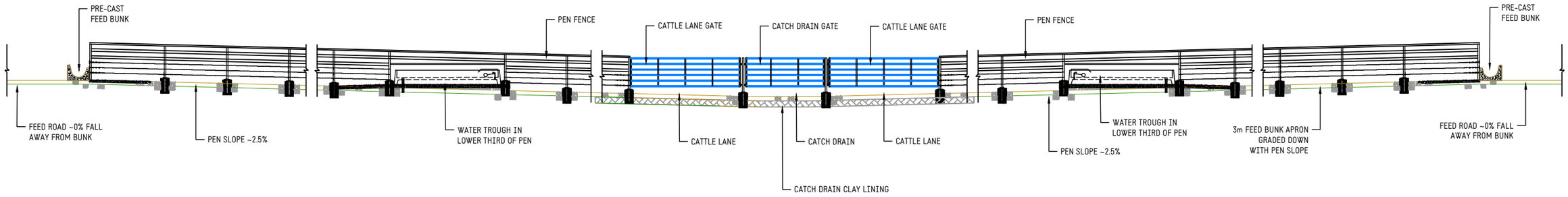

SCALE 0 2 4 6 8 10 12 14 16 18 20m

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PROJECT PROPOSED INTENSIVE ANIMAL INDUSTRY DEVELOPMENT

TITLE DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE
PRODUCTION PEN DETAILS - TYPICAL CROSS SECTION

REPORT REFERENCE	SUPPLIED DRAWING NUMBER		DRAWING NUMBER	REV.
FIGURE 10		A3	D1-130-00-10	B

5.1.3 Controlled drainage area

Those areas of the proposed development from which stormwater runoff has a high organic matter and therefore a high pollution potential are contained within a controlled drainage area. The proposed development shall have two (2) controlled drainage areas as outlined in the following sections.

Each controlled drainage area is divided into three main sub-component areas, each of which has different runoff characteristics. These areas are:

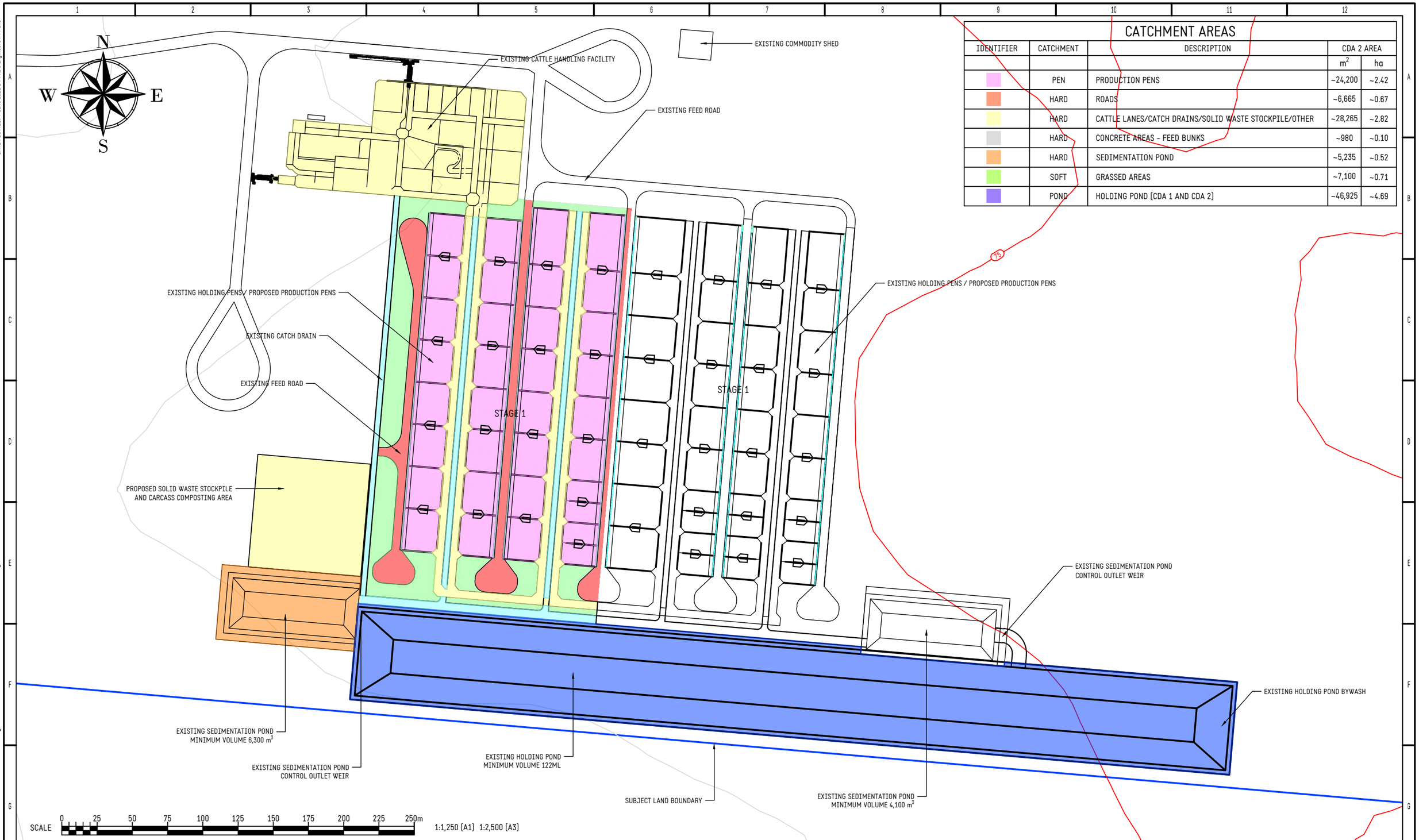
- pen area – areas containing cattle and covered with manure e.g. production pens, holding pens, hospital pens etc.
- hard catchment – areas with a high runoff yield including access roads, feed roads, cattle lanes, catch/main drains, solid waste storage/carcass composting area, sedimentation pond etc.
- soft catchment – areas with a low runoff yield such as grassed and other vegetated areas within the controlled drainage area.

The controlled drainage areas along with pen, hard and soft areas of the proposed development are shown in Figure 11 and Figure 12 for Controlled Drainage Area 1 and Controlled Drainage Area 2 respectively.

Table 8 summaries the areas of the sub-catchments of Controlled Drainage Area 1 and Controlled Drainage Area 2 shown in Figure 11 and Figure 12 respectively. The sub-catchment areas are needed to calculate the design volumes for each sedimentation pond (section 5.1.3.1) and the holding pond (section 5.1.3.2.1). Varying runoff coefficients are applied to the different sub-catchments depending on surface characteristics.

Table 8 – Proposed development – Controlled drainage area catchment details

Sub-catchment	Runoff coefficient	Controlled drainage area 1 Area m^2	Controlled drainage area 2 Area m^2
Pens – production pens, holding pens, hospital pens	0.8	~24,200	~27,200
Hard – feed roads, cattle lanes / drains, solid waste stockpile and carcass composting area	0.8	~35,910	~16,735
Hard – sedimentation pond	0.8	~5,235	~4,025
Soft – grassed areas	0.4	~7,100	~4,345
Sub-total		~72,445	~52,305
Holding pond – surface area inside crest	1.0	~46,925	
Total		~171,675	



CATCHMENT AREAS

IDENTIFIER	CATCHMENT	DESCRIPTION	CDA 2 AREA	
			m^2	ha
	PEN	PRODUCTION PENS	~24,200	~2.42
	HARD	ROADS	~6,665	~0.67
	HARD	CATTLE LANES/CATCH DRAINS/SOLID WASTE STOCKPILE/OTHER	~28,265	~2.82
	HARD	CONCRETE AREAS - FEED BUNKS	~980	~0.10
	HARD	SEDIMENTATION POND	~5,235	~0.52
	SOFT	GRASSED AREAS	~7,100	~0.71
	POND	HOLDING POND (CDA 1 AND CDA 2)	~46,925	~4.69

LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- CONTOUR - MAJOR (5m)
- CONTOUR - MINOR (1m)

NOTES

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DATE	04/06/22
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RDC ENGINEERS | AGRICULTURAL ENVIRONMENTAL PROJECT MANAGEMENT
ABN 37 627 163 071
PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 629 203
E: info@rdcengineers.com.au

CLIENT: REID RIVER EXPORT DEPOT PTY LTD AS TRUSTEE
PROJECT: PROPOSED INTENSIVE ANIMAL INDUSTRY DEVELOPMENT
TITLE: DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE
PROPOSED DEVELOPMENT - CONTROLLED DRAINAGE AREA 1 - CATCHMENT AREA PLAN - STAGE 1

REPORT REFERENCE: FIGURE 11
SUPPLIED DRAWING NUMBER:
A3
DRAWING NUMBER: D1-130-00-11
REV.: B

DATE PLOTTED: 4 June 2022 BY: :: RDC Engineers PTY LTD
FILE NAME: D1-130-00-MASTERPLAN-220228 v8.dwg
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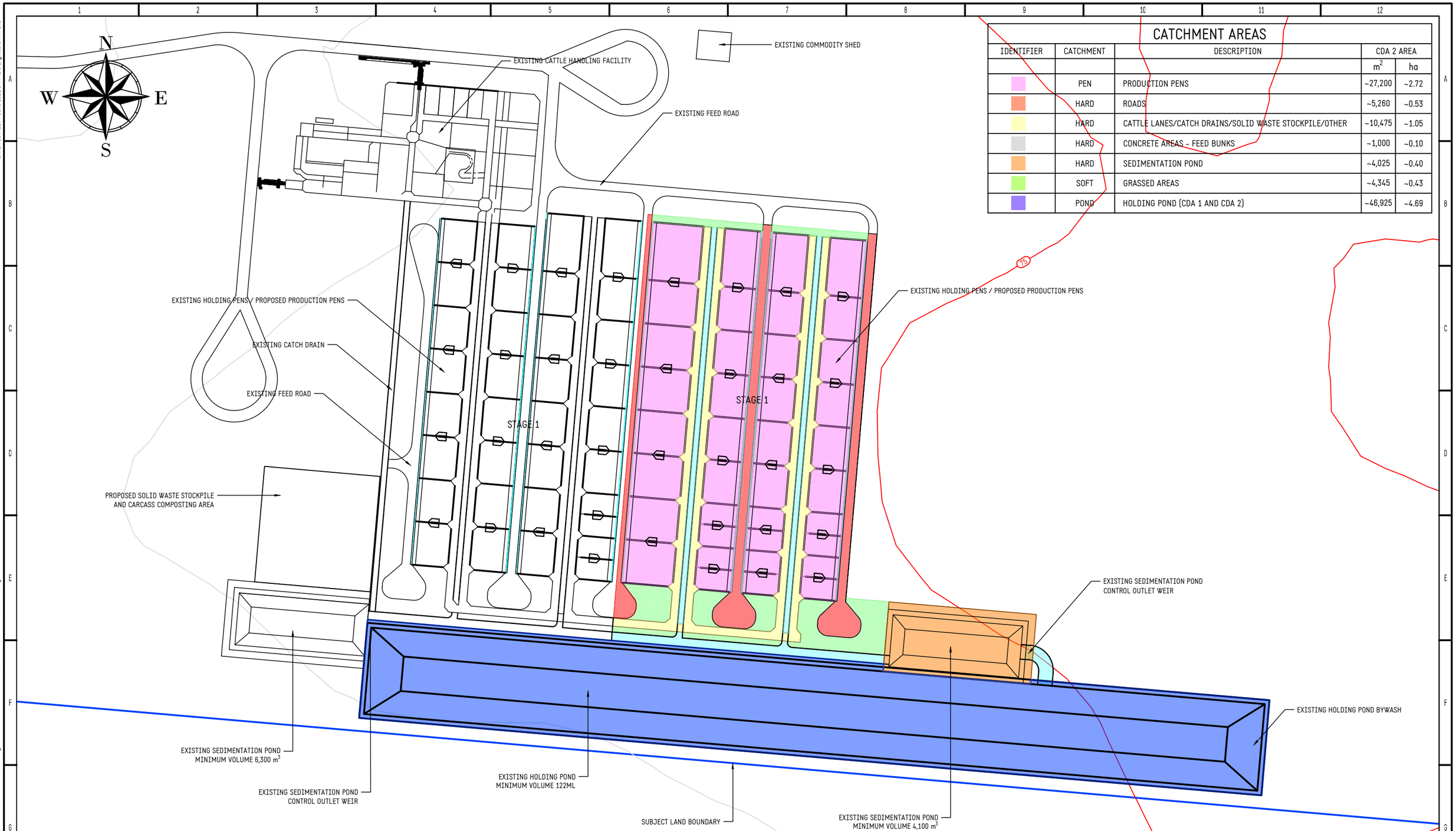

SCALE 0 25 50 75 100 125 150 175 200 225 250m

1:1,250 (A1) 1:2,500 (A3)

CATCHMENT AREAS

IDENTIFIER	CATCHMENT	DESCRIPTION	CDA 2 AREA	
			m^2	ha
	PEN	PRODUCTION PENS	~27,200	~2.72
	HARD	ROADS	~5,260	~0.53
	HARD	CATTLE LANES/CATCH DRAINS/SOLID WASTE STOCKPILE/OTHER	~10,475	~1.05
	HARD	CONCRETE AREAS - FEED BUNKS	~1,000	~0.10
	HARD	SEDIMENTATION POND	~4,025	~0.40
	SOFT	GRASSED AREAS	~4,345	~0.43
	POND	HOLDING POND (CDA 1 AND CDA 2)	~46,925	~4.69

LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
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- CONTOUR - MINOR (1m)

NOTES

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ABN 37 627 163 071
PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 629 203
E: info@rdcengineers.com.au

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PROJECT PROPOSED INTENSIVE ANIMAL INDUSTRY DEVELOPMENT

TITLE DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE
PROPOSED DEVELOPMENT - CONTROLLED DRAINAGE AREA 2 - CATCHMENT AREA PLAN - STAGE 1

REPORT REFERENCE	SUPPLIED DRAWING NUMBER		DRAWING NUMBER	REV.
FIGURE 12		A3	D1-130-00-12	B

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5.1.3.1 Sedimentation system

Each controlled drainage area shall have a dedicated sedimentation system comprising of a sedimentation pond.

Each sedimentation pond has been constructed by excavating a relatively large hole having a maximum depth of about 3.0 m. Each pond does not drain completely following runoff events. The sludge settles to the bottom of the pond and shall be desludged generally using an excavator at regular intervals. The effluent is pumped into the holding pond to allow the settled sludge to dry out prior to removal. The sludge is stockpiled in the manure stockpile and carcass composting area.

The design specification of each sedimentation pond shall:

- cater for the peak flow rate from a design storm having an average recurrence interval of 1 in 20 years; using runoff coefficients of 0.8 from production pens, roadways and other hard stand areas and 0.4 for grassed areas within the controlled drainage area;
- include a maximum flow velocity in the sedimentation system of 0.005 m/s;
- have a suitably sized spillway to discharge effluent into the holding pond;
- provide embankment freeboard of 0.9 m above the top water level; and
- provide embankment batters of 1V:3H or greater.

The formula for determining the required volume of each sedimentation pond that will service each controlled drainage area is:

$V = Q_p \times (L/W) \times (\lambda/v)$

Where:

V = sedimentation system volume (m^3);
Q_p = peak inflow for a design storm with an average recurrence interval of 20 years and duration equal to the time of concentration of the catchment (m^3/s);
L/W = length to width ratio, where l is the length in direction of flow;
λ = a scaling factor (6.0 for a pond);
v = flow velocity (m/s), <0.005 m/s

5.1.3.1.1 Controlled Drainage Area 1

A dedicated earthen sedimentation pond shall be designed and constructed for Controlled Drainage Area 1 and is referred to as Sedimentation Pond 1.

The existing sedimentation pond shall accommodate the stormwater runoff from Controlled Drainage Area 1.

The methodology outlined in the *National Guidelines for Beef Cattle Feedlots in Australia* (MLA, 2012b) was used to calculate the required sedimentation pond volume for Controlled Drainage Area 1.

The formula for determining the minimum required volume of the sedimentation pond that will service Controlled Drainage Area 1 is outlined in section 5.1.3.1.

Table 9 summarises the input parameters used to determine the minimum required volume of Sedimentation Pond 1.

Table 9 – Proposed development – Sedimentation Pond 1 design details

Parameter	Units		National Guidelines
Time of concentration	hours	T_c	0.413
Time of concentration	minutes	T_c	24.78
Rainfall Intensity	mm/hr	$I_{tc,20}$	136.49
Peak flow rate	m^3/s	Q_p	2.09
Lambda		λ	6.0
Length:Breadth ratio at TWL		L/W	2.5
Design flow velocity	m/s	v	0.005
Required volume	m^3	V	6,268
Volume proposed (minimum)	m^3	V	**6,300**

There are several acceptable methods for determining the time of concentration of a small catchment. The time of concentration (Tc) is the time taken for rain that has fallen in the farthermost part of a catchment to flow to the discharge point. Thus, after Tc, the whole of the catchment is contributing to the discharge and the peak flow (Q) will only occur after this time.

The sedimentation pond has a length to width ratio (L/W) of about 2.5 at top water level with a minimum area of 5,235 m^2 at outside crest level, design side slopes of 1V:3H and have a depth of around 3.00 m and a freeboard of 0.9 m.

The rainfall intensity was selected from Intensity-Frequency-Duration (IFD) design rainfalls for the site for an average recurrence interval of 20 years and duration equal to the time of concentration of the catchment. The ARI design rainfalls for the site were obtained from the Bureau of Meteorology (BOM, 2021e) and are shown in Table 34 in section 6.1.3.

The minimum volume required is 6,268 m^3 (Table 9) as calculated by the method outlined in the National Feedlot guidelines. The sedimentation design volume shall be a minimum of 6,300 m^3.

Figure 11 shows the location of the sedimentation pond for Controlled Drainage Area 1 in relation to the beef cattle production pens.

5.1.3.1.1.1 Spillway

The sedimentation pond shall have a spillway designed to bywash stormwater above the design flow to the holding pond. The floor of the spillway is level at top water level of the pond.

The methodology outlined in the *Reference manual for the establishment and operation of feedlots in Queensland* (Skerman, 2000) was used to determine the design criteria for the spillway.

The design criteria for the sedimentation pond spillway are:

- to safely discharge flows greater than the sedimentation system design flowrate, up to the 50 year ARI design storm at a non-scouring velocity, without the earth embankment being overtopped; and
- to provide embankment freeboard of 0.9 m between the spillway crest and the crest of the sedimentation system embankment.

A typical spillway is illustrated in Figure 13. Figure 13 shows a typical cross section of the sedimentation pond spillway to the holding pond.

The spillway inlet width was calculated using the broad-crested weir formula. The flow over a broad-crested weir, with horizontal crest and 2:1 battered abutments.

The minimum width for the spillway based on design flowrate of a 50-year ARI design storm of 2.2 m^3/s (Appendix B) is 3.22 m. The spillway shall have a minimum width of 3.5 m.

5.1.3.1.2 Controlled Drainage Area 2

A dedicated earthen sedimentation pond shall be designed and constructed for Controlled Drainage Area 2 and is referred to as Sedimentation Pond 2.

The methodology outlined in the National Feedlot Guidelines (MLA, 2012a) was used to calculate the minimum required sedimentation pond volume.

The formula for determining the required volume of the sedimentation pond that will service Controlled Drainage Area 2 is outlined in section 5.1.3.1.1. Table 10 summarises the input parameters used to determine the minimum required volume of Sedimentation Pond 2.

Table 10 – Proposed development – Sedimentation Pond 2 design details

Parameter	Units		National Guidelines
Time of concentration	hours	T_c	0.44
Time of concentration	minutes	T_c	26.45
Rainfall Intensity	mm/hr	$I_{tc,20}$	132.50
Peak flow rate	m^3/s	Q_p	1.36
Lambda		λ	6.0
Length:Breadth ratio at TWL		L/W	2.5
Design flow velocity	m/s	v	0.005
Required volume	m^3	V	4,075
Volume proposed (minimum)	m^3	V	**4,100**

The sedimentation pond shall have length to width ratio (L/W) of about 2.5 at top water level with a minimum area of 4,025 m^2 at outside crest level, design side slopes of 1V:3H and have a depth of around 3 m and a freeboard of 0.9 m.

The rainfall intensity was selected from Intensity-Frequency-Duration (IFD) design rainfalls for the site for an average recurrence interval of 20 years and duration equal to the time of concentration of the catchment. The ARI design rainfalls for the site were obtained from the Bureau of Meteorology (BOM, 2020a) and are shown in Table 34 in section 6.1.3.

The minimum volume required is 4,075 m^3 (Table 10) as calculated by the method outlined in the National Feedlot guidelines. The sedimentation pond design volume shall be a minimum of 4,100 m^3.

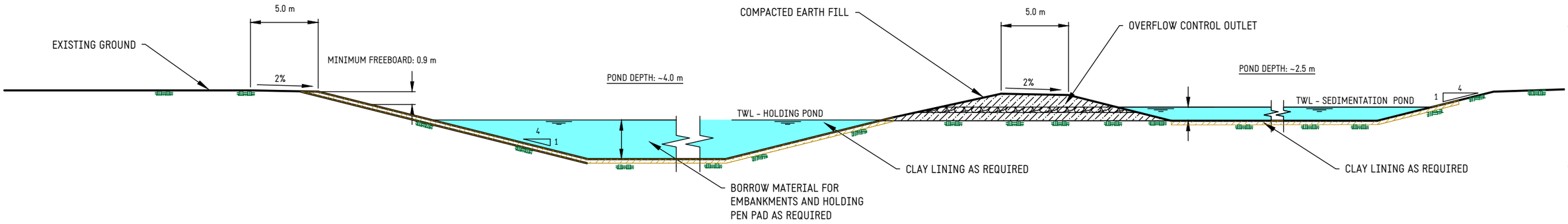
Figure 12 shows the location of the sedimentation pond for Controlled Drainage Area 2 in relation to the beef cattle production pens.

5.1.3.1.2.1 Spillway

Sedimentation Pond 2 shall have a spillway designed to bywash stormwater above the design flow to the holding pond. The design criteria for the sedimentation pond spillway are outlined in section 5.1.3.1.1.1.

Figure 13 shows a typical cross section of the sedimentation pond spillway to the holding pond.

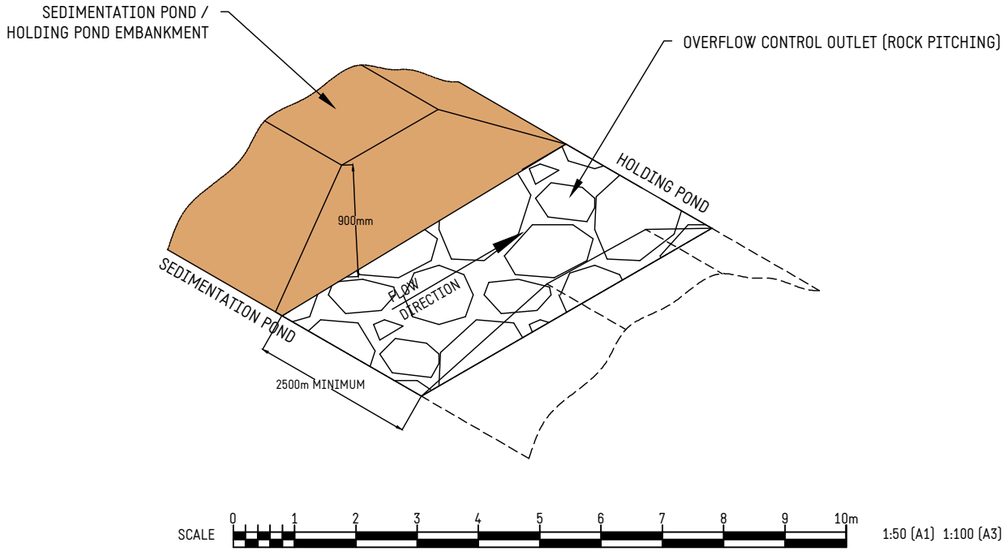
The minimum width for the spillway based on design flowrate of a 50 year ARI design storm of 2.1 m^3/s (Appendix B) is 3.04 m. The spillway shall have a minimum width of 3.25 m.



TYPICAL CROSS-SECTION: SEDIMENTATION POND AND HOLDING POND

SCALE 1:150

SCALE 0 3 6 9 12 15 18 21 24 27 30m 1:150 (A1) 1:300 (A3)



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PROJECT PROPOSED INTENSIVE ANIMAL INDUSTRY DEVELOPMENT

TITLE DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE
PROPOSED DEVELOPMENT - SEDIMENTATION POND SECTION AND CONTROL OUTLET DETAILS

REPORT REFERENCE	SUPPLIED DRAWING NUMBER		DRAWING NUMBER	REV.
FIGURE 13		A3	D1-130-00-13	B

DATE PLOTTED: 4 June 2022 BY : RDC Engineers PTY LTD
XREFs:
FILE NAME: D1-130-100-DRAINAGE SECTIONS-Sed Pond and Holding Pond.dwg
FILE PATH: C:\RDC Engineers\RDCE - Projects\01-130 Reid River Feedlot\05 - ACAD MasterPlan\05.1 Drawings - CURRENT

5.1.3.2 Holding pond

Controlled Drainage Area 1 and Controlled Drainage Area 2 shall have a dedicated holding pond located at the lower end of the controlled drainage area, immediately downstream of Sedimentation Pond 1 and Sedimentation Pond 2. The existing holding pond shall accommodate the stormwater runoff from Controlled Drainage Area 1 and Controlled Drainage Area 2.

The holding pond shall be designed to temporarily store stormwater runoff (effluent) from major storm events (design storm method) and/or when extended wet periods prevent irrigation of effluent so that pond overtopping events are prevented and / or limited to an acceptable frequency.

5.1.3.2.1 Controlled Drainage Area 1 and Controlled Drainage Area 2

A dedicated holding pond shall be designed for Controlled Drainage Area 1 and Controlled Drainage Area 2. The holding pond shall be sized to cater for Controlled Drainage Area 1 and Controlled Drainage Area 2 as shown in Figure 11 and Table 8. When available, effluent will be irrigated onto cropping land where it will be sustainably utilised by crops and soil to ensure storage capacity is available for future runoff events.

The volume of the holding pond constructed for the proposed development shall be to the minimum design volume required for Controlled Drainage Area 1 and Controlled Drainage Area 2.

The storage capacity of the holding pond needs to be large enough that it can safely store the captured effluent, without spilling at an unacceptable frequency.

Skerman (2000) states that holding ponds should:

- be able to accommodate the greater volume produced from either:
    - a design storm having an average recurrence interval of 1 in 20 years; 24-hour duration and using runoff coefficients of 0.8 from production pens, roadways and other hard stand areas and 0.4 for grassed areas within the CDA; or
    - the balance of runoff from the controlled drainage area (making allowance for evaporative losses and withdrawals for irrigation) in a 90th percentile wet year. Volumetric runoff coefficients of 0.3-0.5 should be applied;
- provide embankment freeboard of 0.9 m above the top water level;
- provide embankment batters no steeper than the slopes required to ensure their stability for the particular soil type being used for construction (1V:3H or greater) and embankment width of at least 2.5 m for safe machinery access during construction and cleanout;
- incorporate a spillway to cater for the peak flow rate from a design storm having an average recurrence interval of 1 in 50 years at non-scouring velocity.

The outcomes of this assessment are outlined in the following sections.

5.1.3.2.1.1 Method 1 – Major Storm Event

The design volume of the holding pond during a 1 in 20-year ARI (5% AEP); 24-hour duration storm event was calculated in accordance with the *Reference manual for the establishment and operation of beef cattle feedlots in Queensland* (Skerman, 2000).

For this approach, the design calculation requires catchment area, 24 hr rainfall at an average recurrence interval of 20 years and runoff coefficients from each catchment area.

The area of each sub-catchment was determined from the layout of the Controlled Drainage Area 1 and Controlled Drainage Area 1 as shown in Figure 11 and Figure 12. These data are shown in Table 8. Initially, an approximate surface area for the holding pond was assumed, then an iterative approach used to determine the holding pond volume and design surface area.

The 1 in 20-year, 24 hr rainfall for the development site was obtained from the AEP data design rainfalls for the site as outlined in Table 33, section 6.1.3.

Runoff coefficients were 0.8 for the beef cattle production pens and other hard catchment areas, 0.4 for grassed areas and 1.0 for rainfall falling on the holding pond surface.

The runoff volume in Table 11 is calculated by multiplying the catchment area by the runoff depth. The minimum required holding pond volume is the cumulative total of the runoff volumes for each sub-component of each catchment area. The minimum holding pond volume required by the Major Storm Event method is 38,664 m^3 (38.66 ML).

Table 11 – Proposed development – Holding Pond 1 Design Method 1 (Major Storm Event)

Parameter	Units	Pen area	Hard area	Soft area	Pond area	Total
Catchment area	m^2	~51,400	~61,905	~11,445	~46,925	~171,675
Rainfall event	mm	272	272	272	272	-
Runoff co-efficient		0.8	0.8	0.4	1	-
Runoff depth	mm	217.6	217.6	108.8	272	-
Runoff volume	m^3	~11,185	~13,471	~1,245	~12,764	~38,664
Runoff volume	ML	~11.18	~13.47	~1.25	~12.76	~38.66

5.1.3.2.1.2 Method 2 – Standard Tabulated

The design volume of the holding pond has been sized using the standard tabulated method as outlined in the *Reference manual for the establishment and operation of beef cattle feedlots in Queensland Guidelines* (Skerman, 2000). Holding pond coefficients for Townsville were selected.

Table 12 shows that a minimum pond volume of 123.5 ML is required to retain the runoff from Controlled Drainage Area 1 and Controlled Drainage Area 2 in accordance with the standard tabulated method. Therefore, a holding pond with a minimum volume of about 122.1 ML shall be implemented for Controlled Drainage Area 1 and Controlled Drainage Area 2. The existing holding pond has been constructed with a volume in the order of 176 ML.

The holding pond shall have a bywash capable of discharging the peak flow from the controlled drainage area from a 50-year ARI design storm.

A minimum freeboard of at least 0.9 m shall be provided between the bywash level and the crest of the holding pond embankment.

Table 12 – Proposed development – Holding Pond 1 Design Method 2 (Standard Tabulated)

Parameter	Units	Pen area	Hard area	Soft area	Pond area	Total
Catchment area	m^2	~51,400	~61,905	~11,445	~46,925	~171,675
Catchment area	Ha	5.14	6.19	1.14	4.69	17.17
Runoff co-efficient		7.532	7.168	4.695	7.168	-
Runoff volume	m^3	~387,145	~443,737	~53,732	~336,358	~1,220,972
Runoff volume	ML	~38.71	~44.37	~5.37	~33.64	~122.10

5.1.4 Solid waste management

The disposal of solid waste is a major consideration in the siting, structure and management of the proposed development. The development shall produce significant amounts of putrescible solid wastes as outlined below.

All other non-putrescible and domestic putrescible solid wastes shall be removed off-site for recycling, recovery or disposal at a suitable facility. The proposed development is expected to generate negligible quantities of non-putrescible and domestic putrescible solid wastes.

5.1.4.1 Solid wastes streams

5.1.4.1.1 Manure

Manure is the solid waste produced by the cattle. Manure is the faeces and urine excreted by the cattle. Since manure includes both faeces and urine, freshly excreted beef cattle manure has a moisture content of around 90%. However, it usually dries quickly once deposited on the pen surface.

Manure also includes those solids that have settled from the stormwater runoff in the sedimentation pond and which are then removed. Manure is the major solid waste for management.

5.1.4.1.2 Waste feed

Typically, very low levels of feed are wasted through spillage or spoilage. Spilled or spoiled feed is removed from the trough and deposited within the pen or taken directly to the solid waste storage area.

5.1.4.1.3 Mortalities

Composting shall be the method used for disposal of carcasses as composting yields a product for utilisation and is ecological sustainable when compared to other methods of disposal such as burial and incineration. Most Australian beef cattle feedlots use composting for managing mortalities (MLA, 2012b).

For mass mortalities, burial is the preferred method of disposal. In this method carcasses shall be deeply buried in a completely sealed pit to prevent the escape of fluids and/or infectious agents.

The burial pits shall be established in low permeability soils on a site well removed from surface waters, drainage lines, gullies, groundwater bores and the proposed development complex as shown in Figure 14. The soils in this location are low permeability, thus lining of the pits with clay is unlikely to be required. If lining is required, then the pits shall be lined with at least 600 mm of clay.

5.1.4.1.4 Pond sludge

When suspended solids from the effluent settle, a layer of sediment material known as sludge is deposited on the base of the sedimentation pond and to a lesser degree in the holding pond. Over time the accumulated sludge reduces the effective storage volume of the pond.

Consequently, sludge shall be removed periodically, although weather conditions may delay removal. With a well-designed and maintained sedimentation pond system, sludge accumulation in the holding pond should be minimal.

5.1.4.2 Solid waste stockpile

A solid waste stockpile area is needed to temporarily store manure after it has been removed from the cattle production pens, sedimentation pond(s) and sludge removed from holding pond prior to utilisation on-site or removed off-site. Stockpiling allows pens to be cleaned out as frequently as required, even when spreading machinery is not available, when agricultural land is not ready for the application of manure or when it may not be possible to directly remove it from the site.

The storage, processing and/or composting of solid wastes shall be undertaken on a suitably designed and constructed area within the controlled drainage area. The composting of mortalities shall be undertaken within the solid waste stockpile and carcass composting area.

The solid waste stockpile and carcass composting area shall be constructed using the specifications outlined in section 5.3.7.1.4.1 and have a floor slope of 0.5% towards the sedimentation pond servicing the controlled drainage area to ensure drainage. Figure 11 shows the location of the solid waste stockpile and carcass composting area within Controlled Drainage Area 2.

Stockpiling of solid wastes is best undertaken in windrows up to 2 m high rather than in large piles. Windrows are typically constructed by forming solid wastes into a long pile with a triangular cross-section, a base width of 3–4 m and a height of 1.5–2 m. Their long axes shall be perpendicular to the slope to promote drainage.

The solid waste stockpile and carcass composting area was sized on the estimated volume of solid waste produced from the proposed development and assuming each solid waste windrow is triangular shaped, with 1 vertical to 4 horizontal batters (1V:4H) and no higher than 2.5 m and a bulk density of solid waste of about 0.6 t/m^3.

With the assumed windrow dimensions and estimated quantity of solid waste to be generated some 5,050 m^2 of pad area is required to store and process harvested manure. An area for composting of carcasses has been made. An area of about 6,400 m^2 (~0.64 ha) has been allowed for solid waste stockpile and carcass composting.

5.1.4.3 Solid waste utilisation

Solid waste (e.g. manure, spoilt feed, carcass compost, holding pond sludge) is valued as a source of nutrients for fertilising crops or pasture and therefore, shall be applied to land where it can be sustainably utilised by crops or pasture and soil. The application rates depend on factors such as the solid waste chemical characteristics, physical and chemical characteristics of the soils, type of crops grown and climate.

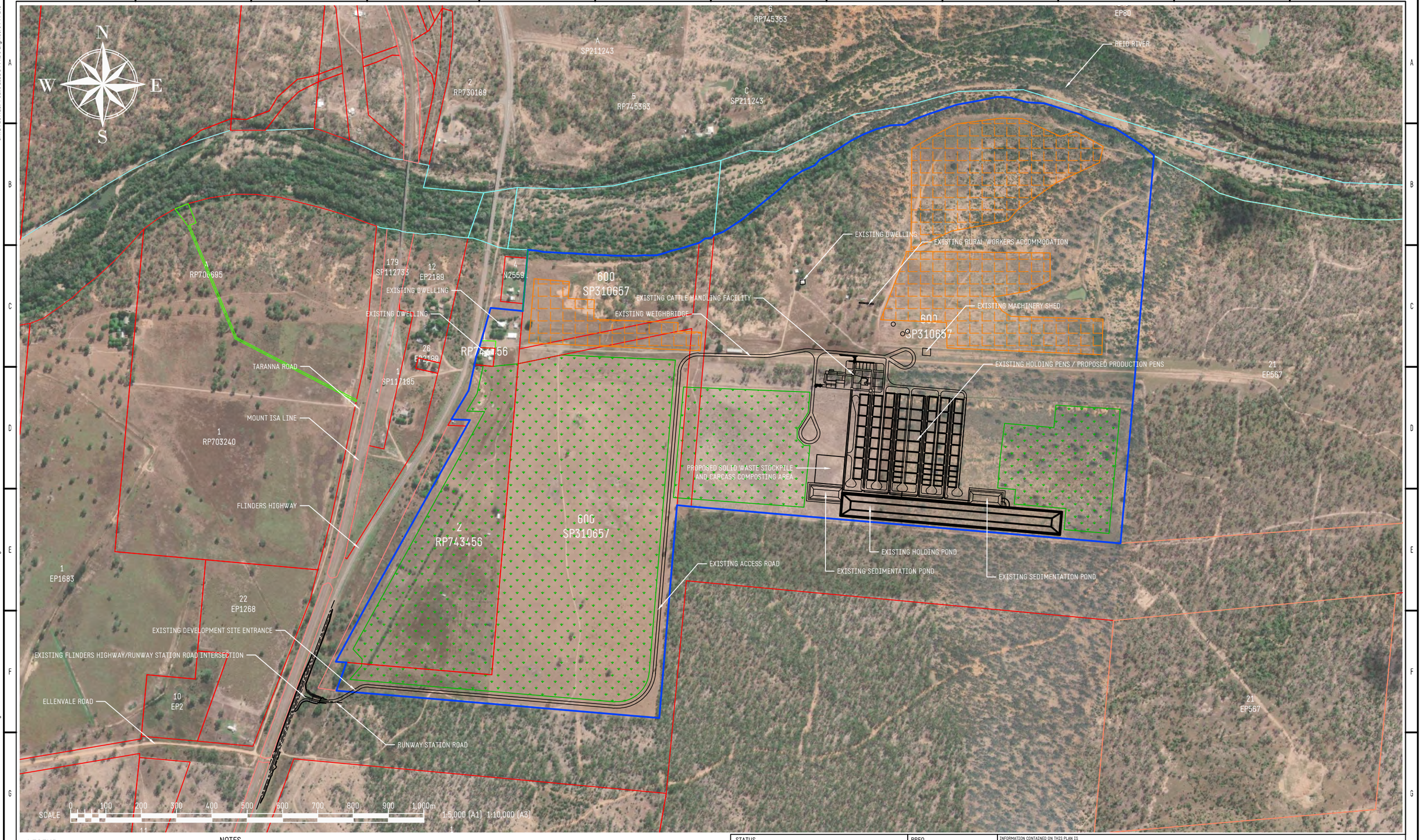
Figure 14 illustrates the location of the proposed solid waste utilisation area. The subject land has an area of about 100 ha of cropping land suitable for the application of solid wastes.

5.1.4.3.1 Environmental buffers

When planning the solid waste utilisation areas, consideration of the separation of these areas from neighbours and sensitive environments was considered. The rationale for separating these land uses is to protect the locality's ground and surface waters, other environmental and social values as well the long-term future of the solid waste utilisation areas.

A buffer distance shall be also applied where the application of solid waste takes place within proximity to areas likely to be used by the public at that time. The appropriateness of the applied buffer distance has been determined having consideration for the qualities of the materials being applied, weather conditions and other environmental factors; as well as the anticipated level of public usage or exposure at those times.

A minimum buffer distance of 25 m between the solid waste utilisation areas and drainage lines and public areas has been adopted. Various mitigation measures shall be implemented to ensure no adverse impacts to these sensitive receivers from solid waste application.



LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- EFFLUENT UTILISATION AREA (85Ha)
- SOLID WASTE UTILISATION AREA (30Ha)

NOTES

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RDC ENGINEERS
AGRICULTURAL
ENVIRONMENTAL
PROJECT MANAGEMENT
ABN 37 627 163 071
PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 629 203
E: info@rdcengineers.com.au

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CLIENT REID RIVER EXPORT DEPOT PTY LTD AS TRUSTEEE
PROJECT PROPOSED INTENSIVE ANIMAL INDUSTRY DEVELOPMENT
TITLE DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE
PROPOSED DEVELOPMENT - WASTE UTILISATION AREAS

REPORT REFERENCE	SUPPLIED DRAWING NUMBER		DRAWING NUMBER	REV.
FIGURE 14		A3	D1-130-00-14	B

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5.1.5 Liquid waste management

5.1.5.1 Liquid waste management

5.1.5.1.1 Effluent storage

Effluent shall be collected, temporarily held in each sedimentation pond and then stored in the holding pond until it can be used as outlined in section 5.1.3.

The proposed development requires infrastructure to convey effluent stored in the holding pond to the effluent utilisation area.

5.1.5.1.2 Effluent utilisation

Effluent is valued as a source of nutrients for fertilising crops and therefore, shall be applied to land when available where it can be sustainably utilised by crops and soil. Land is required for the long-term application of water, nutrients, salts and organic loads in the effluent.

The effluent utilisation areas have been selected and sized to be ecologically sustainable to prevent environmental harm, especially to soils, groundwater and surface water and to avoid impacts to remnant vegetation.

The effluent utilisation system is a full utilisation system. In this system, the effluent is fully used (thereby no discharges to surface waters), with the area required for irrigation determined by calculating the limiting land area using a water and nutrient balance.

Figure 14 illustrates the location of the proposed effluent utilisation area. The subject land has an area of about 100 ha of cropping land suitable for the application of effluent.

5.1.5.1.3 Environmental buffers

When planning the effluent utilisation area, consideration of the separation of the area from neighbours and sensitive environments was considered. The rationale for separating these land uses is to protect the locality's ground and surface waters, other environmental and social values as well the long-term future of the effluent utilisation area.

A buffer distance shall also be applied where the application of effluent takes place within close proximity to the Flinders Highway Road and the subject land boundary, or other areas likely to be used by the public at that time. The appropriateness of the applied buffer distance has been determined having consideration for the qualities of the materials being applied, weather conditions and other environmental factors; as well as the anticipated level of public usage or exposure at those times.

The adopted buffer distances between the effluent utilisation area and water resources and public areas are provided in Table 13.

Table 13 – Proposed buffer distances to water resources and public areas

Sensitive area	Minimum buffer separation distance Effluent m	Impact of concern/comments
Watercourses	50	Protection of water quality and aquatic ecosystems.
Internal natural drainage lines	20	Protection of water quality for most sensitive water uses of the potentially affected waterbody.
Bore – Domestic supply	50	Groundwater quality for domestic human uses protected.
Public roads	25*	Avoidance of spray drift of effluent containing pathogens offsite.
Public spaces	50*	Avoidance of spray drift of effluent containing pathogens offsite.
Property boundary	25*	Avoidance of spray drift of effluent containing pathogens offsite.

*Where irrigation gives rise to aerosols.

5.1.5.2 Sewage

As the subject land is in a rural area connection to the Charters Towers Regional Council's reticulated sewerage system is not practical. Consequently, an on-site sewage management system is installed for the existing development which has sufficient capacity for the demands of the proposed development.

Consequently, no additional domestic sewage disposal systems are proposed to be implemented in the proposed development at this stage. If a domestic sewage system is required for the proposed development the sewage shall be treated and disposed on-site by dedicated land area by absorption adjacent to the respective source facility. The system shall be designed in accordance with Australian Standard AS1547.

Raw or treated sewage shall not be added to the controlled drainage system and not irrigated onto the effluent utilisation area.

The on-site sewage management systems shall be operated and maintained in a manner that will:

- Prevent public health risk;
- Prevent environmental damage (particularly to land, soil, groundwater and surface waters); and
- Protect community amenity (e.g. odours).

All relevant approvals for any new sewage treatment system or upgrades to the existing sewage treatment system shall be obtained from Charters Towers Regional Council.

5.1.6 Livestock handling

The existing livestock handling facility as shown in Photograph 13 shall cater for the demands of the proposed development.

5.1.7 Feed processing and commodity storage

The existing grain storage and processing and commodity storage facility as shown in Photograph 14, Photograph 15 and Photograph 16 has sufficient capacity to cater for the demands of the proposed development.

5.1.8 Water supply, storage and reticulation

Water for the proposed development will be sourced from a licensed surface water allocations and unregulated groundwater.

Water shall be reticulated around the development complex via a gravity and/or a pressurised system using an underground polyethylene pipe network. The reticulation system shall be designed to supply water throughout the proposed development during peak demand periods.

The on-site water storage shall be above-ground storage tanks as shown in Photograph 18. Three storages have been provisioned to store about 2 days emergency supply or about 750 KL when fully developed. These storages are located on the northern edge of the development complex as shown in Figure 8.

5.1.9 Administrative/Maintenance infrastructure

The existing site office and workshop shall be used to service the proposed development. No additional buildings are proposed.

5.1.10 Lighting

Lighting is desired mainly for the convenience of the operator, for inspecting feed processing, handling cattle, and administrative activities. Security and predator control are other advantages.

Lighting has been installed around the cattle handling facilities (receivals / dispatch / processing) to allow for night loading and unloading of cattle if required due to animal welfare reasons as shown in Photograph 13.

No lighting is proposed around the beef cattle production pens or the drainage systems.

Any outdoor lighting installed will comply with Australian Standard AS1158.1.1 (1997 – Road Lighting) and AS4282 (1997 – Control of the Obtrusive Effects of Outdoor Lighting).

5.1.11 Access and internal roads

Access to the site and the layout of internal road systems are critical to the efficient and safe functioning of the proposed development.

Access to the proposed development shall be from the existing subject land entrance off the Flinders Highway as shown in Figure 15. No upgrades are proposed to the geometric design of the entrance as the heavy vehicles accessing the proposed development will be no larger than the heavy vehicles accessing the existing development.

No upgrades are proposed to the existing all-weather access road that connects the subject land entrance to the proposed development.

All signs shall be fully contained within the subject land. Sufficient on-site car parking shall be provided commensurate with the scale and use. Due to the nature of the development and rural character of the site, the provision of a formal car parking area is unnecessary. However, any gravel hardstand areas used as car parking areas such as adjacent to the site office shall be designed in accordance with relevant Australian Standards (e.g. Standards Australia, 2890.1-2004) where relevant.

Sufficient on-site manoeuvring area shall be provided to enable all vehicles to enter and exit the site in the forward direction. The proposed layout of internal roads is shown on Figure 15.

All incoming and outgoing vehicles shall travel past the site office. This provides security and control over site entry.

Feed delivery roads are established along the feed bunk of each row of pens. These roads are approximately 5 m wide to enable vehicles to deliver feed to the feed bunks of the pens. Each feed road has been constructed to:

- slope away from the feed bunk with a cross fall of approximately 2% towards the centre to ensure adequate drainage away from the feed bunk. The road will be constructed to also act as a clean water diversion bank to direct clean water from above the pen area away from the feedlot pen area below;
- produce a smooth finish to minimise wear and tear on the feedout wagon and reduce feed spillage;
- withstand high traffic volumes and wheel loadings;
- provide reliable all-weather access to the feed bunks.

A fit-for-purpose internal road system has been established with adequate road width, turning radii, drainage, all-weather surface, adequate sight distance through intersections, curves and crests to provide good traffic flow around the site.

To ensure good traffic flow at the site, vehicles travel to either the feed receival/processing area or to the cattle receival/dispatch area after passing the site office. The cattle handling and feeding systems are managed separately and both operate independently with little operational interference.

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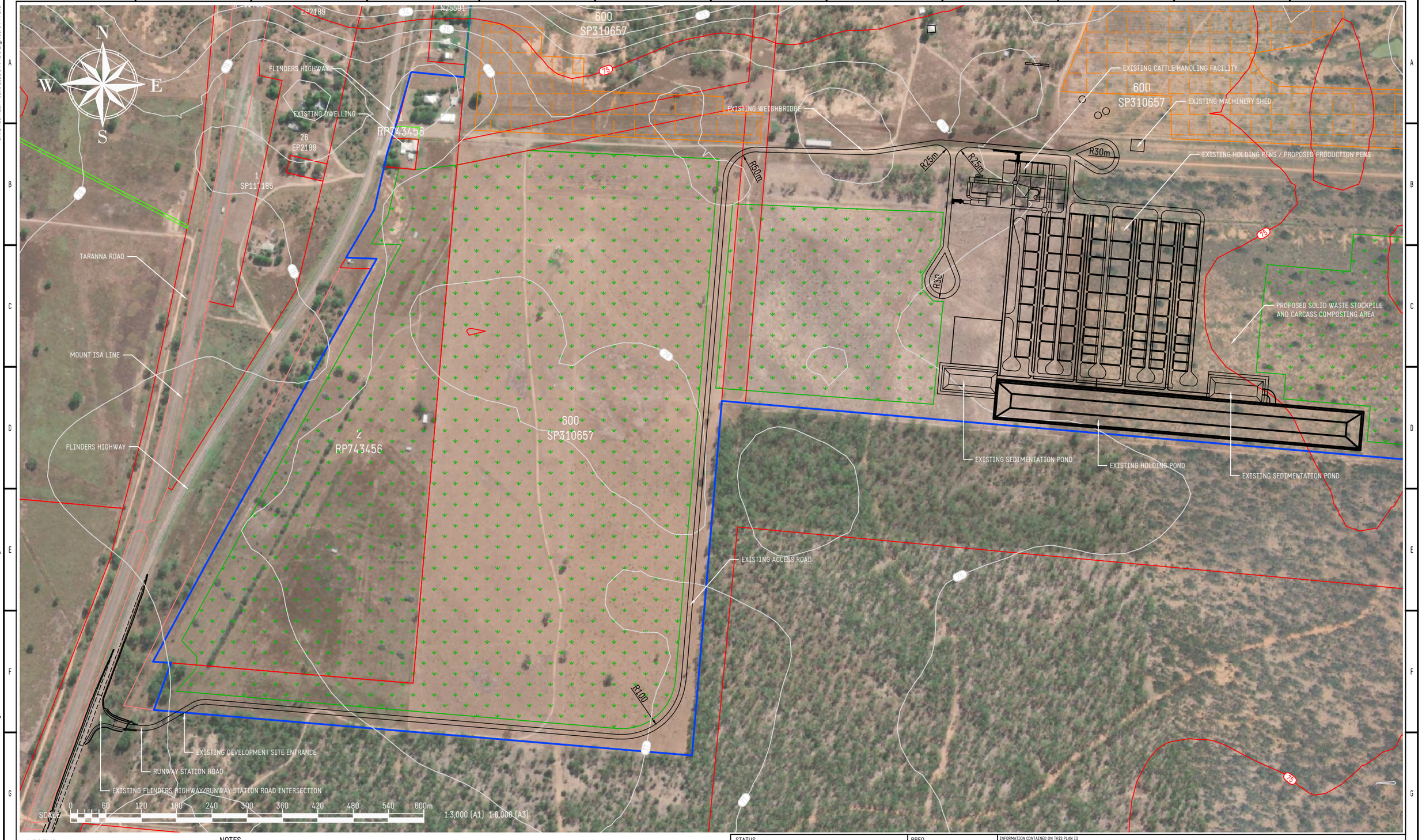

LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- WASTE UTILISATION AREA
- SOLID WASTE UTILISATION AREA

VEHICLE MANOEUVRING

DESIGN VEHICLE - TYPE 2 ROAD TRAIN

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RDC ENGINEERS
AGRICULTURAL
ENVIRONMENTAL
PROJECT MANAGEMENT
ABN 37 627 163 071
PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 829 203
E: info@rdcengineers.com.au

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CLIENT	REID RIVER EXPORT DEPOT PTY LTD AS TRUSTEE
PROJECT	PROPOSED INTENSIVE ANIMAL INDUSTRY DEVELOPMENT
TITLE	DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE PROPOSED DEVELOPMENT - INTERNAL ROADS AND VEHICLE MANOEUVRING

REPORT REFERENCE	SUPPLIED DRAWING NUMBER		DRAWING NUMBER	REV.
FIGURE 15		A3	D1-130-00-15	B

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5.1.12 Utilities

5.1.12.1.1 Electricity

The proposed development does not require the extension and upgrade of electricity services from the subject land's existing overhead supply to service the electricity demand of the proposed development such as the office, feed storage and processing, water pumping, lighting and ancillary services etc.

5.1.12.1.2 Water

The proposed development shall have access to an on-site domestic supply of water. As outlined in section 3.2 the proposed development is not located in a reticulated water supply area. Consequently, no extensions or upgrades to the Charters Towers Regional Council's reticulated water supply are required.

5.1.12.1.3 Telecommunications

No extensions or upgrades to existing communications services are required.

5.1.12.2 Separation distances

The proposed development complex has been sited and designed to prevent or minimise adverse impacts on the amenity of the surrounding community.

Table 14 outlines the separation distances available from the proposed development complex and the nearest sensitive receptors. An assessment of potential impacts to community amenity has been undertaken and is presented in section 7.5.1.

Table 14 – Proposed development complex - Separation distances to sensitive receivers

Sensitive receivers	Separation distance m
Town zone	>5,000
Rural residence	>750
Domestic bore	>250
Category A or B environmentally sensitive area	>1,500
Watercourse	>500
Public roads (constructed)	>1,000

5.1.13 Landscaping

The proposed development has been sited and designed to be consistent with and respect the rural character of the area. The locality is characterised by large expanses of grazing land, framed by remnant open woodland vegetation and open forest and very sparsely populated with low-rise, very-low intensity dwellings and rural buildings.

The existing development has retained native vegetation and paddock trees in and around the complex area as far as practical for visual softening of the built infrastructure. Due to its low vertical height combined with existing vegetation and distance, the existing development complex has a low visual prominence from the Flinders Highway.

Those elements of the proposed development complex which have a high vertical scale such as the cattle handling building and shade structures are partially visible from the Flinders Highway.

An assessment of potential impacts to community amenity has been undertaken and is presented in section 7.5.1.

5.2 Construction

The proposed development shall utilise the built infrastructure associated with the existing development. Consequently, there are no construction activities per se.

All bulk earthworks, feed bunks, water troughs, aprons, fences and gates have been completed.

5.2.1 Geometric design

The proposed development shall utilise existing built infrastructure developed as part fo the existing development. The IFC drawings prepared by Premise for the existing development are provided in Appendix C. The existing development has been generally in accordance with the IFC plans.

5.2.2 Material suitability

The suitability of material for construction is assessed based on its geotechnical qualities. Soil testing during site investigations determines the nature of the material on the site of the proposed development.

Material excavated and suitable for placement in the beef cattle production, induction and hospital pens foundation or clay lining shall be subject to the suitability requirements outlined in the National Feedlot Guidelines (MLA, 2012b).

5.2.3 Drainage system

Runoff from the controlled drainage area contains organic and mineralised manure constituents that could pose a significant impact to soil and water resources if they were released, uncontrolled, into the environment.

A low-permeability barrier shall be needed on those areas within the controlled area where the permeability of underlying soil/rock strata exceeds 0.1 mm/day (3.5 cm/year). This barrier shall be created by using a liner made of compacted clay (clay liner).

For a given soil, permeability is related to soil particle composition, moisture content and level of compaction; and there are limits to the permeability that can be achieved at any level of compaction. In-situ and laboratory measurement of permeability is difficult, and relatively inaccurate (MLA, 2012b).

Consequently, cattle feedlot design guidelines provide guidance on specifications for materials and construction methods to be used for clay lining rather than relying on permeability standards.

Table 15 and Appendix D outline the characteristics of suitable clay lining material and provides guidance on the selection of the correct materials for use in the liner. Soils may need to be mixed or engineered to produce a material that meets the specifications.

Table 15 – Specifications for clay liner materials (MLA, 2012b)

Soil characteristic	Acceptability criterion	Test method
Percentage fines	More than 25% passing a 75 μm sieve More than 15% passing a 2 μm sieve	AS 1289 3.6
Liquid Limit	Less than 70	AS 1289 3.1.2
Plasticity Index	More than 15	AS 1289 3.3.1
Emerson Class	Number 5 to 6	AS 1289 3.8.1

5.2.3.1 Drains

Catch drains are located along the bottom of each row of beef cattle production pens. Catch drains flow directly into the sedimentation pond. The catch drains convey stormwater runoff to the sedimentation pond.

To mitigate the potential for contamination of underground water resources because of leaching of contaminants through permeable, underlying soil, a low-permeability barrier shall be constructed on the floor of the drains.

Hence, the base of the catch drain shall be underlain by a minimum of either 300 mm clay or other suitable soil, able to provide a design permeability of $<1 \times 10^{-9}$ m/s (~ 0.1 mm/day) (MLA, 2012b).

The specification for clay lining is provided in Appendix D.

5.2.3.2 Sedimentation pond

A sedimentation pond is constructed at the downslope end of each existing controlled drainage area. The sedimentation pond for the Controlled Drainage Area 1 and Controlled Drainage Area 2 shall have a minimum nominal working capacity as outlined in Table 9 in section 5.1.3.1.1 and Table 10 in section 5.1.3.1.2 respectively.

The general method of protecting groundwater is to ensure that a low-permeability barrier exists between the stored effluent and any underlying groundwater resources. Hence, the base and embankment of the sedimentation pond(s) shall be underlain by a minimum of either 300 mm clay or other suitable soil, able to provide a design permeability of $<1 \times 10^{-9}$ m/s (~ 0.1 mm/day) (MLA, 2012b).

5.2.3.3 Holding pond

A holding pond is constructed downslope of each sedimentation pond within the existing controlled drainage areas as shown on Figure 11 and Figure 12.

The holding pond for Controlled Drainage Area 1 and Controlled Drainage Area 2 shall have a minimum nominal working capacity as outlined in Table 12 as stated in section 5.1.3.2.

The general method of protecting groundwater is to ensure that a low-permeability barrier exists between the stored effluent and any underlying groundwater resources. The base and embankment of the holding pond shall be underlain by a minimum of either 300 mm clay (or other suitable soil), able to provide a design permeability of $<1 \times 10^{-9}$ m/s (~ 0.1 mm/d) (MLA, 2012b).

5.2.4 Solid waste stockpile area

Solid wastes contain organic and mineralised manure constituents that could have adverse impacts on the environment if they were released uncontrolled from the site. Therefore, the storage of solid wastes shall take place on a suitably constructed area that is within the controlled drainage area.

Runoff external to the solid waste stockpile and carcass composting area is diverted away from the solid waste stockpile and carcass composting area by the provision of diversion banks upslope of the area that prevent upslope runoff from entering the area.

Any groundwater resources underlying the solid waste stockpile and carcass composting area shall be protected by implementing a low-permeability barrier on the base of the area. Hence, the solid waste stockpile and carcass composting area shall be underlain by a minimum of either 300 mm clay (or other suitable material), able to provide a design permeability of less than 1×10^{-9} m/s (~ 0.1 mm/day) (MLA, 2012b).

5.2.5 Staging and timing

The proposed development does not involve a staged construction.

5.2.6 Decommissioning existing infrastructure

All infrastructure associated with the existing development shall be maintained and no infrastructure is to be decommissioned.

5.3 Operation

5.3.1 Cattle management

The proposed development shall have about 51,400 m^2 of constructed pen area within Controlled Drainage Area 1 and Controlled Drainage Area 2 which equates to a cattle capacity of 3,075 SCUs at an average stocking density of about ~16.7 m^2/SCU.

The beef cattle feedlot shall fatten beef cattle predominantly for the export market to an average liveweight in the order of 650 kg respectively. The typical specifications for the market type are provided in Table 16. The majority of beef cattle fed shall be owned by the applicant, but custom feeding may be undertaken.

Table 16 – Proposed development – Market type composition

Parameter	Units	Market type
		Export
Days on feed	Days	~125
Entry weight	kg	~450
Exit weight	kg	~650
SCU Scale Factor	-	0.94
Net gain	kg	~200
Average daily gain	kg gain/head/day	~1.6
Dry matter intake	kg DM/head/day	11.7
Mortality rate (No in/No Out)	%	0.5
Percent in lot	%	100.0

The number of beef cattle turned off from the proposed development is dependent on the following factors:

- pen capacity;
- intake weight;
- days on feed;
- average daily gain;

- required turnoff weight;
- occupancy levels; and
- mortality rates.

The proposed development shall be able to accommodate up to 3,075 SCUs of beef cattle at an average stocking density of about ~18.75 m^2/SCUs.

Based on these data and the market type specifications of the cattle to be fed (Table 16), the estimated number of incoming and outgoing cattle for each stage of the proposed development is shown in Table 17.

Total beef cattle throughput would be approximately 8,100 head of cattle annually based on an occupancy of 95% and a mortality rate of 0.5%.

Table 17 – Proposed development – Estimated cattle throughput

Parameter	Units	Market Type Export Stage 1
Development capacity	SCUs	3,075
Entry weight	kg	~450
Exit weight	kg	~650
Days on fed	Days	~125
Occupancy	%	~95.0
Mortality rate (No in/No out)	%	~0.5
Market type percent in lot	%	100.0
Head-on-feed	No head per year	~3,118
Incoming cattle (walked in*)	No head per year	~0
Incoming cattle (transported in)	No head per year	~9,104
Incoming cattle (Total)**	No head per year	~9,104
Outgoing cattle	No head per year	~9,058

** Total head into proposed development.

5.3.2 Feed management

The feed ration for the beef cattle shall be prepared on-site in the existing grain storage and processing and commodity storage facility developed to the north of the existing holding pens.

Winter and summer cereals such as wheat, barley and maize shall be the predominant grains used in the ration. The level of each grain in the ration depends on the availability and cost of the grain sourced from off-site.

The proximity of the proposed development to the central and north Queensland grain producing areas leaves it well positioned for grain and commodities procurement.

A proportion of the hay for the proposed development shall be grown on the subject land. The shortfall of these commodities and other commodities not grown on the subject land such as whole cottonseed and supplements shall be transported from the suppliers in the local region and/or central Queensland.

All grain shall be processed on-site through the grain processing facility. The facility consists of storage silos to store grain, a grain movement system and a grain processing system. Grain shall be processed by dry rolling. The grain movement and processing system shall be powered by electricity.

The processed feeds and commodities are stored in bays within the commodity shed where they are loaded into a tractor-drawn feed wagon by front-end loader. The feed wagon has on-board mixing equipment. The ration is then dispensed into the feed bunks directly from the feed wagon.

The estimated annual commodity usage for the proposed development when operated as a beef cattle feedlot for 365 days of the year is shown in Table 18. The percentage of each commodity within a ration is dependent on commodity availability and the buying price and therefore the composition often changes seasonally and from year to year. The dry matter content of beef cattle rations is usually formulated to be 75–85%.

Table 18 – Proposed development – Estimated annual commodity usage

Parameter	Type	Units	Market type
			Export
Development capacity		SCU	3,075
Grain	Maize	t/year	~7,595
	Dried distillers grain	t/year	~2,130
Protein	Whole cottonseed	t/year	~1,775
Roughage	Hay (Grass)	t/year	~2,130
Supplements	Finisher	t/year	~885
Total		t/year	~14,515

5.3.3 Solid waste generation

5.3.3.1 Manure

McGahan and Tucker (2003) recommend using a mass balance approach to estimate the quality and quantity of solid waste generated by intensive livestock developments. One such method is the predictive model known as BEEFBAL (QPIF, 2004). BEEFBAL can be used to estimate waste characteristics from a beef cattle feedlot. BEEFBAL is a Microsoft Excel® worksheet model.

BEEFBAL (DAF, 2019) was used to estimate the weight and nutrient content for solid waste from the proposed development. Input data for BEEFBAL was taken from Table 16 for herd

data and quantity fed respectively. The estimated solid waste generated from the proposed development is shown in Table 19.

The BEEFBAL inputs and outputs for the scenarios modelled are provided in Appendix B.

BEEFBAL (DAF, 2019) estimates some 1,815 t of manure (dry matter) harvested from the pens per year when operated at its full capacity. Based on a scraped manure moisture content of 40%, this translates into some 3,025 t of wet scraped manure per year to the stockpile. Based on a stockpiled manure moisture content of 20%, this translates into some 2,275 t of manure available for spreading per year.

Table 19 – Proposed development – Estimated manure generated

Parameter	Units	Market Type
		Export Stage 1
Development capacity	SCU	3,075 t/year
Fresh manure excreted	Dry mass	~2,215
	t DM/SCU/year	0.76
	Wet mass (85%MC)	~14,765
Manure scraped from pad	Dry mass*	~2,035
	Wet mass (40%MC)	~3,390
Manure removed from stockpile	Dry mass	~2,035
	Wet mass (20%MC)	~2,545

*50% dry matter loss on the pad

5.3.3.2 Mortalities

5.3.3.2.1 Typical

The average mortality rate in beef cattle feedlots is around 0.1-0.5% expressed as a percentage of cattle throughput. A mortality rate of about 0.5% expressed as a percentage of cattle throughput as outlined in 5.3.1. has been used for the proposed development which is consistent with the industry average.

BEEFBAL (DAF, 2019) was used to estimate the mass of mortalities which was then converted to a dry matter basis based on an average carcass moisture content of 60% (Michell et al, 1989). Table 20 the estimated mass of mortalities generated in the proposed development.

BEEFBAL (DAF, 2019) estimates some 10.1 t of mortalities (dry matter) are produced when the proposed developed is operating at its full capacity. Based on a carcass compost moisture content of 20%, this translates into some 12.0 t of carcass compost available for utilisation per year.

Table 20 – Proposed development – Estimated typical mortalities generated

Parameter	Units	Market Type Export
Development capacity	SCU	3,075 t/year
Mortalities	Dry mass	~10.1
	Wet Mass (60%MC)	~25.3
Carcass compost removed from stockpile	Dry mass	~9.6
	Wet mass (20%MC)	~12.0

*The fluid content, including water, comprise an average of 60% of the total body weight of a beef animal (Michell et al., 1989).

5.3.4 Liquid waste generation

The Feedlot Assessment Spreadsheet V8.6 (DAF, 2019a) was used to estimate the average annual effluent irrigation volume for the controlled drainage area of the proposed development and is shown in Table 21. The Feedlot Assessment Spreadsheet V8.6 outputs for the scenarios modelled are provided in Appendix B. Table 21 shows that the average annual effluent irrigation volume for the proposed developed is in the order of 100.9 ML per year.

Table 21 – Proposed development – Estimated annual effluent irrigation volume

CDA Identifier	Annual effluent irrigation volume ML
1 & 2	~100.9

5.3.5 Water management

Water is a vital resource for the proposed development and is also a significant expense. Most of the water used is for beef cattle to drink; it is also used for hygiene practices such as cleaning of machinery and cattle processing facilities, and in amenities for personnel working at the proposed development.

The proposed development's water supply, storage and reticulation shall be managed to:

- meet the total annual water requirement of the development;
- provide an unrestricted, reliable supply of water to livestock (beef cattle) at all times of the year;
- provide water that is clean, fresh and free from contamination for livestock (beef cattle);

- meet the peak water intake requirement for cattle, especially during the summer period;
- minimise losses and maximise water use efficiency;
- ensure that the quality of the water (which includes temperature, salinity and impurities) does not affect cattle performance or welfare; and
- provide water that is clean, fresh and free from contamination for personnel working at the development.

5.3.6 Water usage

Davis et al (2009) measured total water usage data from seven Australian feedlots between 2007 and 2009. The total water usage ranged from 14.5 to 20.5 ML/1000 head-on-feed. These data included drinking water, feed processing, cattle washing (where this practice is undertaken), administration and direct sundry uses such as trough cleaning, dust control, vehicle and facility cleaning and indirect sundry 'uses' such as evaporation.

No water shall be used for cattle washing or feed processing at the proposed development.

Consequently, the annual water requirements shall comprise mostly livestock drinking water. Winchester and Morris (1956) relate ambient temperature and dry matter intake (DMI) and breed to water intake. Table 22 shows the average monthly predicted water intake per head per day. The average daily intake is 47.2 L/head/day. With about 3,118 head-on-feed at the maximum capacity of 3,075 SCUs, this equates to about 55 ML/year.

Table 22 – Proposed development – Estimated drinking water usage

Month	Mean daily water intake	Market type
		Export 3,075 SCU
	L/head/day	ML
January	53.0	5.13
February	52.8	5.10
March	50.0	4.84
April	46.7	4.51
May	43.7	4.22
June	41.9	4.05
July	41.5	4.01
August	42.2	4.08
September	44.1	4.26
October	47.3	4.57
November	50.6	4.89
December	53.0	5.13
Average	47.2	
Total		54.80

The National Guidelines for Beef Cattle Feedlots (MLA, 2012a) state that as a guide, a proposed feedlot would normally need to demonstrate access to approximately 24 ML of high-

security water per annum per 1,000 SCU of feedlot capacity. Consequently, up to 73.8 ML may be required for the proposed development.

5.3.7 Solid waste management

The proposed development will operate at the equivalent of a Class 1 standard. Consequently, regular cleaning and maintenance in and around the proposed development shall be undertaken in accordance with Class 1 specifications. This level minimises odour emissions and reduces the risk of any amenity impacts on neighbouring sensitive receptors. Regular cleaning:

- reduces manure build up within the pens;
- reduces odours emanating from the proposed development; and
- eliminates wet spots in the pens (production, hospital, induction), which reduces fly breeding areas and reduces odour.

5.3.7.1 Pen cleaning and maintenance

Free drainage of pens is essential in optimising conditions for livestock, preventing odour nuisance and minimising pen maintenance costs.

Ideally, pen cleaning shall occur when the manure is moist but not wet since moist manure is more easily scraped from the surface. However, regular cleaning may occur even when conditions are not ideal.

As manure is deposited on the pen surface it dries and is compacted by the action of the cattle hooves. It is typically laid down in layers. In some cases, the lowest layer may be an "interface layer" – a compacted mixture of manure and pen surface material (clay/gravel). The interface layer has a low permeability and offers additional production against nutrient leaching through the pen surface (Lott et al. 1994) and shall not be removed during pen cleaning.

As the proposed development has been designed and constructed and shall be managed in accordance with Class 1 standards as described by Skerman (2000), the pen cleaning and maintenance schedule shall be in accordance with Table 23. Class 1 represents the highest level of management standards.

The machinery to be used for pen and drain cleaning and maintenance activities may include:

- skid steer loader – under fence cleaning and removal of solids from around feed bunks and water troughs;
- front-end loader to remove manure out of the pens/drains and stockpile area;
- rigid and articulated tip trucks for removing manure from the pens to the solid waste stockpile / carcass composting area, loading manure and compost for transport to the utilisation areas; and
- front-end loader for mixing and aerating the manure windrows and carcass compost.

5.3.7.1.1.1 Under-fence cleaning

The removal of manure from under fence lines is important for two reasons. Accumulated manure acts as a fly breeding area and a trap that prevents run-off leaving the pen. Removal of accumulated manure under fence lines shall be undertaken at the same time as pen cleaning.

Table 23 summarises the proposed under-fence cleaning interval for the proposed development.

5.3.7.1.1.2 Pen maintenance

General pen maintenance activities shall be conducted after each pen cleaning event and the manure from the pens and under fence lines has been removed. General pen maintenance activities include:

- Depressions/potholes within the pen are filled and compacted
- Elimination of wet spots in the pen surface
- Removal of split feed residues from around feed bunks.

Attention shall be given to the area behind the feed bunk apron, as that area tends to become worn and hollowed out and, if not maintained, retains water, remains boggy and quickly becomes worn.

Table 23 summarises the production pen maintenance interval for the proposed development.

5.3.7.1.2 Drain cleaning

To work effectively, catch drains need to be maintained. Poorly maintained catch drains such as when vegetation is allowed to grow in them or if manure builds up, restricts the flow of stormwater allowing, manure in the runoff from pens to be deposited in the catch drains rather than flowing to the sedimentation ponds.

Manure in drains tends to stay wet, thus creating an odour problem and is also difficult to remove.

When practical, drains shall be cleaned after each rainfall event. Cleaning includes removal of manure and vegetation.

Table 23 summarises the proposed drain cleaning interval for the proposed development.

Table 23 – Schedule for pen and drain cleaning and maintenance

Activity	Frequency and / or Action
Removal of spilt feed /feed residues	Every two days
Elimination of wet patches in pens	Weekly
Repairs to potholes in pens	Weekly
Clean water troughs	Weekly
Under-fence cleaning	Monthly (or after manure obstructs pen drainage)
Pen cleaning	At intervals not exceeding 13 weeks
Pen surface inspections	After runoff events and repaired as required
Diversion banks and drains	After runoff events and repaired as required

5.3.7.1.3 Sedimentation system cleaning and maintenance

Each controlled drainage area has a dedicated sedimentation pond designed to separate larger solids in the stormwater runoff from the liquid component. Solids within the stormwater runoff settle in the sedimentation pond with the liquid draining into the holding pond.

Each sedimentation pond shall be checked for efficacy after each runoff event. Over time, solids build up in the sedimentation pond and, if not removed, will begin to flow into the holding pond. Typically, sediment shall be removed using an excavator or similar equipment.

5.3.7.1.4 Mortalities

5.3.7.1.4.1 Typical

Carcasses shall be removed from the pens daily and taken to the cattle handling facility for post-mortem or directly to the solid waste stockpile and carcass composting area.

Most of the carcass mass is moisture and will evaporate, significantly reducing the mass remaining after composting. The mass of carcasses is considered negligible when compared to the mass and nutrient content of manure that will be handled. Carcasses will be composted in separate windrows to the bulk manure windrows.

The construction and management of a carcass compost windrow shall generally comprise the following:

- A bed of at least 300 mm of the material being used as the carbon source (e.g. sawdust or straw) is placed on the base of the composting area. This bed of material absorbs leachate from the carcasses;
- A carcass is placed on the straw or sawdust bed and covered with at least 500 mm of manure on all sides;

- The carcass windrow shall be no more than two levels of carcasses high. The second level of carcasses shall be placed on top of 50 mm of manure covering the first level of carcasses and covered with at least 500 mm of manure;
- The top of the windrow shall be shaped to an apex to shed rainfall;
- The windrow shall be periodically checked, and any exposed carcasses recovered. The carcasses must be covered to facilitate the composting process by adding a carbon source, and to control odours and in deterring vermin from disturbing the windrow;
- The carcasses are allowed to decompose for around 4 weeks before turning. Typically, a front-end loader shall be used for turning carcass compost;
- Active composting may last for up to 4-8 months. The windrow shall be turned every 2-3 months;
- After active composting the composted windrow is left to mature for at least 3-4 months; and
- The carcass composting area shall be monitored from scavenging animals and livestock.

Since effective aerobic composting of carcasses is a low odour process, the carcass composting area is not expected to be a significant odour source.

5.3.7.1.4.2 Mass events

Emergency animal disease outbreak and / or mass mortality contingency plans have been developed as part of the environmental management plan.

In the event of a large number of mortalities at the proposed development, state and local government authorities would be called to investigate the cause of the mortalities and advise and assist with the most suitable disposal method. The following entities will be contacted:

- Biosecurity Queensland (13 25 23) if there is a suspected disease outbreak.
- Department of Agriculture and Fisheries (DAF) (13 25 23) in the event of a suspected disease outbreak in accordance with relevant AUSVETPLAN manual procedures. DAF veterinary officers have the main responsibility and resources to combat an endemic disease outbreak.
- Consultant veterinarian (Charles Vaughan Veterinary Services - Export & Pastoral 0400 662 921); and
- Charters Towers Regional Council (07 4761 5300) to assist in the disposal of cattle (burial, composting) on or off-farm (land fill site) if required.

All emergency animal diseases **must be reported to Biosecurity Queensland on 13 25 23** as soon as they are suspected. All development personnel shall be made aware of the signs of emergency diseases in cattle.

A suitable site for mass burial of mortalities has been identified on the subject land as shown in Figure 14.

The burial pits shall be established in low permeability soils on a site well removed from surface waters, drainage lines, gullies, groundwater bores and the proposed development complex site. The soils in this location are low permeability, thus lining of the pits with clay is unlikely to be required. If lining is required, then the pits shall be lined with at least 600 mm of clay.

The pit shall be located so that all water runoff is directed away from the pit. Use of diversion bunds or trenches may be required. Pits shall be deep but relatively narrow and excavated using an excavator.

The carcass of each animal shall be opened at the time of placing in the pit and the carcass immediately covered by at least 500 mm of soil to reduce odour and exclude flies and vermin.

Each pit shall be progressively filled with carcasses until sufficient pit capacity remains for the pit to be sealed with clay and compacted to a minimum depth of 1 m.

Soil shall be mounded over the top and replenished should the pit subside to below ground level.

The site where mass mortalities are buried shall be recorded for future reference.

5.3.7.2 Utilisation

Solid waste shall be applied sustainably to cropping land using a tractor drawn moving bed manure spreader or similar equipment on the subject land or removed off-site to be used as a soil conditioner and organic fertiliser on cropping and pasture operations on other cropping land in the local region. The subject land has an area of at least 100 ha of cropping land suitable for solid waste utilisation as shown on Figure 14.

Solid wastes are incorporated into the soil by cultivation to better distribute the nutrients for uptake by crop roots and avoid the potential for solid waste to be washed off the fields in runoff producing rainfall.

The minimum land area required was determined by a nutrient mass balance on the removal of the nutrients in the solid waste (manure, sludge, carcass compost) by the types of crops to be grown within the solid waste utilisation area.

The typical composition of aged beef cattle feedlot manure is shown in Table 24.

Table 24 – Typical characteristics of cattle feedlot manure (MLA, 2015b)

Parameter		Units	Average	Range
Total Nitrogen	N	%	2.18	1-3
Ammonium Nitrogen	NH_4^+ - N	mg/kg	1,430	0 – 3,800
Nitrate Nitrogen	NO_3^- - N	mg/kg	307	1-1,115
Total Phosphorous	P	%	0.8	0.5 – 1.1
Potassium	K	%	1.9	0.75 – 3.2
Sodium	Na	%	0.3	0.04 – 0.7
Acidity/Alkalinity	pH		7.2	6.3 – 8.7
Electrical Conductivity	EC	dS/m	8.26	0.16 – 17.2

Improved pasture (grasses/legumes) shall be grown under dryland and irrigated conditions within the solid waste utilisation area and harvested and reused as roughage in the proposed development's feed ration. The typical crops proposed to be grown in the solid waste utilisation area are outlined in Table 25. These include Rhodes grass (*Chloris gayana*), Urochloa (Sabi grass) and common stylo (Seca) (*Stylosanthes guianensis*).

The typical yields are based on on-farm averages over the last few years and supplied by the applicant. The typical nutrient analyses of each crop have been sourced from the Feedlot Assessment Spreadsheet V8.4 (DAF, 2019) for dryland pasture.

Table 25 – Proposed development – Solid waste utilisation area – Typical crops and yields

Crop	Typical DM yield t/ha	N DM %	P DM %	K DM %
Rhodes grass / Urochloa/ Seca	4-6	2.5	0.30	1.5

5.3.7.2.1 Nutrient Limited Application Rates

The *National Guidelines for Beef Cattle Feedlots in Australia* (MLA, 2012a) express a mass balance equation in the form of a Nutrient Limited Application Rate (NLAR) equation. Solid waste is applied to the waste utilisation area where the biomass accumulation and the quantities of N and P that are removed from the area through crop growth and the export of harvested material are determined.

The mass balance equation in the form of a nutrient limited application rate (NLAR) equation, denoted as:

$$NLAR = \frac{CR+SS+EL}{NW\ x\ 10^{-3}} \quad \text{.....Equation 2}$$

where:
NLAR = nutrient limited application rate of solid waste (t/ha)
CR = crop requirement for the applied nutrient (kg/ha)
SS = soil storage (kg/ha)

EL = allowable nutrient losses to the environment (kg/ha)
NW = available nutrient concentration in the solid waste feedlot manure (mg/kg).

In the assessment of the NLAR, soil storage (SS) and allowable nutrient losses (EL) are ignored as the intention is to only apply nutrients to match crop requirements. The predicted solid waste nutrient concentrations are summarised in Table 24.

The annual application rate for the nitrogen and phosphorus contained in the solid waste were calculated using the NLAR approach.

The typical crops grown on the solid waste utilisation areas and nutrient analyses are outlined in Table 25.

The NLAR was calculated based on an improved grass/legume pasture which was harvested for hay all year round. The improved pasture could remove about 80 kg/ha N, 12 kg/ha P and 60 kg/ha K as shown in Table 26 when harvested as hay.

Table 26 – Proposed development – Solid waste utilisation – NLAR summary

Parameter	Units	Code	N	P	K
Crop requirement	kg/ha	CR	80	12	60
Soil storage	kg/ha	SS	0	0	0
Allowable losses	kg/ha	EL	0	0	0
Nutrient concentration	mg/kg	NW	21,800	8,000	19,000
NLAR	t/ha	NLAR	3.67	1.50	3.16
Area required	ha	-	557	1,363	648

The minimum area required for solid waste utilisation will be the largest calculated for any individual nutrient constituent (MLA 2012a). The minimum area required for uptake of P is 1,363 ha. The proposed development has an area of 30 ha available for solid waste utilisation. Consequently, there is insufficient land on-site for sustainable utilisation of all of the solid waste produced. All solid waste not utilised on the subject land shall be removed off-site and applied to cropping land owned by the applicant in the local area.

Prior to the addition of solid waste to the solid waste utilisation area, soil and manure analysis would be undertaken to establish baseline nutrient levels and the required amount of solid waste for the crops to be grown.

5.3.8 Liquid waste management

5.3.8.1 Effluent

5.3.8.1.1 Holding pond

The holding pond has been designed to store stormwater runoff prior to application to land. The following general maintenance practices shall be implemented:

- Embankments shall be checked for evidence or indications that erosion has or will take place, wet areas indicating seepage etc;
- All fences shall be maintained in satisfactory condition and livestock proof;
- All inlet and outlet pipework, structures and pumps shall be checked regularly to ensure adequate functioning, e.g. flow rates, leaks;
- Tree and shrubs on the embankment shall be removed to ensure the technical integrity of the embankment is maintained and prevent drying out of the embankment core; and
- Grass cover shall be established and regularly mowed to prevent erosion of embankment slopes and a resting site for flies or habitat for other vermin.

Despite the pre-treatment settling of the suspended solids, the stormwater runoff may still contain a proportion of suspended solids entering the holding pond. Subsequently, after several years each holding pond may need to be desludged.

The holding pond shall be desludged when it is apparent that sludge level in the holding pond is causing loss of detention in the holding pond and degeneration of the effectiveness of treatment. Therefore, the following maintenance practices shall be implemented:

- Sludge levels shall be measured annually;
- Sludge levels shall never exceed more than 10% of the holding pond capacity; and
- Clay lining of the holding pond shall be checked after each desludging to ensure its structure and integrity has not been damaged or compromised. Any damage to lining will need to be repaired before liquid waste is reintroduced into the holding pond.

If the holding pond fills during abnormal wet weather and an overflow is imminent or spills, it is generally preferable to irrigate liquid waste onto a wet irrigation area (if practical) rather than allow the pond to spill. Irrigation will assist in dispersing the liquid waste over a large area and provide a greater opportunity for filtering by vegetation and dilution from stormwater.

5.3.8.1.2 Utilisation

When available, effluent shall be sustainably applied to cropping land using a low pressure (travelling irrigator) overhead irrigation system within the dedicated effluent utilisation area on the subject land. The subject land has an area of at least 85 ha of cropping land available for effluent utilisation as shown on Figure 14.

The amount of water, nutrients and organic matter for optimum sustainable production of the cropping system is a function of the crop, the agronomic system employed, and site-specific factors such as climate, topography and soil type.

5.3.8.1.2.1 Nutrient Limited Application Rates

Effluent is applied to the effluent utilisation area where the biomass accumulation and the quantities of N and P that are removed from the area through crop growth and the export of

harvested material are determined. The annual application rate for the nitrogen and phosphorus contained in the effluent were calculated using the NLAR approach.

The mass balance equation in the form of a nutrient limited application rate (NLAR) equation, denoted as:

$$NLAR = \frac{CR+SS+EL}{NW\ x\ 10^{-3}} \text{.....Equation 3}$$

where:

NLAR = nutrient limited application rate of holding pond effluent (kL/ha)
CR = crop requirement for the applied nutrient (kg/ha)
SS = soil storage (kg/ha)
EL = allowable nutrient losses to the environment (kg/ha)
NW = available nutrient concentration in the holding pond effluent (mg/L).

The annual application rate for the nitrogen and phosphorus contained in the effluent were calculated using the NLAR approach. The minimum area required for effluent utilisation will be the largest calculated for any individual nutrient constituent (MLA 2012a). The minimum land area required for nitrogen and phosphorus was calculated by multiplying by the annual average runoff volume by the NLAR for each nutrient.

The typical crops grown on the effluent utilisation area and nutrient analyses are outlined in Table 27.

Table 27 – Proposed development – Effluent utilisation area – Typical crops and yields

Crop	Typical DM yield	N	P	K
	t/ha	DM %	DM %	DM %
Improved pasture	12	2.0	0.30	2.4

The NLAR was calculated based on an improved pasture crop harvested for hay and maize harvested for silage. A 12 t/ha improved pasture crop and 25 t/ha maize silage crop could remove about 645 kg/ha N, 103 kg/ha P and 525 kg K/ha as shown in Table 28.

Table 28 – Proposed development – Effluent utilisation area – NLAR summary

Parameter	Units	Code	N	P	K
Crop requirement	kg/ha	CR	645	103	525
Soil storage	kg/ha	SS	0	0	0
Allowable losses	kg/ha	EL	0	0	0
Nutrient concentration	mg/L	NW	220	71	1,092
NLAR	kL/ha	NLAR	2,932	1,451	481
Area required	ha	-	34.4	69.9	209.9

The quantity of liquid waste (effluent) able to be applied for nitrogen, phosphorus and potassium removal on the effluent utilisation area was calculated by dividing the effluent utilisation land area by the NLAR for each nutrient.

Hence, with 101 ML/year of liquid waste (effluent) about 85 ha of land would be needed to sustainably utilise all of the phosphorus in the effluent. Potassium was found to be the limiting nutrient when growing improved pasture and this corresponds to a maximum effluent application rate of about 0.5 ML/ha.

The area available for effluent utilisation is at least 85 ha as shown on Figure 14. Consequently, there is enough land available on-site to sustainably utilise all of the nitrogen and phosphorus in the effluent generated each year.

Utilisation of effluent would involve the following principles:

- Effluent shall only be applied to the nominated effluent utilisation areas;
- Annual application rates shall be based on annual soil tests and would not exceed nutrient recommendations for a particular crop, soil type or yield goal;
- Application of effluent shall occur over the crop growing period with timing and application rates based on soil moisture deficit levels;
- A minimum 25 m buffer zone shall be maintained between effluent utilisation areas drainage lines and public spaces;
- A minimum 25 m buffer zone shall be maintained between effluent utilisation areas and property boundaries;
- Neighbouring landholders are not subjected to odour and aerosol nuisance because of poorly timed and managed effluent application practices;
- The application method adopted ensures that no ponding occurs on the soil surface or runoff occurs from the utilisation areas to drainage lines or watercourses; and
- The irrigation system used has a high uniformity of application and the overall management is of a high standard.

5.3.8.2 Sewage

No additional domestic sewage disposal systems are proposed to be implemented in the proposed development at this stage. If a domestic sewage system is required for the proposed development the sewage shall be treated and disposed on-site by dedicated land area by absorption adjacent to the respective source facility. The system shall be designed in accordance with Australian Standard AS1547.

The treated sewage shall not be added to the controlled drainage systems and not irrigated onto the effluent utilisation area.

On-site sewage management system shall be operated and maintained in a manner that will:

- Prevent public health risk;

- Prevent environmental damage (particularly to land, soil, groundwater and surface waters); and
- Protect community amenity (e.g. odours).

5.3.9 Stormwater, erosion and sediment management

5.3.9.1 Proposed development complex

Stormwater runoff from around the proposed development complex shall be excluded from entering the controlled drainage area.

Diversion banks and catch drains will redirect upstream clean runoff around each controlled drainage area as shown on Figure 8. The diverted upstream clean runoff will be redirected to flow with the natural drainage lines. Catch drains will be grassed as an erosion preventative measure. The catch drains will be maintained (removal of weeds which create ponding etc.) to ensure operation at design capacity.

The proposed development shall be carried out in such a manner as to prevent the release, or likelihood or release, of contaminants of stormwater exiting the development site. In general, the design and management of the runoff control facilities around the proposed site will comply with Part 5 of the Environmental Protection (Water and Wetlands biodiversity) Policy 2019.

The stormwater runoff from areas outside of the controlled drainage areas is unlikely to be contaminated. The greatest potential impact to stormwater quality from these areas shall be from erosion of exposed surfaces. Consequently, effective ground cover (>70%) shall be maintained on areas external to the controlled drainage areas where practical to retain organic matter, maintain soil structure, reduce runoff and minimise risk of erosion. The groundcover will effectively provide a vegetative filter strip (VFS) system between the controlled drainage area and riparian areas and drainage lines. VFSs are very effective systems for slowing the velocity of stormwater runoff, which reduces erosion and traps sediment before runoff enters natural drainage lines.

5.3.9.2 State transport infrastructure

As outlined in section 5.3.12, access to the proposed development shall be via the existing subject land point of access off the Flinders Highway. No upgrade works are proposed to the existing point of access to cater for the additional traffic generated by the proposed development. Consequently, any stormwater, flooding and drainage shall be the same as pre-development conditions.

The proposed development complex is sited in a controlled drainage area and any upstream stormwater is diverted around the development infrastructure. Upstream stormwater shall not be diverted towards or be impounded such that it will have an impact on the Flinders Highway.

The proposed development has been sited to avoid impacts on flooding as outlined in section 6.5.6 and 6.15.2. Consequently, flood inundation levels shall not be affected or altered by the proposed development.

Consequently, any stormwater and drainage from the proposed development shall not result in an actionable nuisance, or worsening of, stormwater, flooding or drainage impacts in a state-controlled road.

5.3.10 Workforce

The workforce servicing the pre-quarantine export facility would be utilised for the proposed beef cattle feedlot. This includes administrative, livestock handling, feed storage, preparation and delivery, machinery maintenance, waste management and general farm staff.

No additional staff are required. Staff are trained to uphold strong guidelines in meat quality, animal health and welfare and environment.

About four staff can be accommodated on-site in the existing dwellings. About five staff can be accommodated on-site in the rural workers accommodation facility on the subject land. All other staff reside off-site. No additional accommodation shall be provided on-site for staff.

5.3.11 Hours of operation

The proposed beef cattle feedlot development shall typically operate for about 10 hours per day between 6.30 am and 4.30 pm, 7 days per week including public holidays. Staff shall be on-site 24 hours a day, 7 days a week.

Typically, cattle are inducted between 7:00 am and 4:30pm on a Monday, Tuesday, Wednesday or Thursday. As far as practical, cattle are dispatched for processing between 7:00 am and 4:30 pm, on any weekday (Monday to Friday). Typically, no cattle are dispatched on Saturday or Sunday unless required by the processor in the event of a breakdown or other unforeseen incident which may influence processing timeframes or the cattle are destined for live export.

Periodically, heavy vehicle movements do occur outside of normal operating hours (e.g. in summer), as it is desirable to transport cattle either at night or in the early hours of the morning for animal welfare reasons.

As far as practical, delivery of feed commodities occurs during weighbridge hours between 7:00 am and 4:30 pm on Monday to Friday.

Typically, no heavy vehicle movements to or from the Intensive animal industry component of the proposed development shall occur on a public holiday.

5.3.12 Access

The proposed development shall continue to utilise the existing subject land entrance off the Flinders Highway as shown in Figure 3.

The DTMR condition of the approval for the existing development by the Charters Towers Regional Council (Reference No MC18/63) in September 2018 included an upgraded and dedicated entrance on to the Flinders Highway. The intersection was constructed in July 2019 by a prequalified DTMR contractor. The as-constructed intersection layout is shown in Figure 5.

Heavy vehicles accessing the proposed development shall be identical in configuration and size to heavy vehicles currently accessing the existing development. Consequently, the geometric design of the existing Flinders Highway / Runway Station Road intersection can accommodate the size and configuration of vehicles using the proposed development. An internal road connects the proposed development to Runway Station Road.

5.3.13 Traffic and transport

Traffic generated by the proposed development shall consist of heavy vehicles bringing feed commodities to the site (see section 5.3.2 for details of commodity types) and livestock vehicle transporting cattle to and from the site (see section 5.3.1 for details of cattle numbers in and out). Any solid waste not utilised on the subject land shall be transported in semi-trailers to adjoining land which is owned by the applicant.

5.3.13.1 Haulage routes

The proposed development shall continue to utilise the same haulage routes as the existing development. The haulage routes to the proposed development are outlined in 4.12.

5.3.13.2 Traffic generation

Typically, livestock shall be transported in a 2-deck cattle trailer in B-Double, Type 1 Road Train or Type 2 Road Train configuration. Commodities are typically delivered in B-Double, Type 1 Road Train or Type 2 Road Train configuration.

Livestock are transported in accordance with the Queensland compulsory code of practice for land transport of livestock under the *Animal Care and Protection Act 2001* and Land Transport of Livestock (Animal Health Australia (AHA) 2012).

The combined existing and proposed throughput of cattle for the proposed development shall not exceed 200,000 per year as previously considered as part of SARAs 2018 response to the existing development (Ref: 1805-5309 SRA)).

The maximum number of head of cattle on site at any one time is 17,005 head as limited by the existing development's conditions of approval by the Charters Towers Regional Council

(Reference No MC18/63) for Undefined Use (Cattle Holding Yards) and Certificate of Registration (LAE343). Of those, a maximum number of 3,288 head equivalent to 3,075 SCUs would be on a production ration and thus considered lot-fed cattle. This equates to some 9,000 head turned over per year.

The traffic movements for the proposed development are summarised in Table 29. One vehicle movement is defined as the sum of an inbound and outbound trip.

As shown in Table 29, the proposed development when fully utilised as an Intensive animal industry shall result in some 3 heavy vehicle movements per day well less that the number of heavy vehicles utilising the Flinders Highway when 200,000 head are turned over per year.

Table 29 – Proposed development – Traffic movements

Development capacity		**SCU**		**3,075**	**3,075**	**3,075**
Activity	**Vehicle Type & (Distribution)**	**GVM t**	**Capacity**	**Movements per day**	**Movements per week**	**Movements per year**
Incoming cattle	Type 2 Road Train (6 deck)	115.5	153 head	0.16	1.14	60
Incoming cattle	B-Double (3 deck)	64.5	76 head	0.33	2.30	120
Outgoing cattle	Type 2 Road Train (6 deck)	115.5	108 head	0.23	1.61	84
Outgoing cattle	B-Double (3 deck)	64.5	54 head	0.46	3.23	168
Grain	Type 1 Road Train	84.5	63 t	0.59	4.11	214
Protein	Type 1 Road Train	81	60 t	0.34	2.40	125
Roughages*	On-farm truck / Type 1 Road Train	81	49.5 t	0.13	0.94	49
Liquids (Oil/Molasses)	B-Double tanker	57	39.5 t	0.00	0.00	0
Supplements (liquid)	Type 1 Road Train tanker	81	55 t	0.07	0.52	27
Outgoing solid waste**	On-farm truck / Semi trailer	42.5	23.4 t	0.34	2.40	125
Employees***	Light vehicles	<4.5	-	6.58	46.15	2400
Support services	Light vehicles	<4.5	-	0.85	6.00	312
Total	Total light and heavy vehicles			10.09	70.81	3682
Total	Total heavy vehicles			2.66	18.65	970

* Proportion of roughages (hay) produced on subject land and vehicles do not use state controlled road network.
** On-farm trucks do not use state-controlled road network – internal roads on subject land only.
*** A proportion of staff reside on the subject land 5 days per week.

5.3.14 Hazardous materials

Industry codes of practice, best management practices (BMP) and regulations apply to the storage, use and disposal of hazardous materials.

There shall be limited quantities of hazardous materials stored and used on-site during operation. To minimise the risk of environmental harm from liquid spills and leaks, all hazardous materials required to be stored on-site shall have a spill containment system appropriate for the nature and pollution risk of that liquid in accordance with relevant guidelines and Australian Standards. Liquids that may be stored during the operation of the development include:

- agricultural chemicals – herbicides, pesticides etc;
- veterinary chemicals;
- cleaning and sanitising agents;
- detergents and sanitisers;
- engine coolant;
- oil, grease, lubricants;
- diesel, petrol fuels; and
- solvents.

All spill containment systems shall be routinely inspected to ensure their technical integrity meets the intended requirements. A routine inspection and maintenance program shall be tailored to suit the specific installation.

The proposed development requires limited quantities of hazardous materials during operation. Diesel fuel is the primary hazardous material required on-site. Most of this fuel is used for cropping operations and feed delivery. Diesel fuel storage may be in the order of 10,000 L due to the rural location of the proposed development.

Limited quantities (<200 L) of other hazardous materials such as oils, solvents, pesticides and veterinary chemicals etc may be stored if required for use at the proposed development. All agricultural chemicals shall be stored in accordance with regulatory requirements. Only development personnel with chemical user accreditation shall be permitted to handle and apply chemicals.

Veterinary chemicals will also be stored in fit-for-purpose and lockable containers. In some cases, these chemicals need refrigeration and shall be stored in a dedicated locked refrigerator within the cattle handling facility. Only development personnel with veterinary chemical user accreditation shall be permitted to handle and apply/administer veterinary chemicals.

5.3.15 Fire management

A fire is an emergency that causes the greatest concern for personnel. A fire management strategy shall be developed for fire developing from a range of sources. These include bushfires (e.g. planned controlled burning that escapes the original burn zone, embers from a cigarette or unattended campfire, lightning strikes, or deliberate arson), fires originating from the development such as from flammable hazardous material storage, machinery use, electrical faults, maintenance activities or feed storage and processing where hay and/or grain dust is present etc.

The risk of fire is offset by strategies that reduce fire risk. Suitable access and adequate infrastructure to support suppression of fire is provided by way of adequate water supply (storage tanks, irrigation pumps), fire breaks and portable extinguishers.

A grassed fire break shall be maintained around the proposed development outside of the controlled drainage areas that will also provide access for fire-fighting vehicles. The grass shall be regularly slashed or grazed and a height of no greater than 10 cm maintained.

The water supply storages (tanks) shall be used as fire-fighting water in the event of fire.

5.3.16 Emergency animal disease

Emergency animal diseases (EADs) include diseases that are exotic to Australia, new and emerging diseases that are of national significance and includes serious outbreaks of prohibited matter, for example foot and mouth disease.

A few serious animal diseases can be transmitted to people (e.g. rabies and bovine spongiform encephalopathy). These are known as zoonoses.

All emergency animal diseases must be reported to Biosecurity Queensland on 13 25 23 as soon as they are suspected. All Development personnel involved in the daily monitoring and handling of stock should be aware of unusual signs or signs of emergency animal diseases of concern to beef cattle.

AUSVETPLAN Enterprise Manual for beef cattle feedlots and other supporting AUSVET documents provide guidelines on the responsibilities and actions during an EAD outbreak, as required by the relevant government authorities, and the strategies that may be adopted to improve preparedness for, or to handle, a suspected EAD.

Standard operating procedures for each government jurisdiction, agency support plans for the involvement of other areas of emergency management (e.g. police, local government), diagnostic resources and training materials also support the AUSVETPLAN core materials. All these documents can be accessed from the Animal Health Australia website.

If an emergency disease is identified within the proposed development, the requirements of the AUSVETPLAN and any directions from the relevant authority shall be followed.

5.3.17 Environmental management and monitoring

In accordance with the requirements under Chapter 7 of the EP Act 1994, Reid River Export Depot Pty Ltd as trustee for the Reid River Unit Trust commit to taking all reasonable and practicable measures to prevent or minimise environmental harm (the general environmental duty environmental) when carrying out the proposed development.

Reid River Export Depot Pty Ltd as trustee for the Reid River Unit Trust has a procedures and operating manual for the approval for the registered pre-export quarantine facility.

Due to the inclusion of lot feeding activities, Reid River Export Depot Pty Ltd as trustee for the Reid River Unit Trust has developed a draft site based environmental management plan (SBMP) for the operation of the Intensive animal industry component of the development. A copy of the SBMP shall be kept on-site in the site office where it is readily accessible to personnel.

The SBMP provides details of the procedures to be implemented to minimise the risk of environmental harm arising from the proposed development.

The SBMP includes a detailed description of the subject land, including its land and water resources, an assessment of the potential environmental risks associated with the proposed beef cattle feedlot development and the relevant procedures, schedules, plans and responsibilities for:

- Operating, maintaining and managing the proposed development;
- Monitoring, recording and reporting of operations and their impact on the environment; and
- Implementing corrective measures and actions in the event of operational problems and emergencies.

A copy of the SBMP is provided in Appendix Q.

Reid River Export Depot Pty Ltd as trustee shall also gain NFAS accreditation for the operation of the Intensive animal industry component of the proposed development.

6 Existing environment

6.1 Climate

6.1.1 Rainfall and Temperature

The closest BoM meteorological stations to the subject land with long term climatic records are the Townsville Aero (Site number: 032040 (1940-2022)) (BoM, 2022a) and Ayr DPI Research Station (Site number: 003002 (1951-2022)) (BoM, 2022a) located some 56 km north and 58 km east-northeast of the subject land respectively. These data may not be representative of the climate of the subject land.

Consequently, daily time series climate data for the proposed development site was acquired from SILO (DSITIA, 2021). The Queensland Department of Science, Information Technology, Innovation and the Arts - Science Delivery (DSITIA) supplied MEDLI-format climate data to enable the long-term climate of the site to be determined. Daily data for the proposed development site was collated into monthly averages and is summarised in Table 32.

The region has a tropical savanna climate. Aw in the Koeppen-Geiger climate classification and experiences typical by hot and humid summers and mild winters. Rainfall varies with time of year due to the latitude of the region (-28.39^0) with a highly seasonal weather pattern resulting in most of the rainfall falling during the six-month "wet season" from November to April.

Table 30 shows that the average annual rainfall recorded at the Townsville Aero for the period 1940 to 2022 is approximately 1,136 mm/year with the heaviest falls usually occurring in January and February. The lowest rainfall totals are in July, August and September (Table 30). Table 31 shows that the average annual rainfall recorded at the DPI Ayr Research Station for the period 1954 to 2022 is approximately 952 mm/yr.

Table 32 shows that the average annual rainfall interpolated by SILO for the period 1921 to 2020 is approximately 838 mm/yr.

The annual evaporation interpolated by SILO for the period 1921 to 2020 is approximately 2,119 mm/yr. The region has nett deficit rainfall with rainfall about one third of the annual average evaporation.

The climatic influence on temperatures results in warm to hot summers and mild winters, rarely reaching single digit temperatures. Townsville Aero recorded a mean maximum temperature of about 31.6^{0}C in December and the mean minimum is about 13.8^{0}C recorded for July between 1940 and 2022 as shown in Table 30. The DPI Ayr Research Station recorded a mean maximum temperature of about 32.1^{0}C in December and the mean minimum is about 11.8^{0}C recorded for July between 1954 and 2022 as shown in Table 31.

Table 32 shows that the mean maximum temperature interpolated by SILO for the period 1921 to 2020 is 33.1^{0}C in December and a mean minimum temperature of about 11.8^{0}C for July.

Table 30 – Climatic data from Townsville Aero (1940 - 2022) (BoM, 2022a)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Rainfall (1940 – 2022)													
Mean rainfall (mm)	270	303.7	193.3	64.3	33.1	20.5	14.6	15.6	10.1	23.6	57.6	124.3	1,136
Median rainfall (mm)	212.6	236	153.6	27.8	18.3	9.7	3	3.8	2.3	13.3	29.1	75.8	1070.4
Lowest rainfall (mm)	8.8	4.2	2	0.3	0	0	0	0	0	0	0.2	0	397.6
Highest rainfall (mm)	1141.7	964	696.2	546.2	180.8	111.4	173.7	258.2	84.4	252.8	345.2	458	2399.8
Temperature, Humidity and Pan evaporation (1940 – 2022)													
Mean maximum temperature (deg C)	31.4	31.2	30.8	29.7	27.7	25.7	25.2	26.1	27.8	29.5	30.8	31.6	29
Mean minimum temperature (deg C)	24.3	24.1	23	20.7	17.7	14.7	13.8	14.7	17.4	20.8	22.9	24.2	19.9
Mean 9am Relative Humidity (%)	71	75	71	68	66	65	65	63	60	60	63	66	66
Pan evaporation (mm)	251.1	208.8	217.0	195.0	170.5	147.0	161.2	189.1	225.0	272.8	273.0	279.0	2591.5
Wind speed (1940 – 2022)													
Mean 9am wind speed (km/h)	10.9	9.7	10.2	10.7	8.8	8.3	7.9	10	13.7	15.7	15.1	13.5	11.2

Table 31 – Climatic data from DPI Ayr Research Station (1954 - 2022) (BoM, 2022b)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Rainfall (1954 – 2022)													
Mean rainfall (mm)	224.1	233	153.6	48.8	39.9	23.5	15.7	15.8	9.6	25.8	45.3	98.7	952
Median rainfall (mm)	179.4	198.6	140	22.8	14.8	11.3	4.3	3.8	1.9	6.1	26.4	59	940
Lowest rainfall (mm)	10.4	1.3	2.2	0	0	0	0	0	0	0	0	0	138.4
Highest rainfall (mm)	799.4	880	491.4	437.4	360.4	223.5	114.6	110.9	99.6	341.7	242.8	497.6	1,759.4
Temperature, Humidity and Pan Evaporation (1954 – 2021)													
Mean maximum temperature (deg C)	31.8	31.6	30.9	29.6	27.6	25.5	25.3	26.3	28.2	29.9	31.2	32.1	29.2
Mean minimum temperature (deg C)	22.8	22.8	21.6	19.1	16.2	13	11.8	12.8	15.2	18.2	20.6	22.1	18
Mean 9am Relative Humidity (%)	75	78	76	74	74	74	72	70	66	64	66	68	72
Pan evaporation (mm)	207.7	173.6	176.7	156	133.3	114	124	148.8	174	213.9	219	226.3	2,080.5
Wind speed (1954 – 2022)													
Mean 9am wind speed (km/h)	11.4	12	12.5	13.2	11.9	11.2	11.4	12.5	13.8	14.6	14.4	13.1	12.7

Table 32 – Climatic data derived for SILO (1921 - 2020) (DSITIA, 2021)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Rainfall													
Mean rainfall (mm)	190.2	240.6	137.4	45.3	30.5	28.9	19.0	16.5	9.5	22.6	46.3	91.3	878.1
Median rainfall (mm)	132.9	189.5	100.3	22.5	11.8	11.6	2.5	0.5	0.1	7.5	26.2	69.4	801.4
Lowest rainfall (mm)	5.8	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	299.7
90% years at least rainfall (mm)	46.8	48.5	17.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.4	458.3
10% years at least rainfall (mm)	385.5	537.0	293.7	115.0	74.9	77.1	62.2	45.3	36.4	76.7	113.1	198.7	1,401.7
Highest rainfall (mm)	691.0	1,063.7	608.4	272.3	243.5	271.8	146.6	326.7	82.6	220.5	327.3	409.2	1,995.5
Temperature, Humidity and Pan evaporation													
Mean maximum temperature (deg C)	32.6	32.3	31.3	30.0	27.7	25.4	25.1	26.7	28.9	31.0	32.4	33.1	29.7
Mean minimum temperature (deg C)	23.1	23.2	21.7	19.0	15.9	13.0	11.8	12.9	15.6	18.8	21.2	22.6	18.2
Relative Humidity (%) maxT	54.3	57.9	55.6	51.5	49.2	47.1	45.0	43.9	44.0	44.7	46.9	49.7	49.2
Mean pan evaporation (mm)	213.4	174.7	181.8	156.4	133.2	111.5	122.2	148.5	184.7	226.1	231.5	235.4	2,119.4

6.1.2 Wind speed and direction

As no meteorological data exists for the proposed development site, data was obtained from the closest meteorological record station that holds wind direction statistics to the subject land. The closest stations are the Townville Aero (1940-2022) and DPI Ayr Research Station which are located approximately 56 km north and 58 km east-northeast of the subject land respectively. Given the distance and terrain, these data may not be representative of the site.

Consequently, the meteorological model – The Air Pollution Model (TAPM) (Version 4) was used to predict local wind speed and direction data.

TAPM, developed by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) is a prognostic model which is used to predict three-dimensional meteorological data and air pollution concentrations. A detailed description of the TAPM model can be found in Hurley (2008).

TAPM software allows users to generate synthetic observations by referencing in-built databases (e.g. terrain information, synoptic scale meteorological observations, vegetation and soil type etc.) which are subsequently used in generating site-specific hourly meteorological observations.

The modelling was centred on the closest grid point to the proposed development site being 19° 46'S and 146° 50'E and was configured with a 25 x 25 x 25 grid. In total, five domains were set up with grid spacings of 30 km, 10 km, 3 km, 1 km and 0.3 km. Five (5) years data were modelled from 2016 to 2020. This setup is consistent with good practice and the guidance detailed in DEHP odour impact guidelines (Department of Environment and Heritage Protection, 2013).

The results of the meteorological modelling are presented in Appendix E.

Wind speed and direction information obtained from TAPM modelling is presented in the form of wind roses. Wind roses are a way of presenting a summary of wind speed and directional data for a particular time and location and show the frequency of occurrence of winds by direction and strength.

The annual wind rose developed for the proposed development site from TAPM in the years 2016 and 2020 is shown in Figure 16 and Figure 17 respectively. All years modelled result in similar wind directions as shown in Appendix E. Each bar shown on the wind rose represents winds blowing from that direction. The length of the bar represents the frequency of occurrence of winds from that direction, and the colour and width of the bar sections correspond to wind speed categories as outlined in the legend.

Figure 16 and Figure 17 show that wind flow is predominantly from the north-easterly to south-westerly sectors with calm to light wind speeds (0.2 – 2.1 m/s) observed for most of the year.

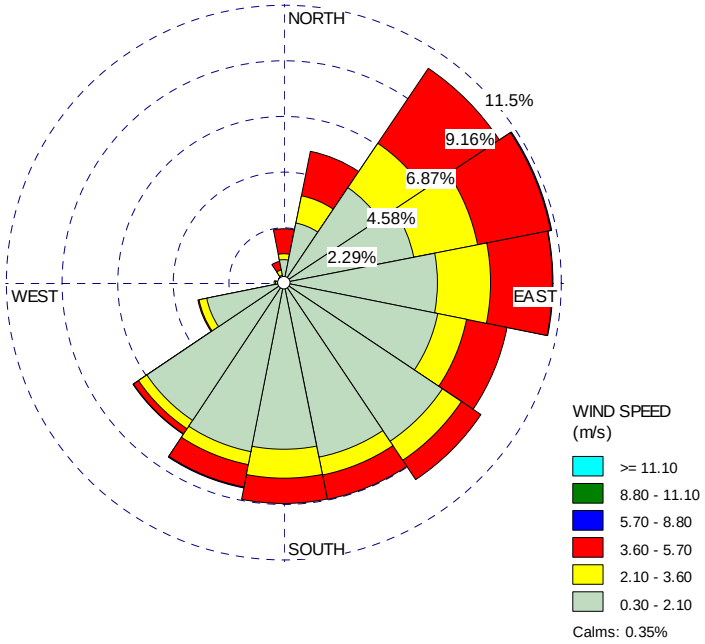

Figure 16 – Proposed development site – Windrose (TAPM 2016)

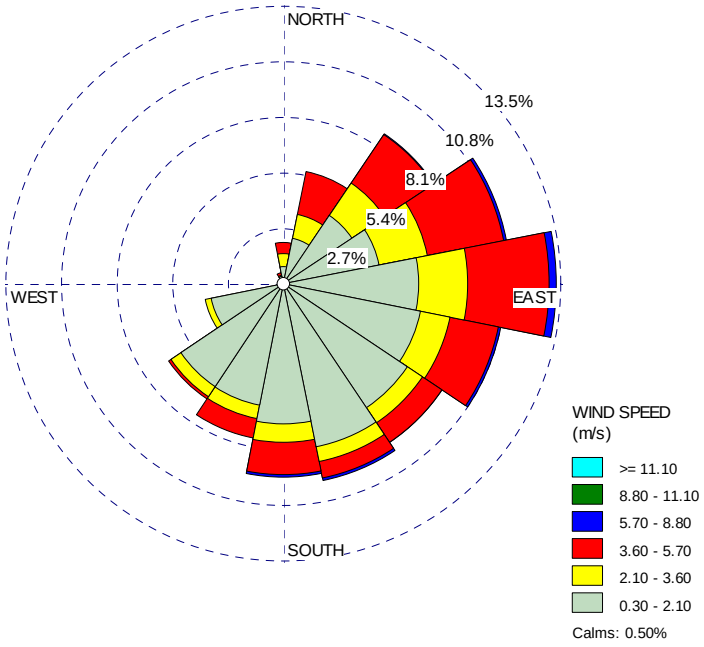

Figure 17 – Proposed development site – Windrose (TAPM 2020)

6.1.3 Design rainfalls

Annual Exceedance Probability (AEP) and Intensity-Frequency-Duration (IFD) design rainfalls for the proposed development site were obtained from the Bureau of Meteorology (BoM, 2021a; BoM, 2021b). The rainfall total accumulated over a given duration and probability that it will be exceeded in any one year (AEP) is provided in Table 33. Rainfall depth for durations and average recurrence interval are shown in Table 34. The probability that a given rainfall total accumulated over a given duration will be exceeded in any one year when the ARI is expressed in years, is given by the relationship:

$$AEP = 1 - \exp\left(\frac{-1}{ARI}\right)$$

Consequently, a one in 20-year, 24-hour storm event (ARI) correlates to an AEP of 5%, 24-hour storm event.

Table 33 – Annual Exceedance Probability design rainfalls (AEP)

Duration	Annual Exceedance Probability						
	63.2%	**50%**	**20%**	**10%**	**5%**	**2%**	**1%**
5 mins	104.8	119.3	162.0	189.6	214.8	246.0	268.8
10 mins	87.6	99.6	135	157.8	178.2	204	222.6
15 mins	75.6	86	116.8	136.4	154	176	192
30 mins	55	62.6	85	99.2	112.4	128.6	140.2
1 hour	36.9	42	57.5	67.5	76.7	88.3	96.7
2 hours	23.3	26.7	37.2	44.0	50.5	59.0	65.0
3 hours	17.5	20.2	28.4	34.0	39.3	46.0	51.3
6 hours	10.7	12.4	18.0	21.8	25.5	30.5	34.5
12 hours	6.6	7.8	11.6	14.3	16.9	20.5	23.3
24 hours	5.2	6.3	9.5	11.9	**14.3***	17.4	19.7
48 hours	2.6	3.2	4.9	6.2	7.5	9.0	10.2
72 hours	2.0	2.4	3.8	4.8	5.8	6.9	7.7

*Design storm event (mm/hr)

Table 34 – Intensity-Frequency-Duration design rainfalls (ARI)

Duration	Annual Return Interval						
	1	**2**	**5**	**10**	**20**	**50**	**100**
5 mins	117	151	192	217	250	293	326
6 mins	109	141	180	204	234	275	306
10 mins	91.8	118	151	170	196	230	256
20 mins	70.8	91	116	130	150	175	195
30 mins	59.1	76	96.7	109	125	146	163
1 hour	40.8	52.5	66.9	75.3	86.7	102	113
2 hours	26.1	33.7	43.2	48.8	56.2	66.1	73.6
3 hours	19.7	25.4	32.7	37	42.7	50.3	56.1
6 hours	11.9	15.4	20.1	22.8	26.4	31.3	35
12 hours	7.34	9.54	12.5	14.4	16.7	19.9	22.4
24 hours	4.64	6.08	8.15	9.42	**11.1**	13.3	15
48 hours	2.91	3.86	5.3	6.22	7.4	9	10.3
72 hours	2.12	2.82	3.94	4.66	5.58	6.84	7.84

*Design storm event (mm/hr)

6.2 Landform and drainage

6.2.1 Landforms

The geologic history and its climate contrasts are reflected in the landforms of the region. The Townsville-Bowen Region is situated in the northern portion of the former Tasman Geosyncline, which formed during the Palaeozoic time.

The landforms of the region are characterised by relatively flat alluvial lowlands on the coastal plains with flat alluvial plains along the major rivers rising to dissected lands characterised by steeper basalt ridges, rugged ranges and low hills within the Leichhardt Range and Hervey Range part of the Great Dividing Range. There are several named mountains including Mount Ellenvale (678 m), Mount Flagstone (591 m), Black Mountain (428 m), Brown Mountain (600 m), Saint Georges Tree (564 m) and Ross River Mountain (589 m), Mt Prince Charlie (375 m), Mt Sugarloaf (505 m), The Bluff (535 m) for example with the region.

6.2.2 Drainage

The subject land is located within the Haughton drainage basin. The surface drainage systems in the Haughton drainage basin are characterised by the Haughton River and its major tributaries the Reid River and Major Creek and several minor tributaries including Four Mile Creek and Redbank Creek for example. The Haughton River has its headwaters in the Hervey Range north of Mingela. The Reid River has its headwaters in the Hervey Range west of Woodstock and flows generally in a south-easterly direction through a narrow valley where it joins the Haughton River some 9 km east-southeast of the subject land.

The Haughton River and Reid River have relatively small catchments and due to the rapid response of the catchments to rainfall, heavy rainfalls over the catchment are capable of causing short duration high flows and flooding of areas adjacent to the waterways in the lower alluvial areas.

The subject land is located within the catchment of the Reid River. For part of its length the Reid River forms the northern boundary of the subject land. Due to its location on the alluvial plains and resultant topography, drainage of the subject land is not well defined but trends in a north westerly direction towards the Reid River. Drainage is more defined closer to the Reid River in the north eastern areas of the subject land where several unnamed first order drainage lines drain in a north westerly direction eventually to the Reid River.

All the drainage lines in the area are ephemeral and only flow during periods of prolonged rainfall.

6.3 Topography

The subject land is located within the Mingela (8248) 1:100,000 and Reid River 8258-3 1:50,000 topographic map sheets. The topography at a regional scale is generally flat to undulating, with elevations from 70 m to 80 m with isolated topographic highs of 100-125 m AHD characterising the river valleys and coastal areas. To the west and north the land becomes steeper basalt ridges, rugged ranges and low hills within the Leichhardt Range and Hervey Range part of the Great Dividing Range.

A topographic plan of the subject land and surrounding area was prepared from topographic data at a scale of 1:25,000 with a 1 m contour interval and is shown in Figure 18. This shows that the subject land lies on the levee and plains adjacent to the Reid River and has low relief landforms gently sloping away from the Reid River from approximately 78 m AHD to around 76 m AHD.

The proposed development shall be located geographically to the centre of the subject land on relatively flat land. The site is inherently well drained due to the impermeable, predominantly grey and brown cracking clay soils and gentle gradient (0.10-15%).

The proposed solid waste and effluent utilisation areas are located on the centre-west of the subject land on relatively flat land as shown on Figure 18.

The subject land has generally retained its historical topography. There has been no modification to the natural landform from mining or quarrying other than groundworks associated with construction of earthen dams for water storage and cut and fill earthworks for the existing development.

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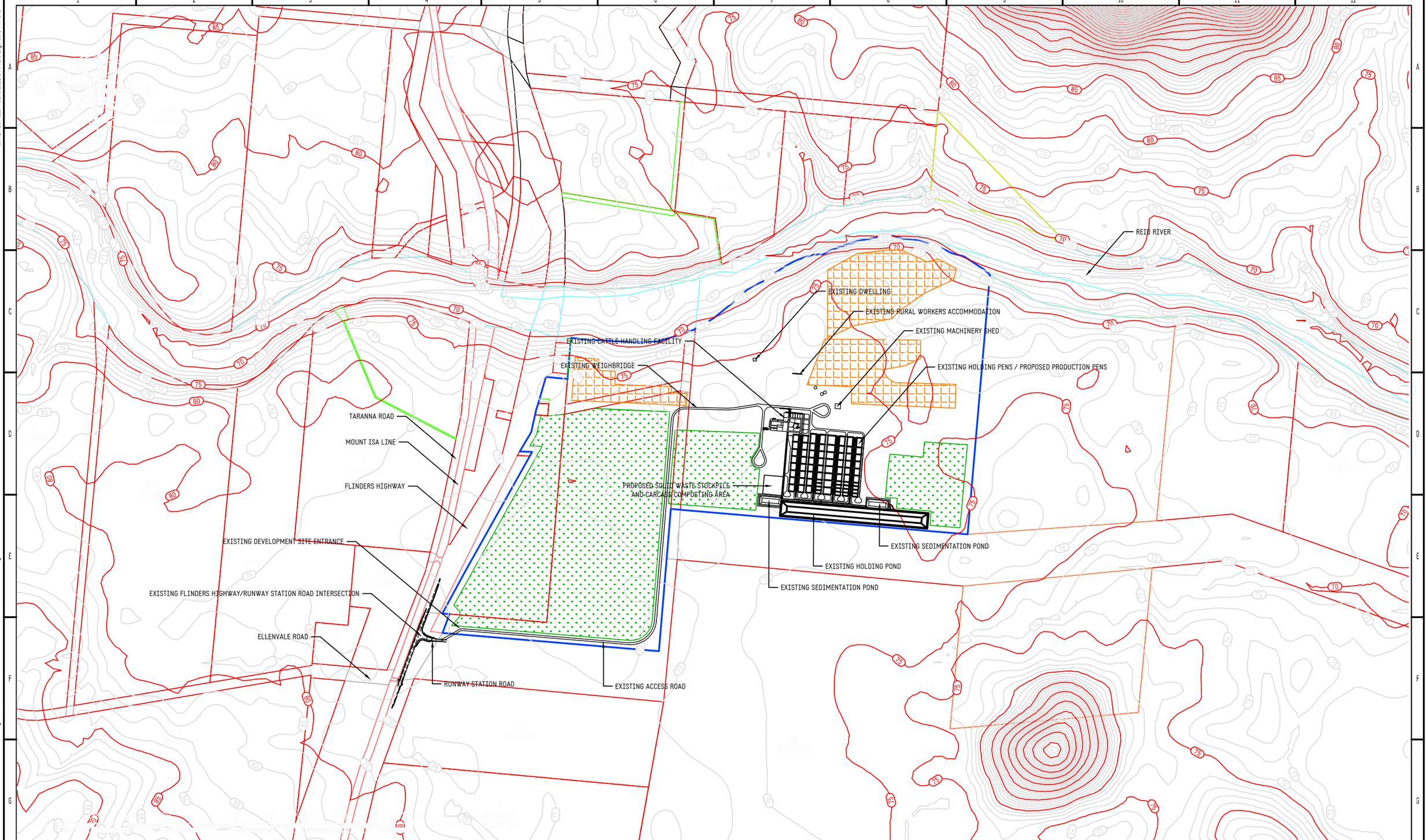

LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- EFFLUENT UTILISATION AREA
- SOLID WASTE UTILISATION AREA
- CONTOUR - MAJOR (5m)
- CONTOUR - MINOR (1m)

NOTES:

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RDC ENGINEERS
AGRICULTURAL
ENVIRONMENTAL
PROJECT MANAGEMENT
ABN 37 627 163 071
PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 829 203
E: info@rdcengineers.com.au

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TITLE: DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE
SUBJECT LAND - TOPOGRAPHIC PLAN

REPORT REFERENCE	SUPPLIED DRAWING NUMBER		DRAWING NUMBER	REV.
FIGURE 18		A3	D1-130-00-18	B

6.4 Land resources

6.4.1 Soils

The land resources of the subject land and surrounding area have been broadly mapped as part of the land systems of the Townsville-Bowen region in North Queensland by Christian et al. (1950). Approximately 1.7 million hectares were mapped at 1:250,000 scale during 1950s. The landscape was assessed using the free survey method and nineteen land systems were identified.

In this publication and corresponding map, three mapping units are identified on the subject land. An excerpt of the soil mapping covering the property is presented in Figure 19. The land systems identified in the subject land are summarised further below.

Christian et al. (1950) land systems mapping was used to gain a general understanding of the soils of the subject land. An overlay of the soil mapping covering the subject land is presented in Figure 19. In this publication and corresponding map, one mapping unit is identified on the subject land being the Kilbogie land system as shown in Figure 19.

A detailed summary of the map unit is summarised in the following section. It must be noted that the Kilbogie Land System (red-brown earths) dominate the subject land as shown in Photograph 25 to Photograph 26.

6.4.1.1 Kilbogie Land System

The Kilbogie Land System has soils developed on granitoid rocks (granodiorites etc.) and volcanics with well developed horizons. The dominant soils are the Dalrymple and Yalboota which have a well-drained grey-brown loamy surface and permeable to impermeable red-brown medium to heavy clay subsoil. Photograph 25 and Photograph 26 illustrate the dominant soil type within the effluent and solid waste utilisation area. The soil type is very similar with a grey-brown loamy surface with a distinct change to a yellow to brown medium clay subsoil.

The vegetation varies with locality, narrow-leaved ironbark, red-barked bloodwood open forest.

These soils on moderate and gentle slopes with little surface stone are well suited for agriculture. A wide range of crops can be grown on these soils, including sugarcane, cotton, fodder crops, summer cereals, peanuts, and sown pastures.

Fertility status is fair, often being low in phosphorus. Subsoil sodicity is undesirably high.

Photograph 25 – Proposed development – Effluent utilisation area – Dominant soil type

Photograph 26 – Proposed development – Solid waste utilisation area – Dominant soil type

The waste utilisation areas shall be located across the Kilbogie Land System and comprise duplex soils with grey to brown fine sandy loamy topsoil to a depth of 20-30cm with a sharp transition to a medium yellowish to reddish brown clays subsoil to a depth of at least 90cm. The loamy duplex soils are ideally suited to the irrigated and dryland cropping.

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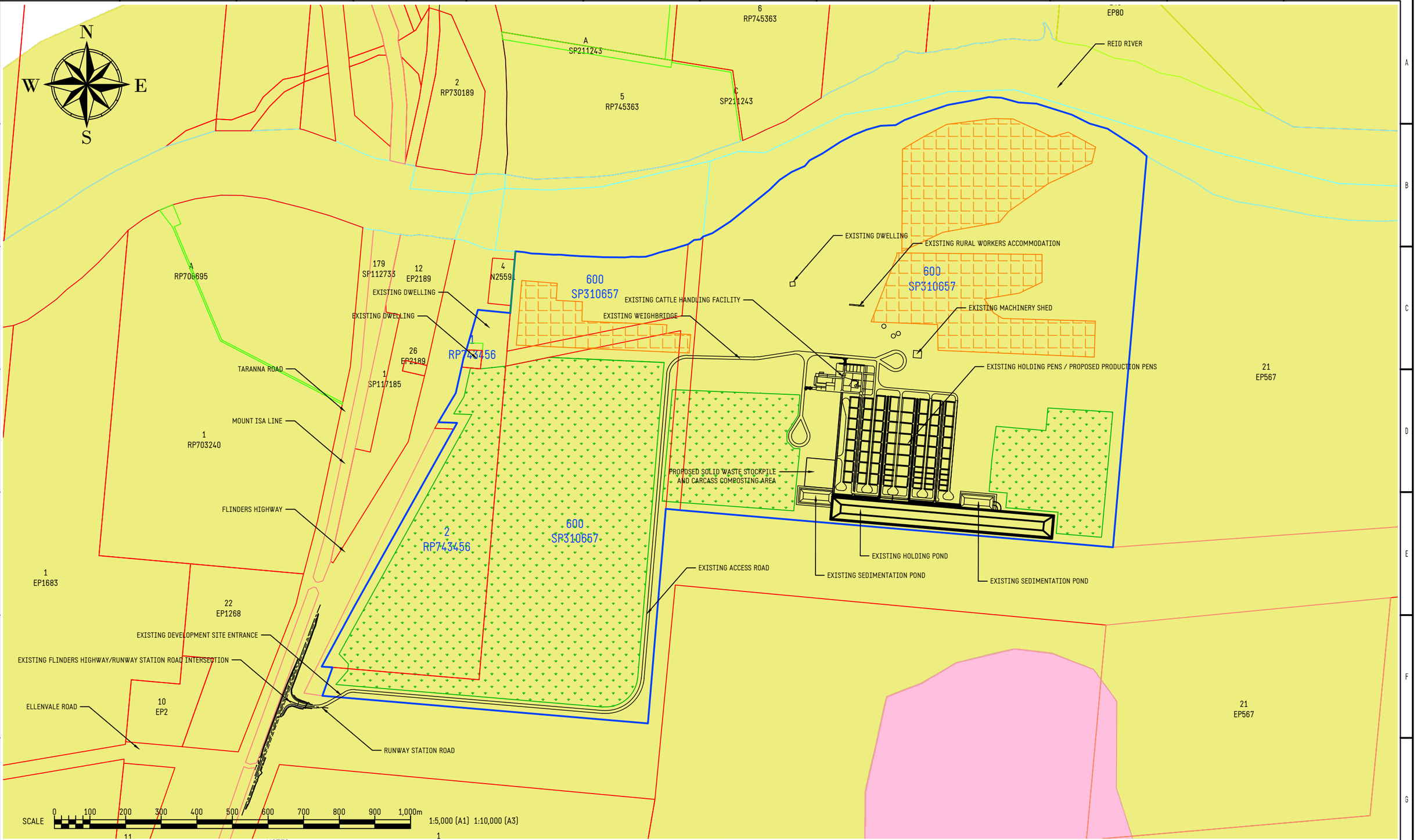

LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- EFFLUENT UTILISATION AREA
- SOLID WASTE UTILISATION AREA
- KILBOGIE (KL)
- LEICHHARDT (Lt)
- STREAM ORDER 1
- STREAM ORDER 2
- STREAM ORDER 3
- STREAM ORDER 4
- STREAM ORDER 5
- STREAM ORDER 6

NOTES

1. THIS IS A LAND SYSTEMS MAP OF THE TOWNSVILLE-BOWEN AREA, NORTH QUEENSLAND. THE STUDY AREA COVERS PARTS OF THE TOWNSVILLE, AYR, BOWEN (SE55-14, SE55-15, SF55-13) 1:250,000 SCALE MAPSHEETS.
2. THIS MAP IS BASED ON DIGITAL GIS DATA FROM THE STATE OF QUEENSLAND (DEPARTMENT OF RESOURCES) 2021 - QUEENSLAND SPATIAL CATALOGUE - LAND SYSTEMS OF THE TOWNSVILLE-BOWEN REGION, NORTH QUEENSLAND - ZCI.
3. LAND SYSTEMS MAPPING HAS BEEN COMPILED AT A MAP SCALE OF 1:250,000. LINEWORK SHOULD BE USED AS A GUIDE ONLY. THE POSITIONAL ACCURACY OF DATA MAPPED AT A SCALE OF 1:250,000 IS ±250 METRES.
4. CADASTRAL INFORMATION BASED ON THE STATE OF QUEENSLAND (DoR) DIGITAL CADASTRAL DATABASE (DCDB) 2021, PROVIDED BY THE QUEENSLAND SPATIAL CATALOGUE AND ACCURACY IS LIMITED.
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SUBJECT LAND - LAND SYSTEM OVERLAY

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FIGURE 19		A3	D1-130-00-19	B

6.4.2 Good quality agricultural land

The Queensland State Planning Policy 1/92 – Development and the Conservation of Agricultural Land (SPP1/92) outlines the policy principles relating to GQAL.

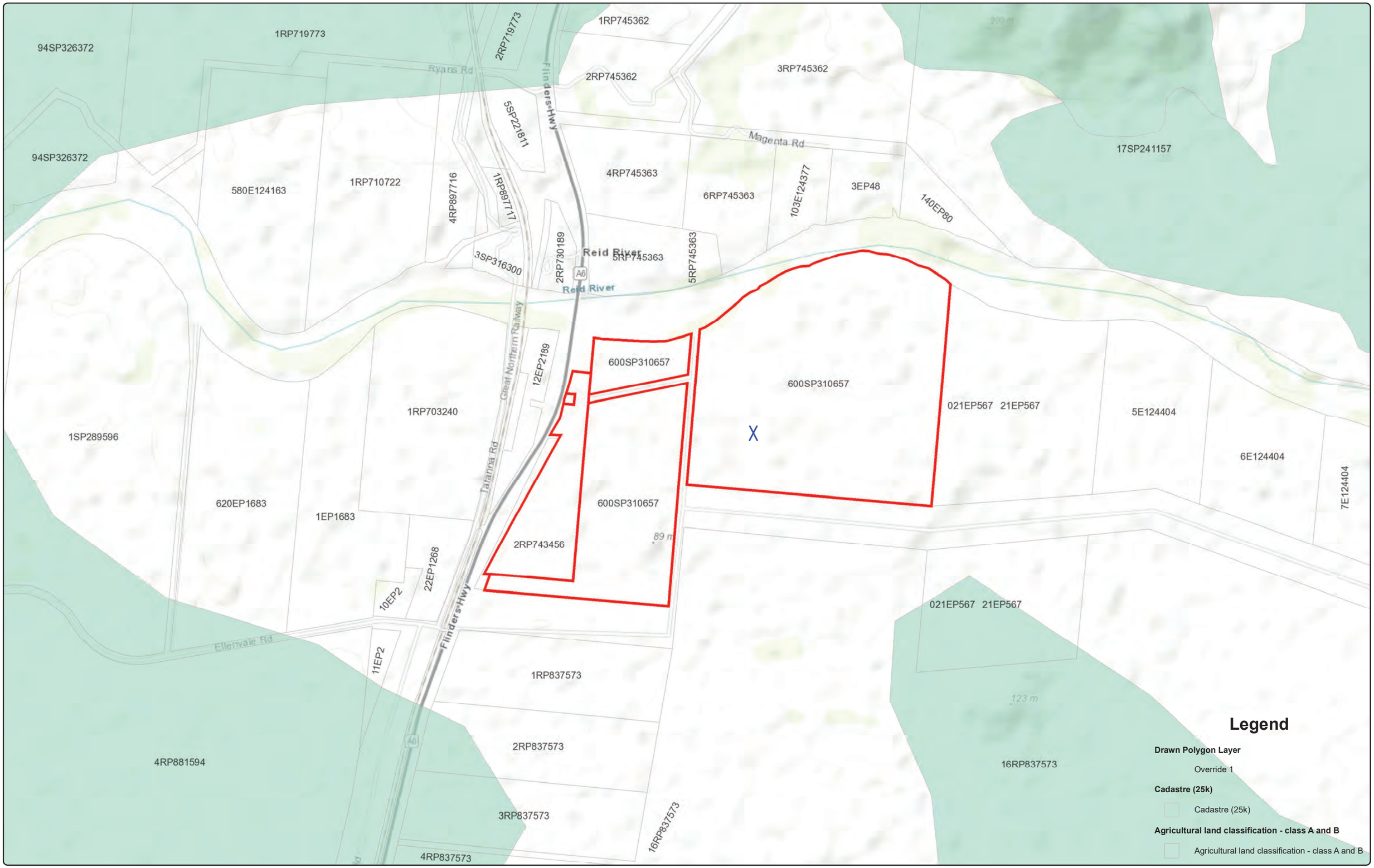
In conjunction with SPP1/92, the Planning Guidelines of the Identification of Good Quality Agricultural Land (Department of Primary Industries & Department of Housing, Local Government and Planning, 1993) defines GQAL as 'land which is capable of sustainable use for agriculture, with a reasonable level of inputs, and without causing degradation of land or other natural resources'.

Department of Primary Industries & Department of Housing, Local Government and Planning (1993) define four classes of agricultural land as outlined below.

- Class A: crop land — land that is suitable for current and potential cropping with limitations to production which range from none to moderate level.
- Class B: limited crop land — land that is marginal for current and potential cropping due to severe limitations, and suitable for pastures. Engineering and/or agronomic improvements may be required before the land is considered for cropping.
- Class C: pasture land — land that is suitable only for improved or native pastures due to limitations which preclude continuous cultivation for crop production, but some areas may tolerate a short period of ground disturbance for pasture establishment.
- Class D: non-agricultural land — land not suitable for agricultural uses due to extreme limitations. This may be undisturbed land with significant habitat, conservation and/or catchment values, or land that may be unsuitable because of very steep slopes, shallow soils, rocky outcrops or poor drainage.

In all local government areas, Class A land is considered GQAL with most local governments also considering Class B land as GQAL. Some local governments also include some Class C land as GQAL. This generally only occurs where pastoral land uses dominate. Class C land can be further separated into C1 – sown improved pastures and C2 – land capable of supporting only native pastures in the long term.

The Agricultural Land Classification overlay of the subject land was obtained from the DSDMIP State Planning Policy (SPP) Interactive Mapping System (IMS) and provided in Figure 20. Figure 20 shows that Agricultural Land Classification Class A and Class B is not mapped over the subject land. The infrastructure of the proposed development shall be located in the centre-south of the subject land and this area is not mapped as Class A and Class B Agricultural land as shown on Figure 20.



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N

State Planning Policy

Making or amending a local planning instrument and designating land for community infrastructure

0 300 600 900 1,200

Metres

X - PROPOSED DEVELOPMENT COMPLEX SITE

Date: 31/03/2022

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FIGURE 20

6.4.3 Strategic cropping land

In 2014, the *Strategic Cropping Land Act 201*1 (SCL Act) was repealed by the Regional *Planning Interests Act 2014* (RPI Act).

The RPI Act identifies and protects areas of regional interest and seeks to manage the impact and support coexistence of resource activities and other regulated activities in areas of regional interest.

The strategic cropping area (SCA) is an area of regional interest under the RPI Act and consists of the areas shown on the SCL Trigger Map as strategic cropping land (SCL). SCL is land that is, or is likely to be, highly suitable for cropping because of a combination of the land's soil, climate and landscape features.

A regional interests development approval (RIDA) may be required when a resource or regulated activity is proposed to be located in an area of regional interest. A resource activity is defined under Section 12 of the RPI Act.

Under the RPI Act a regulated activity is defined as an activity that is prescribed in regulation because it is likely to have a widespread and irreversible impact on an area of regional interest. Widespread means spread over or occupying a wide space. Irreversible means not able to be undone or altered.

Strategic environmental areas include Cape York Peninsula, the Gulf Country, the Channel Country, Fraser Island and Hinchinbrook Island.

The following activities are prescribed as regulated activities in a strategic environmental area under the RPI Act:

- broadacre cropping; and
- water storage (dam).

An SCL overlay of the subject land was created using digital data supplied by the Queensland Spatial Catalogue (QSpatial). SCL data was obtained as an ESRI shapefile. An overlay of cadastral, SCL and the proposed development is shown in Figure 21.

Figure 21 shows that SCL is not mapped over the subject land. Consequently, the infrastructure of the proposed development shall not be located on areas mapped as SCL as shown on Figure 21.

However, as the proposed development is not a resource activity or regulated activity within a strategic environmental area, a regional interests development approval (RIDA) is not required.

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N
W E
S

6
RP745363

EP80

REID RIVER

A
SP211243

2
RP730189

5
RP745363

C
SP211243

A
RP706695

179
SP112733

12
EP2189

4
N2559

600
SP310657

EXISTING DWELLING

EXISTING DWELLING

EXISTING CATTLE HANDLING FACILITY

EXISTING WEIGHBRIDGE

EXISTING DWELLING

EXISTING RURAL WORKERS ACCOMMODATION

600
SP310657

EXISTING MACHINERY SHED

26
EP2189

RP743456

TARANNA ROAD

1
SP117185

EXISTING HOLDING PENS / PROPOSED PRODUCTION PENS

21
EP567

PROPOSED SOLID WASTE STOCKPILE AND CARCASS COMPOSTING AREA

MOUNT ISLA LINE

1
RP703240

FLINDERS HIGHWAY

2
RP743456

600
SP310657

EXISTING HOLDING POND

EXISTING ACCESS ROAD

EXISTING SEDIMENTATION POND

EXISTING SEDIMENTATION POND

1
EP1683

22
EP1268

EXISTING DEVELOPMENT SITE ENTRANCE

EXISTING FLINDERS HIGHWAY/RUNWAY STATION ROAD INTERSECTION

10
EP2

ELLENVALE ROAD

RUNWAY STATION ROAD

21
EP567

SCALE 0 100 200 300 400 500 600 700 800 900 1,000m
1:5,000 (A1) 1:10,000 (A3)

11 1

LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- EFFLUENT UTILISATION AREA
- SOLID WASTE UTILISATION AREA
- STRATEGIC CROPPING LAND

NOTES

1. THIS IS A STRATEGIC CROPPING LAND OVERLAY (SCL) AND REPRESENTS AN ESTIMATE OF STRATEGIC CROPPING IN QUEENSLAND UNDER THE RPI ACT 2014 V3.8.
2. THIS MAP IS BASED ON DIGITAL GIS DATA FROM THE STATE OF QUEENSLAND (DEPARTMENT OF RESOURCES) 2021 - QUEENSLAND SPATIAL CATALOGUE - STRATEGIC CROPPING LAND OVERLAY.
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SUBJECT LAND - STRATEGIC CROPPING LAND OVERLAY

REPORT REFERENCE FIGURE 21
SUPPLIED DRAWING NUMBER
A3
DRAWING NUMBER D1-130-00-21
REV. B

6.4.4 Potential acid sulphate soils

Soils and sediments containing iron sulphides, most commonly pyrite, are called acid sulphate soils (ASS). ASS which have not been oxidised by exposure to air are known as potential acid sulfate soils (PASS). When exposed to air due to drainage or disturbance, these soils produce sulphuric acid, often releasing toxic quantities of iron, aluminium and heavy metals.

PASS commonly occur on coastal wetlands as layers of Holocene marine muds and sands deposited in protected low-energy environments such as barrier estuaries and coastal lakes. In similar environments, they are still being formed.

PASS are formed when seawater or sulphate-rich water mixes with land sediments containing iron oxides and organic matter in a waterlogged situation, in the absence of oxygen.

When PASS are exposed to air (that is, no longer in a waterlogged anaerobic state), the iron sulphides in the soil react with oxygen and water to produce a variety of iron compounds and sulphuric acid. These compounds may contaminate land and adjacent waterways. Following significant rainfall, such contamination may cause red spot disease in fish and destroy aquatic flora and fauna, including highly visible fish kills (Ahern et al. 1998).

PASS occur predominantly on coastal lowlands with elevations generally below 5 m Australian Height Datum (AHD). No detailed PASS mapping for the subject land has been conducted. Ahern et al (1998) recommend areas below 5 m AHD be investigated for PASS prior to commencement of any drainage or excavation works.

Figure 1 and Figure 18 shows that the subject land is not located on coastal lowlands and shown to be at an elevation of about 75-77 m, well above 5 m AHD respectively.

Hence, the area on which the proposed development is to be located is unlikely to contain PASS.

Whilst the land is above 5 m AHD, as the proposed development may involve works requiring excavating and filling of soil, any PASS leachate, can potentially have significant adverse effects on surrounding natural environments. Hence, the State Planning Policy 2/02 Guideline: Acid Sulfate Soils (Version 2) will be used as a source of general advice on the level of investigation, level of treatment and management of ASS should PASS be disturbed.

The proposed development will avoid disturbing PASS or will be managed to avoid or minimise the release of acid and metal contaminants. PASS that have been disturbed will be treated and managed to prevent acid generation and neutralise existing acidity.

6.4.5 Contaminated land

Land contamination can occur as a result of poor environmental management and waste disposal practices or accidental spills in industrial, agricultural or mining activities. In some

cases, land was contaminated in the past by activities now known to be hazardous. Often these cases involve chemicals which have since been banned or are now subject to stricter controls.

In Queensland, the Department of Environment and Science (DES) administers the *Environmental Protection Act 1994* (EP Act). The EP Act's emphasis is on managing Queensland's environment within the principles of ecologically sustainable development. Chapter 7, Part 8 of the EP Act deals with managing contaminated land. Managing potentially contaminating activities and known contaminated sites in Queensland helps prevent environmental and health risks.

The Environmental Management Register (EMR) and the Contaminated Land Register (CLR) are public registers which contain information about contaminated land in Queensland. The EMR also contains information of land which is, or could potentially be, contaminated because it is being used for an activity which may cause contamination.

A search of the DES Environmental Management Register and the Contaminated Land Register was undertaken on the subject land. The subject land is not included on either the Environmental Management Register or the Contaminated Land Register. A copy of the search response for the subject land parcel is included in Appendix F.

6.4.6 Unexploded ordnance

Unexploded Ordnance (UXO) is explosive ordnance such as artillery shells, mortars or grenades that did not explode when used.

Most UXO is found on land formerly used by Australian and Allied Defence Forces for the live firing of explosive ordnance, particularly during World War II.

The Commonwealth's Department of Defence has categorised areas of land as having a 'substantial' potential to be affected by residual unexploded ordnance. DES has developed a database about land that is potentially affected by UXO.

An overlay of areas with substantial potential for UXO relating to the subject land was obtained from the DSDMIP development assessment mapping system and is shown in Figure 22.

Whilst, the subject land was once the site of the Reid River Airfield which operated during World War II as an airfield for US Army Air Force bombardment squadrons, the subject land does not contain any areas with substantial potential for UXO.

Queensland Government

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DA Mapping System – Print Screen

0 300 600 900 1,200

Metres

Date: 01/04/2022

X – PROPOSED DEVELOPMENT COMPLEX SITE

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FIGURE 22

6.5 Water resources

6.5.1 Regulatory framework

The *Water Act 2000* (Water Act) and Water Reform and Other Legislation Amendment Act 2014 (WROLA Act) provide the water planning framework for the allocation and sustainable management of water in Queensland. The Department of Natural Resources, Mines and Energy (DNRME) administers the *Water Act 2000* and Water Reform and Other Legislation Amendment Act 2014.

There are several major drainage basins (catchments) in Queensland. Within most of these catchments, the water planning process is managed with instruments under subordinate legislation to the Water Act and WROLA Act.

The quality of natural waters in Queensland (e.g. water in rivers, creeks, wetlands, lakes, estuaries and coastal areas and ground waters) is protected under the Environmental Protection (Water) Policy 2009 (EPP (Water)). The EPP (Water) achieves the object of the Environmental Protection Act 1994 (EP Act) to protect Queensland's waters while supporting ecologically sustainable development. Queensland waters include water in rivers, streams, wetlands, lakes, aquifers, estuaries and coastal areas.

6.5.2 Catchment areas

Currently, there are 24 catchment water plan areas in Queensland which cover the major drainage basins including the Great Artesian Basin. The subject land is located within the Haughton drainage basin.

6.5.3 Groundwater areas

Underground water areas have been established to protect underground water through the *Water Regulation 2016* or a water plan and include groundwater management areas and subartesian management areas.

6.5.4 Groundwater

The take of underground water is managed differently across Queensland depending on the location and the purpose for which it is taken.

As outlined in section 6.2, the subject land is in the Haughton drainage basin. Water planning in the Haughton basin is managed under the Water Plan (Burdekin Basin) 2007.

The subject land is not located within a sub-artesian groundwater management area of the Water Plan (Burdekin Basin) 2007. Further, the subject land is not located within the Water Plan (Great Artesian Basin and Other Regional Aquifers) 2017 water plan area.

Consequently, the taking of groundwater for stock and domestic or any other purpose within the subject land is not regulated.

To gain an understanding of the depth and quantity of underground water in the area a search of the DRDMW groundwater database was undertaken. Data on the location, casing details, strata logs, aquifer details, water levels (by date) and water analysis (lab and field) for all registered water bores on the subject land were obtained. There are nine (9) registered groundwater bores on the subject land recorded on the DRDMW groundwater database as shown in Table 35 and Figure 23. All production bores are equipped for irrigation and stock intensive purposes with solar, diesel or electric powered pumps.

Examination of the strata log details for subartesian bores shows that they range in depth from 20 m to 30 m and have a standing water level of 12 m to 15 m below ground level. The aquifer has low to medium yields in the order of 2-5 L/s or about 7,000 to 18,000 L/hour.

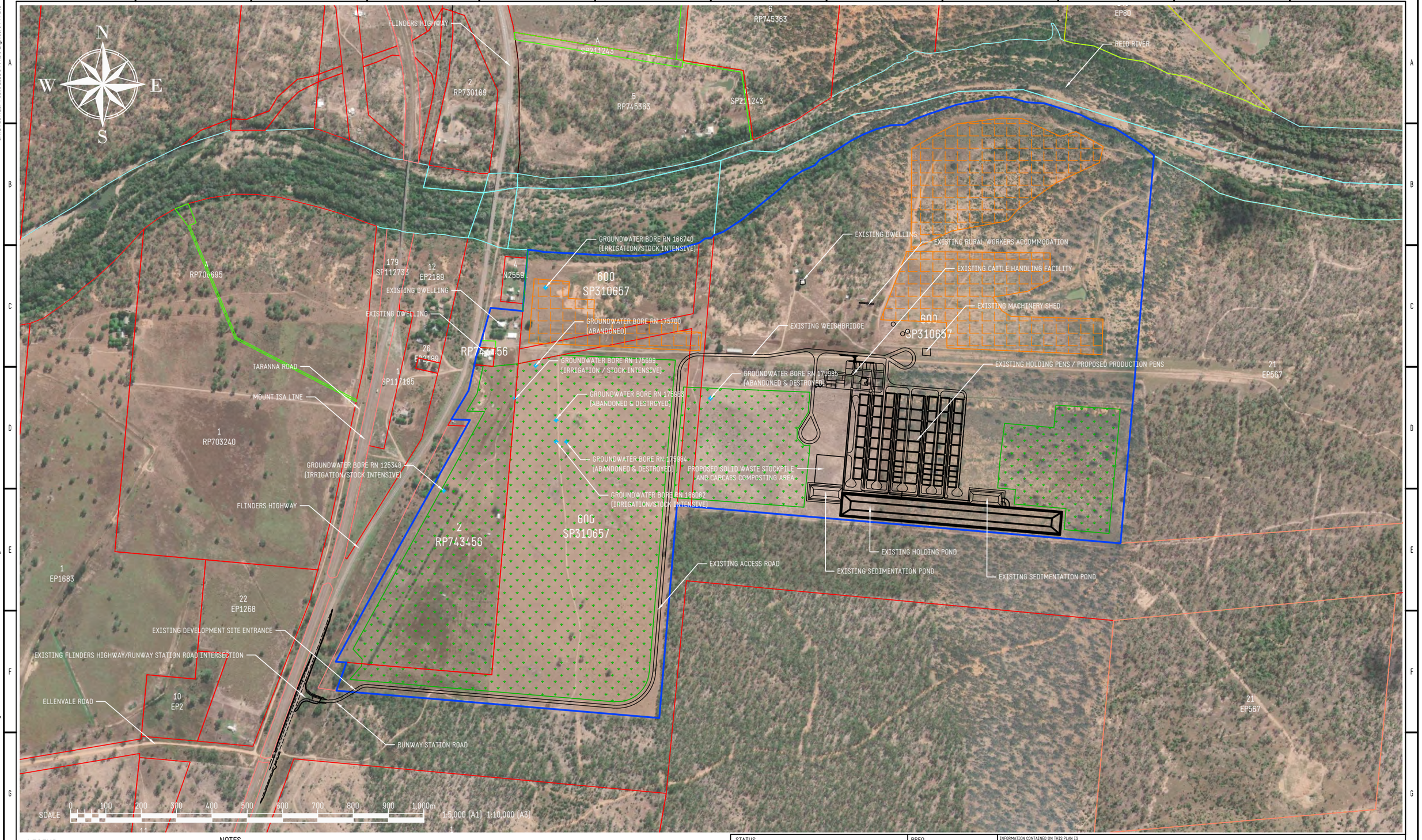
Examination of the strata log details for the registered bores reveals that the top 12 m is clay to sandy clay overlying 10-20 m of conglomerate and weathered granite.

Due to the depth of clay strata above the aquifer, it is unlikely that the proposed development shall have adverse impacts to the quality of groundwater resources in the area. Further, as groundwater use is unregulated the proposed development shall have no adverse impacts to the quantity of groundwater resources in the area.

Table 35 – Subject land – Registered bores

Registered number	Location			Status	Use
	Easting mE	Northing mS	UTM Zone		
125348	482571	7814407	55k	Existing	Irrigation/Stock Intensive
166740*	482859	7814982	55k	Existing	Irrigation/Stock Intensive
166949	489026	7819899	55k	Abandoned & Destroyed	-
175699	482773	7814669	55k	Existing	Irrigation/Stock Intensive
175700	482831	7814761	55k	Abandoned	-
175983	482889	7814607	55k	Abandoned & Destroyed	-
175984	482918	7814546	55k	Abandoned & Destroyed	-
175985	483326	7814669	55k	Abandoned & Destroyed	-
186082	482889	7814546	55k	Existing	Irrigation/Stock Intensive

*Domestic water supply bore located over 500 m from the proposed development complex.



LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- EFFLUENT WASTE UTILISATION AREA
- SOLID WASTE UTILISATION AREA

NOTES

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RDC ENGINEERS
AGRICULTURAL
ENVIRONMENTAL
PROJECT MANAGEMENT
ABN 37 627 163 071
PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 629 203
E: info@rdcengineers.com.au

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DATE	04/06/2022
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DATE	04/06/2022

CLIENT REID RIVER EXPORT DEPOT PTY LTD AS TRUSTEE
PROJECT PROPOSED INTENSIVE ANIMAL INDUSTRY DEVELOPMENT
TITLE DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE
SUBJECT LAND - GROUNDWATER BORES

REPORT REFERENCE	SUPPLIED DRAWING NUMBER		DRAWING NUMBER	REV.
FIGURE 23		A3	D1-130-00-23	B

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FILE NAME: D1-130-00-MASTERPLAN-220228 v8.dwg
FILE PATH: C:\RDC Engineers\RDCE - Projects\01-130 Reid River Feedlot\05 - ACAD MasterPlan\05.1 Drawings - CURRENT

6.5.5 Surface water

As outlined in section 6.2, the subject land is in the Haughton drainage basin. Water planning in the Haughton basin is managed under the Water Plan (Burdekin Basin) 2007.

The surface drainage systems in the Haughton River catchment are characterised by the Haughton River and its major tributaries the Reid River and Major Creek and several minor tributaries including Four Mile Creek and Redbank Creek for example. The Haughton River has its headwaters in the Hervey Range north of Mingela.

The headwaters of the Haughton River rise in the Haughton Valley of the Leichhardt Range near Mingela and flow in a north easterly direction almost immediately crossing the Flinders Highway. The river then passes between Mount Prince Charles and Mount Norman. Reid River discharges into the Haughton River before passing between Piccaninny Mountain and Boundary Hill and continuing through the coastal lowlands before discharging into Bowling Green Bay south of Townsville near Cungulla and then into the Coral Sea.

For part of its length the Reid River forms the northern boundary of the subject land.

Streamflow of creek and rivers of the region reflect the seasonal distribution of rainfall. The predominant source of rainfall is the south-east trade wind, but much rain is also received from tropical influences, particularly tropical cyclones and associated disturbances. During the winter months the tropical influences move to the north. Most of the rainfall occurs during the wet season between November and April. Consequently, most of the streamflow within the region occurs between December and April.

The area is drained by well incised creeks and rivers with limited catchments, short lengths and fast rates of run-off. Consequently, all waterways are very responsive to rainfall from coastal influences and depressions and are characterised by dry stream beds during the dry season with fast stream rises, and occasional major over-bank flows during the wet season.

There are two first order and no second, third and fourth order watercourses defined under the Vegetation Management Act 1999 contained within the subject land. Reid River is a fifth order watercourse under the Vegetation Management Act 1999.

The subject land has been developed for agricultural purposes, including dryland and irrigated cropping and the existing development. The proponent holds an authorisation for the taking of watercourse water from the Reid River with the point of take on or adjacent to Lot 3 on RP715678 with a nominal entitlement of 80 Megalitres (ML). A copy of the licence is provided in Appendix G.

Currently, the taking of overland flow water is regulated under the Water Plan (Burdekin Basin) 2019 for any purpose other than stock and domestic if the works for taking the overland flow water have a capacity of not more than 250 ML or not more than the amount necessary to satisfy the requirements of an environmental authority issued under the Environmental Protection Act 1994.

Figure 24 is a stream order overlay of the subject land derived from DoR vegetation management watercourse data. Figure 24 shows the watercourses mapped on the subject land. There are no drainage features or watercourses mapped on the proposed development site.

The quality of Queensland waters is protected under the Environmental Protection (Water and Wetland Biodiversity) Policy 2019. EPP (Water and Wetland Biodiversity) schedule documents have not been finalised for the Haughton drainage basin.

However, draft environmental values (EVs), water quality objectives (WQOs) and mapping for Burdekin, Haughton and Don basins, and Great Barrier Reef coastal waters are included in the Burdekin Region Water Quality Improvement Plan (WQIP). Key indicators of pollution include relevant to the proposed development include total suspended sediment, turbidity, Nitrogen and its forms and Phosphorus.

Consequently, the proposed design, construction and operation of the proposed development along with mitigation measures shall ensure that the EVs and WQOs for the Haughton drainage basin are maintained or enhanced in accordance with the object of the Environmental Protection Act 1994.

6.5.5.1 Waterways for waterway barrier works

Under the *Fisheries Act 1994* a waterway is defined as a river, creek, stream, watercourse or inlet of the sea. This definition includes freshwater and tidal waters, both permanent and ephemeral waterways, and includes drainage features. Free movement along waterways and onto floodplains is an essential requirement for the survival and productivity of many species of Queensland fish.

Consequently, a Queensland waterways for waterway barrier works of the subject land was obtained from the DSDMIP development assessment mapping system and is shown in Figure 25.

There are no waterways that provide for fish passage under the *Fisheries Act 1994* within the subject land as shown on Figure 25. The Reid River which for part of its length forms the northern boundary of the subject land is a high level (red) waterway under the *Fisheries Act 1994* as shown on Figure 25.

As outlined in section 4, the proposed development complex has been setback over 500 m from the closest mapped waterway (major purple) and shall not involve disturbance of any waterways for waterway barrier works or involve waterway barrier works and therefore a fisheries development approval from Fisheries Queensland is not required.

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N

W E

S

6
RP745363

A
SP211243

2
RP730189

5
RP745363

C
SP211243

EP80

REID RIVER

A
RP706695

179
SP112733

12
EP2189

4
N2559

600
SP310657

EXISTING DWELLING

EXISTING DWELLING

EXISTING CATTLE HANDLING FACILITY

EXISTING WEIGHBRIDGE

EXISTING DWELLING

EXISTING RURAL WORKERS ACCOMMODATION

600
SP310657

EXISTING MACHINERY SHED

26
EP2189

RP743456

1
SP117185

TARANNA ROAD

EXISTING HOLDING PENS / PROPOSED PRODUCTION PENS

21
EP567

MOUNT ISA LINE

1
RP703240

PROPOSED SOLID WASTE STOCKPILE AND CARCASS COMPOSTING AREA

FLINDERS HIGHWAY

2
RP743456

600
SP310657

EXISTING HOLDING POND

EXISTING ACCESS ROAD

EXISTING SEDIMENTATION POND

EXISTING SEDIMENTATION POND

1
EP1683

22
EP1268

EXISTING DEVELOPMENT SITE ENTRANCE

EXISTING FLINDERS HIGHWAY/RUNWAY STATION ROAD INTERSECTION

ELLENVALE ROAD

10
EP2

RUNWAY STATION ROAD

21
EP567

SCALE 0 100 200 300 400 500 600 700 800 900 1,000m

1:5,000 (A1) 1:10,000 (A3)

LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- EFFLUENT UTILISATION AREA
- SOLID WASTE UTILISATION AREA
- STREAM ORDER 1
- STREAM ORDER 2
- STREAM ORDER 3
- STREAM ORDER 4
- STREAM ORDER 5
- STREAM ORDER 6

NOTES

1. THIS IS A ORDERED DRAINAGE OVERLAY BASED ON GEOSCIENCE AUSTRALIA 1:100,000 DRAINAGE NETWORK OF QUEENSLAND AND HAS STREAMS CONNECTED AND DIRECTIONALISED WITH REACHES ORDERED USING STRAHLER METHOD OF STREAM ORDERING.
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AGRICULTURAL ENVIRONMENTAL PROJECT MANAGEMENT
ABN 37 627 163 071
PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 629 203
E: info@rdcengineers.com.au

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DATE	04/06/2022
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DATE	04/06/2022

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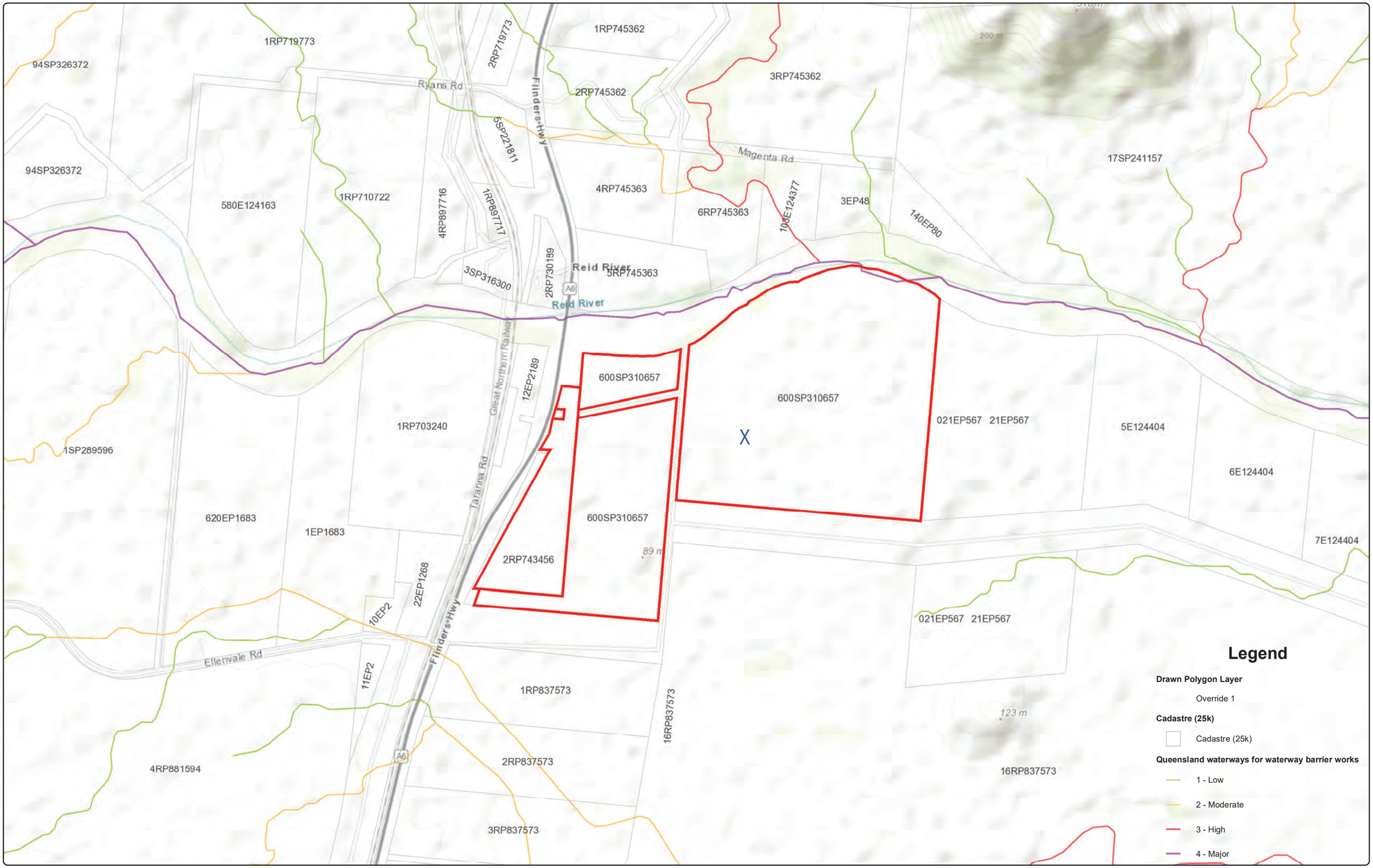
PROJECT PROPOSED INTENSIVE ANIMAL INDUSTRY DEVELOPMENT

TITLE DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE
SUBJECT LAND - STREAM ORDER OVERLAY

REPORT REFERENCE	SUPPLIED DRAWING NUMBER		DRAWING NUMBER	REV.
FIGURE 23		A3	D1-130-00-23	B



Queensland Government

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N

DA Mapping System – Print Screen

0 300 600 900 1,200

Metres

Date: 01/04/2022

X - PROPOSED DEVELOPMENT COMPLEX SITE

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FIGURE 25

6.5.6 Flooding

Whilst located in the drier part of the Queensland tropics, the Haughton drainage basin has a long history of flooding due to the distinct and predictable climatic seasonality. Almost all rainfall in the region occurs during the wet season between November and April. As a consequence, flow in the rivers is strongly seasonal.

The catchment is very responsive to rainfall from coastal influences and depressions. The lower channel of the Haughton River crosses the western part of the Burdekin floodplain and loses capacity in a downstream direction, causing widespread overbank flow. The joint floodplain is drained by Barratta Creek which receives overbank discharges from both the Haughton River and Burdekin River and also local floods from it's own catchment.

Floods originate from different sub-catchments following heavy rain from rain depressions following tropical cyclones which enter from both the Coral Sea or the Gulf of Carpentaria and typically travel in a southerly direction. Flood generation is usually from widespread overland flow which requires significant infiltration before it can occur. Generally, floods occur between the months January to April

The subject land is in the mid to upper reaches of the drainage basin and located on the river levees of the Reid River.

Potential floodplain areas within drainage sub-basins have been developed by the Queensland Floodplain Assessment Overlay (QFAO). The QFAO represents an estimate of areas potentially at threat of inundation by flooding. The data has been developed through a process of drainage sub-basin analysis utilising data sources including 10 metre contours, historical flood records, vegetation and soils mapping and satellite imagery.

A custom flood overlay of the subject land was created using digital data obtained from the Queensland Spatial Catalogue (QSpatial) Queensland floodplain assessment overlay. An overlay of cadastral, potential flood hazard area and the proposed development on the subject land was prepared and shown in Figure 26.

All of the subject land is mapped within the Queensland Floodplain Assessment Overlay – Rapid Hazard Assessment as shown on Figure 26.

Charters Towers Regional Council has adopted the QRA Queensland Reconstruction Authority state flooding mapping and consequently areas along the Reid River are also mapped within the flood hazard overlay of the Charters Towers Regional Town Plan as shown in Figure 27. Figure 27 shows that all of the subject land is mapped as a QRA Level 1 – Flood Hazard Area.

There is no 1% AEP flood mapping for the Haughton River Basin. Consequently, WRM Water & Environment Pty Ltd were engaged to undertake a flood study of the Reid River to assess the 1% AEP flood level at the location of the subject land to determine their flood immunity in this event. A copy of the WRM Flood Study is provided in Appendix H.

The results for the 1% AEP flood event from the WRM Water & Environment Pty Ltd flood impact assessment are shown in Figure 28.

Figure 28 shows that the modelled 1% AEP flood levels are well within the channel banks of the Reid River. Flood levels adjacent to the lot on which the Reid River Export Depot is sited range from 70 mAHD at the Flinders Highway to 66 mAHD at the eastern boundary. Reid River channel bank elevations vary between approximately 75 mAHD and 72 mAHD along this reach.

Figure 28 shows that apart from limited backwater flooding in minor tributary gullies the subject land and proposed development site would not be inundated in a 1% AEP flood event.

Consequently, the proposed development complex shall not affect or be subject to inundation during flood events as shown in Figure 28.

Further, the infrastructure of the proposed development has been sited and designed to:

- minimise concentration or restriction of local catchment flows; and
- avoid diversion of flow to adjoining landholders.

Consequently, the proposed development shall not increase the potential for flood damage on-site or to other property and the risk to life, property, community, economic activity and the environment during flood events remains at the same level as that exists pre-development.

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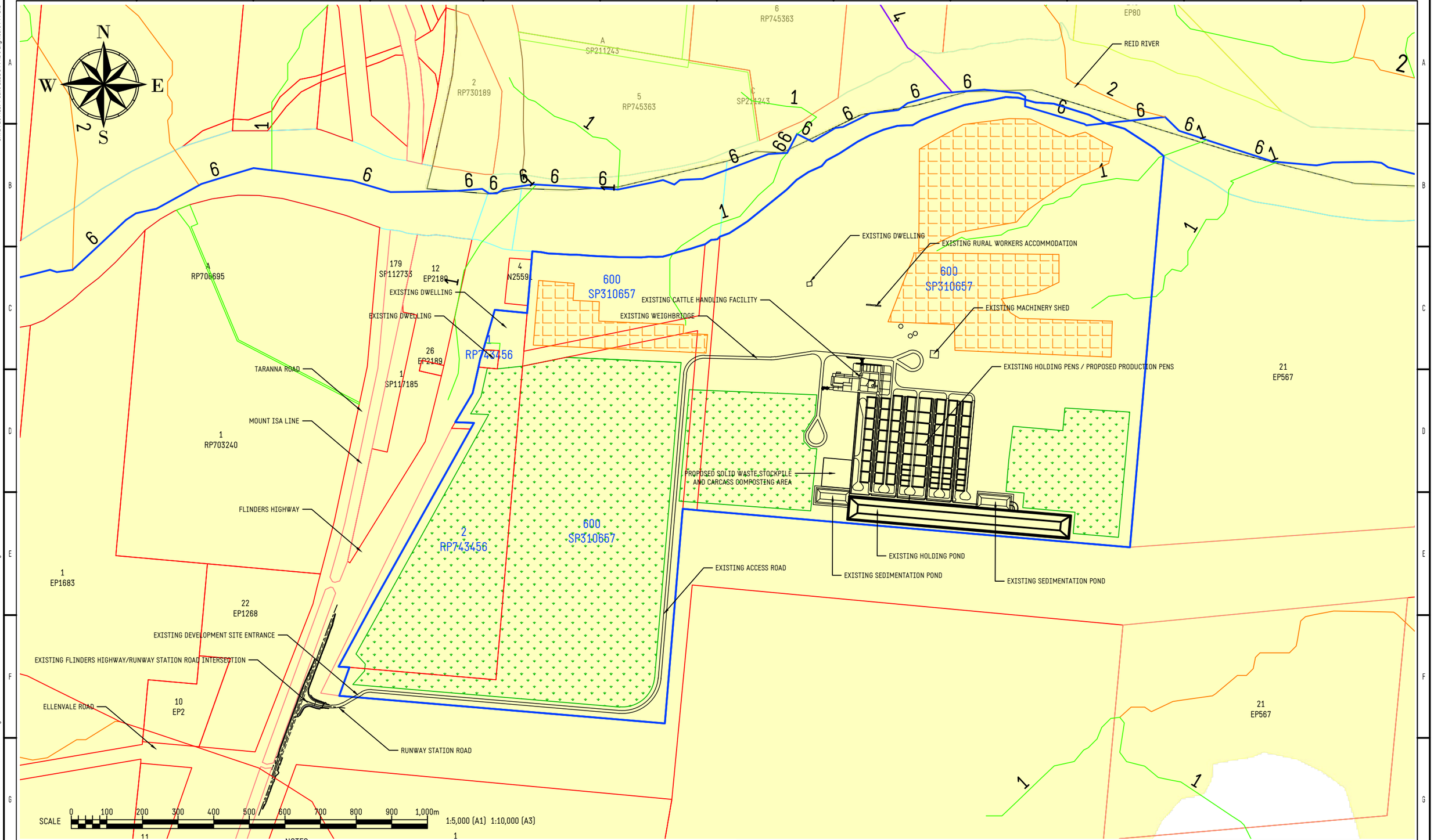

LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- EFFLUENT UTILISATION AREA
- SOLID WASTE UTILISATION AREA
- FLOODPLAIN HAZARD AREA
- STREAM ORDER 1
- STREAM ORDER 2
- STREAM ORDER 3
- STREAM ORDER 4
- STREAM ORDER 5
- STREAM ORDER 6

NOTES

1. THIS IS A FLOODPLAIN ASSESSMENT OVERLAY (QFAO) AND REPRESENTS A FLOODPLAIN AREA WITHIN DRAINAGE SUB-BASINS IN QUEENSLAND. IT REPRESENTS AN ESTIMATE OF AREAS POTENTIALLY AT THREAT OF INUNDATION BY FLOODING.
2. THIS MAP IS BASED ON DIGITAL GIS DATA FROM THE STATE OF QUEENSLAND (DEPARTMENT OF RESOURCES) 2021 - QUEENSLAND SPATIAL CATALOGUE - FLOODPLAIN ASSESSMENT OVERLAY.
3. FLOODPLAIN ASSESSMENT MAPPING HAS BEEN COMPILED AT A MAP SCALE OF 1:100,000. LINEWORK SHOULD BE USED AS A GUIDE ONLY.
4. THE POSITIONAL ACCURACY OF FLOODPLAIN ASSESSMENT MAPPING DATA MAPPED AT A SCALE OF 1:100,000 IS ±100 METRES.
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PO BOX 1223
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TITLE: DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE
SUBJECT LAND - QUEENSLAND FLOODPLAIN HAZARD OVERLAY

REPORT REFERENCE: FIGURE 26
SUPPLIED DRAWING NUMBER:
A3
DRAWING NUMBER: D1-130-00-26
REV.: B

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CHARTERS TOWERS REGIONAL COUNCIL

Charters Towers Regional Town Plan Flood Hazard Overlay Map

Flood Prone Areas

- Flood Hazard Area - QRA Level 1
- Significant Hazard Area – QRA Level 2 with 1% AEP
- High Hazard Area – QRA Level 2 with 1% AEP
- Extreme Hazard Area – QRA Level 2 with 1% AEP

Other Map Layers

- Cadastral Boundary
- Local Government Boundary
- Waterway
- Railway Network
- Major Roads

X - PROPOSED DEVELOPMENT COMPLEX SITE

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Cadastral boundaries as at December 2019 sourced from QSpatial. Floodplain Assessment Overlay, Queensland Reconstruction Authority (QRA) as at 17/10/2013, sourced from QSpatial. Localised Flood Hazard 1% AEP (QRA Level 2) for Charters Towers, Pentland and Sellheim supplied by QRA August and November 2018. Localised Flood Hazard Study Areas are indicative only.

Refer to State Goverment mapping for the latest version of the overlay if applicable.

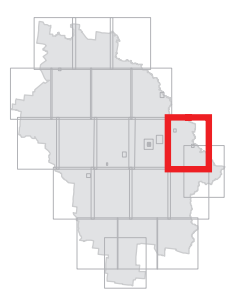
Geocentric Datum of Australia (GDA94)

29/12/2019

Approx Scale @ A3 1:250,000

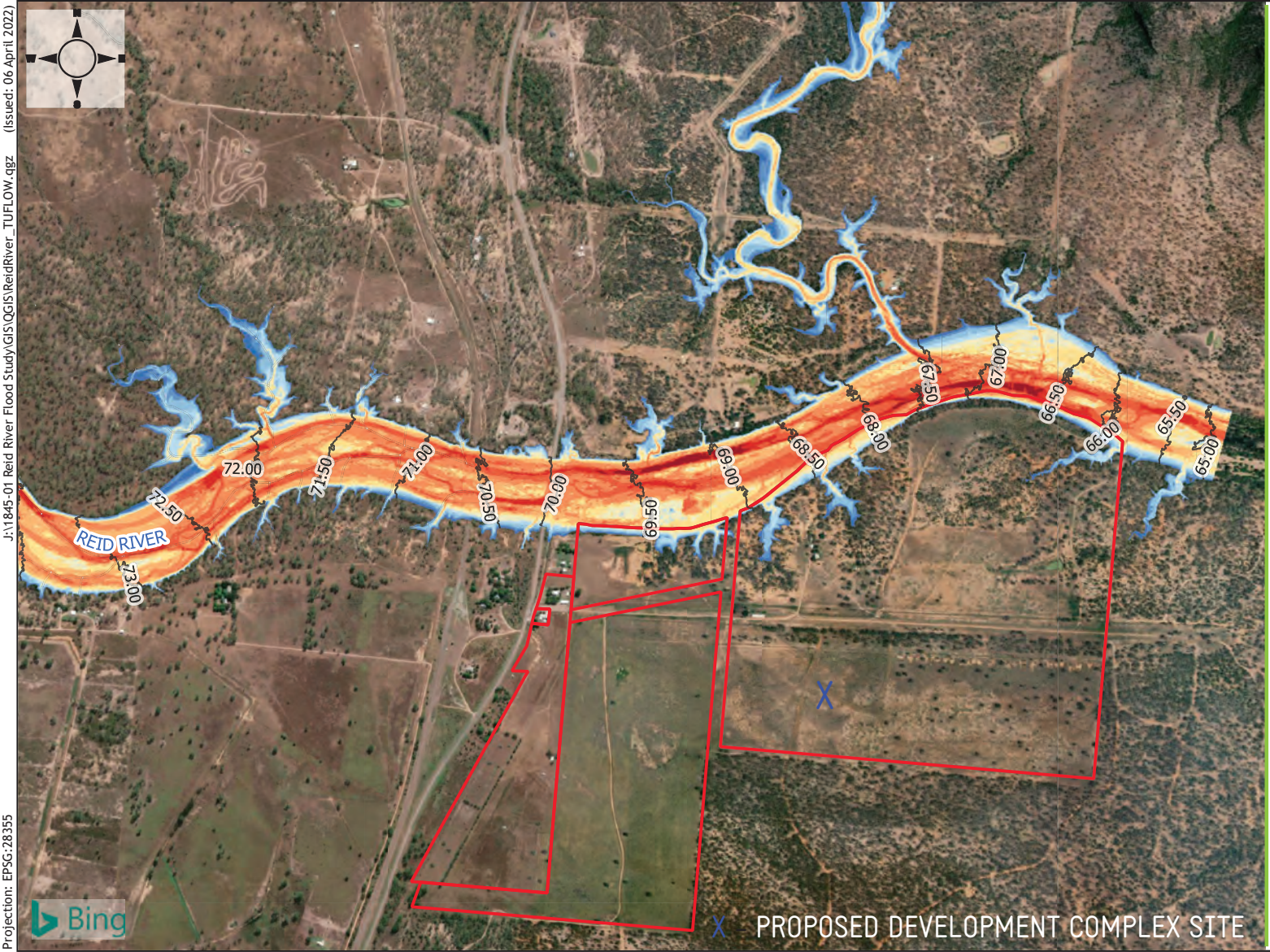
0 6.5 13

km



Flood Hazard Overlay - OM3.27
Map 12

FIGURE 27



Legend

- Reid River depot property boundary
- 0.5m contours (mAHD)

Depth

- up to 0.50m
- 0.50 to 1.0m
- 1.0 to 2.0m
- 2.0 to 3.0m
- 3.0 to 4.0m
- 4.0 to 5.0m
- 5.0 to 6.0m
- 6.0 to 7.0m
- 7.0 to 8.0m
- 8.0 to 9.0m
- > 9.0m

0 250 500 m

Reid River Export Depot Flood Assessment

Flood depths and heights
1% AEP event

wrm water + environment

FIGURE 28

J:\1845-01 Reid River Flood Study\GIS\QGIS\ReidRiver_TUFLOW.qgz (Issued: 06 April 2022)

Projection: EPSG:28355

6.5.7 Declared water resource catchment areas

As outlined in section 8.2.1.6, the subject land is not located in a water resource catchment area declared under the Charters Towers Regional Town Plan (Charters Towers Regional Council, 2020).

The subject land on which the development is proposed is in a catchment that discharges to Bowling Green Bay and the Coral Sea north of Giru. The site does not discharge to the Ross River and or other Townsville regional catchments nor its water supply.

6.6 Biodiversity

6.6.1 Vegetation

The clearing of native vegetation in Queensland is regulated by both Australian (*Environment Protection and Biodiversity Conservation Act 1999*) and Queensland legislation. The *Vegetation Management Act 1999*, the *Planning Act 2016* and other associated policies and codes regulate clearing of native vegetation in Queensland. Various reforms to the vegetation management laws have been undertaken since 1999.

6.6.1.1 Regulated vegetation

The regulated vegetation management map shows vegetation categories on a parcel of land and is used to determine what vegetation is regulated.

A regulated vegetation overlay of the subject land was prepared based on digital data obtained from the Queensland Spatial Catalogue (QSpatial) Vegetation management - regulated vegetation management map - version 5.03. An overlay of cadastral, regulated vegetation, and the proposed development was prepared and is shown in Figure 29. The subject land is located within the Townsville Plains subregion of the Brigalow Belt bioregion. Within each bioregion there are plant communities called regional ecosystems.

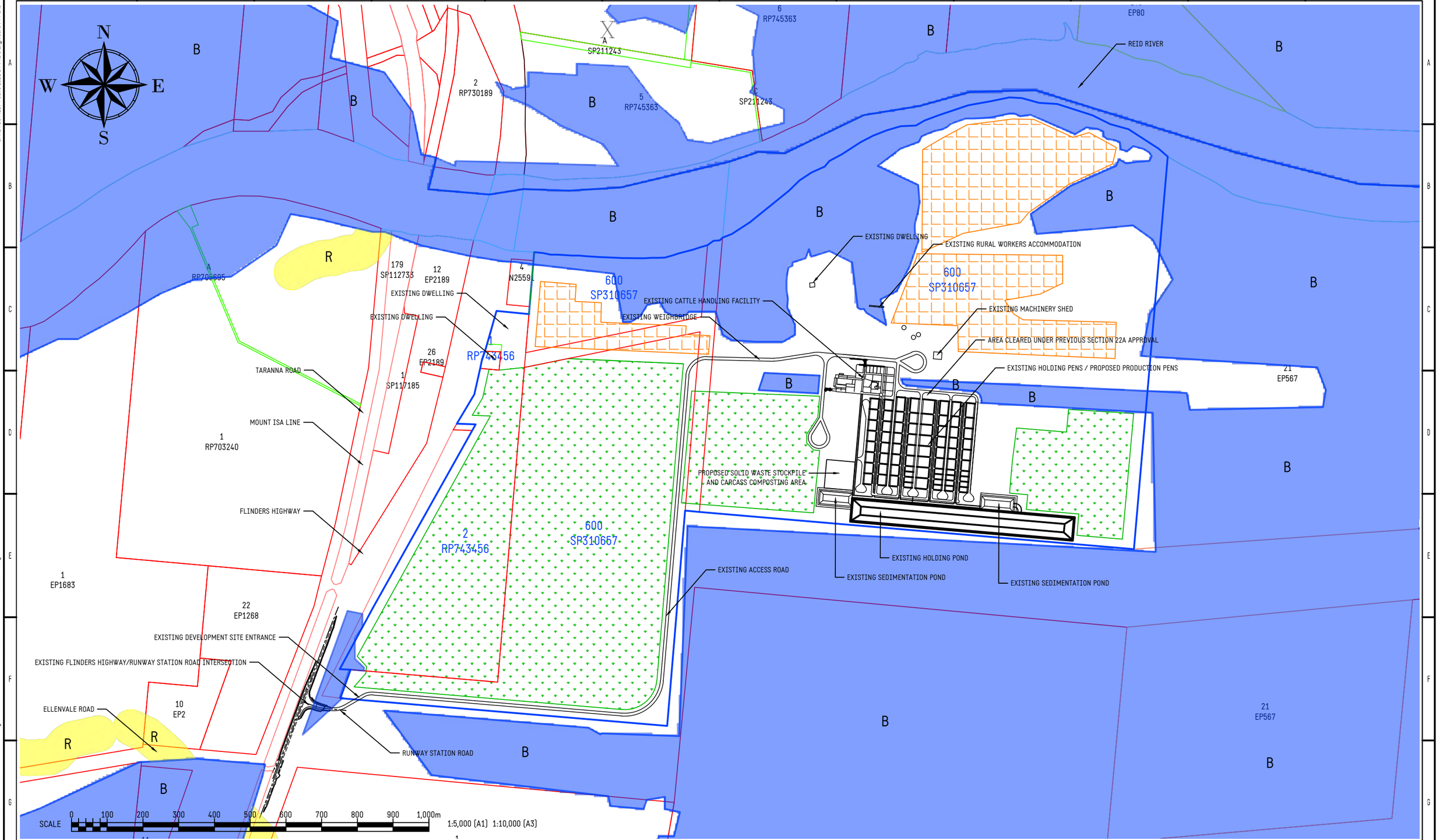
Figure 29 shows there are areas of Category X (not regulated under the Vegetation Management Act 1999) and areas of Category B (remnant vegetation) areas on the subject land. There are no areas of Category C (high-value regrowth vegetation) on the subject land.

Clearing activities can be conducted within Category X areas without obtaining a permit or notifying the DoR. However, other state or Commonwealth laws may apply. Category B areas are subject to clearing requirements. In these areas, vegetation can only be cleared in accordance with an exemption, a self-assessable vegetation clearing code, an area management plan or a development approval.

The regulated vegetation map for the subject land was obtained from the Department of Resources online vegetation mapping system in Adobe Portable Document Format (PDF) and is provided in Appendix I.

The proposed development is sited to avoid areas of regulated vegetation as shown on Figure 30 as far as practical. The proposed development complex shall utilise existing built infrastructure as shown in Photograph 27 and is located over 35 m from regulated vegetation that is Category B Area containing 'least concern' regional ecosystems located on the subject land. The solid waste and effluent utilisation areas shall be located on land that has been previously or currently cultivated. Consequently, no regulated vegetation will be disturbed as part of the proposed development.

Photograph 27 – Proposed development – Existing built infrastructure



LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- EFFLUENT UTILISATION AREA
- SOLID WASTE UTILISATION AREA
- CATEGORY A AREA (VEGETATION OFFSETS/COMPLIANCE NOTICES/VDECS
- CATEGORY B AREA (REMNANT VEGETATION)
- CATEGORY C AREA (HIGH-VALUE REGROWTH)
- CATEGORY R AREA (REEF REGROWTH WATERCOURSE)
- CATEGORY X AREA (EXEMPT CLEARING WORK ON FREEHOLD LAND)
- STREAM ORDER 1
- STREAM ORDER 2
- STREAM ORDER 3
- STREAM ORDER 4
- STREAM ORDER 5
- STREAM ORDER 6

NOTES

1. THIS IS A REGULATED VEGETATION MANAGEMENT MAP AS DEFINED BY s20A OF THE VEGETATION MANAGEMENT ACT 1999. THE MAP INCORPORATES ELEMENTS OF THE REGULATED VEGETATION MANAGEMENT MAP VERSION 5.0.
2. THIS MAP IS BASED ON DIGITAL GIS DATA FROM THE STATE OF QUEENSLAND (DEPARTMENT OF RESOURCES) 2021 - QUEENSLAND SPATIAL CATALOGUE - VEGETATION MANAGEMENT REGULATED VEGETATION - VERSION 5.0.
3. REGULATED VEGETATION HAS BEEN COMPILED AT A MAP SCALE OF 1:100,000, EXCEPT IN DESIGNATED AREA, WHERE COMPILATION SCALE OF 1:50,000 OR 1:25,000 IS AVAILABLE. LINEWORK SHOULD BE USED AS A GUIDE ONLY.
4. REGULATED VEGETATION MAPPING IN PART, BASED ON SURVEYS OF VEGETATION COMMUNITIES AND RELATED LANDFORM, SOILS AND GEOLOGY IS BASED ON LANDSAT IMAGERY FOR 2015.
5. THE POSITIONAL ACCURACY OF REGULATED VEGETATION DATA MAPPED AT A SCALE OF 1:100,000 IS ±100 METRES.

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RDC ENGINEERS
AGRICULTURAL
ENVIRONMENTAL
PROJECT MANAGEMENT
ABN 37 627 163 071
PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 829 203
E: info@rdcengineers.com.au

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A	29/05/22	DRAFT ISSUE TO CLIENT	RJD	RJD	RJD
B	04/06/22	FINAL ISSUE FOR LODGEMENT TO CTRC	RJD	RJD	RJD

SCALE	1:10,000 (A3)
DRAWN	RJD
DATE	04/06/2022
CHECKED	RJD
DATE	04/06/2022
APPROVED	RJD
DATE	04/06/2022

CLIENT: REID RIVER EXPORT DEPOT PTY LTD AS TRUSTEE
PROJECT: PROPOSED INTENSIVE ANIMAL INDUSTRY DEVELOPMENT
TITLE: DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE
SUBJECT LAND - REGULATED VEGETATION OVERLAY

REPORT REFERENCE	SUPPLIED DRAWING NUMBER		DRAWING NUMBER	REV.
FIGURE 29		A3	D1-130-00-29	B

DATE PLOTTED: 4 June 2022 BY: - RDC Engineers PTY LTD
FILE NAME: D1-130-00-MASTERPLAN-220228 v8.dwg
FILE PATH: C:\RDC Engineers\RDCE - Projects\101-130 Reid River Feedlot\05 - ACAD MasterPlan\05.1 Drawings - CURRENT

6.6.1.2 Regional ecosystem

Regional ecosystems are vegetation communities in a bioregion that are consistently associated with a combination of geology, landform and soil (Sattler and Williams, 1999).

A custom regional ecosystem map of the subject land was created using digital data obtained from the Queensland Spatial Catalogue (QSpatial) Vegetation management regional ecosystem map - version 12.00. An overlay of cadastral, regional ecosystems, and the proposed development was prepared and shown in Figure 30.

Figure 30 shows that there is 'least concern' regional ecosystem mapping units identified on the subject land. The closest regional ecosystem to the proposed development site is a strip of the 'least concern' regional ecosystem mapped some 50 m north of the proposed development complex.

The short and long descriptions of the regional ecosystems mapped within 2,000 m of the proposed development complex are provided in the following sections. It must be noted that the mapping units may be complex and contain one or more of the following regional ecosystems.

No regional ecosystems will be disturbed as part of the proposed development as shown on Figure 30.

6.6.1.2.1 'Least concern' regional ecosystem

6.6.1.2.1.1 11.3.10

Short Description:

Eucalyptus brownii woodland on alluvial plains

Description:

Eucalyptus brownii woodland to open woodland. The ground layer is typically tussock grasses, including Aristida spp., Chloris spp., Fimbristylis dichotoma, Eriachne spp., Eragrostis spp. and Chrysopogon fallax. Areas on fertile soils may contain Heteropogon contortus, Bothriochloa bladhii and Chrysopogon fallax. Occurs on Cainozoic alluvial plains. (BVG1M: 17a)

Vegetation communities in this regional ecosystem include:

11.3.10a: Eucalyptus brownii woodland on closed depressions. Occurs on closed depressions. Palustrine (BVG1M: 17a)
11.3.10b: Eucalyptus brownii woodland on floodplains. Not a Wetland (BVG1M: 17a)

6.6.1.2.1.2 11.3.35

Short Description:

Eucalyptus platyphylla (white gum), Corymbia clarksoniana (grey bloodwood) woodland on alluvial plains

Description:

Eucalyptus platyphylla, Corymbia clarksoniana woodland, occasionally with Corymbia tessellaris. A secondary tree layer commonly occurs, including Planchonia careya, Pandanus spiralis, Melaleuca viridiflora or M. nervosa and Petalostigma pubescens. The ground layer is usually tussock grasses, including Themeda triandra, Heteropogon contortus, Mnesithea rottboellioides and Bothriochloa decipiens, together with herbs or forbs such as Glycine tabacina, Galactia tenuiflora or Sida hackettiana. Occurs on Cainozoic alluvial plains. Older floodplain complexes, major stream levees and lighter deltaic deposits. (BVG1M: 9e)

Vegetation communities in this regional ecosystem include:

11.3.35a: Corymbia tessellaris, C. clarksoniana and Eucalyptus platyphylla woodland. Not a Wetland (BVG1M: 9e)

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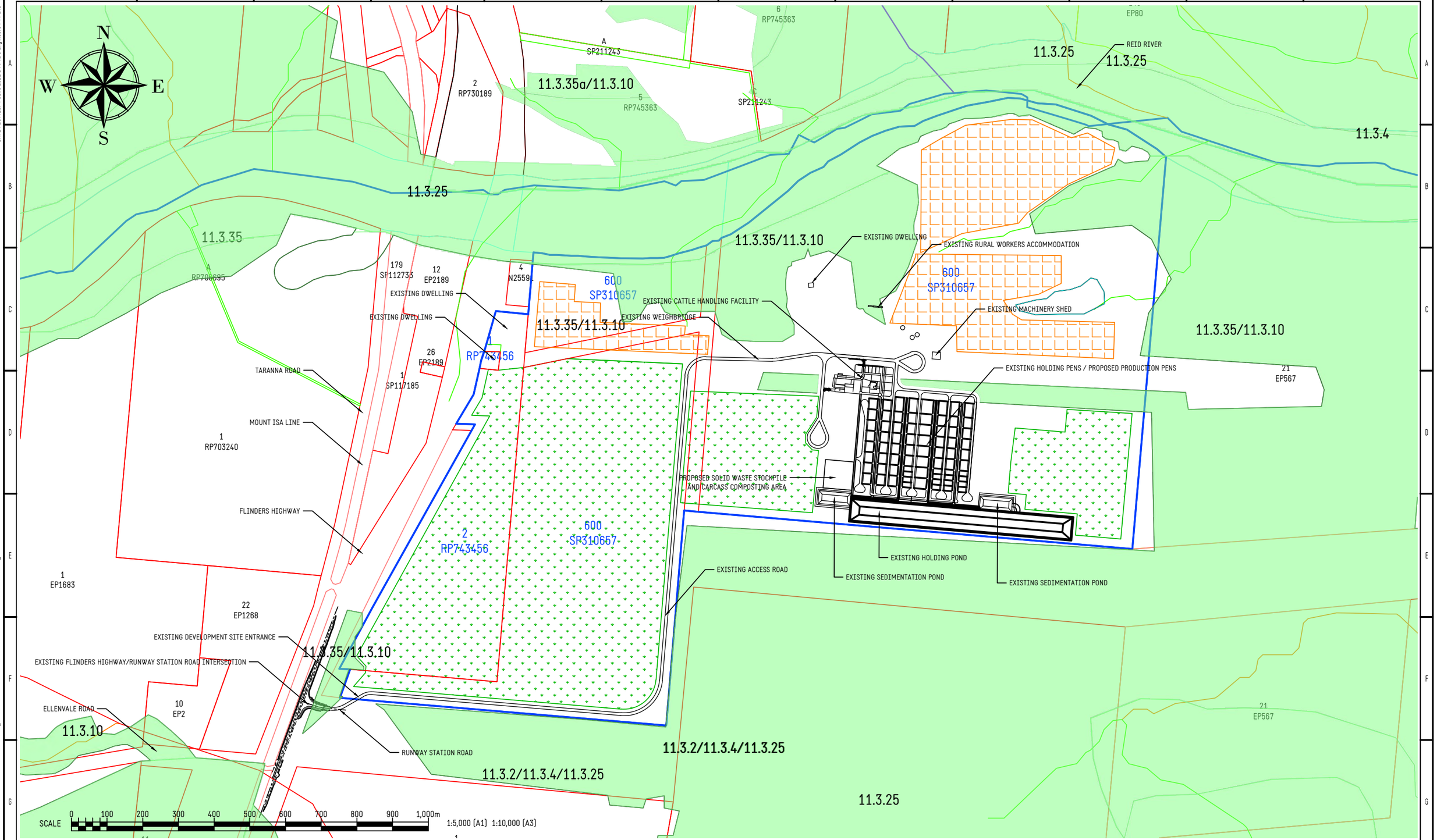

LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- EFFLUENT UTILISATION AREA
- SOLID WASTE UTILISATION AREA
- CATEGORY A OR B AREA CONTAINING ENDANGERED REGIONAL ECOSYSTEMS
- CATEGORY A OR B AREA CONTAINING OF CONCERN REGIONAL ECOSYSTEMS
- CATEGORY A OR B AREA THAT IS A LEAST CONCERN REGIONAL ECOSYSTEM
- CATEGORY C AREA THAT IS A LEAST CONCERN REGIONAL ECOSYSTEM
- STREAM ORDER 1
- STREAM ORDER 2
- STREAM ORDER 3
- STREAM ORDER 4
- STREAM ORDER 5
- STREAM ORDER 6

NOTES

1. THIS IS A VEGETATION MANAGEMENT REGIONAL ECOSYSTEM MAP AND PROVIDES REGIONAL ECOSYSTEM AND VEGETATION MANAGEMENT STATUS TO SUPPORT THE REGULATED VEGETATION MANAGEMENT MAP. THE MAP INCORPORATES ELEMENTS OF THE REGULATED VEGETATION MANAGEMENT MAP AND THE REGIONAL ECOSYSTEM MAPPING VERSION 12.0.
2. THIS MAP IS BASED ON DIGITAL GIS DATA FROM THE STATE OF QUEENSLAND (DEPARTMENT OF RESOURCES) 2021 - QUEENSLAND SPATIAL CATALOGUE - VEGETATION MANAGEMENT REGIONAL ECOSYSTEM MAPPING - VERSION 12.0.
3. REGIONAL ECOSYSTEM MAPPING HAS BEEN COMPILED AT A MAP SCALE OF 1:100,000, EXCEPT IN DESIGNATED AREA, WHERE COMPILATION SCALE OF 1:50,000 OR 1:25,000 IS AVAILABLE. LINEWORK SHOULD BE USED AS A GUIDE ONLY.
4. 2015 REMNANT REGIONAL ECOSYSTEMS MAPPING AT A MAP SCALE OF 1:100,000 and 1:50,000, 1:25,000 IN PART, BASED ON SURVEYS OF VEGETATION COMMUNITIES AND RELATED LANDFORM, SOILS AND GEOLOGY IS BASED ON LANDSAT IMAGERY FOR 2015.
5. THE POSITIONAL ACCURACY OF REGIONAL ECOSYSTEM DATA MAPPED AT A SCALE OF 1:100,000 IS ±100 METRES.

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RDC ENGINEERS
AGRICULTURAL
ENVIRONMENTAL
PROJECT MANAGEMENT
ABN 37 627 163 071
PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 629 203
E: info@rdcengineers.com.au

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REPORT REFERENCE	SUPPLIED DRAWING NUMBER		DRAWING NUMBER	REV.
FIGURE 30		A3	D1-130-00-30	B

FILE PATH: C:\RDC Engineers\RDCE - Projects\D1-130 Reid River Feedlot\05 - ACAD MasterPlan\05.1 Drawings - CURRENT FILE NAME: D1-130-00-MASTERPLAN-220228-v8.dwg

6.6.2 Regrowth vegetation

High-value regrowth vegetation is defined as vegetation that has not been cleared (other than for relevant clearing activities) for over 15 years on freehold land, Indigenous land, occupation licences, and leasehold land used for agricultural and grazing purposes under the Land Act 1994. High-value regrowth vegetation is mapped as Category C or Category R areas.

Category R areas are within 50 m of identified watercourses in the Burnett Mary, Eastern Cape York, Fitzroy, Mackay–Whitsunday, Burdekin and Wet Tropics Great Barrier Reef catchments. The subject land is located in the Burdekin catchment.

However, as shown on Figure 29 and Appendix I, there are no areas mapped as Category C containing high-value regrowth vegetation identified on the subject land. There are no Category R containing reef regrowth watercourse vegetation mapped areas as the subject land.

There are no aspects of the proposed development to be located on areas mapped as Category C or Category R vegetation as shown on Figure 29.

Consequently, no high-value regrowth vegetation shall be disturbed as part of the proposed development.

6.6.3 Property Map of Assessable Vegetation (PMAV)

A property map of assessable vegetation (PMAV) that shows the boundaries of vegetation categories on the property has been certified by the Department of Resources for a proportion of the subject land.

A copy of the certified PMAV 2008/000308 is attached in Appendix I.

Referral for native vegetation clearing under schedule 10 of the Planning Regulation 2017 is avoided as all new proposed infrastructure is located within a category X area and includes the required setbacks for firebreaks and safety buffer distances from the nearest category B areas.

The Department of Resources (DoR) have confirmed that the least concern category B area shown on the vegetation management support map that runs east-west across the development complex area has previously been cleared in accordance with prior approval (1805-5309 SRA) and thus will not trigger assessment. Consequently, no Section 22A approval is required.

The firebreak/safety buffer distance is calculated as a width of 20 m or 1.5 times the height of the tallest adjacent tree to the infrastructure, whichever is the greater. There is a minimum separation of 35 m from category B areas and existing infrastructure. The height of the tallest tree is estimated at 18 m.

6.6.4 Essential habitat

Essential habitat is vegetation in which a species that is endangered, vulnerable or near threatened under the Nature Conservation Act (1992) has been known to occur. The Vegetation Management Act 1999 regulates vegetation clearing to prevent the loss of biodiversity.

The DoR have mapped areas as essential habitat and these are shown on the essential habitat map. Areas of essential habitat are shown on the vegetation management supporting map. The vegetation management supporting map for the subject land is provided in Appendix I.

Appendix I shows that there is no essential habitat mapped within the regional ecosystems on the subject land.

Consequently, the proposed development shall not have any adverse impacts on areas mapped as essential habitat. Further, Figure 30 shows that no aspects of the proposed development complex are to be located within the areas mapped as regional ecosystems.

6.6.5 Flora & fauna

Native plant (flora) and animal (fauna) species are a unique and valuable part of Queensland's biodiversity. The object of the *Nature Conservation Act 1992* is to conserve and protect native flora and fauna, including threatened and endangered species.

Some plant and animal species are declining in numbers and are at risk of extinction due to a range of threatening processes including clearing of vegetation, inappropriate fire regimes, and inappropriate grazing regimes for example.

Currently, there are currently 955 species (224 animals and 731 plants) declared as threatened under the *Nature Conservation Act 1992*. Some species are already considered to be extinct in the wild whilst other threatened species are categorised as 'endangered' or 'vulnerable'. Of these species, about 400 are listed as threatened nationally under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*.

The *Nature Conservation (Wildlife) Regulation 2006* lists species that are classed as threatened or near threatened in Queensland.

The DES WildNet database contains records of wildlife sightings and listings of plants (including fungi and protists), and fauna (mammals, birds, amphibians, reptiles) in Queensland.

A species list was requested from the DES WildNet database records within a radius of 5 km from the proposed development complex site on the subject land. The Wildlife online extract is provided in Appendix J.

The WildNet species search returned no Critically Endangered (CR), Endangered (E), Vulnerable (V), or Special Least Concern (SL) species within a radius of 5 km from the proposed development complex site on the subject land. The WildNet species search returned one Near Threatened (NT) plant species (*Scleromitrion polycladum*) and 126 Least Concern

(C) species within a radius of 5 km from the proposed development complex site on the subject land.

As outlined in section 6.6.1 and shown on Figure 29, there is no proposed clearing of regulated vegetation or regional ecosystems associated with the proposed development.

Consequently, adverse impacts to threatened wildlife species are unlikely because of the proposed development.

The DES have mapped protected flora areas, and these are shown on the protected plants flora survey trigger map. The protected plants flora survey trigger map shows areas where particular provisions of the Nature conservation Act 1992 apply to clearing of protected plants. The protected plants flora survey trigger map for each land parcel that comprises the subject land is provided in Appendix K.

As shown in Appendix K, there are no high risk areas mapped on the subject land. The proposed development site will be located over 2,500 m from the closest mapped high risk area.

Further, no protected plants are proposed to be cleared as part of the proposed development. Consequently, the proposed development shall not impact protected plants.

6.7 Wetlands

Wetlands are a critical part of the environment and deliver many ecosystem services such as coastal protection, water and food supply, reducing the impacts of floods, absorb pollutants, improve water quality.

Broadly, wetlands are areas of land where water covers the soil – all year or just at certain times of the year. They are neither just land, nor just water and can be both at the same time, or seasonally aquatic, or terrestrial. Traditionally, wetlands can be defined as swamps, billabongs and mangrove areas but other areas such as rivers and creeks, estuaries, bays and marine areas are also included in the definition of a wetland.

The responsibility for the protection, conservation and management of wetlands in Queensland is shared between state and local government and for wetlands of international significance – 'Ramsar', the federal government.

The management and use of natural wetlands in Queensland is based on ecologically sustainable management and integrated catchment management practices. Wetlands have been mapped digitally at a scale of 1:100,000 and classified according to a range of criteria, such as the type of ecological system (riverine, estuarine etc.), degree of water permanency, salinity etc for wetland management and decision making (DES, 2018).

A wetland protection area overlay of the subject land was obtained from the DSDMIP development assessment mapping system and is shown in Figure 31. Figure 31 shows that there are no wetland protection areas on or adjacent to the subject land.

The Map of Referable Wetlands under the *Environmental Protection Act 1994* for the subject land was obtained from the DES online mapping system and provided in Appendix L. Review of the referable wetlands mapping of the subject land shows that there are no wetlands of High Ecological Significance (HES) for the purposes of environmental values on, adjacent to or within proximity to the subject land.

Review of the referable wetlands mapping of the subject land shows that there are wetlands of General Ecological Significance (GES) along the Reid River Creek which for part of its length forms the northern boundary of the subject land. The proposed development site will be located over 450 m from wetlands of General Ecological Significance (GES) mapped along the Reid River.

The proposed development shall not be sited within a Great Barrier Reef wetland trigger area.

Consequently, the proposed development will not be located within or adjacent to any wetlands of HES or GES or trigger areas.

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N

DA Mapping System – Print Screen

0 300 600 900 1,200

Metres

Date: 01/04/2022

X - PROPOSED DEVELOPMENT COMPLEX SITE

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FIGURE 31

6.8 Cultural heritage

6.8.1 Indigenous

The *Aboriginal Cultural Heritage Act 2003* and *Torres Strait Islander Cultural Heritage Act 2003* recognise Aboriginal and Torres Strait Islander people as the primary authority on Aboriginal and Torres Strait Islander cultural heritage. The continuation of Aboriginal and Torres Strait Islander culture, traditions and customs is protected under this legislation.

All significant Aboriginal cultural heritage in Queensland is protected under the *Aboriginal Cultural Heritage Act 2003*. Under the legislation, a person carrying out an activity must take all reasonable and practical measures to ensure the activity does not harm Aboriginal Cultural Heritage. This applies whether or not such places are recorded in an official register and whether or not they are located in, on or under private land.

Any Aboriginal heritage, which may occur on the proposed development site, is protected under the terms of the *Aboriginal Cultural Heritage Act 2003* (ACH Act) even if the DES has no records relating to it.

A database search response of sites of aboriginal cultural heritage from the Department of Aboriginal and Torres Strait Islander Partnership - Cultural Heritage Database and Register indicates that there are no sites of Aboriginal cultural heritage currently registered on the subject land or within a 2 km radius of the subject land.

The database search response of sites of aboriginal cultural heritage from the Department of Aboriginal and Torres Strait Islander Partnership database for the land parcel that comprises the subject land and a 2 km buffer of the land parcel is provided in Appendix M.

Pursuant to the Cultural Heritage Duty of Care Guidelines, the proposed development is a 'Category 2 activity' – Activities causing No Additional Surface Disturbance. From those guidelines:

- Where an activity causes No Additional Surface Disturbance of an area it is generally unlikely that the activity will harm Aboriginal cultural heritage or could cause additional harm to Aboriginal cultural heritage to that which has already occurred, and the activity will comply with these guidelines

- In these circumstances, subject to the measures set out in paragraphs 5.6 - 5.12 of the Cultural Heritage Duty of Care Guidelines, it is reasonable and practicable that the activity proceeds without further cultural heritage assessment.

Although the area on which the infrastructure of the proposed development shall be located has previously been extensively cleared and developed, all reasonable and practical measures shall be undertaken to ensure the activity does not harm any Aboriginal cultural heritage.

The cultural heritage search states:

- There are no cultural heritage sites recorded in the specific search area.
- There are no cultural heritage site polygons recorded in the specific search area.
- There is one registered cultural heritage body recorded for the area of the specific search area being the Bindal People #2.
- There are no Designated Landscape Areas (DLA) recorded in the specific search area.
- There are no Registered Study Cultural Heritage Areas recorded in the specific search area.
- There are no cultural heritage management plans recorded in the specific search area.
- There is one registered cultural heritage parties recorded in the specific search area being the Gudjuda Reference Group Aboriginal Corporation.

The regional coordinator is:

Cultural Heritage Coordinator North Region
Phone: 07 4796 7862

6.8.2 Non-Indigenous

The conservation of Queensland's cultural heritage is provided for under the *Queensland Heritage Act 1992*. A register of places and areas of State cultural heritage significance called the Queensland Heritage Register is maintained by the Queensland Heritage Council.

The Queensland Heritage Register is a heritage register, a statutory list of places in Queensland that are protected by the *Queensland Heritage Act 1992*. Heritage places include historic shipwrecks, cultural landscapes, cemeteries, archaeological sites, buildings and structures, gardens and urban precincts.

A heritage place overlay of the subject land was obtained from the DSDMIP development assessment mapping system and is shown in Figure 32.

A review of the heritage place overlay shows that there are no heritage places listed on the Queensland Heritage Register identified on the subject land. Consequently, the proposed development will not impact on a Queensland heritage place.

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DA Mapping System – Print Screen

0 300 600 900 1,200

Metres

Date: 01/04/2022

X - PROPOSED DEVELOPMENT COMPLEX SITE

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FIGURE 32

6.9 Biosecurity

Biosecurity is a strategic and integrated approach that manages the risks from emerging and ongoing animal and plant pests, diseases and weeds on Queensland's economy, terrestrial and aquatic environments, biodiversity, agricultural resources, human health and social amenity.

The *Biosecurity Act 2014* provides a framework for an effective biosecurity system that helps to minimise biosecurity risks and better facilitate a response to the impacts of those risks on the economy, environment, human health and public amenity.

Under the *Biosecurity Act 2014*, a person who deals with a biosecurity matter or a carrier, or carries out an activity, if the person knows or ought reasonably to know that the biosecurity matter, carrier or activity poses or is likely to pose a biosecurity risk has a general biosecurity obligation (GBO) to take all reasonable and practical measures to prevent or minimise the biosecurity risk.

In accordance with the GBO, individuals and organisations whose activities pose a biosecurity risk must:

- take all reasonable and practical steps to prevent or minimise each biosecurity risk;
- minimise the likelihood of causing a 'biosecurity event', and limit the consequences if such an event is caused; and
- prevent or minimise the harmful effects a risk could have, and not do anything that might make any harmful effects worse.

In relation to the proposed development, a GBO might include:

- Management of animal and plant pests (e.g. weeds, wild dogs, wild pigs etc) and diseases that could have negative impacts on neighbouring properties;
- Moving animals will pose a biosecurity risk if they are carrying pests or diseases that could affect agricultural industries; and
- Moving machinery or soil will pose a biosecurity risk if they are carrying weed seeds, fire ants etc that could affect agricultural industries.

6.9.1 Fire ants

The subject land is not located within a fire ant biosecurity zone within south east Queensland as shown in Figure 33.

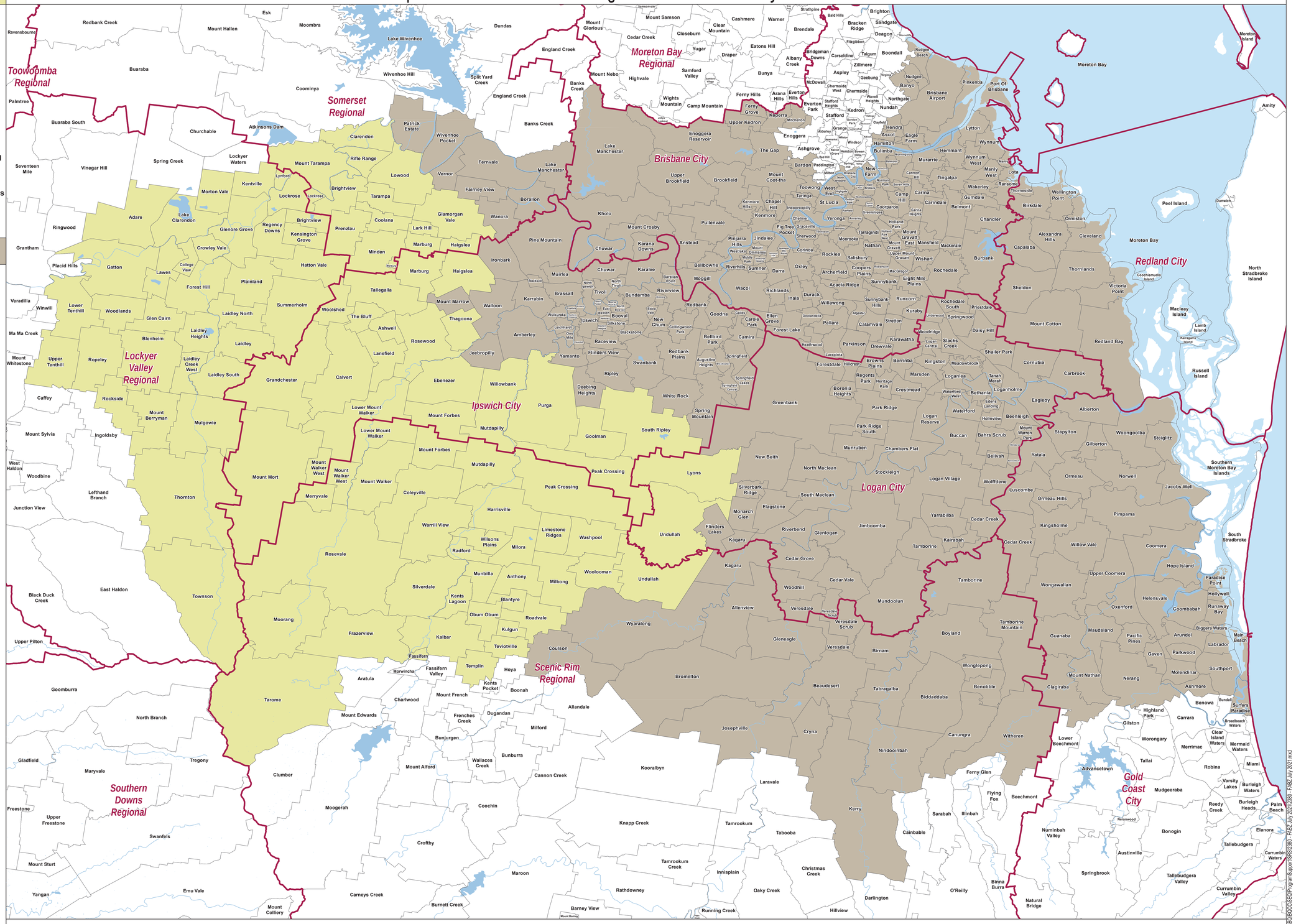
National Red Imported Fire Ant Eradication Program: Fire ant biosecurity zones

Fire ant biosecurity zone 1

Adare
Anthony
Ashwell
Blantyre
Blenheim
Brightview
Calvert
Clarendon
Coleyville
College View
Coolana
Crowley Vale
Ebenezer
Fassifern
Forest Hill
Frazerview
Gatton
Glamorgan Vale
Glen Cairn
Glenore Grove
Goolman
Grandchester
Haigslea
Harrisville
Hatton Vale
Kalbar
Kensington Grove
Kents Lagoon
Kentville
Kulgun
Laidley
Laidley Creek West
Laidley Heights
Laidley North
Laidley South
Lake Clarendon
Lanefield
Lark Hill
Lawes
Limestone Ridges
Lockrose
Lower Mount Walker
Lowood
Lynford
Lyons
Marburg
Merryvale
Milbong
Minden
Moorang
Morton Vale
Mount Berryman
Mount Tarampa
Mount Walker
Mount Walker West
Mulgowie
Mundoolun
Munbilla
Mutdapilly
Obum Obum
Peak Crossing
Plainland
Prenzlau
Purga
Radford
Regency Downs
Rifle Range
Roadvale
Rockside
Ropeley
Rosevale
Rosewood
Silverdale
South Ripley
Summerholm
Tallegalla
Tarampa
Tarome
Teviotville
Thagoona
The Bluff
Thornton
Townson
Undullah
Upper Tenthill
Warrill View
Washpool
Willowbank
Wilsons Plains
Woodlands
Woolooman
Woolshed

Fire ant biosecurity zone 2

Acacia Ridge
Alberton
Alexandra Hills
Algester
Allenview
Amberley
Annerley
Anstead
Archerfield
Arundel
Ascot
Ashmore
Augustine Heights
Bahrs Scrub
Balmoral
Bannockburn
Banyo
Bardon
Barellan Point
Basin Pocket
Beaudesert
Beenleigh
Belivah
Bellbird Park
Bellbowrie
Belmont
Benobble
Berrinba
Bethania
Biddaddaba
Biggera Waters
Birkdale
Birnam
Blacksoil
Blackstone
Booval
Borallon
Boronia Heights
Boyland
Brassall
Brisbane Airport
Brisbane City
Bromelton
Brookfield
Brookwater
Browns Plains
Buccan
Bulimba
Bundamba
Burbank
Calamvale
Camira
Camp Hill
Cannon Hill
Canungra
Capalaba
Carbrook
Carina
Carina Heights
Carindale
Carole Park
Cedar Creek
Cedar Grove
Cedar Vale
Chambers Flat
Chandler
Chapel Hill
Chelmer
Churchill
Chuwar
Clagiraba
Cleveland
Coalfalls
Collingwood Park
Coombabah
Coomera
Coopers Plains
Coorparoo
Corinda
Cornubia
Coulson
Crestmead
Cryna
Daisy Hill
Darra
Deebing Heights
Dinmore
Doolandella
Drewvale
Durack
Dutton Park
Eagle Farm
Eagleby
East Brisbane
East Ipswich
Eastern Heights
Ebbw Vale
Edens Landing
Eight Mile Plains
Ellen Grove
Enoggera Reservoir
Fairfield
Fairney View
Fernvale
Ferny Grove
Fig Tree Pocket
Flagstone
Flinders Lakes
Flinders View
Forest Lake
Forestdale
Gailes
Gaven
Gaythorne
Gilberton
Gleneagle
Glenlogan
Goodna
Graceville
Greenbank
Greenslopes
Guanaba
Gumdale
Hamilton
Hawthorne
Heathwood
Helensvale
Hemmant
Hendra
Heritage Park
Highgate Hill
Hillcrest
Holland Park
Holland Park West
Hollywell
Holmview
Hope Island
Inala
Indooroopilly
Ipswich
Ironbark
Jacobs Well
Jamboree Heights
Jeebropilly
Jimboomba
Jindalee
Jospehville
Kagaru
Kairabah
Kangaroo Point
Karalee
Karana Downs
Karawatha
Karrabin
Kenmore
Kenmore Hills
Keperra
Kerry
Kholo
Kingsholme
Kingston
Kuraby
Labrador
Lake Manchester
Larapinta
Leichhardt
Logan Central
Logan Reserve
Logan Village
Loganholme
Loganlea
Lota
Luscombe
Lytton
Macgregor
Mackenzie
Main Beach
Manly
Manly West
Mansfield
Marsden
Maudsland
Meadowbrook
Middle Park
Mitchelton
Moggill
Molendinar
Monarch Glen
Moores Pocket
Moorooka
Morningside
Mount Coot-Tha
Mount Cotton
Mount Crosby
Mount Gravatt
Mount Gravatt East
Mount Marrow
Mount Nathan
Mount Ommaney
Mount Warren Park
Muirlea
Mundoolun
Munruben
Murarrie
Nathan
Nerang
New Beith
New Chum
New Farm
Newtown
Nindooinbah
Norman Park
North Booval
North Ipswich
North Maclean
North Tivoli
Norwell
Nudgee
Nudgee Beach
One Mile
Ormeau
Ormeau Hills
Ormiston
Oxenford
Oxley
Pacific Pines
Pallara
Paradise Point
Park Ridge
Park Ridge South
Parkinson
Parkwood
Patrick Estate
Pimpama
Pine Mountain
Pinjarra Hills
Pinkenba
Port Of Brisbane
Priestdale
Pullenvale
Raceview
Ransome
Redbank
Redbank Plains
Redland Bay
Regents Park
Richlands
Ripley
Riverbend
Riverhills
Riverview
Robertson
Rochedale
Rochedale South
Rocklea
Runaway Bay
Runcorn
Sadliers Crossing
Salisbury
Seven Hills
Seventeen Mile Rocks
Shailer Park
Sheldon
Sherwood
Silkstone
Silverbark Ridge
Sinnamon Park
Slacks Creek
South Brisbane
South Maclean
Southport
Spring Mountain
Springfield
Springfield Central
Springfield Lakes
Springwood
St Lucia
Stapylton
Steiglitz
Stockleigh
Stones Corner
Stretton
Sumner
Sunnybank
Sunnybank Hills
Surfers Paradise
Swanbank
Tabragalba
Tamborine
Tamborine Mountain
Tanah Merah
Taringa
Tarragindi
Tennyson
The Gap
Thorneside
Thornlands
Tingalpa
Tivoli
Toowong
Underwood
Upper Brookfield
Upper Coomera
Upper Kedron
Upper Mount Gravatt
Veresdale
Veresdale Scrub
Vernor
Victoria Point
Wacol
Wakerley
Walloon
Wanora
Waterford
Waterford West
Wellington Point
West End
West Ipswich
Westlake
White Rock
Willawong
Willow Vale
Windaroo
Wishart
Witheren
Wivenhoe Pocket
Wolffdene
Wongawallan
Wonglepong
Woodend
Woodhill
Woodridge
Woolloongabba
Woongoolba
Wulkuraka
Wyaralong
Wynnum
Wynnum West
Yamanto
Yarrabilba
Yatala
Yeerongpilly
Yeronga


Toowoomba Regional
Somerset Regional
Moreton Bay Regional
Brisbane City
Redland City
Lockyer Valley Regional
Ipswich City
Logan City
Scenic Rim Regional
Southern Downs Regional
Gold Coast City
Redbank Creek
Ravensbourne
Mount Hallen
Esk
Moombra
Dundas
Lake Wivenhoe
Wivenhoe Hill
Split Yard Creek
England Creek
Banks Creek
Mount Glorious
Mount Samson
Cedar Creek
Closeburn
Clear Mountain
Cashmere
Warner
Brendale
Strathpine
Bald Hills
Brighton
Bracken Ridge
Sandgate
Deagon
Fitzgibbon
Eatons Hill
Draper
Yugar
Bridgeman Downs
Albany Creek
Carseldine
Taigum
Boondall
Nudgee
Nudgee Beach
Mount Nebo
Highvale
Samford Valley
Bunya
Aspley
Zillmere
Geebung
McDowall
Chermside West
Chermside
Wavell Heights
Northgate
Nundah
Banyo
Pinkenba
Port Of Brisbane
Brisbane Airport
Wights Mountain
Camp Mountain
Ferny Hills
Arana Hills
Everton Hills
Everton Park
Stafford Heights
Stafford
Kedron
Clayfield
Hendra
Ascot
Eagle Farm
Lytton
Wynnum
Wynnum West
Manly West
Lota
Ransome
Wakerley
Wellington Point
Birkdale
Ormiston
Cleveland
Alexandra Hills
Capalaba
Thornlands
Victoria Point
Sheldon
Redland Bay
Russell Island
Macleay Island
Lamb Island
Coochiemudlo Island
North Stradbroke Island
Peel Island
Dunwich
Amity
Moreton Island
Moreton Bay
Port Of Brisbane
Upper Kedron
Enoggera Reservoir
Enoggera
Ashgrove
Keperra
Mitchelton
Grange
Alderley
Hamilton
Bulimba
Hemmant
Murarrie
Tingalpa
Cannon Hill
Norman Park
Seven Hills
Camp Hill
Carina
Carindale
Belmont
Gumdale
Chandler
Capalaba
Alexandra Hills
Ormiston
Cleveland
Thornlands
Victoria Point
Redland Bay
Coochiemudlo Island
Macleay Island
Lamb Island
Russell Island
North Stradbroke Island
Peel Island
Dunwich
Amity
Moreton Island
Moreton Bay
Port Of Brisbane
Brisbane Airport
Pinkenba
Nudgee
Nudgee Beach
Boondall
Taigum
Carseldine
Albany Creek
Bridgeman Downs
Draper
Yugar
Eatons Hill
Warner
Brendale
Cashmere
Clear Mountain
Closeburn
Cedar Creek
Mount Samson
Mount Glorious
Brighton
Sandgate
Deagon
Bracken Ridge
Fitzgibbon
Bald Hills
Strathpine
Samford Valley
Mount Nebo
Highvale
Bunya
Aspley
Zillmere
Geebung
Chermside
Chermside West
McDowall
Wavell Heights
Northgate
Nundah
Everton Park
Everton Hills
Arana Hills
Ferny Hills
Stafford
Stafford Heights
Kedron
Wights Mountain
Camp Mountain
Ferny Grove
Keperra
Upper Kedron
Enoggera Reservoir
Enoggera
Ashgrove
Mitchelton
Grange
Alderley
Hamilton
Ascot
Eagle Farm
Bulimba
Hemmant
Lytton
Wynnum
Wynnum West
Manly West
Lota
Ransome
Wakerley
Wellington Point
Birkdale
Ormiston
Cleveland
Alexandra Hills
Capalaba
Thornlands
Victoria Point
Sheldon
Redland Bay
Russell Island
Macleay Island
Lamb Island
Coochiemudlo Island
North Stradbroke Island
Peel Island
Dunwich
Amity
Moreton Island
Moreton Bay
Buaraba
Coominya
Palmtree
Buaraba South
Churchable
Atkinsons Dam
Wivenhoe Pocket
Patrick Estate
Clarendon
Rifle Range
Lowood
Vernor
Fernvale
Lake Manchester
Banks Creek
England Creek
Split Yard Creek
Wivenhoe Hill
Lockyer Waters
Spring Creek
Vinegar Hill
Seventeen Mile
Lynford
Mount Tarampa
Brightview
Tarampa
Fairney View
Borallon
Wanora
Kholo
Pullenvale
Mount Crosby
Pine Mountain
Chuwar
Karana Downs
Anstead
Kenmore
Chapel Hill
Taringa
Toowong
St Lucia
Coorparoo
Greenslopes
Camp Hill
Carina
Carindale
Belmont
Gumdale
Wakerley
Ransome
Wellington Point
Birkdale
Ormiston
Cleveland
Alexandra Hills
Capalaba
Thornlands
Victoria Point
Sheldon
Redland Bay
Russell Island
Macleay Island
Lamb Island
Coochiemudlo Island
North Stradbroke Island
Peel Island
Dunwich
Amity
Moreton Island
Moreton Bay
Morton Vale
Kentville
Lockrose
Glenore Grove
Regency Downs
Kensington Grove
Prenzlau
Coolana
Glamorgan Vale
Lark Hill
Minden
Marburg
Haigslea
Hatton Vale
Ironbark
Muirlea
Brassall
Tivoli
Bundamba
Riverview
Redbank
Goodna
Carole Park
Ellen Grove
Forest Lake
Calamvale
Stretton
Karawatha
Parkinson
Drewvale
Heathwood
Larapinta
Forestdale
Hillcrest
Browns Plains
Regents Park
Heritage Park
Crestmead
Boronia Heights
Berrinba
Kingston
Meadowbrook
Loganlea
Tanah Merah
Bethania
Logan Reserve
Waterford
Edens Landing
Holmview
Beenleigh
Eagleby
Mount Warren Park
Stapylton
Gilberton
Yatala
Woongoolba
Steiglitz
Alberton
Carbrook
Cornubia
Logan Village
Buccan
Bahrs Scrub
Chambers Flat
Munruben
Belivah
Park Ridge South
Park Ridge
Greenbank
Spring Mountain
Willowbank
White Rock
Deebing Heights
Ripley
Purga
Jeebropilly
Raceview
Flinders View
Yamanto
Swanbank
Amberley
Rosewood
Ashwell
The Bluff
Thagoona
Woolshed
Summerholm
Walloon
Mount Marrow
Karrabin

6.10 Coastal and marine environment

6.10.1 Coastal protection

Queensland's coastal communities are vulnerable to impact from coastal erosion and storm tide inundation. These coastal hazards are generally caused by extreme weather events such as cyclones.

The erosion and storm tide inundation vulnerability of the Queensland coast has been assessed and erosion prone areas and areas subject to storm tide inundation have been declared and mapped to inform planning and development decisions.

Queensland Coastal Hazard Areas maps show areas vulnerable to coastal erosion or storm tide inundation. Mapping data exists at a minimum scale of 1:10,000. Coastal hazard area maps are based on the following assessment factors for determining coastal hazard areas:

- a defined storm event or storm tide event based on an annual 1% (or one-in-100) return probability;
- an updated sea-level rise figure of 80cm by the year 2100 based on upper limit projections by the Intergovernmental Panel on Climate Change (IPCC); and
- a 10% increase in cyclone intensity due to climate change impacts over the next 30–100 years.

Erosion prone areas are determined by considering short-term erosion from storm events; long-term erosion from sediment supply deficit and channel migration; and erosion risk from sea-level rise.

Storm tide inundation area maps are categorised as either high or medium hazard areas. High hazard areas are the part of the storm tide inundation area that is projected to be temporarily inundated to a depth of 1 m or more during a defined storm tide event. The medium coastal hazard areas consist of land within the storm tide inundation area that is projected to be temporarily inundated to a depth of less than 1 m during a defined storm tide event.

The subject land is located some 50 km inland from the Queensland coast. A coastal protection area overlay of the subject land was obtained from the DSDMIP development assessment mapping system to confirm any erosion and storm tide inundation vulnerability. The resulting overlay is shown in Figure 34. Figure 34 shows that the subject land is not located in a coastal zone, coastal management district, coastal hazard area – erosion prone or storm tide inundation area.

Subsequently, the subject land is not located in an area that is considered a high-risk coastal hazard area and not subject to erosion and permanent tidal inundation due to sea level rise.

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FIGURE 34

6.10.2 Fish habitat area

A declared fish habitat area (FHA) is an area protected from the impacts of coastal development to ensure Queensland's valuable fish habitats are managed effectively for long-term sustainability. FHAs are a type of marine protected area and are declared under the Queensland Fisheries Act 1994 and managed by the Department of Science (DES).

Declared FHAs are matters of state environmental significance (MSES) under the State Planning Policy (SPP) and are therefore valued and protected through the state's planning framework (Department of State Development, Manufacturing, Infrastructure and Planning 2017).

Activities that disturb fish habitats may require fisheries development approval under the *Planning Act 2016*. A resource allocation authority (a form of resource entitlement) may also be required under the *Fisheries Act 1994*.

The following development related activities require a fisheries development approval under the *Planning Act 2016* from Fisheries Queensland:

- removal, destruction or damage of marine plants;
- building or operational works in a declared Fish Habitat Area;
- aquaculture in tidal water, marine and freshwater; and
- waterway barrier works.

Declared FHA, or parts of declared FHA, are assigned a management level - either 'A' for very strict management, or 'B', where existing or planned use requires a more flexible management approach.

A fish habitat area overlay of the subject land was obtained from the DSDMIP development assessment mapping system and is shown in Figure 35.

Figure 35 shows that there no fish habitat management areas A or B on or adjacent to the subject land. Consequently, the proposed development does not require a fisheries development approval under the Planning Act 2016.

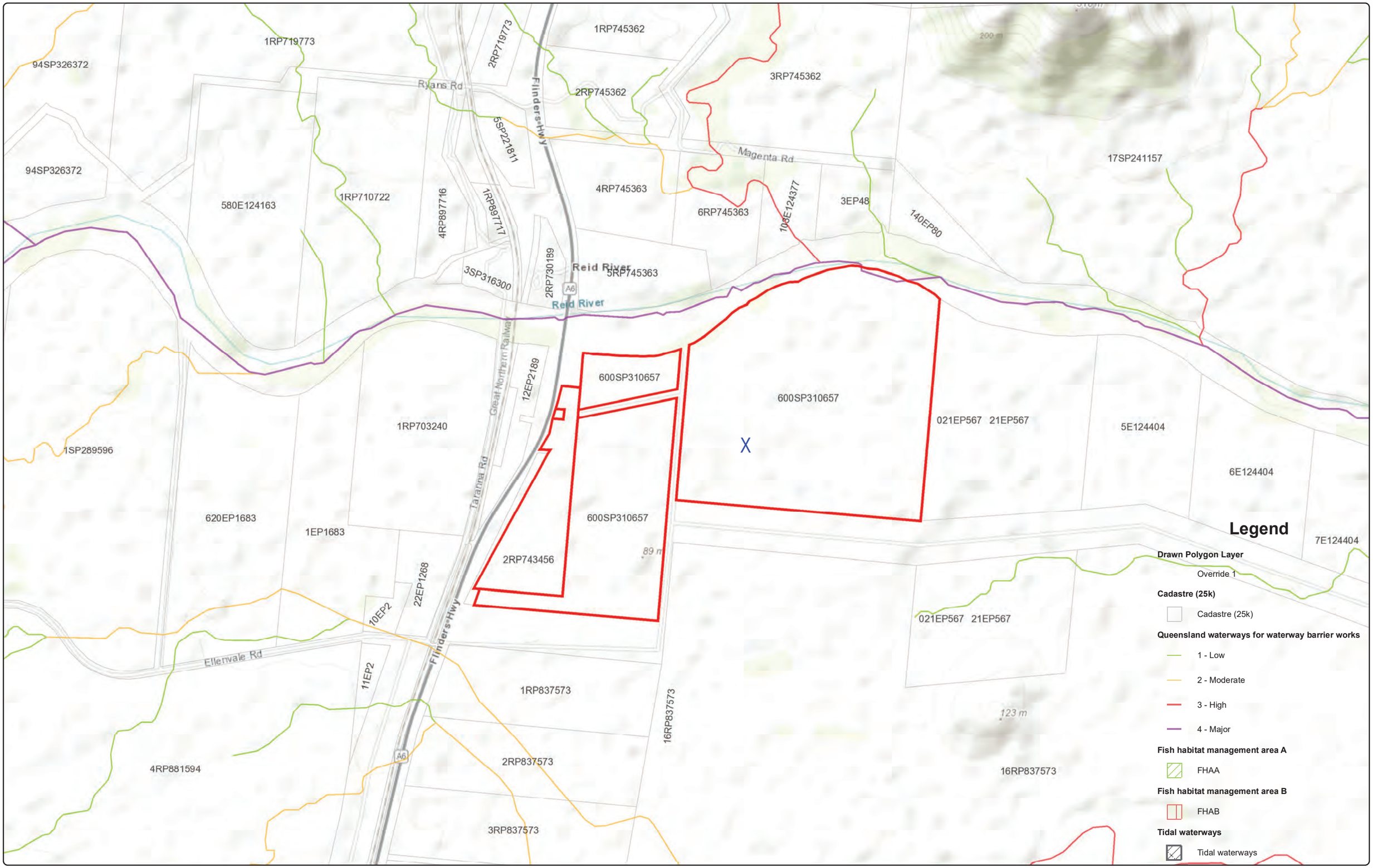

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FIGURE 35

6.11 State transport

State transport interests include road, rail, busway, light rail, ports, maritime and airports of state significance.

All development that may impact on the safe and efficient operation of state transport interests is triggered under the *Planning Regulation 2017* for referral to SARA for assessment. These developments will be assessed against the relevant State Development Assessment Provisions (SDAP).

The subject land has primary frontage to the Flinders Highway (sealed) of approximately 325 m in length. The Flinders Highway is identified as a state-controlled road.

An overlay of state transport interests relating to the subject land was obtained from the DSDMIP development assessment mapping system and shown in Figure 36. Figure 36 shows that the subject land is located adjacent to and within 25 m of a state-controlled road. Figure 36 shows that the subject land is not within 25 m of a railway, busway or light rail corridor or state-controlled transport tunnel. Further, Figure 36 shows that there are no future state transport corridors on or adjacent to the subject land.

Access to the proposed development shall be from the existing subject land entrance off the Flinders Highway. The proposed development does not require new or changed access from a state-controlled road.

All buildings, structures, infrastructure, services and utilities are not located in a state-controlled road and all facades of buildings and structures facing a state-controlled road shall be made of non-reflective materials. The proposed development complex is setback over 950 m from a state-controlled road corridor.

Further due to the location of the proposed development in relation to the closest state-controlled road, filling and excavation shall not interfere with, or result in damage to, infrastructure or services in a state-controlled road. Further, all fill, extracted material and spoil material shall remain of the subject land and shall not be transported to or from the development site on a state-controlled road.

Assessment of the potential impacts of the proposed development on state infrastructure can be found in the compliance statements for the relevant state infrastructure state codes in Appendix O.

Legend

Drawn Polygon Layer
Override 1

Cadastre (25k)
Cadastre (25k)

Public passenger transport facility
Public passenger transport facility

Future public passenger transport facility
Future public passenger transport facility

Area within 25m of a railway corridor
Area within 25m of a railway corridor

Area within 25m of a State-controlled road
Area within 25m of a State-controlled road

Area within 25m of a busway corridor
Area within 25m of a busway corridor

Area within 25m of a light rail corridor
Area within 25m of a light rail corridor

State-controlled transport tunnel
State-controlled transport tunnel

Area within 50m of a State-controlled transport tunnel
Area within 50m of a State-controlled transport tunnel

Future State-controlled transport tunnel
Future State-controlled transport tunnel

Area within 50m of a future State-controlled transport tunnel
Area within 50m of a future State-controlled transport tunnel

Future busway corridor
Future busway corridor

Busway corridor
Busway corridor

Future light rail corridor
Future light rail corridor

Light rail corridor
Light rail corridor

State-controlled road
State-controlled road

Future State-controlled road
Future State-controlled road

Threshold exemption area
Threshold exemption area

Future railway corridor
Future railway corridor

Railway corridor
Railway corridor

Area within 100m of a State-controlled road intersection
Area within 100m of a State-controlled road intersection

Limited access roads
Limited access roads - LAR 1
Limited access roads - LAR 2

Planned upgrade for State-controlled road
Planned upgrade for State-controlled road

Planned upgrade for railway
Planned upgrade for railway

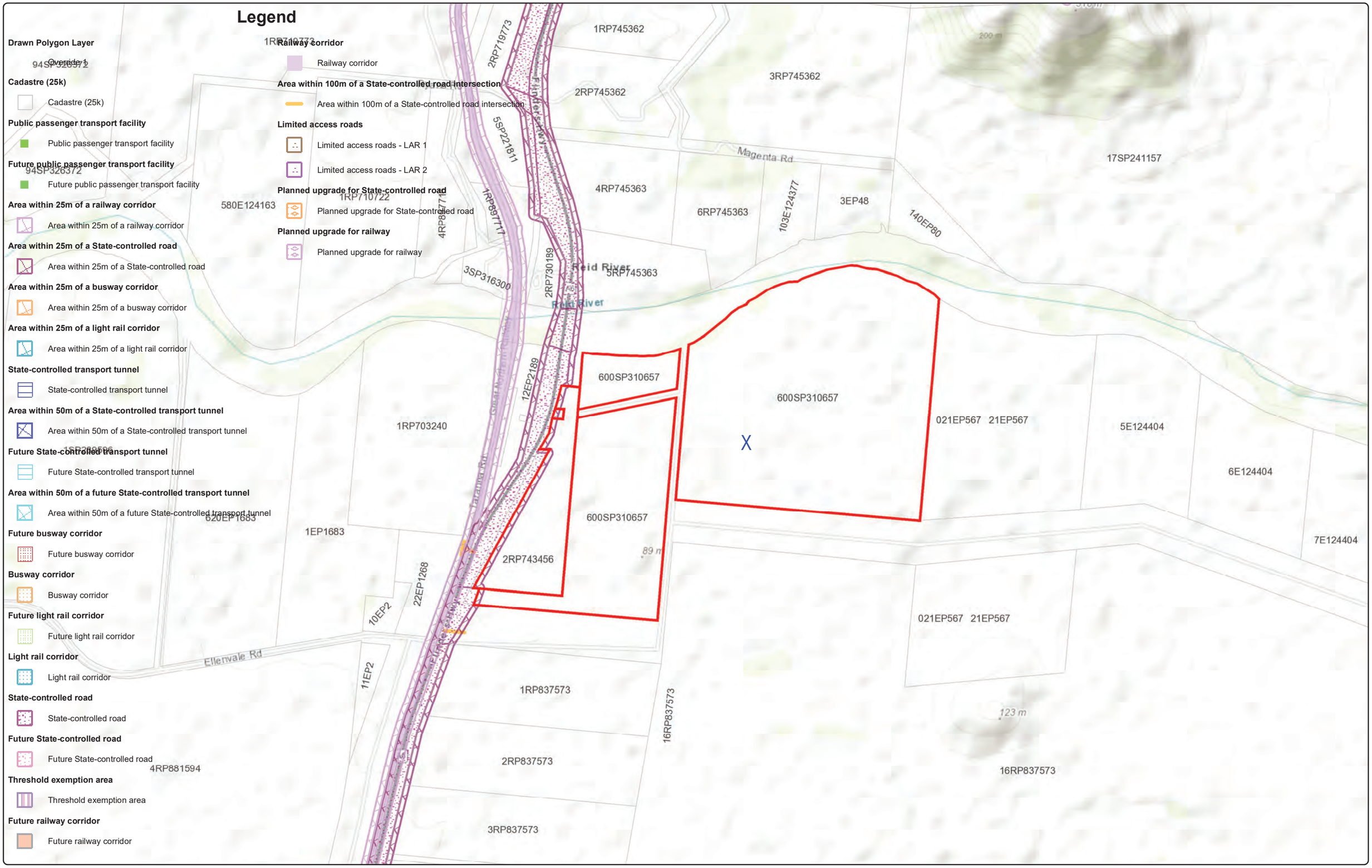

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FIGURE 36

6.12 Strategic environmental areas

Strategic Environmental Areas (SEAs) contain regionally significant environmental attributes (for example biodiversity, water catchments and ecological function). Within these areas, protection of ecological integrity is the priority land use; however, this does not preclude development from occurring in these areas.

SEAs are defined under the *Regional Planning Interests Act 2014* or within a Regional Plan and include Cape York Peninsula, the Gulf Country, the Chanel Country, Fraser Island and Hinchinbrook Island.

The RPI Act provides that a regulated activity is an activity that is prescribed in regulation because it is likely to have a widespread and irreversible impact on an area of regional interest. Where the activity is not exempt under the provisions of the Act or a regional interests development approval (RIDA) has not been granted, the RPI Act restricts the carrying out of resource and regulated activities in SEAs

The RPI Regulation prescribes broadacre cropping and water storage dams as regulated activities in a strategic environmental area:

Therefore, a regional interests development approval will be required for resource activities and broadacre cropping and water storage dams proposed within SEAs.

A strategic environmental area overlay of the subject land was obtained from the DSDMIP development assessment mapping system and is shown in Figure 37.

As shown on Figure 37, the subject land is not located in a strategic environmental area or strategic environmental area designated precinct as defined in the *Regional Planning Interests Act 2014*.

Consequently, a regional interests development approval is not required for the proposed development.

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FIGURE 37

6.13 Environmentally sensitive areas

Environmental authorisation for an intensive animal industry – cattle feedlot is regulated by the *Environmental Protection Act 1994* (EP Act). The EP Act regulates Environmentally Relevant Activities (ERAs), through environmental objective assessment. The *Environmental Protection Regulation 2019* (EP Regulation) provides a mechanism to enforce the EP Act and allows for an assessment of the risk that an ERA poses to Environmentally Sensitive Areas (ESAs).

ESAs refer to locations that have environmental values that contribute to maintaining biological diversity and integrity have intrinsic or attributed scientific, historical or cultural heritage value, or are important in providing amenity, harmony or sense of community.

ESAs are classified as Category A, Category B or Category C based on a ranking of environmental sensitivity. Category A and B ESAs are defined under the EP Regulations. Category C ESAs are not listed under the schedules of the EP Regulations.

Category A ESAs, as defined by the EP Regulation, are displayed in Table 36.

Table 36 – Category A ESAs and Administering Legislation

Category A Protected Areas	Administering Legislation
National Parks (Aboriginal Land) National Parks (Torres Strait Islander Land) National Park National Park (Scientific) National Park (Recovery) Conservation Park Forest Reserves	*Nature Conservation Act 1992* (NC Act) and *Aboriginal Land Act 1991* *Nature Conservation Act 1992*
Wet Tropics World Heritage Area	*Wet Tropics World Heritage Protection and Management Act 1993*
Great Barrier Reef Marine Park (GBRMP) Area	*Great Barrier Reef Marine Park Act 1975*
Marine Parks (other than general use zones)	*Marine Parks Act 2004*

Category B ESAs are defined in the EP Regulation and presented in Table 37.

Table 37 – Category B ESAs and Administering Legislation

Category B Protected Areas	Administering Legislation
Coordinated Conservation Areas Wilderness area Areas of critical habitat, of major interest identified under a conservation plan or subject to an interim conservation order World Heritage Management Areas International Agreement Areas	*Nature Conservation Act 1992*
Endangered Regional Ecosystems (Biodiversity Status)	*Environmental Protection Regulation 2019* (*Vegetation Management Act 1999* (VM Act))
Ramsar Wetlands	*Ramsar Convention*
Protection of the World Cultural and Natural Heritage Conservation of Migratory species	*International Conventions (Paris, 16 November 1972).*
General Use Zones of Marine Parks	
Place of Cultural Heritage Significance (Registered Place, Protected Areas) Aboriginal Cultural Heritage Areas Torres Strait Islander Cultural Heritage Areas	*Aboriginal Cultural Heritage Act 2003* (ACH Act) *Torres Strait Islander Cultural Heritage Act 2003*
Designated Landscape Areas – other than Stanbroke	*Cultural Record (Landscapes Queensland and Queensland Estate) Act 1987*
Feature Protection Area, State Forest Park or a Scientific Area	*Forestry Act 1959*
Fish Habitat Areas and areas of Marine Plants	*Fisheries Act 1994*
An Area to the Seaward Side of the Highest Astronomical Tide	Nil

An environmentally sensitive areas overlay of the subject land was obtained from the Department of Environment and Science online mapping system in Adobe Portable Document Format (PDF) and is shown in Figure 38.

Figure 38 shows there are no Category A or Category B environmentally sensitive areas on the subject land. Figure 38 shows there are Category C being 'of concern' regional ecosystems adjoining the subject land along the Reid River.

As outlined in section 6.6.1 and 6.6.4, no regional ecosystems shall be impacted by the proposed development.

Tenure type: Authority To Prospect

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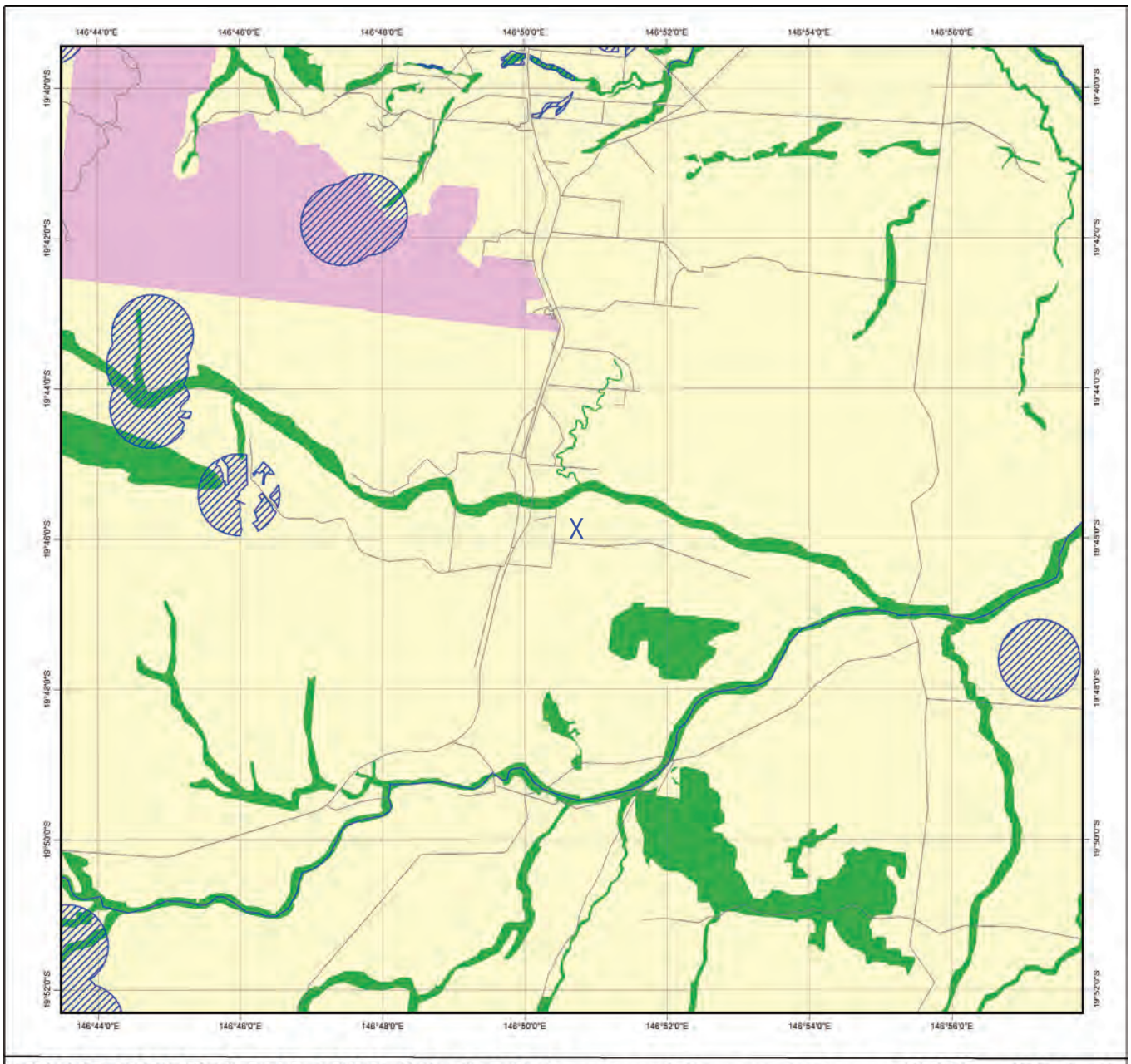

ENVIRONMENTALLY SENSITIVE AREAS - non-mining resource activities (EP Act)

- Authority to Prospect
- CATEGORY A
- National Parks
- Conservation Parks
- Forest Reserves
- Special Wildlife Reserve
- Wet Tropics World Heritage Area
- Great Barrier Reef Marine Park Area
- Marine Parks other than General Use Zones
- CATEGORY B
- Queensland Heritage Register Places
- Ramsar Sites
- Cultural Heritage Registered Areas and DLA's other than Stanbroke
- Special Forestry Areas
- Seaward Side of Highest Astronomical Tide
- Fish Habitat Areas
- Coordinated Conservation Areas
- Endangered Regional Ecosystems - regrowth and remnant (Biodiversity Status)
- General Use Zones of Marine Parks
- Marine Plants
- CATEGORY C
- Essential Habitat
- Koala Plan
- Nature Refuges
- Resources Reserve
- State Forests
- Timber Reserves
- Of Concern Regional Ecosystems (remnant biodiversity status)
- OTHERS
- Towns
- Roads
- Rivers
- Springs
- Queensland

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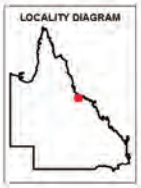
X - PROPOSED DEVELOPMENT COMPLEX SITE

LOCALITY DIAGRAM



N

0 1300 2600 3900 5200 6500 m

This product is projected into GDA 1994 MGA Zone 55

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NOTE TO USER: Themes presented in this map are indicative only. Field survey may be required to verify the 'true' spatial extent and value. Not all environmentally sensitive areas are presented in this map. A user should refer to the particular circumstances relevant to their situation to assess the 'completeness' of themes provided.

The user should note that some boundaries and indicated values are ambient or subject to change over time (e.g. regional ecosystem boundaries and conservation status, watercourse mapping etc).

The user should be aware that due to multiple overlapping themes present, some themes/layers may be obscured by others. Ordering in the Legend does not accurately reflect the order by which themes are displayed.

FIGURE 38

Queensland Government

6.14 Mineral and petroleum resources

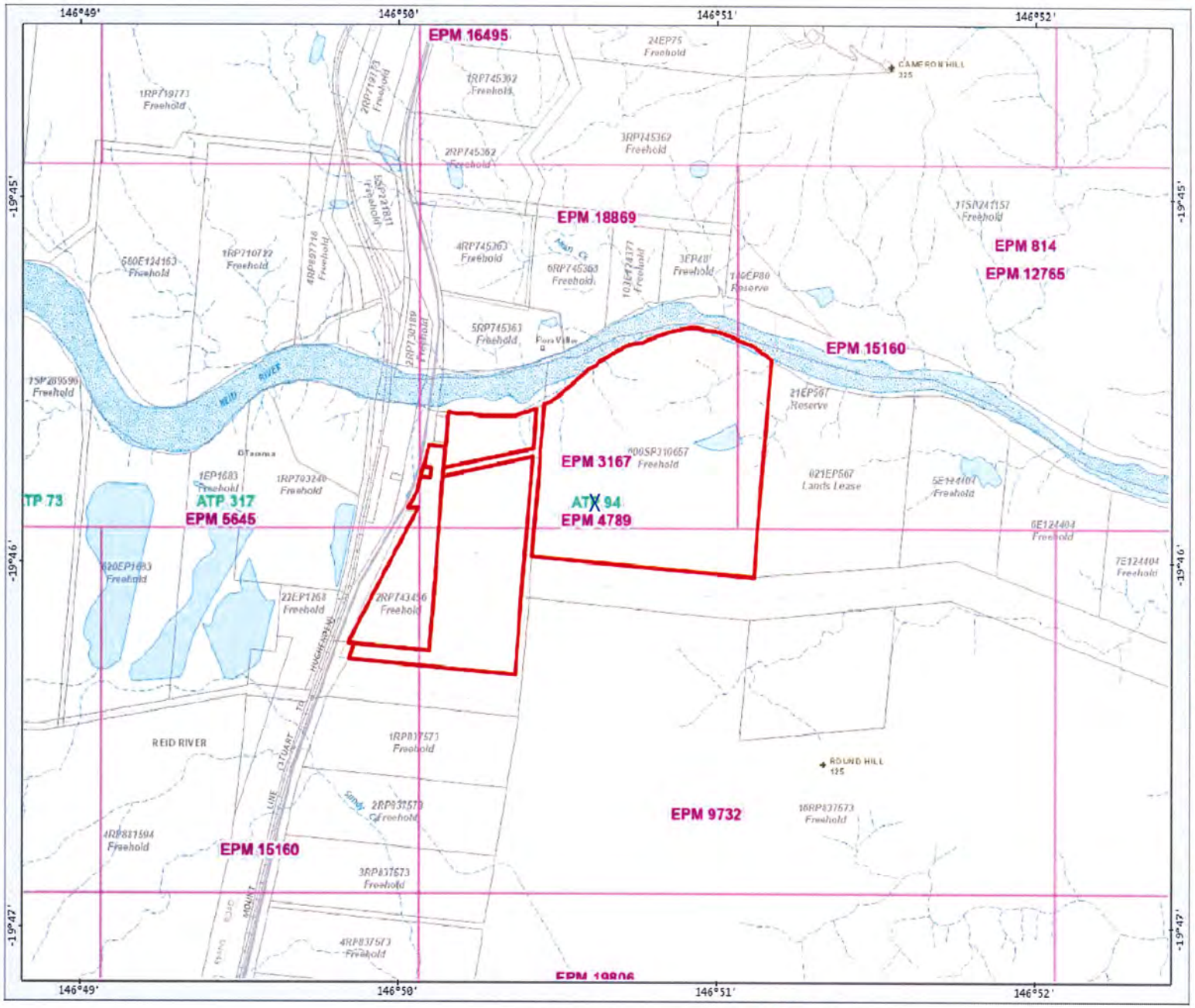
Under the *Petroleum Act 1923, Mineral Resources Act 1989, Geothermal Energy Act 2010* and other related acts ownership of all mineral and energy resources such as coal, minerals, petroleum and gas existing in their natural form is vested in the Crown. However, some resources found on the land like rock, gravel and sand fall outside the operation of these acts.

North-eastern Queensland is endowed with significant mineral resources from intrusion-related mineral systems. Consequently, there has been significant historic production of various commodities. The Charters Towers Region has been a prolific gold and copper producing district for more than 150 years. The subject land is situated in the southeast of the Early Devonian to Early Carboniferous Burdekin Basin sequence in the Townsville hinterland, north Queensland.

GeoResGlobe contains mining and exploration data for Queensland. These data include themes such as exploration, production and historical resource authorities, geological and geophysical data, native title areas and administrative boundaries for example.

An overlay of Historic Mining Permits, Resources (Mineral Occurrence and Geological Observation Data) and Abandoned Mines layers relating to the subject land was obtained from GeoResGlobe and shown in Figure 39.

As shown in Figure 39, the subject land does not contain any abandoned mines, open pits or shallow workings. However, the subject land was covered by historical exploration permits for minerals and petroleum. There are no current exploration permits or licences covering the subject land.



Legend

- Cadastre (DCDB) parcel
- Cadastre (DCDB) parcel > 1 ha

Program sites (assessed)
- Program site (Priority - assessed)
- Urban remediation areas

Mine openings vent (survey)
- Centred vent pipe
- Combined vent pipes
- Grated vent
- Offset vent pipe

- Underground workings outline
- Underground workings

Pit
- Not Remediated
- Remediated

Tailings
- Not Remediated
- Remediated

Mineral material
- Not Remediated
- Remediated

- Shallow workings area

Mine openings
- Not Remediated
- Remediated
- Unknown

- Mine openings remediation (survey)
- Pit (point)
- Mineral material (point)
- Shallow working (point)

- Mine openings area
- Historical EPM prior to 1961
- Historical EPM 1961 to 1970
- Historical EPM 1971 to 1980
- Historical EPM 1981 to 1990
- Historical EPM 1991 to 2000
- Historical EPM 2001 to 2010
- Historical EPM after 2010
- Historical EPG
- Historical EPQ
- Historical ATP prior to 1961
- Historical ATP 1961 to 1970
- Historical ATP 1971 to 1980
- Historical ATP 1981 to 1990
- Historical ATP 1991 to 2000
- Historical ATP 2001 to 2010
- Historical ATP after 2010

A product of GeoResGlobe

X - PROPOSED DEVELOPMENT COMPLEX SITE

N

0 500 metres

Scale: 1:20000

Printed at: A3
Print date: 16/3/2022
Projection: Web Mercator EPSG 102100 (3857)
For more information, visit https://georesglobe.information.qld.gov.au/help-info/Contact-us.html

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Queensland Government
Department of Resources

FIGURE 39

6.15 Natural hazards

Natural hazard events are inherently unpredictable and occur at many levels of severity and frequency and include bushfire, landslide, flood and coastal hazards such as storm tide inundation and erosion.

6.15.1 Bushfire

Bushfire hazard is managed through the *State Planning Policy 2017* as outlined in section 8.1.2. Mapping of bushfire hazard areas has been undertaken using factors to determine the potential intensity of a bushfire. These include:

- potential fire weather severity;
- extent of remnant and non-remnant bushfire prone vegetation;
- estimates of potential fuel loads for different regional ecosystems;
- landscape slope; and
- potential fuel load.

Bushfire mapping overlay of the subject land shows areas with a Very High, High and Medium Potential Bushfire Intensity and land within a Potential Impact Buffer of 100 m. Charters Towers Regional Council has adopted the state-wide bushfire hazard mapping as outlined on the SPP Mapping – Safety and Resilience to Hazards, Bushfire hazard area.

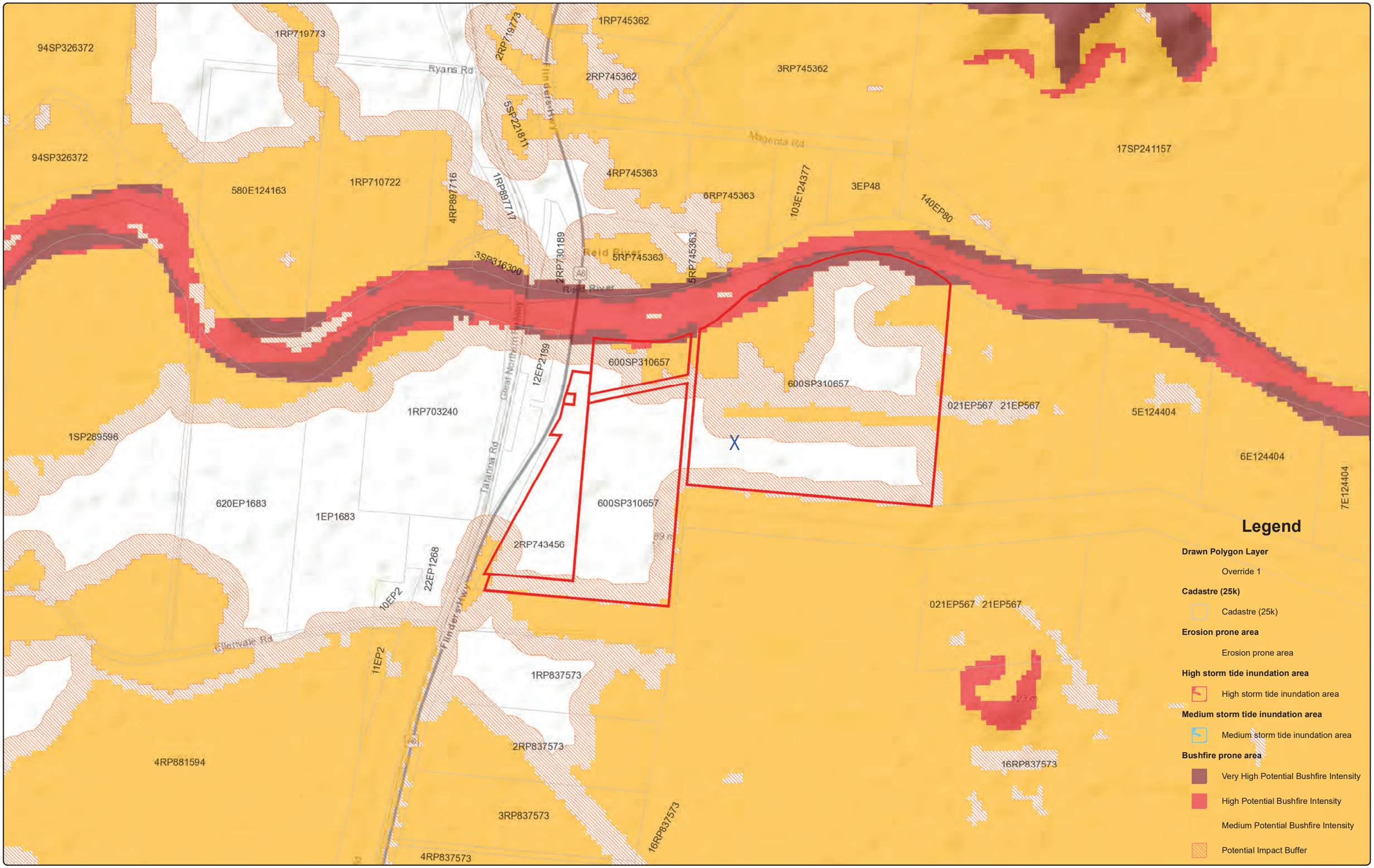
An overlay of bushfire hazard areas relating to the subject land was obtained from the DSDMIP State Planning Policy (SPP) Interactive Mapping System (IMS) and shown in Figure 40.

Figure 40 shows that there are regions of medium potential bushfire intensity risk on the subject land and potential impact buffer. These regions correlate with areas mapped as regional ecosystems and isolated clumps of paddock trees as shown on Figure 30.

Figure 30 shows that there are no aspects of the proposed development to be located within the areas mapped as regional ecosystems and infrastructure is setback a minimum of 50 m from areas of existing vegetation that are mapped as medium potential bushfire intensity risk. There are various measures proposed to mitigate the risk of bushfire on the proposed development as outlined in section 7.6 and the Bushfire Hazard Assessment provided in Appendix R.

Further information on the merits of the proposed development against the provisions of the *Charters Towers Region Town Plan* (Charters Towers Regional Council, 2020) in relation to bushfire hazard can be found in section 8.

As the proposed development is not located in a 'designated bushfire-prone area', it does not trigger assessment against the Building Code of Australia (BCA) and Australian Standard AS3959-2018 Construction of buildings in bushfire-prone areas.



Legend

Drawn Polygon Layer
Override 1

Cadastre (25k)
Cadastre (25k)

Erosion prone area
Erosion prone area

High storm tide inundation area
High storm tide inundation area

Medium storm tide inundation area
Medium storm tide inundation area

Bushfire prone area
Very High Potential Bushfire Intensity
High Potential Bushfire Intensity
Medium Potential Bushfire Intensity
Potential Impact Buffer

Queensland Government

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N

State Planning Policy

Making or amending a local planning instrument and designating land for community infrastructure

0 300 600 900 1,200

Metres

X - PROPOSED DEVELOPMENT COMPLEX SITE

Date: 31/03/2022

Disclaimer:
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FIGURE 40

6.15.2 Flooding

Flood hazard is managed through the *State Planning Policy 2017* as outlined in section 8.1.2. State-wide mapping of flood hazard areas has been undertaken using factors to determine the potential areas impacted by flooding.

An assessment of the subject land and proposed development in relation to flooding has been undertaken in section 6.5.6.

6.15.3 Landslide

A landslide describes the movement of a mass of rock, debris or earth (soil) down a slope and are a form of mass erosion (Australian Geomechanics Society, 2007).

Landslides occur when the downward force of gravity acting on slope materials exceeds the cohesive force that holds the soil particles together, or the frictional force which holds the material to the slope. There are various contributing factors to a landslide including:

- steepness of the slope;
- shape of the hillside;
- physical properties of different materials in the subsurface profile;
- depth to the water table;
- the potential for subsurface water concentration; and
- vegetation cover (Department of State Development, Infrastructure and Planning, 2013).

No statewide hazard mapping is available for landslide. Land with a slope greater than 15 % can be used as an indicator to identify land potentially subject to landslide hazard (Department of Infrastructure, Local Government and Planning, 2016).

Figure 18 shows that the subject land comprises flat terrain. The infrastructure of the proposed development is sited on an area with a gentle slope of between 0.10-0.15 % to the southeast. The proposed development does not require the clearing of any vegetation as shown in Figure 30. Further, the proposed development shall not redirect the existing flow of surface or groundwater.

Consequently, based on the criteria mentioned above, the proposed development is not sited in a potential landslide hazard area and the siting, design and construction of the proposed development shall not increase the potential for landslide events.

Charters Towers Regional Council does not include landslide hazard mapping in the planning scheme (Charters Towers Regional Council, 2020).

6.15.4 Coastal

An assessment of the subject land and proposed development in relation to coastal hazards has been undertaken in section 6.10.1.

The subject land is not located on the Queensland coast and not located in a coastal zone, coastal management district, coastal hazard area – erosion prone or storm tide inundation area as shown in Figure 34.

6.16 Matters of state environmental significance

Matters of state environmental significance (MSES) are a component of the biodiversity state interest that is defined under the *State Planning Policy 2017* (SPP) and defined under the *Environmental Offsets Regulation 2014* (Offset Regulation). MSES include:

a) protected areas (including all classes of protected area except coordinated conservation areas) under the *Nature Conservation Act 1992*;
b) 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zones under the Marine Parks Act 2004;
c) areas within declared fish habitat areas that are management A areas or management B areas under the *Fisheries Regulation 2008*;
d) a designated precinct, in a strategic environmental area under the Regional Planning Interests Regulation 2014, schedule 2, part 5, s15(3);
e) wetlands in a wetland protection area or wetlands of high ecological significance shown on the map of referable wetlands under the Environmental Protection Regulation 2019;
f) wetlands and watercourses in high ecological value waters identified in the Environmental Protection (Water) Policy 2009, schedule 1;
g) legally secured offset areas as defined under the *Environmental Offsets Act 2014*;
h) threatened wildlife under the *Nature Conservation Act 1992* and special least concern animals under the *Nature Conservation (Wildlife) Regulation 2006*;
i) marine plants under the *Fisheries Act 1994* (excluding marine plants in an urban area);
j) waterways that provide for fish passage under the *Fisheries Act 1994* (excluding waterways providing for fish passage in an urban area);
k) High risk area on the flora survey trigger as described by the Environmental offsets Regulation 2014, schedule 2, part 6(1); and
l) regulated vegetation under the *Vegetation Management Act 1999* that is:

    i. category B areas on the regulated vegetation management map, that are 'endangered' and 'of concern' regional ecosystems
    ii. category C areas on the regulated vegetation management map that are 'endangered' and 'of concern' regional ecosystems
    iii. category R areas on the regulated vegetation management map
    iv. areas of essential habitat on the essential habitat map for an animal that is 'endangered wildlife' or 'vulnerable wildlife' or a plant that is 'endangered wildlife' or 'vulnerable wildlife' wildlife prescribed as 'endangered wildlife' or 'vulnerable wildlife' under the Nature Conservation Act 1992

v. category A,B,C,R areas that are located within a defined distance8 from the defining banks of a relevant watercourse identified on the vegetation management watercourse and drainage feature map
vi. category A,B,C,R areas that are located within 100 metres from the defining bank of a wetland identified on the vegetation management wetlands map.

An assessment of the proposed development against each matter of state environmental significance is provided in the following sections.

6.16.1 Protected areas (including all classes of protected area except coordinated conservation areas) under the *Nature Conservation Act 1992*

The subject land is not located within or adjacent to a protected area as defined under the *Nature Conservation Act 1992*.

6.16.2 'Marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zones under the *Marine Parks Act 2004*

The subject land is not located within or adjacent to a 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zones under the *Marine Parks Act 2004*.

6.16.3 Areas within declared fish habitat areas that are management A areas or management B areas under the *Fisheries Regulation 2008*

The subject land is not located in a declared fish habitat area as outlined in section 6.10.2.

6.16.4 A designated precinct, in a strategic environmental area under the Regional Planning Interests Regulation 2014, schedule 2, part 5, s15(3)

The subject land is not located in a designated precinct, in a strategic environmental area under the Regional Planning Interests Regulation 2014, schedule 2, part 5, s15(3) as outlined in 6.12.

6.16.5 Wetlands in wetland protection area or wetlands of HES shown on the map of referable wetlands under the *Environmental Protection Regulation 2019*

There are no wetlands in a wetland protection area or wetlands of high ecological significance shown on the map of referable wetlands under the *Environmental Protection Regulation 2019* on the subject land as outlined in section 6.7. The proposed development shall not be sited within the wetland trigger area.

6.16.6 Wetlands and watercourses in high ecological value waters identified in the Environmental Protection (Water and Wetland Biodiversity) Policy 2019, schedule 1

The proposed development shall have no impact on wetlands and watercourses in high ecological value waters identified in the Environmental Protection (Water and Wetland Biodiversity) Policy 2019, schedule 1 as outlined in section 0 and section 6.7.

6.16.7 legally secured offset areas as defined under the *Environmental Offsets Act 2014*.

The subject land does not contain a legally secured offset area as defined under the *Environmental Offsetts Act 2014*.

6.16.8 threatened wildlife under the *Nature Conservation Act 1992* and special least concern animals under the *Nature Conservation (Wildlife) Regulation 2006*

As outlined in section 6.6.5 there are no critically endangered, endangered, vulnerable or special least-concern wildlife species and one near-threatened wildlife species recorded within a 5 km radius of the proposed development site on the subject land.

The near threatened wildlife species is a plant species (*Scleromitrion polycladum*). However, as the proposed development shall utilise the built infrastructure associated with the existing development there are no additional ground disturbance areas. All bulk earthworks, feed bunks, water troughs, aprons, fences and gates have been completed.

Consequently, adverse impacts to threatened wildlife species are unlikely because the infrastructure for the proposed development has been constructed.

It is highly unlikely that the proposed development shall have adverse impacts on the platypus (*Ornithorhynchus anatinus*) or the broader population of the echidna (Tachyglossus aculeatus) which are special least concern animals under the *Nature Conservation (Wildlife) Regulation 2006*. No habitat for this wildlife such as surface waters and fallen logs and branches, tree stumps, rocks, leaf litter and debris respectively are proposed to be disturbed as part of the proposed development.

6.16.9 Marine plants under the *Fisheries Act 1994* (excluding marine plants in an urban area)

The proposed development does not involve disturbance of marine plants. There are no marine plants on or adjacent to the subject land as outlined in section 6.10.

6.16.10 waterways that provide for fish passage under the Fisheries Act 1994 (excluding waterways providing for fish passage in an urban area)

The subject land contains no low level (green) waterways, moderate level (orange) waterways or high level (red) waterways that provide for fish passage under the *Fisheries Act 1994* as outlined in section 0. The Reid River which for part of its length forms the northern boundary of the subject land is mapped as a major level (purple) waterways that provide for fish passage under the *Fisheries Act 1994*. However, the proposed development does not involve disturbance of the Reid River or involve waterway barrier works as outlined in section 4.

6.16.11 High risk area on the flora survey trigger as described by the *Environmental Offsets Regulation 2014*, schedule 2, part 6(1)

No areas of the subject land are shown to be a high risk area on the flora survey trigger map as described by the *Environmental Offsets Regulation 2014* as outlined in section 6.6.5 and shown in Appendix K.

As outlined in section 6.6.5 and shown on Appendix K, the proposed development shall be sited outside of a high risk area on the flora survey trigger map. Further, the proposed development complex is sited on previously cleared and cultivated land. Consequently, no protected plants shall be cleared as part of the proposed development.

6.17 Matters of national environmental significance

The EPBC Act lists nine matters of NES which must be addressed when assessing the impact of a proposal. The nine matters of NES are:

- world heritage properties;
- national heritage places;
- wetlands of international importance (often called Ramsar wetlands after the international treaty under which such wetlands are listed);
- nationally threatened species and ecological communities;
- migratory species;
- Commonwealth marine areas;
- the Great Barrier Reef Marine Park;
- nuclear actions (including uranium mining); and
- a water resource, in relation to coal seam gas development and large coal mining development.

Appendix N summarises the MNES that may occur in, or may relate to, the subject land or within a 5 km radius surrounding the proposed development site.

6.17.1 World heritage properties

There are no declared world heritage properties in proximity to the proposed development, or that would potentially be affected by the proposed development.

6.17.2 National heritage properties

There are no declared national heritage properties in proximity to the proposed development, or that would potentially be affected by the proposed development.

6.17.3 Wetlands of international importance (Ramsar Wetlands)

There are no Wetlands of International Importance in proximity to the proposed development, or that would potentially be affected by the proposed development. The closest wetlands of international importance is the Bowling Green Bay wetland located some 30-40 km downstream of the subject land.

6.17.4 Nationally threatened species and ecological communities

A search for Commonwealth-listed threatened ecological communities (EC's) has returned no listed EC's that may occur within, or relate to, a buffer of 5 km from the proposed development site on the subject land.

Consequently, the proposed development is unlikely to have any adverse impacts on endangered ecological communities.

A search for Commonwealth-listed threatened species within a 5 km buffer from the proposed development site on the subject land has returned 26 listed species.

Two of these species are birds listed as critically endangered. These are the Curlew Sandpiper (*Calidris ferruginea*) and the Eastern Curlew, Far Eastern Curlew (*Numenius madagascariensis*) which may occur within the search area to forage or feed. Both the Curlew Sandpiper and the Eastern Curlew, Far Eastern Curlew are listed as Endangered under the Nature Conservation Act 1992 (Queensland).

The Curlew Sandpiper and the Eastern Curlew, Far Eastern Curlew are migratory shorebirds. The proposed development will not affect the life cycle of these critically endangered species therefore there will be no decline in a population. The proposed development site does not provide suitable habitat for the Curlew Sandpiper and the Eastern Curlew, Far Eastern Curlew breeding. Consequently, the proposed development will not affect the life cycle of these species and there will be no decline in a population.

The proposed development is unlikely to have any adverse impacts on critically endangered species as the land has been previously cleared and is predominantly former improved pasture or land associated with the existing cattle holding yard operations. Further, no riparian

vegetation is proposed to be impacted by the proposed development. No remnant vegetation on the subject land is proposed to be disturbed or cleared as part of the proposed development.

6.17.5 Migratory species

A search for migratory species within a 5 km buffer area of the proposed development site on the subject land has returned 18 listed migratory species.

Two of these species, the Curlew Sandpiper and Eastern Curlew, Far Eastern Curlew are migratory wetlands bird species listed as critically endangered and may occur within the search area to forage or feed. Both the Curlew Sandpiper and the Eastern Curlew, Far Eastern Curlew are listed as Endangered under the Nature Conservation Act 1992 (Queensland).

However, both the Curlew Sandpiper and Eastern Curlew, Far Eastern Curlew are shorebirds that mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh and brackish waters.

As the subject land is not located in a coastal area or contain habitat favoured by the Curlew Sandpiper or Eastern Curlew, Far Eastern Curlew, it is unlikely that the Curlew Sandpiper or Eastern Curlew, Far Eastern Curlew will occur within the area or species habitat will occur on the subject land.

The proposed development change will not disturb or clear any watercourses, drainage features or vegetation of ecological significance. Consequently, the proposed development will have minimal impact on the Curlew Sandpiper or Eastern Curlew, Far Eastern Curlew.

6.17.6 Commonwealth marine areas

There are no Commonwealth marine areas in proximity to the proposed development, or that would potentially be affected by the proposed development.

6.17.7 The Great Barrier Reef Marine Park (GBRMP)

The proposed development is not located in the GBRMP. However, the subject land is located in an area that drains directly into the GBRMP. Therefore, mitigation measures are proposed for the proposed development to minimise adverse impacts to surface water and therefore avoiding adverse impacts on the GBRMP.

6.17.8 Nuclear actions

The proposed development would not involve a nuclear action, as defined under the EPBC Act 1999.

6.17.9 A water resource, in relation to coal seam gas development and large coal mining development

The proposed development is not a coal seam gas or large coal mining development as outlined in section 4.

7 Environmental risk assessment

7.1 Introduction

The risk that an intensive livestock development poses to the environment depends upon the vulnerability of the natural resources or amenity, and on the standard of design and management of the operation.

The purpose of an environmental risk assessment is to identify any actual, or likely impacts that the proposed development may pose to the environment. This provides the basis for reducing impacts (or risks of impacts) through design, management or monitoring.

A risk assessment has been undertaken to ensure potential environmental risks from the proposed development are identified and addressed up-front with management strategies in place to mitigate the possible risks. The risk assessment approach has been used to identify the hazards that are not only industry-wide hazards but also the hazards posed due to the siting and operation of the proposed development.

There are certain Environmental Values outlined in the *Environmental Protection Act 1994 (EP Ac*t) that are required to be met when constructing and operating an environmentally relevant activity, such as intensive animal feedlotting (cattle). The objective of the EP Act is to protect Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends (ecologically sustainable development).

7.2 Environmental risk assessment process

A risk management approach has been used to determine the severity and likelihood of any impacts the proposed development may have on the environment and to prioritise their significance.

This approach considers potential regulatory and legal risks as well as taking into consideration the concerns of community, vulnerability of site resources and the design and management of the proposed development and other key stakeholders.

The objectives of risk assessment are to:

- Identify activities, events or outcomes that have the potential to adversely affect the local environment and/or human health/property;
- Qualitatively evaluate and categorise each risk item;
- Assess whether risk issues can be managed by environmental protection measures; and
- Qualitatively evaluate residual risk with implementation of measures.

The environmental risk assessment was undertaken in accordance with the following standards:

- Australian Standard/New Zealand Standard (AS/NZS) ISO 31000:2018 Risk management – Principles and guidelines; and
- Australian Standard/New Zealand Standard Handbook 203:2012 Managing environment-related risk (Standards Australia/Standards New Zealand 2012).

The main components of the risk assessment methodology include:

- **Hazard Identification**: Identifying potential hazards that are applicable to the proposed development activities and determining the hazardous events to be evaluated.
- **Risk Assessment**: Determining the possible causes that could lead to the hazardous events identified; the consequences of the hazardous events; and the safeguards and controls currently in place to mitigate the events and/or the consequences.
- **Risk Evaluation**: Evaluating the risks using the Risk Prioritisation Matrix (section 7.4). The risk ranking is determined by a combination of the expected frequency of the hazard occurring (likelihood) and the consequence of its occurrence. Note that when assessing the consequence, no credit is given to the hazard controls. Hazard controls are considered in determining the likelihood of the event.
- **Residual Risk Treatment**: Reviewing the proposed management controls for each of the risks identified and proposing additional controls or making recommendations, if required.

7.3 Hazard identification

The potential impacts on the existing environment by the proposed development include:

- Community amenity (air quality; visual, noise and vibration, traffic and transport);
- Air quality (odour, dust, GHG);
- Groundwater quality and quantity;
- Surface water quality and quantity;
- Cultural heritage;
- Biodiversity (flora & fauna, regulated vegetation); and
- Soil (land capability).

7.4 Risk analysis

The risk analysis was conducted using the semi-quantitative approach in the Australian/New Zealand Standard AS/NZS ISO 31000 (2018). Firstly, the 'likelihood' and 'consequence' definitions were defined for the risk analysis. These are presented in Table 38 and Table 39 for 'consequence' and 'likelihood' definitions respectively.

Table 38 – Consequence assessment

Consequence	Environmental impact
Insignificant	Minor consequence
Minor	Environmental nuisance and default non-compliance
Medium	Material environmental harm
Major	Serious environmental harm
Extreme	High-level serious environmental harm

Table 39 – Likelihood definitions

Likelihood	Description	Frequency
Almost certain	Expected to occur in most circumstances	Occur once in a day or more often
Likely	Will probably occur in most circumstances	Occur once in a week or more often
Possible	Might possibly occur at some time	Occur once in a month or more often
Unlikely	Could occur at some time	Occur once in a year or more often
Rare	May occur in exceptional circumstances	Occur once in 5 years or more often

Risk characterisation describes the likelihood of exposure and consequences of exposure. Risk is described as the "hazard characterisation multiplied by the exposure characterisation". Risks are characterised as Low, Medium or High based on the risk assessment matrix in Table 40.

Table 40 – Risk assessment matrix

Likelihood		Consequence				
		Insignificant	Minor	Medium	Major	Extreme
		1	2	3	4	5
Almost certain	5	M8 Moderate	H16 High	H18 High	E23 Extreme	E25 Extreme
Likely	4	M7 Moderate	M10 Moderate	H17 High	H20 High	E24 Extreme
Possible	3	L3 Low	M9 Moderate	M12 Moderate	H19 High	H22 High
Unlikely	2	L2 Low	L5 Low	M11 Moderate	M14 Moderate	H21 High
Rare	1	L1 Low	L4 Low	L6 Low	M13 Moderate	M15 Moderate

Table 51 summarises the risk performance outcomes and potential risks associated with the operation of the proposed development. The choice for the probability and consequence ratings are based on specific management strategies that will be undertaken within the proposed development to reduce the impacts and are also based on the siting, design and construction of the development.

7.5 Risk evaluation

7.5.1 Amenity and air quality

Reid River Export Depot Pty Ltd as trustee are acutely aware of the potential impact of the proposed development on nearby sensitive receptors even though the subject land has no close neighbours. Amenity issues can arise when the operation of the development unreasonably interferes with the comfortable enjoyment of life of the surrounding sensitive receptors. An intensive livestock development can disrupt amenity through odour, dust and noise generation, and traffic. Although the development is appropriately sited within the Rural zone, Reid River Export Depot Pty Ltd as trustee is committed to having amicable relationships with the surrounding receptors.

Potential impacts on the amenity of nearby land users are outlined in the following sections.

7.5.1.1 Odour

Odour at intensive livestock developments is mainly the result of anaerobic breakdown of organic matter, primarily in solid (manure) and liquid (effluent) wastes. Consequently, odour release sites within the proposed development include:

- pen areas (production pens, holding pens, hospital pens);
- drainage systems including catch drains, sedimentation and holding pond; and
- solid and liquid waste utilisation areas.

Odour has been identified as the principal community amenity concern and impact to air quality in relation to the proposed development. Various design and management measures shall be implemented to minimise the generation of odour but it is not possible to eliminate this nuisance source. The accepted solution to limit any adverse impacts and unreasonable interference with the amenity of neighbours is to provide an adequate separation between the nuisance source and the sensitive receptor.

Consequently, a separation distance assessment has been undertaken as outlined in section 7.5.1.9.

7.5.1.2 Noise

This section discusses the potential impacts from noise and vibration associated with the proposed development; including mitigation measures when practicable.

The sources of noise emissions from the construction and operation of the proposed development include:

- Construction plant and machinery;
- Feed storage and processing equipment (electric motors, conveyors, roller mill) and mobile plant (feed mixer, tractors, front-end loaders etc) during operation;
- Livestock; and
- Livestock, feed commodity and solid waste transport vehicles both on-site and off-site.

Potential noise impacts on sensitive receptors are expected to be minimal based on the implementation of several mitigation measures, the proximity of the proposed development to the closest rural dwellings.

The sources of vibration from the construction and operation of the proposed development include:

- Continuous construction activities such as bulk earthworks machinery, vibrating compactors;
- Infrequent activities such as occasional dropping of heavy equipment, loading and unloading steel;
- Feed processing equipment such as the grain movement; and
- Livestock, feed commodity and solid waste transport vehicles.

Whilst geotechnical sampling has not been undertaken, due to the type of strata that was encountered when the existing development was constructed and therefore likely to be encountered at the site of the proposed development, it is unlikely that blasting, impact pile driving or jack hammers will be required for construction works.

7.5.1.2.1 Noise assessment criteria

7.5.1.2.1.1 Environmental Protection (Noise) Policy 2019

The overall noise level generated by the proposed development should comply with the requirements of the Environmental Protection (Noise) Policy 2019. This policy states that the environmental values to be enhanced or protected under this policy are the qualities of the acoustic environment that are conducive to:

- protecting the health and biodiversity of ecosystem; and
- human health and wellbeing, including by ensuring a suitable acoustic environment for individuals to do any of the following;
  i. sleep;
  ii. study or learn;
  iii. be involved in recreation, including relaxation; and
- protecting the amenity of the community.

Table 41 is a summary of the acoustic quality objectives from the *Environmental Protection (Noise) Policy 2019* applicable to the sensitive receptors within the area of the proposed development.

Table 41 – Acoustic quality objectives (Environmental Protection (Noise) Policy 2019)

Type of sensitive receptor	Indicative noise amenity area	Time of day	Acoustic quality objective (measured at the receptor) dB(A)		
			$L_{Aeq,adj,1hr}$	$L_{A10,adj,1hr}$	$L_{A1,adj,1hr}$
Residence (Outdoors)	Rural	Daytime	50	55	65
		Evening	50	40	65
Residence (Indoors)	Rural	Daytime	35	40	45
		Evening	35	40	45
		Night	30	35	40
Notes: Daytime: 7.00 am – 6.00 pm / Evening: 6.00 pm – 10.00 pm / Night: 10.00 pm – 7.00 am.					

The acoustic quality objective stated in Table 41 is prescribed for enhancing or protecting the environmental value being health and wellbeing for each sensitive receptor.

The *Environmental Protection (Noise) Policy 2019* states noise criteria for controlling background creep, that to the extent that it is reasonable to do so, noise from an activity must not be:

(a) for noise that is continuous noise measured by $L_{A90,T}$ - more than nil dB(A) greater than the existing acoustic environment measured by $L_{A90,T}$; or

(b) for noise that varies over time measured by $L_{Aeq,adj,T}$ - more than 5dB(A) greater than the existing acoustic environment measured by $L_{A90,T}$.

$L_{A90,T}$ means the A-weighted sound pressure level, obtained using time-weighting 'F', that is exceeded for 90% of the measuring period (T).

$L_{Aeq,adj,T}$ means an A-weighted sound pressure level of a continuous steady sound, adjusted for tonal character, that within a measuring period (T) has the same mean square sound pressure as a sound level that varies with time.

The Environmental Protection (Noise) Policy 2019 does not define "continuous noise", but by definition, the "continuous noise" would be required to occur for at least 90% of a measurement period (typically 15 minutes or 60 minutes). Therefore, this criterion could apply for equipment such as mechanical plant.

The criterion for "noise that varies over time" is appropriate for noise sources operating for less than 90% of a measurement period and could apply to intermittent events (e.g. vehicles) or mechanical plant that does not run continuously (e.g. refrigeration).

The acoustic quality objectives in the Environmental Protection (Noise) Policy 2019 do not apply for transport activities (road, rail, aircraft and ports). Transport activities associated with the proposed development will be assessed via other limits relevant to the transport mode (e.g. Traffic Noise Management Code of Practice (DTMR, 2013)).

There are no noise emission criteria prescribed by the *Charters Towers Regional Town Plan* (Charters Towers Regional Council, 2020) in addition to the Environmental Protection (Noise) Policy 2019 criteria.

7.5.1.2.2 Existing environment

The proposed development is in a rural area dominated by agricultural activities such as beef cattle grazing and cattle holding yards. The subject land also adjoins the Flinders Highway. The nearest potentially affected noise sensitive receptor locations have been identified from examination of aerial imagery (Google Earth™) and a site inspection. These are rural dwellings located adjacent to the Flinders Highway and on the northern bank of the Reid River some 905 m west northwest and 735 m north of the proposed development complex respectively, whilst other sensitive receptors being rural dwellings are separated by over 1,000 m. These locations are shown in Table 49 and in Figure 41.

The main sources of noise in the vicinity of the proposed development are from agricultural activities (tractors, cropping, cattle handling, irrigation pumping etc.) and traffic on the Flinders Highway which carries over 2,000 vehicles per day.

The proposed development complex is setback of over 950 m from public roads and the subject land boundary as shown in Figure 15.

Indicatively, Table 42 presents typical background noise levels extracted from AS1055.3–1997 (Standards Australia, 1997). These are representative of background levels in rural areas and are considered applicable to the proposed development.

Table 42 – Estimated background noise levels (Standards Australia, 1997)

Description of neighbourhood	Average background A-weighted sound pressure level, L_{A90}					
	Monday to Saturday			Sunday and public holidays		
	7 am-6pm	6 pm- 10 pm	10 pm-7 am	7 am-6pm	6 pm-10 pm	10 pm-7 am
Area with medium density transportation	40	35	30	40	35	30

7.5.1.3 Construction noise assessment

The proposed development shall utilise the built infrastructure associated with the existing development. Consequently, there are construction activities per se.

7.5.1.4 Operation noise assessment

Noise emissions from the operation of the proposed development would largely be associated with the operation of machinery and equipment on the site, traffic movements and from animal noise. A diesel generator shall be used during operations for backup electricity supply.

Transport of feed commodities, livestock, solid waste would typically occur between 6:30 am and 4:30 pm. However, heavy vehicle movements may occur outside of normal transport hours for example transport of cattle may occur either at night or in the early hours of the morning for animal welfare reasons.

The operation of the proposed development does not involve additional plant and equipment that may produce additional low frequency noise over which already exists at the site. Items such as pumps, stationary diesel engines, are potential sources of high level, low frequency noise having frequency content less than 200 Hz (Roberts, 2004) and these items are used within the existing development at the site.

Activities including the receipt and dispatch of cattle, feed management, water management, waste management, cleaning and maintenance would occur throughout the daytime.

Increased noise from cattle would generally occur during loading and unloading of cattle and any situations where cattle may be distressed. Stress impacts upon cattle growth and carcase quality, and would therefore be minimised to ensure cattle are healthy thereby ensuring optimum growth. Most of the livestock noise would be generated during daytime operations.

Table 43 below indicates the type of equipment, number of units and predicted noise levels during various operational activities associated with the proposed development. The type of mobile plant varies widely within beef cattle feedlots and is subject to change.

Table 43 – Typical sound power level from operational equipment (Department of Planning Transport and Infrastructure (SA), 2014)

Type	Number of units	Activity	Location	Typical sound power level (db(A))
Truck (<20t)	1	Solid waste transport	Production pens, waste utilisation areas	107
Front-end loader	2	Ration preparation, pen cleaning, solid waste stockpiling/processing	Feedmill / Solid waste stockpile	105
Tractor	2	Ration delivery, general activities, slashing, tillage, spraying, silage production	Development site / waste utilisation areas	100
Trucks (>20t)	2	Incoming/outgoing cattle, feed commodities etc	Feedmill, Cattle handling facility	107
Irrigation pumps/motor	4	Irrigation of crops	Pump station	99

A semi-quantitative assessment based on noise emissions of typical equipment to be used during operation has been undertaken due to the separation distances to sensitive receptors. Vegetation, terrain and metrological conditions have not been factored into the assessment. Most sensitive receptors to the northwest and east have stands of vegetation and the Reid River between them and the proposed development site which would attenuate the noise to some degree.

Therefore, the predicted noise levels in Table 44 represent a worst-case scenario and noise levels at these distances from equipment are likely to be much lower. For the assessment it has been assumed that a tractor and feed wagon, front-end loader and truck are operating at the same time.

The noise impact for the anticipated operational equipment is shown in Table 44 for the distance to the subject land boundary and is based on no natural landform noise barriers or no acoustic shielding in place and with each plant item operating at full power.

Table 44 – Predicted sound power levels at nearby residential receptors during operation

Receptor	Distance to sensitive receptor m	Nearest Activity A-weighted Sound Power Level at Source* db(A)	Deduction from A-weighted Sound Power Level[1] db(A)	Predicted A-weighted Sound Power Level db(A)	Compliance with Acoustic Quality Objectives - daytime <45 db(A)
Subject land boundary**	975	110	74	36	Yes
R6	905	110	73	37	Yes
R14	735	110	71	39	Yes

*Assumes one tractor and feed wagon, one front end loader and one truck operating at the same time
**In the direction of the closest sensitive receptor
Notes: 1. Deduction from A-weighted Sound Power Level obtained from Figure B1 and Table D1 in AS2436-2010 – Guide to Noise Control on Construction, Maintenance and Demolition Sites.

Based on data from Table 43 and predicted A-weighted Sound Power Level at sensitive receptors (Table 44), noise generation from the operational activities of the proposed development at sensitive receptors are not expected to exceed the acoustic quality objective for daytime activities.

The *Planning for Noise Control* guideline (EPA, 2004) states that a partially open window can achieve a 10 dB(A) noise reduction from outside to inside. Therefore, an external limit will be 10 dB(A) higher than the internal limit. Consequently, assuming an attenuation of 10db(A) from outside to inside the dwelling, the operational noise from transport activities exceeds the acoustic quality objective for night-time (30 dB(A)). However, the operational activities shall only be undertaken during the day-time, with the only night-time noise generating activities being livestock themselves and pumping of water for irrigation if required. Further, the closest receptors are located within close proximity to the Flinders Highway and may be more impacted by traffic noise.

7.5.1.5 Conclusion

The proposed development is in a rural area dominated by agricultural activities. The nearest potentially affected noise sensitive receptor is located some 735 m from the proposed development and the proposed development is located over 975 m from the subject land boundary in the direction of the closest potentially affected noise sensitive receptor.

The main sources of noise during the operational phase are from the operation of machinery and equipment on the site, traffic movements, animal noise and associated agricultural activities (tractors, cropping, pumping of water etc.).

It is conservatively predicted that operational noise will meet acoustic quality objectives of the EPP (Noise) 2019 policy. The operation of the proposed development is not expected to generate low frequency noise emissions.

There is no increase in traffic generation on the Flinders Highway during the operational phase of the proposed development. Further the vehicles servicing the proposed development are of similar type and size to the existing traffic on this road servicing the existing development. Further, the additional traffic imposed on the Cunningham Highway carries over 500 heavy vehicles per day is less than 5%.

Due to the nature of the proposed development and separation distances to sensitive receptors, the noise emissions from the operational activities of the proposed development are not expected to exceed the acoustic quality objectives for daytime, evening and night-time at sensitive receptors as prescribed by the Environmental Protection (Noise) Policy 2019.

7.5.1.6 Dust

Dust may be generated from cattle movements, traffic movements, solid waste handling and feed commodities. However, generally, solid waste contains enough moisture not to generate dust.

The proposed development must comply with the Environmental Protection Policy (Air) 2019 in that it protects "the qualities of the air environment that are conducive to human health and well-being, protecting the aesthetics of the environment, including the appearance of buildings, structures and other property; and to protecting agricultural use of the environment".

Therefore, the dust emissions from the activity must not cause any dust exposure of a serious and persistent nature to any sensitive place located at or beyond the boundaries of the subject land.

Native vegetation remains between the proposed development and all sensitive receptors with the exception of R6 which is located adjacent to the subject land and Flinders Highway. The existing vegetation shall screen the proposed development from sensitive receptors in these directions and mitigates any potential dust issues. Sensitive receptor R6 is located over 900m from the proposed development and over 500 m from the access road of the existing development. Consequently, any potential dust generated from the proposed development shall not impact on this sensitive receptors due to separation distance.

Vehicle movements along unsealed roads can generate dust. However, the Flinders Highway is sealed. Unsealed roads on the subject land are potential sources of dust generation. However, sensitive receptors are setback over 500 m from the internal road network. Consequently, any potential dust generated from these roads shall not impact on sensitive receptors.

Typically, in intensive livestock facilities, if the separation distance is suitable to mitigate against odour impacts, dust impacts are also not expected by default (MLA, 2012a). Consequently, no particulate matter or visible contaminant, including dust, smoke, fumes and aerosols likely to cause environmental harm is likely to emanate beyond the boundaries of the subject land.

7.5.1.7 GHG

Direct GHG emissions from the proposed development can be broken into three sources, direct methane emissions to the atmosphere (enteric methane) from the livestock themselves; methane and nitrous oxide emissions resulting from the breakdown of organic matter during solid waste and effluent storage, processing and utilisation; and those resulting from the use of fossil fuels for energy usage.

Potential impacts to air quality from GHG emissions were considered based on the type of infrastructure proposed, construction techniques and machinery to be utilised and management techniques to be employed.

The implementation of the following management and mitigation measures at the design, construction and operation stages shall minimise identified potential GHG impacts to air quality as a result of the proposed development:

- The beef cattle production pens shall be designed and constructed with adequate slope to maximise drainage and encourage rapid drying of the pen surface after rainfall;
- Low energy intensive grain processing system adopted (dry rolling);
- Appropriately sized solid waste and effluent utilisation areas for sustainable application of nutrients;
- Sourcing livestock from as close to the development as practical as well as on-site production to minimise fugitive emissions during transport;
- Utilising the best animal production genetics - Improved production traits such as growth rate and carcass weight will contribute significantly to reducing emissions intensity;
- Maximise feed energy by eliminating parasites and nutrient deficiencies;
- Use of appropriately sized plant and equipment for respective processes;
- Generating and maintaining best practice management for solid waste and effluent storage, processing and utilisation;
- Frequent removal of manure from the pens/drains and under-fences;
- Elimination of wet areas within the pens;
- Solids shall be removed from the sedimentation ponds as soon as practical;
- Solid waste stockpiles are not turned to release emissions generated from the anaerobic decomposition process;
- Dewatering of the holding pond by irrigation to crops or pastures shall occur as soon as possible after rainfall;
- Utilisation of solid wastes and effluent on-site to minimise inorganic fertiliser requirements;
- Matching fertiliser to plant nutrient requirements to maximise crop growth;
- Sourcing feed commodities from as close to the proposed development as practical as well as on-site production to minimise fugitive emissions during transport; and

- Routine service and maintenance of mobile equipment used on-site to ensure efficient operation.

GHG emissions from the proposed development are unlikely to cause impacts due to productivity improvements over extensively grazed systems and the mitigation and management measures proposed.

7.5.1.8 Visual

The visual impact of the proposed development, including both short-term and long-term impacts has been determined by considering both visual effect and visual sensitivity. Visual effect is a measure of the level of visual contrast and integration of the proposed development with the existing landscape.

The degree of this contrast with the existing landscape will determine the level of visual effect. For example, a new development will have a higher visual effect due to strong contrast with the existing visual environment. Changes to an existing development will have a lesser visual effect due to elements of the development being present in the landscape.

Visual sensitivity is a measure of how critically a change to the existing landscape is viewed by people from different land use areas in the vicinity of the proposed development. In this regard, residential, tourist and / or recreation areas generally have a higher visual sensitivity than other land use areas including industrial, agricultural or transport corridors. This is because land uses with a higher visual sensitivity, such as residential, use the scenic amenity values of the surrounding landscape and may be used as part of a leisure experience and often over extended viewing periods (such as a regional tourist drive).

The visual sensitivity of individual viewing locations varies according to:

- Screening effects of any intervening topography, buildings or vegetation. Viewing locations with well screened views of the proposed development will have a lower visual sensitivity than those with more open views;
- Viewing distance from the viewing location to visible areas of the proposed development. The longer the viewing distances, the lower the visual sensitivity; and
- General orientation of residences to landscape areas affected by the proposed development. Viewing locations with strong visual orientation towards the proposed development (i.e. those residences with areas such as living rooms and/or verandas orientated towards it) will have a higher visual sensitivity than those not orientated towards it, and which do not make use of the views toward the proposed development.

The subject land has been affected by impacts commonly associated with agricultural development including livestock grazing, cropping, infrastructure improvements and construction of the existing development. This existing disturbance includes vegetation clearing, pasture improvement, cropping and built infrastructure. The current vegetation pattern includes scattered vegetation becoming denser along drainage lines, the subject land boundaries and along the Reid River.

The proposed development has a large horizontal and low vertical scale. Whilst the visual effect of the proposed development is high, the low vertical scale ensures that all viewing locations are generally screened by some of the intervening topography and/or vegetation, limiting the visibility of the proposed development from sensitive receptors in adjacent areas.

There is one neighbouring residential dwelling that has direct views of the proposed development complex as shown in Photograph 8. However, this residential dwelling is over 850 m to the west northwest and the proposed development shall utilise built infrastructure. All other residential dwellings in the local area are unsighted due to intervening topographic and vegetation features as shown in Photograph 29 and Photograph 30.

There is potential for glimpses of the proposed development complex from the Flinders highway between Runway Station Road north to the approach to the Reid River bridge where the roadside vegetation is sparse. Photograph 28 provides a view of the proposed development complex from the Flinders Highway due west of the complex. The viewing distance is about 1,100 m and this shows that the low vertical scale of the proposed development complex and terrain obscures direct views of the proposed development complex. Photograph 29 provides a view from the Flinders Highway closer to Runway Station Road. This shows that the low vertical scale of the proposed development complex, terrain and existing vegetation obscures direct views of the proposed development complex.

The proposed development complex viewed from Runway Station Road is shown in Photograph 30. The viewing distance is about 1,500 m and this shows that the low vertical scale of the proposed development complex combined with the flat terrain obscures the proposed development complex. Photograph 31 shows that the proposed development complex is not visible from viewing locations north of Reid River due to existing vegetation.

Consequently, the visual impact of the proposed development is low from key viewing locations with impact limited to the local setting in the vicinity of the Flinders Highway north of Runway Station Road and from the entrance to the subject land off Runway Station Road.

The nature of the proposed development would be consistent with the existing agricultural activities on the subject land. Consequently, it is considered that the proposed development would assimilate into the local landscape due to the nature of the development and the high visual absorption capacity of the surrounding landscape. Consequently, no additional vegetative screen is proposed adjacent to the Flinders Highway or around the proposed development complex.

Retention of as many of the existing vegetation and the maintenance of the proposed development and its associated infrastructure in a clean and tidy condition will generally assist in the management of the visual impact of the development.

Consequently, the proposed development is not expected to impact on the visual amenity of sensitive receivers or the landscape character of the area in the immediate vicinity.

Photograph 28 – Proposed development – Development complex - Viewed from Flinders Highway (north)

Photograph 29 – Proposed development – Development complex – Views from Flinders Highway (Runway Station Road)

Photograph 30 – Proposed development – Development complex site – Viewed from Runway Station Road

Photograph 31 – Proposed development – Development complex – Viewed from Flinders Highway (Reid River)

7.5.1.9 Separation distance assessment

The use of appropriate separation distances is a well-established and widely recognised means of mitigating the impacts on community amenity that arise from odour from beef cattle feedlots (MLA, 2012a).

The Reference manual for the establishment and operation of beef cattle feedlots in Queensland (Skerman, 2000) and the National Guidelines for Beef Cattle Feedlots in Australia (3rd Edition) (MLA, 2012a) provide two methods for determining appropriate separation distances between cattle feedlots and sensitive receptors. These include the S-factor method and odour dispersion modelling.

The S-factor method uses a standard empirical formula that provides a conservative estimate of the separation distance required and therefore offers higher levels of protection for community amenity. Typically, the separation distance estimated using the S-factor method more than complies with the quantitative performance criteria set out in relevant environmental legislation, regulation and policy.

Typically, odour dispersion modelling is used for large feedlot developments or developments on complex sites. The modelling process utilises odour emission data (from similar developments) and site-specific climatic data to determine the probability of a particular odour level being exceeded at nearby receptors.

Given, the size and scale of the proposed development and proximity to sensitive receptors the S-factor method has been adopted to assess the separation distance required to mitigate potential odour nuisance issues for nearby sensitive receptors.

The S-factor method relies on factors such as the number of cattle in the development, receptor type, topography, vegetation (surface roughness), wind frequency and feedlot design and operation. The required separation distance is measured from the closest odour source of the proposed development in the direction of the sensitive receptor, not the centre of the development.

The National Guidelines for Beef Cattle Feedlots in Australia (3rd Edition) (MLA, 2012a) calculation of separation distances for each receptor type follows the form:

Separation distance (D) (m) = $N^{0.5} \times S_1 \times S_2 \times S_3 \times S_4 \times S_5$

Where:

- N = feedlot capacity in SCU;
- 0.5 = feedlot size exponent determined using the results of modelling;
- S_1 = feedlot design and management factor;
- S_2 = receptor type factor;
- S_3 = topography or terrain weighting factor;
- S_4 = vegetative cover factor; and
- S_5 = wind direction factor.

7.5.1.9.1 Siting, Design and management factor (S_1)

Siting, design and management factors will influence odour emissions from the proposed development.

The proposed development will operate at the equivalent of a Class 1 standard (i.e. adopt best management practice).

The average stocking density of the proposed development is proposed to be ~16.75 m^2/SCU at 3,075 SCUs as outlined in section 5.1.2.3.1.

For comparable odour emission rates, pens must be stocked at a lower density (i.e. greater m^2/SCU) in a wetter climate than in a drier one (with all other factors equal). Thus, S_1 values for specific stocking densities are provided for an average annual rainfall of either <750 mm or >750 mm. As outlined in section 6.1, the average annual rainfall for the area is about 878 mm per year.

Consequently, based on an average stocking density of ~16.75 m^2/SCU and a rainfall category of >750mm/year, a S_1 factor of **60.3** was interpolated from Table B-1 of the National Guidelines for Beef Cattle Feedlots in Australia (3rd Edition) (MLA, 2012a).

7.5.1.9.2 Receptor factor (S_2)

S_2 is a receptor type factor which accounts for the variation in population density, odour sensitivity and risk of exposure for receptors located in the vicinity of a development. The greater the exposed population, the more likely it is that 'sensitive' individuals might be exposed to nuisance odour. Thus, the S_2 value for a large population centre (and the minimum separation distance) is greater than that for a single rural dwelling (Table B.2, MLA, 2012a).

There are three types of receptors to be considered surrounding the proposed development. These include single rural dwellings on surrounding rural properties, low use public areas and population centres such as Woodstock and Mingela and Townsville City which are located some distance away.

Receptor 2, 3 and 4 are former dwellings owned by Queensland Rail and have since been removed from their site.

The Reid River train station, Reid River Rest Area on the edge of the Reid River on the Flinders Highway and the Motorsports Facility (Runway Station Trail Rides) and ancillary camping have been considered as low use public/picnic areas and have been assigned a S_2 factor of 0.05.

Woodstock and Mingela have a population of between 10 and 30 persons and have been assigned a S_2 factor of 0.6. Townsville has a population of greater than 2000 persons and has been assigned a S_2 factor of 1.6.

The S_2 factors were selected for the closest receptors. The location of the receptors is shown in Figure 41 and are summarised in Table 45.

Table 45 – Proposed development – Receptor factors – Adopted values of S_2

Identifier	Location	Direction from Development	Receptor type	S_2 value
R1	7 Taranna Road, Reid River	West southwest	Single rural or farm dwelling	0.3
R2	Flinders Highway, Reid River	West	Single rural or farm dwelling	0.3
R3	5296 Flinders Highway, Reid River	West by North	Single rural or farm dwelling	0.3
R4	Flinders Highway, Reid River	West by North	Single rural or farm dwelling	0.3
R5	Flinders Highway, Reid River	West by North	Single rural or farm dwelling	0.3
R6	5287 Flinders Highway, Reid River	West northwest	Single rural or farm dwelling	0.3
R7	Ryans Road, Reid River	Northwest by West	Single rural or farm dwelling	0.3
R8	Ryans Road, Reid River	Northwest by West	Single rural or farm dwelling	0.3
R9	5216 Flinders Highway, Reid River	Northwest	Single rural or farm dwelling	0.3
R10	Ryans Road, Reid River	Northwest	Single rural or farm dwelling	0.3
R11	Flinders Highway, Reid River	Northwest	Single rural or farm dwelling	0.3
R12	7 Ryans Road, Reid River	Northwest by North	Single rural or farm dwelling	0.3
R13	5234 Flinders Highway, Reid River	Northwest by North	Single rural or farm dwelling	0.3
R14	5267 Flinders Highway, Reid River	Northwest by North	Single rural or farm dwelling	0.3
R15	Flinders Highway, Reid River	North	Single rural or farm dwelling	0.3
R16	Reid River Train Station, Mount Isa Line	West by North	Low use public area	0.05
R17	Reid River Rest Area, Flinders Highway	Northwest by West	Low use public area	0.05
R18	Runway Station Trail Rides, Flinders Highway	East	Low use public area	0.05
R19	Flinders Highway, Woodstock	North	Small town (10 -30 persons)	0.6
R20	Flinders Highway, Mingela	Southwest	Small town (10 -30 persons)	0.6
R21	Townsville City (Population >2000)	North	Large town (>2000 persons)	1.6

7.5.1.9.3 Terrain factor (S_3)

The terrain weighting factor (S_3) relates to the potential for the odour plume to be exaggerated in particular directions, and relatively small in others. This method provides an estimation of the potential changes to odour dispersion in situations where meteorological conditions may be influenced by local terrain.

The S_3 terrain factor is selected based on the topography at the site. Generally speaking, the terrain is flat between the proposed development site and each receptor downhill or uphill as shown in the elevation data in Table 46, Figure 18 and from photographs of the area as shown in Photograph 1 and Photograph 4. The S_3 terrain factor selected for each receptor is shown in Table 46.

Table 46 – Proposed development – Terrain factor – Adopted values of S_3

Identifier	Location	Elevation of receptor[1] m (AHD)	Distance from proposed development m	Grade %	S_3 value
R1	7 Taranna Road, Reid River	78	~1,740	0.17	1.0
R2	Flinders Highway, Reid River	78	~1,150	0.26	1.0
R3	5296 Flinders Highway, Reid River	78	~1,120	0.27	1.0
R4	Flinders Highway, Reid River	79	~1,135	0.35	1.0
R5	Flinders Highway, Reid River	79	~1,095	0.37	1.0
R6	5287 Flinders Highway, Reid River	77	~905	0.22	1.0
R7	Ryans Road, Reid River	78	~1,510	0.20	1.0
R8	Ryans Road, Reid River	78	~1,600	0.19	1.0
R9	5216 Flinders Highway, Reid River	80	~1,289	0.39	1.0
R10	Ryans Road, Reid River	80	~1,650	0.30	1.0
R11	Flinders Highway, Reid River	80	~1,540	0.32	1.0
R12	7 Ryans Road, Reid River	79	~1,735	0.23	1.0
R13	5234 Flinders Highway, Reid River	79	~1,480	0.27	1.0
R14	5267 Flinders Highway, Reid River	75	~735	0.00	1.0
R15	Flinders Highway, Reid River	74	~1,095	-0.09	1.0
R16	Mount Isa Line, Reid River	78	~1,250	0.24	1.0
R17	5216 Flinders Highway, Reid River	75	~1,210	-0.33	1.0
R18	5291 Flinders Highway, Reid River	71	~1,365	0.00	1.0
R19	Flinders Highway, Woodstock	63	~18,250	-0.07	1.0
R20	Flinders Highway, Mingela	295	~24,750	0.89	0.7
R21	Townsville City (Population >2000)	13	~45,000	-0.14	1.0

[1] Terrain heights were taken from the Google Earth™ at each receptor location. The elevation of the proposed development site ranges from about 75 to 77 m.

7.5.1.9.4 Vegetative cover factor (S_4)

The vegetative cover factor (S_4) relates to the vegetative density or 'roughness elements' between the proposed development and the receptor. Generally, the rougher the surface, the more turbulent the air flow, and the more mixing and dilution of the air and more odour dispersion. Maximum turbulence occurs when the surface is a mixture of various sized obstacles of various heights.

The vegetation factor for each sensitive receptor was selected based on both on-site observations and aerial imagery of the area as shown in Figure 3 and Figure 41. The vegetation type between all receptors and the proposed development comprises a mix of open grassland, crops, isolated paddock trees, heavily timbered open woodland with significant mid and lower storey vegetation as shown in Photograph 33, Photograph 34 and Photograph 32. The S_4 vegetative cover factor applied to all receptors in shown in Table 47.

The vegetation factor for each sensitive receptor was selected based on both on-site observations and aerial imagery of the area as shown in Figure 41. All receptors are separated by crops, open grassland, woodland, and open forest with varying canopy density and mid and lower storey vegetation. Consequently, a composite factor was determined and applied to each receptor.

Receptors R1 to R6 are separated by crops as shown in Figure 3 and Figure 14 and Photograph 31. Receptors R7 to R9, R12, R13, R17 to R21 are separated by open forest with some mid and lower storey vegetation as shown in Figure 3 and Figure 14 and Photograph 33 and Photograph 34.

For sensitive receptors R10 and R11, the S_4 factor was based on an interpolated value assuming some 200 m of open grassland and the remainder open forest with a factor of 0.6. For sensitive receptor R14, the S_4 factor was based on an interpolated value assuming some 300 m of open grassland and the remainder open forest with a factor of 0.6.

An indication of the vegetative cover can be seen on aerial imagery as shown in Figure 3 and Figure 41.

Table 47 – Proposed development – Vegetative cover – Adopted values of S_4

Identifier	Location	Vegetation type	S_4 value
R1	7 Taranna Road, Reid River	Crops only	1
R2	Flinders Highway, Reid River	Crops only	1
R3	5296 Flinders Highway, Reid River	Crops only	1
R4	Flinders Highway, Reid River	Crops only	1
R5	Flinders Highway, Reid River	Crops only	1
R6	5287 Flinders Highway, Reid River	Crops only	1
R7	Ryans Road, Reid River	Open forest	0.6
R8	Ryans Road, Reid River	Open forest	0.6
R9	5216 Flinders Highway, Reid River	Open forest	0.6
R10	Ryans Road, Reid River	Composite (Open grassland, Open forest)	0.64
R11	Flinders Highway, Reid River	Composite (Open grassland, Open forest)	0.64
R12	7 Ryans Road, Reid River	Open forest	0.6
R13	5234 Flinders Highway, Reid River	Open forest	0.6
R14	5267 Flinders Highway, Reid River	Composite (Open grassland, Open forest)	0.74
R15	Flinders Highway, Reid River	Open forest	0.6
R16	Mount Isa Line, Reid River	Crops only	1
R17	5216 Flinders Highway, Reid River	Open forest	0.6
R18	5291 Flinders Highway, Reid River	Open forest	0.6
R19	Flinders Highway, Woodstock	Open forest	0.6
R20	Flinders Highway, Mingela	Open forest	0.6
R21	Townsville City (Population >2000)	Open forest	0.6

Photograph 32 – Existing vegetation – West northwest of proposed development complex site

Photograph 33 – Existing vegetation – North of proposed development complex site

Photograph 34 – Existing vegetation – West of proposed development complex site

7.5.1.9.5 Wind direction factor (S_5)

Wind direction has the potential to increase the exposure of a receptor located in the downwind path. While most Australian feedlot sites will have some form of prevailing wind, it is unlikely that it will blow from that general direction (±40° of the direct line) for most of the time (>60%) (MLA, 2012a).

Site-specific wind direction data was used in the S-factor assessment to determine wind direction. Wind data derived from TAPM between 2015 and 2019 were used (43,824 hours). Figure 16 and Figure 17 (TAPM 2015; 2019) show that the predominant wind direction is from the northeast through to east. Consequently, the receptors that would be most affected are receptors R10 to R16 and R21 (Inglewood). However, the wind does not blow from that general direction (±40° of the direct line) towards these receptors for most of the time (>60%) as shown in Table 48. Consequently, a normal S_5 wind factor was applied to all receptors as shown in Table 48.

Table 48 – Proposed development – Separation distance assessment – Wind direction – Adopted values of S_5

Identifier	Location	Wind Direction (Bearing)	Hours wind blowing within ±40° of the bearing	Percentage wind blowing within ±40° of the bearing	S_5 value
R1	7 Taranna Road, Reid River	67.00	9,971	22.7	1.0
R2	Flinders Highway, Reid River	93.75	10,233	23.3	1.0
R3	5296 Flinders Highway, Reid River	99.00	10,355	23.6	1.0
R4	Flinders Highway, Reid River	101.25	10,224	23.3	1.0
R5	Flinders Highway, Reid River	105.00	15,972	36.4	1.0
R6	5287 Flinders Highway, Reid River	110.25	16,177	36.9	1.0
R7	Ryans Road, Reid River	120.00	10,161	23.2	1.0
R8	Ryans Road, Reid River	120.00	10,161	23.2	1.0
R9	5216 Flinders Highway, Reid River	129.38	10,014	22.8	1.0
R10	Ryans Road, Reid River	129.38	10,014	22.8	1.0
R11	Flinders Highway, Reid River	133.00	9,979	22.8	1.0
R12	7 Ryans Road, Reid River	140.63	9,607	21.9	1.0
R13	5234 Flinders Highway, Reid River	143.25	9,547	21.8	1.0
R14	5267 Flinders Highway, Reid River	148.25	9,438	21.5	1.0
R15	Flinders Highway, Reid River	178.00	8,583	19.6	1.0
R16	Mount Isa Line, Reid River	95.63	16,064	36.6	1.0
R17	5216 Flinders Highway, Reid River	123.75	10,016	22.8	1.0
R18	5291 Flinders Highway, Reid River	264.38	1,984	4.5	0.7
R19	Flinders Highway, Woodstock	180.00	8,507	19.4	1.0
R20	Flinders Highway, Mingela	45.00	7,999	18.2	1.0
R21	Townsville City (Population >2000)	174.38	8,662	19.8	1.0

7.5.1.9.6 Cumulative effects

There are several intensive livestock facilities in the Woodstock region. The closest intensive livestock facility (beef cattle feedlot) is the Calcium Feedlot located some 8.5 km south-southeast of Woodstock and Dingo Park Feedlot located some 10.5 km east of Woodstock. Calcium Feedlot is licensed for a capacity up to 500 SCUs owned and operated by the Woodstock Pastoral Services Pty Ltd. Dingo Park Feedlot is licensed for up to 30,000 SCUs and is owned and operated by the Cox family. There are no poultry or piggeries in the local area.

The proposed development and Calcium Feedlot and Dingo Park Feedlot are not separated by less than half the shortest separation distance (616 m R21). Consequently, the proposed development, Calcium Feedlot and Dingo Park Feedlot do not need to be treated as a single entity (having a capacity equivalent to the combined capacities of the two facilities) as they are sufficiently separated.

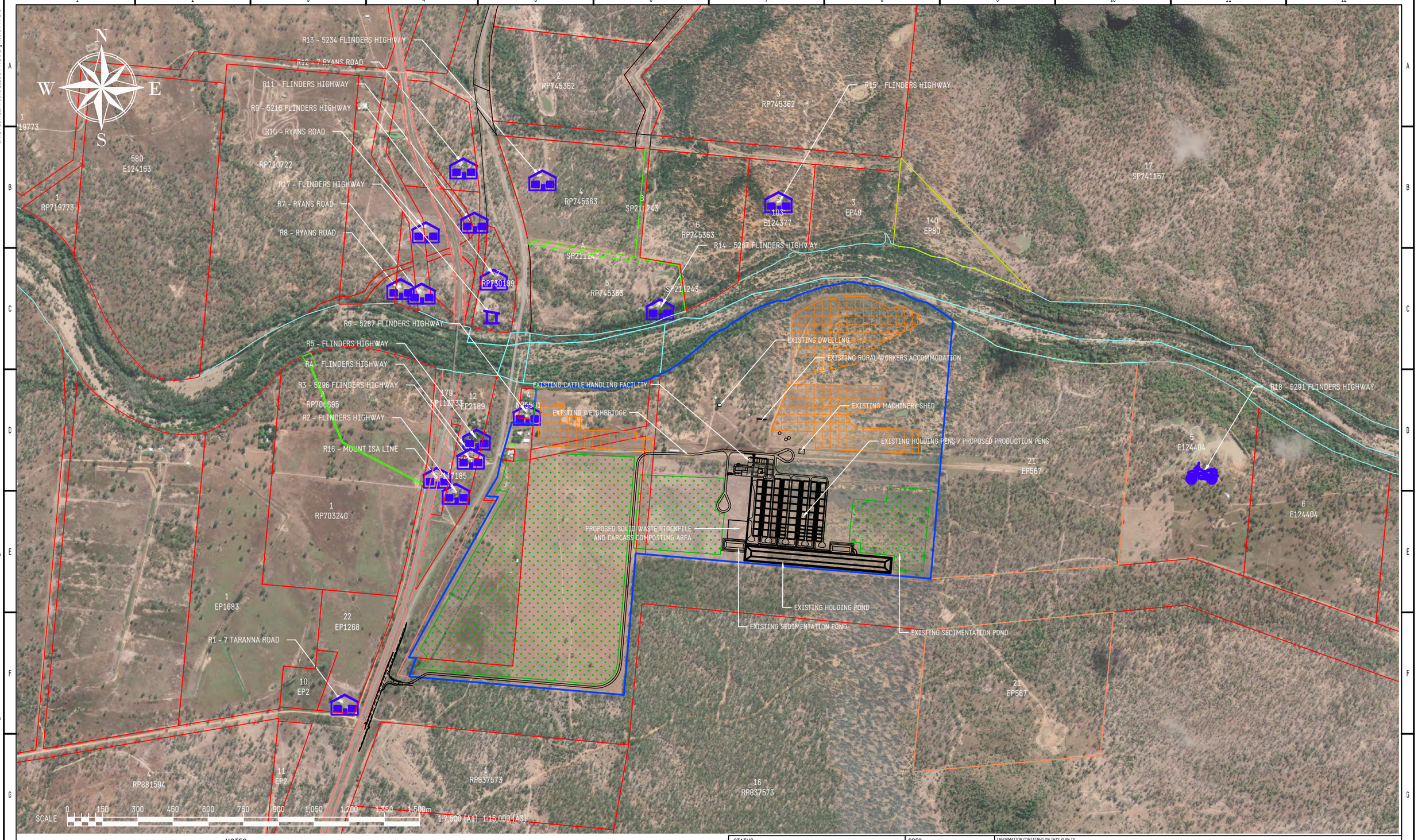
There are no sensitive receptors located within the 120% overlap zone, of the proposed development, Calcium Feedlot or Dingo Park Feedlot as shown on Figure 41. Consequently, as there are no sensitive receptors unacceptably located within the 120% overlap zone a cumulative impact assessment is not warranted in accordance with the National Feedlot Guidelines (MLA, 2012) and normal separation distances apply.

7.5.1.9.7 Conclusion

As outlined in Table 49, the S-factor assessment demonstrates that sufficient separation exists between the proposed development with a capacity of 3,075 SCUs at 16.75 m^2/SCU and sensitive receptors.

Table 49 – Proposed development – Separation distances from National Feedlot Guidelines (MLA, 2012a)

Identifier	Location	Direction	S1	S2	S3	S4	S5	Distance Required Normal S_5	Available Distance	Compliance
							Normal	m	m	
R1	7 Taranna Road, Reid River	West southwest	60.3	0.3	1	1.0	1.0	1,003	~1,740	Yes
R2	Flinders Highway, Reid River	West	60.3	0.3	1	1.0	1.0	1,003	~1,150	Yes
R3	5296 Flinders Highway, Reid River	West by North	60.3	0.3	1	1.0	1.0	1,003	~1,245	Yes
R4	Flinders Highway, Reid River	West by North	60.3	0.3	1	1.0	1.0	1,003	~1,150	Yes
R5	Flinders Highway, Reid River	West by North	60.3	0.3	1	1.0	1.0	1,003	~1,210	Yes
R6	5287 Flinders Highway, Reid River	West northwest	60.3	0.3	1	1.0	1.0	1,003	~1,020	Yes
R7	Ryans Road, Reid River	Northwest by West	60.3	0.3	0.6	1.0	1.0	602	~1,630	Yes
R8	Ryans Road, Reid River	Northwest by West	60.3	0.3	0.6	1.0	1.0	602	~1,720	Yes
R9	5216 Flinders Highway, Reid River	Northwest	60.3	0.3	0.6	1.0	1.0	602	~1,405	Yes
R10	Ryans Road, Reid River	Northwest	60.3	0.3	0.64	1.0	1.0	639	~1,765	Yes
R11	Flinders Highway, Reid River	Northwest	60.3	0.3	0.64	1.0	1.0	639	~1,540	Yes
R12	7 Ryans Road, Reid River	Northwest by North	60.3	0.3	0.6	1.0	1.0	602	~1,830	Yes
R13	5234 Flinders Highway, Reid River	Northwest by North	60.3	0.3	0.6	1.0	1.0	602	~1,580	Yes
R14	5267 Flinders Highway, Reid River	Northwest by North	60.3	0.3	0.74	1.0	1.0	744	~840	Yes
R15	Flinders Highway, Reid River	North	60.3	0.3	0.6	1.0	1.0	602	~1,180	Yes
R16	Flinders Highway, Reid River	West by North	60.3	0.05	1	1.0	1.0	167	~1,250	Yes
R17	5216 Flinders Highway, Reid River	Northwest by West	60.3	0.05	0.6	1.0	1.0	100	~1,330	Yes
R18	5291 Flinders Highway, Reid River	East	60.3	0.05	0.6	1.0	0.7	100	~1,365	Yes
R19	Flinders Highway, Woodstock	North	60.3	0.6	0.6	1.0	1.0	1,204	~18,250	Yes
R20	Flinders Highway, Mingela	Southwest	60.3	0.6	0.6	0.7	1.0	843	~24,750	Yes
R21	Townsville City (Population >2000)	North	60.3	1.6	0.6	1.0	1.0	3,211	~45,000	Yes



LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- SINGLE RURAL RESIDENCE
- PUBLIC REST AREA
- MOTORSPORTS PARK

NOTES:

1. THIS MAP IS BASED ON DIGITAL GIS DATA FROM THE STATE OF QUEENSLAND (DEPARTMENT OF RESOURCES) 2021 - QUEENSLAND SPATIAL CATALOGUE.
2. CADASTRAL INFORMATION BASED ON THE STATE OF QUEENSLAND (DoR) DIGITAL CADASTRAL DATABASE (DCDB) 2021, PROVIDED BY THE QUEENSLAND SPATIAL CATALOGUE AND ACCURACY IS LIMITED.
3. IMAGE SOURCED FROM GOOGLE EARTH™. IMAGE DATE 31/12/2016.
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STATUS

FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

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RDC ENGINEERS
AGRICULTURAL
ENVIRONMENTAL
PROJECT MANAGEMENT

ABN 37 627 163 071
PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 629 203
E: info@rdcengineers.com.au

REV.	DATE	REVISION DESCRIPTION	DRAWN	CHECK	APPROVED
A	29/05/22	DRAFT ISSUE TO CLIENT	RJD	RJD	RJD
B	04/06/22	FINAL ISSUE FOR LODGEMENT TO CTRC	RJD	RJD	RJD

SCALE	1:15,000 (A3)
DRAWN	RJD
DATE	04/06/22
CHECKED	RJD
DATE	04/06/22
APPROVED	RJD
DATE	04/06/22

CLIENT: REID RIVER EXPORT DEPOT PTY LTD AS TRUSTEE

PROJECT: PROPOSED INTENSIVE ANIMAL INDUSTRY DEVELOPMENT

TITLE: DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE
PROPOSED DEVELOPMENT - SENSITIVE RECEPTORS
SEPARATION DISTANCE PLAN (ODOUR)

REPORT REFERENCE	SUPPLIED DRAWING NUMBER		DRAWING NUMBER	REV.
FIGURE 41		A3	D1-130-00-41	B

DATE PLOTTED: 4 June 2022 BY: - RDC Engineers PTY LTD
FILE NAME: D1-130-00-MASTERPLAN-220228 v8.dwg
FILE PATH: C:\RDC Engineers\RDCE - Projects\D1-130 Reid River Feedlot\05 - ACAD MasterPlan\05.1 Drawings - CURRENT

7.5.2 Soils

The soils of the subject land are outlined in section 6.4.1. Due to the location of the subject land in the landscape (75-77 m AHD), it is unlikely that potential acid sulfate soils shall be disturbed during construction of the proposed development.

Stormwater runoff from the controlled drainage area is captured by a holding pond as outlined in 5.1.3 where it will be applied to crops by irrigation when there is sufficient volume. The catch drains, sedimentation ponds and holding pond shall be lined with an impermeable clay base to achieve a permeability of 1×10^{-9} m/s. The solid waste stockpile and carcass composting area will also have a base permeability of 1×10^{-9} m/s. Those areas of the proposed development from which stormwater runoff has a high organic matter such as the beef cattle production and hospital pens, sedimentation ponds, solid waste stockpile and carcass composting area and holding pond are contained within controlled drainage areas which excludes upslope stormwater runoff.

When available, effluent shall be sustainably applied to crops on the subject land using a high- or low-pressure overhead irrigation system. The subject land has an area of at least 100 ha of suitable cropping land available for effluent utilisation as shown on Figure 14.

Solid waste shall be applied sustainably to cropping land using a tractor drawn moving bed manure spreader on the subject land. The subject land has an area of at least 100 ha of cropping land available for solid waste utilisation as shown on Figure 14.

Soil erosion is another potential impact. Consequently, effective ground cover (>70%) around the infrastructure of the proposed development shall be maintained to retain organic matter, maintain soil structure, reduce runoff and minimise risk of erosion. The groundcover will provide vegetative filters between controlled drainage areas and infrastructure. The vegetative filters shall act to slow the velocity of stormwater runoff, which reduces erosion and traps sediment before runoff leaves the site. Further, minimal earthworks are required to create the proposed development design pen surface as the site has a natural fall to achieve adequate drainage.

Further, no vegetation is required to be cleared for the proposed development, thus minimising any potential impacts from salinity that may result from removal of trees on the subject land.

Consequently, the capability of the land shall not be affected by the proposed development.

7.5.3 Water

7.5.3.1 Surface water

7.5.3.1.1 Quality

The proposed development is located within the Reid River catchment of the Haughton drainage basin. Water planning in the Haughton basin is managed under the Water Plan (Burdekin Basin) 2007.

EPP (Water and Wetland Biodiversity) schedule documents have not been finalised for the Haughton River catchment.

However, the proposed development is within the Haughton River catchment and included in the draft aquatic ecosystem water quality guidelines: Don and Haughton river basins, Mackay-Whitsunday estuaries, and coastal/marine waters (Department of Science, Information Technology and Innovation, Queensland, 2016) and Burdekin Region Water Quality Improvement Plan 2016 (NQ Dry Tropics, 2016). The surface water quality objectives for the upland freshwater catchments of the Haughton River are shown in Table 50.

Table 50 – Surface water quality objectives – Upland freshwater of Haughton River catchments

Parameter	Unit	WQO
pH	-	6.5-7.5
Electrical Conductivity	µS/cm	<270
Ammonia - N	µg/L	<10
Oxidised N	µg/L	<15
Total N	µg/L	<250
Total P	µg/L	<30
Dissolved Oxygen	%sat	90-110
Turbidity	NTU	<25

Consequently, the proposed design, construction and operation of the proposed development along with mitigation measures shall ensure that the EVs and WQOs for the Haughton drainage basin are maintained or enhanced in accordance with the object of the Environmental Protection Act 1994 and surface water quality objectives for the upland freshwater catchments of the Haughton River.

The subject land has been developed for agricultural purposes, including the existing development, broadacre cropping and extensive grazing of beef cattle.

The proposed development has the potential to impact the environmental values of surface waters on the subject land through the release of contaminants commonly found in effluent and/or solid waste streams and therefore measures are in place to mitigate any potential impacts.

Consequently, the proposed development has been designed and shall be constructed and operated to mitigate risks to surface water quality. The areas of the proposed development from which stormwater runoff may have a high organic matter and therefore high pollution potential shall be included within a controlled drainage area as outlined in section 5.1.3.

Stormwater runoff from outside of the controlled drainage area shall be excluded from contaminated runoff from within the controlled drainage area by diversion banks and catch drains.

The holding pond has been sized using the standard tabulated method to retain ensure the spill frequency does not exceed an average of one spill in 10 years (notionally able to retain runoff in a 90th percentile wet year). This shall minimise any impacts on surrounding surface waters.

When available, effluent shall be sustainably applied to crops within a dedicated effluent utilisation area on the subject land using a low-pressure overhead irrigation system. Buffer distances shall be maintained between effluent utilisation areas and watercourses as outlined in 5.1.5.1.3. The subject land has an area of at least 85 ha of cropping land available for effluent utilisation as shown on Figure 14.

Solid waste shall sustainably be applied within a dedicated on-site solid waste utilisation area on the subject land using a tractor drawn moving bed manure spreader. Buffer distances shall be maintained between solid waste utilisation areas and watercourses as outlined in section 5.1.5.1.3. The subject land has an area of at least 30 ha of cropping land available for solid waste utilisation as shown on Figure 14. The majority of solid waste shall be removed off-site and sustainably applied to land owned by the applicant.

Consequently, there is a minimal risk of surface water contamination from the proposed development.

7.5.3.1.2 Quantity

Surface water shall be used a source of water for the proposed development. As outlined in section 6.5.4, the subject land has established agricultural enterprises supported by surface water extraction.

Consequently, the proposed development shall have no impact on the quantity of surface water in the local area.

7.5.3.2 Groundwater

7.5.3.2.1 Quality

The proposed development has the potential to impact the environmental values of groundwater at or in the vicinity of the site through the release of contaminants commonly found in effluent and/or solid waste streams.

Contamination of groundwater has been shown to occur wherever three main components exist; a potential source of contamination, an underlying aquifer, and a pathway for transfer between the two. This pathway can be either indirectly through the soil or directly through man-made structures which intersect the water table, such as drains, sedimentation ponds and holding pond.

Stormwater runoff from the controlled drainage areas is captured by sedimentation ponds and a holding pond as outlined in 5.1.3 where it will be applied to land as irrigation when sufficient quantities allow. Catch drains, sedimentation ponds and the holding pond shall be lined with an impermeable clay base to achieve a permeability of 1×10^{-9} m/s. The solid waste stockpile and carcass composting area will also have a base permeability of 1×10^{-9} m/s.

When available, effluent shall be applied sustainably to crops within a dedicated effluent utilisation area on the subject land using a low-pressure overhead irrigation system. The subject land has an area of at least 100 ha of cropping land available for effluent utilisation as shown on Figure 14.

Solid waste shall be applied sustainably to a dedicated solid waste utilisation area on the subject land using a tractor drawn moving bed manure spreader. The subject land has an area of at least 100 ha of cropping land available for solid waste utilisation as shown on Figure 14.

7.5.3.2.2 Quantity

Groundwater shall be used as the source of water for the proposed development. As outlined in section 6.5.4, the subject land is not located within a sub-artesian groundwater management area of the Water Plan (Burdekin Basin) 2007. Further, the subject land is not located within the Water Plan (Great Artesian Basin and Other Regional Aquifers) 2017 water plan area.

Therefore the taking of groundwater for stock and domestic or any other purpose within the subject land is not regulated.

Consequently, the proposed development shall have no impact on the quantity of groundwater in the local area.

7.5.4 Biodiversity

The infrastructure of the proposed development shall be sited on an area historically cleared of vegetation and which currently contains no regrowth shrubs and trees. No areas of regulated vegetation will be removed or disturbed as part of the proposed development.

When available, effluent shall be applied sustainably to a dedicated effluent utilisation area on the subject land using a high- or low-pressure overhead irrigation system. Buffer distances shall be maintained between effluent utilisation areas and riparian areas as outlined in 5.1.5.1.3.

Solid waste shall be applied sustainably to cropping land within a dedicated solid waste utilisation area on the subject land. Buffer distances shall be maintained between solid waste utilisation areas and riparian areas as outlined in 5.1.4.3.1.

Consequently, the proposed development shall have no adverse impacts on biodiversity on the subject land or immediate surrounds.

7.5.5 Cultural heritage

As outlined in section 6.8.1, a search of recorded aboriginal cultural heritage from the Department of Aboriginal and Torres Strait Islander Partnership database indicates that there that there are no sites of Aboriginal cultural heritage currently registered on the subject land or within a 2 km radius of the subject land.

The subject land has been affected by impacts commonly associated with agricultural development including livestock grazing and cropping operations. This existing disturbance includes paddock tree clearing, pasture improvement and cropping. Consequently, pursuant to the Cultural Heritage Duty of Care Guidelines, the proposed development is classed as a 'Category 4 activity' – Areas previously subject to significant ground disturbance. As the proposed development is a Category 4 activity it is generally unlikely that it could harm Aboriginal cultural heritage.

The proposed development will comply with the Cultural Heritage Duty of Care Guidelines.

Although the area has previously been extensively cleared and developed for agricultural purposes, the applicant shall take all reasonable and practical measures to ensure the activity does not harm any Aboriginal cultural heritage.

7.5.6 Waste

The proposed development must conform to the management hierarchy outlined in the Waste Reduction & Recycling Act 2011. The waste and resource management hierarchy states:

"The waste and resource management hierarchy is the following precepts, listed in the preferred order in which waste and resource management options should be considered:

(a) AVOID unnecessary resource consumption;
(b) REDUCE waste generation and disposal;
(c) RE-USE waste resources without further manufacturing;
(d) RECYCLE waste resources to make the same or different products;
(e) RECOVER waste resources, including the recovery of energy;
(f) TREAT waste before disposal, including reducing the hazardous nature of waste; and
(g) DISPOSE of waste only if there is no viable alternative".

The approach taken on waste management for the proposed development will be consistent with the waste management hierarchy outlined above.

The proposed development shall utilise the built infrastructure associated with the existing development. Consequently, there are no construction activities per se.

The operation of the proposed development shall generate a small quantity of in-organic solid wastes such as product packaging, paper etc.

Further, the operation of the proposed development shall generate significant levels of organic solid waste and effluent which can be sustainably utilised on the subject land as outlined in section 5.3.7.2 and 5.3.8.1.2.

7.5.7 Biosecurity

Biosecurity relates to preventive measures designed to reduce the risk of transmission of infectious diseases, invasive pests or weeds which may impact on biodiversity values, animal human health. Biosecurity risks shall be managed in accordance with the general biosecurity obligation and the proposed development's relevant environmental management plans.

The implementation of a Construction Environmental Management Plan shall minimise potential adverse biosecurity risks during the construction phase. All equipment arriving on-site shall be clean and free of soil and matter which may be a vector for transmission of weed seeds, pest animals or the like.

The implementation of a Site Based Environmental Management Plan shall minimise potential adverse biosecurity risks during the operational phase.

Consequently, with the implementation of environmental management plans, the proposed development shall have no adverse impacts on biosecurity.

7.6 Residual risk treatment

The proposed development shall utilise the built infrastructure associated with the existing development. Consequently, there are no construction activities per se. All bulk earthworks, feed bunks, water troughs, aprons, fences and gates have been completed. Therefore, a risk assessment for the construction phase is not deemed warranted.

Table 51 summarises the risks associated with the proposed development during the operational phase.

From Table 51 it is evident that the proposed development does not pose a high risk to the environment due to existing siting and design and management strategies are applied during the operation phase. The largest risk from the proposed development will be to air quality in relation to community amenity from odour. However, the proposed development is sited such that it complies with the minimum separation distances to sensitive receptors calculated in accordance with the National Feedlot Guidelines (MLA, 2012a).

Table 51 – Operation environmental aspects and impacts

Category	Operation Activities / Aspect	Potential Impacts	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level after mitigation	Relevant Management Document / Training required
Air quality	• Dry commodity storage, handling and processing • High moisture commodity (e.g. silage, molasses, oils) storage and handling • Grain handling and processing • Pen, drain and sedimentation pond cleaning • Mortality management • Split feed management • Solid waste handling, processing and spreading • Effluent storage • Effluent utilisation • Vehicular movements on unsealed roads • Ration delivery • Exposed bare earth areas • Vehicle emissions	Complaints from neighbours, including loss of amenity and impacts of dust.	**M9 – Moderate**	• All Development employees and contractors are given adequate training in environmental awareness, legal responsibilities, and air quality control methods. • The air quality and meteorological monitoring network is maintained, and results are routinely analysed, assessed and reported. • Pen cleaning and surface maintenance is undertaken on a planned basis to ensure that pen surfaces dry quickly following rainfall, can drain freely and do not become overly dry and cause excessive dust emissions. • Elimination of wet areas within the pens by repairing potholes, eliminating accumulated manure from under fencelines and fixing leaks from water troughs. • Spilt and spoilt feed and feedstuffs are regularly removed from around feed storage and preparation areas, feed bunks, feed processing equipment, etc. • The effluent is removed from the sedimentation pond as soon as practical after the wet season. • Solids are removed from the sedimentation pond as soon as practical after deposition. • Mortalities are placed within the solid waste stockpile and carcass composting area and covered with high carbon material as soon as practicable after placement. • Wet manure stockpiles are not turned to minimise release of emissions generated from the anaerobic decomposition process. • Controlled aeration of solid waste composting windrows. • Dewatering of the holding pond by irrigation to crops as soon as possible after rainfall. • Receiving, reporting and responding to any complaints in relation to air quality. • Adapting the cattle stocking density in pens to maintain the moisture content of the manure on the pen surface at 25-35% to minimise dust generation. For example, stocking density may change from lighter rates in winter to heavy rates in summer. • Setting and enforcing speed limits on internal road network. • Dust suppression measures, such as watering access and feed roads and solid waste (manure) stockpiles as required.	**L3 - Low**	Site Based Environmental Management Plan Meat and Livestock Australia, 2015b, Beef cattle feedlots: waste management and utilisation, Meat and Livestock Australia, North Sydney, NSW Development approval conditions NFAS manual Environment Protection (Air quality) Policy 2019 Complaints Register Personnel training and awareness Personnel induction
		Impacts on residential sensitive receivers, including impacts on living areas, swimming pools and general amenities.	**M9 – Moderate**		**L2 - Low**	
		Potential adverse health effects.	**M11 – Moderate**		**L1 - Low**	
		Impacts on water quality and other aspects of the natural environment.	**L5 – Low**		**L1 - Low**	
		Dust on crops including broadacre crops or other agricultural crops.	**L5 – Low**		**L2 - Low**	

				• Any operations involving the movement of dusty materials such as grain movement, solid waste (manure) turning and spreading shall be timed and managed where possible when materials have adequate moisture content. • Ceasing dust generating activities such as pen cleaning, and solid waste (manure, carcass compost, pond sludge) stockpiling, screening and spreading during periods of high wind. • Any grain processing dust-suppression equipment is maintained and operational at all times. • The loads on vehicles moving dusty materials (e.g. feedstuffs) onto or off the site are covered during transit. • All visual screens (e.g. vegetative buffers) are kept in good order (including the replanting of gaps in vegetative buffers due to trees failing to establish, the death or loss of established trees or other factors which would cause the buffer not the perform its intended function). • Application of solid (manure, carcass compost, holding pond sludge) and effluent to land when wind conditions and dispersion conditions are favourable. • The best animal production genetics shall be used - Improved production traits, particularly good feed conversion efficiency will contribute significantly to reducing animal emissions intensity. • Sourcing livestock and feed commodities from as close to the Development as practical as well as on-site production to minimise fugitive emissions during transport. • Rations formulated to minimise enteric methane emissions • Use of appropriately sized plant and equipment for respective processes • Where practical, solid wastes (manure, carcass compost, holding pond sludge) incorporated directly into the soil. • Routine service and maintenance of mobile equipment used on-site to ensure efficient operation • Continuous improvement of GHG intensity of production by identifying and controlling energy intensive processes • A suitable buffer is applied where effluent and solid waste (manure, carcass compost, pond sludge) applications take place within close proximity to roads, dwellings or other areas likely to be used by the public at that time (the appropriateness of the applied buffer distances is determined having consideration for the qualities of the materials being applied, weather conditions and other environmental factors; as well as the anticipated level of public usage or exposure at those times). • A complaints register is kept, including details of the nature of any complaint received, the response made, and any mitigation measures implemented.		

				• Hazardous materials are stored and used in accordance with relevant guidelines and Australian Standards for the storage of hazardous and dangerous goods and spill management.		
Groundwater – Quantity and quality	• Groundwater use exceeding Development's allocation and entitlements • Leachate of effluent through the liner underlying the controlled drainage area as a result of integrity failure or exceedance of design criteria. • Spills or leaks of hazardous materials stored or used on-site such as fuels, chemicals etc. • Inappropriate storage of solid wastes such as outside of the controlled drainage area. • Inappropriate utilisation of solid wastes (manure, carcass compost, holding pond sludge) and effluent on-site such as high application rates and ponding of effluent.	Potential for localised drawdown of groundwater resources.	**M11 – Moderate**	• Preparation of an environmental management framework for operation of the Development. • Development and implementation of emergency and contingency plans detailing methods to manage spills or other emergencies on site, such as pipe breakages, holding pond overflows, pump failures etc. • Sustainable use of groundwater in accordance with the Development's allocation and entitlements. • Groundwater extraction managed to ensure sustainable drawdown rates. • Groundwater monitoring (quantity and quantity) is undertaken as prescribed by the Development approval conditions. • Solid waste stockpiles established within controlled drainage area to prevent contaminated leachate into groundwater resources. • The land application of solid wastes and effluent is made at rates consistent with the ability of soils and crops grown in the on-site utilisation areas to sustainably utilise the applied nutrients, salts and organic matter, under the climatic conditions prevailing at the site. • Application rate of effluent is controlled to ensure that excessive ponding does not occur • Effluent and solid waste only applied to dedicated waste utilisation areas. • Application rate of effluent should not necessitate the routine and specific leaching of salts from the soil profile in order to obtain acceptable crop performance. • The liner of all elements of the controlled drainage area such as drains, sedimentation pond, holding pond etc is maintained to ensure the integrity and ongoing compliance with specified design criteria • When available, effluent stored, treated and sustainably applied to land on-site by irrigation. • Hazardous materials are stored and used in accordance with relevant guidelines and Australian Standards for the storage of hazardous and dangerous goods and spill management.	**L6 – Low**	Site Based Environmental Management Plan NFAS manual Meat and Livestock Australia, 2015b, Beef cattle feedlots: waste management and utilisation, Meat and Livestock Australia, North Sydney, NSW Development approval conditions Personnel training and induction
		Impacts to the quality of groundwater in the vicinity of the Development.	**M12 – Moderate**		**L6 – Low**	

Surface water – Quantity and quality	• Surface water use exceeding Development's allocation and entitlements • Uncontrolled release of liquid (effluent) wastes from controlled drainage area as a result of overflows, integrity failure or exceedance of design criteria • Spills or leaks of hazardous materials stored or used on-site such as fuels, chemicals etc • Surface runoff from the inappropriate application of liquid wastes (effluent) to land impacting water chemistry, clarity, nutrient and toxicants, for example • Inappropriate storage of solid wastes (manure, carcass compost, holding pond sludge) such as outside of the controlled drainage area • On-site utilisation of solid and liquid wastes	Potential for drawdown of surface water resources.	**M13 – Moderate**	• Preparation of environmental management framework for operation of the Development. • Development and implementation of emergency and contingency plans detailing methods to manage spills or other emergencies on site, such as pipe breakages, pond overflows, pump failures etc. • Liquid and solid wastes only applied to dedicated waste utilisation areas. • Vegetative buffers around drainage lines designed to help protect surface water are maintained in their intended condition. • Solid waste (manure, carcass compost, holding pond sludge) stockpiles would be established within controlled drainage area to prevent contaminated runoff into clean water areas. • Sustainable use of surface water in accordance the Development's allocation and entitlements. • The land application of solid waste and effluent is made at rates consistent with the ability of soils and crops grown in the on-site utilisation areas to sustainably utilise the applied nutrients, salts and organic matter, under the climatic conditions prevailing at the site. • Soil condition is monitored periodically, and soil tests are used where there is potential for deterioration of soil condition • Application rates of effluent are controlled to ensure that excessive runoff does not occur • All elements of the controlled drainage area such as drains, sedimentation pond, holding pond etc are cleaned and maintained to ensure their integrity and ongoing compliance with specified design criteria. • When available, effluent shall be stored, treated and sustainably applied to land on-site by irrigation. • Design discharge events from the holding ponds shall be directed to a natural grassed discharge area. This grassed area shall filter and disperse the liquid waste whilst allowing some infiltration. As the design discharge events are at a frequency of one in 10 years the concentration of nutrients shall be sustainably adsorbed and utilised by vegetation in between events. • DAF is notified of any overtopping event or similar threats to surface water quality • Hazardous materials are stored and used in accordance with relevant guidelines and Australian Standards for the storage of hazardous and dangerous goods and spill management.	**L6 – Low**	Site Based Environmental Management Plan NFAS manual Meat and Livestock Australia, 2015b, Beef cattle feedlots: waste management and utilisation, Meat and Livestock Australia, North Sydney, NSW Development approval conditions Personnel training and induction
		Loss of or damage to aquatic habitat.	**M11 – Moderate**		**L6 – Low**	
		Erosion of exposed soils causing sedimentation of waterways and aquatic environments	**M11 – Moderate**		**L6 – Low**	
		Changes to water chemistry, in particular pH values altering aquatic habitats, including threatened species habitats.	**M11 – Moderate**		**L6 – Low**	
		Impact to water quality due to fuels and leaks and inappropriate storage of hazardous material.	**M11 – Moderate**		**L6 – Low**	
Biodiversity	• Access and internal road alignments and traffic movements. • Dry commodity storage, handling and processing	Loss of or damage to habitat for threatened species	**L5 – Low**	• Any significant flora and fauna habitat areas required to be protected shall be identified and marked. • Clearing restricted to those areas required for Development's operation and firebreaks. • Induct personnel on biodiversity issues and safeguards.	**L4 – Low**	Site Based Environmental Management Plan Weed management procedure
		Potential impact on endangered ecological communities	**L5 – Low**		**L4 – Low**	

	• High moisture commodity (e.g. silage, molasses, oils) storage and handling
	• Grain handling and processing
	• Mortality management
	• Split feed management
	• Solid waste handling, processing and utilisation.
	• Liquid waste storage, handling and utilisation
	• Vehicular movements on unsealed roads
	• Use of chemicals
	• Noise impacts
	• Uncontrolled fires/bushfires
		Loss and fragmentation of riparian and aquatic habitat	**L5 - Low**	• Implement ongoing weed monitoring and management program to remove pest plant species and weeds. Control shall be achieved by regular mowing or herbicide application. Knockdown or residual herbicides (or a combination of the two) shall be used depending on whether the weeds have emerged, the time of year and the weeds present.
				• Disturbed areas to be rehabilitated will be monitored for effective restoration and rehabilitation.
				• All habitat trees retained where practicable.
				• Major drainage lines are to be bridged and loss of riparian vegetation to be minimised.
				• Waterway crossings for fish passage are maintained.
				• Implement vehicle hygiene procedures to prevent the introduction of pest plants, spread of pest plants and disease.
				• Provisions to limit heavy vehicle speeds and for signage along access roads.
				• Methods and communication tools to monitor road strike and mortality of wildlife.
				• Aquatic weeds in water storages shall be controlled via mechanical and/or chemical means. Chemical control shall be undertaken with considerable care, considering the identity of the weed, the effect of herbicides on desirable plants, fish and other aquatic life and the eventual use of the water.
				• Implement a pest management program to control pest animal species already present, using acceptable methods as well as identifying potential pest species, their likely distribution and methods to prevent their spread.
				• Wild dog, fox and vermin pest species populations on the Development site shall be monitored and managed to prevent proliferation and spread.
				• Pest animal control programs shall use the most humane, target specific, cost effective and efficacious techniques available.
				• Mice and rat populations will be mitigated:
				  • by minimising feed wastage and spillage to minimise likelihood of attracting vermin)
				  • implementing a baiting program if the vermin population reaches a nuisance level.
				• Fly breeding sites shall be mitigated using:
				  • Several control methods such as biological, chemical and physical methods following integrated pest management (IPM) principles shall be used.
				  • Best practice sanitation methods such as solid waste management practices (pen cleaning, under-fence cleaning) to minimise fly breeding sites.
					L4 – Low
					L5 – Low
					L4 – Low
					L4 – Low
					L5 – Low
						Vehicle hygiene procedures
						
						Personnel induction

		Mortality of protected and threatened fauna	**M9 – Moderate**			
		Creation of barriers to fauna movement	**L5 – Low**			
		Edge effects from road noise and light	**L5 – Low**			
		Introduction and spread of terrestrial and /or aquatic weeds and pest fauna species	**M9– Moderate**			

				• Controlling weeds and keeping grass and other vegetation short, particularly around pens, drains, sedimentation systems and holding ponds makes it more difficult for flies to find resting places and reduces the vegetation–manure interface, a preferred breeding substrate for stable flies. • Composting carcasses shall be covered with manure. • Domestic waste shall be managed appropriately and in accordance with any relevant statutory requirements.		
Hydrology and flooding	• Waterway and drainage line crossings • Transverse drainage	Restricted flow paths causing localised flooding due to access road infrastructure structures placed on floodplain	**L6 – Low**	• The Development is sited above the height of a 100-year average recurrence interval (Q_{100}) flood level. • Development designed, constructed and operated in accordance with the conditions of approval of the Development. • Evacuation and access assessed in consultation with landowners. • Monitor rain radar and flooding forecasts and ensure response preparedness. • Prepare site for flood and severe rainfall events (where forecast) to minimise inundation impacts. • Waterway and drainage crossings maintained to ensure the integrity and ongoing compliance with specified design criteria. • Solid waste and effluent application infrastructure sited so that they do not pose an unacceptable risk to flood afflux levels. • Solid waste and effluent are not applied to on-site utilisation areas where and when there is a reasonable probability that the applied materials will cause pollution of surface water (e.g. on land directly abutting a watercourse or when a flood event is imminent).	**L6 – Low**	Site Based Environmental Management Plan National Guidelines for Beef Cattle Feedlots in Australia 3rd Edition, MLA, 2012a) Personnel induction and training
		Changes to flood afflux levels during flood events – increased impact to receivers	**L6 – Low**		**L6 – Low**	
		Flood damage to plant, equipment or infrastructure	**L6 – Low**		**L6 – Low**	
		Erosion of access road during large flood events	**L6 - Low**		**L6 – Low**	
		Change to flood regime due to topographical changes and modification of catchments	**L6 - Low**		**L6 – Low**	
		Impacts to flood evacuation and access movements	**L6 - Low**		**L6 – Low**	
Noise and vibration	• Livestock handling and movement • Feed processing and preparation equipment (electric motors, conveyors, roller mills) • Feed delivery mobile plant (feed trucks) • Solid waste management (front-end loaders, haulage trucks,	Noise impacts on sensitive receivers during operation	**L5 – Low**	• Low-stress cattle handling techniques employed to manage cattle to ensure they are handled quietly and efficiently. • Adherence to working hours in conditions of approval unless otherwise approved. • Minimising heavy vehicles' entry to site and departure from site outside the nominated operational hours. • Respite periods for noisy activities (in accordance with regulatory guidelines). • Operation equipment selected, operated and maintained to minimise noise impacts and where necessary fitted with silencers and "smart" reversing safety devices. • Managing operation vehicle routes and speed of vehicles.	**L4 - Low**	Site Based Environmental Management Plan Environment Protection (Noise) Policy 2019 Complaints register Personnel induction and training
		Noise exceeding regulatory criteria levels	**L5 – Low**		**L4 - Low**	
		Vibration impacts on sensitive receptors during operation	**L6 - Low**		**L4 - Low**	

	screening equipment, tractors etc) • Effluent management (pumping and generators) • Water supply and reticulation (pumping) • Farming plant and equipment (tractors, front-end loaders etc)			• Establish and maintain complaints management system. • Awareness training for staff and contractors in environmental noise issues. • Minimising the use of horn signals and consideration of alternative methods of communication. • Switching off any equipment not in use for extended periods. • All plant and equipment required would be well maintained and regularly serviced. • Community consultation with local residents to assist in the alleviation of community concerns. • Selection of machines that are inherently free of or have low vibration. • Vibration-producing machinery shall be supported on stiff structural components and be provided with efficient vibration isolation systems. • Maintenance of plant and equipment machinery – ensuring rotating parts are balanced, vibration isolators are functioning as intended etc.		
Traffic and transport	• Light vehicle travel to / from site – staff, visitors etc • Heavy vehicle travel to and from site - livestock, commodities and general deliveries etc • Operation vehicle movements – feed trucks, solid waste management etc	Temporary disruptions / delays to local traffic	**L5 – Low**	• Identify and assess roads likely to be affected by Development's operation and develop methods to minimise traffic impacts. • All vehicles carrying materials to be adequately covered (using a tarpaulin) as required to prevent any loss of material, which may cause driver safety issues. • Maintain principal haulage route, advance and position intersection signage. • Monitoring of any traffic delays.	**L4 - Low**	Site Based Environmental Management Plan Complaints register Personnel induction
		Temporary restrictions to private access roads	**L5 – Low**		**L4 – Low**	
		Permanent adjustment to some private property access roads and local/regional roads	**L5 – Low**		**L4 – Low**	
		Changed traffic patterns	**M11 – Moderate**		**L4 – Low**	
		Accidents - Safety of commuters, pedestrians, contractors and subcontractors.	**H22 – High**		**M15 – Moderate**	
Indigenous cultural heritage	• Routine maintenance activity • Excavation of soils	Impact to undiscovered or undocumented aboriginal sites, artefacts and cultural places	**L5 – Low**	• Induct personnel on heritage issues, safeguards, and the location of indigenous heritage items. • If design changes or operation activities impact on areas outside of those identified in the Development Consent, relevant stakeholders will be consulted.	**L4 – Low**	Site Based Environmental Management Plan Personnel induction

		Finding / disturbing burials or human remains	**L5 - Low**	• Protect identified heritage items with protective fencing or flagging from being disturbed during operation. • Regular inspection of heritage protection fencing.	**L4 – Low**	
Resource and waste management	• Water usage • Energy usage • Generation of general waste during operation activities including building materials, excess unsuitable spoil material, vegetation material • Generation of solid waste • Generation of liquid wastes (effluent/sewage) • Handling of chemicals, waste and hazardous goods. • Fuel storage and distribution and waste oil disposal	Improper disposal of waste material	**M12 – Moderate**	• Sustainable use of groundwater and surface water in accordance with the Development's allocation and entitlements. • Waste materials contained in waste bins or other suitable containers, and collected for recycling, reuse or disposal by the licensed waste contractor. • Use recycled products where possible. • Separate, contain, manage and dispose contaminated waste to prevent migration and further contamination whilst maintaining compliance with regulatory requirements. • Label and store all liquid waste containers in a bunded area prior to removal off-site. • Undertake inspections of the worksite and waste storage areas to ensure litter / debris is regularly cleaned up and contained on site. • Bunding of areas used for fuel, oil and chemical storage in accordance with Australian Standards and regulatory guidelines. • Locate appropriate waste removal contractor and/or appropriately licenced waste facilities in the area. • Sustainable on-site utilisation of effluent and solid waste. • Modern and well-maintained equipment is to be used to encourage fuel efficiency • Stormwater from roof structures captured for incidental uses. • Water recycling measures are implemented where practical.	**L6 – Low**	Site Based Environmental Management Plan Meat and Livestock Australia, 2015b, Beef cattle feedlots: waste management and utilisation, Meat and Livestock Australia, North Sydney, NSW Personnel induction and training
		Direct impacts to land, groundwater or surface waters.	**M12 – Moderate**		**L6 – Low**	
		Depletion or sterilisation of non-renewable resources, including water and energy	**M11 – Moderate**		**L6 – Low**	
		Difficult disposal of waste material including hazardous waste.	**M13 – Moderate**		**L6 – Low**	
		Potential leaks and spills of fuels and/or hazardous materials.	**M12 – Moderate**		**L6 – Low**	
		Impact to water quality due to inappropriate solid and/or liquid waste management.	**M12 – Moderate**		**L6 – Low**	
Visual amenity and landscaping	• Revegetation /landscaping • Solid waste management • Rehabilitation of disturbed land • Removal of visually prominent native vegetation • Evening / night activities	Change to landscape character and visual environment as a result of large embankments, disturbed areas, night activities, removal of vegetation, and access road.	**L5 – Low**	• Landscape revegetation will incorporate the surrounding landscape types and vegetation patterns. • Embankments will be stabilised by appropriate landscape treatments. • The use of night-lighting will be minimised and directed away from rural residences where possible. • Site facilities and areas surrounding them will be kept tidy and be regularly mowed, cleaned and maintained. • Solid waste management in accordance with DAF guidelines. • Monitoring, evaluation and management of landscape revegetation areas including treatment of weeds.	**L2 – Low**	Site Based Environmental Management Plan Meat and Livestock Australia, 2015b, Beef cattle feedlots: waste management and utilisation, Meat and Livestock Australia, North Sydney, NSW Obtrusive Effects of Outdoor Lighting, Sydney, Australia.
		Visual impacts as a result of solid waste management	**L5 – Low**		**L2 – Low**	
		Poor management of revegetation	**L5 – Low**		**L2 – Low**	
		Visual impacts as a result of obtrusive lighting	**L5 – Low**		**L4 - Low**	

						Personnel induction
Fire	• Handling of hazardous materials. • Fuel storage and distribution • Hot works • Materials handling and storage e.g. hay storage, grain dust	Fire damage to plant, equipment or infrastructure	**M9 – Moderate**	• Establish fuel free zones around materials which are adjacent to bush fire hazard areas. • Provide fuel reduced zones in areas of high ignition potential (e.g. along roads, refuelling areas, infrastructure etc) to slow the development of fires. • Access tracks maintained on the site. • Ensure any hot works have been approved by site management beforehand and adequate controls are in place e.g. fire extinguishers • Hazardous materials are stored and used in accordance with relevant state guidelines and Australian Standards for the storage of hazardous and dangerous goods and spill management. • Fire-fighting equipment will be held on-site to respond to any fires that may occur during operation.	**L5 – Low**	Site Based Environmental Management Plan Personnel induction and training
		Impacts to surrounding properties.	**M11 – Moderate**		**L6 – Low**	
Soils and sediments	• Rehabilitation of disturbed land • Solid waste handling, processing and utilisation. • Liquid waste storage, handling and utilisation • Handling of chemicals, waste and hazardous goods. • Fuel storage and distribution and waste oil disposal • Maintenance of plant and equipment, servicing and refuelling • Holding pond / sediment basin management • Noxious weed treatment	Erosion of exposed soils causing sedimentation of waterways and aquatic environments	**M11 – Moderate**	• Clean and dirty water runoff will be adequately separated to avoid mixing where possible through the use of diversions, clean water drains, and the installation of permanent drainage infrastructure. • Exposed areas will be progressively rehabilitated. Methods will include permanent vegetation, or temporary protection with cover crops. • Exposed batter slopes and embankments, and other areas exposed but not worked, will be protected from erosion through implementation of permanent stabilisation measures e.g. seeding, revegetation. • Vehicle movements from site will be minimised during wet weather if the tracking of mud onto public sealed roads becomes an issue. • Hazardous materials storage meets regulatory requirements for bunding/storage and spill kits available. • Solid waste will be stored in designated solid waste stockpile/carcass composting area in accordance with relevant guidelines. • Solid waste will be sustainably applied to land within the solid waste utilisation area. • When available, effluent from the holding pond will be sustainably applied to land within the effluent utilisation area. • The land application of solid waste and effluent is made at rates consistent with the ability of soils and crops grown in the on-site utilisation areas to sustainably utilise the applied nutrients, salts and organic matter, under the climatic conditions prevailing at the site.	**L6 – Low**	Site Based Environmental Management Plan IECA (2008) Best Practice Erosion and Sediment Control Meat and Livestock Australia, 2015b, Beef cattle feedlots: waste management and utilisation, Meat and Livestock Australia Personnel induction and training
		Impacts to the quality of soils in the solid waste and effluent utilisation areas	**M12 – Moderate**		**L6 – Low**	
		Contamination of soils due to spills and leaks and inappropriate storage of hazardous material	**M9 – Moderate**		**L4 – Low**	

8 Planning framework

8.1 State legislative framework

8.1.1 *Planning Act 2016*

The purpose of the *Planning Act 2016* is to establish an efficient, effective, transparent, integrated, coordinated, and accountable system of land use planning (planning), development assessment and related matters that facilitates the achievement of ecological sustainability.

In accordance with section 78 of the *Planning Act 2016* an application may be made to change a development approval (**a change application**). A change application must be made to the responsible entity.

A change application may be for a minor or other change. A minor change means a change that for a development approval –

(i) would not result in substantially different development; and
(ii) if a development application for the development, including the change, were made when the change application is made would not cause –
  (a) the inclusion of prohibited development in the application; or
  (b) referral to a referral agency, other than to the chief executive, if there were no referral agencies for the development application; or
  (c) referral to extra referral agencies, other than to the chief executive; or
  (d) a referral agency to assess the application against, or have regard to, matters prescribed by regulation under section 55(2), other than matters the referral agency must have assessed the application against, or have had regard to, when the application was made; or
  (e) public notification if public notification was not required for the development application.

A change application that is not a minor change is considered an other change.

Section 82 of the *Planning Act 2016* provides that the change application is to be assessed, in the context of the development approval, against Part 2, Division 2 and Part 3, other than section 51, 63 and 64(8)(c) and the Development Assessment Rules, as if

- the responsible entity were the Assessment Manager;
- the change application were the original development application, with the changes included, but was made when the change application was made; and
- with necessary changes.

The intent of the other change provisions is to ensure that the proposed changes are considered in the context of the existing development approval. However, it is not intended to provide for a reassessment of the entire development approval (i.e. the changes are to be

assessed in the context of the existing development approval but without a reassessment of parts of the development approval that are not proposed to be changed.

8.1.1.1 Prohibited development

The proposed change to the existing Development is not prohibited, as established giving consideration to all relevant instruments which can provide prohibitions under the *Planning Act 2016* and *Planning Regulation 2017*. Therefore, the applicant has the right to make a change application under section 50 of the *Planning Act 2016*.

8.1.1.2 Assessable development

The proposed development includes development that is made assessable under the *Charters Towers Regional Town Plan* (Charters Towers Regional Council, 2020) and the *Planning Regulation 2017*.

The proposed development involves the establishment of an Intensive Animal Industry (beef cattle feedlot) on the subject land. The change application (other change) would be assessed as a material change of use as it involves;

i. material increase in the intensity or scale of the use of the premises; and
ii. approval for environmentally relevant activities.

Under schedule 2 of the *Planning Act 2016* material change of use is defined as:

material change of use, of premises, means any of the following that a regulation made under section 283(2)(a) does not prescribe to be minor change of use –

a) the start of a new use of the premises;
b) the re-establishment on the premises of a use that has been abandoned;
c) a material increase in the intensity or scale of the use of the premises.

8.1.1.3 Level of assessment

The use of Intensive Animal Industry (cattle feedlot) is not listed in Table 5.4.7.3 of section 5.4.7 of the *Charters Towers Regional Town Plan* which is the relevant table of assessment for the zoning of the subject land. The change application (other change) meets the criteria for a material change of use for Intensive Animal Industry (feedlot) and is subject to impact assessment in accordance with section 45 (3) of the *Planning Act 2016*.

8.1.1.4 Public notification requirements

The change application (other change) is subject to impact assessment, public notification will be required as part of the assessment process. The change application (other change) will be notified for minimum period of fifteen (15) business days in accordance with section 53 of the *Planning Act 2016*.

8.1.1.5 Assessment Manager

The assessment manager for the application is the local government (Charters Towers Regional Council) as determined by the *Planning Regulation 2017* (Schedule 6). A development permit must be obtained to authorise the lawful commencement of the use on the site.

8.1.2 State planning policy

Pursuant to the provisions of section 45 (5) of the Planning Act 2016, the Assessment Manager, in considering a change application (other change) subject to impact assessment, must assess the change application in respect of the State Planning Policy.

The State Planning Policy July 2017 (SPP) commenced on 3 July 2017. The SPP expresses the state's interests in land use planning and development and promotes these interests through plan making and development decisions of state and local government.

The SPP expresses seventeen (17) state interests categorised under the following themes:

a) Liveable communities and housing:
   - Housing supply and diversity;
   - Liveable communities

b) Economic growth;
- Agriculture
- Development and construction
- Mining and extractive resources
- Tourism

c) Environment and heritage;
   - Biodiversity
   - Coastal environment

- Cultural heritage
- Water quality

d) Safety and Resilience to Hazards;
- Emissions and hazardous activities
- Natural hazards, risk and resilience

e) Infrastructure.
- Energy and water supply;
- Infrastructure integration;
- Transport infrastructure;
- Strategic airports and aviation facilities; and
- Strategic ports

A state planning policy area overlay of the subject land was obtained from the DSDMIP SPP to confirm the state interests relevant to the assessment of the proposed development. In relation to the environment, under the State Planning Policy, the subject land is identified as being affected by interests outlined in Table 52.

Table 52 – Subject land - State Planning Policy relevant state interests

SPP	State interest
Economic growth	
Agriculture	Stock route network
Environment and heritage	
Biodiversity	MSES - Regulated vegetation (intersecting a watercourse)
Safety and resilience to hazards	
Natural hazards risk and resilience	Flood hazard area - Level 1 - Queensland floodplain assessment overlay* Bushfire prone area
Infrastructure	
Transport infrastructure	State-controlled road

An assessment against the development assessment requirements under the SPP of the state interests listed in Table 52 has been undertaken within subsequent sections and determined that the proposed development is consistent with the SPP.

8.1.2.1 Economic growth

8.1.2.1.1 Stock route

The SPP Agricultural land state interest overlay on the subject land is shown in Figure 42. In relation to the Agricultural land state interest overlay it is noted that:

- the proposed development is not located on or adjacent to the stock route network thereby not compromising the network's use for moving stock on foot;
- access to the proposed development is not located on the stock route network thereby not compromising the network's use for moving stock on foot;
- livestock proof boundary fencing shall be maintained along the full length of the subject land boundary including adjoining the stock route;
- The proposed development complex access road is gated to ensure no livestock can exit the subject land, any livestock traversing the stock route cannot enter the subject land and to provide for secure access.

Consequently, the proposed development will not adversely affect matters associated with this state interest.

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State Planning Policy

Making or amending a local planning instrument and designating land for community infrastructure

0 300 600 900 1,200

Metres

X - PROPOSED DEVELOPMENT COMPLEX SITE

Date: 31/03/2022

Disclaimer:
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FIGURE 42

8.1.2.2 Environment and Heritage

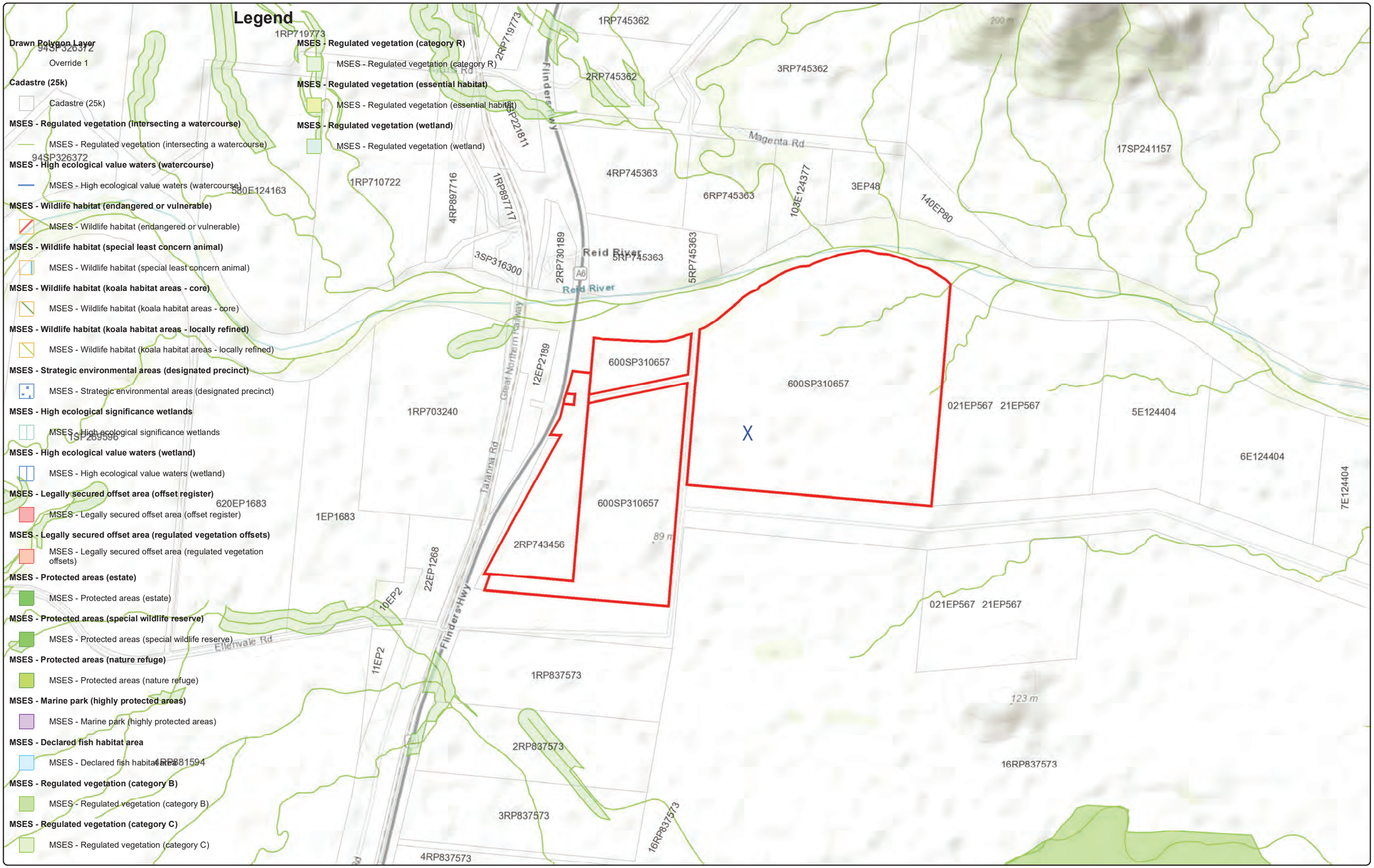
These provisions relate to development applications for a material change of use, reconfiguring a lot or operational work on land affected by: (i) biodiversity; (ii) coastal environment; (iii) cultural heritage; and (iv) water quality overlays.

8.1.2.2.1 Biodiversity

The SPP Biodiversity state interest overlay on the subject land is shown in Figure 43. It is noted that:

- the proposed development is not located in an area of state environmental significance such as regulated vegetation Category B as demonstrated in section 6.14.
- the proposed development is adequately offset from matters on state significance as such as regulated vegetation Category B as demonstrated in section 6.6.1.1; and
- the proposed development shall not result in the disturbance of matters on state significance as such as regulated vegetation Category B as demonstrated in section 6.6.1.1;
- the proposed development is adequately offset from watercourses so as to not impact on state significance matters as such as regulated vegetation Category B as demonstrated in section 0 and 6.6.1.1; and

Consequently, the proposed development will not adversely affect matters associated with this state interest.



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State Planning Policy

Making or amending a local planning instrument and designating land for community infrastructure

0 300 600 900 1,200

Metres

X - PROPOSED DEVELOPMENT COMPLEX SITE

Date: 31/03/2022

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FIGURE 43

8.1.2.3 Safety and resilience to hazards

8.1.2.3.1 Natural hazards risk and resilience

These provisions relate to development applications for a material change of use, reconfiguring a lot or operational work on land within: (i) a flood hazard area; (ii) a bushfire hazard area; (iii) a landslide hazard area; (iv) storm tide inundation areas; and (v) erosion prone area.

The SPP Natural hazards and risk resilience state interest overlay on the subject land is shown in Figure 44. It is noted that:

- the proposed development is not located in a natural hazard area such as a flood hazard, very high or high bushfire prone area (Figure 40), landslide or coastal area as demonstrated in section 6.
- the proposed development is compatible with the level of risk associated with natural hazards;
- the proposed development responds to a potential natural hazard and minimises risk to personal safety through the siting, layout, access and management as outlined in sections 5.1.2.1 and 5.3;
- the proposed development supports, and does not unduly burden, disaster management response or recovery capacity and capabilities;
- the proposed development is resilient to natural hazard events by ensuring siting and design accounts for the potential risks of natural hazards to property as demonstrated in sections 5.1.2.1 and 6.5.6;
- the proposed development directly, indirectly and cumulatively avoids an unacceptable increase in severity of the natural hazard and does not significantly increase the potential for damage on the site or to other properties through its design, siting, construction and management as outlined in sections 5.1.2.1, 5.2 and 5.3;
- the proposed development avoids the release of hazardous materials as a result of a natural hazard event as demonstrated in 5.1.3 and 5.1.5.1;
- the siting and configuration of the proposed development maintains the natural processes and the protective function of landforms and/or vegetation in natural hazard areas as demonstrated in sections 4 and 6; and
- the proposed development infrastructure is located outside of the extent of areas subject to 1%AEP flood event and, during flood events, there is enough storage of commodities on-site for several days of ration.

Consequently, the proposed development will not adversely affect matters associated with this state interest.

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FIGURE 44

8.1.2.4 Infrastructure

The state interests in infrastructure relate to: (i) Energy and water supply; (ii) Infrastructure integration, (iii) Transport infrastructure, (iv) Strategic airports and aviation facilities and (v) Strategic ports.

8.1.2.4.1 Transport Infrastructure

The SPP Transport Infrastructure state interest overlay on the subject land is shown in Figure 45. It is noted that:

- the proposed development is not located in an existing or future state infrastructure corridor;
- the development is a rural use and is compatible with and supports the most efficient use of the existing infrastructure and transport network;
- the proposed development is not an urban development and therefore the risk of adverse impacts to the community and the long term sustainability of the transport system is not compromised;
- the siting, access and capacity of the proposed development allows the safe and efficient movement of people and goods and therefore shall not lead to operational constraints on the adjoining state transport corridor and infrastructure as demonstrated in section 4; and
- Development personnel are protected from significantly adverse impacts on health and wellbeing resulting from noise, vibration, air particles and emissions and light emitted from existing and future state transport corridors and infrastructure due to the separation distances between the proposed development and the state transport corridor and infrastructure.

Consequently, the proposed development will not adversely affect matters associated with this state interest.

The proposed development has been assessed to comply with all applicable matters of state interest included in the State Planning Policy.

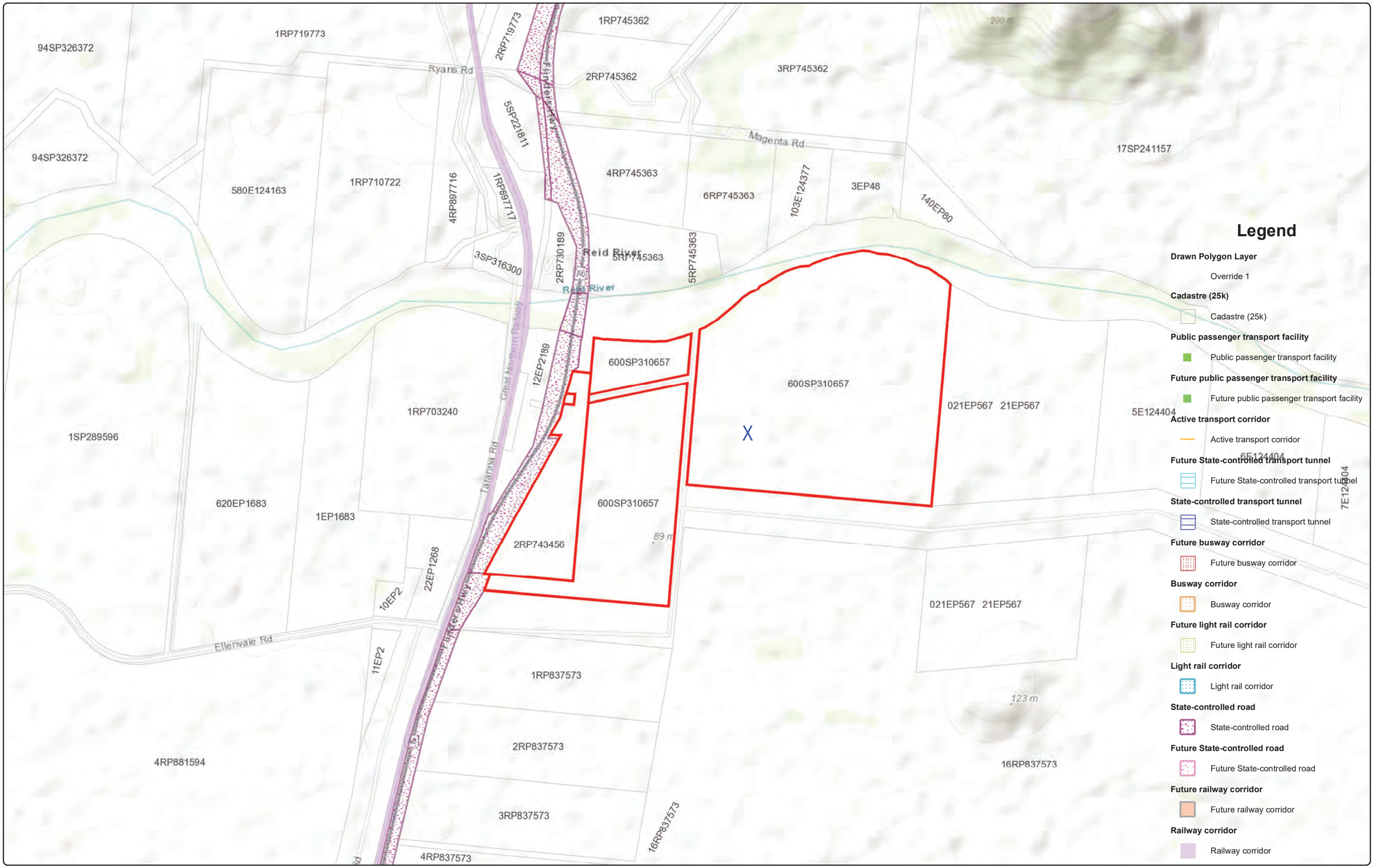

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FIGURE 45

8.1.3 State Development Assessment Provisions

The State Development Assessment Provisions (SDAP) set out the matters of interest to the state for development assessment, where the chief executive administering the *Planning Act 2016* is the assessment manager or referral agency.

While land use planning in Queensland is primarily the responsibility of local government, matters of interest to the state are assessed by the state at a site level for certain aspects. The SDAP is not applied by local government in the assessment of a change application (other change).

Schedule 6 of the *Planning Regulation 2017* prescribes the matters that the chief executive may have regard to when assessing an application for particular development.

Schedule 8 of the *Planning Regulation 2017* prescribe when the chief executive is an assessment manager or a referral agency for certain development applications.

There are three aspects of the proposed development that trigger referral to the chief executive administering the Act as a referral agency.

The following outlines aspects under the *Planning Regulation 2017* in relation to environmental matters where referral ***IS*** triggered to the chief executive administering the Act as a referral agency as outlined below.

8.1.3.1 Non-devolved environmentally relevant activities

Schedule 10, Part 5, Division 4, Table 2 - Item - 1 Non-devolved environmentally relevant activities.

If –

a) the environmentally relevant activity the subject of the application has not been devolved to a local government under the Environmental Protection Regulation; and

b) the chief executive is not the prescribed assessment manager for the application (*Planning Regulation 2017)*.

The proposed development is a concurrence environmentally relevant activity and the environmentally relevant activity has not been devolved to a local government under the Environmental Protection Regulation. Consequently, referral is required for material change of use.

8.1.3.2 State transport infrastructure generally

Schedule 10, Part 9, Division 4, subdivision 1, Table 1 - Item - 1 State transport infrastructure generally.

Development stated in schedule 20 that is assessable development under a local categorising instrument or section 21, if –

a) the development is for a purpose stated in schedule 20, column 1 for the aspect; and
b) the development meets or exceeds the threshold –
   i. for development in local government area 1—stated in schedule 20, column 2 for the purpose; or
   ii. for development in local government area 2—stated in schedule 20, column 3 for the purpose; and
c) for development in local government area 1—the development is not for an accommodation activity or an office at premises wholly or partly in the excluded area

The proposed development is an Intensive Animal Industry (beef cattle feedlot) with a total facility capacity of 3,075 SCUs. Consequently, the threshold stated in schedule 20, column 2 of 2,000 head of cattle is exceeded and referral is required for material change of use.

8.1.3.3 State transport corridors and future State transport corridors

Schedule 10, Part 9, Division 4, Subdivision 2, Table 1 – item 1 - State transport corridors and future State transport corridors –

Development application for reconfiguring a lot that is assessable development under section 21, if –

(a) all or part of the premises are within 25m of a State transport corridor;
and
(b) 1 or more of the following apply –
(i) the total number of lots is increased;
(ii) the total number of lots adjacent to the State transport corridor is increased;
(iii) there is a new or changed access between the premises and the State transport corridor;

The subject land on which the development is proposed is within 25 m of a state transport corridor being the Flinders Highway. Consequently, referral is required for material change of use.

8.1.3.4 Managing multiple state codes or matters of state interest

The proposed development involves multiple matters of state interest and triggers assessment against a number of different state codes as outlined in sections 8.1.3 and 8.1.4. Consequently, each relevant state code has been considered independently and no attempt has been made to balance or justify outcomes with reference to other state codes.

8.1.4 State codes

As there are three referral triggers to the State as a referral agency for the proposed development material change of use, the provisions mentioned in the following state development assessment state codes apply:

- State Code 1 – Development in a state-controlled road environment of the State Development Assessment Provisions;
- State Code 6 – Protection of state transport networks of the State Development Assessment Provisions; and
- State Code 22 – Environmentally Relevant Activities of the State Development Assessment Provisions.

The relevant criteria in the state codes include the purpose statement, performance outcomes and acceptable outcomes. Acceptable outcomes are provided for most performance outcomes and represent ways in which the relevant performance outcomes can be met.

An application that complies with the applicable acceptable outcomes will satisfy the relevant performance outcome. If an application does not comply with all applicable acceptable outcomes, an alternative solution is proposed, or no acceptable outcome has been provided in the state code, the proposed development must comply with the relevant performance outcome in order to comply with the purpose of the code. If an application does not comply with the performance outcomes, then the proposed development must comply with the purpose of the code.

A response to the relevant provisions of the *State Development Assessment Provisions State Code 1, 6 and 22* is provided in Appendix O.

The proposed development is considered to comply with the relevant SDAP state codes.

8.1.5 Regional Plan

8.1.5.1 North Queensland Regional Plan

Adopted in March 2020, the North Queensland Downs Regional Plan is a statutory regional plan providing strategic direction and policies to deliver regional outcomes within the local authority areas of Burdekin Shire, Hinchinbrook Shire and Palm Island Aboriginal Shire, the Regional Council of Charters Towers and Townsville City Council which align with the state's interests in planning and development.

The policies contained in the regional plan aim to strengthen established industries and the already-diverse regional economy and protect priority agricultural land uses while supporting co-existence opportunities for the resources sector and provide certainty in the future of local towns.

Priority Agricultural Areas (PAAs) are identified in the plan and comprise the region's strategic areas containing highly productive agricultural land uses. Within PAAs, Priority Agricultural Land Uses (PALU) are recognised as the primary land use and given priority over any other proposed land use. PAAs co-existence criteria enable compatible resource activities to co-exist with high-value agricultural land uses within PAAs.

The regional plan also safeguards areas required for the growth of towns in the regions through the establishment of Priority Living Areas while providing for resource activities to locate within these areas where it meets communities' expectations as determined by the relevant local government.

The subject land is not located within the Priority Agricultural Area (PAA) and Strategic Cropping Area (SCA) under Chapter 4 of the North Queensland Regional Plan as shown in Figure 46. The proposed development involves an "Intensive Animal Industry" use for the purposes of a beef cattle feedlot and supports higher intensity agricultural production within the area.

Consequently, the proposal does not compromise the regional outcomes or polices sought under the plan and does not trigger the need for statutory referral to the Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP).

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FIGURE 46

8.1.6 Pre-lodgement consultation

The proposed development was discussed with representatives of the Charters Towers Regional Council on the 7th April 2022. The meeting attendees are listed in Table 53. The meeting discussion revolved around developing a shared understanding between the intensive animal industry consultant and Charters Towers Regional Council about what is being proposed, the nature of the application and the content and requirements for a bushfire hazard assessment.

Table 53 – SARA pre-lodgement meeting – Attendees

Name	Title / Role	Organisation
Prue Miller	Planner	Charters Towers Regional Council
Hayley Thompson	Planner	Charters Towers Regional Council
Rod Davis	Intensive Animal Industry consultant	RDC Engineers Pty Ltd

Table 54 – Response to GRC Pre-lodgement advice

Item	Response
Change application (other change)	Please refer to this report.
Planning Assessment report against the relevant criteria contained in the State Planning Provisions and Strategic Framework, the Rural Zone Code and code purpose, the Transport & Infrastructure Code and code purpose, the Rural Activities Code and code purpose, and any overlay codes of the Goondiwindi Region Planning Scheme 2018	Please refer to section 8.2.
Mandatory supporting information & material (i.e. site plan including existing infrastructure, setbacks from boundaries, access points, natural features etc.	Please refer to all figures contained within this report.
Bushfire Hazard Assessment	Please refer to the Bushire Hazard Assessment report provided at Appendix R.

Table 54 demonstrates that this planning report and supporting information report has been prepared having regard to matters raised in the pre-lodgement meeting with the Charters Towers Regional Council.

The proposed development was discussed with representatives of the SARA, DAF, DTMR and DoR on the 11th March 2022 via video conference. The meeting attendees are listed in Table 55.

Table 55 – SARA pre-lodgement meeting – Attendees

Name	Title / Role	Organisation
Catherine Hobbs	Principal Planning Officer	DSDILGP / SARA
Mary McCarthy	Senior Planning Officer	DSDILGP / SARA
Lisa Brooks	Senior Town Planner	DTMR
Helena Z Xu	A/Senior Town Planner	DTMR
Monique Pierce	Natural Resource Management Officer	DoR
Luke Boucher	Acting Manager - Environmental Regulation	DAF
Aaron Sequeira	Environmental Regulation	DAF
Rod Davis	Intensive Animal Industry consultant	RDC Engineers Pty Ltd
Paul Heil	Applicant	Reid River Export Depot Pty Ltd
Kristy Heil	Applicant	Reid River Export Depot Pty Ltd
Kate Andison	Applicant	Reid River Export Depot Pty Ltd

The Department of State Development Manufacturing Infrastructure and Planning (DSDMIP) provided pre-lodgement advice outlining the matters of interest to DSDMIP in correspondence dated 22nd of March 2022. The DSDMIP pre-lodgement advice is provided in Appendix P.

Table 56 below demonstrates that this report has been prepared having regard to matters raised in the pre-lodgement written response relating to state development assessment provisions, state-controlled roads, vegetation matters and environmentally relevant activity (ERA).

Table 56 – Response to DSDMIP Pre-lodgement advice

Item	Response
State transport infrastructure	
Development impacting on state transport infrastructure and thresholds	
DTMR has confirmed in the pre-lodgement meeting held on 11 March 2022, that an overall statement addressing SDAP State code 6: protection of state transport networks to be sufficient where there has been: • no increase to the total approved holding capacity; • no increase to the annual through-put; and • no increase to the number or size of haulage vehicle	Refer to State Code 6 - Protection of state transport networks of the State Development Assessment Provisions provided in Appendix O.
Development in a State-controlled road environment	
DTMR has confirmed in the pre-lodgement meeting held on 11 March 2022, that an overall statement addressing SDAP State code 1: protection of state transport networks to be sufficient where there has been: • no increase to the total approved holding capacity; • no increase to the annual through-put; and • no increase to the number or size of haulage vehicle	Refer to State Code 6 - Protection of state transport networks of the State Development Assessment Provisions provided in Appendix O.
Environmentally relevant activity	
State code 22: Environmentally relevant activities (ERAs)	
Provide a response to the performance outcomes listed in State code 22: Environmentally relevant activities.	Refer to State Code 22 – environmentally relevant activities of the State Development Assessment Provisions provided in Appendix O.
Environmental Authority	
Information addressing the following concerns should be submitted as part of the application:	
a) Surface water	
provide a detailed surveyed site plan that shows that the proposed feedlot controlled drainage area (CDA) is designed to an acceptable hydrological standard that prevents unauthorised discharges of runoff from the feedlot CDA. This plan also should have the CDA broken down into pen area, hard and soft catchments in accordance with the National Guidelines for Beef Cattle Feedlots in Australia. Note: For the purpose of the ERA component of the application, plans should show only the final proposed feedlot footprint and no aerial imagery in the background. Ideally all plans should be	Refer to section 5.1.3 and Figure 11, Figure 12 and Figure 13, which demonstrate that the proposed controlled drainage areas are designed to an acceptable hydrological standard in accordance with the National Guidelines for Beef Cattle Feedlots in Australia (MLA, 2012a) and are serviced by appropriately sized effluent containment systems. All plans have been drawn by an appropriately qualified RPEQ accredited Engineer.

drawn by an appropriately qualified RPEQ accredited Engineer	
ii. provide a pen detail plan showing the typical pen dimensions, down and cross-slope in the pens.	Refer to Figure 8, Figure 9 and Figure 10 which provides typical cross-sections of the proposed controlled drainage area including the pens, drains and cattle lanes and catch drains. All plans have been drawn by an appropriately qualified RPEQ accredited Engineer.
iii. provide typical cross-sectional plans for the proposed feedlot CDA including the feedlot pens, drains, cattle lanes, manure stockpile area, sedimentation basins and effluent holding ponds. Details of the control weir on all sedimentation basins should be included to show how the weir is sized in accordance with the National Guidelines for Beef Cattle Feedlots in Australia.	Refer to section 5.1.3 and Figure 11, Figure 12 and Figure 13, which demonstrate that the proposed controlled drainage areas are designed to an acceptable hydrological standard in accordance with the National Guidelines for Beef Cattle Feedlots in Australia (MLA, 2012a) and are serviced by appropriately sized effluent containment systems. All plans have been drawn by an appropriately qualified RPEQ accredited engineer.
iv. provide cut and fill diagrams for the feedlot CDA and associated sedimentation basins and effluent holding ponds. Note: The proposed feedlot effluent holding ponds and sedimentation structures must be sized and designed in accordance with the National Guidelines for Beef Cattle Feedlots in Australia including the installation of appropriately designed weirs.	Refer to section 5.1.3 and Figure 11, Figure 12 and Figure 13, which demonstrate that the proposed controlled drainage areas are designed to an acceptable hydrological standard in accordance with the National Guidelines for Beef Cattle Feedlots in Australia (MLA, 2012a) and are serviced by appropriately sized effluent containment systems. Refer to the issued for construction plan of the existing development prepared by Premise and provided in Appendix C.
v. provide a properly scaled plan indicating the location and extent of all feedlot waste utilisation areas including the size of the areas and type of waste being applied (i.e. effluent or manure). This plan should also consider and describe any environmental values, including but not limited to surface waters, vegetation and wetlands, which may be at risk of harm due to proximity to utilisation areas.	Refer to sections 5.1.4, 5.1.5, 5.3.7 and 5.3.8 and Figure 14 which provides specific details of the management of the waste utilisation areas including the size of the areas, a description of the soils, crops grown and expected yields, and application rate for effluent and solid waste.
vi. provide specific details for management of the feedlot waste utilisation areas in the form of a waste management plan including a description of the soils, crops grown and expected yields, method of application and application rate for effluent and manure. The waste management plan should also include visual and other triggers for implementing irrigation to de water the effluent ponds to minimise the risk of effluent spills from the	A detailed description of all management practices that will be employed to prevent or minimise the risk of environmental harm from storage and use of hazardous and dangerous materials have been documented in the proposed development's Site Based Environmental Management Plan as demonstrated in Appendix Q.

effluent holding ponds and sedimentation basins causing environmental harm to surface waters.	
b) Groundwater	
i. provide details of the measures to be implemented in the design, construction and management phases of the proposed feedlot that will prevent or minimise the risk of leachate or percolate from the feedlot CDA contaminating ground water in accord with the National Guidelines for Beef Cattle Feedlots in Australia and National Beef Cattle Feedlot Environmental Code of Practice.	Please refer to sections 5.1, 5.1.3, 5.2.3, 5.2.4, 5.3.7 and 5.3.8 which provides details of the measures to be implemented to minimise the risk of leachate or percolate from the proposed development contaminating groundwater. Please refer to Figure 14 and sections 5.1.4, 5.1.5 and 5.1.5.1 which shows the location and extent of waste utilisation area and type of waste being applied and application rates. A detailed description of all management practices that will be employed to prevent or minimise the risk of environmental harm to groundwater have been documented in the proposed development's Site Based Environmental Management Plan as demonstrated in Appendix Q.
c) Community	
i. identify the proposed total capacity (Standard cattle units (SCU)) in the feedlot and the proposed stocking density (m^2/SCU) in the feedlot.	Refer to section 5.1.2.2 and 5.1.2.3.1 for the proposed total capacity (Standard cattle units (SCU)) in the feedlot and the proposed stocking density (m^2/SCU) in the feedlot.
ii. provide a plan that shows the location of the feedlot CDA in relation to the property boundaries and all nearby sensitive receptors to show compliance with the separation distance guidelines described in the National Guidelines for Beef Cattle Feedlots in Australia.	Refer to section 7.5.1.9, Figure 11, Figure 12 and Figure 41 which provides the layout of the controlled drainage areas including the pens, drains, cattle lanes, solid waste stockpile and carcass composting area, sedimentation ponds and holding pond. Please refer to section 5.3.8 and the procedures within the SBEMP in Appendix Q which provide details of the maintenance of structures in the controlled drainage area.
iii. provide a detailed description of all management practices that will be employed to prevent or minimise the risk of environmental harm to community amenity in the relevant feedlot site-based environmental management system as described in point 3 below.	A detailed description of all management practices that will be employed to prevent or minimise the risk of environmental harm to community amenity have been documented in the proposed development's Site Based Environmental Management Plan as demonstrated in Appendix Q.
iv. provide a description of how the proposed activity location meets the separation distance guidelines described in Appendix B of the National Guidelines for Beef Cattle Feedlots in Australia 3rd Edition 2012, including the cumulative impact considering there are other feedlots in the area.	Refer to section 7.5.1.9 and Figure 41 which provides details of the separation distance from the proposed development and all nearby sensitive receptors as calculated in accordance with the separation distance guidelines described in the National Guidelines for Beef Cattle Feedlots in Australia (MLA, 2012a).
d) Ecology	

i. provide details of the measures to be implemented in the design, construction and management phases of the proposed feedlot. Include measures that will prevent or minimise the risk of adverse impacts on native flora, fauna and ecological communities, including mapped regulated vegetation and wetlands. Provide the measures in the relevant feedlot site-based environmental management system as described in point 4 below	Refer to section 5.1, 5.2, 5.3, 6.6 and Figure 29 and Figure 30 which demonstrates that the proposed development shall not have a significant impact on regulated vegetation or ecological communities. A detailed description of all operational management practices that will be employed to prevent or minimise the risk of the proposed development on remnant vegetation or ecological communities have been documented in the proposed development's Site Based Environmental Management Plan as demonstrated in Appendix Q.
Site-based environmental management system	
a feedlot site-based environmental management system should be submitted that describes all management practices that is in accordance with section 3.5 of the National Beef Cattle Feedlot Environmental Code of Practice, and include : a description of the environmental values likely to be affected by each relevant activity; details of any emissions or releases likely to be generated by each relevant activity; a description of the risk and likely magnitude of impacts on the environmental values; details of the management practices proposed to be implemented to prevent or minimise adverse impacts; and details of how the land the subject of the application will be rehabilitated after the relevant activity ceases.	Please refer to the proposed development's Site Based Management Plan provided in Appendix Q. The SBEMP is a site-based environmental management system that outlines a framework designed to mitigate risks to the environment from the proposed development.
It is recommended that the applicant contact Department of Agriculture and Fisheries (livestockregulator@daf.qld.gov.au) to obtain a copy of the feedlot assessment spreadsheet (Version 8.6) for use when drafting the development application.	Please refer to the feedlot assessment spreadsheet (Version 8.6) provided in Appendix B.

8.2 Local Legislative framework

8.2.1 Local Planning scheme

8.2.1.1 Introduction

Pursuant to the provisions of Section 43 - 45 of the *Planning Act 2016*, a development application must be assessed against the local categorising instrument. The relevant local categorising instrument in this instance is the *Charters Towers Regional Town Plan* (Charters Towers Regional Council, 2020). The *Charters Towers Regional Town Plan* states the category of assessment that must be carried out for the proposed development. A summary of the assessment of the Development's proposed change against the provisions of the *Charters Towers Regional Town Plan* is outlined below.

8.2.1.2 Definition of Use

Under the provisions of the *Charters Towers Regional Town Plan*, the proposed use is defined as "Intensive Animal Industry". The relevant use is defined as follows:

"**Intensive Animal Industry**" – Premises used for the intensive production of animals or animal products in an enclosure that requires the provision of food and water either mechanically or by hand.

The use includes the ancillary storage and packing of feed and produce.

The term includes the use of premises for purposes such as:

(a) Feedlots;
(e) Piggeries;
(f) Poultry;
(g) Egg production.

8.2.1.3 Strategic framework

The strategic framework sets the policy direction for the *Charters Towers Regional Town Plan* and forms the basis for ensuring appropriate development occurs in the Town plan area for the life of the Town plan (Charters Towers Regional Council, 2020). As the change application (other change) is subject to impact assessment, the proposed development has been assessed against the applicable provisions of the Strategic Framework and a summary of this assessment is provided in Table 57.

As outlined in Table 57, it is submitted that, on balance, the proposed development is consistent with the fundamental planning objectives that form the basis of the planning scheme. The proposed development is in a rural area, is well serviced by the major road network of the region and is sited, designed, constructed and shall be operated without affecting sensitive land uses where adverse environmental impacts may arise.

Table 57 – Strategic Framework (Charters Towers Regional Town Plan)

ID	Theme/Element	Relevance	Response
3.2	**Strategic Intent**		
3.2.1	**Overview**		
1	The Charters Towers Region is greater in size than Tasmania. Within this large area is a diverse array of land uses and activities influenced by geographic, climatic and economic conditions.	Yes	The proposed use is for "Intensive Animal Industry" (Beef cattle feedlot) which is a diversification of an existing rural activity.
2	The region is located in an area of strategic significance acting as a 'cyclone resilient' economic gateway between western Queensland and large coastal urban communities via major road and rail networks.	Yes	The proposed use is for "Intensive Animal Industry" (Beef cattle feedlot) which contributes to the economic diversification of the region through existing rural activities and rural-sector employment opportunities. The proposed development is strategically located on a major road corridor providing connection between western and northern Queensland cattle producing regions and coastal urban communities.
3	The city of Charters Towers and Ravenswood were first established through the discovery of vast gold deposits in the late nineteenth century. This resulted in Charters Towers experiencing a gold rush boom driving major population and economic growth resulting in Charters Towers being known at the time as, 'The World'. A legacy of this prominent period are the numerous historic buildings and features throughout the town that celebrate and show the local cultural heritage of the past.	No	The proposed use is for "Intensive Animal Industry" (Beef cattle feedlot) and is not located within an urban area or rural township and does not impact on a local or state heritage place.
4	Today gold mining remains one of the major economic drivers with the Charters Towers region containing some of the largest gold deposits in Australia.	No	The proposed use is for "Intensive Animal Industry" (Beef cattle feedlot) does not involve a gold mining use.
5	The region has also experienced other periods of growth, such as the industrialised gold mining of the early 20th century and the influx of service personnel during World War II which have contributed to the establishment of	Yes	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) and directly supports the economic prosperity of the region.

	settlements and infrastructure which support the contemporary social and economic prosperity of the region.		
6	The region today is an agricultural powerhouse and is internationally recognised in the cattle industry. The H.M. Clarke Saleyards (Dalrymple Saleyards) is a regionally significant infrastructure facility supporting the region's cattle industry.	Yes	The proposed use is for "Intensive Animal Industry" (Beef cattle feedlot) being an agricultural activity and is strategically located within North Queensland's cattle producing region.
7	Cropping and other rural industries occur extensively throughout the region's productive lands along with broad hectare grazing.	Yes	The proposed use is for a rural use being "Intensive Animal Industry" (Beef cattle feedlot). The proposed development does not involve the encroachment of an incompatible development or practice which degrades, alienates, fragments or compromises the viability of existing agricultural and rural land uses or is incompatible development.
8	Agricultural and grazing activities are influenced by access to water and climatic conditions resulting in innovative primary production activities and associated industries. The Burdekin River and its tributaries is vital 'natural infrastructure' supporting existing and future agriculture and associated activities.	Yes	The proposed development will directly support an increase in the productive capacity and agricultural efficiency of the land. The proposed development has access to a sufficient quantity and quality of water.
9	The Charters Towers urban area has evolved into a major inter-regional education and health care hub servicing a large catchment of north and north-west Queensland. There are three boarding (primary and secondary) and primary schools, a State high school and school of distance education that provide educational services to residents in town and to children from rural areas. The Charters Towers hospital offers a variety of in and outpatient health care and emergency services.	No	The proposed use is for a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve an urban use.
10	Building on its locational attributes and access to major transport infrastructure, the Charters Towers urban area supports a thriving industry sector through significant industrial land supplies with diverse lot sizes and varying standards of infrastructure service.	No	The proposed use is for a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve an urban use.

11	Townships such as Pentland and Greenvale and localities including Hervey Range and Belyando Crossing are located along the Flinders Highway, Gregory Developmental Road and Hervey Range Road. These function as important focal points for rural communities and cater for passing tourists and road freight.	No	The proposed use is for a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve an urban use.
12	The Charters Towers urban area and its surrounding townships and localities are renown for a relaxed county lifestyle and rural character, ideal for the lifestyle needs of families and retirees. There is a range of community, recreation and entertainment facilities that promote community wellbeing. This is symbolised through events such as the Goldfield Ashes which is the largest amateur cricket carnival in the southern hemisphere.	No	The proposed use is for a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve an urban use.
13	The Charters Towers region features many areas of natural and environmental value through numerous national parks along with part of the southern fringe of the Wet Tropics World Heritage Area in the Paluma Range National Park. These areas are popular tourist destinations including camping on the banks of Fletcher Creek.	Yes	The proposed development has been sited, designed and shall be operated to avoid adverse impacts on the regions natural and environmental values.
14	Many of the region's towns and settlements are over one hundred years old demonstrating a resilience to climatic, economic and societal changes.	No	The proposed use is for a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve an urban use.
15	The region experiences levels of climatic variations that influence the extent of natural hazards such as flooding and bushfire in rural areas.	Yes	Where practical the proposed development avoids areas affected by natural hazards and any residual risks are mitigated through the design and operational measures. Refer to section 5 and 6. The development has been suitably located and designed to ensure it does not compromise the rural character of the area.

3.2.2 The New World in 2038

	The New World of Charters Towers is made up of a prosperous and engaged regional community driven by traditional industries in the gold mining and rural sectors, new economic development, innovation opportunities and tourism. This regional mosaic is underpinned by infrastructure, services and sustainable development practices.	Yes	The proposed use is for a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve a mining, tourism or urban use. The proposed development is in a rural area and compliments the operation of the existing nearby rural uses and intensive animal industries.
2	The New World of the Charters Towers region has the following building blocks: (a) a strong sense of place epitomised by an authentic country atmosphere and rewarding lifestyle; (b) a network of strategically connected communities of different sizes that promote community wellbeing and regional identity; (c) a celebrated history demonstrated though heritage buildings, monuments and well-known sporting traditions; and (d) an abundance of natural resources that is maintained through sustainable land use practices in farming, renewable energy production and other forms of innovative development.	Yes	The proposed use is for "Intensive Animal Industry" (Beef cattle feedlot) being a rural use and does not involve a mining, tourism or an urban use. The proposed development has been appropriately located and designed and will be operated and sustainably managed to ensure that adverse impacts of land use, both on-site and on adjoining areas are avoided and minimised.
3	Communities are made up of distinct and compact urban areas and townships that: (a) are functional, well balanced, liveable and have a high level of amenity; (b) support community interaction and active lifestyles for all age groups; (c) provide housing choice and affordability across all lifecycle situations including renters, first home buyers, families, retirees and people with special needs; (d) have an abundance of parkland, sporting fields, public spaces and tree lined streets; and	No	The proposed use is for "Intensive Animal Industry" (Beef cattle feedlot) being a rural use and does not involve an urban use.

	(e) display a built form character that compliments historical features of the region's urban areas and townships.		
4	The urban area of Charters Towers is a north and north-west Queensland centre for education and health care services including boarding schools, specialist training in contemporary agricultural practices and aged care facilities.	No	The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve an urban use.
5	Economic development outcomes maximise the strategic locational and physical attributes of the region to service regional, national and global markets and supply chains associated with mining, agriculture, rural enterprises, logistics and distribution.	Yes	The proposed use is for "Intensive Animal Industry" (Beef cattle feedlot) being a rural use which is strategically located to service regional, national and global markets and supply chains associated with the beef industry.
6	These strategic local and physical attributes include: (a) the multi modal transport links of the Flinders Highway, Gregory Developmental Road and Mt Isa – Townsville rail corridor that converge in proximity to the urban centre of Charters Towers and connect to the Port of Townsville and beyond; (b) the Charters Towers Airport providing a range of air services and other complimentary uses as part of a larger economic development area; (c) the urban area of Charters Towers acting as an urban gateway supporting major mining activities in the region and further afield in the Galilee Basin; (d) relatively unconstrained land and natural resources free from severe natural hazards and constraints including cyclones; (e) excellent climatic conditions supporting rural production activities and renewable energy practices such as solar farming and bioenergy production; and (f) a reliable water supply from the Burdekin River and its catchment.	Yes	The proposed development is an Intensive Animal Industry (beef cattle feedlot) and is strategically located on a major road transport link that connects western Queensland to Townsville. The proposed development will not contribute to access, safety or circulation problems in the locality. The proposed development is sited and designed not to be impacted by natural hazards.
7	Entrepreneurial activities and innovation is encouraged where strategies that seek further economic diversification	Yes	The proposed use is for "Intensive Animal Industry" (Beef cattle feedlot) which is co-located with and

	capitalise on the natural characteristics and competitive advantages of the region to support sustained prosperity		further strengthens and diversifies an existing rural activity.
8	The Charters Towers region is adaptable, flexible and nimble in providing materials, services, energy and data networks to support new technologies, research, innovation and emerging economic opportunities.	No	The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) which is an establish use within the region and does not involve new technologies, research, innovation or emerging economic opportunities.
9	This ability to adapt in changing economic circumstances demonstrates the region's level of resilience to accommodate population and economic growth in its urban areas and townships.	No	The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve an urban use
3.2.3	**Places in the New World of the Charters Towers Region**		
Places			
Natural	Natural places will remain dominated by the natural environment through mostly undisturbed natural conditions containing high biodiversity and open space values. These places are inappropriate for urban development but could accommodate small scale tourism and other compatible uses where celebrating the natural environment and impacts can be suitably managed.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) and has been appropriately sited to preserve natural places and natural conditions. Refer to section 4, 5 and 6.
Rural	Rural places consume the largest area throughout the region and are used primarily for agriculture, grazing and complementary tourism, agribusiness and rural activities. Other activities may be found in rural places where they are in keeping with the character, amenity and natural resources of the area or are unable to be in urban areas due to scale and impacts. In some limited circumstances larger scale economic activities may be appropriate where this is not possible in urban areas. Rural places also contain small localities which provide low level community facilities, service hubs and tourist stopovers which act as a focal point for the surrounding rural and hinterland community. Mining and exploration activities occur in rural areas. These activities are not regulated by the Town plan but are regulated by the Queensland State Government under other	Yes	The proposed use is for "Intensive Animal Industry" (Beef cattle feedlot) which is co-located with, and further strengthens and diversifies an existing rural activity. Refer to section 4 and 5.

	legislation including the Mineral Resources Act 1989, the Environmental Protection Act 1994 and the State Development and Public Works Organisation Act 1971. Integrated within the region's rural areas are extensive Defence Field Training Areas, which support the training of defence personnel for military operations.		
Rural Residential	Rural residential places provide for residential development on large lifestyle lots in a rural setting. The keeping of small numbers of working and companion animals and hobby farming is expected in these areas along with some small-scale tourism uses in Hervey Range.	No	The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve a rural residential use.
Urban - Industry	Urban – Industry places are predominantly for industrial development and major economic activity. In addition to land in the Industry zone, there is extensive land identified in the Industry investigation zone to accommodate the future industrial growth needs of the region. These places have varying lot sizes and standards of infrastructure service consistent with their location and anticipated use.	No	The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve an urban industrial use.
Urban - Neighbourhoods	Urban neighbourhoods accommodate the region's urban residential areas with a wide range of housing options such as houses, units and retirement facilities that cater for all lifecycle needs. Many houses display historical design features which reflect the heritage and character of these neighbourhoods. Within these areas there is sufficient capacity to accommodate the future urban growth of the region. Neighbourhoods are fully serviced to an urban standard and include some non-residential uses (community facilities, open space and sport and recreation).	No	The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve an urban use.
Urban – Commercial centre	The Central Business District of Charters Towers is the Urban - Commercial centre of the region. In addition to providing the convenience service needs of surrounding neighbourhoods, it also functions as a regional economic hub connecting into State wide, National and global markets. Centre activities include Shopping, offices, administration centres, medical and personal services, Food	No	The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve an urban commercial use.

	and drink outlets and hotels or other uses that provide a community focal point. Community services such as boarding schools and the regional hospital facility support a population catchment well beyond the urban area of Charters Towers. Buildings along Gill and Mosman Street date back to the gold mining boom of the late nineteenth century providing a unique heritage quality that defines the character of the commercial centre. Future development contributes to and reflects this historic character.		
Townships	Townships service rural and hinterland communities, passing travellers and tourists where along major roads and highways. Townships support a diverse range of small rural, industry, service, tourist and other economic activities in compact and functioning communities.	No	The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve an urban use.
3.3	**A New World for economic development and tourism**		
3.3.1	**Strategic outcomes**		
3.3.1.1	**A region for major economic activities, uses and opportunities**		
1	The region has vast areas of largely unconstrained rural land that can support major economic activities and uses that cannot be appropriately accommodated within urban and township areas because of adverse impacts. The region has unique locational and transport characteristics with multi modal networks (major road and rail and a rural airport) converging in Charters Towers along with proximity to the Port of Townsville. In addition to other land consumptive uses, these characteristics are suitable for the establishment of a large scale freight and logistics supply hub for north Queensland.	No	The proposed use is for "Intensive Animal Industry" (Beef cattle feedlot) and is in a rural area. The proposed development does not involve a major economic activity such as a large scale freight and logistics supply hub for north Queensland. Refer to section 2, 4 and 5.
2	Major economic activities and large industrial uses may be considered outside urban and township areas where: (a) there is demonstrated need; (b) the scale and size of the development means it cannot be feasibly located within existing industry or other urban zones;	No	The proposed use is for "Intensive Animal Industry" (Beef cattle feedlot) and is in a rural area. The proposed development does not involve a major economic activity such as a large scale freight and logistics supply hub for north Queensland or a large industrial use. Refer to section 2, 4 and 5.

	(c) the impacts generated require separation from urban areas and sensitive land uses; (d) these are in highly accessible locations that maximise road and rail freight corridors and other transport connections; (e) these are supported by necessary infrastructure that provides for sufficient water and energy; (f) these are free from flooding and other natural hazards; (g) these avoid productive rural land; (h) these amalgamate or co-locate with similar uses (where possible); and (i) operational impacts such as effluent disposal and other forms of waste can be managed and mitigated to acceptable levels.		
3	The H.M. Clarke Saleyards (Dalrymple Saleyard) and Dalrymple Stadium are major economic assets associated with the beef industry. Uses undertaken in the Dalrymple Stadium (rodeos and associated events) are value adding activities that compliment and reinforce the saleyards as an economic node for the beef industry are supported where access and traffic can be managed appropriately.	No	The proposed use is for "Intensive Animal Industry" (Beef cattle feedlot) and is in a rural area. The proposed development does not involve a use within the Dalrymple Stadium. Refer to section 2, 4 and 5.
3.3.1.2	**Delivering thriving urban and township centres**		
1	The region's urban and township centres provide a range of commercial, retail, professional, educational, administrative, community, entertainment, health and aged care, cultural, social activities that facilitate economic development and service community needs	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) located in a rural area and does not involve an urban use. Refer to section 5.
2	The greatest concentration and intensity of these centre activities are located in the Centre zone of Charters Towers. This is a defined Central Business District following the 'high streets' of Gill Street (west of the railway crossing to the Mosman Street), Deane Street (between Hodgkinson Street and Ryan Street) and Mosman Street (from Towers Street to Jane Street). Development along these main streets:	No	The proposed development is an Intensive Animal Industry (expansion of an existing beef cattle feedlot) located in a rural area and does not involve a centre activity within the Centre zone of Charters Towers. Refer to section 5.

	(a) ensure active uses are situated at ground level; and (b) reinforce the main street/historical character of the central business district.		
3	Commercial and centre activities are limited to the centre and Township zones.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) located in a rural area and does not involve the provision of commercial and centre activities within a Township zone. Refer to section 5.
4	Urban, rural residential, township and rural areas support Home-based business activities which: (a) are small scale and subordinate to the primary residential dwelling; (b) do not compromise the viability of the region's centres and employment areas; and (c) are low impact and compatible with the amenity and residential character of surrounding areas.		The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve an urban use.
5	Centre activities and buildings within the region's commercial centre and township areas: (a) manage the interface between centre activities and adjoining residential activities; (b) achieve a building height and size proportionate to surrounding historic buildings; and (c) promote high quality centre design that creates safe places and highly accessible streets and public spaces.	No	The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve a commercial activity within a commercial centre or township area.
6	Centre activities and associated development within the urban centre of Charters Towers and the township area of Ravenswood is designed to integrate with the character of existing historic commercial buildings through awnings along prominent street frontages and complimentary facade treatments.	No	The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve an activity within an urban centre or township area.
7	Small scale centres such as along Church Street in Charters Towers are intended as convenience centres providing retail and Food and drink outlets to the surrounding area.	No	The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve an activity within an urban centre or township area.
8	Development associated with research and development for supporting and growing the agricultural, beef and industrial	No	The proposed use is an established rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve a development associated with

	sectors is supported in appropriate locations that mitigate any amenity impacts on surrounding uses.		research and development for supporting and growing the agricultural, beef and industrial sectors.
9	Educational establishments such as schools and training facilities are appropriate within the urban area of Charters Towers where development: (a) supports the needs of the local, regional and inter-regional community; (b) is of a site area and configuration to comfortably accommodate necessary buildings, sporting facilities and open space areas; (c) transitions in terms of building height and bulk to any surrounding sensitive land uses; (d) is highly accessible and integrated and co-located with complementary uses where possible; and (e) can accommodate and manage parking, traffic and access arrangements appropriately.	No	The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve an educational establishment such as a school or training facility.
10	Forms of Short-term accommodation and complementary tourist and entertainment activities promote and support the region's historic character, heritage, recreation and sporting traditions.	No	The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve short-term accommodation or complementary tourist and entertainment activities.
11	Industry zoned land within the region's urban areas support a range of industrial activities compatible with the amenity of surrounding areas.	No	The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve an industrial use.
12	Industrial development occurs in a range of small and large lots that reflect site area requirements for a range of industrial activities and development footprint needs.	No	The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve an industrial use.
13	Commercial uses are not supported on Industry zoned land. Indoor sport and recreation uses are possible where utilising existing warehouses and sheds.	No	The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and is located on rural zoned land and does not involve a commercial use on Industry zoned land.
14	Sensitive land uses do not encroach upon Industry zoned land.	No	The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and is located on rural zoned land and well separated from Industry zoned land. Further, the proposed development is not a sensitive land use.

15	Industry investigation zoned land west of the H.M. Clarke Saleyards and Dalrymple Stadium has been identified to accommodate future industrial growth once existing industrial precincts reach capacity.	No	The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and is located on rural zoned land and well separated from Industry investigation zoned land.
16	Any development of Industry investigation zoned land: allows for the staging of development in line with the provision of necessary urban infrastructure and services; (a) provides for a range of lot sizes suitable to respond to a diverse range of industrial activities; (b) mitigates and minimises impacts on the natural terrain, natural environment and water quality; (c) achieves the construction and post construction design objectives for stormwater management relevant to local climatic conditions; (d) avoids risks to industrial activities from natural hazards; natural hazards and other hazards such as former mine shafts and contaminated land; (e) ensures regional infrastructure networks and corridors are protected from inappropriate development; and (f) provides for appropriate fire hydrant infrastructure and unimpeded access for emergency service vehicles to protect people, property and the environment.	No	The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and is located on rural zoned land and well separated from Industry investigation zoned land.
3.3.1.3	**Enabling a diverse rural economy**		
1	The Charters Towers region has a strong, prosperous and diverse rural economy that services, local, state, national and global markets. It contains a mix of agricultural, animal husbandry and value-adding activities, such as agri-tourism and associated rural production uses. Land uses supporting these economic development outcomes in rural areas include grazing, cropping, horticulture, forestry, intensive animal industries, tourism and solar farms.	Yes	The proposed development will enhance and sustain the local economy of the area through diversification and intensification of rural activities. The proposed development is an Intensive Animal Industry (Beef cattle feedlot) located in an area dominated by agricultural production. Refer to section 5.
2	A sustainable rural economy is supported by the retention of Rural zoned lots of a size sufficient to support economically viable farming activities where on productive rural land.	No	The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not propose rezoning or fragmentation of rural zoned lots.

3	Rural localities such as Sellheim, Hervey Range, Balfes Creek and Hidden Valley are small communities generally clustered around a community focal point with opportunities for small scale services and tourism uses.	No	The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and is well separated from rural localities of Sellheim, Hervey Range, Balfes Creek and Hidden Valley.
4	Cattle feedlots are a vital intensive animal industry use that supports growth in the sale and export of cattle. Sensitive land uses must be well separated from feedlots and other intensive rural industries in rural areas.	Yes	The proposed use is a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and is not a sensitive land use. The proposed development is well separated from sensitive land uses and other intensive rural industries in rural areas.
5	Nature based tourism and agri-tourism provide a vital component of economic diversification in rural areas that take advantage of the region's natural resources, vibrant agricultural sector, scenic amenity and rural lifestyle. These tourism uses complement rural activities and rural scenic amenity.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) and does not involve nature based tourism or agri-tourism use. Refer to section 5.
6	Short-stay tourism accommodation in rural areas may occur in the form of bed and breakfasts, farm stays, ecotourism cabins and camping, as well as larger scale tourist accommodation and function facilities.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) and does not involve short-stay tourism accommodation activities or large scale tourist accommodation and function facilities. Refer to section 5.
7	Tourism and recreation related development: (a) has a limited building footprint; (b) is compatible with surrounding land uses and rural character; (c) does not aversely encroach on rural production activities; (d) does not involve significant modification of the natural landform; and (e) avoids or mitigates the impacts of natural hazards and environmental values.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) and does not involve tourism or recreation related development. Refer to section 5.
8	Tourism uses accessible from the Flinders Highway, Gregory Developmental Road and Hervey Range Road are supported where they do not adversely impact on the economy of the region's urban and township areas.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) and does not involve a tourism use. Refer to section 5.

9	Renewable energy facilities such as solar farms and bioenergy facilities are supported in rural areas where: (a) the impacts on productive rural land and adjoining land uses can be avoided or mitigated; and (b) in locations accessible to relevant infrastructure networks and supply chains.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) and does not involve a renewable energy facility such as a solar farm or bioenergy facility. Refer to section 5.
3.4	**A New World for living, growing and aging in our communities**		
3.4.1	**Strategic outcomes**		
3.4.1.1	**The region's urban, township and rural areas**		
1	The urban centre of Charters Towers provides the highest level and range of urban housing and lifestyle choices along with important health, community and educational services for the region.	No	The proposed development is a rural use being for "Intensive Animal Industry" (Beef cattle feedlot) and does not involve an urban use. Refer to section 5.
2	Urban expansion does not extend beyond areas included within the following zones: (a) General residential; (b) Centre; (c) Industry; (d) Industry investigation; (e) Emerging community; (f) Community facilities; (g) Open space and recreation (where within the Charters Towers urban area); (h) Special purpose (where urban infrastructure is within the Charters Towers urban centre).	No	The proposed development is a rural use bring for "Intensive Animal Industry" (Beef cattle feedlot) and does not involve an urban use. Refer to section 5.
3	Building heights within the urban centre of Charters Towers is generally two storeys or in keeping with the height of existing buildings.	No	The proposed development is a rural use being for "Intensive Animal Industry" (Beef cattle feedlot) and does not involve an urban use. Refer to section 5.
4	Pentland, Homestead, Greenvale and Mingela support rural catchments with rural convenience and highway related services and facilities that service surrounding rural catchments, freight traffic and tourists.	No	The proposed development is a rural use being for "Intensive Animal Industry" (Beef cattle feedlot) and does not involve rural convenience and highway related services and facilities. Refer to section 5.
5	Ravenswood continues to function as a township that supports a local population employed mainly in gold	No	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area

	mining activities, rural services and tourism related uses that reflect its gold mining history.		and does not involve development within the Township zone area of Ravenswood. Refer to section 5.
6	Sellheim, Balfes Creek and Hidden Valley are smaller communities with limited services, community facilities and infrastructure. There is limited growth anticipated in these areas over the life of the Town plan.	No	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area and does not involve residential development within the Township zone areas of Sellheim, Balfes Creek and Hidden Valley. Refer to section 5.
7	The Hervey Range community supports rural residential lifestyle options along with small scale tourism and health and wellbeing activities that focus on leverage off the unique natural setting and vistas of Hervey Range.	No	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area and does not involve rural residential development within the Hervey Range. Refer to section 5
3.4.1.2	**Providing housing choice and diversity across the lifecycle**		
1	Existing urban areas within Charters Towers are the focus for the majority of housing growth through a mix of: (a) infill development in the form of Dwelling houses, Dual occupancy, Multiple dwellings, community residence, residential care and retirement facilities in the General residential zone; and (b) greenfield urban development in the Emerging community zone area.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) located in a rural area and does not involve greenfield urban development in the Emerging community zone or infill development within an urban area. Refer to section 5.
2	In addition to this, there are also housing options in the Rural residential zone surrounding the Charters Towers urban area.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) located in a rural area and does not involve rural residential development surrounding the Charters Towers urban area. Refer to section 5.
3	The urban centre of Charters Towers provides housing choice that supports aging in place along with accommodation for people requiring assistance with daily living needs. This is an essential part of the region's housing diversity particularly for elderly people as they transition from more traditional detached housing forms in rural, rural residential and urban areas into retirement and residential care facilities. These uses are situated in appropriate locations with proximity to health care services,	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) located in a rural area and does not involve aged care housing. Refer to section 5.

	parks, community facilities and convenience Shopping and recreation facilities.		
4	Infill development must compliment neighbourhood character, be oriented to the street and include design elements that reduce building bulk, minimise overlooking and overshadowing on adjoining properties and allow for sufficient area for vehicle parking and storage.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) located in a rural area and does not involve infill development within an urban area. Refer to section 5.
5	The establishment of new urban residential areas does not occur outside the Emerging community zone.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) located in a rural area and does not involve new urban residential areas outside the Emerging community zone. Refer to section 5.
6	Development within the Emerging community zone: (a) manages the timely conversion of non–urban land to urban purposes when necessary to meet community needs; (b) allows for the staging of development in line with the provision of community infrastructure (including parks) and services; (c) facilitates integration with existing and future urban development, having regard to movement networks, open space networks and accessibility to community infrastructure; (d) provides accessibility for all modes of transport including pedestrian, cyclist and private motor vehicles; (e) creates clear, direct pedestrian and cycle access to centres and local parks; (f) provides for a range of housing types and associated lot sizes while avoiding large tracts of any one housing type; (g) increases residential densities in and around centres, along connector streets and close to parks and schools; (h) includes provision for convenience level centres where there is demonstrated need and does not impact on the viability of the existing centres;	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) located in a rural area and does not involve development within the emerging community zone. Refer to section 5.

	(i) locates community facilities including schools, where appropriate, requiring high levels of accessibility within or adjoining centres; (j) mitigates and minimises impacts on the natural terrain, natural environment and water quality; (k) achieves the construction and post construction design objectives for stormwater management relevant to local climatic conditions; (l) avoids risks to future residents from natural hazards and other hazards such as former mine shafts and contaminated land; (m) avoids impacts associated with the location of sensitive uses in proximity to hazardous land uses, major electricity, pump stations and substations; (n) provides an open space network suitable for community needs; (o) provides for the provision of telecommunication infrastructure; and (p) provides for appropriate fire hydrant infrastructure and unimpeded access for emergency service vehicles to protect people, property and the environment.		
7	There is potential for small scale residential growth within the Township zone areas of Ravenswood, Pentland, Homestead, Mingela and Greenvale. This growth may change should mining or major economic projects demonstrate a need to establish within or in proximity to these townships. In such circumstances, further growth will be considered where development: (a) demonstrates the utilisation of existing vacant land and housing capacity within the Township zone; (b) provides infrastructure and services to support the necessary urban growth; (c) is effectively integrated in terms of design and appearance with the existing settlement pattern; and	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) located in a rural area and does not involve residential development within the Township zone areas of Ravenswood, Pentland, Homestead, Mingela and Greenvale. Refer to section 5.

	(d) avoids natural hazards, productive rural land and other constraints.		
8	Rural residential housing is limited to the Rural residential zone on lot sizes that can accommodate onsite treatment of effluent and provide transition to rural areas from urban areas. The extent of the Rural residential zone surrounding the Charters Towers urban area is a reflection of historical subdivision patterns that resulted in a mix of highly fragmented land and the absence of genuine rural activities in these areas. This consists of an inner ring of Rural residential parcels which have some level of water servicing and an outer ring known as the Environs precinct that accommodates larger Rural residential parcels with very limited servicing.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) located in a rural area and does not involve rural residential housing development. Refer to section 5.
9	No further Rural residential development is supported outside of land in the Rural residential zone surrounding the Charters Towers urban area and in Hervey Range.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) located in a rural area and does not involve rural residential development. Refer to section 5.
10	Diverse housing options are possible on Rural zoned properties to enable accommodation for multiple generations of families to live on farms in conjunction with farm-based employees. This includes Dwelling houses, Secondary dwellings, Caretaker's accommodation and Rural workers accommodation.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) located in a rural area and does not involve resident workers accommodation. Refer to section 5.
11	Any non-resident workers accommodation is strictly limited to the construction phases of any mining or major economic projects. These temporary uses are construction camps which exist only during the construction phase of such developments and are decommissioned once construction is finished.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) located in a rural area and does not involve non-resident workers accommodation. Refer to section 5.
12	The housing of operational employees of mining or major economic projects must be accommodated within the region's urban or township communities where the necessary services, facilities and infrastructure are already provided or can be augmented. Non-resident workforce	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) located in a rural area and does not involve housing of operational employees of mining or major economic projects. Refer to section 5.

	accommodation servicing operational employees is not supported anywhere throughout region.		
3.5	**A New World of sustainable infrastructure & services for our communities**		
3.5.1	**Strategic outcomes**		
3.5.1.1	**General**		
1	The following infrastructure types are provided, where relevant, to meet the needs of the community and support economic activities and businesses: (a) Transport; (b) Parkland; (c) Recreation and community; (d) Health facilities; (e) Reticulated potable water and sewerage; (f) Stormwater; (g) Waste management; and (h) Energy and telecommunications infrastructure.	No	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area and is serviced by transport, energy and telecommunications and other necessary infrastructure relevant to the use. The proposed development is self sufficient as far as water supply, sewerage and energy infrastructure provision is concerned and does not require connection to Council's sewage, reticulated potable water, stormwater or waste management infrastructure. Refer to section 2, 3 and 5.
2	Development is located, coordinated and sequenced to ensure the orderly and cost-effective delivery of the full range of infrastructure and services required for functional and well-balanced communities. This includes the design, delivery and timing of parkland and open space, community facilities, transport infrastructure, energy, water and utility networks.	No	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area and does not involve an urban or residential use. Refer to section 2 and 5.
3	Urban development and associated infrastructure does not extend beyond the land zoned for urban purposes within the Priority Infrastructure Area.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) located in a rural area and does not involve urban development and associated infrastructure within or outside of the urban zone. Refer to section 5.
4	Development minimises user demand and optimises available capacity of infrastructure networks.	No	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area and is self sufficient as far as water supply, sewerage and energy infrastructure provision is concerned and does not require upgrades to relevant networks or connection to Council's sewage, reticulated potable

			water, stormwater or waste management infrastructure. Refer to section 5.
5	Infrastructure networks are designed to minimise adverse impacts on public health and safety, the visual character and amenity of the community, and the natural environment.	No	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area and does not involve new or upgraded infrastructure networks.
6	Infrastructure networks are located and designed to avoid or minimise their exposure to natural and other hazards.	No	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area and does not involve new or upgraded infrastructure networks.
7	Whole of life costs, including both establishment and ongoing operation and maintenance costs, are minimised.	No	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area and does not involve new or upgraded infrastructure networks.
8	Urban development supplies non-trunk infrastructure networks that connect to external infrastructure networks in a manner that maintains the overall safety and efficiency of these networks.	No	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area and does not involve urban development and associated infrastructure within or outside of the urban zone. Refer to section 5.
9	On site wastewater and water supply systems maintain human health and safety, the amenity of the immediate locality and minimise adverse impacts on water quality and the natural environment.	Yes	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area and has an existing legal supply of water of adequate quantity and quality for the proposed use. Further, the proposed development is serviced by existing council approved on-site wastewater system. Refer to section 5.1.8, 5.1.5.2 and 6.5.
10	Infrastructure corridors and sites are co-located wherever practicable to minimise impacts on landscapes, the natural environment and communities. The purpose of this is to utilise land and infrastructure efficiently.	No	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area and does not involve infrastructure networks. Further, the proposed development does not impact on existing infrastructure corridors. Refer to section 5.
3.5.12	**Enhancing transport connectivity and infrastructure networks**		
1	Infrastructure corridors and sites for transport, water supply, gas pipelines, sewerage, waste, energy and telecommunications are protected from development and	No	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area and is setback over 500 m from the closest

	hazards that would undermine their safe, efficient and unencumbered operation or expansion. Key infrastructure corridors and sites are shown on Overlay Map OM6.		infrastructure corridors and sites for transport, water supply, gas pipelines, sewerage, waste, energy and telecommunications. Consequently, infrastructure corridors are protected from development and the propose development does not present any hazards that would undermine their safe, efficient and unencumbered operation or expansion. Refer to section 5.
2	Within Charters Towers, a network of roads, walking and cycling paths provide access to places of employment, education, recreation, community services and other townships and localities across the region via the intra-regional road network.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) located in a rural area and does not involve development within Charters Towers. Refer to section 5.
3	Development does not impact upon the safe and efficient operation of the transport network, airports and aviation facilities, and the rail network within the region.	Yes	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) and has been designed, sited and shall be managed so that the safety or efficiency of the transport network, airports and aviation facilities and the rail freight and haulage routes are not compromised. Refer to section 5.
4	Development does not impact upon the safe and efficient operation of freight movement associated with: (a) major roads such as the Flinders Highway, Gregory Developmental Road and Hervey Range Road; and (b) the Mt Isa – Townsville rail network.	Yes	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) and has been sited to avoid adverse impacts to the safe and efficient operation of freight movement and is serviced by an existing safe and dedicated entrance onto the Flinders Highway. Refer to section 5.
5	Ribbon development is not supported along major regional transport links outside of the Centre zone.	No	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area and does not involve ribbon development along major regional transport links outside of the Centre zone. Refer to section 5.
6	The Charters Towers airport is regionally significant infrastructure. A strategically recognised area has been identified which includes the airport facility and land for future development. Further feasibility work and master planning will be undertaken to investigate the	No	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area and does not encroach on, or adversely impact upon the current and future safety, efficiency and operation of

	establishment of regional economic activities and other air services activities that maximise the air, road and rail infrastructure networks within Charters Towers. Development does not: (a) encroach on, or adversely impact upon the current and future safety, efficiency and operation of the Charters Towers Airport; and (b) compromise the future development potential of this strategic precinct for regionally economic activities and uses with incompatible land uses.		the Charters Towers Airport. Refer to section 2.1, 4 and 5.
3.5.1.3	**Social, open space and recreational infrastructure that supports community health and wellbeing**		
1	Residents and visitors have access to a network of well-located social infrastructure, open space and recreational facilities that meet community needs and promotes community interaction and a healthy lifestyle.	No	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area and is not located within an urban area and there is no requirement for social infrastructure for residents and visitors. Refer to Figure 2 and section 5.
2	Charters Towers hospital and health services facility is an important health infrastructure asset servicing the greater regional community. Development within the Charters Towers Hospital and health care services precinct reinforces the role of the hospital and also supports other allied health and medical support facilities including possible Short-term accommodation. Should the Charters Towers Hospital relocate to a larger site within the Charters Towers urban area, this precinct allows for infill residential development including townhouses and aged care facilities.	No	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area and is not located within the Charters Towers Hospital and health care services precinct. Refer to Figure 2 and section 5.
3	Charters Towers has a concentration of internationally recognised primary, secondary and boarding school educational facilities servicing inter-regional rural and urban catchments beyond the local government boundary. Development within the urban area of Charters Towers complements these facilities through educational services and associated housing needs for students and staff.	No	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area and is not located within the urban area of Charters Towers. Refer to Figure 2 and section 5.
4	Community services and facilities along with civic and public spaces are concentrated in Charters Towers and the	No	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area

	region's, townships and localities to enhance community life and interaction.		and does not involve community services and facilities. Refer to Figure 2 and section 5.
5	Social infrastructure is designed to be multi-purpose, flexible and adaptable to respond to the changing and emerging needs of the community.	No	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area and does not involve community services and facilities. Refer to Figure 2 and section 5.
6	Development within the Emerging community zone is provided with appropriate social, recreational and open space infrastructure from the initial stages of development.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) located in a rural area and does not involve development within the Emerging community zone. Refer to section 5.
7	A network of open space and parkland provides for a diverse range of passive and active recreation activities to support active and healthy lifestyles and enhance the quality of urban and township environments.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) located in a rural area and the provision of open space and parkland for a diverse range of passive and active recreation activities is not relevant to the use. Refer to section 5.
8	Development facilitates an open space network that is functional, interconnected and highly accessible from surrounding communities by walking and cycling.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) located in a rural area and the provision of open space network for walking and cycling by surrounding communities is not relevant to the use. Refer to section 5.
9	Sporting and other recreational facilities are: (a) provided to cater for the sporting and recreational needs of local communities; and (b) located and designed to minimise impacts on the amenity of the surrounding areas.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) located in a rural area and the provision of sporting and other recreational facilities is not relevant to the use. Refer to section 5.
3.5.1.4	**Managing waste efficiently**		
1	Waste management infrastructure is provided and managed to maintain the health, wellbeing, amenity of the community and the natural environment, and to minimise visual and amenity impacts.	Yes	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area. The proposed development does not require the provision of Council's waste collection services or waste management infrastructure such sewage connection.

			The proposed development shall generate no construction waste streams as existing built infrastructure shall be utilised and negligible quantities of domestic waste during the operation phase. The proposed development shall generate substantial quantities of organic solid waste (i.e. manure, carcass compost, pond sludge) and effluent. Solid waste and effluent shall be sustainably utilised on the subject land through use as a soil conditioner and application to crops via irrigation. The proposed development has been appropriately sited, designed and shall be operated to ensure sufficient separation distances to the nearest sensitive land use. Thereby mitigating potential visual and amenity impacts within the locality. Refer to section 4 and 6.
2	Development provides for the safe and efficient storage and collection of waste and recyclable materials, commensurate with the type and amount of waste generated.	Yes	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area. The proposed development does not require the provision of Council's waste collection services or waste management infrastructure such sewage connection. The proposed development has been designed with a dedicated safe and adequate on-site storage area for solid waste (i.e. manure, carcass compost, pond sludge) being the solid waste stockpile and carcass composting area. The proposed development has been designed with a dedicated pond system commensurate with the amount of effluent generated to temporarily hold effluent pending utilisation to crops .

			These waste storage areas have been designed and constructed in accordance with relevant guidelines such as the National Guidelines for Beef Cattle Feedlots (Meat and Livestock Australia Limited, 2012b) and the Reference Manual for the Establishment and Operation of Beef Cattle Feedlots in Queensland (Skerman, 2000).
3.6	**A New World protecting our heritage and natural resources**		
3.6.1	**Strategic outcomes**		
3.6.1.1	**Celebrating and preserving local cultural heritage**		
1	The Charters Towers region has a rich history largely associated with Queensland's gold mining boom of the late nineteenth and early twentieth century and in World War II military activities. This is demonstrated by heritage buildings (particularly along Mosman and Gill Street), monuments and physical features located on Towers Hill and throughout the region.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) located in a rural area. There are no cultural heritage values of local significance as identified on the Heritage overlay map OM4 mapped on the land on which the development is proposed. Refer to section 6.8.
2	Development ensures these cultural heritage values of local significance as identified in the Heritage overlay map OM4 are: (a) conserved and protected from inappropriate development for the enjoyment of present and future communities; and (b) compatible with the cultural heritage significance of the place.	No	There are no cultural heritage values of local significance as identified on the Heritage overlay map OM4 mapped on the land on which the development is proposed. Refer to section 6.8.
3	The Residential character overlay identifies important streetscapes and gateways that ensure the appearance of Dwelling houses and Dual occupancy complement local cultural heritage places and enhance the unique streetscape character of neighbourhoods within the urban area of Charters Towers.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) and does not involve a dwelling house or dual occupancy use within an urban area. Refer to section 5.
4	Where an Indigenous Land Use Agreement (ILUA) is registered, the land use aspirations are recognised to achieve the outcomes of each ILUA.	No	There are no registered Indigenous Land Use Agreement (ILUA) on the subject land on which the development is proposed. Refer to section 6.8.

5	Carefully planned development of traditional lands contributes to the economic and social benefit of traditional owners.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) sited on freehold land. Refer to section 6.8.
6	Development on, around or near land of cultural significance to traditional owners demonstrates a cultural heritage duty of care.	No	The proposed development is not sited on, around or near land of cultural significance to traditional owners. Refer to section 4, 5 and 6.8.
7	Development does not diminish or adversely impact on places or values of cultural significance to traditional owners.	No	The proposed development is not sited on, around or near land of cultural significance to traditional owners. Refer to section 4, 5 and 6.8. Consequently, the proposed development shall not diminish or adversely impact on places or values of cultural significance to traditional owners. Refer to section 4, 5 and 6.8.
3.6.1.2	**Productive rural lands and rural activities**		
1	Rural land is abundant throughout the Charters Towers region, and various forms of rural production and associated activities are a major source of economic activity and employment.	Yes	The proposed development involves the establishment of a beef cattle feedlot (Intensive Animal Industry). The proposed development is a rural use which is a permitted use where located and has been sited to ensure no detrimental impact on the amenity of the surrounding rural or residential land or rural landscape character. Further, the proposed development is compatible with surrounding rural uses. The proposed development has been sited and designed to ensure no detrimental impacts on matters of state environmental significance.
2	Reconfiguration of lots in the Rural zone avoids the fragmentation of rural land into lot sizes which do not support the long-term economic viability of agriculture and grazing enterprises.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) and does not involve reconfiguration of lots in the Rural zone. Refer to section 5.
3	Reconfiguration of rural land will occur only where it has been demonstrated that the reconfiguration: (a) can support an ongoing and viable rural enterprise6 on the land or is necessary to support a major economic or industrial use that is necessary to be located in a rural area; and	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) and does not involve reconfiguration of rural land. Refer to section 5

	(b) will not impact on adjoining farming activities through the inclusion of sufficient buffers within the proposed allotments; and (c) will not adversely impact upon productive rural land; and (d) will not adversely impact on infrastructure and services; and (e) will not adversely impact on extraction of resources by enabling encroachment of sensitive uses.		
4	Class A and B land that supports high value agricultural activities are protected from fragmentation and encroachment by sensitive land uses and other activities in rural areas such as extractive resource activities.	Yes	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) and is not classed as a sensitive land use under the Planning Act 2017 or an extractive resource activity. Refer to section 5. Consequently, Class A and B land that supports high value agricultural activities are protected from fragmentation and encroachment.
5	Existing intensive animal industries, cropping and other larger scale and higher impacting activities are protected from encroachment by sensitive land uses.	Yes	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area and is not classed as a sensitive land use under the Planning Act 2017.
6	Intensive animal industries and other larger scale and higher impacting activities are not located where they would adversely impact on urban or rural residential areas or existing sensitive land uses established on rural land.	Yes	The proposed development has been sited to ensure sufficient separation distances to the nearest sensitive receptor. The proposed development has been designed and will be managed to mitigate potential impacts such as traffic, noise, dust, odour and lighting within the locality. Refer to section 5, Figure 3 and Figure 41
7	The function, connectivity and pasture productivity of the stock route network, including reserves associated with the network (i.e. for camping and watering purposes) and existing pasturage rights are protected from development that comprise the use of the network and adjoining pasturage rights.	Yes	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) and has not been sited on a stock route or stock route reserve. Therefore, the function, connectivity and pasture productivity of the stock route network, including reserves associated with the network (i.e. for camping and watering purposes) and existing pasturage rights are protected from development. Refer to section 2 and 5.

3.6.1.3	**Extractive and mineral resources**		
1	Mineral and other extractive natural resources are protected from encroachment by sensitive land uses that might prevent or constrain current or future operations.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) and does not involve a mineral or other extractive industry use. Refer to section 5.
2	Extractive resource operations only occur where: (a) compatible with the intentions of the Rural zone and any overlays applying to the site; (b) impacts on visual amenity and the natural environment (including MSES and water quality) can be appropriately managed; and (c) the impacts from any noise, dust, light blasting or vibration on the safety and amenity of the surrounding area can be mitigated to an acceptable standard.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) and does not involve an extractive industry use. Refer to section 5.
3	Resource extraction areas are progressively rehabilitated following extraction to restore the natural environment and to mitigate environmental impacts including impacts associated with dust.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) and does not involve a extractive industry use. Refer to section 5.
3.6.1.4	**Protecting biodiversity and water quality**		
1	Development avoids significant impacts in areas identified as Matters of National Environmental Significance such as the region's national parks and areas within the Wet Tropics World Heritage Area.	No	The proposed development involves an Intensive Animal Industry (Beef cattle feedlot) and has been appropriately sited, designed, constructed and shall be operated to ensure there are no significant impacts in areas identified as Matters of National Environmental Significance such as the region's national parks and areas within the Wet Tropics World Heritage Area. Refer to section 4 and 5 and 6.17 and Figure 38.
2	Development avoids or minimises impacts on Matters of State Environmental Significance and maintains ecological processes and connectivity by minimising fragmentation. Where development results in a significant residual impact on these areas, the impacts are offset.	No	The proposed development involves an Intensive Animal Industry (Beef cattle feedlot) and has been appropriately sited, designed, constructed and shall be operated to ensure there are no significant impacts in areas identified as Matters of State Environmental. Refer to section 4 and 5 and 6.16 and Figure 38.

3	Development ensures impacts on local terrestrial and aquatic biodiversity values are avoided or minimised where they cannot be reasonably avoided across the entire region.	No	The proposed development involves an Intensive Animal Industry (Beef cattle feedlot) and has been appropriately sited, designed, constructed and shall be operated to ensure local terrestrial and aquatic biodiversity values are avoided. There is no proposed clearing of regulated vegetation associated with the proposed development. Refer to section 4 and 6 and Figure 29 and Figure 30. Those areas of the proposed development complex area from which stormwater runoff has a high organic matter and therefore a high pollution potential are sited within a controlled drainage area. Stormwater within the controlled drainage area is collected, stored, treated and sustainably applied to crops within a dedicated on-site effluent utilisation area.
4	Terrestrial and aquatic habitat areas are connected (where possible) to ensure the ongoing function of significant ecological processes.	Yes	The proposed development shall utilise existing built infrastructure. Consequently, the proposed development shall not disturb terrestrial and aquatic habitat areas. The proposed development is setback some 35 m from terrestrial and 500 m from aquatic habitat areas.
5	Development avoids the introduction or spread of pest plants and animals in the region.	Yes	The proposed development involves an "Intensive Animal Industry" (Beef cattle feedlot) and shall be established within existing built infrastructure. Mitigation measures shall be implemented during operation of the proposed development to minimise the risk of introducing pest species (plant or animal) onto the subject land. This shall include preparation of a Biosecurity Management Plan which outlines weed control practices and plant and equipment cleaning and inspection protocols to avoid the introduction and spread of weeds and to control existing declared weeds

			on-site and introduction and proliferation of pest animals on the subject land.
6	Development minimises disturbances to natural topography and avoids changes to natural waterways, their bed, banks and riparian vegetation.	Yes	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) and shall utilise existing built infrastructure. The proposed development is sited over 300 m from natural waterways and riparian vegetation. Refer to section 5.
7	Urban stormwater is managed to mitigate impacts upon the region's waterways, water quality and aquatic ecosystems.	No	The proposed development is an Intensive Animal Industry (Beef cattle feedlot) and does not involve an urban use or connect to Council's stormwater management network. Refer to section 5.
8	The environmental values of the region's waterways are protected or enhanced, and development does not adversely impact on the quality of receiving waters, including waterways and wetlands.	Yes	The proposed development involves an "Intensive Animal Industry" (Beef cattle feedlot) and has been appropriately sited, designed, constructed and shall be operated to ensure there are no adverse impacts on the quality of receiving waters, including waterways and wetlands. Refer to section 4, 5, 6.7, 0 and 7.5.3.1 and Figure 11, Figure 12, Figure 24 and Figure 31. The proposed development complex is sited within a controlled drainage area in which stormwater is collected, stored, treated and sustainably utilised on-site.
9	Development does not adversely impact upon water quality within the region's water supply catchments including the Burdekin River catchment.	Yes	The proposed development involves an "Intensive Animal Industry" (Beef cattle feedlot) and has been appropriately sited, designed, constructed and shall be operated to ensure there are no adverse impacts on the quality of receiving waters. Refer to section 4, 5, 6.7, 0 and 7.5.3.1 and Figure 11, Figure 12, Figure 24 and Figure 31. The proposed development is not located within complex is sited within a water supply catchment or the Burdekin River catchment.
3.7	**A New World which is resilient to natural and other hazards**		

3.7.1	**Strategic outcomes**		
3.7.1.1	**All hazards**		
1	The region is subject to some natural hazards such as bushfire, flooding and landslide along with other hazards such as former mine shafts, contaminated land and military training operations on defence land.	Yes	The proposed development shall utilise existing built infrastructure. The proposed development does not materially increase the extent or severity of natural or other hazards or their impacts on people, on or off the subject land and the environment. The subject land is relatively flat and landslide hazard areas are not present. The subject land is not on the CLM register or contain former mine shafts or current defence land. Refer to section 4 and 5.
2	Development does not materially increase the extent or severity of natural or other hazards or their impacts on people, property and the environment.	Yes	The proposed development shall utilise existing built infrastructure. The proposed development does not materially increase the extent or severity of natural or other hazards or their impacts on people, property and the environment. The extent and severity of natural or other hazards remains the same as pre-development levels. Where practical the proposed development avoids areas affected by natural hazards and any residual risks are mitigated through the operational measures. Refer to section 4 and 5.
3	Exposure of people and property to hazards is avoided, or where it is not possible to avoid the hazard, the risks are mitigated to an acceptable or tolerable level.	Yes	The proposed development shall utilise existing built infrastructure. The exposure of people and property to hazards remains the same as pre-development levels. Where practical the proposed development avoids areas affected by natural hazards and any residual risks are mitigated through the operational measures. Refer to section 4 and 5.
4	The establishment of essential community infrastructure and services is located and designed to ensure functionality during and immediately after a natural hazard event.	No	The proposed development involves an "Intensive Animal Industry" (Beef cattle feedlot) and does not involve establishment of essential community infrastructure and services. Refer to section 4 and 5.

5	Development does not reduce the functions of landforms or vegetation in providing protection against natural hazards.	Yes	The proposed development involves an "Intensive Animal Industry" (Beef cattle feedlot) and shall utilise existing built infrastructure. Refer to section 4 and 5.
6	The cost to the public of measures to mitigate the risks of natural hazards is minimised.	No	The proposed development involves an "Intensive Animal Industry" (Beef cattle feedlot) and the measures to mitigate impacts of natural hazards remains the same as pre-development levels. Refer to section 4 and 5.
7	Activities involving the manufacture or bulk storage of hazardous material are not located in hazard areas.	No	The proposed development involves an "Intensive Animal Industry" (Beef cattle feedlot) and does not involve the manufacture or bulk storage of hazardous material within a hazard area. Refer to section 4 and 5.
8	Development does not unreasonably prevent disaster management and emergency responses from occurring.	Yes	The proposed development involves an "Intensive Animal Industry" (Beef cattle feedlot) and is strategically located on a major road corridor. Consequently, the proposed development shall not unreasonably prevent disaster management and emergency responses from occurring. Refer to section 4 and 5
9	Sensitive land uses are appropriately managed in areas subject to adverse noise impacts such as along major transport noise corridors.	No	The proposed development involves an "Intensive Animal Industry" (Beef cattle feedlot) and does not involve a sensitive land use as defined under the Planning Regulation 2017. Refer to section 4 and 5.
3.7.1.2	**Flood hazard**		
1	Development must protect people and property by avoiding flood hazards or, where it is not possible to avoid the hazard, the risks are mitigated to an acceptable or tolerable level.	Yes	The proposed development complex has been sited above the 1% AEP flood level. Refer to section 6.5.6 and Appendix H.
2	Development does not result in an increase in the extent or severity of flood risk to the site or other land.	Yes	The proposed development complex has been sited above the 1% AEP flood level and does not result in an increase in the extent or severity of flood risk to the site or other land. Refer to section 6.5.6 and Appendix H
3.7.1.3	**Bushfire and landslide hazard**		
1	The establishment or intensification of development involving higher concentrations of people living, working	Yes	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) and not considered a

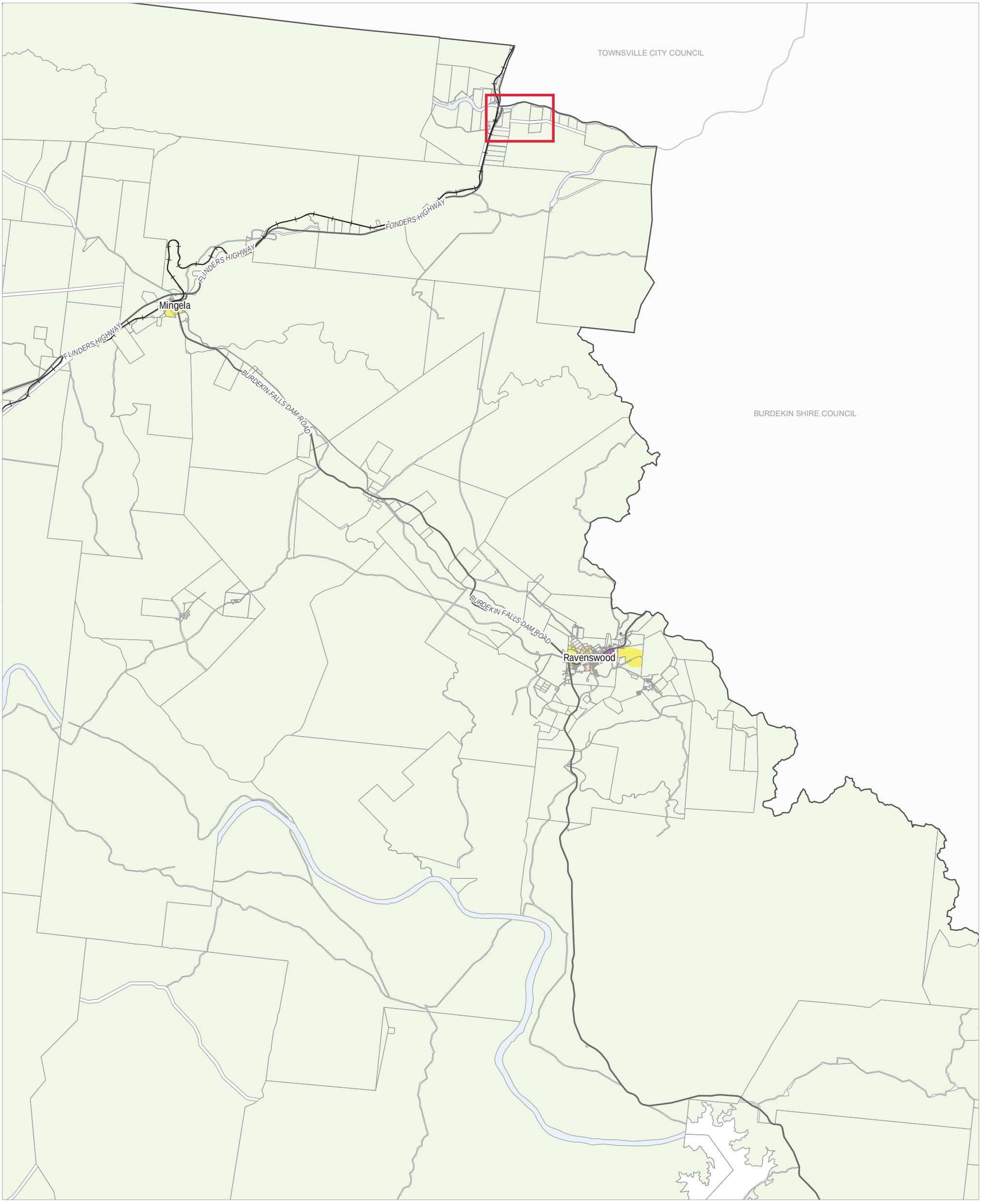
	or congregating in high risk bushfire or landslide hazard areas is avoided unless it can be demonstrated: (a) there is an overriding community need in the public interest; and (b) no other site is suitable and reasonably available.		sensitive use under the Planning Regulation 2017. The proposed development shall not establish or intensify higher concentrations of people living, working or congregating in high risk bushfire hazard area. The proposed development complex is setback some 500 m from a high risk bushfire hazard area.
2	Development within or near bushfire and landslide hazard areas protects people and property by avoiding the bushfire or landslide hazard or incorporates appropriate siting, design and management practices to mitigating any risk to an acceptable or tolerable level.	Yes	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) and not considered a sensitive use under the Planning Regulation 2017. Where practical the proposed development avoids areas affected by bushfire hazard areas and any residual risks are mitigated through the design and operational measures. Refer to section 4, 5 and 6.15.1 and Figure 40. The proposed development site is not subject to landslide and is sited on relatively flat land. Refer to section 6.15.3.
3.7.1.4	**Other hazards**		
1	Development that is likely to generate off site adverse impacts such as air, noise or odour emissions are adequately separated from existing sensitive land uses and natural receiving environments and is protected from encroachment by new sensitive land uses. Such development may include: (a) wastewater treatment and disposal facilities; (b) solid waste management sites; (c) industrial development; (d) extractive industry; (e) regionally significant economic projects; and (f) intensive animal industries such as feedlots.	Yes	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) and has been appropriately sited, designed, constructed and shall be operated to ensure sufficient separation distances to the nearest sensitive receptor. The proposed development has been designed and will be managed to mitigate potential impacts such as noise, dust, odour and lighting within the locality. Refer to section 4, 5 and 6.
2	Sensitive land uses and other forms of inappropriate development avoid noise, air quality and other impacts by not locating in proximity to: (a) operational mining activities and associated hazards;	No	The proposed development involves an "Intensive Animal Industry" (Beef cattle feedlot) and does not involve a sensitive land use as defined under the Planning Regulation 2017. Refer to section 4 and 5.

	(b) major industrial activities; (c) intensive rural industries and activities; and (d) government owned defence land (in the Special purpose zone - Defence land precinct) where military training and operations may be undertaken.		
3	Development that has the potential to cause land or water contamination is located, designed and managed to minimise environmental and community health risks.	Yes	The proposed development involves an "Intensive Animal Industry" (Beef cattle feedlot) and has been appropriately sited, designed, constructed and shall be operated to minimise environmental and community health risks. Refer to section 4, 5, 6 and 7.
4	Development involving the use, storage and disposal of hazardous materials and hazardous chemicals, dangerous goods and flammable or combustible substances is located, designed and managed to minimise the health and safety risks to communities and adverse impacts on the natural environment.	Yes	The proposed development involves an "Intensive Animal Industry" (Beef cattle feedlot) and does involve the use and storage of flammable or combustible substances (diesel, petrol). All hazardous materials are stored in accordance with relevant guidelines and Australian Standards. Refer to section 4 and 5.
5	Development considers the location of former mining activities and related hazards and adequately mitigates any potential for risk to people and property.	No	The proposed development involves an "Intensive Animal Industry" (Beef cattle feedlot) and is not sited on former mining land. Refer to 2 and 5.

8.2.1.4 Zoning and assessment status

The *Charters Towers Regional Town Plan* (Charters Towers Regional Plan, 2020) comprises thirteen (13) zones. The subject land is in the **Rural zone**.

The zoning of the subject land and surrounding locality is illustrated on Figure 47.



CHARTERS TOWERS REGIONAL COUNCIL

Charters Towers Regional Town Plan Zone Map

Zone

- Centre
- General Residential
- Industry
- Industry Investigation
- Community Facilities
- Minor Tourism
- Recreation and Open Space
- Environmental Management and Conservation
- Rural Residential
- Emerging Community
- Rural
- Special Purpose
- Township

Precinct

- CF1 - Hospital and Health Care Services Precinct
- RR1 - Environs Precinct
- RR2 - Hervey Range Precinct
- SP1 - Airport Precinct
- SP2 - Defence Precinct
- SP3 - Sales Yard Precinct
- Precinct Boundary

Other Map Layers

- Cadastral Boundary
- Local Government Boundary
- Waterway
- Railway Network
- Major Roads

DISCLAIMER

Based on or contains data provided by the State of Queensland (Department of Natural Resources and Mines) [2019]. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws.

Cadastral boundaries as at December 2019 sourced from QSpatial.

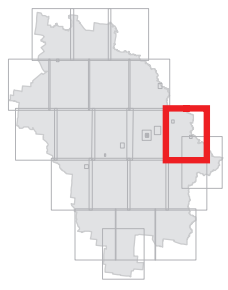
Geocentric Datum of Australia (GDA94)

29/12/2019

Approx Scale @ A3 1:250,000

0 6.5 13

km



Zone - ZM1.27
Map 12

– SUBJECT LAND

FIGURE 47

Part 5 – Tables of assessment of the *Charters Towers Regional Town Plan* (Charters Towers Regional Council, 2020) provides assessment tables for development associated with a *material change of use* for each zone.

For the Rural zone, the assessment table for development making a material change of use is Table 5.4.7.3 – Categories of development and assessment—Material change of use. This table prescribes that the proposed development (*Intensive Animal Industry*) is **Impact Assessable** as it is not identified as Exempt, Self Assessable or Code Assessable (Charters Towers Regional Council, 2020).

In accordance with Table 5.54.7.3 of the *Charters Towers Regional Town Plan* (Charters Towers Regional Council, 2020) the applicable assessment benchmark for the proposed development is The Planning Scheme.

8.2.1.5 Local plan

There are no local plans associated with the *Charters Towers Regional Town Plan* (Charters Towers Regional Council, 2020).

8.2.1.6 Land characteristics overlays

The *Charters Towers Regional Town Plan* (Charters Towers Regional Council, 2020) includes overlays to identify land characterised by particular features or subject to physical constraints which influence the use and development potential of affected areas. Overlays identify natural hazards and prescribe criteria for avoiding and mitigating their effects on people and property.

The overlays for the planning scheme are:

(a) Agricultural overlay;
(b) Bushfire hazard overlay;
(c) Flood hazard overlay;
(d) Heritage overlay;
(e) Natural environment overlay;
(f) Regional infrastructure overlay; and
(g) Residential character overlay

The subject land on which the development is proposed is affected by the following overlays.

a) Bushfire hazard overlay as mapped and included in Schedule 2 as map OM2.27:
- Very High Potential Bushfire Intensity as shown on Figure 48;
- High Potential Bushfire Intensity as shown on Figure 48;
- Medium Potential Bushfire Intensity as shown on Figure 48; and
- Potential Impact Buffer as shown on Figure 48.

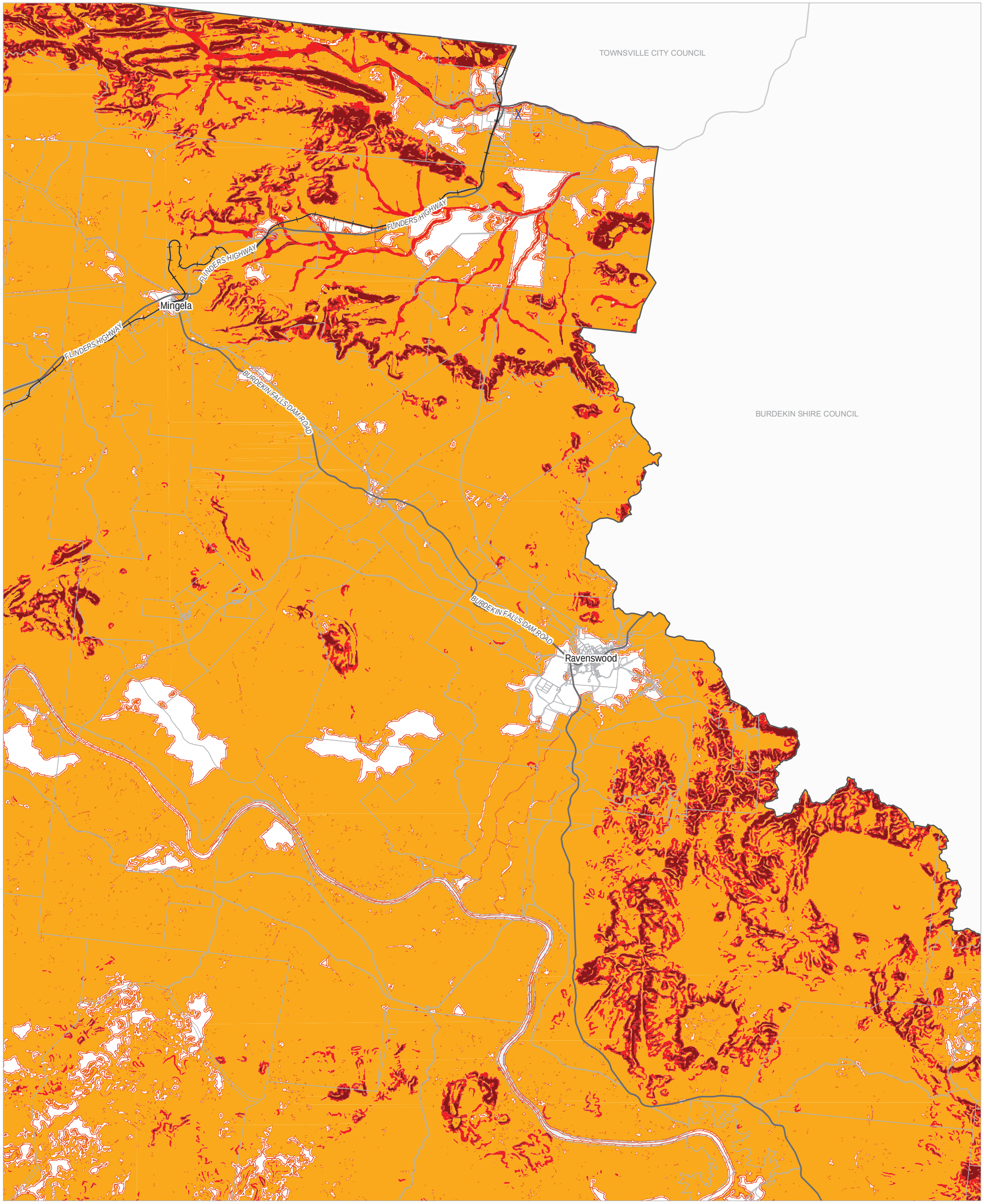
b) Flood hazard overlay as mapped and included in Schedule 2 as map OM3.27:
- Flood Hazard Area - QRA Level 1 as shown on Figure 27.

c) Natural environment overlay as mapped and included in Schedule 2 as map OM5.27:
- MSES - Regulated vegetation (category B) as shown on Figure 49.
- MSES - Regulated vegetation (intersecting a watercourse) as shown on Figure 49.

d) Regional infrastructure overlay as mapped and included in Schedule 2 as map OM6.27:
- State controlled Road as shown on Figure 50.

The subject land on which the development is proposed is not affected by the following overlays.

(a) Agricultural overlay as mapped and included in Schedule 2 as map OM1.27;
(b) Heritage overlay as mapped and included in Schedule 2 as map OM4.27; and
(c) Residential character overlay as mapped and included in Schedule 2 as map OM7.0 (Building Character Overlay).



CHARTERS TOWERS REGIONAL COUNCIL

Charters Towers Regional Town Plan Bushfire Hazard Overlay Map

Bushfire Prone Areas

- Very High Potential Bushfire Intensity
- High Potential Bushfire Intensity
- Medium Potential Bushfire Intensity
- Potential Impact Buffer

Other Map Layers

- Cadastral Boundary
- Local Government Boundary
- Waterway
- Railway Network
- Major Roads

X - PROPOSED DEVELOPMENT COMPLEX SITE

DISCLAIMER

Based on or contains data provided by the State of Queensland (Department of Natural Resources and Mines) [2019]. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws.

Cadastral boundaries as at December 2019 sourced from QSpatial.
Bushfire Prone Areas as at September 2015, sourced from QSpatial.

Refer to State Goverment mapping for the latest version of the overlay if applicable.

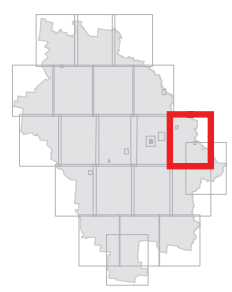
Geocentric Datum of Australia (GDA94)

29/12/2019

Approx Scale @ A3 1:250,000

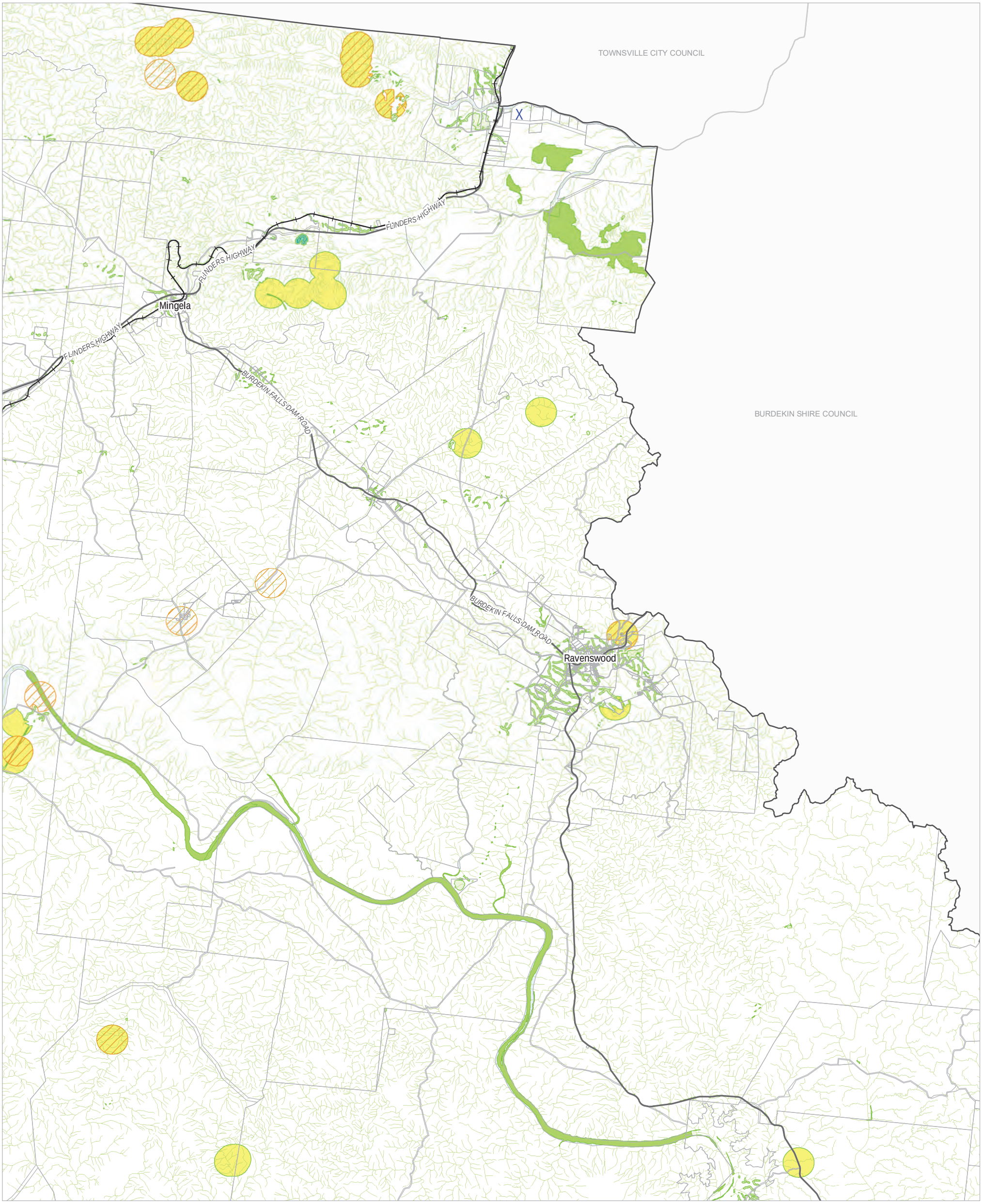
0 6.5 13

km



Bushfire Hazard Overlay - OM2.27
Map 12

FIGURE 48



CHARTERS TOWERS REGIONAL COUNCIL

Charters Towers Regional Town Plan Natural Environment Overlay Map

Matters of State Environmental Significance (MSES)

- Protected areas (estates)
- Protected areas (nature refuge)
- High ecological value waters (watercourse)
- High ecological significance wetlands
- High ecological value waters (wetland)
- Wildlife habitat
- Regulated vegetation (intersecting a watercourse)
- Regulated vegetation (essential habitat)
- Regulated vegetation (wetland)
- Regulated vegetation (category B)
- Regulated vegetation (category C)
- Regulated vegetation (category R)
- High ecological value water areas

Other Map Layers

- Cadastral Boundary
- Local Government Boundary
- Waterway
- Railway Network
- Major Roads

X – PROPOSED DEVELOPMENT COMPLEX SITE

DISCLAIMER

Based on or contains data provided by the State of Queensland (Department of Natural Resources and Mines) [2019]. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws.

Cadastral boundaries as at December 2019 sourced from QSpatial.
Matters of Environmental Sigificance (MSES) as at 30/06/2017-28/11/2018, sourced from QSpatial.

Refer to State Goverment mapping for the latest version of the overlay if applicable. May contain overlap between layers.

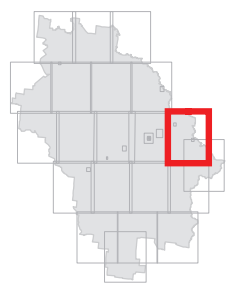
Geocentric Datum of Australia (GDA94)

29/12/2019

Approx Scale @ A3 1:250,000

0 6.5 13

km



Natural Environmental Overlay - OM5.27
Map 12

FIGURE 49

CHARTERS TOWERS REGIONAL COUNCIL

Charters Towers Regional Town Plan Regional Infrastructure Overlay Map

Transport Infrastructure
- State Controlled Road
- Railway Corridor
- Future Railway Corridor

Electricity Infrastructure
- Powerlink High Voltage Corridor
- Ergon High Voltage Line (above 66kV)
- Ergon Electricity Substations

Note: not all substations shown.

Aviation Infrastructure - Aviation facility
- Location
- Building Restriction Area - Zone A
- Building Restriction Area - Zone A/B
- Building Restriction Area - Area of Interest

Water Infrastructure
- Bulk Water Storage Infrastructure (Sunwater)

Other Map Layers
- Cadastral Boundary
- Local Government Boundary
- Waterway

X - PROPOSED DEVELOPMENT COMPLEX SITE

DISCLAIMER

Based on or contains data provided by the State of Queensland (Department of Natural Resources and Mines) [2019]. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws.

Cadastral boundaries as at December 2019 sourced from QSpatial. Water infrastructure as at 28/07/2017, sourced from QSpatial. Transport and aviation infrastructure as at 03/04/2019, supplied by Department of Transport and Main Roads. Powerlink infrastructure as at 27/06/2018, supplied by Powerlink. Ergon infrastructure as at 08/11/2018, supplied by Energy Queensland.

Refer to State Goverment mapping for the latest version of the overlay if applicable.

Geocentric Datum of Australia (GDA94)

29/12/2019

Approx Scale @ A3 1:250,000

0 6.5 13 km

Regional Infrastructure Overlay - OM6.27
Map 12

FIGURE 50

8.2.2 Planning scheme codes

8.2.2.1 Rural zone code

(1) The purpose of the Rural zone code is to:

(a) provide for rural uses and activities; and
(b) provide for other uses and activities that are compatible with:
  (i) existing and future rural uses and activities; and
  (ii) the character and environmental features of the zone; and
(c) maintain the capacity of land for rural uses and activities by protecting and managing significant natural resources and processes.

(2) The purpose of the zone will be achieved through the following overall outcomes:

(a) areas for primary production are conserved and fragmentation is avoided through maintaining very large lots to support rural agricultural activities;
(b) the viability of both existing and future rural uses and resource related activities are protected from the intrusion of incompatible uses;
(c) sensitive land uses are protected from impacts associated with resource extraction activities associated with mining and quarrying having regard to vibration, odour, dust or other emissions;
(d) the establishment of a wide range of rural pursuits is facilitated, including cropping, intensive horticulture, grazing, intensive animal industries, animal husbandry and animal keeping and other compatible primary production uses;
(e) cropping and horticultural activities are encouraged on productive ALC Class A and B agricultural land;
(f) renewable energy facilities and extractive industries:
  (i) mitigate impacts on the environment and adjoining land uses;
  (ii) do not degrade ALC Class A and B agricultural land;
  (iii) are located to allow connections into supporting energy networks; and
  (iv) rehabilitate sites upon completion of activities.

Editor's note – For extractive industry, refer also to the Extractive Industry code in Part 8.

(g) the establishment of outdoor recreation and small-scale tourism and entertainment facilities (such as restaurants and function facilities) in suitable locations is facilitated only where they do not compromise the use of the land for rural activities and minimise any land-use conflicts;
(h) natural features such as creeks, gullies, waterways, wetlands and bushland are retained, managed and separated from adjacent development where possible. Any unavoidable impacts are minimised through location, design, operation and management requirements;
(i) rural land uses incorporate sustainable practices to:
  (i) prevent soil erosion and landslide;
  (ii) protect the quality of land resources and water catchments; and

(iii) maintain habitat values of waterways and native timber and forest areas.

(j) adverse impacts of land use, both on site and from adjoining areas, are avoided and any unavoidable impacts are minimised through location, design, operation and management;

(k) urban and rural residential expansion does not occur on land in the rural zone;

(l) development responds to land constraints, including but not limited to, former mining activities and land contamination.

(m) Development does not conflict with the ongoing efficient and safe use of the stock route network by travelling stock.

An assessment of the proposed development against the performance outcomes of the Rural zone code and code purpose are provided in Table 58 and
Table 59. The compliance statements outlined in Table 58 and
Table 59 demonstrate that the proposed development complies with the accepted outcomes and purpose of the Rural zone code and will not compromise the local government purpose or overall outcomes sought for the individual themes with the Rural zone code.

Table 58 – Rural zone code (Charters Towers Regional Town Plan)

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
Table 6.2.7.3.3 – Accepted development subject to requirements and assessable development				
For accepted, accepted subject to requirements and assessable development (code, code (fast tracked) and impact)				
Built form				
PO1	Buildings are designed and located so as not to adversely impact on the rural character and amenity of the locality.	**AO1.1**	Building height does not exceed 12m.	**Complies with AO1.1** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5. The proposed development does not involve buildings or structures over 12 m above ground level other than silos and similar structures that are ancillary to the operations of the proposed use. Refer to section 5 and Figure 8.
		AO1.2	Buildings, other than a Roadside stall, are setback a minimum of: (a) 10m from the front boundary and side boundaries for allotments greater than 2ha; or (b) 5m front boundary and side boundaries for allotments less than 2ha.	**Complies with AO1.2** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5. All existing and proposed buildings will be setback over 10 m from the front and side boundaries. Refer to Figure 8.

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
Residential density				
PO2	Residential density reflects the low intensity rural character of the locality.	**AO2.1**	Residential density is limited to: (a) one Dwelling house (including a Secondary dwelling) per allotment; and (b) Rural workers accommodation up to 400m^2 GFA.	**Not applicable (AO2.1)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5. The proposed development does not involve a dwelling house or rural workers accommodation. Refer to Figure 8.
		AO2.2	Any Secondary dwelling is a maximum of 150m^2 GFA.	**Not applicable (AO2.2)** Refer to AO2.1 response.
Amenity				
PO3	Sensitive land uses do not encroach on existing or approved rural, mining and extractive industry activities or other uses that may result in an adverse impact on amenity, health or safety. Editor's note – Where not achieving AO3, a site-based assessment is required to demonstrate compliance with PO3.	**AO3**	Sensitive land uses are separated: (a) from intensive animal industry uses where: (i) feedlots by a minimum of 1km; (ii) poultry farms by a minimum of 800m; (b) from animal keeping where: (i) catteries and kennels by a minimum of 800m; (ii) otherwise 500m; (c) aquaculture by a minimum of 300m; (d) from waste disposal areas connected to an animal husbandry operation by a minimum of 1km;	**Not applicable (AO3)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5. The proposed use is not a sensitive land use as defined under the Planning Regulation 2017.

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
			(e) from cropping on areas of agricultural land by a minimum of 300m; (f) from other agricultural activities (excluding cropping activities) by a minimum of 50m; (g) from other rural activities, not elsewhere mentioned, by a minimum of 100m; (h) from railway activities by a minimum of 100m; (i) from existing industrial activities by 1km; and (j) from extractive industry operations as follows: **Operation** / **Separation distance** Extraction or processing involving blasting or crushing — 1,000m Extraction or processing not involving blasting or crushing — 200m Haul route — 100m	
PO4	Outdoor lighting does not adversely affect the amenity of adjoining properties or create a traffic hazard on adjacent roads.	**AO4.1**	Light emanating from any source complies with *Australian Standard AS4282 Control of the Obtrusive Effects of Outdoor Lighting* or current version.	**Complies with AO4.1** The proposed use is for "Intensive Animal Industry" being the establishment of a beef

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
				cattle feedlot using existing built infrastructure as outlined in section 5. Any lighting associated with the proposed development shall be installed in accordance with relevant Australian Standards.
		AO4.2	Outdoor lighting is provided in accordance with *Australian Standard AS 1158.1.1 Road Lighting – Vehicular Traffic (Category V) Lighting – Performance and Installation Design Requirements* or current version.	**Complies with AO4.2** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5. Any outdoor lighting associated with the proposed development shall be installed in accordance with the current version of *Australian Standard AS 1158.1.1 Road Lighting – Vehicular Traffic (Category V) Lighting – Performance and Installation Design Requirements*.
PO5	Development does not adversely impact on the amenity of the surrounding rural or rural residential land uses and/or rural landscape character.	**AO5**	Plant and air-conditioning equipment, storage areas and processing activities are screened from view of the road or adjoining residential uses.	**Complies with AO5** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5. Plant and air-conditioning equipment, storage areas and processing activities are

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
				screened from view of the primary road and adjoining residential uses. The proposed development complex will be adequately screened from nearby receptors with existing onsite vegetation and existing infrastructure. The surrounding land uses are predominantly rural industries; therefore, the amenity of the area would not be compromised by the proposed development.
PO6	Development ensures: (a) vulnerability to landslip, erosion and land degradation is minimised; and (b) the safety of people and property. Editor's note – Where not achieving AO6, a site-based assessment and Landslide risk management plan is required to demonstrate compliance with PO6. Refer to the Natural hazards TPP.	**AO6**	Development is not located on slopes greater than 15%.	**Complies with AO6** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5. The site of the proposed development is relatively flat with the site having a slope of less than 1%. Refer to Figure 18.
Stock routes *(Editor's note – stock routes are identified on the Agriculture overlay map OM1).*				
PO7	Development does not result in encroachment by sensitive land uses and other incompatible uses along the stock route network and uses are setback and buffered from the stock route network to mitigate impacts.	**AO7**	Sensitive land uses are separated a minimum of: (a) 200m from a surveyed stock route; or (b) 800m from an unsurveyed stock route.	**Not Applicable (AO3)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5.

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
				The proposed use is not a sensitive land use as defined under the Planning Regulation 2017.
PO8	Development on or adjoining the stock route network does not compromise the connectivity and integrity of the network and protects the ongoing, efficient and safe use of travelling stock by: (a) Maintaining the extent of the stock route network, including where pasturage rights exists; (b) Maintaining access to water facilities and other stock route infrastructure; (c) Using access works that are robust and fit-for-purpose, and provide for the safe passage of stock traversing the stock route; and (d) Where transport or other linear infrastructure crosses a stock route, providing a practical solution to allow stock to move across the infrastructure safety and in a timely example (for example grade separation).	**AO8**	No acceptable outcome is nominated.	**Complies with PO8** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5. There are no elements of the proposed development located on a stock route. The proposed development is located on land adjoining a stock route. The subject land is fenced. Consequently, the proposed development shall have no adverse impacts on the passage of stock traversing the stock route.
PO9	Development does not result in a loss of secondary values associated with the stock route network including recreational, environmental and heritage values.	**AO9**	No acceptable outcome is nominated.	**Complies with PO9** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5.

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
				There are no elements of the proposed development located on a stock route. The proposed development is located on land adjoining a stock route. The subject land is fenced. Consequently, the proposed development shall have no adverse impacts on secondary values associated with the stock route network including recreational, environmental and heritage values.
Use – Caretakers accommodation				
PO10	Development is ancillary to the primary use.	**AO10**	No more than 1 Caretaker's accommodation unit is established on the site.	**Not applicable (AO10)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 4 and does not involve the establishment of a caretakers residence.
Use – Roadside stall				
PO11	Roadside stalls are of a scale in keeping with the rural character of the locality.	**AO11.1**	Structures associated with the use are limited to 30m^2 GFA.	**Not applicable (AO11.1)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 4 and does not involve the establishment of a roadside stall.

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
		AO11.2	A Roadside stall is setback a minimum of 10m from the front and side boundaries.	**Not applicable (AO11.2)** Refer to AO11.1 response.
		AO11.3	The Roadside stall only sells produce grown on site.	**Not applicable (AO11.3)** Refer to AO11.1 response.
For all assessable development				
Land use				
PO12	Development: (a) is consistent with the rural character of the locality; (b) supports the primary rural function of the zone; and (c) protects rural, natural and scenic values of the locality.	**AO12**	No acceptable outcomes are nominated.	**Complies with PO12** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5. The proposed development is consistent with the rural character of the locality; supports the primary rural function of the zone; and protects rural, natural and scenic values of the locality. Beef cattle feedlots are a rural based industry.
PO13	Tourism (including associated accommodation), recreation and entertainment related activities: (a) are small scale; (b) do not impact on the viability of nearby urban and township areas;	**AO13**	No acceptable outcomes are nominated.	**Not applicable (AO13)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot and does not involve tourism,

Performance Outcomes	Acceptable Outcomes	Compliance Assessment
(c) have a direct nexus with the natural environment or rural activities; (d) avoid locating on productive rural land; (e) are not located where they would prejudice the ongoing operation of existing or approved rural activities such as intensive animal industries and intensive horticulture; and (f) are compatible with rural production and agricultural land, natural resources and landscape amenity.		recreation or entertainment related activities. Refer to section 5.
Design and amenity		
PO14 Development is designed to achieve safety for all users having regard to: (a) maximising casual surveillance and sight lines; (b) avoiding personal concealment and entrapment locations; (c) exterior building design that promotes safety; (d) adequate lighting; (e) appropriate signage and wayfinding; and (f) building entrances, parking areas, loading and storage areas that are well lit and have clearly defined access points.	**AO14** No acceptable outcome is nominated.	**Complies with PO14** The proposed use is for a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve an urban use. The proposed development is designed to achieve safety for all users as far as is relevant to the use. Refer to section 5.

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
	Editor's note – Applicants may find useful guidance in the Queensland Government's Crime Prevention through Environmental Design Guidelines for Queensland.			
PO15	Development minimises potential conflicts with, or impacts on, other uses having regard to vibration, odour, dust or other emissions.	**AO15.1**	Development achieves the air quality design objectives set out in the *Environmental Protection (Air) Policy 2008*, as amended.	**Complies with AO15.1** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5. The proposed development has been designed and constructed in accordance with the National Guidelines for Beef Cattle Feedlots (Meat and Livestock Australia Limited, 2012b), National Beef Cattle Feedlot Environmental Code of Practice (Meat and Livestock Australia Limited, 2012a) and the Reference Manual for the Establishment and Operation of Beef Cattle Feedlots in Queensland (Skerman, 2000). The proposed development ensures sufficient separation distances from the development complex to the nearest sensitive land use. The proposed development has been designed, constructed and shall be managed to mitigate potential impacts such as traffic, noise, dust, odour and lighting within the locality. Refer to section 4, 5, Figure 4 and Figure 41.

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
				The management of the proposed development in accordance with the SBEMP (Appendix Q) will ensure that all potential dust and odour issues are mitigated as far as reasonably practical.
		AO15.2	Development that involves the storage of materials on site that are capable of generating air contaminants either by wind or when disturbed are managed by: (a) being wholly enclosed in storage bins; or (b) a watering program so material cannot become airborne.	**Complies with AO15.2** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5. The proposed development involves the handling and storage of solid waste such as manure, spoilt feedstuffs and pond sludge. Solid waste shall be handled as far as reasonably practical when they contain sufficient moisture to avoid dust generation.
PO16	Development prevents or minimises the generation of any noise so that nuisance is not caused to adjoining premises or other nearby sensitive land uses.	**AO16**	Development achieves the noise generation levels set out in the *Environmental Protection (Noise) Policy 2008*, as amended.	**Complies with AO16** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5. The proposed development shall typically operate between 6:30 am and 4:30 pm. Periodically, heavy vehicle movements may occur outside of normal operating hours (e.g.

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
				in summer), as it is desirable to transport cattle either at night or in the early hours of the morning for animal welfare reasons or due to processor requirements. Due to the nature of the proposed development and separation distances to sensitive receptors, the noise emissions from the operational activities of the proposed development are not expected to exceed the acoustic quality objectives for daytime, evening and night-time at sensitive receptors as prescribed by the Environmental Protection (Noise) Policy 2019. Refer to section 5 and 7.5.1.
PO17	Development does not unduly impact on the existing amenity and character of the locality having regard to: (a) the scale, siting and design of buildings and structures; (b) visibility from roads and other public view points, screening vegetation and landscaping; (c) the natural landform and avoidance of visual scarring; and (d) vibration, odour, dust, spray drift and other emissions.	**AO17**	No acceptable outcomes are nominated.	**Complies with PO17** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5. The proposed development complex is obscured from roads and other public view points due to its low vertical scale, setback distances and existing vegetation. The proposed development ensures sufficient separation distances from the development complex to the nearest

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
				sensitive land use. The proposed development has been designed, constructed and shall be managed to mitigate potential impacts such as noise, dust, odour and other emissions within the locality. Refer to section 4, 5, Figure 4 and Figure 41. Further, the proposed development has been designed in accordance with the National Guidelines for Beef Cattle Feedlots (Meat and Livestock Australia Limited, 2012b), National Beef Cattle Feedlot Environmental Code of Practice (Meat and Livestock Australia Limited, 2012a) and the Reference Manual for the Establishment and Operation of Beef Cattle Feedlots in Queensland (Skerman, 2000).
PO18	All uses are located, designed, orientated and constructed to: (a) minimise noise dust, odour or other nuisance from existing lawful uses including rural and industrial uses; (b) minimise nuisance caused by noise, vibration and dust emissions generated to the State-controlled road and rail network in the vicinity of the land; (c) not adversely encroach on airport service uses and other activities associated with the Charters Towers airport; and	**AO18**	No acceptable outcomes are nominated.	**Complies with AO18** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5. The subject land on which the development is proposed is not located within close proximity to the Charters Towers airport. The subject land is not included on either the Environmental Management Register or the Contaminated Land Register and not

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
	(d) avoid areas that may place unreasonable risk to people and property from former mining activities and contaminated land. Editor's note – sites of former mining activity may be identified through the Historic Mining Permits, Resources (Mineral Occurrence and Geological Observation Data) and Abandoned Mines layers of MyMinesOnline Maps. However, proponents should be aware that the online mapping does not spatially represent all abandoned mines and their extent. Geotechnical investigation of past mining areas may reveal additional unmapped historic mine sites.			affected by historical mining activities. Refer to section 6.4.5 and 6.14. The proposed development ensures sufficient separation distances from the development complex to the nearest sensitive land use. The proposed development has been designed, constructed and shall be managed to mitigate potential impacts such as noise, dust, odour and other emissions within the locality. Refer to section 4, 5, Figure 4 and Figure 41. Further, the proposed development has been designed in accordance with the National Guidelines for Beef Cattle Feedlots (Meat and Livestock Australia Limited, 2012b), National Beef Cattle Feedlot Environmental Code of Practice (Meat and Livestock Australia Limited, 2012a) and the Reference Manual for the Establishment and Operation of Beef Cattle Feedlots in Queensland (Skerman, 2000).
PO19	Development ensures ecological values, habitat corridors, soil and water quality are protected, having regard to: (a) maximising the retention of vegetation and the protection of vegetation from the impacts of development; (b) minimising the potential for erosion and minimisation of earthworks;	**AO19**	No acceptable outcome is nominated.	**Complies with PO19** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5.

Performance Outcomes	Acceptable Outcomes	Compliance Assessment
(c) maximising the retention and protection of natural drainage lines and hydrological regimes; (d) avoidance of release of biohazards into the environment; (e) mitigating the risk of introducing and spreading weeds and pest animals; and (f) avoidance of leeching by nutrients, pesticides or other contaminants, or potential for salinity.		Further, the proposed development has been designed in accordance with the National Guidelines for Beef Cattle Feedlots (Meat and Livestock Australia Limited, 2012b), National Beef Cattle Feedlot Environmental Code of Practice (Meat and Livestock Australia Limited, 2012a) and the Reference Manual for the Establishment and Operation of Beef Cattle Feedlots in Queensland (Skerman, 2000). Utilising existing built infrastructure ensures that all existing regulated vegetation is retained. The pre-disturbance topography of the proposed development site was predominantly flat with a slope of less than 1%. The proposed development complex is setback over 500 m from the Reid River and there is dense riparian vegetation between the proposed development and the waterway. Those areas of the proposed development complex area from which stormwater runoff has a high organic matter and therefore a high pollution potential are sited within a controlled drainage area. Appropriate drainage controls are installed to direct clean water away from the

Performance Outcomes	Acceptable Outcomes	Compliance Assessment
		controlled drainage area and contaminated stormwater runoff is directed to drainage infrastructure where it is temporarily stored pending sustainable re-use on-site. Natural drainage lines are maintained as far as reasonably practical with diversion banks in place to separate clean and dirty stormwater runoff water as required. Stormwater within the controlled drainage area is collected, temporarily stored and sustainably applied to crops within a dedicated on-site effluent utilisation area. Effluent and solid waste shall be sustainably applied to crops within the dedicated waste utilisation area. These areas will be monitored regularly with soil and crop tissue sampling to ensure that nutrients are adequate and do not exceed the crop requirements. Appropriate nutrient balancing shall ensure nutrients are not leached thus avoiding any adverse impacts to groundwater quality or potential for salinity. Introduction and spread of weeds and pest animals shall be mitigated through the adoption of management measures outlined in the SBEMP.

Performance Outcomes	Acceptable Outcomes	Compliance Assessment
		Implementation of the mitigation and management measures outlined in the SBEMP will ensure that excessive nutrients aren't leaching into groundwater or deteriorating soil quality.
Use – Animal keeping (kennels or catteries)		
PO20 Development is sited, constructed and managed such that: (a) animals are securely housed; and (b) the use does not create an unreasonable nuisance beyond the site boundaries.	**AO20.1** The premises has a minimum site area of 5ha.	**Not applicable (AO20.1)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 5 and does not involve the establishment of a kennel or cattery or animal keeping use.
	AO20.2 Buildings used for animal keeping are constructed with impervious reinforced concrete floors, gravity drained to the effluent collection/treatment point.	**Not applicable (AO20.2)** Refer to AO20.1 response.
	AO20.3 Animal proof fencing or other appropriate barrier features are provided to a minimum height of 1.8m within the site to prevent the escape of animals.	**Not applicable (AO20.3)** Refer to AO20.1 response.
	AO20.4 Animals are kept in fenced enclosures, inside buildings at all times between the hours of 18:00 and 07:00.	**Not applicable (AO20.4)** Refer to AO20.1 response.

Performance Outcomes	Acceptable Outcomes		Compliance Assessment
	AO20.5	A person who is responsible for the operation of the use is accommodated on the premises at all times.	**Not applicable (AO20.5)** Refer to AO20.1 response.
	AO20.6	Animal enclosures are set back to roads, streets and water resources as follows: Road frontages: 50m Top bank of creek, river, stream, wetland, edge of well, bore, dam, weir, intake or the like which provides potable water supply to the site or surrounds: 100m Top bank of dry or perennial gully: 30m	**Not applicable (AO20.6)** Refer to AO20.1 response.
Use – Agricultural supplies store, Bulk landscaping supplies, Rural industry, Wholesale nursery and Garden centre			
PO21 Development is located and designed on sites of sufficient size, to minimise adverse impacts on: (a) the amenity of the setting, in particular noise, odour and dust emissions; (b) the amenity of neighbours; and (c) operating within the safe and effective design capacity of the region's road system.	**AO21.1**	The premises has a minimum site area of 5 ha.	**Not applicable (AO21.1)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 5 and does not involve the establishment of a Agricultural supplies store, Bulk landscaping supplies, Rural industry, Wholesale nursery or Garden centre use.
	AO21.2	A minimum 15m setback is required from any adjoining property boundary.	**Not applicable (AO21.2)**

Performance Outcomes	Acceptable Outcomes	Compliance Assessment
		Refer to AO21.1 response.
	AO21.3 Sales, storage, handling, packaging and production areas are setback a minimum of: (a) 100m from any sensitive land use (50m for Garden centre); (b) 50m from State-controlled roads and 20m from all other roads; (c) 20m from any residential dwelling on the same or neighbouring site (10m for Garden centre); and (d) 30m from top bank of creek, river, stream or wetland edge of well, bore, dam, weir, or intake that provides potable water.	**Not applicable (AO21.3)** Refer to AO21.1 response.
	AO21.4 Infrastructure and material storage areas are confined to free draining areas and sites on slopes not exceeding 10%.	**Not applicable (AO21.4)** Refer to AO21.1 response.
	AO21.5 There is direct access from the property boundary to a sealed road.	**Not applicable (AO21.5)** Refer to AO21.1 response.
	AO21.6 Hours of operation are limited between 07:00 to 17:00.	**Not applicable (AO21.6)** Refer to AO21.1 response.
Use – Club or community use		
PO22 Development is located and designed on sites of sufficient size, to minimise adverse impacts on:	**AO22.1** A minimum site area of 5ha.	**Not applicable (AO22.1)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef

Performance Outcomes	Acceptable Outcomes		Compliance Assessment
(a) the amenity of the setting, in particular noise, odour and dust emissions; and (b) the amenity of neighbours.			cattle feedlot as outlined in section 5 and does not involve the establishment of a Club or community use.
	AO22.2	Siting and layout includes: (a) the total area of covered buildings and roof structures is no greater than 10% of site area; and (b) no building or structure is closer than 15m to any site boundary.	**Not applicable (AO22.2)** Refer to AO22.1 response.
	AO22.3	Buildings and structures associated with the use is limited to: (a) shelters; (b) toilets; (c) kiosks; and (d) hall/function area.	**Not applicable (AO22.3)** Refer to AO22.1 response.
	AO22.4	Hours of operation are limited between 07:00 and 22:00.	**Not applicable (AO22.4)** Refer to AO22.1 response.
Use – Renewable energy facility (where a solar farm)			
PO23 Development is: (a) located to allow for connections into relevant energy supply networks; (b) located to avoid fragmenting highly productive agricultural land; and (c) accessible to an appropriate level of road infrastructure to support the facility.	**AO23**	No acceptable outcome is nominated.	**Not applicable (AO23)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 5 and does not involve the establishment of a renewable energy facility (e.g. solar farm) use.

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
PO24	Development ensures the site is returned to its pre-development condition and land use upon cessation of the renewable energy facility.	**AO24**	No acceptable outcome is nominated.	**Not applicable (AO24)** Refer to AO23 response.

Table 59 – Rural zone code purpose (Charters Towers Regional Town Plan)

ID	Purpose / Outcome	Relevance	Response
1	**Purpose**		
a)	provide for rural uses and activities; and	Yes	The proposed use is for "Intensive Animal Industry" (Beef cattle feedlot) and is a consistent and compatible use for the rural zone.
b)	provide for other uses and activities that are compatible with: i) existing and future rural uses and activities; and ii) the character and environmental features of the zone; and	Yes	The proposed use is for a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve a non-rural use that is incompatible with both existing and future rural uses, the environmental features, and landscape character of the rural area.
c)	maintain the capacity of land for rural uses and activities by protecting and managing significant natural resources and processes.	Yes	The proposed development is not an incompatible land use for the subject land. The proposed development will have a limited footprint and the nature of the use is such that it will not compromise the ongoing use of the subject land for agricultural purposes.
2	**Outcomes**		
a)	areas for primary production are conserved and fragmentation is avoided through maintaining very large lots to support rural agricultural activities;	Yes	The proposed use is for "Intensive Animal Industry" (Beef cattle feedlot) and is a consistent and compatible use for the rural zone. The proposed development does not involve reconfiguration of a lot. The general low rise and low intensity scale of the proposed development is consistent with the predominant rural character of the zone and visual prominence of environmental and landscape features in the rural landscape.

			The proposed use is for a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve a non-rural use that is incompatible with both existing and future rural uses, the environmental features, and landscape character of the rural area.
b)	the viability of both existing and future rural uses and resource related activities are protected from the intrusion of incompatible uses;	Yes	The proposed development is not an incompatible land use for the subject land. The proposed development will have a limited footprint and the nature of the use is such that it will not compromise the ongoing use of the subject land for agricultural purposes. The proposed development is a productive rural use and strengthens the rural diversification on the subject land.
c)	sensitive land uses are protected from impacts associated with resource extraction activities associated with mining and quarrying having regard to vibration, odour, dust or other emissions;	No	The subject land is not located within a key resource area or key resource area separation area. The proposed use is for a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve a non-rural use such as resource extraction activities associated with mining and quarrying.
d)	the establishment of a wide range of rural pursuits is facilitated, including cropping, intensive horticulture, grazing, intensive animal industries, animal husbandry and animal keeping and other compatible primary production uses;	Yes	The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot and does not involve a non-rural use. The proposed development has a direct nexus with and will support agricultural diversification through intensification on land that demonstrates productive soils and access to water resources.
e)	cropping and horticultural activities are encouraged on productive ALC Class A and B agricultural land;	Yes	The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot and is not located on productive ALC Class A and B agricultural land.
f)	renewable energy facilities and extractive industries: (i) mitigate impacts on the environment and adjoining land uses; (ii) do not degrade ALC Class A and B agricultural land;	No	The proposed use is for a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve a non-rural use such as a renewable energy facilities and extractive industries.

	(iii) are located to allow connections into supporting energy networks; and (iv) rehabilitate sites upon completion of activities.		
g)	the establishment of outdoor recreation and small-scale tourism and entertainment facilities (such as restaurants and function facilities) in suitable locations is facilitated only where they do not compromise the use of the land for rural activities and minimise any land-use conflicts;	No	The proposed use is for a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve a non-rural use such as establishment of outdoor recreation and small-scale tourism and entertainment facilities (such as restaurants and function facilities).
h)	natural features such as creeks, gullies, waterways, wetlands and bushland are retained, managed and separated from adjacent development where possible. Any unavoidable impacts are minimised through location, design, operation and management requirements;	Yes	The proposed development has been sited, designed and shall be operated to protect and avoid adverse impacts to natural features such as creeks, gullies, waterways, wetlands and bushland identified on the subject land and adjoining land. The proposed development has been designed and will be managed in accordance with best practice guidelines.
i)	rural land uses incorporate sustainable practices to: (i) prevent soil erosion and landslide; (ii) protect the quality of land resources and water catchments; and (iii) maintain habitat values of waterways and native timber and forest areas.	Yes	All reasonable and practical measures are implemented to establish development specific engineering designs and solutions so as to prevent soil erosion and landslide, protect land resources and waterways and maintain habitat values of waterways and regulated vegetation. Appropriate drainage controls are installed to direct clean water away from the controlled drainage area and contaminated stormwater runoff is directed to drainage infrastructure where it is temporarily stored pending sustainable re-use on-site. Natural drainage lines are maintained as far as reasonably practical with diversion banks in place to separate clean and dirty stormwater runoff water as required.

			Effluent and solid waste shall be sustainably applied to crops within the dedicated waste utilisation area. Mitigation measures such as weed control practices and plant and equipment cleaning and inspection protocols to avoid the introduction and spread of weeds and to control existing declared weeds on-site shall be implemented.
j)	adverse impacts of land use, both on site and from adjoining areas, are avoided and any unavoidable impacts are minimised through location, design, operation and management;	Yes	The proposed development ensures sufficient separation distances from the development complex to the nearest sensitive land use. The proposed development has been designed, constructed and shall be managed to mitigate potential impacts such as traffic, noise, dust, odour and lighting within the locality.
k)	urban and rural residential expansion does not occur on land in the rural zone;	No	The proposed use is for a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve a non-rural use such as an urban or rural residential use.
l)	development responds to land constraints, including but not limited to, former mining activities and land contamination.	No	The proposed use is for a rural use being "Intensive Animal Industry" (Beef cattle feedlot) and does not involve a non-rural use. The subject land is not included on either the Environmental Management Register or the Contaminated Land Register and not affected by historical mining activities. The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure.
m)	Development does not conflict with the ongoing efficient and safe use of the stock route network by travelling stock.	Yes	There are no elements of the proposed development located on a stock route. The proposed development is located on land adjoining a stock route. The perimeter of the subject land is fenced with livestock proof fencing. Consequently, the proposed development shall have no adverse impacts on the ongoing efficient and safe use of the stock route network by travelling stock.

8.2.2.2 Overlay codes

8.2.2.2.1 Bushfire hazard overlay code

(1) The purpose of the Bushfire hazard overlay code is to ensure that:
   (a) that the risks to life, property, community, economic activity and the environment during uncontrolled bushfire events are avoided or minimised; and
   (b) development does not increase the potential for bushfire damage or risk on site or to other property.

(2) The purpose of the code will be achieved through the following overall outcomes:

   (a) development is compatible with the nature of the bushfire hazard except where there is an overriding need for the development in the public interest and no other site is suitable and reasonably available for the proposal;
   (b) development siting, layout, design and access minimises the risks to personal safety, damage to property, infrastructure and other assets;
   (c) development directly, indirectly and cumulatively avoids an unacceptable increase in severity of bushfires and does not increase the potential for damage on the site or to other properties;
   (d) the potential for the release of hazardous material as a result of a bushfire event is avoided;
   (e) evacuation and disaster management response including firefighting and access for emergency services during bushfire events is facilitated; and
   (f) community infrastructure is located and designed to function effectively at all times.

An assessment of the proposed development against the performance outcomes of the Bushfire hazard overlay code and code purpose are provided in Table 60 and Table 61. The compliance statements outlined in Table 60 and Table 61 demonstrate that the proposed development complies with the accepted outcomes and purpose of the Bushfire hazard overlay code and will not compromise the purpose or overall outcomes sought for the individual themes with the Bushfire hazard overlay code.

Table 60 – Bushfire hazard overlay code (Charters Towers Regional Town Plan)

Performance Outcomes	Acceptable Outcomes	Compliance Assessment
Table 7.2.1.3 – Assessable development		
For accepted, accepted subject to requirements and assessable development (code, code (fast tracked) and impact)		
Site suitability		
PO1 Development maintains the safety of people and property. Editor's note – A site specific bushfire hazard assessment and management plan is required to demonstrate compliance with this performance criterion. Refer to the Natural hazards Town plan Policy.	**AO1** No acceptable outcome is nominated.	**Complies with PO1** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 5 and does not involve the establishment of class 1, 2, 3 or 4 buildings on the subject land. Refer to section 5. The subject land includes areas identified as Very High, High and Medium Bushfire on the Bushfire Hazard Overlay, however the development site area is located clear of all mapped areas. Bushfire management procedures shall be implemented during the operation phase of the proposed development. A site specific bushfire hazard assessment and management plan has been prepared and provided in Appendix R. Refer to section 5 and 5.3.15 and Appendix R.

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
PO2	Development does not result in a higher concentration of people living, working or congregating in a bushfire prone area unless it can be demonstrated: (a) there is an overriding community need in the public interest; and (b) no other site is suitable and reasonably available.	**AO2**	The following uses are not located on land within a high to very high bushfire hazard area: (a) Agricultural supplies store; (b) Bulk landscape supplies; (c) Club; (d) Community use; (e) Food and drink outlet; (f) Function facility; (g) Garden centre; (h) Market; (i) Nature based tourism; (j) Outdoor sport and recreation; (k) Rural industry; (l) Rural workers accommodation; (m) Renewable energy facility; (n) Tourist park; and (o) Wholesale nursery.	**Not applicable (AO2)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 5 and does not involve the establishment of an Agricultural supplies store; Bulk landscape supplies; Club; Community use; Food and drink outlet; Function facility; Garden centre; Market; Nature based tourism; Outdoor sport and recreation; Rural industry; Rural workers accommodation; Renewable energy facility; Tourist park; or Wholesale nursery use within a high to very high bushfire hazard area. Refer to section 5.
Siting of development				
PO3	The siting, layout and design of development avoids or mitigates the risks associated with bushfire hazard through: (a) being situated on that part of the site that has the lowest level of bushfire risk; (b) fire mitigation measures that do not adversely impact on areas having high environmental values. Editor's note – (a) a site specific bushfire hazard assessment and management plan is required to demonstrate	**AO3**	No acceptable outcome is nominated.	**Complies with PO3** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve the establishment of class 1, 2, 3 or 4 buildings on the subject land. Refer to section 5. The subject land includes areas identified as Very High, High and Medium Bushfire on the Bushfire Hazard Overlay, however the

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
	compliance with this performance criterion. Refer to the Natural hazards TPP; (b) buildings in a bushfire hazard area must meet the requirements of *AS3959-2009 – the Australian Standard for the Construction of Buildings in Bushfire Prone Areas* and the requirements of the Building Code of Australia.			proposed development complex site area is located clear of all mapped areas. A Bushfire Hazard Assessment and Management Plan has been developed and included as Appendix R.
Water supply				
PO4	Development in areas with a reticulated water supply has adequate flow and pressure for fire-fighting purposes at all times.	**AO4**	The water supply network has a minimum sustained pressure and flow of at least 10 litres per second at 200kPa.	**Not applicable (AO4)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 5 and is in a rural area. The subject land is not in Council's reticulated potable water supply area. The proposed development is self sufficient as far as water supply is concerned and does not require connection to Council's reticulated potable water supply infrastructure. Refer to section 2, 3 and 5.
PO5	Development in areas without a reticulated water supply has an appropriate dedicated water supply for fire-fighting purposes, that is safely located and freely accessible for fire-fighting purposes at all times.	**AO5**	Development involving a gross floor area greater than 50m^2 where a reticulated water supply is not available is: a. provided with an easily accessible fire resistant on site water storage of not less than 5,000 litres (e.g. concrete tank with fire brigade fittings, in-ground swimming pool, dam fed by a permanent water source) that is within 100 m of the development; and	**Complies with AO5** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 5 and is in a rural area. The proposed development has surface water allocation under the Water Plan

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
			b. has a hard-standing area allowing a heavy rigid fire appliance safe access to within 6m of the storage facility. Editor's note – Plastic water tanks are not considered to be fire resistant.	(Burdekin Basin) 2007 as outlined in section 3.2. The proposed development has several equipped groundwater bores which supply water to the existing development. This infrastructure shall provide a safe and sufficient water supply for fire-fighting purposes. The proposed development shall have an on-site water supply and storage comprising multiple steel tanks for water supply with a minimum capacity of 750,000 litres. Access to existing dam on the subject land to the northeast of the proposed development is also accessible to fire-fighting vehicles. The subject land also contains several large dams that are maintained at a sufficient water level to act as a safe and sufficient water supply for fire-fighting purposes. The holding pond can also act as a water supply source for fire-fighting purposes if required.
Roads, fire access trails and firebreaks				
PO6	Roads and fire access trails are designed and constructed to: (a) enable efficient access to buildings and structures for fire-fighting purposes for emergency services; and	**AO6.1**	Roads and fire access trails are designed and constructed to: (a) have a maximum gradient of 12.5%; (b) a minimum cleared width of 6m and a minimum formed width of 4m;	**Complies with AO6.1** The proposed use is for "Intensive Animal Industry" being the establishment of a beef

Performance Outcomes	Acceptable Outcomes	Compliance Assessment
(b) swift evacuation in emergency situations.	(c) provides passing and turning areas for fire-fighting appliances at intervals of not less than 500m; (d) have a vehicular access at each end to roads or a bushfire trail; and (e) not involve any cul-de-sac.	cattle feedlot as outlined in section 5 and is in a rural area. Access to the proposed development is via an internal access road from Runway Station Road which intersects with the Flinders Highway. The internal access road is an unsealed gravel road with a cleared width of greater than 10 m and a 6 m formation and relatively flat gradient well less than 12.5%. Type 2 Road Trains regularly access the existing development. The subject land is a relatively large parcel and there is substantial area available within the property for fire-fighting appliances to pass, manoeuvre and turnaround. No other fire trails exist on the subject land. The proposed development utilises existing built infrastructure which is located 50 m from mapped Medium Potential Bushfire Hazard area. This setback area contains internal roadways and grassed open areas which negate the need for a fire trail. Refer to section 2, 4, 5 and 6.15.1 and Figure 8 and Figure 40.
	AO6.2 Development has direct access to an evacuation route with a potential fire intensity exposure no greater than 2kw/m^2.	**Complies with AO6.2** The proposed use is for "Intensive Animal Industry" being the establishment of a beef

Performance Outcomes	Acceptable Outcomes	Compliance Assessment
	Editor's note – The distance from hazardous vegetation to achieve 2kw/m^2 is generally: (i) 58m in a very high bushfire hazard areas; (ii) 52m in a high bushfire hazard area; and (iii) 44m in a medium bushfire hazard area.	cattle feedlot as outlined in section 5 and is in a rural area. Access to the proposed development is via an internal access road from Runway Station Road which intersects with the Flinders Highway. The internal access road is an unsealed gravel road with a cleared width of greater than 10 m. There also is an alternate evacuation route from the subject land for light vehicles past the existing dwelling on Lot 1 SP743456 in emergency situations. This access route has a setback of over 60m to mapped medium bushfire hazard area. Refer to section 2, 4, 5 and 6.15.1 and Figure 8 and Figure 40.
	AO6.3 Development incorporates an area of managed vegetation that separates lot boundaries from hazardous vegetation by a distance of: (a) 20m to a high or very high bushfire risk area; or (b) 10m to a medium risk bushfire area and includes a fire access trail. Editor's note – (i) hazardous vegetation is identified through a site specific bushfire hazard assessment. Refer also to the Natural hazards TPP; (ii) any fire access trail is secured by public ownership or an access easement in favour of Charters Towers Regional Council and the Queensland Fire and Rescue Service.	**Complies with AO6.3** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 5 and is in a rural area. Access to the proposed development is via an internal access road from Runway Station Road which intersects with the Flinders Highway. The internal access road is an unsealed gravel road with a cleared width of greater than 6 m which follows boundary of the subject land for part of its length.

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
				Development incorporates an area of managed vegetation that separates the subject land boundary from hazardous vegetation by a distance of at least 10 m.
PO7	Development provides for adequate fire breaks that minimise bushfire hazard by: (a) separating hazardous vegetation from development areas; and (b) facilitating access for firefighting and emergency vehicles. Editor's note – A site specific bushfire hazard assessment and management plan is required to demonstrate compliance with this performance criterion. Refer to the Natural hazards TPP.	**AO7**	No acceptable outcome is nominated.	**Complies with PO7** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve the establishment of class 1, 2, 3 or 4 buildings on the subject land. Refer to section 5. The proposed development is located 35 m from mapped Medium Potential Bushfire Hazard area which is regulated least concern vegetation. The setback area contains all-weather access roads and open grassland which is regularly mowed. Consequently, the setback area provides an adequate fire break. The proposed development site contains an extensive all-weather access road network which facilitates access for firefighting and emergency vehicles around the subject land.
PO8	Development is located and designed to incorporate a bushfire defendable space which achieves separation between buildings, building envelopes and hazardous vegetation necessary to reduce risk to an acceptable or tolerable level.	**AO8.1**	Buildings, or building envelopes, are separated by hazardous vegetation by a distance that achieves a radiant heat flux level at any point on the building, or building envelope, respectively that does not exceed:	**Not Applicable (AO8.1)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve the

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
			(a) 10kW/m^2 where involving a vulnerable use, essential service uses or hazardous chemical facility use; or (b) 29W/m^2 otherwise. Editor's note – The radiant flux levels and separation distances are to be established in accordance with hazard assessments. Where a separation distance is proposed to be achieved by utilising existing, cleared developed areas external to the site, certainty must be established (through tenure or other means) that the land will remain cleared of hazardous vegetation. For staged development, temporary separation distances, perimeter roads or fire trails may be absorbed as part of subsequent stages.	establishment of class 1, 2, 3 or 4 buildings on the subject land. Refer to section 5. The proposed development is located 35 m from mapped Medium Potential Bushfire Hazard area which is regulated least concern vegetation. The setback area contains all-weather access roads and open grassland which is regularly mowed. Consequently, the setback area provides an adequate fire break.
		AO8.2	Development ensures buildings or building envelopes are separated from adjacent buildings or building envelopes by a minimum distance of 8m.	**Not Applicable (AO8.2)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve the establishment of class 1, 2, 3 or 4 buildings on the subject land. Refer to section 5.
Hazardous materials				
PO9	The potential for the release of hazardous materials as a result of a bushfire event is avoided.	**AO9**	Development involving the production or storage of hazardous materials is not located within a high or very high bushfire hazard area.	**Complies with AO9** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5. All hazardous materials required to be on stored on-site would not be stored in a high or very high bushfire hazard area. Refer to section 5.3.14 and 6.15.

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
Reconfiguration of a lot				
PO10	Additional lots avoid the risk of bushfire hazard to: (a) personal and property safety; and (b) increased risk of damage to assets. Editor's note – A site specific bushfire hazard assessment and management plan may demonstrate that the site is not within a bushfire hazard area or has a low degree of bushfire risk. Refer also to the Natural hazards TPP.	**AO10**	New lots (including rear lots) do not occur in a bushfire prone area.	**Not applicable (AO10)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 5 and does not involve reconfiguration of a lot.
Essential community infrastructure *Editor's note – The term essential community infrastructure is defined in the State Planning Policy.*				
PO11	Development for essential community infrastructure is located, designed and sited to: (a) protect the safety of people during a bushfire; (b) not increase the exposure of people to the risk from a bushfire event; and (c) function effectively during and immediately after bushfire events. Editor's note – A site specific bushfire hazard assessment and management plan is required to demonstrate compliance with this performance criterion. Refer to the Natural hazards TPP.	**AO11**	No acceptable outcome is nominated.	**Not applicable (AO11)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 5 and does not involve establishment of essential community infrastructure.

Table 61 – Bushfire hazard overlay code purpose and outcomes (Charters Towers Regional Town Plan)

ID	Purpose / Outcome	Relevance	Response
1	**Purpose**		
a)	that the risks to life, property, community, economic activity and the environment during uncontrolled bushfire events are avoided or minimised; and	Yes	The proposed development takes into consideration topography, location of existing vegetation and potential natural hazards. The proposed development is not located within a high or medium bushfire hazard area. The proposed development is setback at least 35 m from medium bushfire hazard areas. The proposed development area contains all-weather access roads and adequate fire break from bushfire hazard area versus open grassland which is regularly mowed. The proposed development actively assists and supports disaster management capacity and capabilities by: (i) Providing ready access to a water supply suitable for firefighting purposes; and (ii) Provision of all-weather constructed access to the development complex site. Adequate access for the evacuation of residents and emergency personnel in an emergency situation is provided, including alternative safe access routes (should access in one direction be blocked in the event of a fire) from Runway Station Road and the Flinders Highway which are all-weather construction.
b)	development does not increase the potential for bushfire damage or risk on site or to other property	Yes	The proposed development takes into consideration topography, location of existing vegetation and potential natural hazards. The proposed development is not located within a high or medium bushfire hazard area. The proposed development is setback at least 35m from medium bushfire hazard areas. The proposed development being the establishment of a beef cattle feedlot within existing infrastructure will result in the area being maintained in a low fuel load state. Mitigation measures identified include:

			(i) Ongoing maintenance of the development complex site in a 'low fuel load' state (e.g. short grass); (ii) Location of internal roads and access points between development and areas of potentially hazardous vegetation; and (iii) Access from Runway Station Road which is an all-weather construction. The proposed development directly, indirectly and cumulatively avoids an increase in the severity of the natural hazard and the potential for damage on the site or to other properties.
2	**Outcomes**		
a)	development is compatible with the nature of the bushfire hazard except where there is an overriding need for the development in the public interest and no other site is suitable and reasonably available for the proposal;	Yes	The proposed development takes into consideration topography, location of existing vegetation and potential natural hazards. The proposed development is not located within a high or medium bushfire hazard area. The proposed development is setback at least 35 m from medium bushfire hazard areas. The proposed development area contains all-weather access roads and adequate fire break from bushfire hazard area versus open grassland which is regularly mowed. Adequate access for the evacuation of residents and emergency personnel in an emergency situation is provided, including alternative safe access routes (should access in one direction be blocked in the event of a fire) from Runway Station Road and the Flinders Highway which are all-weather construction.
b)	development siting, layout, design and access minimises the risks to personal safety, damage to property, infrastructure and other assets;	Yes	The proposed development takes into consideration topography, location of existing vegetation and potential natural hazards. The proposed development is not located within a high or medium bushfire hazard area. The proposed development is setback at least 35 m from medium bushfire hazard areas. The proposed development area contains all-weather access roads and adequate fire break from bushfire hazard area versus open grassland which is regularly mowed.

c)	development directly, indirectly and cumulatively avoids an unacceptable increase in severity of bushfires and does not increase the potential for damage on the site or to other properties;	Yes	The proposed development being the establishment of a beef cattle feedlot within existing infrastructure will result in the area being maintained in a low fuel load state. Mitigation measures identified include: (i) Ongoing maintenance of the development complex site in a 'low fuel load' state (e.g. short grass); (ii) Location of internal roads and access points between development and areas of potentially hazardous vegetation; and (iii) Access from Runway Station Road which is an all-weather construction. The proposed development directly, indirectly and cumulatively avoids an increase in the severity of the natural hazard and the potential for damage on the site or to other properties.
d)	the potential for the release of hazardous material as a result of a bushfire event is avoided;	Yes	The proposed development takes into consideration topography, location of existing vegetation and potential natural hazards. The proposed development is not located within a high or medium bushfire hazard area. The proposed development is setback at least 35 m from medium bushfire hazard areas. All hazardous material is stored in accordance with relevant regulation.
e)	evacuation and disaster management response including firefighting and access for emergency services during bushfire events is facilitated; and	Yes	Adequate access for the evacuation of residents and emergency personnel in an emergency situation is provided, including alternative safe access routes (should access in one direction be blocked in the event of a fire) from Runway Station Road and the Flinders Highway which are all-weather construction.
f)	community infrastructure is located and designed to function effectively at all times.	No	The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 5 and does not involve establishment of essential community infrastructure.

8.2.2.2.2 Flood hazard overlay code

(1) The purpose of the Flood hazard overlay code is to ensure that development on land subject to a defined flood[1] event[2] (DFE) avoids or mitigates the risk of flood hazard[3] to protect people, property, the environment and economic activity and, to ensure development does not adversely affect other properties or the hydraulic efficiency of a waterway or floodplain.

(2) The purpose of the code will be achieved through compliance with the following overall outcomes:
- (a) development does not occur on land subject to flooding from a defined flood event unless:
  - (i) it is compatible with the level of risk having regard to flow depth, flow velocity, rate of flood level rise and the duration of the inundation;
  - (ii) the impacts of flooding can be managed such that there can be no foreseeable risk to personal safety or to property;
- (b) development does not result in an increase in the extent or severity of flood risk to the site or other land;
- (c) the flood storage or the conveyance of waterways and flood plains is not diminished;
- (d) the potential for the release of hazardous material is not increased;
- (e) development supports, and does not unduly burden disaster management response or recovery capacity and capabilities;
- (f) essential community infrastructure is located and designed to function effectively during and immediately after a flood hazard event.

Editor's notes –
(1) The term 'flood' is used to describe the temporary inundation of land by expanses of water that overtop the natural or artificial banks of a creek, river, lake or estuary resulting from prolonged or intensive rainfall in the catchments of these water bodies.
(2) The term 'defined flood event' or DFE is used to describe level of a 1% annual exceedance probability (AEP) event (including an allowance for climate change) where determined by a flood assessment. It should be noted that higher flood events than the DFE can occur.
(3) Site specific flood hazard assessments are required to demonstrate compliance with aspects of this overlay code. Refer also to the Natural hazard TPP.
(4) For the purposes of section 13 of the *Building Regulation 2006:*
  (a) The area covered by the flood overlay map is the designated flood hazard area;
  (b) The defined flood level is the level to which flood waters would reasonably be expected to rise within the flood hazard area during the defined flood event.

An assessment of the proposed development against the performance outcomes of the flood hazard overlay code and code purpose are provided in Table 62 and Table 63. The compliance statements outlined in Table 62 and Table 63 demonstrate that the proposed development complies with the accepted outcomes and purpose of the Flood hazard overlay code and will not compromise the purpose or overall outcomes sought for the individual themes with the Flood hazard overlay code.

Table 62 – Flood hazard overlay code (*Charters Towers Regional Town Plan)*

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
Table 7.2.2.3(a) – Assessable development				
For accepted, accepted subject to requirements and assessable development (code, code (fast tracked) and impact)				
Siting of development				
PO1	Development: (a) does not provide unacceptable risks to people and property from flood hazard impacts or, the risks are mitigated to an acceptable or tolerable level; and (b) does not intensify or locate a use in an extreme or high hazard area, in order to avoid risks to people, property and the environment.	**AO1**	No acceptable outcome is nominated.	**Complies with PO1** The subject land and proposed development complex are sited above the 1% AEP flood level as outlined in section 6.5.6 and Appendix R.. Consequently, the proposed development will not result in any flood safety implications to people or property.
PO2	Development is sited to enable safe evacuation in the event of a flood.	**AO2**	No acceptable outcome is nominated.	**Complies with PO2** The proposed development complex is sited above the 1% AEP flood level as outlined in section 6.5.6 and Appendix R. The proposed development has several access points to the road network to enable safe evacuation in the event of a flood. Refer to section 6.5.6 and Appendix R and Figure 7.
PO3	Signage is provided within flood hazard areas to alert residents and visitors to the flood hazard.	**AO3**	Signage is provided on site (regardless of whether the land is in public or private ownership) indicating: (a) the position and path of all safe evacuation routes off the site; and	**Not applicable (AO3)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
			(b) if the site contains or is within 100m of a floodable waterway, hazard warning signage and depth indicators are also provided at key hazard points such as floodway crossings or entrances to low-lying reserves.	infrastructure as outlined in section 5. The proposed development complex is sited above the 1% AEP flood level as outlined in section 6.5.6 and Appendix R.
Reconfiguring a lot				
PO4	The siting, layout and design of lot reconfiguration avoids or mitigates the adverse impacts associated with flooding to protect the safety of people and property.	**AO4**	No acceptable outcome is nominated.	**Not applicable (AO4)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 5 and does not involve reconfiguration of a lot.
PO5	Road and pathway layout ensures residents are not physically isolated from adjacent flood free urban areas and provides a safe and clear evacuation route.	**AO5**	No acceptable outcome is nominated.	**Not applicable (AO5)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 5 and does not involve reconfiguration of a lot.
Building floor levels				
PO6	The floor levels of sensitive land uses have an acceptable level of flood immunity to maintain the safety of people from flood hazard impacts. Editor's note – The grouping of land uses known as 'sensitive land uses', as referenced throughout this Town plan is found in section SC1.2 Administrative terms.	**AO6.1**	Habitable rooms have a minimum floor level at least 0.3m above the DFE.	**Not applicable (AO6.1)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and does not involve a sensitive land use as defined under section SC1.2 Administrative

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
				terms of the *Charters Towers Regional Town Plan* and the Planning Regulation 2017.
		AO6.2	Floor levels of non-habitable rooms (other than Class 10 buildings) are above the DFE, or allow for the flow through of floodwaters on the ground floor.	**Not applicable (AO6.2)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and does not involve a sensitive land use as defined under section SC1.2 Administrative terms of the *Charters Towers Regional Town Plan* and the Planning Regulation 2017.
		AO6.3	Where involving an extension to an existing residential use that has habitable rooms below the level referred to in AO6.2, any extension does not exceed 25m^2 GFA.	**Not applicable (AO6.3)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and does not involve a sensitive land use as defined under section SC1.2 Administrative terms of the *Charters Towers Regional Town Plan* and the Planning Regulation 2017.
PO7	Non-residential development is designed and located to minimise damage to property and contents from flooding impacts.	**AO7**	No acceptable outcome is nominated.	**Complies with PO7** The subject land and proposed development complex are sited above the 1% AEP flood level as outlined in section 6.5.6 and Appendix R.. Consequently, the proposed development has been designed and located to minimise damage to property and contents from

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
				flooding impacts. Refer to section 6.5.6 and Appendix R.
Earthworks				
PO8	Development including any earthworks must: (a) not adversely impact on or change the flood characteristics of a floodplain or waterway; (b) not reduce existing flood storage and flow capacity; (c) avoid any physical change to a floodplain or natural waterway; (d) avoid increased scour and erosion; (e) not increase the depth, velocity or direction of the flow, the rate of flood level rise or the duration of inundation on the site or on land external to the site; and (f) not remove any riparian or riverine vegetation.	**AO8**	No acceptable outcome is nominated.	**Complies with PO8** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and does not involve earthworks per se. A site specific flood hazard assessment of the subject land has been completed and provided in Appendix R. The site specific flood hazard assessment demonstrates that the proposed development complex is sited above the 1% AEP flood level. Consequently, any minor earthworks associated with the proposed development will not impact on flood characteristics mapped for the area. The proposed development does not propose to remove any riparian or riverine vegetation. Refer to section 6.6.
Hazardous materials				
O9	Public safety and the natural environment are not adversely affected by the impacts of floodwater on hazardous materials manufactured or stored in bulk.	**AO9.1**	Development does not involve the manufacture or storage of hazardous materials within a flood hazard area.	**Complies with AO9.1** The subject land and proposed development complex are sited above the 1% AEP flood

Performance Outcomes	Acceptable Outcomes		Compliance Assessment
			level as outlined in section 6.5.6 and Appendix R.. Consequently, any hazardous material storage areas would be situated above the mapped flood hazard area. Further, any hazardous materials on site would be very minor in quantity, these materials would be stored in a secure bunded area where any releases would be contained.
	AO9.2	Where it can be demonstrated that there is a low or medium flood risk, the manufacture or storage of hazardous materials takes place above the DFE flood levels. Editor's note – A site specific flood hazard assessment is required to demonstrate compliance with this performance criterion. Refer to the Natural hazards TPP.	**Complies with AO9.2** The subject land and proposed development complex are sited above the 1% AEP flood level as outlined in section 6.5.6 and Appendix R.. Consequently, any hazardous material storage areas would be situated above the defined flood event flood levels.
Intensive animal industry			
PO10 The use of land for intensive animal husbandry does not establish or intensify in a flood hazard area, in order to avoid risk to the environment.	**AO10**	Intensive animal husbandry, including the storage of bulk food and any associated water treatment facilities, does not occur on land below the DFE.	**Complies with AO10** The subject land and proposed development complex are sited above the 1% AEP flood level as outlined in section 6.5.6 and Appendix R.. A site specific flood hazard assessment of the subject land has been completed and provided

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
				in Appendix R. The site specific flood hazard assessment demonstrates that the proposed development complex is sited above the 1% AEP flood level. Consequently, the storage of bulk food and any associated water treatment facilities, do not occur on land below the defined flood event flood levels.
Essential community infrastructure *Editor's note – The term essential community infrastructure is defined in the State Planning Policy.*				
PO11	Essential community infrastructure is able to function effectively during and immediately after flood events.	**AO11**	Community infrastructure is provided at or above the recommended flood level specified in Table 7.2.2.3(b) – Recommended flood levels of community infrastructure.	**Not applicable (AO11)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve essential community infrastructure. Refer to section 5.
PO12	Essential services infrastructure (e.g. on site electricity, gas, water supply, sewerage and telecommunications) maintains its function during and immediately after a DFE flood event.	**AO12**	Any components of infrastructure that are likely to fail to function or may result in contamination when inundated by flood water (e.g. electrical switchgear and motors, water supply pipeline air valves) are: (a) located above the DFE; or (b) designed and constructed to prevent floodwater intrusion/infiltration.	**Complies with AO12** The subject land and proposed development complex are sited above the 1% AEP flood level as outlined in section 6.5.6 and Appendix R.. A site specific flood hazard assessment of the subject land has been completed and provided in Appendix R. The site specific flood hazard assessment demonstrates that the proposed development complex is sited above the 1% AEP flood level.

Performance Outcomes	Acceptable Outcomes	Compliance Assessment
		Consequently, any components of infrastructure that are likely to fail to function or may result in contamination when inundated by flood water are located above the defined flood event flood levels.
Emergency management		
PO13 Development in flood hazard areas supports and does not hinder disaster management capacity and capabilities.	**AO13** No acceptable outcome is nominated.	**Complies with PO13** The subject land and proposed development complex are sited above the 1% AEP flood level as outlined in section 6.5.6 and Appendix R.. A site specific flood hazard assessment of the subject land has been completed and provided in Appendix R. The site specific flood hazard assessment demonstrates that the proposed development complex is sited above the 1% AEP flood level.

Table 63 – Flood hazard overlay code purpose and outcome (Charters Towers Regional Town Plan)

ID	Purpose / Outcome	Relevance	Response
1	**Purpose**		
	The purpose of the Flood hazard overlay code is to ensure that development on land subject to a defined flood event (DFE) avoids or mitigates the risk of flood hazard to protect people, property, the environment and economic activity and, to ensure development does not adversely affect other properties or the hydraulic efficiency of a waterway or floodplain.	Yes	The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The subject land is not located with the 1% AEP defined flood event. Consequently, all the risks of flood hazard to protect people, property, the environment and economic activity have been avoided. Further, the proposed development does not adversely affect other properties or the hydraulic efficiency of a waterway or floodplain as the subject land is not located with the 1% AEP defined flood event.
2	**Outcomes**		
a)	development does not occur on land subject to flooding from a defined flood event unless; i) it is compatible with the level of risk having regard to flow depth, flow velocity, rate of flood level rise and the duration of the inundation; ii) the impacts of flooding can be managed such that there can be no foreseeable risk to personal safety or to property;	Yes	The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The subject land is not located with the 1% AEP defined flood event. Consequently, an increase in the extent or severity of flood risk to the site or other land as a result of the proposed development shall not occur.
b)	development does not result in an increase in the extent or severity of flood risk to the site or other land;	Yes	The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The subject land is not located with the 1% AEP defined flood event. Consequently, an increase in the extent or severity of flood risk to the site or other land as a result of the proposed development shall not occur.
c)	the flood storage or the conveyance of waterways and flood plains is not diminished;	Yes	The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure.

			The subject land is not located with the 1% AEP defined flood event. Consequently, the flood storage or the conveyance of waterways and flood plains is not diminished.
d)	the potential for the release of hazardous material is not increased;	Yes	The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The subject land is not located with the 1% AEP defined flood event. Consequently, the potential for the release of hazardous material is not increased as a result of the proposed development.
e)	development supports, and does not unduly burden disaster management response or recovery capacity and capabilities;	Yes	The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The subject land is not located with the 1% AEP defined flood event. Consequently, disaster management response or recovery capacity and capabilities shall remain the same as pre-development levels.
f)	essential community infrastructure is located and designed to function effectively during and immediately after a flood hazard event.	No	The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 5 and does not involve establishment of essential community infrastructure.

8.2.2.2.3 Natural environment overlay code

(1) The purpose of the Natural environment overlay code is to:
   (a) protect important environmental areas including those Matters of State Environmental Significance (MSES) and their associated ecological processes and biodiversity values;
   (b) maintain or enhance the health and resilience of biodiversity to support ecological integrity;
   (c) maintain or enhance ecological connectivity to preserve fauna movement, habitat values, remnant vegetation and ecological processes;
   (d) protect or enhance water quality, ecosystem health and the natural hydrological functioning of waterways, wetlands and their riparian areas and buffers; and
   (e) protect, rehabilitate and manage biodiversity and ecosystem services values.

(2) The purpose of the code will be achieved through the following overall outcomes:

   (a) development avoids adverse impacts on MSES and their associated ecological processes and biodiversity values, unless:
      (i) it is demonstrated that MSES do not exist on the site; or
      (ii) where adverse environmental impacts cannot be avoided, impacts are minimised and an environmental offset is provided for any residual adverse impacts and a net environmental benefit is achieved;
   (b) development avoids direct and indirect impacts resulting in species or habitat loss or disturbance, soil degradation or pollution due to vegetation clearing, erosion and contamination, salinity, waste disposal or modification to natural processes;
   (c) fragmentation of remnant vegetation, ecological corridors and existing habitat is avoided to maintain ecological function and biodiversity values and to maintain or increase the resilience of ecosystems and habitat to threatening processes, including the impacts of climate change;
   (d) a network of connecting corridors and linkages between areas supporting MSES, wetlands, waterways, remnant vegetation, habitat areas and other natural areas are maintained, created or restored;
   (e) development including infrastructure, is designed and located to maintain and enhance continuity of wildlife movement and ecological processes;
   (f) the hydrological regime of wetlands and waterways is protected and rehabilitated;
   (g) development avoids encroachment or expansion into sensitive habitats along riparian areas unless it is for management of public access, recreation, public use or other public benefit;
   (h) development maintains sustainable community access to waterways, national parks and other land in protected area estates;
   (i) development incorporates and maintains appropriate buffers in accordance with minimum best practice distances so as to avoid adverse impacts on environmental values;
   (j) development maintains or enhances the scenic amenity of important natural landscapes, views and vistas.

An assessment of the proposed development against the performance outcomes of the Natural environment overlay code and code purpose are provided in Table 64 and Table 65. The compliance statements outlined in Table 64 and Table 65 demonstrate that the proposed development complies with the accepted outcomes and purpose of the Natural environment overlay code and will not compromise the purpose or overall outcomes sought for the individual themes with the Natural environment overlay code.

Table 64 – Natural environment overlay code (*Charters Towers Regional Town Plan)*

Performance Outcomes	Acceptable Outcomes	Compliance Assessment
Table 7.2.4.3 – Accepted development subject to requirements and assessable development		
For accepted, accepted subject to requirements and assessable development (code, code (fast tracked) and impact)		
Environmental protection and buffering		
PO1 Development maintains and protects and MSES by: (a) locating in areas that avoid adverse impacts on MSES; or (b) where adverse environmental impacts cannot be avoided, impacts are minimised and an environmental offset is provided for any residual adverse impacts; and (c) the underlying ecological processes and biodiversity values of MSES are maintained or enhanced. Editor's note – (i) to assist in demonstrating achievement of an environmental and ecological assessment may be required to demonstrate compliance with this performance criterion; (ii) where it is demonstrated that adverse impacts cannot be avoided or minimised, significant residual impacts on matters of state environmental significance may require an offset in accordance in accordance with the *Environmental Offsets Act 2014.*	**AO1** Development locates outside of an area supporting MSES as shown on map OM5.	**Not applicable (AO1)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development is sited outside of an area supporting MSES as shown on map OM5. Refer to section 5, 6.6 and 6.16 and Figure 29, Figure 30 and Figure 37.
RDCE Note – Performance outcome PO2 missing / absent from Table 7.2.4.3 (Natural environment overlay code) of Charters Towers Regional Town Plan Version 2 (Charters Towers Regional Council, 2020)		
Buffers		

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
PO3	Development is setback from and provides an adequate vegetated buffer to areas containing MSES to: (a) protect these areas and their values from threatening processes; (b) avoid edge effects such as undesirable microclimate effects and threats from non-native or pest fauna or flora; and (c) maintain and enhance ecological connectivity.	**AO3**	A buffer extending from the outside edge of an area of MSES is provided and has a minimum width of 200 m where located outside an urban zone.	**Complies with AO3** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development is in the rural zone. The proposed development is setback over 200m from an area supporting MSES as shown on map OM5. Refer to section 5, 6.6 and 6.16 and Figure 29, Figure 30 and Figure 37.
PO4	An adequate buffer to a wetland in a MSES area is provided and maintained to: (a) protect or enhance habitat values, connectivity and other ecological processes and values; (b) protect water quality and aquatic conditions; (c) maintain natural micro-climatic conditions; (d) maintain natural hydrological processes; (e) prevent mass movement, gully erosion, rill erosion, sheet erosion, tunnel erosion, stream bank erosion, wind erosion, or scalding; and	**AO4**	A vegetated and development free buffer is provided and maintained extending from the high bank of the following: (a) 100m wide buffer to a river; or (b) 50m wide buffer to waterway.	**Complies with AO4** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development is in the rural zone. The proposed development complex is setback over 100 m from the Reid River. The proposed development is setback over 50 m from a waterway and wetland in a MSES area. Refer to section 5, 0, 6.6, 6.7, 6.16 and 6.16 and Figure 24, Figure 30, Figure 31 and Figure 37.

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
	(f) prevent loss or modification of chemical, physical or biological properties or functions of soil.			
PO5	Isolated habitat areas are linked by a continuous corridor to provide effective ecological connectivity and to create additional linkages along waterways, wetlands, drainage lines, ridgelines, and other areas where possible.	**AO5**	Development provides a continuous corridor with a minimum width of 100m linking areas of protected vegetation to each other and other vegetation areas off site.	**Complies with AO5** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development is in the rural zone. The proposed development does not propose to clear areas of protected vegetation and setback over 200 m from an area supporting MSES as shown on map OM5. Refer to section 5, 6.6 and 6.16 and Figure 29, Figure 30 and Figure 37. The majority of regulated vegetation that exists on the subject land is contiguous with regulated vegetation areas that adjoin the subject land.
Assessable development				
General				

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
PO6	Alterations to natural landforms, hydrology and drainage patterns do not adversely impact on areas containing MSES.	**AO6**	No acceptable outcome is nominated.	**Complies with PO6** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. As there are no construction works, there are no alterations to existing landforms. Consequently, hydrology and drainage patterns shall be the same as pre-development conditions. The proposed development complex is sited above the 1%AEP flood level and therefore will be protected from ingress of hazards (e.g. flood) and will in turn protect adjoining environments (e.g. protected vegetation, habitats and waterways) from potential impact. Refer to section 6.5.6 and Appendix R. Consequently, the proposed development shall have no adverse impacts on MSES as a result of alterations to natural landforms, hydrology and drainage patterns.
PO7	Development retains and enhances riparian vegetation along watercourses and drainage corridors, and vegetation along timbered ridgelines.	**AO7**	No acceptable outcome is nominated.	**Complies with PO7** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure.

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
				The proposed development complex is setback over 500 m from the Reid River. No clearing of vegetation is proposed as part of the proposed development. Consequently, no riparian vegetation along watercourses and drainage corridors will be impacted by the proposed development. Refer to section 5, 0, 6.6, 6.7, 6.16 and 6.16 and Figure 24, Figure 30, Figure 31 and Figure 37.
PO8	Development avoids direct and indirect impacts on significant ecological communities and significant species and their habitats, including disturbance from the presence of vehicles, pedestrian use, increased exposure to domestic animals, noise and lighting impacts.	**AO8**	No acceptable outcome is nominated.	**Complies with PO8** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development complex has been sited, constructed and shall be managed to avoid direct and indirect impacts on significant ecological communities and significant species and their habitats. Refer to section 5, 6.6.4, 6.6.5, 6.16 and 6.17 and Figure 38.
PO9	Areas of habitat that support a critical life cycle stage such as feeding, breeding or roosting or ecological function for threatened species, ecological communities or migratory	**AO9**	No acceptable outcome is nominated.	**Complies with PO9** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure.

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
	species are protected and not impacted by development.			The proposed development complex has been sited, constructed and shall be managed to minimise adverse impacts to areas of habitat that support a critical life cycle stage such as feeding, breeding or roosting or ecological function for threatened species, ecological communities or migratory species. No clearing of vegetation is proposed as part of the proposed development. All areas associated with the proposed development have existing built infrastructure or cropping land. Refer to section 5, 6.6.4, 6.6.5, 6.16 and 6.17 and Figure 38.
PO10	Buffering, rehabilitation or restoration protects and enhances MSES and their underlying ecological processes, habitat and biodiversity values by: (a) using site appropriate and locally occurring native species; (b) replicating as far as practicable, the species composition and structural components of healthy remnant vegetation and associated habitats, including understorey vegetation; and (c) excluding environmental weeds, declared plants and other non-native plants likely to displace	**AO10**	No acceptable outcome is nominated.	**Complies with PO10** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. No clearing of vegetation is proposed as part of the proposed development. The proposed development complex has been sited, constructed and shall be managed to minimise adverse impacts to areas of MSES.

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
	native flora or fauna species or degrade habitat.			All areas associated with the proposed development have existing built infrastructure or cropping land. Refer to section 5, 6.6.4, 6.6.5, 6.16 and 6.17 and Figure 38.
PO11	Development: (a) avoids the introduction of pest species (plant or animal) that pose a risk to the ecological integrity and biodiversity values of MSES; and (b) includes appropriate pest management practices to control any existing threat of pest species in a way that provides for the long term ecological integrity of MSES.	**AO11**	No acceptable outcome is nominated.	**Complies with PO11** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. Mitigation measures shall be implemented during operation of the proposed development to minimise the risk of introducing pest species (plant or animal) onto the subject land. This shall include preparation of a Biosecurity Management Plan which outlines weed control practices and plant and equipment cleaning and inspection protocols to avoid the introduction and spread of weeds and to control existing declared weeds on-site and introduction and proliferation of pest animals on the subject land.
Ecological corridors				
PO12	Development protects an ecological corridor through: (a) enhancing ecological connectivity and habitat extent; and	**AO12**	No acceptable outcome is nominated.	**Complies with PO12** The proposed use is for "Intensive Animal Industry" being the establishment of a beef

Performance Outcomes	Acceptable Outcomes	Compliance Assessment
(b) effectively linking habitats on and/or adjacent to the site. Editor's note – Ecological corridors and habitat linkages have dimensions and characteristics to support: (i) ecological processes and functions that enable the natural change in distributions of species and provide connectivity between populations of species over long periods of time; (ii) ecological responses to climate change; (iii) connectivity between large tracts and patches of remnant vegetation, habitat areas and areas supporting MSES; and (iv) effective and unhindered day-to-day and seasonal movement of avian, terrestrial and aquatic fauna.		cattle feedlot using existing built infrastructure. No clearing of vegetation is proposed as part of the proposed development. The proposed development complex has been sited, constructed and shall be managed to minimise adverse impacts to ecological corridors. All areas associated with the proposed development have existing built infrastructure or cropping land. Refer to section 5, 6.6.4, 6.6.5, 6.16 and 6.17 and Figure 38.
Wetland ecological values		
PO13 Development involving the clearing of vegetation protects the biodiversity, ecological values and processes, and hydrological functioning of a wetland area, including: (a) water quality values; (b) aquatic habitat values; (c) terrestrial habitat values; and (d) usage of the site by native wetland fauna species or communities.	**AO13** No acceptable outcome is nominated.	**Complies with PO13** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. No clearing of vegetation is proposed as part of the proposed development. No riparian vegetation shall be disturbed. The proposed development complex has been sited, constructed and shall be managed to minimise adverse impacts to biodiversity, ecological values and processes, and

Performance Outcomes	Acceptable Outcomes	Compliance Assessment
		hydrological functioning of wetland areas adjoining the subject land. All areas associated with the proposed development have existing built infrastructure or cropping land. Refer to section 5, 6.6.4, 6.6.5, 6.16 and 6.17 and Figure 38.
Wetland hydrology and stormwater management		
PO14 The existing surface water hydrological regime of the wetland is enhanced or maintained through: (a) providing a net ecological benefit and improvement to the environmental values and functioning of a wetland in a wetland protection area; or (b) rehabilitating the existing hydrological regime or restore the natural hydrological regime of a wetland.	**AO14** No acceptable outcome is nominated.	**Complies with PO14** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. As there are no construction works and therefore are no alterations to existing landforms. Consequently, hydrology and drainage patterns shall be the same as pre-development conditions. The operation of the proposed development shall be in accordance with relevant best practice procedures and guidelines for beef cattle feedlots as outlined in the SBEMP. Refer to section 5, Appendix Q and Figure 4 and Figure 7.
Land degradation		

Performance Outcomes	Acceptable Outcomes	Compliance Assessment
PO15 Development avoids land degradation in a wetland area, including: (a) mass soil movement, gully erosion, rill erosion, sheet erosion, tunnel erosion, stream bank erosion, wind erosion, or scalding; and (b) loss or modification of chemical, physical or biological properties or functions of soils.	**AO15** No acceptable outcome is nominated.	**Complies with PO15** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. As there are no construction works, there are no land disturbance activities other than cropping agricultural land. The proposed development is sited some 500 m from a wetland area mapped along the Reid River. Effluent and solid waste shall be sustainably applied to crops within the dedicated waste utilisation area. These areas will be monitored regularly with soil and crop tissue sampling to ensure that nutrients are adequate and do not exceed the crop requirements. Appropriate nutrient balancing shall ensure nutrients are not leached thus avoiding any adverse impacts to soils. The operation of the proposed development shall be in accordance with relevant best practice procedures and guidelines for beef cattle feedlots as outlined in the SBEMP. Refer to section 5, Appendix Q and Figure 4 and Figure 7.

Performance Outcomes		Acceptable Outcomes		Compliance Assessment
PO16	Degraded areas supporting MSES or other environmental values important to the maintenance of underlying ecological processes required to maintain biodiversity, are rehabilitated as near as is practical to the naturally occurring state of native plant species and ecological communities.	**AO16**	No acceptable outcome is nominated.	**Complies with PO16** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. As there are no construction works, there are no land disturbance activities other than cropping agricultural land. The proposed development is sited some 500 m from MSES mapped along the Reid River. The operation of the proposed development shall be in accordance with relevant best practice procedures and guidelines for beef cattle feedlots as outlined in the SBEMP. Refer to section 5, Appendix Q and Figure 4 and Figure 7.
Monitoring				
PO17	During construction and operation of development, ongoing management, monitoring and maintenance is undertaken to ensure impacts on areas supporting MSES and their underlying ecological processes and biodiversity values are avoided or minimised.	**AO17**	No acceptable outcome is nominated.	**Complies with PO17** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. Consequently, there are no construction works.

Performance Outcomes	Acceptable Outcomes	Compliance Assessment
		The proposed development is sited some 500 m from MSES mapped along the Reid River. The operation of the proposed development shall be in accordance with relevant best practice procedures and guidelines for beef cattle feedlots as outlined in the SBEMP. Refer to section 5, Appendix Q and Figure 4 and Figure 7. The SBEMP includes monitoring and maintenance procedures that will ensure impacts on areas supporting MSES and their underlying ecological processes and biodiversity values are avoided or minimised.
Environmental Offsets		
PO18 Where development cannot reasonably avoid impacts on MNES or MSES, any unavoidable impacts should be minimised and offset, in accordance with the *Environmental Offsets Regulation 2014*.	**AO18** No acceptable outcome is nominated.	**Not Applicable (AO18)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. No clearing of vegetation is proposed as part of the proposed development. Consequently, the proposed development avoids impacts on MNES and MSES and an offset, in accordance with the *Environmental Offsets Regulation 2014* is not required.

Performance Outcomes	Acceptable Outcomes	Compliance Assessment
		Refer to section 5, 0, 6.6, 6.7, 6.16 and 6.17 and Figure 24, Figure 30, Figure 31 and Figure 37.

Table 65 – Natural environment overlay code purpose and outcomes (Charters Towers Regional Town Plan)

ID	Purpose / Outcome	Relevance	Response
1	**Purpose**		
a)	protect important environmental areas including those Matters of State Environmental Significance (MSES) and their associated ecological processes and biodiversity values;	Yes	The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development is sited outside of an area supporting MSES as shown on map OM5.
b)	maintain or enhance the health and resilience of biodiversity to support ecological integrity;	Yes	The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development has been designed and constructed and shall be operated to maintain or enhance the health and resilience of biodiversity to support ecological integrity in accordance with the National Guidelines for Beef Cattle Feedlot (MLA, 2012a) and National Beef Cattle Feedlot Environmental Code of Practice (2012b).
c)	maintain or enhance ecological connectivity to preserve fauna movement, habitat values, remnant vegetation and ecological processes;	Yes	The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development has been designed and constructed and shall be operated to maintain or enhance ecological connectivity to preserve fauna movement, habitat values, remnant vegetation and ecological processes in accordance with the National Guidelines for Beef Cattle Feedlot (MLA, 2012a) and National Beef Cattle Feedlot Environmental Code of Practice (2012b).

d)	protect or enhance water quality, ecosystem health and the natural hydrological functioning of waterways, wetlands and their riparian areas and buffers; and	Yes	The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development has been designed and constructed and shall be operated to protect or enhance water quality, ecosystem health and the natural hydrological functioning of waterways, wetlands and their riparian areas and buffers in accordance with the National Guidelines for Beef Cattle Feedlot (MLA, 2012a) and National Beef Cattle Feedlot Environmental Code of Practice (2012b).
e)	protect, rehabilitate and manage biodiversity and ecosystem services values.	Yes	The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development has been designed and constructed and shall be operated to protect, rehabilitate and manage biodiversity and ecosystem services values in accordance with the National Guidelines for Beef Cattle Feedlot (MLA, 2012a) and National Beef Cattle Feedlot Environmental Code of Practice (2012b).
2	**Outcomes**		
a)	development avoids adverse impacts on MSES and their associated ecological processes and biodiversity values, unless: iii) development incorporates and maintains appropriate buffers in accordance with minimum best practice distances so as to avoid adverse impacts on environmental values iv) development maintains or enhances the scenic amenity of important natural landscapes, views and vistas.	Yes	The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development is sited outside of an area supporting MSES as shown on map OM5.
b)	development avoids direct and indirect impacts resulting in species or habitat loss or disturbance, soil degradation or pollution due to vegetation clearing, erosion and contamination, salinity, waste disposal or modification to natural processes;	Yes	The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. No clearing of regulated vegetation is proposed. The proposed development has been designed and constructed and shall be operated to avoid direct and indirect impacts resulting in species or habitat

			loss or disturbance, soil degradation or pollution due to vegetation clearing, erosion and contamination, salinity, waste disposal or modification to natural processes in accordance with the National Guidelines for Beef Cattle Feedlot (MLA, 2012a) and National Beef Cattle Feedlot Environmental Code of Practice (2012b).
c)	fragmentation of remnant vegetation, ecological corridors and existing habitat is avoided to maintain ecological function and biodiversity values and to maintain or increase the resilience of ecosystems and habitat to threatening processes, including the impacts of climate change;	Yes	The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. No clearing of regulated vegetation is proposed. The clearing of vegetation for the proposed development is for a purpose, vegetation type and circumstance that is identified under the Vegetation Management Act 1999 as exempt being Category X regulated vegetation which is exempt.
d)	a network of connecting corridors and linkages between areas supporting MSES, wetlands, waterways, remnant vegetation, habitat areas and other natural areas are maintained, created or restored;	Yes	The proposed development has been designed and located to maintain the network of connecting corridors and linkages between areas supporting MSES, wetlands, waterways, remnant vegetation, habitat areas and other natural areas and enhance continuity of wildlife movement and ecological processes. No clearing of regulated vegetation is required.
e)	development avoids direct and indirect impacts resulting in species or habitat loss or disturbance, soil degradation or pollution due to vegetation clearing, erosion and contamination, salinity, waste disposal or modification to natural processes;	Yes	The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. Effluent and solid waste shall be sustainably applied to crops within the dedicated waste utilisation area. Appropriate nutrient balancing shall ensure nutrients are not leached thus avoiding any adverse impacts to soils. The operation of the proposed development shall be in accordance with relevant best practice procedures and guidelines for beef cattle feedlots as outlined in the Site Based Management Plan.
f)	development including infrastructure, is designed and located to maintain and enhance continuity of wildlife movement and ecological processes;	Yes	The proposed development has been designed and located to maintain and enhance continuity of wildlife movement and ecological processes. No clearing of regulated vegetation is required.
g)	the hydrological regime of wetlands and waterways is protected and rehabilitated;	Yes	The proposed development has been sited and designed and shall be operated to protect the hydrological regime of wetlands and waterways. Hydrology and drainage patterns shall be the same as pre-development conditions.

h)	development avoids encroachment or expansion into sensitive habitats along riparian areas unless it is for management of public access, recreation, public use or other public benefit;	Yes	The proposed development has been sited and designed so that all buildings and structures are not located with areas mapped as regulated vegetation, wetlands, riparian areas, wildlife habitat or protected areas. No clearing of regulated vegetation is required.
i)	development maintains sustainable community access to waterways, national parks and other land in protected area estates;	Yes	The proposed development has been designed and constructed and shall be operated to maintain community access to waterways, national parks and other land in protected area estates as far as relevant to the proposed development.
j)	development incorporates and maintains appropriate buffers in accordance with minimum best practice distances so as to avoid adverse impacts on environmental values;	Yes	The proposed development has been designed and constructed and shall be operated to maintain appropriate buffers in accordance with the National Guidelines for Beef Cattle Feedlot (MLA, 2012a) and National Beef Cattle Feedlot Environmental Code of Practice (2012b) so as to avoid adverse impacts on environmental values.
k)	development maintains or enhances the scenic amenity of important natural landscapes, views and vistas.	Yes	The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. Consequently, the scenic amenity of important natural landscapes, views and vistas remain the same as pre-development.

8.2.2.2.4 Regional infrastructure overlay code

(1) The purpose of the Regional infrastructure overlay code is to:

(a) protect regionally significant infrastructure including the Tabletop en-route or secondary radar, Very high frequency communication facilities and Satelite ground station aviation facilities from nearby development that is sensitive to, or creates a risk for the infrastructure; and
(b) protect nearby development from the potential impacts of the regionally significant infrastructure.

(2) The purpose of the code will be achieved through the following overall outcomes:

(a) effective separation and interface treatment is provided to major infrastructure sites and corridors to avoid risk to people and property and to minimise noise, odour and visual impacts;
(b) easy access is provided to and along major infrastructure sites and corridors;
(c) development does not compromise the safe and efficient operation, maintenance or expansion of major infrastructure;
(d) existing and planned regional infrastructure facilities and corridors are protected from encroachment by sensitive land uses or incompatible development;
(e) development does not create any threat to the provision of a safe and reliable supply of services and infrastructure to all users, and avoids any potential interference with the ongoing operation, maintenance and augmentation of the services and infrastructure;
(f) development does not increase the potential for safety concerns, nuisance and complaints and minimises the need for measures to be introduced in the operation of the infrastructure to reduce potential impacts on surrounding areas; and
(g) development minimises overlooking of and visual exposure to the infrastructure sites and corridors.

An assessment of the proposed development against the performance outcomes of the Regional infrastructure overlay code and code purpose are provided in Table 66 and Table 67. The compliance statements outlined in Table 66 and Table 67 demonstrate that the proposed development complies with the accepted outcomes and purpose of the Regional infrastructure overlay code and will not compromise the purpose or overall outcomes sought for the individual themes with the Regional infrastructure overlay code.

Table 66 – Regional infrastructure overlay code (*Charters Towers Regional Town Plan)*

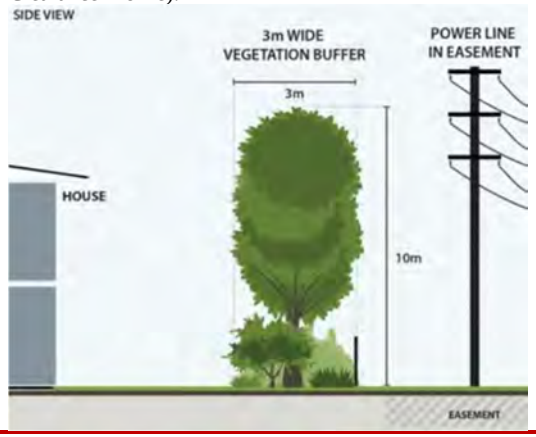
Performance outcomes		Acceptable Outcomes		Compliance Assessment
Table 7.2.5.3 – Regional Infrastructure overlay code: Assessable development POs and AOs				
General				
PO1	Development does not increase risk to community health or safety, or the operation and reliability of major regional infrastructure.	**AO1**	No acceptable outcome is nominated	**Complies with PO1** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The proposed development complex is setback over 950 m from major infrastructure such as the Flinders Highway and major electricity infrastructure. Refer to Figure 50. Further, the proposed development does not involve the establishment of class 1, 2, 3 or 4 buildings on the subject land. Refer to section 5. The proposed development shall utilise the existing subject land entrance off Runway Station Road and access to the Flinders Highway shall remain the same as pre-development conditions. Consequently, the proposed development shall not increase risk to

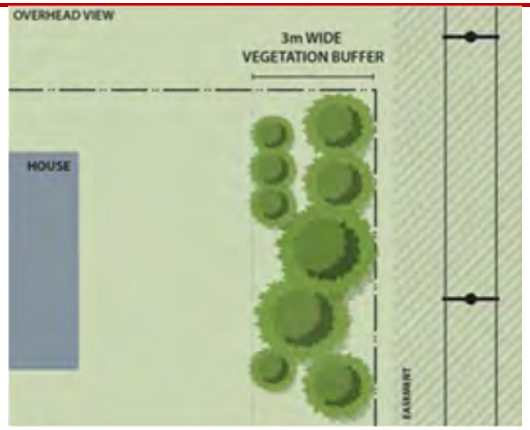
				community health or safety, or the operation and reliability of major regional infrastructure. Refer to Figure 50.
PO2	Development involving a sensitive land use is sufficiently separated from major infrastructure to: (a) ensure community safety; (b) minimise the likelihood of nuisance or complaint. and (c) is located, designed and constructed to protect the integrity of the major infrastructure; and (d) maintains adequate access for any required maintenance or upgrading of the major infrastructure.	**AO2**	Sensitive land uses maintain a setback of at least: (a) 50 m from a transmission substation; (b) 20 m from any other substation; (c) 40 m from a Powerlink high voltage corridor; (d) 20 m from bulk water storage infrastructure; (e) 30 m from a transmission line equal or greater than 66kV (identified as a major electricity infrastructure on OM6).	**Not applicable (AO2)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5. The proposed use is not a sensitive land use as defined under section SC1.2 Administrative terms of the *Charters Towers Regional Town Plan* and the Planning Regulation 2017.
PO3	Other than where they are separated from the infrastructure by a road, buildings are oriented to avoid direct overlooking of major infrastructure or corridors.		No acceptable outcome is nominated. Editor's note–The figure below provides an illustration of buildings oriented away from infrastructure. 	**Not Applicable (PO4)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The proposed development complex is setback over 950 m from major infrastructure such as the Flinders Highway and major electricity infrastructure. Refer to Figure 50.

				Further, the proposed development does not involve the establishment of class 1, 2, 3 or 4 buildings on the subject land. Refer to section 5.
PO4	Major infrastructure within private land is protected by easement in favour of the service provider.	**AO4**	Existing easements are maintained and where none currently exist, new easements are created which are sufficient for the provider's requirements.	**Not Applicable (PO4)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The proposed development complex is setback over 950 m from major infrastructure such as the Flinders Highway and major electricity infrastructure. Consequently, the subject land is not burdened by major infrastructure. Refer to Figure 50.
PO5	Where in the building restriction area, development (including any associated permanent or temporary structures landscaping) does not obstruct a clear line of sight between the Tabletop en-route or secondary radar, Very high frequency communication facilities and Satelite ground station aviation facilities and associated communication satellites.	**AO5**	Where in the building restriction area, development (including any associated permanent or temporary structures landscaping) does not exceed 12 m in building height.	**Not Applicable (PO5)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The subject land is located at Reid River and is not located with the building restriction area of Aviation Infrastructure – Aviation facility.

				Consequently, the subject land is not burdened by major infrastructure. Refer to Figure 50
Electricity Infrastructure (including substations)				
PO6	Where major electricity infrastructure is located within public open space, the dimensions and characteristics of the open space area are sufficient to accommodate the electricity easement, in combination with compatible recreational facilities and landscaping, so that: (a) it has an open and expansive character, with landscape design which assists in breaking up the linear and vertical dominance of the infrastructure; (b) landscaping is located outside the easement area and substantively screens and softens the appearance of poles, towers or other structures and (c) recreational facilities and landscaping are compatible with the electricity infrastructure, having regard to safety, height, the conductivity of materials and access to the electricity infrastructure by the electricity provider.	**AO6**	No acceptable outcome is nominated. Editor's note –The figures below provide an example of a well integrated transmission corridor. Editor's note–Refer also to the Landscaping code.	**Not Applicable (PO6)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 5 and shown on Figure 7 and does not involve the establishment of electricity infrastructure.

PO7	Where major electricity infrastructure is located in a road: (a) an attractive, functional and safe streetscape is achieved; (b) street furniture, planting and lighting are compatible with the electricity infrastructure, having regard to safety, height and the conductivity of materials; (c) the reserve has sufficient width to accommodate significant landscaping which assists in screening and softening poles, towers or other structures and equipment from nearby sensitive land uses; (d) the clearances required under schedules 4 and 5 of the Electrical Safety Regulations 2002 can be achieved; and (e) convenient access to the infrastructure by the electricity provider is maintained.	**AO7**	No acceptable outcome is nominated.	**Not Applicable (PO7)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 5 and shown on Figure 7 and does not involve the establishment of electricity infrastructure.
PO8	Development avoids potential noise nuisance from electricity substations.	**AO8**	Noise emissions do not exceed 5db(A) above background noise level at the facia of a building measured in accordance with AS 1055 Acoustics – description and measurement of environmental noise.	**Not Applicable (PO8)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 5 and shown on Figure 7 and does not involve the

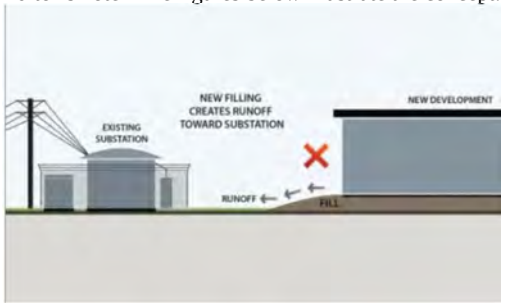
				establishment of electricity infrastructure.
PO9	There is sufficient space within the site to establish landscaping which substantively assists in screening and softening poles, towers or other structures and equipment associated with major electricity infrastructure and substations.	**AO9**	A minimum 3m wide densely planted landscaped buffer is provided along the boundary adjoining the major electricity infrastructure, including provision for advanced trees and shrubs that will grow to a minimum height of 10m. Editor's note–The figures below provide an example but are not drawn to scale. Applicants may find guidance in Powerlink's "Screening your home from powerlines – A guide for planting trees and shrubs outside of easements to screen powerlines". Applicants should also note that vegetation will need to maintain statutory clearances (refer Ergon's Standard for Vegetation Management and Standard for Vegetation Clearance Profile). 	**Not Applicable (PO9)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 5 and shown on Figure 7 and does not involve the establishment of electricity infrastructure.

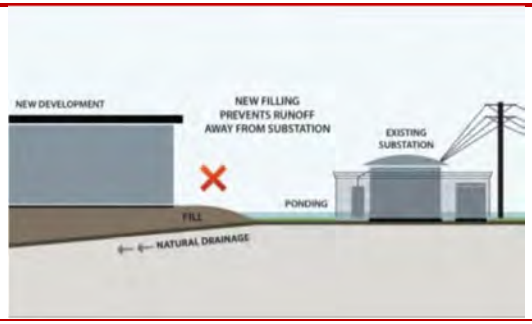


Editor's note–Refer also to the Landscaping code.

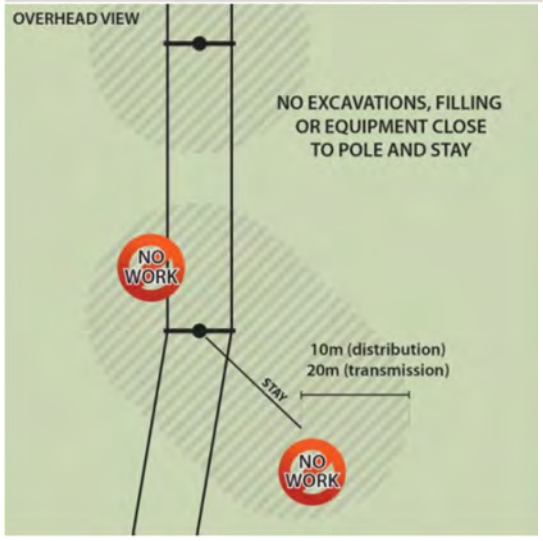
Reconfiguring a lot			
PO10	Reconfiguration of lots does not compromise or adversely impact upon the efficiency, functionality and integrity of major infrastructure and services networks.	No acceptable outcome is nominated.	**Not Applicable (PO10)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 5 and shown on Figure 7 and does not involve reconfiguration of a lot.
PO11	Lot reconfiguration integrates major infrastructure sites and corridors within the overall layout. Layout and design: (a) ensures land of sufficient size and suitability is allocated to accommodate the existing and future major infrastructure networks;	No acceptable outcome is nominated.	**Not Applicable (PO11)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 5 and shown on Figure 7 and does not involve reconfiguration of a lot.

	(b) as far as possible, minimises the likely visual prominence of major infrastructure; and (c) provides for an interface to surrounding uses that minimises the potential for nuisance (including noise and odour), health and safety concerns. Editor's note–Applicants should consult with the infrastructure providers early in the planning process to determine relevant infrastructure requirements.			
PO12	Where the reconfiguration involves major electricity infrastructure corridor, the corridor is incorporated within a useable public open space network wherever possible.		No acceptable outcome is nominated.	**Not Applicable (PO12)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 5 and shown on Figure 7 and does not involve reconfiguration of a lot.
Operational Works				
PO13	Development within a bulk water storage area is located, designed and constructed to: (a) protect the integrity of the water supply infrastructure; and (b) maintains adequate access for any required maintenance or upgrading work to the water supply infrastructure.	**AO13**	Development does not involve works within a bulk water storage infrastructure corridor.	**Not Applicable (PO13)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7 and does not involve development within a bulk water storage area.

PO14	Earthworks do not restrict access to major electricity infrastructure by the electricity providers, using their normal vehicles and equipment.	**AO14**	No acceptable outcome is nominated.	**Not Applicable (PO14)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The proposed development complex is setback over 950 m from major electricity infrastructure running along the Flinders Highway. Consequently, the proposed development shall not restrict access to major electricity infrastructure by the electricity providers. Refer to Figure 50.
PO15	There is no worsening of flooding, drainage or erosion conditions affecting regional infrastructure.	**AO15**	No acceptable outcome is nominated. Editor's note –The figures below illustrate the concept.  	**Complies with PO15** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The proposed development complex is setback over 950 m from the closest regional infrastructure being the Flinders Highway and major electricity infrastructure running parallel with the highway. The proposed development shall utilise the existing subject land entrance off Runway Station Road and access to the Flinders Highway shall remain the same

				as pre-development conditions. Refer to Figure 50.
PO16	Development maintains the clearances required under schedules 4 and 5 of the Electrical Safety Regulations 2002.	**AO16**	No acceptable outcome is nominated.	**Not Applicable (PO16)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The proposed development complex is setback over 950 m from major electricity infrastructure running along the Flinders Highway. Consequently, clearances required under schedules 4 and 5 of the Electrical Safety Regulations 2002 shall be met. Refer to Figure 50.
PO17	Earthworks are undertaken in a way which: (a) ensures stability of the land on or adjoining electricity infrastructure. (b) does not otherwise impact on the safety and reliability of the electricity infrastructure; and	**AO17.1**	No earthworks are undertaken: (a) for overhead transmission infrastructure, within 20 m of a transmission tower or pole; or (b) for overhead distribution infrastructure, within 10 m of a tower, pole or stay; or (c) for substations, within 10 m of a property boundary shared with the substation. Editor's note–The figures below illustrate the concept.	**Not Applicable (PO17)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7.

(c) does not restrict the placement or use of the electricity provider's equipment.



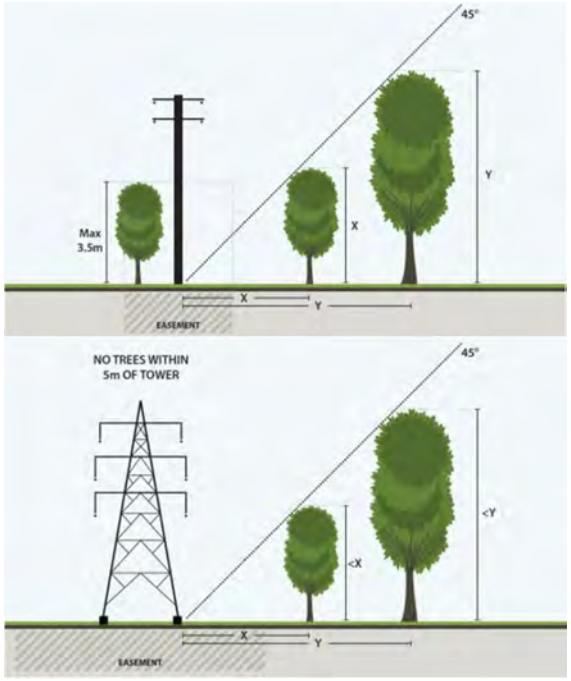
The proposed development complex is setback over 950 m from major electricity infrastructure running along the Flinders Highway.

Further, the proposed development does not involve earthworks as all infrastructure is existing.

Consequently, no earthworks shall be undertaken within close proximity to overhead transmission infrastructure, overhead distribution infrastructure or substations. Refer to Figure 50.

		AO17.2	No earthworks are undertaken, or other loading or displacement of earth caused, within the easement of an underground power line.	**Not Applicable (AO17.2)** Refer to AO17.1 response.
PO18	Other services and infrastructure works (such as stormwater, sewerage, water and the like) do not impact on the safety and reliability of electricity infrastructure.	**AO18.1**	Underground services are not located within 20 m of a tower, pole, stay or substation boundary.	**Not Applicable (PO18)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The proposed development complex is setback over 950 m from major electricity infrastructure running along the Flinders Highway. Further, the proposed development does not involve other services and infrastructure works (such as stormwater, sewerage, water and the like. Consequently, the proposed development shall not impact on the safety and reliability of electricity infrastructure. Refer to Figure 50.
		AO18.2	No valve pits occur within: (a) for transmission infrastructure, 60m of a tower, pole or stay; or (b) for distribution infrastructure, 20m of a tower, pole or stay	**Not Applicable (AO18.2)** Refer to AO18.1 response.
		AO18.3	Pipelines with cathodic protection systems, comply with part 11 of the Electrical Safety Regulation 2013.	**Not Applicable (AO18.3)** Refer to AO18.1 response.

		AO18.4	Underground services traversing an easement, cross at right angles to the overhead or underground lines.	**Not Applicable (AO18.4)** Refer to AO18.1 response.
		AO18.5	Trenches for services are backfilled to be compacted in 150 mm layers to at least 95% modified dry density compaction ratio.	**Not Applicable (AO18.5)** Refer to AO18.1 response.
		AO18.6	Trenches under construction are not left open overnight.	**Not Applicable (AO18.6)** Refer to AO18.1 response.
PO19	Vegetation does not pose a risk to the safety or reliability of electricity infrastructure.	**AO19.1**	Vegetation planted within an easement of an overhead powerline or, where there is no easement, the area of influence of a powerline has a mature height of no more than 3.5 metres.	**Not Applicable (PO19)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The proposed development complex is setback over 950 m from major electricity infrastructure running along the Flinders Highway. Further, the subject land is not burdened with an easement in favour of an overhead powerline. Consequently, any vegetation planted shall not pose a risk to the safety or reliability of electricity infrastructure. Refer to Figure 50.
		AO19.2	Vegetation planted within an underground powerline easement does not have a mature root	**Not Applicable (AO19.2)** Refer to AO19.1 response

		system in >150 mm depth and is not located directly over the powerline.	
	AO19.3	Vegetation adjoining easements complies with the clearance dimensions illustrated in the figure below. 	**Not Applicable (AO19.3)** Refer to AO19.1 response
	AO19.4	Planting complies with (as relevant to the infrastructure concerned): (a) Energex's Safe Tree Guidelines; or (b) Ergon's Plant Smart brochures; or (c) Powerlink's Screening Your Home from Powerlines information sheet and Property and Easements / Landowner information sheets).	**Not Applicable (AO19.4)** Refer to AO19.1 response

			Editor's note–Further information can be found on the websites of the abovementioned infrastructure providers.

Table 67 – Regional Infrastructure overlay code purpose and outcomes (Charters Towers Regional Town Plan)

ID	Purpose / Outcome	Relevance	Response
1	**Purpose**		
a)	protect regionally significant infrastructure including the Tabletop en-route or secondary radar, Very high frequency communication facilities and Satelite ground station aviation facilities from nearby development that is sensitive to, or creates a risk for the infrastructure; and	Yes	The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development complex is setback over 950 m from regionally significant infrastructure including major electricity infrastructure, the Flinders Highway and the Tabletop en-route or secondary radar, Very high frequency communication facilities and Satelite ground station aviation facilities.
b)	protect nearby development from the potential impacts of the regionally significant infrastructure.	Yes	The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development complex is setback over 950 m from regionally significant infrastructure including major electricity infrastructure, the Flinders Highway and the Tabletop en-route or secondary radar, Very high frequency communication facilities and Satelite ground station aviation facilities.
2	**Outcomes**		
a)	effective separation and interface treatment is provided to major infrastructure sites and corridors to avoid risk to people and property and to minimise noise, odour and visual impacts;	Yes	The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The subject land is not burdened by major infrastructure. The proposed development is setback over 950 m from the closest regionally significant infrastructure being major electricity infrastructure along the Flinders Highway, Mt Isa railway line and the Flinders Highway.

b)	easy access is provided to and along major infrastructure sites and corridors;	Yes	The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development complex is setback over 950 m from the closest regionally significant infrastructure being major electricity infrastructure along the Flinders Highway, Mt Isa railway line and the Flinders Highway.
c)	development does not compromise the safe and efficient operation, maintenance or expansion of major infrastructure;	Yes	The subject land is not burdened by major infrastructure. The proposed development complex is setback over 950 m from the closest regionally significant infrastructure being major electricity infrastructure along the Flinders Highway, Mt Isa railway line and the Flinders Highway. Consequently, the proposed development does not compromise the safe and efficient operation, maintenance or expansion of major infrastructure.
d)	existing and planned regional infrastructure facilities and corridors are protected from encroachment by sensitive land uses or incompatible development;	Yes	The subject land is not burdened by major infrastructure or a proposed major infrastructure corridor. The proposed development complex is setback over 950 m from the closest regionally significant infrastructure being major electricity infrastructure along the Flinders Highway, Mt Isa railway line and the Flinders Highway. Consequently, existing and planned regional infrastructure facilities and corridors are protected from encroachment by sensitive land uses or incompatible development.
e)	development does not create any threat to the provision of a safe and reliable supply of services and infrastructure to all users, and avoids any potential interference with the ongoing operation, maintenance and augmentation of the services and infrastructure;	Yes	The subject land is not burdened by major infrastructure or a proposed major infrastructure corridor. The proposed development complex is setback over 950 m from the closest regionally significant infrastructure being major electricity infrastructure along the Flinders Highway, Mt Isa railway line and the Flinders Highway. Consequently, the proposed development does not create any threat to the provision of a safe and reliable supply of services and infrastructure to all users, and avoids any potential interference with the ongoing operation, maintenance and augmentation of the services and infrastructure.

f)	development does not increase the potential for safety concerns, nuisance and complaints and minimises the need for measures to be introduced in the operation of the infrastructure to reduce potential impacts on surrounding areas; and	Yes	The subject land is not burdened by major infrastructure or a proposed major infrastructure corridor. The proposed development complex is setback over 950 m from the closest regionally significant infrastructure being major electricity infrastructure along the Flinders Highway, Mt Isa railway line and the Flinders Highway. The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot and is not a sensitive land use.
g)	development minimises overlooking of and visual exposure to the infrastructure sites and corridors.	Yes	The subject land is not burdened by major infrastructure or a proposed major infrastructure corridor. The proposed development complex is setback over 950 m from the closest regionally significant infrastructure being major electricity infrastructure along the Flinders Highway, Mt Isa railway line and the Flinders Highway. The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot and is not a sensitive land use.

8.2.2.3 Development codes

8.2.2.3.1 Other development codes

8.2.2.3.1.1 Development works code

(1) The purpose of the Development works code is to:

(a) ensure all development is provided with appropriate infrastructure, parking spaces and services;
(b) ensure development manages stormwater and wastewater as part of the integrated total water cycle and in ways that help protect the environmental water values specified in the Environmental Protection (Water) Policy 2009 and the Stormwater Management Design Objectives in the State Planning Policy;
(c) protect surface water and ground water; and
(d) ensure development is designed, constructed, operated and maintained to eliminate any adverse impacts on the environment and the amenity of the locality.

(2) The purpose of the code will be achieved through the following overall outcomes:

(a) development is adequately serviced by utility and access infrastructure including roads, water, waste water, power, telecommunications, stormwater management and waste management;
(b) the integrity and efficiency of utility and access infrastructure systems is maintained;
(c) environmental values of receiving waters are protected from adverse development impacts arising from stormwater quality and flow;
(d) environmental values of receiving waters are protected from waste water impacts;
(e) public health and safety are protected and damage or nuisance caused by stormwater is avoided;
(f) stormwater management works is designed to maintain or recreate natural hydrological processes and minimise run-off;
(g) the function, safety and efficiency of the transport network is optimised;
(h) development within close proximity to existing or future public passenger transport facilities supports an integrated approach to land use and transport integration;
(i) development provides adequate on site vehicular access and adequate parking and servicing facilities for vehicles and parking facilities for bicycles;
(j) access, parking, servicing and associated manoeuvring areas are designed to be safe, functional and meet the reasonable demands generated by the development;
(k) provision of safe and non-discriminatory public and pedestrian access is provided;
(l) works in public streets and spaces enhance the pedestrian amenity and improve streetscape appearance;
(m) earthwork does not impact adversely on the amenity of the site or the surrounding area and does not result in increased flooding, drainage and soil erosions problems on upstream and downstream property; and

(n) development provides for the storage of generated waste in an environmentally acceptable manner and waste storage facilities are functionally appropriate for users of the facilities.

An assessment of the proposed development against the performance outcomes of the Development code and code purpose are provided in Table 68 and Table 69. The compliance statements outlined in Table 68 and Table 69 demonstrate that the proposed development complies with the accepted outcomes and purpose of the Development code and will not compromise the purpose or overall outcomes sought for the individual themes with the Development code.

Table 68 – Development works code (*Charters Towers Regional Town Plan)*

Performance outcomes		Acceptable Outcomes		Compliance Assessment
Table 8.3.1.3(a)—Development works code: Accepted development subject to requirements and assessable development				
Utility Infrastructure and services				
PO1	Development is serviced by an adequate, safe and reliable supply of potable and general use water, connected to reticulated water supply where possible.	**AO1**	Development is: (a) connected to Council's reticulated water supply network, including the installation of easily accessed water meters, in accordance with the Development works Town plan policy; or (b) if connection to Council's reticulated water supply network is not possible, a potable on site water supply is provided in accordance with the Development works Town plan policy.	**Complies with AO1** The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area not serviced by Council's reticulated water supply network. The proposed development is self sufficient as far as water supply is concerned and does not require connection to Council's reticulated potable water infrastructure. Refer to section 2, 3 and 5. The subject land has over 80 ML of surface water supply from the Reid River and is located within an unregulated groundwater area of the Water Plan (Burdekin Basin) 2007. Potable water supply shall be from groundwater or rainwater collected in tanks. Potable on-site water supply shall be within the requirements of the Development works Town plan Policy.
PO2	Development is serviced by appropriate waste water disposal infrastructure which ensures:	**AO2**	Development is: (a) connected to Council's reticulated sewerage treatment	**Complies with AO2**

	(a) no adverse ecological impacts on the receiving environment; (b) cumulative impacts of onsite waste water treatment are considered in assessing the likely environmental impacts; (c) public health is maintained; (d) the location, site area, soil type and topography is suitable for on site waste water treatment; and (e) the reuse of waste water does not contaminate any surface water or ground water.		system, in accordance with the Development works Town plan policy; or (b) if connection to Council's reticulated sewerage treatment system is not possible, waste water is treated in accordance with Development works Town Plan Policy.	The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area not serviced by Council's reticulated sewerage treatment system. The proposed development shall utilise existing built infrastructure as outlined in section 5 and shown on Figure 7 and does not require connection to Council's reticulated sewerage treatment infrastructure. Refer to section 2, 3 and 5. The existing development has a Council approved domestic wastewater system that can meet the demands of the proposed development. Domestic sewerage treatment shall be in accordance with Development works Town plan Policy.
PO3	Electricity supply network and telecommunication service connections are provided to the site and are connected.	**AO3.1**	The development is connected to electricity and telecommunications infrastructure in accordance with the standards of the relevant regulatory authority prior to the commencement of any use of the site.	**Complies with AO3.1** The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area and shall utilise existing built infrastructure as outlined in section 5 and shown on Figure 7. The existing development has connection to electricity and telecommunications services which are of a standard to meet the demands of the proposed development. No upgrades to the electricity supply or telecommunications services networks are proposed.

		AO3.2	Where not included in the development, provision is made for future telecommunications services (such as fibre optic cable) in accordance with the standards of the relevant regulatory authority.	**Not applicable (AO3.2)** The proposed development is an "Intensive Animal Industry" (Beef cattle feedlot) located in a rural area and the existing telecommunications are adequate to meet the needs of the proposed development. There is no provision for future telecommunications services.
Stormwater management (Editor's note–Refer also to the Stormwater management design objectives in the State planning policy.)				
PO4	Stormwater management is designed and operated to ensure that adjoining land and upstream and downstream areas are not adversely affected through any ponding or changes in flows: (a) ensure that adjoining land and upstream and downstream areas are not adversely affected through any ponding or changes in flows; and (b) direct stormwater to a lawful point of discharge through competently designed and constructed outlet works in a manner that reflects the predevelopment status. Editor's note– Stormwater quality must meet the design objectives within the Development works Town plan policy.	**AO4.1**	Development does not result in an increase in flood level or flood duration on upstream, downstream or adjacent properties.	**Complies with AO4.1** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. As there are no construction works, there are no earthworks associated with the establishment of the proposed development on the subject land. Refer to section 5. Those areas of the proposed development complex area from which stormwater runoff has a high organic matter and therefore a high pollution potential are sited within a controlled drainage area. The proposed development has been designed in accordance with the National Guidelines for Beef Cattle Feedlots (Meat and Livestock Australia Limited, 2012b) and the Reference Manual for the Establishment and Operation of Beef Cattle Feedlots in Queensland (Skerman, 2000).

			Appropriate drainage controls are installed to direct clean water away from the controlled drainage area and contaminated stormwater runoff is directed to drainage infrastructure where it is temporarily stored pending sustainable re-use on-site. As existing infrastructure shall be utilised the lawful point of discharge shall remain the same as pre-development. Refer to section 2, 3 and 5.3.9 and Figure 2, Figure 4, Figure 7, Figure 11 and Figure 13.
	AO4.2	Stormwater (including roof and surface water) is conveyed to the kerb and channel or other lawful point of discharge in accordance with the requirements of the Development works Town plan policy.	**Complies with AO4.2** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The subject land does not have a kerb and channel drainage system. Those areas of the proposed development complex area from which stormwater runoff has a high organic matter and therefore a high pollution potential are sited within a controlled drainage area. Appropriate drainage controls are installed to direct clean water away from the controlled drainage area and contaminated stormwater runoff is directed to drainage infrastructure

				where it is temporarily stored pending sustainable re-use on-site. Roof and site drainage shall be able to be collected and discharged from the proposed development in a manner that does not adversely affect the stability of buildings, structures, or land on the site or on adjoining land consistent with best practice guidelines for the use and rural location of the development. Refer to section 5.
		AO4.3	Stormwater runoff from all impervious areas (roof, pavements, etc) are not permitted to flow or discharge over adjoining properties.	**Complies with AO4.3** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. Roof and site drainage shall be able to be collected and discharged from the proposed development in a manner that does not adversely affect the stability of buildings, structures, or land on the site or on adjoining land consistent with best practice guidelines for the use and rural location of the development. Refer to section 5. As existing infrastructure shall be utilised the lawful point of discharge shall remain the same as pre-development.
Earthworks				
PO5	Earthworks are undertaken in a manner that:	**AO5.1**	Earthworks comply with the Development works Town plan policy.	**Not applicable (AO5.1)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef

	(a) prevents any worsening of soil erosion or water quality on the site, any adjoining land, or land upstream or downstream of the site; (b) produces stable landforms and structures; (c) maintain natural landforms where possible; (d) minimise the height of any batter faces; (e) does not unduly impact on the amenity or privacy for occupants of the site or on adjoining land or on the amenity of the streetscape; (f) does not result in the contamination of land or water; and (g) avoids risk to people and property.			cattle feedlot using existing built infrastructure. As there are no construction works, there are no earthworks associated with the establishment of the proposed development on the subject land. Refer to section 5.
		AO5.2	The extent of filling or excavation does not exceed 40% of the site area or 500 m^2, whichever is lesser	**Not applicable (AO5.2)** Refer to AO5.1 response.
		AO5.3	Excavating or filling is no greater than 1m in height or depth.	**Not applicable (AO5.3)** Refer to AO5.1 response.
		AO5.4	Batters have a maximum slope of 25%, are terraced at every rise of 1.5m and each terrace has a depth of 0.75m.	**Not applicable (AO5.4)** Refer to AO5.1 response.
		AO5.5	No contaminated material is used as fill.	**Not applicable (AO5.2)** Refer to AO5.1 response.
PO6	Retaining walls are designed to minimise visual impact through: (a) setbacks from any boundary; and	**AO6.1**	The combined height of any retaining walls and fences does not exceed 2 m.	**Not applicable (AO6.1)**

	(b) being stepped or terraced to accommodate landscaping.			The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. As there are no construction works, there are no proposed retaining walls associated with the establishment of the proposed development on the subject land. Refer to section 5.
		AO6.2	A retaining wall is set back at least half the height of the wall from any boundary of the site.	**Not applicable (AO6.2)** Refer to AO6.1 response.
		AO6.3	Retaining walls over 1.5 m are stepped 0.75 m for every 1.5 m in height, terraced and landscaped.	**Not applicable (AO6.3)** Refer to AO6.1 response.
		AO6.4	Design and construction of retaining walls over 1 m in height are certified by a Registered Professional Engineer of Queensland.	**Not applicable (AO6.4)** Refer to AO6.1 response.
PO7	The excavation, filling or laying of pipes within the vicinity of electricity supply infrastructure must not create damage or hazard. Editor's note–Development involving filling, excavation or laying of metal pipes on land contiguous to electricity supply infrastructure should be referred to the relevant electricity entity for safety advice on the proposed development.	**AO7.1**	Excavation or filling does not occur within: (a) 10 m of any tower, pole, foundation, ground anchorage or stay supporting electric lines or associated equipment; (b) 5 m of a substation site boundary; (c) 2 m of a padmount substation; or (d) 1 m of a padmount transformer or an underground cable.	**Not Applicable (PO7.1)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The proposed development complex is setback over 950 m from major infrastructure such as the Flinders Highway and major electricity infrastructure. Refer to Figure 50.

				The existing development has connection to electricity services which are of a standard to meet the demands of the proposed development. No upgrades to the electricity supply network is proposed. Consequently, excavation or filling shall not occur within 10 m of any tower, pole, foundation, ground anchorage or stay supporting electric lines or associated equipment; 5 m of a substation site boundary; 2 m of a padmount substation; or 1 m of a padmount transformer or an underground cable.
		AO7.2	The laying of metal pipes does not occur within: (a) 5 m of any pole, tower, foundation, ground anchorage or stay supporting electric lines or associated equipment; (b) 15 m of any substation site boundary; or (c) 5 m of, and parallel to, an electric line shadow.	**Not applicable (A7.2)** Refer to AO7.1 response.
Parking and Access				
PO8	Development includes the provision of adequate and convenient car parking on site to satisfy the anticipated requirements of the land use or activity.	**AO8**	Car parking is provided in accordance with Table 8.3.1.3(b)–Car parking requirements.	**Complies with AO8** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The proposed development has been provided with on-site vehicle parking in accordance

				with the standards relevant to the use of "Intensive Animal Industry" and in compliance with Table 8.3.1.3(b) – Car parking requirements of the *Charters Towers Regional Town Plan*. In accordance with Table 8.3.1.3(b) of the *Charters Towers Regional Town Plan* there will be at least one space per employee available at the site which is adequate for the expected demand. The nature of the development and rural character of the site is such that the provision of a formal car parking area is unnecessary.
PO9	Development provides end of trip facilities for people engaging in active transport (bicycle and pedestrian): (a) to meet the needs of users and promote active modes of travel; (b) at convenient, easily identifiable, safe locations; and (c) in locations that do not obstruct vehicular, bicycle or pedestrian movement paths.	**AO9**	Development provides cycling and pedestrian end of trip facilities, in accordance with the requirements of the Development works Town plan policy.	**Not Applicable (AO9)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. No pedestrian/cycle network is proposed as part of the proposed development recognising the nature of the development and rural setting of the site. The proposed development shall not generate use by a high quantity of people and pedestrian services and facilities are not required.
PO10	Access driveways are designed and constructed to:	**AO10.1**	Access driveways are designed and constructed in accordance	**Complies with AO10.1**

	(a) provide convenient access to the site and maintain the safety and efficiency of the road; (b) minimise conflicts with traffic and pedestrians; and (c) are constructed to a standard that is appropriate to the location and to meet the anticipated volume and type of traffic.	with the relevant Development works Town plan policy.	The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The proposed development shall utilise the existing subject land entrance off Runway Station Road and access to the Flinders Highway shall remain the same as pre-development conditions. The proposed development does involves a new entrance to the subject land. The existing subject land entrance is designed and constructed in accordance with the Development works Town plan policy and DTMR standards as far as relevant to the use and can accommodate the largest type of vehicle accessing the proposed development site. The access driveway is currently suitable for a Type 2 Road Train to access the site safely in forward gear.
	AO10.2	Access driveways allow vehicles (with the exception of Dwelling house and Dual occupancy) to enter and exit the site in a forward gear.	**Complies with AO10.2** The subject land is located in the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7.

				Recognising the proposed development's location on a large parcel of rural land, all vehicles likely to use the site are able to enter and leave the site in a forward gear, and the on-site vehicle parking spaces, pick-up areas, loading and unloading areas, queuing areas, circulation and manoeuvring areas for the development are designed and constructed in accordance with the most up to date version of the Australian Standards as relevant to the development. Refer to
PO11	Vehicle movement areas (including internal driveways, access aisles, manoeuvring areas, car parks and service bays) are designed to ensure: (a) a gradient appropriate for the type of vehicles; (b) effective stormwater drainage; (c) clearly marked and signed spaces; (d) convenience and safety for drivers and pedestrians; and (e) adequate dimensions to meet user requirements, including access and egress for emergency vehicles.	**AO11**	Manoeuvring, queuing, loading and unloading areas, and parking areas are: (a) designed and constructed in accordance with the Development works Town plan policy; and (b) certified by a Registered Professional Engineer of Queensland.	**Complies with AO11** The subject land is located in the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. Recognising the proposed development's location on a large parcel of rural land, all on-site vehicle parking spaces, pick-up areas, loading and unloading areas, queuing areas, circulation and manoeuvring areas for the development are designed and constructed in accordance with the Development works Town plan policy and the most up to date version of the Australian Standards as relevant to the development. The nature of the development and rural character of the site is such that the provision of a formal car parking area is unnecessary. Refer to section 5 and Figure 4 and Figure 7.

PO12	Footpaths in the road reserve are provided along all road frontages and are paved in durable and stable materials matching any adjacent development footpaths.	**AO12**	Footpaths are: (a) provided for the full width and length of all road frontages; (b) designed and constructed in accordance with the requirements of the Development works Town plan policy; and (c) certified by a Registered Professional Engineer of Queensland.	**Not Applicable (AO12)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. No pedestrian network is proposed as part of the proposed development recognising the nature of the development and rural setting of the site. The proposed development shall not generate use by a high quantity of people and pedestrian services and facilities are not required.
PO13	Pedestrian access to buildings: (a) do not obstruct pedestrian movement (or form physical clutter) on public footpaths; (b) are not visually overbearing (or form visual clutter) in the streetscape; and (c) provide safe, efficient and convenient access including wheelchair access.	**AO13**	Steps, escalators, ramps and lifts are: (a) located wholly within the site; and (b) setback a minimum of 1.5 m from the front boundary.	**Not Applicable (AO13)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The proposed development does not involve the establishment of class 1, 2, 3 or 4 buildings on the subject land. Refer to section 5.
Acoustics and air quality				
PO14	Development minimises potential conflicts with, or impacts on, other uses having regard to vibration, odour, dust or other emissions.	**AO14**	Development achieves the air quality design objectives set out in the Environmental Protection (Air) Policy 2008, as amended.	**Not Applicable (AO14)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built

	Editor's note–To achieve compliance, development is planned, designed and managed to ensure emissions from activities achieve the appropriate acoustic objectives (measured at the receptor dB(A)).	infrastructure as outlined in section 5 and shown on Figure 7. The proposed development has been sited and designed and shall be constructed and operated to maintain or enhance the amenity of the local area in relation to air emissions. The proposed development complies with the applicable requirements of the *Environmental Protection (Air) Policy 2019* as far as they are relevant to the proposed development. Refer to section 7.5.1 and 7.5.1.9. The proposed development has been sited, designed and will be managed to avoid or mitigate environmental harm in regard to air quality. The proposed development is appropriately located to provide sufficient separation distances to sensitive receptors as shown in section 7.5.1.9 and Figure 41. The proposed development has been designed in accordance with the National Guidelines for Beef Cattle Feedlots (Meat and Livestock Australia Limited, 2012b) and the Reference Manual for the Establishment and Operation of Beef Cattle Feedlots in Queensland (Skerman, 2000). The management of the proposed development in accordance with the Site Based Management Plan will ensure that all

				potential dust and odour issues are mitigated as far as reasonably possible.
PO15	Development prevents or minimises the generation of any noise so that: (a) nuisance is not caused to adjoining premises or other nearby sensitive land uses; and (b) desired ambient noise levels in residential areas are not exceeded.	**AO15**	Development achieves the noise generation levels set out in the Environmental Protection (Noise) Policy 2008, as amended.	**Not Applicable (AO15)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The proposed development has been sited and designed and shall be constructed and operated to maintain or enhance the amenity of the local area in relation to noise emissions. The proposed development complies with the applicable requirements of the *Environmental Protection (Noise) Policy 2019* as far as they are relevant to the proposed development. Refer to section 7.5.1 and 7.5.1.2. The subject land is located in a rural area and is appropriately located to provide sufficient separation distances to sensitive receptors as shown on section 7.5.1.9 and Figure 41. The management of the proposed development in accordance with the SBEMP ensure that all potential noise issues are mitigated as far as reasonably possible.
PO16	Development adjacent to State controlled roads or Council controlled arterial road minimise nuisance caused by noise, vibration and dust emissions.	**AO16**	Development complies with the requirements of the Department Main Roads - Road Traffic Noise Management Code of Practice	**Not Applicable (AO16)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built

			and the Environmental Protection (Noise) Policy 2008.	infrastructure as outlined in section 5 and shown on Figure 7. The subject land is located adjacent to a State controlled road being the Flinders Highway. The proposed development does not involve the establishment of a sensitive land use adjacent to the state-controlled road. Refer to section 5. There is no additional traffic generated by the proposed development. Refer to section 5.
Lighting				
PO17	External lighting is provided in urban areas to ensure a safe environment.	**AO17**	Technical parameters, design, installation, operation and maintenance of outdoor lighting complies with the requirements of AS4282 – Control of the Obtrusive Effects of Outdoor Lighting.	**Not Applicable (AO18)** The subject land is within the Rural zone and not within an urban environment. The proposed use is for "Intensive Animal Industry" being a beef cattle feedlot. Refer to section 2, 4 and Figure 2, Figure 3 and Figure 7.
Waste management				
PO18	Development: (a) minimises waste generation (including construction, demolition and operational waste); and (b) provides adequate facilities on site for the storage of waste and recyclables.	**AO18**	Waste storage and management arrangements are sited, screened and designed in accordance with the Development works Town plan policy.	**Complies with AO18** The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being a beef cattle feedlot. Refer to section 2 and 5. Waste from the operation of the proposed development will be disposed of in a sustainable manner.

				The proposed waste storage and management arrangements will sited, screened and designed in accordance with the Development works Town plan policy as far as they are relevant to the proposed development. The proposed development has been designed in accordance with the National Guidelines for Beef Cattle Feedlots (Meat and Livestock Australia Limited, 2012b) and the Reference Manual for the Establishment and Operation of Beef Cattle Feedlots in Queensland (Skerman, 2000).
PO19	Development is designed to allow for safe and efficient servicing of waste and recycling containers through: (a) a development layout that facilitates direct and unobstructed servicing of waste and recycling containers; and (b) minimising the potential for nuisances to be caused by way of noise and odour.	**AO19**	Waste and recycling collection services are provided in accordance with the Development works Town plan policy.	**Not Applicable (AO19)** The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being a beef cattle feedlot which is a rural use. Refer to section 2 and 4. The proposed development does not propose on–site waste and recycling collection services. The proposed development has been designed in accordance with the National Guidelines for Beef Cattle Feedlots (Meat and Livestock Australia Limited, 2012b) and the Reference Manual for the Establishment and Operation of Beef Cattle Feedlots in Queensland (Skerman, 2000).
For all assessable development				
General				

PO20	Where buildings and structures are located on multiple lots, these are amalgamated to form one lot.	**AO20**	No acceptable outcome specified	**Not Applicable (AO20)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. All buildings and structures associated with the proposed development are located on one lot. Refer to section 2 and 5 and Figure 4 and Figure 7.
Wastewater management				
PO20	Wastewater is managed to: (a) avoid wastewater discharge to any waterway; or (b) if wastewater discharge to waterways cannot be practically avoided, discharge is minimised to an acceptable level by re-use, recycling, recovery and treatment for disposal to sewer, surface water and groundwater. Editor's note–Wastewater is defined in accordance with Environmental Protection (Water) Policy 2009, schedule 2). A wastewater management plan (WWMP) is prepared by a suitably qualified person and addresses: (i) wastewater type; and (ii) climatic conditions; and (iii) water quality objectives (WQOs); and	**AO20**	No acceptable outcome specified.	**Complies with PO20** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7 and does not involve the discharge of wastewater to a waterway or off-site. The proposed development does not propose to discharge trade waste or contaminated waste to the environment. All wastewater shall be sustainably utilised on-site. Those areas of the proposed development complex area from which stormwater runoff has a high organic matter and therefore a high pollution potential are sited within a controlled drainage area.

	(iv) best-practice environmental management.	The proposed development has been designed in accordance with the National Guidelines for Beef Cattle Feedlots (Meat and Livestock Australia Limited, 2012b) and the Reference Manual for the Establishment and Operation of Beef Cattle Feedlots in Queensland (Skerman, 2000). Utilising existing built infrastructure ensures that all existing regulated vegetation is retained. The pre-disturbance topography of the proposed development site was predominantly flat with a slope of less than 1%. The proposed development complex is setback over 500 m from the Reid River and the riparian vegetation between the proposed development and the waterway shall be retained. Appropriate drainage controls are installed to direct clean water away from the controlled drainage area and contaminated stormwater runoff is directed to drainage infrastructure where it is temporarily stored pending sustainable re-use on-site. Natural drainage lines are maintained as far as reasonably practical with diversion banks in place to separate clean and dirty stormwater runoff water as required. Stormwater within the controlled drainage area is collected, temporarily stored and sustainably applied to crops within a dedicated on-site effluent utilisation area.

				Effluent and solid waste shall be sustainably applied to crops within the dedicated waste utilisation area. These areas will be monitored regularly with soil and crop tissue sampling to ensure that nutrients are adequate and do not exceed the crop requirements. Appropriate nutrient balancing shall ensure nutrients are not leached thus avoiding any adverse impacts to groundwater quality or potential for salinity. Refer to section 5.1.3, 5.1.5.1 and 5.3.8 and Figure 11 and Figure 12.
PO21	Wastewater discharge maintains ecological processes, riparian vegetation, waterway integrity, and downstream ecosystem health including: (a) protecting applicable water quality objectives for the receiving waters; (b) managing soil disturbance or altering natural hydrology in coastal areas; and (c) avoiding or minimising the release of nutrients of concern.	**AO21**	No acceptable outcome specified.	**Complies with PO21** Refer to PO20 response.
PO22	Stormwater management systems: (a) implement Water Sensitive Urban Design (WSUD) principles that: (i) protect natural systems and waterways; (ii) allow for the detention of stormwater instead of rapid conveyance;	**AO22**	Stormwater management systems are designed and constructed in accordance with the Development works Town plan policy. Editor's note–A site Stormwater Quality Management Plan (SQMP) is prepared in accordance with	**Complies with PO22** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7.

	(iii) minimise impervious areas; (iv) utilise stormwater to conserve potable water; (v) integrate stormwater treatment into the landscape; (vi) ensure water quality values are protected; (b) must be economically maintained for the life of the system; (c) provide for safe access and maintenance; and (d) maintain natural drainage lines and adequate filtering and settlement of sediment for the protection of watercourses, wetlands from point sources and non-point source stormwater discharges.	Development works Town plan policy.	The proposed development is not located in an urban area. Consequently, the management of stormwater runoff from the proposed development shall be managed in accordance with relevant guidelines for the use and noting that the proposed development is in a rural area. The stormwater management principles in these guidelines are generally similar to the Water Sensitive Urban Design (WSUD) principles. Refer to section 2, 3 and 5.3.9 and Figure 2, Figure 4, Figure 7, Figure 11 and Figure 13. Those areas of the proposed development complex area from which stormwater runoff has a high organic matter and therefore a high pollution potential are sited within a controlled drainage area. The proposed development has been designed in accordance with the National Guidelines for Beef Cattle Feedlots (Meat and Livestock Australia Limited, 2012b) and the Reference Manual for the Establishment and Operation of Beef Cattle Feedlots in Queensland (Skerman, 2000). Utilising existing built infrastructure ensures that all existing regulated vegetation is retained. The pre-disturbance topography of the proposed development site was predominantly flat with a slope of less than

				1%. The proposed development complex is setback over 500 m from the Reid River and the riparian vegetation between the proposed development and the waterway shall not be disturbed. Appropriate drainage controls are installed to direct clean water away from the controlled drainage area and contaminated stormwater runoff is directed to drainage infrastructure where it is temporarily stored pending sustainable re-use on-site. Refer to section 2, 3 and 5.3.9 and Figure 2, Figure 4, Figure 7, Figure 11 and Figure 13.
PO23	Development allows for sufficient site area to accommodate an effective stormwater management system.	**AO23**	No acceptable outcome specified.	**Complies with PO23** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being a beef cattle feedlot. The proposed development is not located in an urban area. Consequently, the management of stormwater runoff from the proposed development shall be managed in accordance with relevant guidelines for the use and noting that the proposed development is in a

				rural area. Refer to section 2, 3 and 5.3.9 and Figure 2, Figure 11 and Figure 12.
PO24	Development provides for the orderly development of stormwater infrastructure within a catchment, having regard to: (a) existing capacity of stormwater infrastructure and ultimate catchment conditions; (b) discharge for existing and future upstream development; and (c) protecting the integrity of adjacent and downstream development.	**AO24**	No acceptable outcome specified	**Complies with PO24** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being a beef cattle feedlot. The proposed development is not located in an urban area. Consequently, the management of stormwater runoff from the proposed development shall be managed in accordance with relevant guidelines for the use and noting that the proposed development is located in a rural area. Refer to section 2, 3 and 5.3.9 and Figure 2 and Figure 11
PO25	Major stormwater drainage network elements are designed and constructed with the capacity to control stormwater flows under normal and minor system blockage conditions for the applicable defined flood event ensuring there is no damage to property or hazards for motorists.	**AO25**	Stormwater infrastructure is designed in accordance with the requirements of the Development works Town plan policy.	**Complies with PO25** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The proposed development is not located in an urban area.

				Consequently, the design of major stormwater drainage elements off the proposed development shall be in accordance with relevant guidelines for the use and noting that the proposed development is in a rural area. Those areas of the proposed development complex area from which stormwater runoff has a high organic matter and therefore a high pollution potential are sited within a controlled drainage area. The proposed development has been designed in accordance with the National Guidelines for Beef Cattle Feedlots (Meat and Livestock Australia Limited, 2012b) and the Reference Manual for the Establishment and Operation of Beef Cattle Feedlots in Queensland (Skerman, 2000). Refer to section 2, 3 and 5.3.9 and Figure 2, Figure 4, Figure 7, Figure 11 and Figure 13.
PO26	Reconfiguration of lots includes stormwater management measures in the design of any road reserve, streetscape or drainage networks to: (a) minimise impacts on the water cycle; (b) protect waterway health by improving stormwater quality and reducing site run-off; and (c) avoid large impervious surfaces.	**AO26**	No acceptable outcome specified.	**Not Applicable (PO26)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The proposed development does not involve the reconfiguration of a lot. Refer to section 2 and 5 and Figure 4 and Figure 7.

PO27	Construction activities for the development avoids or minimise adverse impacts on stormwater quality by: (a) achieving the post construction stormwater management design objectives for pollution load reductions for Western Queensland (TSS 85% TP 60% TN 45% and 90% Gross pollutants) and or In lieu of modelling, the default bio-retention treatment area of 1.5 per cent of the contributing catchment area; and (b) the waterway stability management design objective: limit the peak 1-year ARI event discharge within the receiving waterway to the pre-development peak1-year ARI discharge. An Erosion and Sediment Control Plan (ESCP) is prepared by a suitably qualified person that demonstrates: (a) erosion and sediment control practices (including any proprietary erosion and sediment control products) are designed, installed, constructed, operated, monitored and maintained, and any other erosion and sediment control practices are carried out in accordance with local conditions; or (b) how stormwater quality will be managed in accordance with an acceptable regional or local guideline so that target contaminants are	**AO27**	Stormwater quality achieves the stormwater design objectives of the Development works Town plan policy.	**Not Applicable (PO27)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The proposed development does not involve construction activities as all infrastructure is existing. Consequently, as no land disturbance activities shall be undertaken and therefore erosion and sediment control measures are not warranted.

	treated to a design objective at least equivalent of this Performance outcome.			
Earthworks				
PO28	Earthworks associated with roads: (a) maintain the efficiency of the road network; (b) do not adversely impact upon residents or road infrastructure; and (c) do not obstruct access to the site.	**AO28**	No acceptable outcome specified.	**Not Applicable (PO28)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The proposed development does not involve earthworks as all infrastructure is existing. The proposed development shall utilise the existing subject land entrance off Runway Station Road and access to the Flinders Highway shall remain the same as pre-development conditions. Refer to Figure 3 and Figure 7.
PO29	Development in the Rural zone and Rural residential zone manages soil erosion and sedimentation by: a) avoiding land clearing or earthworks in the riparian corridor to a designated stream; b) minimising the extent of disturbance on, or the stabilisation of slopes steeper than 10%; and c) managing and controlling surface drainage by using natural flow paths.	**AO29**	No acceptable outcome specified.	**Not Applicable (PO29)** The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The proposed development does not involve earthworks as all infrastructure is existing.

				The proposed development does not propose any vegetation clearing or land disturbance within the riparian corridor.
PO30	Any disturbed areas within the site are to be progressively rehabilitated through appropriate earthworks and involve the: (a) grading and reshaping of the disturbed areas to provide controlled and stable drainage flow paths; (b) construction of drainage paths which divert high velocity flows away from disturbed areas; (c) re-spreading of stored topsoil stripped from the site prior to commencement of construction works; and (d) planting of the disturbed area with native species of grasses, ground covers and trees and placing mulch in between on the surface. Editor's note–Applicants may be required to engage specialists to prepare a rehabilitation plan.	**AO30**	No acceptable outcome specified.	**Complies with PO30** The subject land is located in the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7
Land use and transport integration				
PO31	Development: (a) supports a road hierarchy which facilitates efficient movement of all transport modes; and (b) appropriately integrates and connects with surrounding movement networks. Editor's note–Refer to the road hierarchy identified on map AM1.	**AO31**	No acceptable outcome specified.	**Complies with PO31** The subject land is located in the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7.

				The subject land is located in the Rural zone and the proposed use is for "Intensive Animal Industry". The proposed development does not involve a new public road or street. The proposed development does not involve a new entrance onto Runway Station Road or onto the Flinders Highway. The surrounding road network is suitable to accommodate the scale and nature of traffic generated by the development. Refer to section 5 and Figure 5.
PO32	Development provides direct and safe access to public passenger transport facilities.	**AO32**	Any through-site pathway connections to public passenger transport facilities are provided in accordance with Austroads guide to road design— Part 6A: Pedestrian and cyclist paths.	**Not Applicable (AO32)** The subject land is located in the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The proposed development does not require public passenger transport facilities. Refer to section 2 and 5.
Road design				
PO33	Roads providing access to the site are provided, constructed and maintained to a standard which is adequate for the traffic type and volume likely to be generated by the activities on site.	**AO33**	Roadworks are provided in accordance with the requirements of the Development works Town plan policy.	**Complies with AO33** The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built

				infrastructure as outlined in section 5 and shown on Figure 7. The subject land is located in the Rural zone and the proposed use is for "Intensive Animal Industry". The proposed development does not involve a new public road or street. The proposed development does not involve a new entrance onto Runway Station Road or onto the Flinders Highway. The surrounding road network is suitable to accommodate the scale and nature of traffic generated by the development. Refer to section 5 and Figure 5.
PO34	Street lighting and signs are provided to ensure the safety of both vehicles and pedestrians, and to facilitate access and movement.	**AO34**	Street lighting and signage comply with the requirements of the Development works Town plan policy.	**Not Applicable (AO34)** The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. No street lighting is proposed as part of the proposed development recognising the nature of the development and rural setting of the site. All street lighting and signage on the Flinders Highway in the vicinity of Runway Station Road is remain the same as pre-development conditions.

Acoustics and air quality				
PO35	Utility services and service structures attached to buildings, do not adversely impact on the acoustic or visual amenity of the surrounding area and are: (a) located as far from sensitive land uses, road frontage boundaries and public open spaces as practical; (b) acoustically shielded and visually screened so as not to be audible or visible from adjoining and nearby sites, public open spaces and roads.	**AO35**	No acceptable outcome specified.	**Not Applicable (PO35)** The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The proposed development has been sited over 800 m from sensitive land uses, road frontage boundaries and public open spaces respectively. Refer to section 2, 4 and 5, Figure 3, Figure 7 and Figure 41.

Table 69 – Development works code purpose and outcomes (Charters Towers Regional Town Plan)

ID	Purpose / Outcome	Relevance	Response
1	**Purpose**		
			The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development is well serviced as far by utility and access infrastructure including roads, water, wastewater, power, telecommunications, stormwater management and waste management. The proposed development does not require connection to Council's utility and access infrastructure such as reticulated potable water, sewerage, stormwater or road infrastructure. The proposed development shall utilise the existing subject land entrance off Runway Station Road and access to the Flinders Highway shall remain the same as pre-development conditions. The proposed development does involve a new entrance to the subject land. The proposed development does not involve a new entrance onto Runway Station Road or onto the Flinders Highway. The surrounding road network is suitable to accommodate the scale and nature of traffic generated by the proposed development. Recognising the nature and location of the proposed development's in a rural area public passenger transport facilities are not required or proposed. The proposed development does not involve a new public road or street., The proposed development has been provided with on-site vehicle parking in accordance with the standards relevant to the use of "Intensive Animal Industry" and in compliance with Table 8.3.1.3(b) – Car parking requirements of the *Charters Towers Regional Town Plan.*
a)	ensure all development is provided with appropriate infrastructure, parking spaces and services;		

			No bicycle parking facilities are proposed as part of the proposed development recognising the nature of the development and rural setting of the site. Recognising the proposed development's location on a large parcel of rural land, all on-site vehicle parking spaces, pick-up areas, loading and unloading areas, queuing areas, circulation and manoeuvring areas for the development are designed to be safe, functional and meet the reasonable demands generated by the development. No public or pedestrian access is proposed as part of the proposed development recognising the nature of the development and rural setting of the site.
b)	ensure development manages stormwater and wastewater as part of the integrated total water cycle and in ways that help protect the environmental water values specified in the Environmental Protection (Water) Policy 2009 and the Stormwater Management Design Objectives in the State Planning Policy;	Yes	The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. Those areas of the proposed development complex area from which stormwater runoff has a high organic matter and therefore a high pollution potential are sited within a controlled drainage area. The proposed development has been designed in accordance with the National Guidelines for Beef Cattle Feedlots (Meat and Livestock Australia Limited, 2012b) and the Reference Manual for the Establishment and Operation of Beef Cattle Feedlots in Queensland (Skerman, 2000). Natural drainage lines are maintained as far as reasonably practical with diversion banks in place to separate clean and dirty stormwater runoff water as required. Stormwater within the controlled drainage area is collected, temporarily stored and sustainably applied to crops within a dedicated on-site effluent utilisation area.
c)	protect surface water and ground water; and	Yes	The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve the discharge of wastewater to a waterway or off-site.

			The management of stormwater runoff from the proposed development shall be managed in accordance with relevant guidelines for the use and noting that the proposed development is in a rural area. The proposed development does not propose to discharge trade waste or contaminated waste to the environment. All wastewater shall be sustainably utilised on-site. Those areas of the proposed development complex area from which stormwater runoff has a high organic matter and therefore a high pollution potential are sited within a controlled drainage area. The proposed development has been designed in accordance with the National Guidelines for Beef Cattle Feedlots (Meat and Livestock Australia Limited, 2012b) and the Reference Manual for the Establishment and Operation of Beef Cattle Feedlots in Queensland (Skerman, 2000). Natural drainage lines are maintained as far as reasonably practical with diversion banks in place to separate clean and dirty stormwater runoff water as required. Stormwater within the controlled drainage area is collected, temporarily stored and sustainably applied to crops within a dedicated on-site effluent utilisation area. Effluent and solid waste shall be sustainably applied to crops within the dedicated waste utilisation area. These areas will be monitored regularly with soil and crop tissue sampling to ensure that nutrients are adequate and do not exceed the crop requirements. Appropriate nutrient balancing shall ensure nutrients are not leached thus avoiding any adverse impacts to surface water quality, groundwater quality or potential for salinity.
d)	ensure development is designed, constructed, operated and maintained to eliminate any adverse	Yes	The proposed development is an “Intensive Animal Industry” being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve the discharge of wastewater to a waterway or off-site

	impacts on the environment and the amenity of the locality.		Waste from the operation of the proposed development will be disposed of in a sustainable manner. The proposed waste storage and management arrangements will be sited, screened and designed in accordance with the Development works Town plan policy as far as they are relevant to the proposed development. The proposed development has been designed in accordance with the National Guidelines for Beef Cattle Feedlots (Meat and Livestock Australia Limited, 2012b) and the Reference Manual for the Establishment and Operation of Beef Cattle Feedlots in Queensland (Skerman, 2000).
2	**Outcomes**		
a)	development is adequately serviced by utility and access infrastructure including roads, water, waste water, power, telecommunications, stormwater management and waste management;	Yes	The proposed development is well serviced as far by utility and access infrastructure including roads, water, wastewater, power, telecommunications, stormwater management and waste management. The proposed development does not require connection to Council's utility and access infrastructure such as reticulated potable water, sewerage, stormwater or road infrastructure.
b)	the integrity and efficiency of utility and access infrastructure systems is maintained;	Yes	The proposed development is well serviced as far by utility and access infrastructure including roads, water, wastewater, power, telecommunications, stormwater management and waste management. The proposed development does not require connection to Council's utility and access infrastructure such as reticulated potable water, sewerage, stormwater or road infrastructure.
c)	environmental values of receiving waters are protected from adverse development impacts arising from stormwater quality and flow;	Yes	The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. Those areas of the proposed development complex area from which stormwater runoff has a high organic matter and therefore a high pollution potential are sited within a controlled drainage area. The proposed development has been designed in accordance with the National Guidelines for Beef Cattle Feedlots (Meat and Livestock Australia

			Limited, 2012b) and the Reference Manual for the Establishment and Operation of Beef Cattle Feedlots in Queensland (Skerman, 2000). Natural drainage lines are maintained as far as reasonably practical with diversion banks in place to separate clean and dirty stormwater runoff water as required. Stormwater within the controlled drainage area is collected, temporarily stored and sustainably applied to crops within a dedicated on-site effluent utilisation area.
d)	environmental values of receiving waters are protected from waste water impacts;	Yes	The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve the discharge of wastewater to a waterway or off-site. The proposed development does not propose to discharge trade waste or contaminated waste to the environment. All wastewater shall be sustainably utilised on-site. Those areas of the proposed development complex area from which stormwater runoff has a high organic matter and therefore a high pollution potential are sited within a controlled drainage area. The proposed development has been designed in accordance with the National Guidelines for Beef Cattle Feedlots (Meat and Livestock Australia Limited, 2012b) and the Reference Manual for the Establishment and Operation of Beef Cattle Feedlots in Queensland (Skerman, 2000). Natural drainage lines are maintained as far as reasonably practical with diversion banks in place to separate clean and dirty stormwater runoff water as required. Stormwater within the controlled drainage area is collected, temporarily stored and sustainably applied to crops within a dedicated on-site effluent utilisation area.

			Effluent and solid waste shall be sustainably applied to crops within the dedicated waste utilisation area. These areas will be monitored regularly with soil and crop tissue sampling to ensure that nutrients are adequate and do not exceed the crop requirements. Appropriate nutrient balancing shall ensure nutrients are not leached thus avoiding any adverse impacts to surface water quality, groundwater quality or potential for salinity.
e)	public health and safety are protected and damage or nuisance caused by stormwater is avoided;	Yes	The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure and stormwater quality and flow shall be the same as pre-development. The proposed development has been designed in accordance with the National Guidelines for Beef Cattle Feedlots (Meat and Livestock Australia Limited, 2012b) and the Reference Manual for the Establishment and Operation of Beef Cattle Feedlots in Queensland (Skerman, 2000).
f)	stormwater management works is designed to maintain or recreate natural hydrological processes and minimise run-off;	Yes	The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The management of stormwater runoff from the proposed development shall be managed in accordance with relevant guidelines for the use and noting that the proposed development is in a rural area. Those areas of the proposed development complex area from which stormwater runoff has a high organic matter and therefore a high pollution potential are sited within a controlled drainage area.
g)	the function, safety and efficiency of the transport network is optimised;	Yes	The proposed development does not involve a new public road or street. The proposed development does not involve a new entrance onto Runway Station Road or onto the Flinders Highway. The surrounding road network is suitable to accommodate the scale and nature of traffic generated by the proposed development.
h)	development within close proximity to existing or future public passenger transport facilities supports an integrated approach to land use and transport integration;	Yes	Recognising the nature and location of the proposed development's in a rural area public passenger transport facilities are not required or proposed.

i)	development provides adequate on site vehicular access and adequate parking and servicing facilities for vehicles and parking facilities for bicycles;	Yes	The proposed development has been provided with on-site vehicle parking in accordance with the standards relevant to the use of "Intensive Animal Industry" and in compliance with Table 8.3.1.3(b) – Car parking requirements of the *Charters Towers Regional Town Plan.* No bicycle parking facilities are proposed as part of the proposed development recognising the nature of the development and rural setting of the site.
j)	access, parking, servicing and associated manoeuvring areas are designed to be safe, functional and meet the reasonable demands generated by the development;	Yes	The proposed development shall utilise the existing subject land entrance off Runway Station Road and access to the Flinders Highway shall remain the same as pre-development conditions. The proposed development does involve a new entrance to the subject land. Recognising the proposed development's location on a large parcel of rural land, all on-site vehicle parking spaces, pick-up areas, loading and unloading areas, queuing areas, circulation and manoeuvring areas for the development are designed to be safe, functional and meet the reasonable demands generated by the development.
k)	provision of safe and non-discriminatory public and pedestrian access is provided;	No	No public or pedestrian access is proposed as part of the proposed development recognising the nature of the development and rural setting of the site.
l)	works in public streets and spaces enhance the pedestrian amenity and improve streetscape appearance;	No	No works in public streets are proposed as part of the proposed development recognising the rural setting of the site and a new entrance to the subject land is not proposed.
m)	earthwork does not impact adversely on the amenity of the site or the surrounding area and does not result in increased flooding, drainage and soil erosions problems on upstream and downstream property; and	Yes	The proposed development is an "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development does not involve earthworks as all infrastructure is existing.
n)	development provides for the storage of generated waste in an environmentally acceptable manner and waste storage facilities are functionally appropriate for users of the facilities.	Yes	Waste from the operation of the proposed development will be disposed of in a sustainable manner. The proposed waste storage and management arrangements will sited, screened and designed in accordance with the Development works Town plan policy as far as they are relevant to the proposed development.

The proposed development has been designed in accordance with the National Guidelines for Beef Cattle Feedlots (Meat and Livestock Australia Limited, 2012b) and the Reference Manual for the Establishment and Operation of Beef Cattle Feedlots in Queensland (Skerman, 2000).

8.2.2.3.1.2 Landscaping code

(1) The purpose of the Landscaping code is to ensure landscaping in both the private and public domain:
   (a) complements built form, topography and existing landscape elements;
   (b) enhances the visual appeal and local character of different places throughout the region;
   (c) is designed and constructed to a high standard to suit climatic conditions; and
   (d) is functional for users and remains fit for purpose over the long-term.

(2) The purpose of the code will be achieved by the following overall outcomes:

   (a) landscaping creates shade and shelter on streets and public spaces;
   (b) landscaping conserves energy, water usage and creates comfortable microclimates;
   (c) landscaping creates high quality streetscapes and enhances local identity;
   (d) landscape design is used to integrate the natural and built form elements of the site and the locality;
   (e) landscape elements contribute to the useability, legibility, identity and understanding of the region and its places;
   (f) landscaping is used for screening to soften built form, mitigate adverse aesthetic impacts, improve amenity and provide privacy;
   (g) plant species and landscaping materials are suitable for local climatic conditions;
   (h) plant species, landscaping materials and surface treatments are suited to their intended function and user requirements and are designed to remain attractive, fit for purpose and be cost effective to maintain over the long-term;
   (i) landscape design facilitates an accessible, safe and comfortable environment for all users; and
   (j) mature on site vegetation is retained, protected and integrated into the site design wherever practicable.

An assessment of the proposed development against the performance outcomes of the Landscaping code and code purpose are provided in Table 70 and Table 71. The compliance statements outlined in Table 70 and Table 71 demonstrate that the proposed development complies with the accepted outcomes and purpose of the Landscaping code and will not compromise the purpose or overall outcomes sought for the individual themes with the Landscaping code.

Table 70 – Landscaping code (*Charters Towers Regional Plan)*

Performance outcomes		Acceptable Outcomes		Compliance Assessment
Table 8.3.2.3—Landscaping Code- Assessable Development				
General				
PO1	Landscape design of both public and private spaces: (a) compliments the intended character of the streetscape and zone; (b) is functional and designed to be visually appealing in the long-term; and (c) incorporates plant types appropriate for the region and local climate.	**AO1**	No acceptable outcome is nominated.	**Complies with PO1** The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. Noting that the proposed development is in a rural area and not an urban area and existing built infrastructure shall be used, existing landscape elements will be retained as part of the proposed development and no formal landscaping is proposed. Any landscaping shall be consistent with the use and character of the surrounding rural landscape.
PO2	Landscape works and plant selection ensure: (a) climatically appropriate species are planted; (b) the provision of shade in appropriate locations; (c) an appropriate mix of soft and hard elements; and (d) planting densities and stock sizes are suitable for their location, purpose and hardiness.	**AO2**	No acceptable outcome is nominated.	**Complies with PO2** The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. Noting that the proposed development is in a rural area and not an urban area and existing built infrastructure shall be used, existing landscape elements will be retained as part of the development and no formal landscaping is

				proposed. Any landscaping shall be consistent with the use and character of the surrounding rural landscape
PO3	Street trees are provided in appropriate locations to: (a) provide shade for pedestrians along footpaths. (b) reinforce the legibility of the movement network; (c) avoid damage to public or private property or infrastructure; (d) enhance the character of the streetscape; and (e) ensure visibility is maintained from entrances and exits to properties and at intersections.	**AO3**	Street trees are provided at the rate whichever is the lesser of: (a) one street tree per lot frontage or one tree per 10 linear metres of road frontage; or (b) a minimum of 1 tree per 400m2 of site area.	**Complies with AO3** The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. Noting that the proposed development is in a rural area and not an urban area and no new streets are proposed, then the provision of street trees is not required.
PO4	Street treatments including pavement, seating, lighting, rubbish bins are provided to: (a) enhance the usability and amenity of streets and public spaces; (b) facilitate social interaction; and (c) maintain clean streetscapes. Editor's note–Refer also to the Development works Town plan policy.	**AO4**	No acceptable outcome identified	**Not Applicable (PO4)** The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. The proposed development does not involve the creation of new streets or require street treatments.
PO5	Wherever possible, landscape design facilitates the retention and integration of mature existing vegetation, both within and external to the site.	**AO5**	Existing mature trees and vegetation are retained and incorporated into the landscape design.	**Complies with AO5** The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7.

				Noting that the proposed development is within a rural area and not an urban area, existing landscape elements will be retained as part of the proposed development and no formal landscaping is proposed.
Landscaping along boundaries and edges				
PO6	Planting and landscape elements along boundaries and edges assist in: (a) maintaining privacy between adjoining buildings; (b) protecting local views, vistas and sightlines; (c) enhancing the visual appearance of the built form; (d) screening service, utility and parking areas; (e) minimising noise impacts between noise sources and sensitive receiving environments; and (f) reducing the visual impact of acoustic fences, retaining walls and long unbroken walls.	**AO6**	No acceptable outcome is nominated.	**Not Applicable (PO6)** The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. Noting that the proposed development is within a rural area and not an urban area, existing landscape elements will be retained as part of the development and no formal landscaping is proposed. Further the proposed development is in the centre east of the subject land and is not visible from public areas. Any landscaping shall be consistent with the use and character of the surrounding rural landscape.
Open air car parking				
PO7	Open air car parking areas are provided with suitable levels of shade.	**AO7.1**	Shade trees are located at the rate of one tree per 6 car spaces.	**Not Applicable (PO7)** The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7.

				Noting that the proposed development is within a rural area and not an urban area, existing landscape elements will be retained as part of the development and no formal car parking area is proposed. Further the proposed development is in the centre east of the subject land and is not visible from public areas. The existing vegetation on the site will visually fragment and shade the existing car parking area, noting that these facilities are not visible from the road frontage or adjoining properties. No further landscaping is proposed within the car parking area.
		AO7.2	Wheel stops are provided to protect vegetation.	**Not Applicable (AO7.2)** Refer to AO7.1 response.
Sustainability				
PO8	Landscape design, including irrigation methods, optimise water and energy efficiency and respond appropriately to local conditions, by: (a) maximising the exposure to the prevailing summer winds and the winter morning sun; (b) minimising exposure to the prevailing winter winds and the summer afternoon sun; (c) optimising shade to create useable and comfortable areas; and (d) maintaining infiltration to subsurface soil.	**AO8**	No acceptable outcome is nominated.	**Not Applicable (PO8)** The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. Noting that the proposed development is within a rural area and not an urban area, existing landscape elements will be retained as part of the development and no formal landscaping is proposed.

				Further the proposed development is located in the centre of the subject land and is not visible from public areas.
Safety				
PO9	Landscape elements enhance the safety, legibility of places and do not undermine the surveillance of paths, walkways, parking areas, streets and public spaces by ensuring: (a) landscape elements (including signage and other infrastructure) does not interfere with sightlines; (b) spaces are well lit, free from obstructions and clearly defined by landscape treatments; and (c) public and private areas are clearly distinguishable and accessible. Editor's note–Applicants should have regard to Crime Prevention through Environmental Design Guidelines for Queensland.	**AO9**	No acceptable outcome is nominated.	**Not Applicable (PO9)** Refer to PO8 response.
PO10	Landscape elements do not adversely affect stormwater quantity or quality by ensuring: (a) the flow of water along overland flow paths is not restricted; (b) opportunities for water infiltration are maximised; and (c) areas of pavement, turf and mulched garden beds are appropriately located and adequately drained.	**AO10**	No acceptable outcome is nominated.	**Not Applicable (PO10)** The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure as outlined in section 5 and shown on Figure 7. Noting that the proposed development is within a rural area and not an urban area, existing landscape elements will be retained as part of the proposed development and no formal landscaping is proposed.

				Further the proposed development is in the centre east of the subject land and is not visible from public areas.
PO11	Landscape elements: (a) provide high levels of durability and robustness; (b) are cost effective; and (c) have the ability to be maintained conveniently over the long-term.	**AO11**	No acceptable outcome is nominated.	**Not Applicable (PO11)** Refer to PO10 response.
PO12	Landscape works and plant selection protects the structural integrity and function of: (a) buildings and structures; (b) overhead and underground services; and (c) other forms of infrastructure.	**AO12**	No acceptable outcome is nominated.	**Not Applicable (PO12)** Refer to PO10 response.

Table 71 – Landscaping code purpose and overall outcomes (*Charters Towers Regional Town Plan*)

ID	Purpose / Outcome	Relevance	Response
1	**Purpose**		
a)	complements built form, topography and existing landscape elements;	Yes	The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. Noting that the proposed development is in a rural area and not an urban area and existing built infrastructure shall be used and no new streets are proposed and existing landscape elements will be retained as part of the proposed development, then no formal landscaping is proposed and the provision of street trees is not required.
b)	enhances the visual appeal and local character of different places throughout the region	No	Noting that the proposed development is in a rural area and not an urban area and existing built infrastructure shall be used and no new streets are proposed and existing landscape elements will be retained as part of the proposed development, then no formal landscaping is proposed and the provision of street trees is not required.
c)	is designed and constructed to a high standard to suit climatic conditions; and	No	Noting that the proposed development is in a rural area and not an urban area and existing built infrastructure shall be used and no new streets are proposed and existing landscape elements will be retained as part of the proposed development, then no formal landscaping is proposed and the provision of street trees is not required.
d)	is functional for users and remains fit for purpose over the long-term	No	Noting that the proposed development is in a rural area and not an urban area and existing built infrastructure shall be used and no new streets are proposed and existing landscape elements will be retained as part of the proposed development, then no formal landscaping is proposed and the provision of street trees is not required.
2	**Overall outcomes**		
a)	landscaping creates shade and shelter on streets and public spaces;	No	The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure.

			Noting that the proposed development is in a rural area and not an urban area and existing built infrastructure shall be used and no new streets are proposed and existing landscape elements will be retained as part of the proposed development, then no formal landscaping is proposed and the provision of street trees is not required.
b)	landscaping conserves energy, water usage and creates comfortable microclimates;	No	The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. Noting that the proposed development is in a rural area and not an urban area and existing built infrastructure shall be used and no new streets are proposed and existing landscape elements will be retained as part of the proposed development, then no formal landscaping is proposed and the provision of street trees is not required.
c)	landscaping creates high quality streetscapes and enhances local identity;	No	The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. Noting that the proposed development is in a rural area and not an urban area and existing built infrastructure shall be used and no new streets are proposed and existing landscape elements will be retained as part of the proposed development, then no formal landscaping is proposed and the provision of street trees is not required.
d)	landscape design is used to integrate the natural and built form elements of the site and the locality;	No	The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. Noting that the proposed development is in a rural area and not an urban area and existing built infrastructure shall be used and no new streets are proposed and existing landscape elements will be retained as part of the proposed development, then no formal landscaping is proposed and the provision of street trees is not required.
e)	landscape elements contribute to the useability, legibility, identity and understanding of the region and its places;	No	The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure.

			Noting that the proposed development is in a rural area and not an urban area and existing built infrastructure shall be used and no new streets are proposed and existing landscape elements will be retained as part of the proposed development, then no formal landscaping is proposed and the provision of street trees is not required.
f)	landscaping is used for screening to soften built form, mitigate adverse aesthetic impacts, improve amenity and provide privacy;	No	The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. Noting that the proposed development is in a rural area and not an urban area and existing built infrastructure shall be used and no new streets are proposed and existing landscape elements will be retained as part of the proposed development, then no formal landscaping is proposed and the provision of street trees is not required.
g)	plant species and landscaping materials are suitable for local climatic conditions;	No	The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. Noting that the proposed development is in a rural area and not an urban area and existing built infrastructure shall be used and no new streets are proposed and existing landscape elements will be retained as part of the proposed development, then no formal landscaping is proposed and the provision of street trees is not required.
h)	plant species, landscaping materials and surface treatments are suited to their intended function and user requirements and are designed to remain attractive, fit for purpose and be cost effective to maintain over the long-term;	No	The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. Noting that the proposed development is in a rural area and not an urban area and existing built infrastructure shall be used and no new streets are proposed and existing landscape elements will be retained as part of the proposed development, then no formal landscaping is proposed and the provision of street trees is not required.

i)	landscape design facilitates an accessible, safe and comfortable environment for all users; and	No	The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. Noting that the proposed development is in a rural area and not an urban area and existing built infrastructure shall be used and no new streets are proposed and existing landscape elements will be retained as part of the proposed development, then no formal landscaping is proposed and the provision of street trees is not required.
j)	mature on site vegetation is retained, protected and integrated into the site design wherever practicable.	No	The subject land is within the Rural zone and the proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure. Noting that the proposed development is in a rural area and not an urban area and existing built infrastructure shall be used and no new streets are proposed and existing landscape elements will be retained as part of the proposed development, then no formal landscaping is proposed and the provision of street trees is not required.

9 Relevant guidelines

Various states including Queensland in conjunction with the Australian beef cattle lot feeding sector have prepared codes of practice, guidelines and reference manuals for guiding the siting, design and preventing adverse impacts on the environment from beef cattle feedlots.

These guidelines, code of practice and reference manuals do not override or replace federal, state or local government legislation, regulations, plans or policies. The aim of these reference documents is to ensure that those planning to construct a beef cattle feedlot, or operate one, comply with all relevant regulatory requirements.

RDC Engineers Pty Ltd has extensive experience in the preparation of environmental assessments, layouts and designs for intensive livestock developments, particularly beef cattle feedlots. The following guidelines have been used to plan and design the proposed development and provide best practice methods for siting, design, operation and management (in the event development consent is granted) of the development.

9.1.1 State guidelines, codes and policies

The following state documents have been used as a resource when preparing this development application. These guidelines provide a broad framework of generally acceptable principles for establishing and operating beef cattle feedlots within Queensland.

- *Reference Manual for the Establishment and Operation of Beef Cattle Feedlots in Queensland*. The Queensland Feedlot Manual contains information on the establishment and operation of feedlots in Queensland including the key site selection parameters, the major design components of a feedlot and feedlot construction techniques (Skerman, 2000).
- Environmental Protection (Air) Policy 2019. The Environmental Protection (Air) Policy has been developed to provide a framework for making consistent, equitable and informed decisions about the air environment. Environmental values for the air environment include health and biodiversity of ecosystems, human health and wellbeing and the amenity of the community.
- Environmental Protection (Noise) Policy 2019. The Environmental Protection (Noise) Policy has been developed to provide a framework for making consistent, equitable and informed decisions about the acoustic environment. Acoustic values include health and biodiversity of ecosystems, human health and wellbeing and the amenity of the community.
- Guideline: Application requirements for activities with waste impacts (Department of Environment and Science, 2017a). This guideline outlines the type of impacts ERAs which generate, handle, store, treat or dispose of waste can have on the environmental values of the receiving environment.

- Guideline: Application requirements for activities with impacts to water (Department of Environment and Science, 2017b). This guideline outlines the type of impacts ERAs can have on the environmental values of water.
- Guideline: Odour Impact Assessment from Developments (Department of Environment and Heritage Protection, 2013). This guideline outlines a procedure for assessing the likelihood of odour nuisance from developments.
- Guideline: Application requirements for activities with noise impacts (Department of Environment and Science, 2017c). This guideline outlines the type of impacts ERAs can have on nearby sensitive receptors.
- Guideline: Application requirements for activities with impacts to land (Department of Environment and Science, 2017d). This guideline outlines the type of impacts ERAs can have on the environmental values of land.
- Guideline: Application requirements for activities with impacts to air (Department of Environment and Science, 2017e). This guideline outlines the type of impacts ERAs can have on environmental values of air.

9.1.2 National guidelines

Meat & Livestock Australia considers that the protection of the environment is essential for ecologically and economically sustainable agricultural production. To this end, Meat & Livestock Australia has been pro-active in developing and adopting appropriate guidelines and codes of practice for best practice siting, design, construction and operation for beef cattle feedlots. The following documents have been used as a resource when preparing this environmental assessment. These documents provide a framework of acceptable principles for the establishment and operation of beef cattle feedlots in Australia.

- The National Guidelines for Beef Cattle Feedlots in Australia contains information on the establishment and operation of feedlots including the major design components of a feedlot, key site selection parameters, development application and approval process, and feedlot construction (MLA, 2012a).
- The National Beef Cattle Feedlot Environmental Code of Practice addresses the environmentally relevant aspects of the site, design, construction and operation of a beef cattle feedlot. It defines a series of outcomes that should prevent or minimise adverse impacts on environmental values (MLA, 2012b).
- The Beef Cattle Feedlots: Design and Construction manual provides a reference document that outlines current best practice design and construction of feedlot facilities including site selection and layout, site infrastructure, site earthworks, cattle handling, shade structures, pen design and layout, feed storage, preparation and delivery, water supply and usage, cattle washing, runoff control and storage, feedlot construction (MLA, 2015a).
- The Beef Cattle Feedlots: Waste Management and Utilisation handbook provides a reference document that outlines current best practice for waste management and utilisation including types of wastes, waste storage and processing and utilisation (MLA, 2015b).

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Appendix A – Title reference

Current Title Search

Queensland Titles Registry Pty Ltd
ABN 23 648 568 101

Title Reference:	**21327058**	**Search Date:**	29/05/2022 05:50
Date Title Created:	08/10/1986	**Request No:**	41199044
Previous Title:	21026111, 21303068		

ESTATE AND LAND

Estate in Fee Simple

LOT 1 REGISTERED PLAN 743456
Local Government: CHARTERS TOWERS

REGISTERED OWNER

Dealing No: 720002889 09/04/2020

REID RIVER LAND HOLDINGS PTY LTD A.C.N. 623 669 367 TRUSTEE
UNDER INSTRUMENT 720002889

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 20818224 (POR 18)

2. EASEMENT No 601328258 (T521486P) 12/02/1991
BENEFITING THE LAND
OVER EASEMENT A ON RP808273

3. MORTGAGE No 720818977 26/05/2021 at 15:45
COMMONWEALTH BANK OF AUSTRALIA A.C.N. 123 123 124

ADMINISTRATIVE ADVICES

NIL

UNREGISTERED DEALINGS

NIL

Caution - Charges do not necessarily appear in order of priority

** End of Current Title Search **

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Requested by: D-ENQ TITLES QUEENSLAND

Current Title Search

Queensland Titles Registry Pty Ltd
ABN 23 648 568 101

Title Reference:	**21325149**	**Search Date:**	29/05/2022 05:50
Date Title Created:	01/09/1986	**Request No:**	41199044
Previous Title:	21303068		

ESTATE AND LAND

Estate in Fee Simple

LOT 2 REGISTERED PLAN 743456
Local Government: CHARTERS TOWERS

REGISTERED OWNER

Dealing No: 720829113 31/05/2021

REID RIVER LAND HOLDINGS PTY LTD A.C.N. 623 669 367 TRUSTEE
UNDER INSTRUMENT 720829113

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 20818224 (POR 18)

2. EASEMENT No 601328258 (T521486P) 12/02/1991
BURDENING THE LAND
TO LOT 1 ON RP743456
OVER EASEMENT A ON RP808273

ADMINISTRATIVE ADVICES

NIL

UNREGISTERED DEALINGS

NIL

Caution - Charges do not necessarily appear in order of priority

** End of Current Title Search **

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Requested by: D-ENQ TITLES QUEENSLAND

Current Title Search

Queensland Titles Registry Pty Ltd
ABN 23 648 568 101

Title Reference:	**51184465**	**Search Date:**	29/05/2022 05:50
Date Title Created:	23/05/2019	**Request No:**	41199044
Previous Title:	20538096, 20539215, 20999072, 20999073, 20999076, 20999077, 20999078, 20999079		

ESTATE AND LAND

Estate in Fee Simple

LOT 600 SURVEY PLAN 310657
Local Government: CHARTERS TOWERS

REGISTERED OWNER

Dealing No: 719413655 17/05/2019

REID RIVER LAND HOLDINGS PTY LTD A.C.N. 623 669 367 TRUSTEE
UNDER INSTRUMENT 719042756

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 20095234 (POR 598)
Deed of Grant No. 20142222 (POR 2V)
Deed of Grant No. 20142223 (POR 4V)
Conveyance No. 602568790 (N402296) (POR 4V)
(POR 2V)
Conveyance No. 602691874 (N395058) (POR 598)

2. MORTGAGE No 719209944 15/01/2019 at 12:23
COMMONWEALTH BANK OF AUSTRALIA A.C.N. 123 123 124

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
711561999	VEG NOTICE VEGETATION MANAGEMENT ACT 1999	08/04/2008 16:00	CURRENT
711562015	VEG NOTICE VEGETATION MANAGEMENT ACT 1999	08/04/2008 16:02	CURRENT
711620779	VEG NOTICE VEGETATION MANAGEMENT ACT 1999	02/05/2008 13:37	CURRENT
711620781	VEG NOTICE VEGETATION MANAGEMENT ACT 1999	02/05/2008 13:37	CURRENT
711620782	VEG NOTICE VEGETATION MANAGEMENT ACT 1999	02/05/2008 13:38	CURRENT
711620784	VEG NOTICE VEGETATION MANAGEMENT ACT 1999	02/05/2008 13:38	CURRENT
711620786	VEG NOTICE VEGETATION MANAGEMENT ACT 1999	02/05/2008 13:38	CURRENT
711620790	VEG NOTICE VEGETATION MANAGEMENT ACT 1999	02/05/2008 13:39	CURRENT
711620792	VEG NOTICE VEGETATION MANAGEMENT ACT 1999	02/05/2008 13:39	CURRENT
711620795	VEG NOTICE VEGETATION MANAGEMENT ACT 1999	02/05/2008 13:40	CURRENT

UNREGISTERED DEALINGS

NIL

Caution - Charges do not necessarily appear in order of priority

COPYRIGHT QUEENSLAND TITLES REGISTRY PTY LTD [2022]
Requested by: D-ENQ TITLES QUEENSLAND

Queensland Titles Registry Pty Ltd
ABN 23 648 568 101

Title Reference:	51184465

** End of Current Title Search **

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Appendix B – Assessment spreadsheets

General

Landholders' name(s):	**Reid River Land Holdings Pty Ltd**
Cattle feedlot name:	**Reid River**
PIC (Property Identification Code):	
Feedlot address:	**4291 Flinders Highway**
Feedlot locality:	**Reid River**
Feedlot State:	**Qld**
Postcode:	**4816**
Feedlot Local Government Area:	**Charters Towers Regional Council**
Feedlot latidude (dec degrees):	**-19.7750**
Feedlot longitude (dec degrees):	**146.8500**
Closest hydrological locality (Qld)	Townsville
Distance from site (km)	57.571
Average annual rainfall (mm)	1,143
Spreadsheet user name	**Rod Davis**
Assessment identification	**3,075 SCUs**
Assessment date	**29 May 2022**

Nearby localities:

	Closest	2nd closest	3rd closest	4th closest
Locality name:	Reid River	Calcium	Crimea	Woodstock
Distance from feedlot site to locality (km):	9.309	13.275	17.490	19.625
Bearing from feedlot site to locality (dec deg):	58	334	248	356
General direction from feedlot site to locality:	ENE	NNW	WSW	N
Locality Local Government Area:	Townsville (City)	Townsville (City)	Charters Towers (Regional Council)	Townsville (City)
Locality State:	QLD	QLD	QLD	QLD
Locality Postcode:	4816	4816	4816	4816
Locality latitude (dec deg):	-19.7306	-19.6672	-19.8350	-19.5989
Locality longitude (dec deg):	146.9254	146.7954	146.6955	146.8378
Locality average annual rainfall (mm/yr):	895	858	707	844
Locality average annual pan evaporation (mm/yr):	2,435	2,515	2,515	2,557

Staged development

Is it intended to develop the proposed feedlot in stages?	**Yes**		
	Stage 1	**Stage 2**	**Stage 3**
Cattle capacity per stage	**3,075**		
Pen numbers (as per plan)	**1 - 45**		
Anticipated completion date	**31-Dec-19**		

Pens

Maximum feedlot cattle capacity	3,075	SCU
Stocking density	16.7	m^2/SCU
Comment	*OK*	
Number of controlled drainage areas	2	CDAs

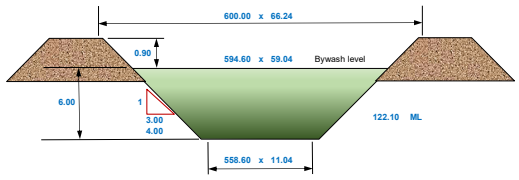
Controlled drainage area	1	2	3	Total	Units
Number of production pens	34	30		64	pens
Proposed cattle capacity	1,445	1,630		3,075	SCU
Comment	*OK*				
Pen area	2.42	2.72		5.14	ha
Comment	*OK*				
Hard catchment area	3.59	1.67		5.26	ha
Soft catchment area	0.71	0.43		1.14	ha
Sedimentation system area	0.52	0.40		0.93	ha
Comment	*OK*				
Holding pond area	4.69			4.69	ha
Comment	*Less than estimated area of holding pond*				
Pen down-slope	2.5% [1]	2.5% [1]			%
Comment	*OK*				
Pen cross-slope	0.5% [1]	0.5% [1]			%
Comment	*OK*				
Catch drain slope	0.5%	0.5%			%

Effluent management system:	**Sedimentation system, holding pond & effluent irrigation** [1]

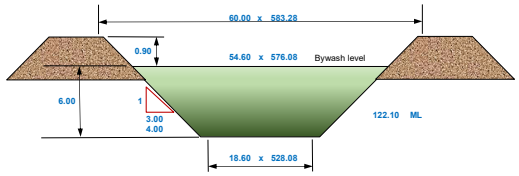
Effluent holding pond(s)

Controlled drainage area	1	2	3	Total	Units
			2 CDAs		
Standard tabulated method for determining holding pond volume *(Skerman, 2000)*					
Pen pond volume co-efficient *(Cp)*	7.532	7.532			ML/ha
Pen area *(Ap)*	2.42	2.72		**5.14**	ha
Hard catchment pond volume co-efficient *(Ch)*	7.168	7.168			ML/ha
Hard catchment area *(Ah)*	8.81	2.08		**10.88**	ha
Soft catchment pond volume co-efficient *(Cs)*	4.695	4.695			ML/ha
Soft catchment area *(As)*	0.71	0.43		**1.14**	ha
Effluent holding pond storage capacity *(V)*	84.68	37.41		**122.09**	ML
Major storm event holding pond volume calculation *(National Guidelines, ARMCANZ, 1997)*					
Tabulated rainfall intensity (Qld localities) for 5% AEP and 24 hr duration	14.30				mm/hr
WARNING - see below					
Rainfall intensity (from BoM website) for 5% AEP and 24 hr duration					mm/hr
Effluent holding pond storage capacity *(V)*	31.80	13.76		**45.56**	ML
Required effluent holding pond storage capacity *(V)*	**84.68**	**37.41**		**122.09**	**ML**
Proposed effluent holding pond storage capacity *(V)*	**122.10**	**122.10**		**244.20**	**ML**
Comment	*OK*	*OK*		*OK*	
Proposed Pond Dimensions *(based on fully excavated, rectangular based storage, constructed on flat, horizontal site)*					
Depth - base to bywash level, *(D)*	**6.00**	**6.00**			m
Batter - lengthwise, *Zl* (1 vertical : z horizontal)	**3.00**	**3.00**			
Batter - breadthwise, *Zb* (1 vertical : z horizontal)	**4.00**	**4.00**			
Freeboard - bywash to crest, *(F)*	**0.90**	**0.90**			m
Length - at embankment crest, *(Lc)*	**600.00**	**60.00**			m
Breadth - at embankment crest, *(Bc)*	66.24	583.28			m
Length - At bywash level, *(Lfsl)*	594.60	54.60			m
Breadth - at bywash level, *(Bfsl)*	59.04	576.08			m
Length - at base, *(Lb)*	558.60	18.60			m
Breadth - at base, *(Bb)*	11.04	528.08			m
Length : Breadth Ratio	10.07	10.55			
Surface Area at Embankment Crest	3.975	3.500		**7.474**	ha
Volume Check	122,100	122,100		244,200	m^3
Bywash (spillway) calculations					
Peak outflow rate (Qp) for 2% AEP design storm	4.09	1.77			
Suggested minimum bywash inlet width (based on 0.5 m deep bywash flow)	6.67	2.44			

Controlled Drainage Area 1



Controlled Drainage Area 2



Cropping information

	Liquid effluent irrigation area		Manure application area	
	Summer	Winter	Summer	Winter
Utilisation method	Cut and cart	Cut and cart	Cut and cart	Cut and cart
Cut and cart				
Crop or fodder produced	Maize silage	Irrigated pasture	N/A	Dry land winter cereal
Normal yield range	*10 to 25 t/ha/yr*	*8 to 20 t/ha/yr*	*N/A*	*2 to 4 t/ha/yr*
Anticipated DM yield (t/ha/yr)	**15.0**	**16.0**	**3.5**	**3.5**
DM N content (%)	2.0%	2.0%	0.0%	2.0%
DM P content (%)	0.3%	0.3%	0.0%	0.3%
DM K content (%)	1.5%	1.5%	0.0%	0.5%
N removal (kg/ha/yr)	**300**	**320**	**0**	**70**
P removal (kg/ha/yr)	**45**	**48**	**0**	**11**
K removal (kg/ha/yr)	**225**	**240**	**0**	**18**
Grazing				
Pasture or forage cropping situation	N/A	N/A	N/A	N/A
Suggested stocking rate (ha/AE)	*N/A*	*N/A*	*N/A*	*N/A*
Stocking rate (ha/AE)				
Suggested growth rate (kg/AE/year)	*N/A*	*N/A*	*N/A*	*N/A*
Stock growth rate (kg/AE/year)				
Cattle N Content (g/kg lwt)	25	25	25	25
Cattle P Content (g/kg lwt)	7	7	7	7
Cattle K Content (g/kg lwt)	1.8	1.8	1.8	1.8
Stock growth N removal (kg/ha/year)	0.00	0.00	0.00	0.00
Total N excreted on pasture (kg/AE/day)	0.15	0.15	0.15	0.15
Total N excreted on pasture (kg/ha/year)	0.00	0.00	0.00	0.00
Total N loss on pasture (%)	50%	50%	50%	50%
Nett total N removal (kg/ha/year)	**0.00**	**0.00**	**0.00**	**0.00**
Cattle growth P removal (kg/ha/year)	**0.00**	**0.00**	**0.00**	**0.00**
Cattle growth K removal (kg/ha/year)	**0.00**	**0.00**	**0.00**	**0.00**
Total annual N removal (kg/ha/yr):	**300**	**320**	**0**	**70**
Total annual P removal (kg/ha/yr):	**45**	**48**	**0**	**11**
Total annual K removal (kg/ha/yr):	**225**	**240**	**0**	**18**

Effluent irrigation area

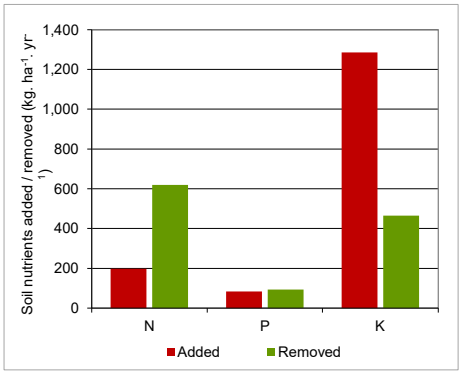
Estimated average annual effluent irrigation volume			**99.99**	ML/yr
Nutrient	**N**	**P**	**K**	
Average pond effluent nutrient composition	**220**	**71**	**1,092**	mg/L
N losses during effluent irrigation	15%			
N losses from soil surface following effluent irrigation	10%			
Irrigated effluent available for plant uptake	16,828	7,099	109,185	kg/yr
Total crop nutrient removal	620	93	465	kg/ha/yr
Safe P storage capacity of soil		1,200		kg/ha
P storage life span		**20**		years
Minimum effluent irrigation areas, based on:	**N**	**P**	**K**	
1. Total nutrient uptake	27.1	76.3	**234.8**	ha
2. Soil P storage over nominated life span		46.4		ha
Proposed effluent irrigation area			**85.0**	**ha**
Proposed effluent irrigation rate			**118**	**mm/yr**

WARNING - The proposed effluent irrigation area is less than the minimum area highlighted above.

Proposed effluent irrigation method	**Spray**
Proposed irrigator type / system	**Travelling low-med pressure effluent type**

Proposed effluent irrigation area nutrient balance	**N**	**P**	**K**	
Nutrients added (after losses)	16,828	7,099	109,185	kg/yr
Nutrients added (after losses) per ha	198	84	1,285	kg/ha/yr
Nutrients removed by crop	52,700	7,905	39,525	kg/yr
Nutrients removed by crop per ha	620	93	465	kg/ha/yr
Nutrient excess per ha	**0**	**0**	**820**	**kg/ha/yr**
Nutrient deficiency per ha	**422**	**9**	**0**	**kg/ha/yr**

Inorganic fertiliser replacement value	**Urea**	**Triple super phosphate**	**Muriate of potash**	
Nutrient excess	0	0	69,660	
Effective effluent nutrient application	16,828	7,099	39,525	
Fertiliser nutrient content	46.0%	20.0%	50.0%	%
Equivalent fertiliser mass	36,582	35,495	79,050	kg / year
Fertiliser cost	**$290**	**$434**	**$470**	$ / tonne
Annual fertiliser value	**$10,609**	**$15,405**	**$37,154**	**$ / year**
Total annual fertiliser value		**$63,167**		**$ / year**



Appendix C – IFC Drawings

REID RIVER EXPORT DEPOT

5291 FLINDERS HIGHWAY, REID RIVER

FOR REID RIVER HOLDINGS

GENERAL NOTES

1. ALL DIMENSIONS GIVEN ON THESE DRAWINGS ARE IN METRES UNLESS NOTED OTHERWISE.
2. ALL NEW WORK AND MATERIALS SHALL COMPLY WITH THE PROJECT DRAWING SPECIFICATION AND CURRENT RELEVANT COUNCIL STANDARDS AND SPECIFICATIONS.
3. THE CONTRACTOR IS TO LOCATE, IDENTIFY AND ESTABLISH THE CONNECTIVITY OF ALL EXISTING SERVICES WITHIN THE LIMITS OF PROPOSED WORKS AND CONFIRM THIS INFORMATION WITH THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MEASURING DEVICES, SAFETY EQUIPMENT AND MACHINERY REQUIRED TO CARRY OUT INSPECTIONS/MEETINGS AS SPECIFIED OR REQUESTED BY THE ENGINEER.
5. PROOF ROLLING NOMINATED SHALL BE CARRIED OUT USING A SINGLE AXLE HIGHWAY TRUCK WITH A REAR AXLE LOAD NOT LESS THAN 10 TONNES AND TYRES INFLATED TO 550kPa OR APPROVED EQUIVALENT. EQUIPMENT LABOUR AND LOADING REQUIRED FOR PROOF ROLLING IS TO BE PROVIDED BY THE CONTRACTOR.
6. THESE NOTES SHALL APPLY TO ALL PORTIONS OF WORK.
7. THE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE SPECIFICATIONS. ANY POINT OF CONFLICT WILL BE RESOLVED BY THE SUPERINTENDENT.

NOISE

1. ALL PLANT AND EQUIPMENT SHALL BE CONTROLLED TO MINIMISE NOISE EMISSION IN ACCORDANCE WITH AS2436 (GUIDE TO NOISE CONTROL ON CONSTRUCTION, MAINTENANCE AND DEMOLITION). THE SITE WORKING HOURS SHOULD BE IN ACCORDANCE WITH LOCAL AUTHORITY REQUIREMENTS. WHERE NOT SPECIFIED THE HOURS SHALL BE:

MONDAY - SATURDAY	7:00am to 6:00pm
SUNDAY OR PUBLIC HOLIDAY	NO WORK PERMITTED

PRE-CONSTRUCTION & APPROVALS

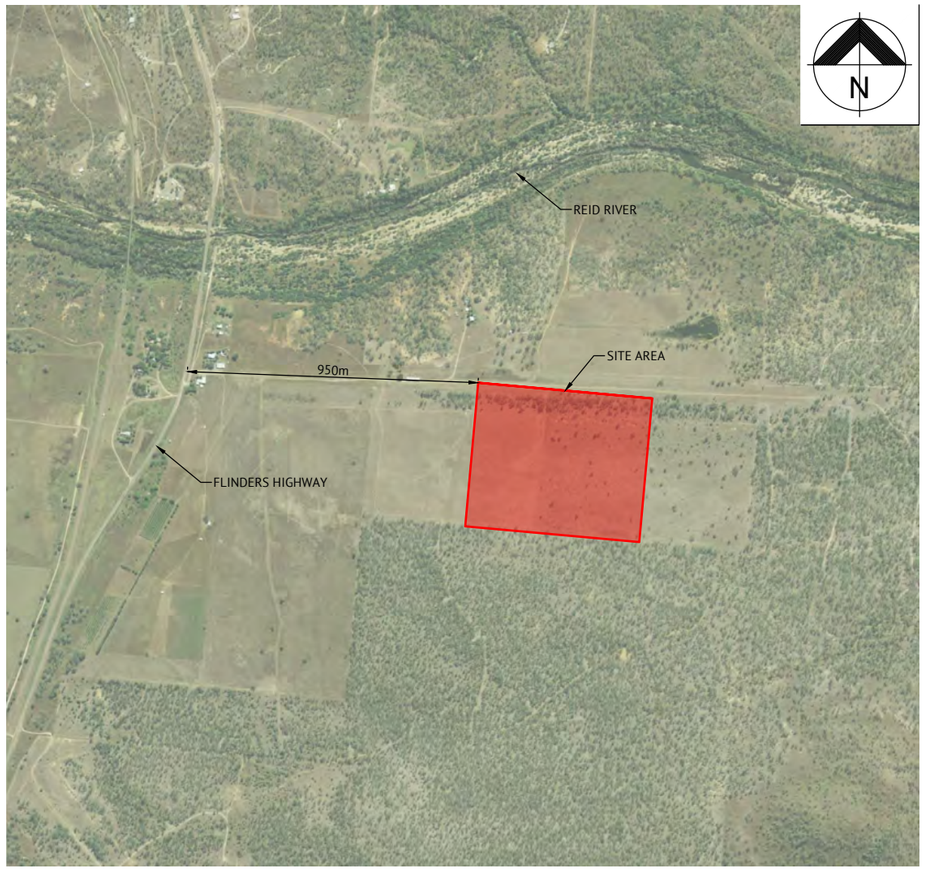
1. NO LOCATING/ POTHOLING OF EXISTING SERVICES HAS BEEN CARRIED OUT. THE CONTRACTOR IS TO DETERMINE THE LOCATION AND DEPTH OF ALL EXISTING SERVICES WHICH AFFECT THE WORKS AND REPORT ANY POTENTIAL CLASHES TO THE SUPERINTENDENT PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION WORKS.
2. THE CONTRACTOR IS RESPONSIBLE FOR ARRANGING WITH THE APPROPRIATE AUTHORITY FOR LOCATING EXISTING SERVICES AND FOR ANY MODIFICATIONS TO EXISTING SERVICES REQUIRED AS A RESULT OF THE WORKS.
3. THE CONTRACTOR IS RESPONSIBLE TO PROTECT ALL EXISTING SERVICES FROM DAMAGE.
4. ANY WORKS DAMAGED AS A RESULT OF CONSTRUCTION ARE TO BE REINSTATED TO RELEVANT AUTHORITY'S REQUIREMENTS AT THE CONTRACTORS COST.
5. FINISHED SURFACE LEVELS ARE TO BE GRADED UNIFORMLY BETWEEN LEVELS INDICATED ON THE DRAWINGS.

WORKPLACE HEALTH AND SAFETY

1. THE CONTRACTOR SHALL BE THE PRINCIPAL CONTRACTOR AS DESIGNATED BY THE WORK HEALTH AND SAFETY ACT (2011).
2. THE CONTRACTOR SHALL PREPARE AND IMPLEMENT A WORKPLACE HEALTH AND SAFETY PLAN AS REQUIRED BY THE WORK HEALTH AND SAFETY ACT (2011).

SETOUT NOTES

1. THE LEVEL DATUM FOR WORKS IS A.H.D (AUSTRALIAN HEIGHT DATUM).
2. SETOUT SHALL BE MADE BY DIGITAL ENGINEERING DATA AND CONFIRMED ONSITE PRIOR TO CONSTRUCTION BY A SURVEYOR.



LOCALITY PLAN

0 200 400 600m

SCALE 1:10,000 (A1)

SURVEY ORIGIN

TBM - PM97057
R.L - 135.194 A.H.D

SITE AREA

267,900m²

REAL PROPERTY DESCRIPTION

LOTS 1, 2, 5 & 10 on RP715678

INDEMNITY - EXISTING SERVICES

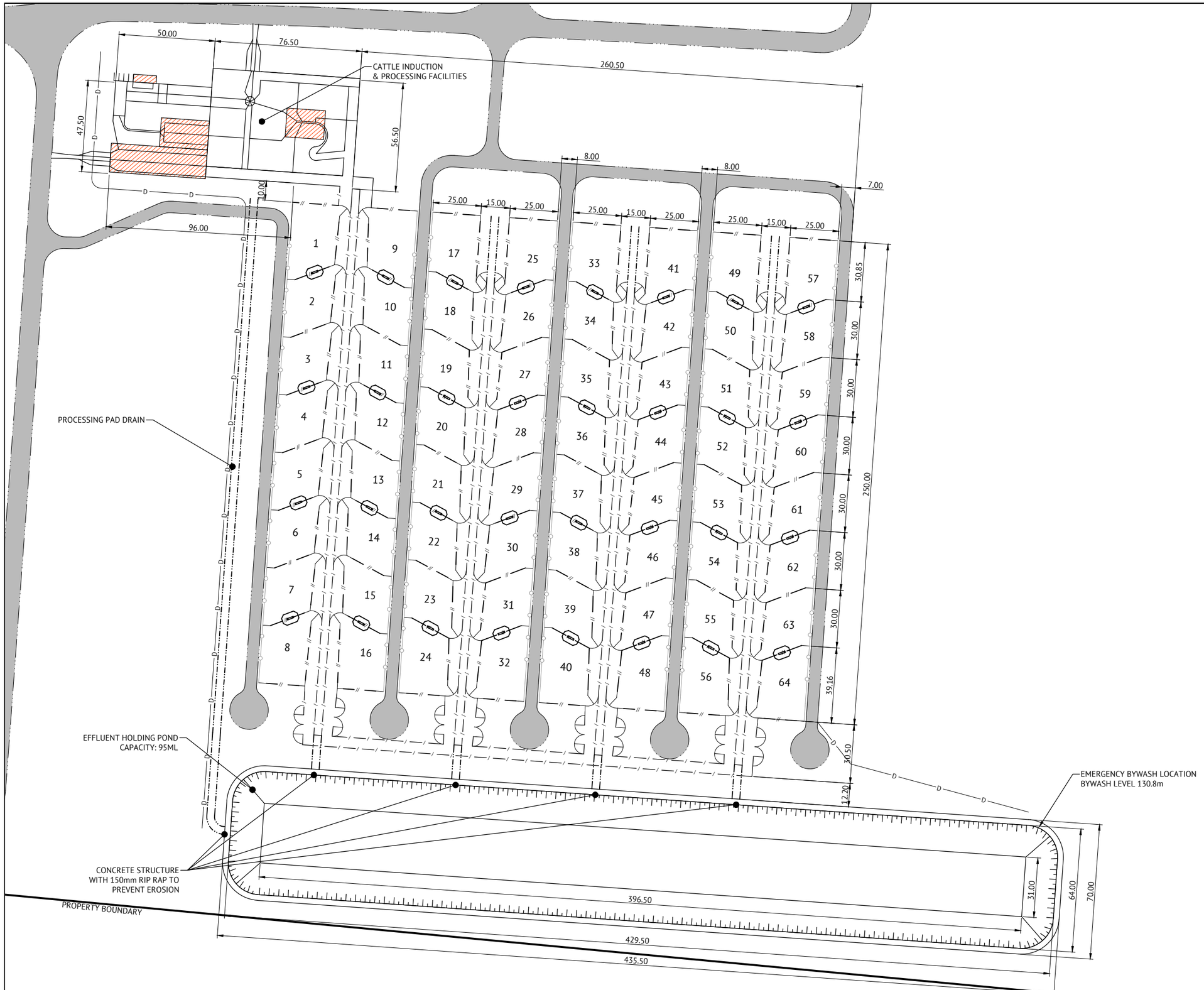
NOT WITHSTANDING THAT EXISTING SERVICES MAY OR MAY NOT BE SHOWN ON THESE DRAWINGS, NO RESPONSIBILITY IS TAKEN BY THE ENGINEER OR THE PRINCIPAL FOR THIS INFORMATION WHICH HAS BEEN SUPPLIED BY OTHERS. THE DETAILS ARE PROVIDED FOR INFORMATION ONLY. THE CONTRACTOR SHALL ASCERTAIN THE POSITION OF ALL UNDERGROUND SERVICES PRIOR TO EXCAVATION AND SHALL BE RESPONSIBLE FOR THE COST OF REPAIRS TO DAMAGES CAUSED AS A RESULT OF THE WORKS.

SHEET LIST TABLE

Sheet Number	Sheet Title
A001	COVER SHEET
A002	SITE LAYOUT
A003	SURVEY PLAN
A005	DESIGN CONTOUR PLAN
A101	BULK EARTHWORKS PLAN
A102	SECTION A, B & C - LONGITUDINAL SECTION THROUGH FEED ROAD
A103	SECTION D & E - LONGITUDINAL SECTION THROUGH FEED ROAD
A104	SECTION F & G - LONGITUDINAL SECTION THROUGH DRAIN
A105	SECTION H & I - LONGITUDINAL SECTION THROUGH DRAIN
A106	SECTION J, K & L - CROSS SECTION THROUGH FEED PENS
A701	TYPICAL PEN LAYOUT
A702	TYPICAL PEN CROSS SECTION
A801	PEN SET OUT - SHEET 1 OF 2
A802	PEN SET OUT - SHEET 2 OF 2

Premise

PROJECT DIRECTOR	DATE	JOB CODE	SHEET NUMBER	REVISION
TIM SULLIVAN	09/08/18	MIS-0441	A001	C



N

LEGEND

- PEN FENCE
- LANE/DRAIN FENCE
- BUNK FENCE
- ROAD EDGE
- DRAIN
- DIVERSION BANK
- WET WEATHER GRAVEL ROAD

NOTES:

1. FEATURES MAY HAVE BEEN DIGITISED FROM PLANS, MAPS OR AERIAL PHOTOGRAPHS AND ACCURACY IS LIMITED.
2. THE EFFLUENT HOLDING POND HAS BEEN SIZED USING THE STANDARD TABULATED DESIGN METHOD FOR AN ARI_{20} (1 IN 20 YEAR) EVENT.
3. ALL DIMENSIONS ARE IN METERS UNLESS STATED OTHERWISE.

NOTES: PEN LAYOUT

1.	STOCKING DENSITY (400kg)	= 3.2 m^2/HEAD
2.	PENS 25.0m x 30.0m	= 750 m^2/PEN
3.	STANDARD PEN CAPACITY	= 234 HEAD
4.	TOTAL HOLDING PENS	= 64 PENS
5.	TOTAL HOLDING CAPACITY	= 15,575 HEAD

NOTES: FACILITY LAYOUT

1.	CATTLE LANE WIDTH	= 5.5 m
2.	BUNK WIDTH	= 1.0m
3.	FEED ROAD WIDTH	= 6.0m
4.	CATCH DRAIN WIDTH	= 4.0m

FINAL ISSUE

DATE	REV	DESCRIPTION	REC	APP
09/08/18	C	EFFLUENT POND LENGTH & WIDTH CHANGED		TJS
04/07/18	B	FINAL ISSUE		TJS
29/06/18	A	PRELIMINARY ISSUE - NOT FOR CONSTRUCTION	----	TJS

REVISIONS

Premise

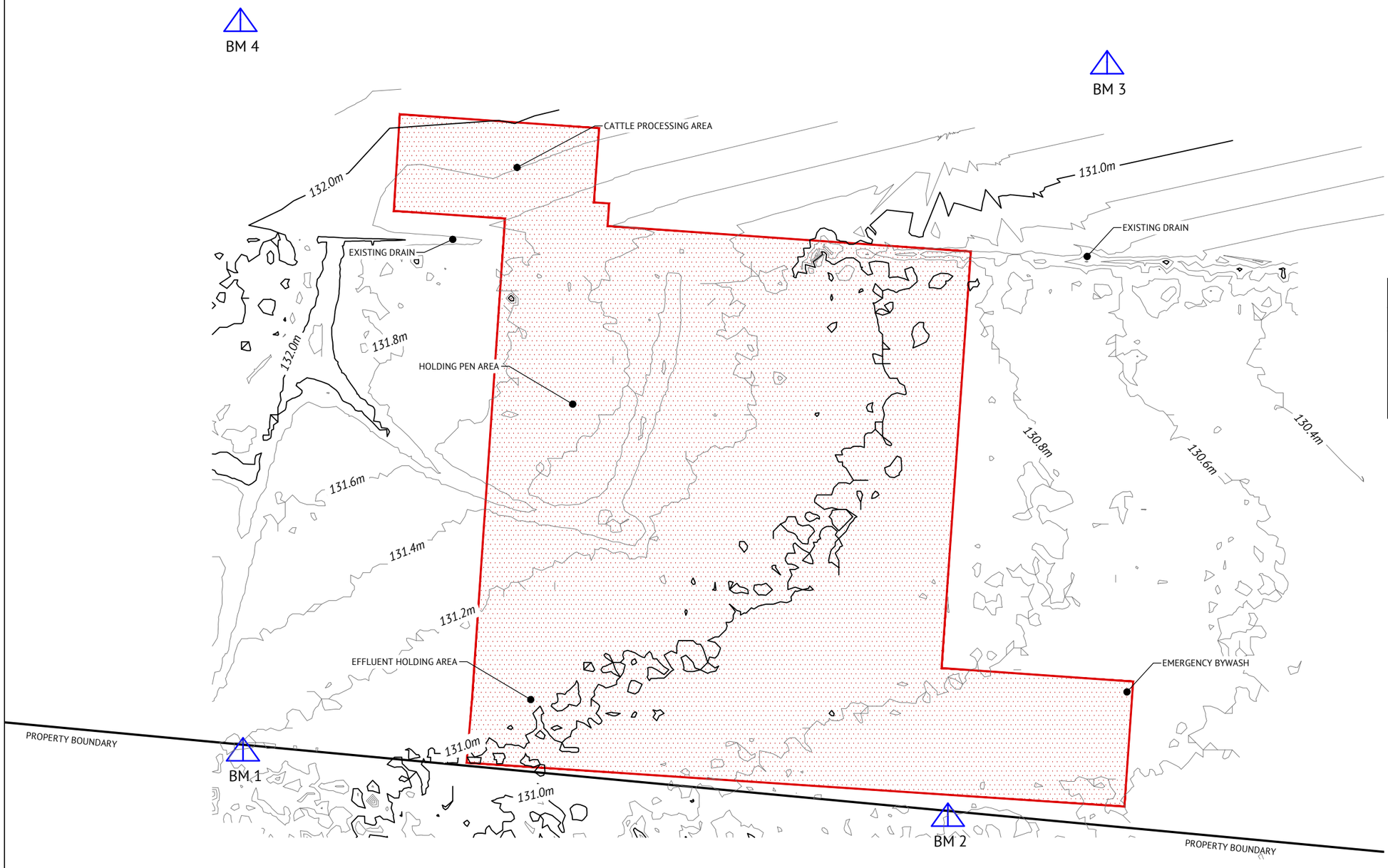
TOOWOOMBA OFFICE
LEVEL 2, UNIT 2
128 MARGARET ST
TOOWOOMBA, QLD 4350
PH: (07) 4632 8230
WEB: www.premise.com.au

DESIGNED TJS
CHECKED TCG
PROJECT MANAGER TJS
ENGINEERING CERTIFICATION

SCALE
0 20 40 60m
SCALE 1:1000 (A1)
ORIGINAL SHEET SIZE A1

CLIENT REID RIVER HOLDINGS
PROJECT REID RIVER EXPORT DEPOT
LOCATION 5291 FLINDERS HIGHWAY, REID RIVER
SHEET TITLE SITE LAYOUT

JOB CODE MIS-0441
SHEET NUMBER A002
REV C



N

LEGEND

- 132m — MAJOR EXISTING CONTOUR (1.0m INTERVAL)
- MINOR EXISTING CONTOUR (0.2m INTERVAL)
- BM — SURVEY BENCHMARK
- EXTENT OF STRIPPING & DEVELOPMENT

NOTES:

1. CADASTRAL INFORMATION EXTRACTED FROM DNRM (SATE OF QUEENSLAND (DEPARTMENT OF NATURAL RESOURCES AND MINES) 2017), ACCURACY IS LIMITED
2. SITE SURVEY UNDERTAKEN BY PREMISE ON 21/05/2018.
3. SURVEY DATA WAS GATHERED USING AN UNMANNED AERIAL VEHICLE (UAV). DATA WAS THEN GROUNDTRUTHED USING A TOPCON GR3 RTK-GPS. THIS UNIT HAS A HORIZONTAL ACCURACY OF +/- 10mm.
4. HORIZONTAL DATUM: ARBITRARY MGA94 ZONE 55
   VERTICAL DATUM: AHD
5. SURVEY CONNECTED TO PSM97057
6. OTHER FEATURES MAY HAVE BEEN DIGITISED FROM PLANS OR AERIAL PHOTOGRAPHS AND ACCURACY IS LIMITED.

BENCHMARK DETAILS

BM	EASTING	NORTHING	AHD	DESCRIPTION
PSM	482769.092	7815706.556	135.194	PSM97057
1	483525.48	7814328.26	131.23	STEEL PICKET
2	484009.29	7814283.42	130.55	STEEL PICKET
3	484118.57	7814799.73	131.00	STEEL PICKET
4	483523.71	7814828.90	132.39	STEEL PICKET

FINAL ISSUE

DATE	REV	DESCRIPTION	REC	APP
09/08/18	C	EFFLUENT POND LENGTH & WIDTH CHANGED		TJS
04/07/18	B	FINAL ISSUE		TJS
29/06/18	A	PRELIMINARY ISSUE - NOT FOR CONSTRUCTION	----	TJS

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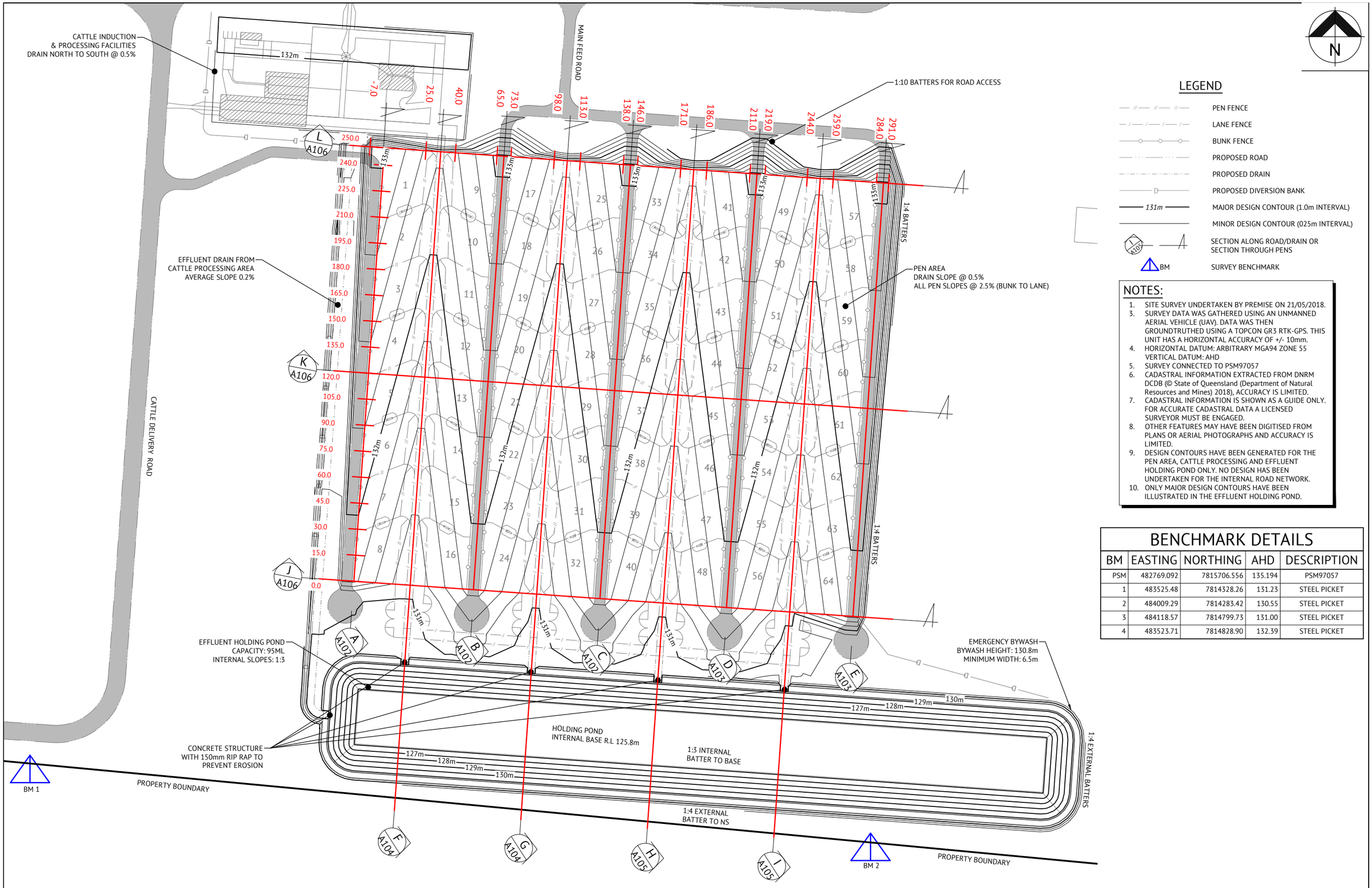
TOOWOOMBA OFFICE
LEVEL 2, UNIT 2
128 MARGARET ST
TOOWOOMBA, QLD 4350
PH: (07) 4632 8230
WEB: www.premise.com.au

DESIGNED TJS
CHECKED TCG
PROJECT MANAGER TJS
ENGINEERING CERTIFICATION

SCALE
0 30 60 90m
SCALE 1:1500(A1)
ORIGINAL SHEET SIZE A1

CLIENT REID RIVER HOLDINGS
PROJECT REID RIVER EXPORT DEPOT
LOCATION 5291 FLINDERS HIGHWAY, REID RIVER
SHEET TITLE SURVEY PLAN

JOB CODE MIS-0441
SHEET NUMBER A003
REV C



LEGEND

- PEN FENCE
- LANE FENCE
- BUNK FENCE
- PROPOSED ROAD
- PROPOSED DRAIN
- PROPOSED DIVERSION BANK
- 131m — MAJOR DESIGN CONTOUR (1.0m INTERVAL)
- MINOR DESIGN CONTOUR (025m INTERVAL)
- SECTION ALONG ROAD/DRAIN OR SECTION THROUGH PENS
- BM — SURVEY BENCHMARK

NOTES:

1. SITE SURVEY UNDERTAKEN BY PREMISE ON 21/05/2018.
3. SURVEY DATA WAS GATHERED USING AN UNMANNED AERIAL VEHICLE (UAV). DATA WAS THEN GROUNDTRUTHED USING A TOPCON GR3 RTK-GPS. THIS UNIT HAS A HORIZONTAL ACCURACY OF +/- 10mm.
4. HORIZONTAL DATUM: ARBITRARY MGA94 ZONE 55 VERTICAL DATUM: AHD
5. SURVEY CONNECTED TO PSM97057
6. CADASTRAL INFORMATION EXTRACTED FROM DNRM DCDB (© State of Queensland (Department of Natural Resources and Mines) 2018), ACCURACY IS LIMITED.
7. CADASTRAL INFORMATION IS SHOWN AS A GUIDE ONLY. FOR ACCURATE CADASTRAL DATA A LICENSED SURVEYOR MUST BE ENGAGED.
8. OTHER FEATURES MAY HAVE BEEN DIGITISED FROM PLANS OR AERIAL PHOTOGRAPHS AND ACCURACY IS LIMITED.
9. DESIGN CONTOURS HAVE BEEN GENERATED FOR THE PEN AREA, CATTLE PROCESSING AND EFFLUENT HOLDING POND ONLY. NO DESIGN HAS BEEN UNDERTAKEN FOR THE INTERNAL ROAD NETWORK.
10. ONLY MAJOR DESIGN CONTOURS HAVE BEEN ILLUSTRATED IN THE EFFLUENT HOLDING POND.

BENCHMARK DETAILS

BM	EASTING	NORTHING	AHD	DESCRIPTION
PSM	482769.092	7815706.556	135.194	PSM97057
1	483525.48	7814328.26	131.23	STEEL PICKET
2	484009.29	7814283.42	130.55	STEEL PICKET
3	484118.57	7814799.73	131.00	STEEL PICKET
4	483523.71	7814828.90	132.39	STEEL PICKET

FINAL ISSUE

DATE	REV	DESCRIPTION	REC	APP
09/08/18	C	EFFLUENT POND LENGTH & WIDTH CHANGED		TJS
04/07/18	B	FINAL ISSUE		TJS
29/06/18	A	PRELIMINARY ISSUE - NOT FOR CONSTRUCTION	----	TJS

REVISIONS

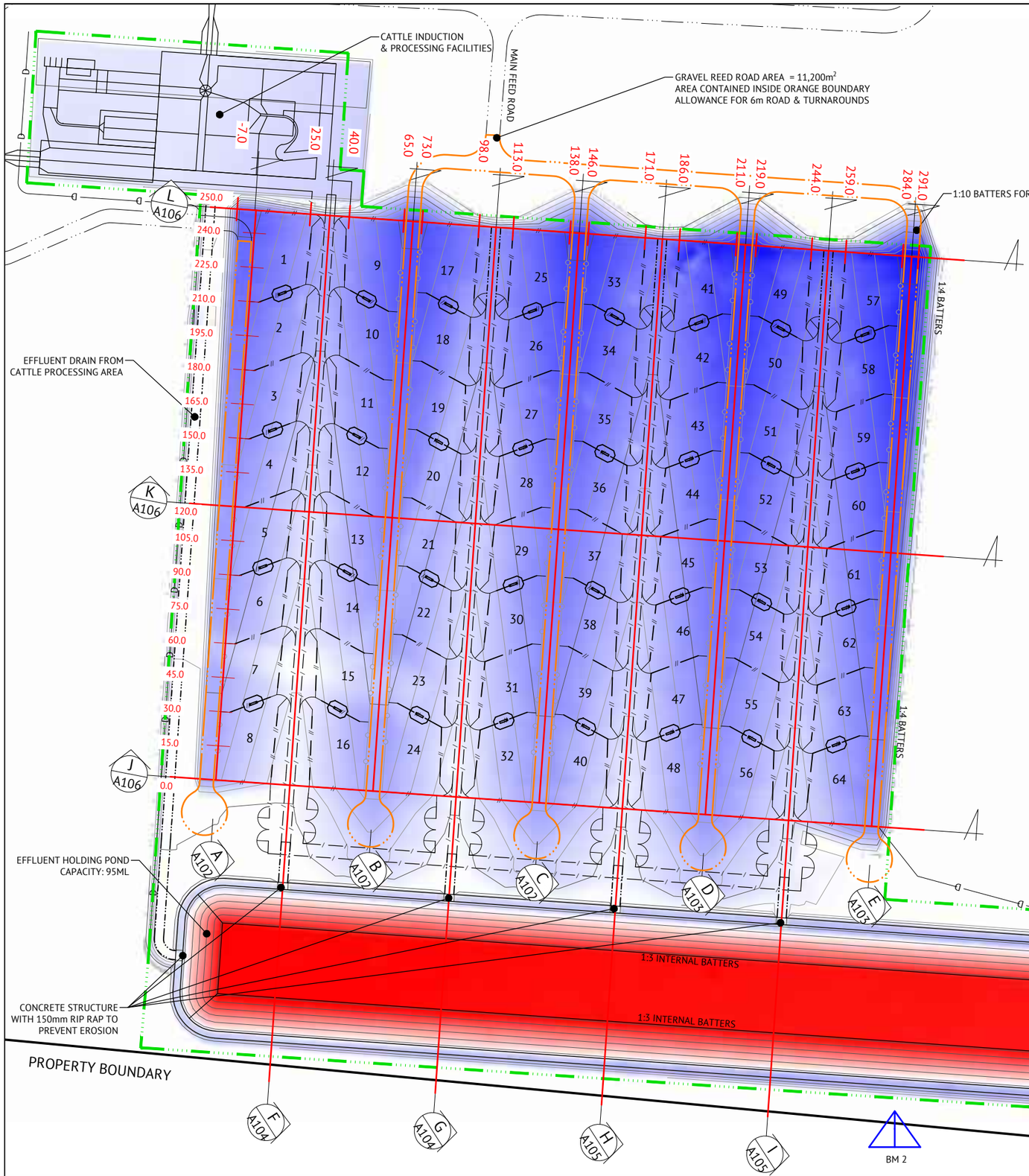
Premise
TOOWOOMBA OFFICE
LEVEL 2, UNIT 2
128 MARGARET ST
TOOWOOMBA, QLD 4350
PH: (07) 4632 8230
WEB: www.premise.com.au

DESIGNED TJS
CHECKED TJG
PROJECT MANAGER TJS
ENGINEERING CERTIFICATION

SCALE
0 20 40 60m
SCALE 1:1000 (A1)
ORIGINAL SHEET SIZE A1

CLIENT REID RIVER HOLDINGS
PROJECT REID RIVER EXPORT DEPOT
LOCATION 5291 FLINDERS HIGHWAY, REID RIVER
SHEET TITLE DESIGN CONTOUR PLAN

JOB CODE MIS-0441
SHEET NUMBER A005
REV C



BULK EARTHWORK ESTIMATE TOPSOIL STRIPPING

AREA	VOLUME	UNITS
STRIP AREA	131,700	m^2
STRIP DEPTH	150	mm
STRIP VOLUME	19,755	m^3

*STRIP DEPTH IS AN ESTIMATE ONLY AND NEEDS TO BE DETERMINED ONSITE. STRIPPED MATERIALS ARE NOT TO BE USED AS FILL.

BULK EARTHWORK ESTIMATE PROCESSING AREA AREA

PARAMETER	VOLUME	UNITS
CUT VOLUME	0	m^3
FILL VOLUME	2,970	m^3
NET RESULT	2,970	FILL REQUIRED m^3

*FILL SOURCED FROM EXCAVATION OF EFFLUENT HOLDING POND

BULK EARTHWORK ESTIMATE PEN AREA

PARAMETER	VOLUME	UNITS
CUT VOLUME	310	m^3
IMPORTED CONCRETE	900	m^3
IMPORTED GRAVEL	2,240	m^3
FILL VOLUME EX IMPORT	83,650	m^3
NET RESULT	86,480	FILL REQUIRED m^3

*FILL EX IMPORT SOURCED FROM EXCAVATION OF EFFLUENT HOLDING POND

BULK EARTHWORK ESTIMATE EFFLUENT HOLDING POND

PARAMETER	VOLUME	UNITS
CUT VOLUME	91,500	m^3
FILL VOLUME	3,300	m^3
NET RESULT	88,200	EXCESS CUT m^3

*CUT SOURCED FROM EXCAVATION OF BORROW PIT TO BE USED IN THE CONSTRUCTION OF THE PROCESSING AND PEN AREAS.

NOTES:

1. VOLUMES PRESENTED ARE ON A M^3 SOLID BASIS, THEREFORE EXCLUDING ANY CUT/FILL RATIOS, BULKING FACTORS OR COMPACTION FACTORS.
2. VOLUMES PRESENTED ARE THE CUT & FILL REQUIREMENTS *AFTER* A SITE STRIPPING DEPTH OF 150mm HAS BEEN APPLIED.
4. STRIPPED TOPSOIL MATERIAL IS NOT TO BE USED AS FILL MATERIAL FOR THE CONSTRUCTION OF THE PENS.
5. THE INITIAL BULK EARTHWORKS DO NOT MAKE ANY ALLOWANCE FOR ENCOUNTERING OF UNSUITABLE MATERIAL DURING THE EXCAVATION PHASE.
6. ADDITIONAL FILL REQUIREMENTS ARE TO BE SOURCED FROM WITHIN THE EFFLUENT HOLDING POND BY DIGGING DEEPER. THE FOOTPRINT IS NOT TO BE INCREASED. REMOVAL OF MATERIAL FROM THIS AREA WILL INCREASE THE STORAGE CAPACITY OF THE HOLDING POND BEYOND THE MINIMUM REQUIREMENT.
7. FEED APRON AREA (CONCRETE) = 6,000m^2 @ 150mm = 900m^3
8. FEED ROAD AREA (GRAVEL) = 11,200m^2 @ 200mm = 2,240m^3
9. AN OVERALL SITE EXCESS OF 2,650m^3 CUT HAS BEEN ESTIMATED. THIS MATERIAL WILL BE USED IN THE FORMATION OF INTERNAL ROADS.

N

LEGEND

- 131m — MAJOR DESIGN CONTOUR (1.0m INTERVAL)
- MINOR DESIGN CONTOUR (0.25m INTERVAL)
- BM — SURVEY BENCHMARK
- EXTENT OF STRIPPING AREA
- PEN FENCE
- LANE FENCE
- BUNK FENCE
- ROAD
- DRAIN
- D — DIVERSION BANK
- PROPOSED GRAVEL FEED ROAD AREA

NOTES:

1. PROPOSED DESIGN IS BASED ON TOPOGRAPHICAL DATA COLLECTED BY PREMISE ON ON 21/05/2018.
2. SURVEY DATA WAS GATHERED USING AN UNMANNED AERIAL VEHICLE (UAV) AND GROUNDTRUTHED USING A TOPCON GR3 RTK-GPS. THIS UNIT HAS A HORIZONTAL ACCURACY OF +/- 10mm.
3. FEATURES MAY HAVE BEEN DIGITISED FROM PLANS, MAPS OR AERIAL PHOTOGRAPHS AND ACCURACY IS LIMITED.
4. CONTOUR INTERVALS - 0.5m

2.670 (m) — MAXIMUM FILL DEPTH

0.000 (m)

-5.140 (m) — MAXIMUM CUT DEPTH

FINAL ISSUE

DATE	REV	DESCRIPTION	REC	APP
09/08/18	C	EFFLUENT POND LENGTH & WIDTH CHANGED		TJS
04/07/18	B	FINAL ISSUE		TJS
29/06/18	A	PRELIMINARY ISSUE - NOT FOR CONSTRUCTION	----	TJS

REVISIONS

Premise
TOOWOOMBA OFFICE
LEVEL 2, UNIT 2
128 MARGARET ST
TOOWOOMBA, QLD 4350
PH: (07) 4632 8230
WEB: www.premise.com.au

DESIGNED TJS
CHECKED TCG
PROJECT MANAGER TJS
ENGINEERING CERTIFICATION

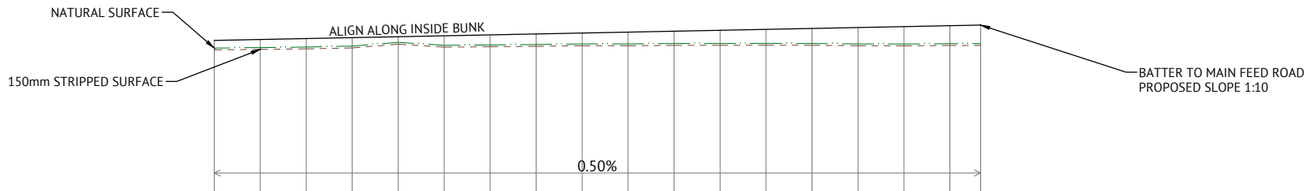
SCALE
0 20 40 60m
SCALE 1:1000 (A1)
ORIGINAL SHEET SIZE A1

CLIENT REID RIVER HOLDINGS
PROJECT REID RIVER EXPORT DEPOT
LOCATION 5291 FLINDERS HIGHWAY, REID RIVER
SHEET TITLE BULK EARTHWORKS PLAN

JOB CODE MIS-0441
SHEET NUMBER A101
REV C

NOTES:

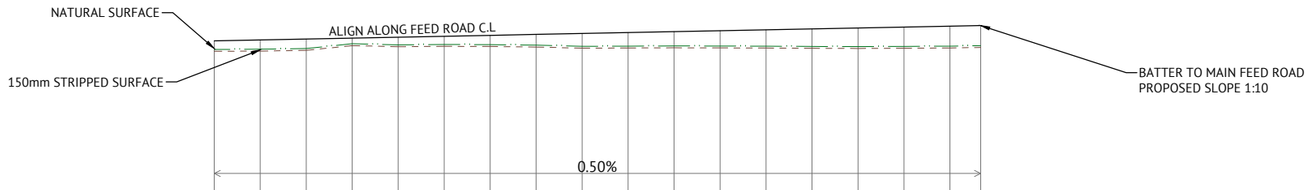
1. SITE SURVEY UNDERTAKEN BY PREMISE ON 21/02/2018.
2. SURVEY DATA WAS GATHERED USING A "FLYING AG" UNMANNED AERIAL VEHICLE (UAV). DATA WAS THEN GROUNDTRUTHED USING A TOPCON GR3 RTK-GPS. THIS UNIT HAS A HORIZONTAL ACCURACY OF +/- 10mm.
3. HORIZONTAL DATUM: ARBITRARY MGA94 ZONE 55
   VERTICAL DATUM: ARBITRARY AHD
4. SURVEY CONNECTED TO PSM97057



CUT/FILL DEPTH	+0.77	+0.81	+0.84	+0.84	+0.61	+0.92	+0.97	+1.01	+1.03	+1.11	+1.15	+1.22	+1.29	+1.37	+1.48	+1.57	+1.61	+1.66
DESIGN LEVEL	131.81	131.88	131.96	132.03	132.11	132.18	132.26	132.33	132.41	132.48	132.56	132.63	132.71	132.78	132.86	132.93	133.01	133.06
STRIPPED LEVEL	131.04	131.08	131.12	131.20	131.50	131.26	131.29	131.33	131.38	131.37	131.41	131.41	131.42	131.41	131.38	131.37	131.40	131.40
CHAINAGE	0.00	15.00	30.00	45.00	60.00	75.00	90.00	105.00	120.00	135.00	150.00	165.00	180.00	195.00	210.00	225.00	240.00	250.00

SECTION A101 LONGITUDINAL SECTION THROUGH INSIDE FEED BUNK

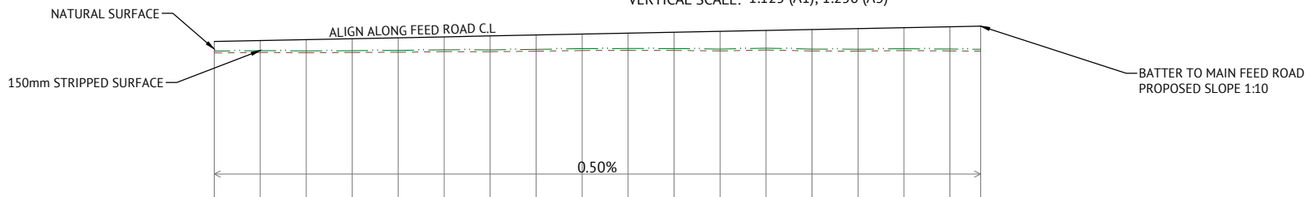
HORIZONTAL SCALE: 1:500 (A1); 1:1000 (A3)
VERTICAL SCALE: 1:125 (A1); 1:250 (A3)



CUT/FILL DEPTH	+0.85	+0.91	+0.93	+0.61	+0.78	+0.82	+0.91	+1.03	+1.20	+1.25	+1.31	+1.40	+1.49	+1.58	+1.67	+1.73	+1.78	+1.79
DESIGN LEVEL	131.81	131.88	131.96	132.03	132.11	132.18	132.26	132.33	132.41	132.48	132.56	132.63	132.71	132.78	132.86	132.93	133.01	133.06
STRIPPED LEVEL	130.96	130.98	131.03	131.42	131.33	131.36	131.35	131.31	131.21	131.23	131.25	131.24	131.22	131.20	131.19	131.21	131.23	131.27
CHAINAGE	0.00	15.00	30.00	45.00	60.00	75.00	90.00	105.00	120.00	135.00	150.00	165.00	180.00	195.00	210.00	225.00	240.00	250.00

SECTION B A101 LONGITUDINAL SECTION THROUGH C.L. FEED ROAD

HORIZONTAL SCALE: 1:500 (A1); 1:1000 (A3)
VERTICAL SCALE: 1:125 (A1); 1:250 (A3)



CUT/FILL DEPTH	+0.93	+0.97	+1.07	+1.13	+1.18	+1.21	+1.28	+1.32	+1.34	+1.40	+1.48	+1.60	+1.60	+1.75	+1.83	+1.87	+1.97	+2.04
DESIGN LEVEL	131.81	131.88	131.96	132.03	132.11	132.18	132.26	132.33	132.41	132.48	132.56	132.63	132.71	132.78	132.86	132.93	133.01	133.06
STRIPPED LEVEL	130.88	130.91	130.89	130.91	130.93	130.98	130.98	131.02	131.07	131.08	131.08	131.04	131.11	131.04	131.03	131.06	131.04	131.02
CHAINAGE	0.00	15.00	30.00	45.00	60.00	75.00	90.00	105.00	120.00	135.00	150.00	165.00	180.00	195.00	210.00	225.00	240.00	250.00

SECTION C A101 LONGITUDINAL SECTION THROUGH C.L. FEED ROAD

HORIZONTAL SCALE: 1:500 (A1); 1:1000 (A3)
VERTICAL SCALE: 1:125 (A1); 1:250 (A3)

FINAL ISSUE

DATE	REV	DESCRIPTION	REC	APP
09/08/18	C	EFFLUENT POND LENGTH & WIDTH CHANGED		TJS
04/07/18	B	FINAL ISSUE		TJS
29/06/18	A	PRELIMINARY ISSUE - NOT FOR CONSTRUCTION	----	TJS

REVISIONS

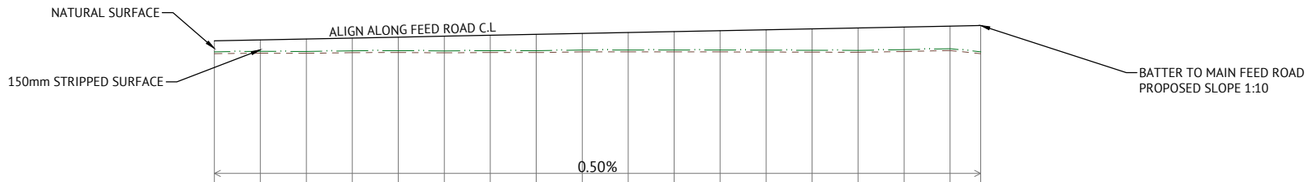
Premise
TOOWOOMBA OFFICE
LEVEL 2, UNIT 2
128 MARGARET ST
TOOWOOMBA, QLD 4350
PH: (07) 4632 8230
WEB: www.premise.com.au

DESIGNED TJS
CHECKED TCG
PROJECT MANAGER TJS
ENGINEERING CERTIFICATION

SCALE: AS ABOVE
ORIGINAL SHEET SIZE A1

CLIENT: REID RIVER HOLDINGS
PROJECT: REID RIVER EXPORT DEPOT
LOCATION: 5291 FLINDERS HIGHWAY, REID RIVER
SHEET TITLE: SECTION A, B & C - LONGITUDINAL SECTION THROUGH FEED ROAD

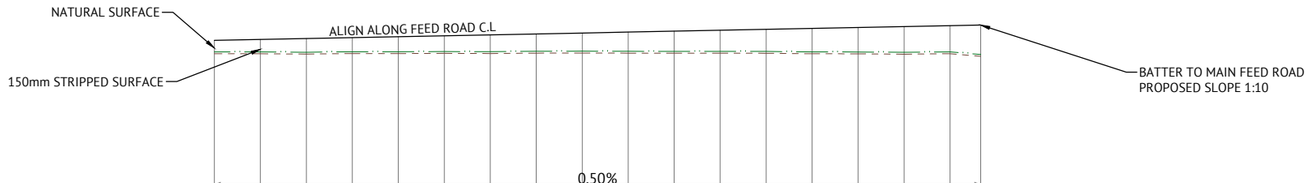
JOB CODE: MIS-0441
SHEET NUMBER: A102
REV: C



CUT/FILL DEPTH	+1.05	+1.08	+1.17	+1.19	+1.25	+1.35	+1.40	+1.48	+1.50	+1.58	+1.65	+1.73	+1.81	+1.90	+1.98	+2.00	+1.99	+2.30
DESIGN LEVEL	131.81	131.88	131.96	132.03	132.11	132.18	132.26	132.33	132.41	132.48	132.56	132.63	132.71	132.78	132.86	132.93	133.01	133.06
STRIPPED LEVEL	130.76	130.80	130.79	130.85	130.86	130.83	130.86	130.85	130.91	130.91	130.91	130.91	130.90	130.88	130.88	130.93	131.02	130.76
CHAINAGE	0.00	15.00	30.00	45.00	60.00	75.00	90.00	105.00	120.00	135.00	150.00	165.00	180.00	195.00	210.00	225.00	240.00	250.00

SECTION D A101 LONGITUDINAL SECTION THROUGH C.L FEED ROAD

HORIZONTAL SCALE: 1:500 (A1); 1:1000 (A3)
VERTICAL SCALE: 1:125 (A1); 1:250 (A3)



CUT/FILL DEPTH	+1.09	+1.16	+1.27	+1.30	+1.38	+1.44	+1.52	+1.56	+1.63	+1.72	+1.79	+1.87	+1.95	+2.06	+2.15	+2.25	+2.28	+2.55
DESIGN LEVEL	131.81	131.88	131.96	132.03	132.11	132.18	132.26	132.33	132.41	132.48	132.56	132.63	132.71	132.78	132.86	132.93	133.01	133.06
STRIPPED LEVEL	130.72	130.72	130.69	130.74	130.73	130.75	130.74	130.77	130.78	130.77	130.77	130.77	130.76	130.72	130.71	130.69	130.73	130.51
CHAINAGE	0.00	15.00	30.00	45.00	60.00	75.00	90.00	105.00	120.00	135.00	150.00	165.00	180.00	195.00	210.00	225.00	240.00	250.00

SECTION E A101 LONGITUDINAL SECTION THROUGH C.L. FEED ROAD

HORIZONTAL SCALE: 1:500 (A1); 1:1000 (A3)
VERTICAL SCALE: 1:125 (A1); 1:250 (A3)

FINAL ISSUE

DATE	REV	DESCRIPTION	REC	APP
09/08/18	C	EFFLUENT POND LENGTH & WIDTH CHANGED		TJS
04/07/18	B	FINAL ISSUE		TJS
29/06/18	A	PRELIMINARY ISSUE - NOT FOR CONSTRUCTION	---	TJS

REVISIONS

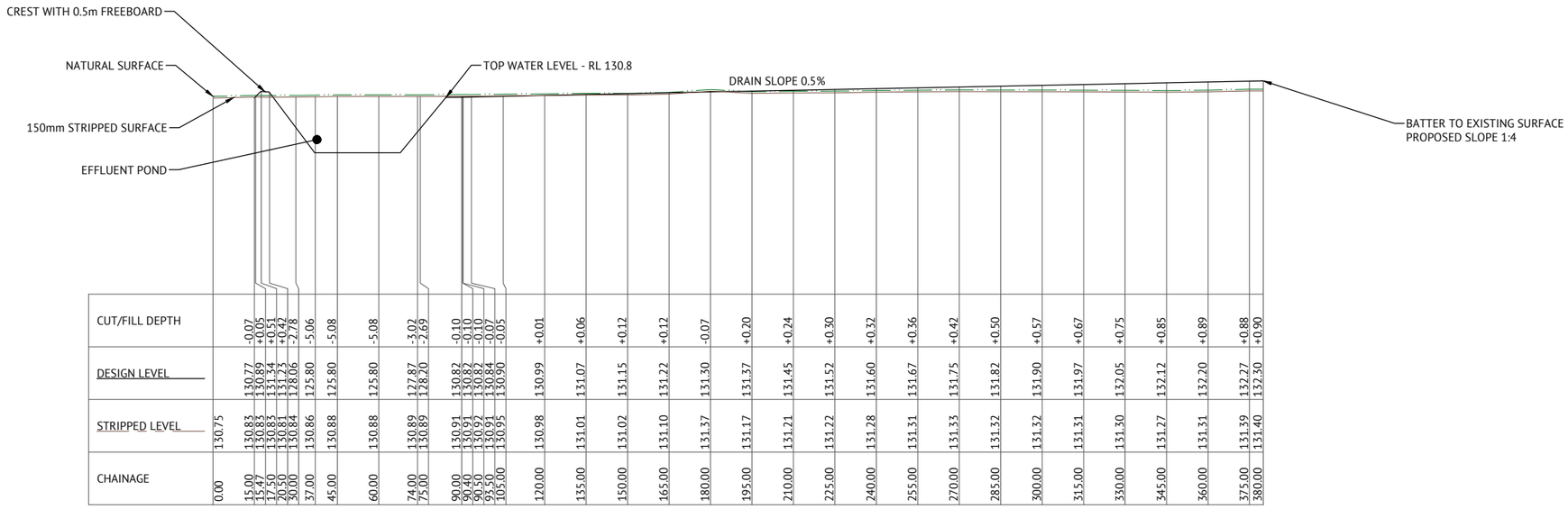
Premise
TOOWOOMBA OFFICE
LEVEL 2, UNIT 2
128 MARGARET ST
TOOWOOMBA, QLD 4350
PH: (07) 4632 8230
WEB: www.premise.com.au

DESIGNED TJS
CHECKED TCG
PROJECT MANAGER TJS
ENGINEERING CERTIFICATION

SCALE: AS ABOVE
ORIGINAL SHEET SIZE A1

CLIENT: REID RIVER HOLDINGS
PROJECT: REID RIVER EXPORT DEPOT
LOCATION: 5291 FLINDERS HIGHWAY, REID RIVER
SHEET TITLE: SECTION D & E - LONGITUDINAL SECTION THROUGH FEED ROAD

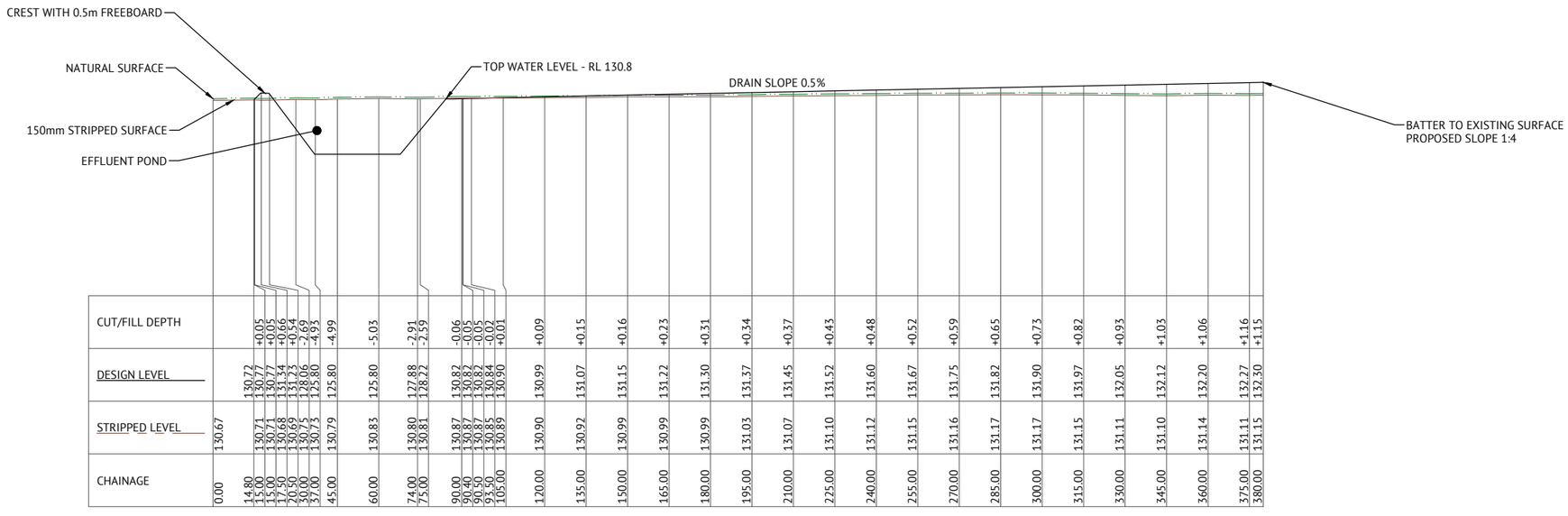
JOB CODE: MIS-0441
SHEET NUMBER: A103
REV: C



CHAINAGE	0.00	15.00	15.47	17.50	20.50	30.00	37.00	45.00	60.00	74.00	75.00	90.00	90.40	90.50	93.50	105.00	120.00	135.00	150.00	165.00	180.00	195.00	210.00	225.00	240.00	255.00	270.00	285.00	300.00	315.00	330.00	345.00	360.00	375.00	380.00
STRIPPED LEVEL	130.75	130.83	130.83	130.83	130.81	130.84	130.86	130.88	130.88	130.89	130.89	130.91	130.91	130.92	130.91	130.95	130.98	131.01	131.02	131.10	131.37	131.17	131.21	131.22	131.28	131.31	131.33	131.32	131.32	131.31	131.30	131.27	131.31	131.39	131.40
DESIGN LEVEL		130.77	130.89	131.34	131.23	128.06	125.80	125.80	125.80	127.87	128.20	130.82	130.91	130.82	130.84	130.90	130.99	131.07	131.15	131.22	131.30	131.37	131.45	131.52	131.60	131.67	131.75	131.82	131.90	131.97	132.05	132.12	132.20	132.27	132.30
CUT/FILL DEPTH		-0.07	+0.05	+0.51	+0.42	-2.78	-5.06	-5.08	-5.08	-3.02	-2.69	-0.10	-0.10	-0.10	-0.07	-0.05	+0.01	+0.06	+0.12	+0.12	-0.07	+0.20	+0.24	+0.30	+0.32	+0.36	+0.42	+0.50	+0.57	+0.67	+0.75	+0.85	+0.89	+0.88	+0.90

SECTION F A101 LONGITUDINAL SECTION THROUGH C.L CATCH DRAIN

HORIZONTAL SCALE: 1:500 (A1); 1:1000 (A3)
VERTICAL SCALE: 1:125 (A1); 1:250 (A3)



CHAINAGE	0.00	14.80	15.00	15.00	17.50	20.00	30.00	37.00	45.00	60.00	74.00	75.00	90.00	90.40	90.50	93.50	105.00	120.00	135.00	150.00	165.00	180.00	195.00	210.00	225.00	240.00	255.00	270.00	285.00	300.00	315.00	330.00	345.00	360.00	375.00	380.00
STRIPPED LEVEL	130.67	130.71	130.71	130.71	130.68	130.75	130.75	130.73	130.79	130.83	130.80	130.81	130.87	130.87	130.87	130.85	130.89	130.90	130.92	130.99	130.99	130.99	131.03	131.07	131.10	131.12	131.15	131.16	131.17	131.17	131.15	131.11	131.10	131.14	131.11	131.15
DESIGN LEVEL		130.72	130.77	130.77	130.74	131.34	128.06	125.80	125.80	125.80	127.88	128.22	130.82	130.82	130.82	130.84	130.90	130.99	131.07	131.15	131.22	131.30	131.37	131.45	131.52	131.60	131.67	131.75	131.82	131.90	131.97	132.05	132.12	132.20	132.27	132.30
CUT/FILL DEPTH		+0.05	+0.05	+0.06	+0.04	+0.56	-2.69	-4.93	-4.99	-5.03	-2.91	-2.59	-0.06	-0.05	-0.05	-0.02	+0.01	+0.09	+0.15	+0.16	+0.23	+0.31	+0.34	+0.37	+0.43	+0.48	+0.52	+0.59	+0.65	+0.73	+0.82	+0.93	+1.03	+1.06	+1.16	+1.15

SECTION G A101 LONGITUDINAL SECTION THROUGH C.L. CATCH DRAIN

HORIZONTAL SCALE: 1:500 (A1); 1:1000 (A3)
VERTICAL SCALE: 1:125 (A1); 1:250 (A3)

FINAL ISSUE

DATE	REV	DESCRIPTION	REC	APP
09/08/18	C	EFFLUENT POND LENGTH & WIDTH CHANGED		TJS
04/07/18	B	FINAL ISSUE		TJS
29/06/18	A	PRELIMINARY ISSUE - NOT FOR CONSTRUCTION	----	TJS

REVISIONS

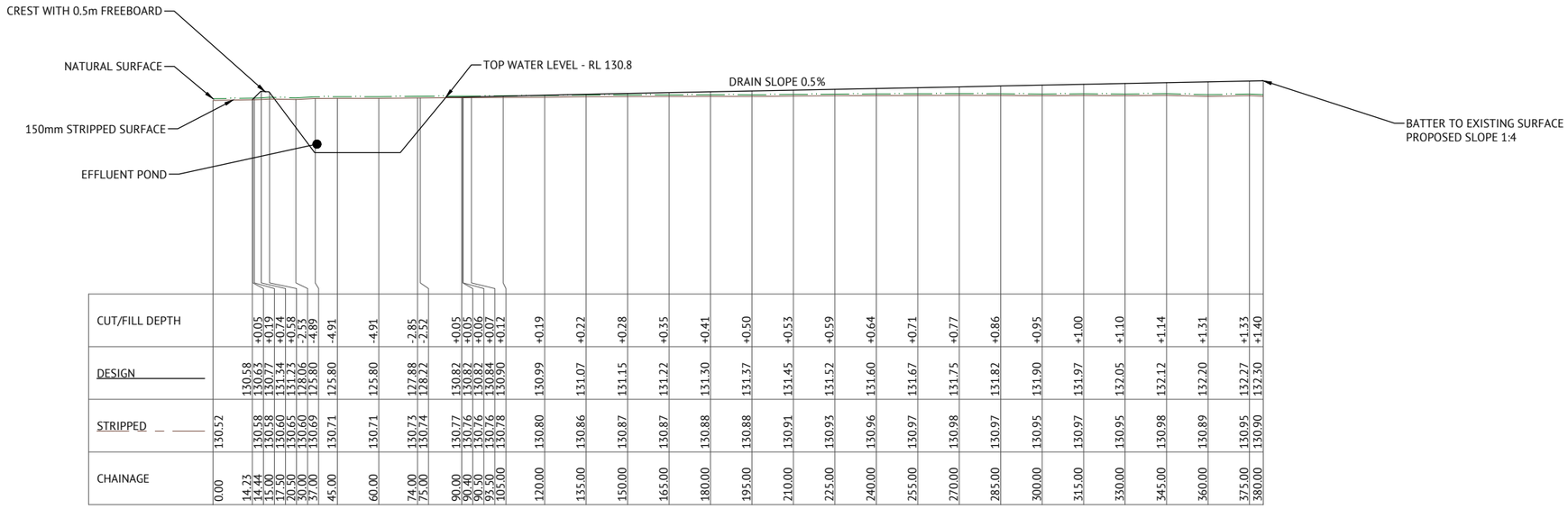
Premise
TOOWOOMBA OFFICE
LEVEL 2, UNIT 2
128 MARGARET ST
TOOWOOMBA, QLD 4350
PH: (07) 4632 8230
WEB: www.premise.com.au

DESIGNED TJS
CHECKED TCG
PROJECT MANAGER TJS
ENGINEERING CERTIFICATION

SCALE: AS ABOVE
ORIGINAL SHEET SIZE A1

CLIENT: REID RIVER HOLDINGS
PROJECT: REID RIVER EXPORT DEPOT
LOCATION: 5291 FLINDERS HIGHWAY, REID RIVER
SHEET TITLE: SECTION F & G - LONGITUDINAL SECTION THROUGH DRAIN

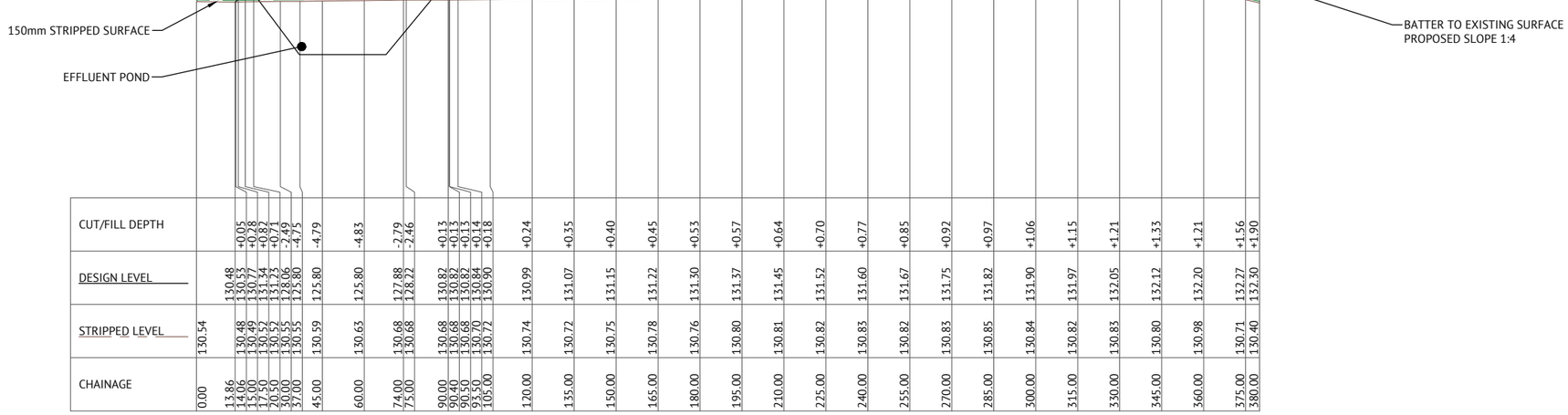
JOB CODE: MIS-0441
SHEET NUMBER: A104
REV: C



CHAINAGE	0.00	14.23	14.44	15.00	20.50	30.00	37.00	45.00	60.00	74.00	75.00	90.00	90.40	90.50	93.50	105.00	120.00	135.00	150.00	165.00	180.00	195.00	210.00	225.00	240.00	255.00	270.00	285.00	300.00	315.00	330.00	345.00	360.00	375.00	380.00
STRIPPED	130.52	130.58	130.58	130.58	130.60	130.65	130.60	130.69	130.71	130.71	130.74	130.77	130.76	130.76	130.76	130.78	130.80	130.86	130.87	130.87	130.88	130.88	130.91	130.93	130.96	130.97	130.98	130.97	130.95	130.97	130.95	130.98	130.89	130.95	130.90
DESIGN		130.58	130.63	130.74	131.23	128.06	125.80	125.80	125.80	127.88	128.22	130.82	130.82	130.82	130.84	130.90	130.99	131.07	131.15	131.22	131.30	131.37	131.45	131.52	131.60	131.67	131.75	131.82	131.90	131.97	132.05	132.12	132.20	132.27	132.30
CUT/FILL DEPTH		+0.05	+0.19	+0.74	+0.58	-2.53	-4.89	-4.91	-4.91	-2.85	-2.52	+0.05	+0.05	+0.06	+0.07	+0.12	+0.19	+0.22	+0.28	+0.35	+0.41	+0.50	+0.53	+0.59	+0.64	+0.71	+0.77	+0.86	+0.95	+1.00	+1.10	+1.14	+1.31	+1.33	+1.40

SECTION H A101 LONGITUDINAL SECTION THROUGH C.L CATCH DRAIN

HORIZONTAL SCALE: 1:500 (A1); 1:1000 (A3)
VERTICAL SCALE: 1:125 (A1); 1:250 (A3)



CHAINAGE	0.00	13.86	14.06	15.00	20.50	30.00	37.00	45.00	60.00	74.00	75.00	90.00	90.40	90.50	93.50	105.00	120.00	135.00	150.00	165.00	180.00	195.00	210.00	225.00	240.00	255.00	270.00	285.00	300.00	315.00	330.00	345.00	360.00	375.00	380.00
STRIPPED LEVEL	130.54	130.48	130.48	130.49	130.52	130.55	130.55	130.59	130.63	130.68	130.68	130.68	130.68	130.68	130.70	130.72	130.74	130.72	130.75	130.78	130.76	130.80	130.81	130.82	130.83	130.82	130.83	130.85	130.84	130.82	130.83	130.80	130.98	130.71	130.40
DESIGN LEVEL		130.48	130.52	130.74	131.23	128.06	125.80	125.80	125.80	127.88	128.22	130.82	130.82	130.82	130.84	130.90	130.99	131.07	131.15	131.22	131.30	131.37	131.45	131.52	131.60	131.67	131.75	131.82	131.90	131.97	132.05	132.12	132.20	132.27	132.30
CUT/FILL DEPTH		+0.05	+0.07	+0.88	+0.71	-2.49	-4.75	-4.79	-4.83	-2.79	-2.46	+0.13	+0.13	+0.13	+0.14	+0.18	+0.24	+0.35	+0.40	+0.45	+0.53	+0.57	+0.64	+0.70	+0.77	+0.85	+0.92	+0.97	+1.06	+1.15	+1.21	+1.33	+1.21	+1.56	+1.90

SECTION I A101 LONGITUDINAL SECTION THROUGH C.L. CATCH DRAIN

HORIZONTAL SCALE: 1:500 (A1); 1:1000 (A3)
VERTICAL SCALE: 1:125 (A1); 1:250 (A3)

FINAL ISSUE

DATE	REV	DESCRIPTION	REC	APP
09/08/18	C	EFFLUENT POND LENGTH & WIDTH CHANGED		TJS
04/07/18	B	FINAL ISSUE		TJS
04/07/18	A	PRELIMINARY ISSUE - NOT FOR CONSTRUCTION	----	PJW

REVISIONS

Premise
TOOWOOMBA OFFICE
LEVEL 2, UNIT 2
128 MARGARET ST
TOOWOOMBA, QLD 4350
PH: (07) 4632 8230
WEB: www.premise.com.au

DESIGNED TJS
CHECKED TCG
PROJECT MANAGER TJS
ENGINEERING CERTIFICATION

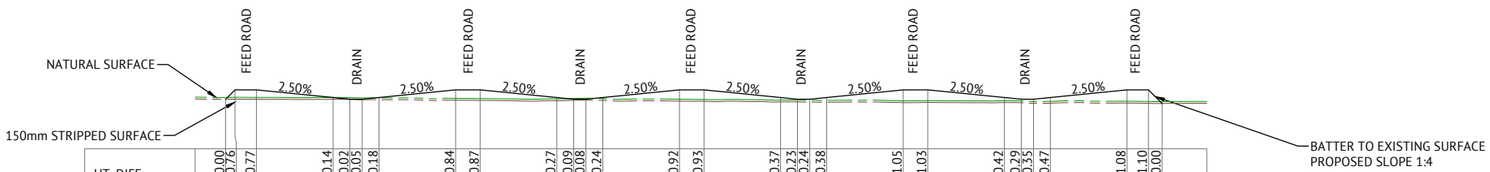
SCALE: AS ABOVE
ORIGINAL SHEET SIZE A1

CLIENT: REID RIVER HOLDINGS
PROJECT: REID RIVER EXPORT DEPOT
LOCATION: 5291 FLINDERS HIGHWAY, REID RIVER
SHEET TITLE: SECTION H & I - LONGITUDINAL SECTION THROUGH DRAIN

JOB CODE: MIS-0441
SHEET NUMBER: A105
REV: C

NOTES:

1. SITE SURVEY UNDERTAKEN BY PREMISE ON 21/02/2018.
2. SURVEY DATA WAS GATHERED USING A "FLYING AG" UNMANNED AERIAL VEHICLE (UAV). DATA WAS THEN GROUNDTRUTHED USING A TOPCON GR3 RTK-GPS. THIS UNIT HAS A HORIZONTAL ACCURACY OF +/- 10mm.
3. HORIZONTAL DATUM: ARBITRARY MGA94 ZONE 55
   VERTICAL DATUM: ARBITRARY AHD
4. SURVEY CONNECTED TO PSM97057



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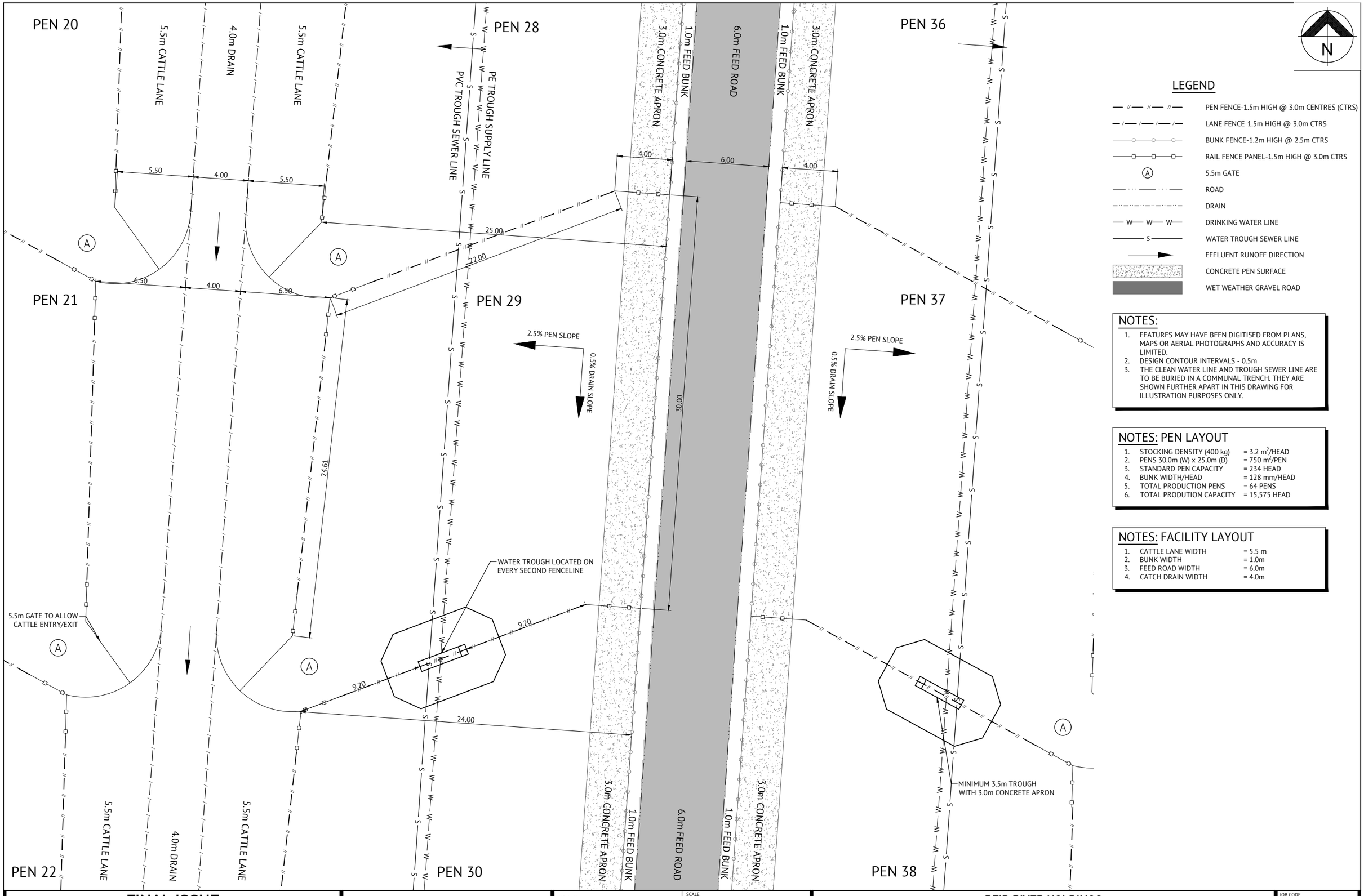

N

LEGEND

- PEN FENCE-1.5m HIGH @ 3.0m CENTRES (CTRS)
- LANE FENCE-1.5m HIGH @ 3.0m CTRS
- BUNK FENCE-1.2m HIGH @ 2.5m CTRS
- RAIL FENCE PANEL-1.5m HIGH @ 3.0m CTRS
- (A) 5.5m GATE
- ROAD
- DRAIN
- W W W DRINKING WATER LINE
- S WATER TROUGH SEWER LINE
- EFFLUENT RUNOFF DIRECTION
- CONCRETE PEN SURFACE
- WET WEATHER GRAVEL ROAD

NOTES:

1. FEATURES MAY HAVE BEEN DIGITISED FROM PLANS, MAPS OR AERIAL PHOTOGRAPHS AND ACCURACY IS LIMITED.
2. DESIGN CONTOUR INTERVALS - 0.5m
3. THE CLEAN WATER LINE AND TROUGH SEWER LINE ARE TO BE BURIED IN A COMMUNAL TRENCH. THEY ARE SHOWN FURTHER APART IN THIS DRAWING FOR ILLUSTRATION PURPOSES ONLY.

NOTES: PEN LAYOUT

1.	STOCKING DENSITY (400 kg)	= 3.2 m^2/HEAD
2.	PENS 30.0m (W) x 25.0m (D)	= 750 m^2/PEN
3.	STANDARD PEN CAPACITY	= 234 HEAD
4.	BUNK WIDTH/HEAD	= 128 mm/HEAD
5.	TOTAL PRODUCTION PENS	= 64 PENS
6.	TOTAL PRODUTION CAPACITY	= 15,575 HEAD

NOTES: FACILITY LAYOUT

1.	CATTLE LANE WIDTH	= 5.5 m
2.	BUNK WIDTH	= 1.0m
3.	FEED ROAD WIDTH	= 6.0m
4.	CATCH DRAIN WIDTH	= 4.0m

FINAL ISSUE

DATE	REV	DESCRIPTION	REC	APP
09/08/18	C	EFFLUENT POND LENGTH & WIDTH CHANGED		TJS
04/07/18	B	FINAL ISSUE		TJS
29/06/18	A	PRELIMINARY ISSUE - NOT FOR CONSTRUCTION	----	PJW

REVISIONS

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LEVEL 2, UNIT 2
128 MARGARET ST
TOOWOOMBA, QLD 4350
PH: (07) 4632 8230
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DESIGNED TJS
CHECKED TCG
PROJECT MANAGER TJS
ENGINEERING CERTIFICATION

SCALE
0 2.5 5.0 7.5m
SCALE 1:125 (A1)
ORIGINAL SHEET SIZE A1

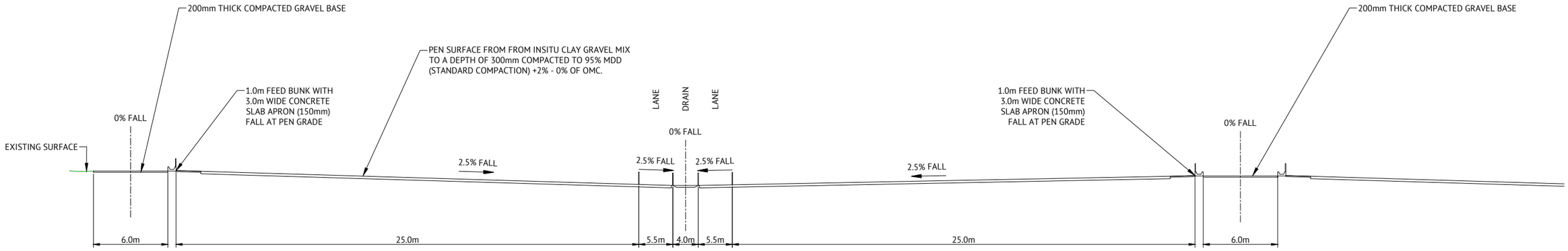
CLIENT REID RIVER HOLDINGS
PROJECT REID RIVER EXPORT DEPOT
LOCATION 5291 FLINDERS HIGHWAY, REID RIVER
SHEET TITLE TYPICAL PEN LAYOUT

JOB CODE MIS-0441
SHEET NUMBER A701
REV C

NOTES:

PEN FOUNDATIONS SHOULD BE CONSTRUCTED IN ACCORDANCE WITH THE NATIONAL GUIDELINES FOR BEEF CATTLE FEEDLOTS IN AUSTRALIA (2012). THESE STANDARDS STATE THAT:

1) THE FINAL SURFACE OF THE PAD MUST HAVE A CBR (CALIFORNIA BEARING RATION) OF ≥ AT LEAST 30, AND BE OF SUFFICIENT DEPTH TO ENSURE THE INTEGRITY OF THE STRUCTURE IS MAINTAINED THROUGHOUT THE GENERAL WORKING OF THE FACILITY.
2) IRRESPECTIVE OF THE FINISHED PEN SURFACE, THE UNDERLYING SOILS MUST HAVE A MAXIMUM PERMEABILITY OF 1 x 10^{-9} m/s (0.1mm/day) FOR DISTILLED WATER WITH 1.0m OF PRESSURE HEAD.
3) IF A CLAY LINER IS USED, THE MATERIAL SHOULD BE PLACED IN LAYERS OF 150mm (±50 mm). EACH LAYER SHOULD BE TINED, WETTED TO ±2% OF OPTIMUM MOISTURE CONTENT (AS 1289 5.1.1) AND COMPACTED TO REACH THE REQUIRED COMPACTION (RELATIVE TO THE MAXIMUM DRY DENSITY, AS1289 5.4.2) THAT IS NEEDED TO ACHIEVE THE REQUIRED PERMEABILITY OF 0.1mm/day.



TYPICAL SECTION THROUGH FEED PENS
NOT TO SCALE

FINAL ISSUE				
09/08/18	C	EFFLUENT POND LENGTH & WIDTH CHANGED		TJS
04/07/18	B	FINAL ISSUE		TJS
29/06/18	A	PRELIMINARY ISSUE - NOT FOR CONSTRUCTION	----	TJS
DATE	REV	DESCRIPTION	REC	APP
REVISIONS				

Premise
TOOWOOMBA OFFICE
LEVEL 2, UNIT 2
128 MARGARET ST
TOOWOOMBA, QLD 4350
PH: (07) 4632 8230
WEB: www.premise.com.au

DESIGNED TJS
CHECKED TCG
PROJECT MANAGER TJS
ENGINEERING CERTIFICATION

SCALE: NOT TO SCALE
ORIGINAL SHEET SIZE A1

CLIENT: REID RIVER HOLDINGS
PROJECT: REID RIVER EXPORT DEPOT
LOCATION: 5291 FLINDERS HIGHWAY, REID RIVER
SHEET TITLE: TYPICAL PEN CROSS SECTION

JOB CODE: MIS-0441
SHEET NUMBER: A702
REV: C

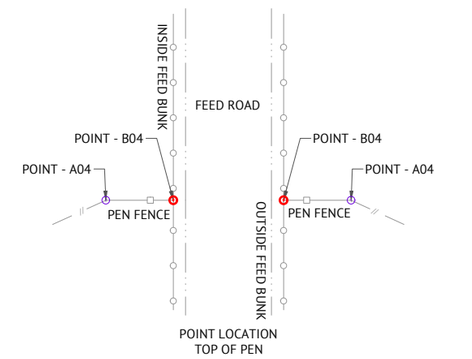
N

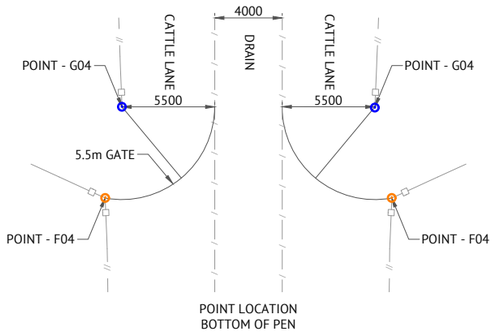
LEGEND

- PEN FENCE
- LANE FENCE
- BUNK FENCE
- PROPOSED ROAD
- PROPOSED DRAIN
- PROPOSED DIVERSION BANK
- A04 — APRON POST
- B04 — BUNK & PEN INTERFACE
- E04 — EFFLUENT POND CORNER
- F04 — FENCE CORNER
- G04 — GATE POST
- H04 — HANDLING PAD CORNER

NOTES:

1. FEATURES MAY HAVE BEEN DIGITISED FROM PLANS, MAPS OR AERIAL PHOTOGRAPHS AND ACCURACY IS LIMITED.
2. POINT DETAILS ARE PROVIDED IN THE COORDINATE TABLES ON A710 - SHEET 2 OF 2.





FINAL ISSUE

DATE	REV	DESCRIPTION	REC	APP
09/08/18	C	EFFLUENT POND LENGTH & WIDTH CHANGED		TJS
04/07/18	B	FINAL ISSUE		TJS
08/06/18	A	PRELIMINARY ISSUE - NOT FOR CONSTRUCTION	----	PJW

REVISIONS

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DESIGNED TJS
CHECKED TCG
PROJECT MANAGER TJS
ENGINEERING CERTIFICATION

SCALE

ORIGINAL SHEET SIZE A1

CLIENT REID RIVER HOLDINGS

PROJECT REID RIVER EXPORT DEPOT

LOCATION 5291 FLINDERS HIGHWAY, REID RIVER

SHEET TITLE PEN SET OUT - SHEET 1 OF 2

JOB CODE MIS-0441

SHEET NUMBER A801

REV C

POINT SETOUT DETAILS FOR POINTS DETAILED IN PLAN A710 - SHEET 1 OF 1

SET OUT POINTS - POST OUTSIDE APRON		
POINT	EASTING	NORTHING
A01	483733.46	7814685.35
A02	483730.65	7814645.44
A03	483728.54	7814615.52
A04	483726.43	7814585.59
A05	483724.32	7814555.67
A06	483722.21	7814525.74
A07	483720.10	7814495.82
A08	483717.99	7814465.89
A09	483715.88	7814435.96
A10	483790.30	7814681.34
A11	483787.49	7814641.44
A12	483785.38	7814611.51
A13	483783.27	7814581.59
A14	483781.17	7814551.66
A15	483779.06	7814521.74
A16	483776.95	7814491.81
A17	483774.84	7814461.88
A18	483772.73	7814431.96
A19	483806.26	7814680.22
A20	483804.10	7814649.45
A21	483801.99	7814619.52
A22	483799.88	7814589.60
A23	483797.77	7814559.67
A24	483795.66	7814529.75
A25	483793.55	7814499.82
A26	483791.44	7814469.89
A27	483788.69	7814430.83
A28	483863.12	7814676.21
A29	483860.95	7814645.44
A30	483858.85	7814615.52
A31	483856.74	7814585.59
A32	483854.63	7814555.66
A33	483852.52	7814525.74
A34	483850.41	7814495.81
A35	483848.30	7814465.89
A36	483845.55	7814426.83
A37	483879.08	7814675.08
A38	483876.92	7814644.32
A39	483874.81	7814614.39
A40	483872.70	7814584.47
A41	483870.59	7814554.54
A42	483868.48	7814524.61
A43	483866.37	7814494.69
A44	483864.26	7814464.76
A45	483861.51	7814425.70
A46	483935.94	7814671.08
A47	483933.77	7814640.31
A48	483931.67	7814610.38
A49	483929.56	7814580.46
A50	483927.45	7814550.53
A51	483925.34	7814520.61
A52	483923.23	7814490.68
A53	483921.12	7814460.76
A54	483918.37	7814421.70
A55	483951.90	7814669.95
A56	483949.73	7814639.18
A57	483947.63	7814609.26
A58	483945.52	7814579.33
A59	483943.41	7814549.41
A60	483941.30	7814519.48
A61	483939.19	7814489.56
A62	483937.08	7814459.63
A63	483934.33	7814420.57
A64	484008.76	7814665.95
A65	484006.59	7814635.18
A66	484004.48	7814605.25
A67	484002.38	7814575.33
A68	484000.27	7814545.40
A69	483998.16	7814515.48
A70	483996.05	7814485.55
A71	483993.94	7814455.62
A72	483991.19	7814416.56

SET OUT POINTS - APRON - FENCE INTERFACE		
POINT	EASTING	NORTHING
B01	483729.47	7814685.63
B02	483726.66	7814645.72
B03	483724.55	7814615.80
B04	483722.44	7814585.87
B05	483720.33	7814555.95
B06	483718.22	7814526.02
B07	483716.11	7814496.10
B08	483714.00	7814466.17
B09	483711.89	7814436.25
B10	483794.29	7814681.06
B11	483791.48	7814641.16
B12	483789.37	7814611.23
B13	483787.26	7814581.31
B14	483785.16	7814551.38
B15	483783.05	7814521.45
B16	483780.94	7814491.53
B17	483778.83	7814461.60
B18	483776.72	7814431.68
B19	483802.27	7814680.50
B20	483800.11	7814649.73
B21	483798.00	7814619.80
B22	483795.89	7814589.88
B23	483793.78	7814559.95
B24	483791.67	7814530.03
B25	483789.56	7814500.10
B26	483787.45	7814470.18
B27	483784.70	7814431.12
B28	483867.05	7814675.93
B29	483864.89	7814645.16
B30	483862.78	7814615.24
B31	483860.67	7814585.31
B32	483858.56	7814555.39
B33	483856.45	7814525.46
B34	483854.34	7814495.54
B35	483852.23	7814465.61
B36	483849.48	7814426.55
B37	483875.09	7814675.37
B38	483872.93	7814644.60
B39	483870.82	7814614.67
B40	483868.71	7814584.75
B41	483866.60	7814554.82
B42	483864.49	7814524.90
B43	483862.38	7814494.97
B44	483860.27	7814465.04
B45	483857.52	7814425.98
B46	483939.93	7814670.80
B47	483937.76	7814640.03
B48	483935.66	7814610.10
B49	483933.55	7814580.18
B50	483931.44	7814550.25
B51	483929.33	7814520.33
B52	483927.22	7814490.40
B53	483925.11	7814460.47
B54	483922.36	7814421.41
B55	483947.91	7814670.23
B56	483945.74	7814639.47
B57	483943.64	7814609.54
B58	483941.53	7814579.61
B59	483939.42	7814549.69
B60	483937.31	7814519.76
B61	483935.20	7814489.84
B62	483933.09	7814459.91
B63	483930.34	7814420.85
B64	484012.75	7814665.67
B65	484010.58	7814634.90
B66	484008.47	7814604.97
B67	484006.37	7814575.05
B68	484004.26	7814545.12
B69	484002.15	7814515.19
B70	484000.04	7814485.27
B71	483997.93	7814455.34
B72	483995.18	7814416.28

SET OUT POINTS - BOTTOM FENCE CORNER		
POINT	EASTING	NORTHING
F01	483753.35	7814683.95
F02	483751.24	7814653.17
F03	483749.13	7814623.25
F04	483747.02	7814593.32
F05	483744.91	7814563.40
F06	483742.80	7814533.47
F07	483740.70	7814503.54
F08	483738.59	7814473.62
F09	483735.83	7814434.56
F10	483770.35	7814682.75
F11	483768.18	7814651.98
F12	483766.08	7814622.05
F13	483763.97	7814592.13
F14	483761.86	7814562.20
F15	483759.75	7814532.28
F16	483757.64	7814502.35
F17	483755.53	7814472.43
F18	483752.78	7814433.36
F19	483827.21	7814678.74
F20	483823.40	7814638.91
F21	483821.29	7814608.98
F22	483819.18	7814579.06
F23	483817.08	7814549.13
F24	483814.97	7814519.21
F25	483812.86	7814489.28
F26	483810.75	7814459.35
F27	483808.64	7814429.43
F28	483842.17	7814677.69
F29	483840.36	7814637.71
F30	483838.25	7814607.79
F31	483836.14	7814577.86
F32	483834.03	7814547.94
F33	483831.93	7814518.01
F34	483829.82	7814488.08
F35	483827.71	7814458.16
F36	483825.60	7814428.23
F37	483900.03	7814673.61
F38	483896.22	7814633.78
F39	483894.11	7814603.85
F40	483892.00	7814573.92
F41	483889.90	7814544.00
F42	483887.79	7814514.07
F43	483885.68	7814484.15
F44	483883.57	7814454.22
F45	483881.46	7814424.30
F46	483914.99	7814672.55
F47	483913.18	7814632.58
F48	483911.07	7814602.66
F49	483908.96	7814572.73
F50	483906.85	7814542.80
F51	483904.74	7814512.88
F52	483902.64	7814482.95
F53	483900.53	7814453.03
F54	483898.42	7814423.10
F55	483972.85	7814668.48
F56	483969.04	7814628.64
F57	483966.93	7814598.72
F58	483964.82	7814568.79
F59	483962.71	7814538.87
F60	483960.61	7814508.94
F61	483958.50	7814479.02
F62	483956.39	7814449.09
F63	483954.28	7814419.17
F64	483987.81	7814667.42
F65	483986.00	7814627.45
F66	483983.89	7814597.52
F67	483981.78	7814567.60
F68	483979.67	7814537.67
F69	483977.56	7814507.75
F70	483975.46	7814477.82
F71	483973.35	7814447.90
F72	483971.24	7814417.97

SET OUT POINTS - BOTTOM GATE		
POINT	EASTING	NORTHING
G01	483753.97	7814678.48
G02	483751.86	7814647.71
G03	483749.75	7814617.78
G04	483747.64	7814587.86
G05	483745.53	7814557.93
G06	483743.42	7814528.01
G07	483741.31	7814498.08
G08	483739.20	7814468.15
G09	483768.98	7814677.42
G10	483766.81	7814646.65
G11	483764.70	7814616.73
G12	483762.59	7814586.80
G13	483760.48	7814556.88
G14	483758.37	7814526.95
G15	483756.26	7814497.03
G16	483754.15	7814467.10
G17	483824.78	7814644.23
G18	483822.67	7814614.31
G19	483820.56	7814584.38
G20	483818.45	7814554.46
G21	483816.35	7814524.53
G22	483814.24	7814494.60
G23	483812.13	7814464.68
G24	483810.02	7814434.75
G25	483839.74	7814643.18
G26	483837.63	7814613.25
G27	483835.53	7814583.33
G28	483833.42	7814553.40
G29	483831.31	7814523.48
G30	483829.20	7814493.55
G31	483827.09	7814463.62
G32	483824.98	7814433.70
G33	483897.60	7814639.10
G34	483895.49	7814609.17
G35	483893.38	7814579.25
G36	483891.27	7814549.32
G37	483889.16	7814519.40
G38	483887.06	7814489.47
G39	483884.95	7814459.55
G40	483882.84	7814429.62
G41	483912.56	7814638.05
G42	483910.45	7814608.12
G43	483908.34	7814578.19
G44	483906.24	7814548.27
G45	483904.13	7814518.34
G46	483902.02	7814488.42
G47	483899.91	7814458.49
G48	483897.80	7814428.57
G49	483970.42	7814633.97
G50	483968.31	7814604.04
G51	483966.20	7814574.12
G52	483964.09	7814544.19
G53	483961.98	7814514.27
G54	483959.88	7814484.34
G55	483957.77	7814454.42
G56	483955.66	7814424.49
G57	483985.38	7814632.91
G58	483983.27	7814602.99
G59	483981.16	7814573.06
G60	483979.06	7814543.14
G61	483976.95	7814513.21
G62	483974.84	7814483.29
G63	483972.73	7814453.36
G64	483970.62	7814423.44

SET OUT POINTS - EFFLUENT POND		
POINT	EASTING	NORTHING
E01	483716.08	7814391.63
E02	484111.60	7814363.76
E03	484128.29	7814344.54
E04	484126.11	7814313.61
E05	484106.89	7814296.92
E06	483711.37	7814324.80
E07	483694.68	7814344.02
E08	483696.85	7814374.83
E09	483714.82	7814373.68
E10	484110.34	7814345.80
E11	484108.16	7814314.88
E12	483712.64	7814342.96

SET OUT POINTS - HANDLING PAD CORNER		
POINT	EASTING	NORTHING
H01	483634.49	7814760.49
H02	483779.14	7814750.30
H03	483774.92	7814690.45
H04	483630.28	7814700.64

FINAL ISSUE

DATE	REV	DESCRIPTION	REC	APP
09/08/18	C	EFFLUENT POND LENGTH & WIDTH CHANGED		TJS
04/07/18	B	FINAL ISSUE		TJS
08/06/18	A	PRELIMINARY ISSUE - NOT FOR CONSTRUCTION	----	PIW

REVISIONS

Premise

TOOWOOMBA OFFICE
LEVEL 2, UNIT 2
128 MARGARET ST
TOOWOOMBA, QLD 4350
PH: (07) 4632 8230
WEB: www.premise.com.au

DESIGNED TJS
CHECKED TCG
PROJECT MANAGER TJS
ENGINEERING CERTIFICATION

SCALE

ORIGINAL SHEET SIZE A1

CLIENT REID RIVER HOLDINGS
PROJECT REID RIVER EXPORT DEPOT
LOCATION 5291 FLINDERS HIGHWAY, REID RIVER
SHEET TITLE PEN SET OUT - SHEET 2 OF 2

JOB CODE MIS-0441
SHEET NUMBER A802
REV C

Appendix D – Foundation and Clay lining of feedlot pens, pads and drainage system

Appendix C. – Clay lining of feedlot pens, pads and drainage system

Preamble

Runoff from the feedlot pad contains organic and mineralised manure constituents that could pose a significant ecological hazard if they were released, uncontrolled, into the environment.

If a groundwater assessment indicates a high potential for contamination of underground water resources because of leaching of nutrients through permeable, underlying soil or rock strata, an impermeable barrier will be needed between the contaminant and the groundwater. This is required if the permeability of underlying soil/rock strata exceeds 0.1mm/day (3.5 cm/year).

This impermeable barrier is generally created using a liner made of compacted clay or other suitable compactable soil materials. Where these materials are not available, a synthetic liner (polymembrane) may be used. Synthetic liners tend to be expensive, require specialist installation and are hard to protect from damage by cattle and cleaning equipment. Clay liners tend to be the most common form employed in feedlot construction, and the following section outlines the characteristics of suitable clay lining material.

Design standard

- Clay liners should have a maximum permeability of 1 x 10^{-9} m/s (0.1mm/day) for distilled water with 1 m of pressure head.
- Clay liners must be of sufficient depth so that the integrity of the structure is maintained throughout the general working of the feedlot.

Clay liners

Clay liners are commonly used in industry for a range of contaminants including liquid effluent.

For a given soil, permeability is related to soil particle composition, moisture content and level of compaction; and there are limits to the permeability that can be achieved at any level of compaction. *In-situ* and laboratory measurement of permeability is difficult, and relatively inaccurate. Also, some soil types, because of their physical and chemical properties, are impermeable *in-situ*, but fail to meet the design standard when measured in the laboratory.

For these reasons, rather than relying on permeability standards, this section provides guidance on specifications for materials and construction methods to be used for clay lining.

The specifications in Table C.1 provide guidance on the selection of the correct materials for use in the liner. Soils may need to be mixed or engineered to produce a material that meets the specifications.

Table C.1 Specifications for clay liner materials

Soil characteristic	Acceptability criterion	Test method
Percentage fines	More than 25% passing 75 µm sieve	AS 1289 3.6
	More than 15% passing 2 µm sieve	
Liquid Limit	Less than 70	AS 1289 3.1.2
Plasticity Index	More than 15	AS 1289 3.3.1
Emerson class number	5 to 6	AS 1289 3.8.1

Areas to be clay lined within the controlled drainage area include:

- effluent catch drain
- sedimentation system
- holding ponds
- manure stockpile and composting pad
- any area where contaminants are stored or handled.

Because of the formation of a low permeability soil-manure interface layer, clay lining is not generally required on the feedlot pen and yard areas.

Trafficability of clay lined materials

The liner should be trafficable for cattle and equipment. To ensure that the integrity of the liner is maintained, the depth of the liner should be sufficient to ensure that equipment does not damage it during harvesting of manure. The minimum depth recommended for the clay liner is 300 mm after compaction. Periodic repair of the liner will be necessary due to the wear and tear associated with cattle traffic and normal cleaning operations.

The mechanical strength of liners can be tested using the Californian Bearing Ratio (CBR) test, which was developed for measuring the load-bearing capacity of soils used for building roads. The test is performed by measuring the pressure required to penetrate a soil sample with a plunger of standard area in both the saturated and dry conditions at a specified compaction. The minimum standard for CBR wet and dry is 20%.

Particular attention should be applied to the load-bearing capability of areas where cleaning or harvesting of dry waste is undertaken, including:

- feedlot pens
- effluent catch drain
- sedimentation system
- manure stockpile and composting pad.

Construction

All areas to be clay lined should be cleared and grubbed, stripped of top soil and prepared to the required levels and gradients by cutting and filling. The surface of the excavated area should also be tined before the clay material is placed to produce a satisfactory bonding surface.

The clay lining material should be placed in layers of 150 mm (±50 mm). Each layer should be tined, wetted to ±2% of optimum moisture content (AS 1289 5.1.1) and compacted to the required compaction (relative to the maximum dry density, AS 1289 5.4.2) that is needed to achieve the required permeability of 1mm/day.

Appendix E
Standard specification

CATTLE FEEDLOTS

QUEENSLAND GOVERNMENT

DPI QUEENSLAND DEPARTMENT OF PRIMARY INDUSTRIES

CLAY LINING OF DRAINS, SEDIMENTATION SYSTEMS, HOLDING PONDS AND MANURE STOCKPILE AREAS

Alan Skerman, Senior Environmental Engineer, DPI, Toowoomba

INTRODUCTION

This standard specification is intended to provide guidance and technical direction to licensees, contractors, consultants and project managers involved in the construction of cattle feedlots at sites where groundwater impact assessments have indicated a high potential for contamination of underground and/or surface water resources, because of leaching of nutrients through permeable, underlying soil or rock strata. It outlines this Department's recommended practices for the clay lining of drains, sedimentation systems, holding ponds and manure stockpile areas and provides a set of enforceable, quantitative standards to ensure that consistency is achieved throughout the industry.

This specification is based on established engineering principles and operational experience gained by the industry over several years. However, it may be revised from time to time as new methods are developed and/or as experience dictates. Proposals involving alternative materials and/or construction methods may be submitted to the administering authority for consideration.

1. PERMEABILITY STANDARD

If a groundwater impact assessment indicates a high potential for contamination of underground and/or surface water resources, because of the leaching of nutrients through permeable, underlying soil/rock strata, clay lining of the feedlot complex should be undertaken in accordance with this specification. For the purpose of this specification, it is considered that there is a significant risk of nutrient leaching if the permeability of underlying soil/rock strata exceeds 0.1 mm/day (37 mm/year).

Because in-situ and laboratory measurement of permeability is difficult and relatively inaccurate, rather than relying on permeability standards, this document provides proven standards for materials and methods used for clay lining. By applying these standards, the required permeability should be achieved consistently.

2. AREAS TO BE CLAY LINED

Unless the underlying soil type and geology changes significantly across the feedlot site, each of the following areas of the feedlot complex should be clay lined:

- internal catch drain(s),
- sedimentation system(s),
- holding pond(s) and
- manure stockpile area(s)

Because of the formation of a low permeability soil–manure interface layer, clay lining is not generally required on the pen and yard areas, unless directed by the administering authority.

3. CLAY LINING SURFACE PREPARATION

All surfaces to be clay lined shall be cleared and grubbed, stripped of topsoil and prepared to the required levels and gradients by cutting and filling, as required. This will involve over-excavation (excavation below the design level indicated on the plans) to accommodate the required thickness of clay lining while ensuring that the final design gradients, levels and dimensions are achieved, in accordance with the plans approved by the administering authority.

To produce a satisfactory bonding surface for the placement of subsequent layers, the following operations should be carried out on all areas to be clay lined:

(i) scarifying or ripping with a tined implement, to a minimum depth of 150 mm,
(ii) watering to produce the correct moisture content, as specified in Clause 6,
(iii) compaction in accordance with Clause 7.

4. CLAY LINING MATERIAL

Soils shall be considered suitable for use as clay lining materials, subject to compliance with the following requirements:

The material shall be classified as either CL, CI, CH, SC or GC in accordance with the soil classification system described in Appendix A of AS 1726. Furthermore, it shall conform with the following particle size distribution and plasticity limits:

(i) Particle Size Distribution:

AS Metric Sieve Size (mm)	**Percentage Passing** (by dry weight)
75	100
19	70 – 100
2.36	40 – 100
0.075	25 – 90

(ii) Plasticity Limits on fines fraction, passing 0.425 mm sieve:

Liquid Limit W_L	30 – 60 %
Plasticity Index I_p	> 10 %

***Note for explanatory purposes**: The material classification symbols CL, CI, CH, SC* and *GC represent clays having low, intermediate and high plasticity, clayey sands and clayey gravels respectively.*

If materials complying with the above plasticity limits are not readily available, clays having liquid limits between 60% and 80% may be used as lining material, provided that the clay lining layer is covered with a layer of compacted gravel (or other approved material), having a minimum thickness of 100 mm, to prevent the clay lining from drying out and cracking.

Topsoil, soils incorporating tree roots or organic matter and any other material which does not compact properly, must not be placed in any of the areas to be clay lined. Wherever non-dispersive materials are available, they are to be used in preference to materials shown to be dispersive using the Emerson test, as described in Method 8.1 of AS 1289.

5. MATERIAL SUITABILITY AND IDENTIFICATION

The visual identification methods described in AS 1726 may be used by suitably qualified and experienced persons, for classifying soils in the field. However, if there is doubt about the suitability of the material, the administering authority may direct the licensee to arrange for laboratory testing, in accordance with the appropriate sections of AS 1289. All such laboratory testing must be carried out by a soils laboratory, accredited by the National Association of Testing Authorities (NATA).

6. CLAY LINING THICKNESS

The minimum required thickness of clay lining depends on the maximum head of effluent in contact with the clay lining and the duration of that contact. The following table outlines minimum lining thicknesses (after compaction), for the different areas of the feedlot, for two maximum head conditions.

Area of Feedlot	**Maximum Head Over Clay Lining** (m)	**Minimum Clay Lining Thickness** (mm)
Internal Catch Drains Sedimentation Systems Holding Ponds Manure Stockpile Areas	< 2 m	300
Sedimentation Systems Holding Ponds	> 2 m	450

7. PLACEMENT OF MATERIAL

Clay lining material complying with Clause 4, shall be placed at the correct moisture content as defined in Clause 8, on surfaces prepared in accordance with Clause 3, in progressive, uniform, horizontal layers, not exceeding 200 mm in thickness, prior to compaction.

8. CORRECT MOISTURE CONTENT

Prior to compaction, all material used for lining purposes shall be conditioned to have a moisture content within the range of two (2) percent wet to two (2) percent dry of the optimum moisture content required to produce the maximum dry density when compacted in accordance with Method 5.1.1 of AS 1289.

Note for explanatory purposes: *This moisture content is consistent with the requirements for compaction using a sheepsfoot roller to produce maximum impermeability. As a guide, the required moisture content is as wet as can be rolled without clogging a sheepsfoot roller. A preliminary assessment of the required moisture content can be made by rolling a sample of the material between the hands. If it can be rolled to pencil thickness without breaking, it should be satisfactory.*

9. COMPACTION

Each layer of material placed in accordance with Clause 7, shall be compacted to produce **either** a field dry density of at least 95% of the standard maximum laboratory dry density determined in accordance with Method 5.4.1 of AS 1289, **or alternatively**, a Hilf density ratio of at least 95% when tested in accordance with Method 5.7.1 of AS 1289.

Note for explanatory purposes: *This degree of compaction may generally be achieved by rolling each layer of material, placed at the correct moisture content, with at least eight (8) passes of a sheepsfoot roller of the configuration described in Clause 10 below. As a guide, compaction will generally be sufficient when there is a clearance of 100 mm between the drum of the roller and the compacted material.*

10. SHEEPSFOOT ROLLER

The following specifications describe a sheepsfoot roller which is suitable for fulfilling the compaction requirements described in Clause 9:

(i) The diameter of the drum(s) shall be not less than 1m.
(ii) The length of each drum(s) shall be approximately 1.2 times the drum diameter.
(iii) The feet shall extend approximately 175mm radially from the drum and be of the taper-foot type, with a cross-sectional area close to the outer end of not less than 3200mm^2 and not more than 4500mm^2.
(iv) The number of feet shall be such that their total area close to the outer ends shall be between 5% and approximately 8% of the area of the cylinder which would enclose all the feet, *i.e.* a cylinder having a diameter equal to the diameter of the drum plus twice the length of each foot.
(v) The weight of the roller ballasted, shall be such that the bearing pressure thus obtained shall be not less than 1750 kilopascals, in accordance with the following formula:

$$\text{Bearing Pressure (kPa)} = \frac{\text{Mass (kg)} \times 9.81 \times 1000}{\text{Area of contact of one row of feet (mm}^2\text{)}}$$

Rollers of other types and configurations may be used provided that the required compaction is achieved in accordance with Clause 9.

11. TEST FOR ADEQUATE COMPACTION

The administering authority may direct the licensee to arrange for compaction testing, in accordance with the methods referred to in Clause 9 of this specification, to be carried out on appropriate sections of the works area. Compaction testing is to be performed by suitably qualified and experienced personnel, employed by a soils laboratory accredited by the National Association of Testing Authorities (NATA) for the specified testing method.

Failure of the test results to comply with the compaction requirements described in Clause 9 will result in the licensee being prohibited from stocking the feedlot until appropriate remedial measures are implemented, as directed by the administering authority.

12. EXEMPTION FROM CLAY LINING REQUIREMENTS

The administering authority may exempt a licensee from the requirement to clay line cattle feedlot facilities if the licensee can submit certified test results confirming that the permeability of soils underlying nominated areas of the feedlot does not exceed 0.1 mm/day.

Permeability testing is to be carried in accordance with the methods specified in either Part 6 of BS 1377 (Triaxial Permeability) or Section F7.1 of AS 1289. The test results shall be submitted to the administering authority, following certification by a National Association of Testing Authorities (NATA) accredited soils laboratory.

13. FINAL TRIMMING

Following the completion of compaction, final trimming of all clay lined areas shall be carried out to produce a smooth, uniform surface, in accordance with the design gradients, levels and dimensions shown on the plans, as previously approved by the administering authority.

14. SYNTHETIC LINERS

A licensee may submit to the administering authority, alternate material and installation specifications relating to the use of synthetic lining materials, in lieu of clay lining. Approval of synthetic lining proposals will be subject to assessment by the administering authority.

15. INDEMNITY

The Department of Primary Industries and Officers of that Department shall not be responsible for any costs incurred by either the licensee or his/her contractor, in carrying out any works, as directed by the administering authority, for the purpose of rectifying design and/or construction faults or omissions.

Appendix E– Meteorological modelling

19 February 2022

Rod Davis
Director
RDC Engineers
rod.davis@rdcengineers.com.au

Astute Environmental Consulting

Dear Rod

Re: Meteorological Modelling – Runway Station

Background

As requested, meteorological modelling for the Runway Station Feedlot on land described as Lot 600 on SP310657 ("the site"), was performed.

It is understood that the meteorological data will be used to calculate wind frequency factors for the National Guidelines for Beef Cattle Feedlots in Australia (3rd Edition) (MLA, 2012).

As there is no freely available weather station data for the site, The Air Pollution Model (TAPM), which is a prognostic model, was used. The use of the model is consistent with DEHP (2013).

Methodology

Five recent years were modelled using TAPM, from 2016 through to 2020.

TAPM (version 4), is a three-dimensional meteorological and air pollution model developed by CSIRO. The model is a prognostic model which uses synoptic scale data to predict hourly meteorology in the area modelled. Details about TAPM can be found in the TAPM user manual (Hurley, 2008a) and details of the model development and underlying equations can be found in Hurley (2008b). Details of validation studies performed for TAPM are also available and include Hurley et. al. (2008c).

TAPM v4 predicts meteorological data including wind speed and direction in an area using a series of fluid dynamics and scalar transport equations (Hurley, 2008b) and it has both prognostic meteorological and air pollution (dispersion) components. The benefit of using TAPM is that key meteorological aspects including the influence of terrain induced flows are predicted both locally and regionally.

The TAPM setup is summarised in Table 1 and is consistent with the requirements in NSW EPA (2016). The land use in the innermost TAPM grids were checked and adjusted to be reflect the land use in the area. This is shown in Figure 1.

Table 1: TAPM Setup

Parameter	Value
Year	2016 - 2020
Centre	19° 46'S; 146° 50'E
Grid points	25 x 25
Outer Grid Spacing	30km
Nested Grid Spacing	10km, 3km, 1km, 300m
Vertical Levels	25
Model Settings	Default

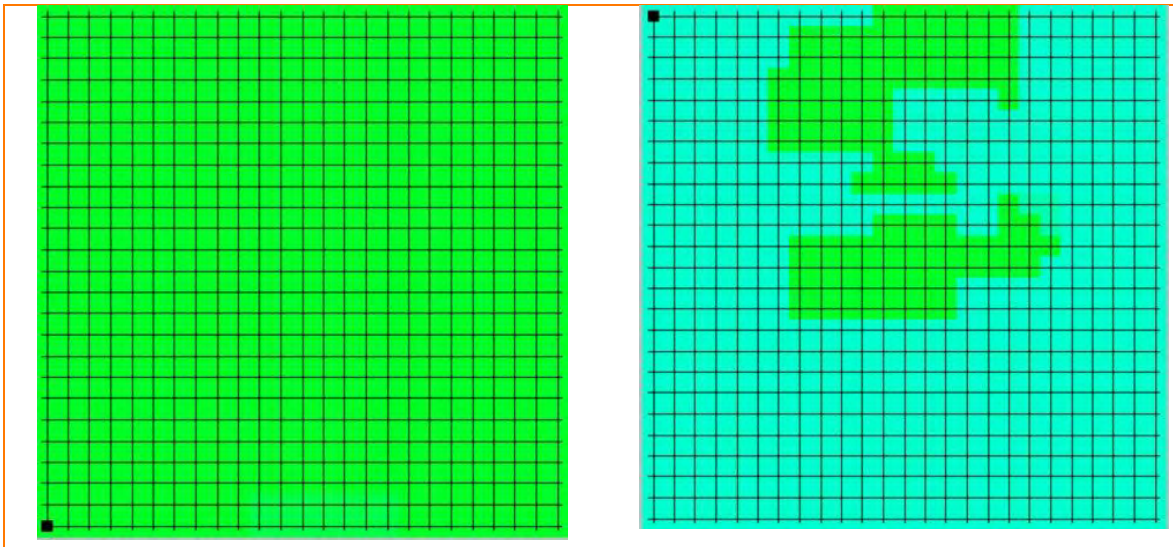


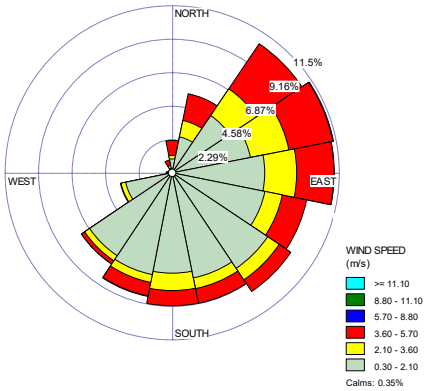
Figure 1: Default (left) and Updated (right) Landuse – 300 m

Predicted Winds

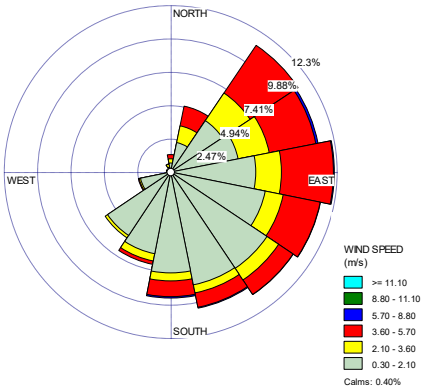
The wind speed and direction data from TAPM for 2016 to 2020 are shown below in Figure 2 as wind roses. Wind roses are used to show the frequency of winds by direction and strength. The data was extracted near to the centre of the TAPM domain to be close to the subject site. This is shown in Figure 3.

The bars in the wind roses correspond to 16 compass points (north, north-north-east, north-east etc) and the bar at the top of each wind rose shows winds blowing from the north (i.e. northerly winds), and so on. The length of the bar shows how much of the winds blow from that direction (i.e. frequency) and the colouration and width of the bars shown the wind speed categories in line with the legend.

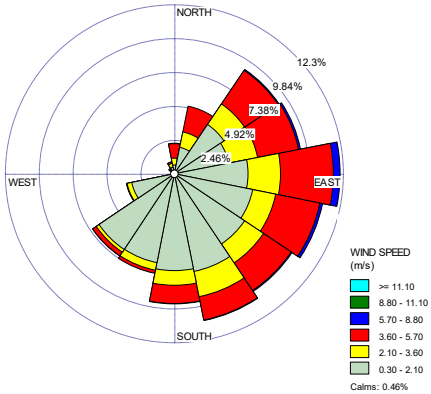
Figure 2 shows that TAPM predicted minor changes in wind speed and direction over time with dominant south easterly winds.



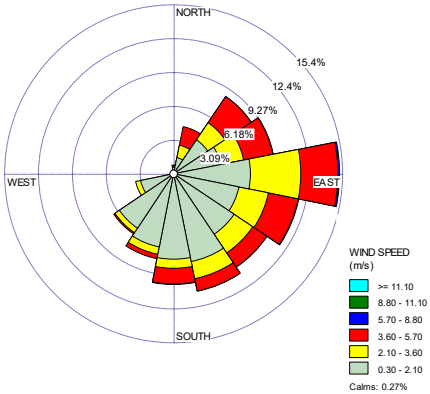
2016



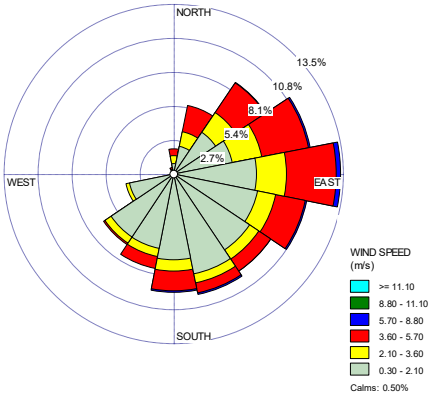
2017



2018



2019



2020

Figure 2: Wind Roses 2016 to 2020

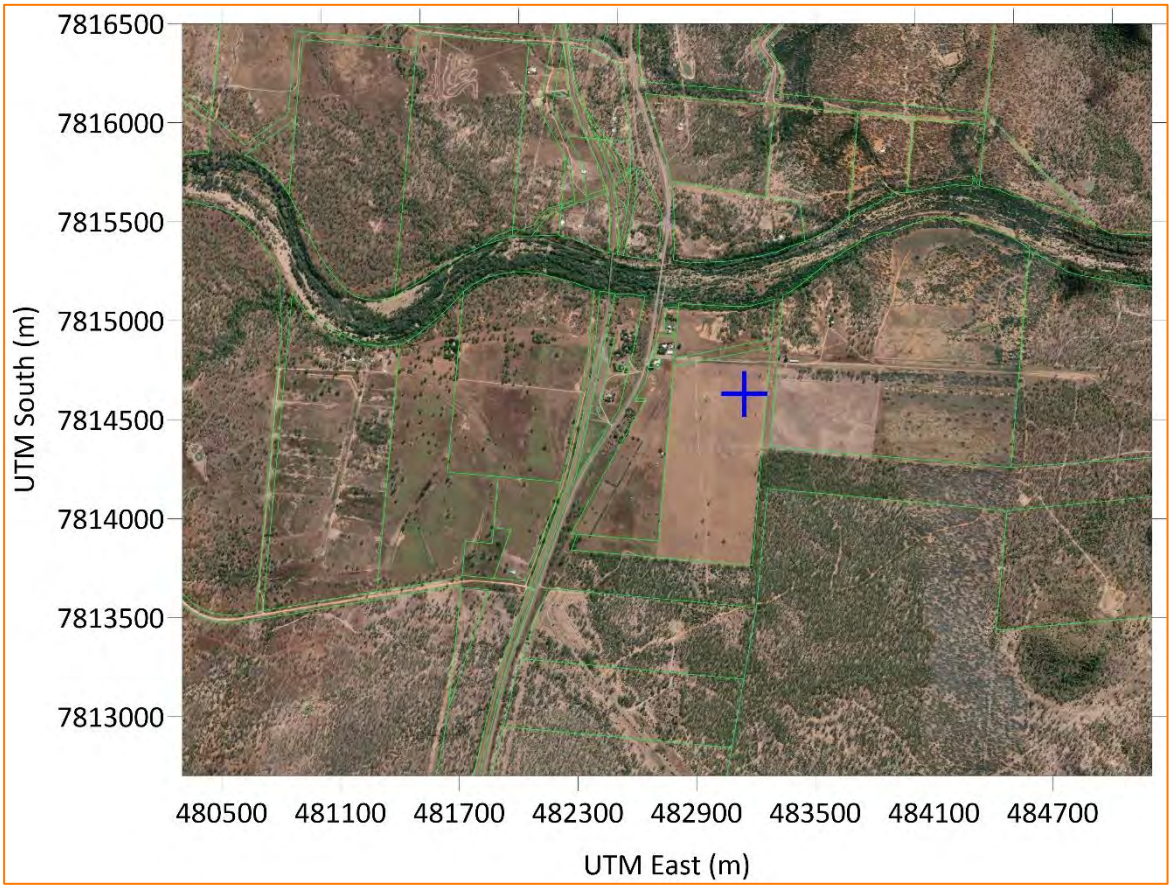


Figure 3: TAPM Extract Location

Conclusion

The modelling methodology here used TAPM to predict on site winds, which is consistent with DEHP (2013).

It is our experience that TAPM predicted wind speed and direction profiles compare reasonably well to observed data in most areas. However, care should be taken if the predicted factor based on the model output results in marginal compliance.

If you have any questions, please contact me.

Yours sincerely

Geordie Galvin
B.Eng (Env Eng) M.Eng (Env) MIEAust A.AirQual
Principal Environmental Engineer

References

DEHP, 2013. *Guideline: Odour Impact Assessment from Developments,* Brisbane: Department of Environment and Heritage Protection.

Hurley, P., 2008a. *TAPM V4 User Manual,* Canberra, Australia: CSIRO Marine and Atmospheric Research.

Hurley, P., 2008b. *TAPM V4 Part 1: Technical Description,* Canberra, Australia: CSIRO Marine and Atmospheric Research.

Hurley, P., Edwards , M. & Luhar, A., 2008c. *TAPM V4 Part 2: Summary of Some Verification Studies,* Canberra Australia: CSIRO Marine and Atmospheric Research.

MLA, 2012. *National Guidelines for Beef Cattle Feedlots in Australia (3rd Edition),* Canberra: Meat and Livestock Australia.

NSW EPA, 2016. *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales,* Sydney: Environment Protection Authority.

Appendix F– Land contamination

Department of Environment and Science (DES)
ABN 46 640 294 485
400 George St Brisbane, Queensland 4000
GPO Box 2454, Brisbane QLD 4001, AUSTRALIA
www.des.qld.gov.au

SEARCH RESPONSE

ENVIRONMENTAL MANAGEMENT REGISTER (EMR)
CONTAMINATED LAND REGISTER (CLR)

RDC Engineers Pty Ltd
PO Box 1223
Toowoomba QLD 4350

Transaction ID: 50764862 EMR Site Id: 13 March 2022
Cheque Number:
Client Reference:

This response relates to a search request received for the site:

Lot: 1 Plan: RP743456
5293 FLINDERS HWY
REID RIVER

EMR RESULT

The above site is NOT included on the Environmental Management Register.

CLR RESULT

The above site is NOT included on the Contaminated Land Register.

ADDITIONAL ADVICE

All search responses include particulars of land listed in the EMR/CLR when the search was generated.
The EMR/CLR does NOT include:-

1. land which is contaminated land (or a complete list of contamination) if DES has not been notified
2. land on which a notifiable activity is being or has been undertaken (or a complete list of activities) if DES has not been notified

If you have any queries in relation to this search please phone 13QGOV (13 74 68)

Administering Authority

Department of Environment and Science (DES)
ABN 46 640 294 485
400 George St Brisbane, Queensland 4000
GPO Box 2454, Brisbane QLD 4001, AUSTRALIA
www.des.qld.gov.au

SEARCH RESPONSE
ENVIRONMENTAL MANAGEMENT REGISTER (EMR)
CONTAMINATED LAND REGISTER (CLR)

RDC Engineers Pty Ltd
PO Box 1223
Toowoomba QLD 4350

Transaction ID: 50764861 EMR Site Id: 13 March 2022
Cheque Number:
Client Reference:

This response relates to a search request received for the site:
Lot: 2 Plan: RP743456
5289 FLINDERS HWY
REID RIVER

EMR RESULT

The above site is NOT included on the Environmental Management Register.

CLR RESULT

The above site is NOT included on the Contaminated Land Register.

ADDITIONAL ADVICE

All search responses include particulars of land listed in the EMR/CLR when the search was generated.
The EMR/CLR does NOT include:-

1. land which is contaminated land (or a complete list of contamination) if DES has not been notified
2. land on which a notifiable activity is being or has been undertaken (or a complete list of activities) if DES has not been notified

If you have any queries in relation to this search please phone 13QGOV (13 74 68)

Administering Authority

Department of Environment and Science (DES)
ABN 46 640 294 485
400 George St Brisbane, Queensland 4000
GPO Box 2454, Brisbane QLD 4001, AUSTRALIA
www.des.qld.gov.au

SEARCH RESPONSE
ENVIRONMENTAL MANAGEMENT REGISTER (EMR)
CONTAMINATED LAND REGISTER (CLR)

RDC Engineers Pty Ltd
PO Box 1223
Toowoomba QLD 4350

Transaction ID: 50764860 EMR Site Id: 13 March 2022
Cheque Number:
Client Reference:

This response relates to a search request received for the site:
Lot: 600 Plan: SP310657
5291 FLINDERS HWY
REID RIVER

EMR RESULT

The above site is NOT included on the Environmental Management Register.

CLR RESULT

The above site is NOT included on the Contaminated Land Register.

ADDITIONAL ADVICE

All search responses include particulars of land listed in the EMR/CLR when the search was generated.
The EMR/CLR does NOT include:-

1. land which is contaminated land (or a complete list of contamination) if DES has not been notified
2. land on which a notifiable activity is being or has been undertaken (or a complete list of activities) if DES has not been notified

If you have any queries in relation to this search please phone 13QGOV (13 74 68)

Administering Authority

Appendix G – Water licence

WATER LICENCE
Water Act 2000

Queensland Government

Reference	57202A	**Expiry Date**	30/06/2111
Licensee	REID RIVER LAND HOLDINGS PTY LTD AS TRUSTEE		
Authorised Activity	The taking of watercourse water from Reid River with the point of take on or adjacent to Lot 600 on SP310657.		
Authorised Purpose	Any		
Description of Land	Attached to the land described as Lot 600 on SP310657 and Lot 2 on RP743456.		
Nominal Entitlement	80 Megalitres		
Maximum Rate	65 Litres per second		

This water licence is subject to the conditions endorsed hereon or attached hereto.

Given at Ayr this SIXTH day of APRIL 2022.

Delegate of the Chief Executive
Department of Regional Development, Manufacturing and Water

Water Licence: 57202A
Expiry Date: 30/06/2111

Conditions: Schedule A

2.44
The taking of water under this authorisation is permitted only when there is a continuous surface flow in Reid River from the location at which water is taken to the Haughton River.

2.69
The daily volumetric limit that may be taken under this licence is 3.9 megalitres.

Water Licence: 57202A
Expiry Date: 30/06/2111

Conditions: Schedule B

SPEC01
Water taken under the authority of water licence 57202A must only be taken from the area previously described as Lot 3 on RP715678.

Water Act 2000

Water licence information and requirements

The information below outlines requirements that may apply to your water licence under the Water Act 2000 (Act). It also outlines how the chief executive may deal with your water licence under the Act.

Complying with licence conditions

The chief executive may grant or grant in part a licence with or without conditions. Licensees must comply with all terms and conditions of a licence. A regulation may also prescribe conditions in addition to those listed on a licence.
Water licences are usually issued with an expiry date of 30 June 2111, unless otherwise specified on the licence or in a water plan.
The licensee must pay any fee or charge associated with the licence as prescribed by a regulation. The licensee will be invoiced annually for the water licence fee while the licence is in force. Prescribed fees are subject to adjustment from periodic reviews and Consumer Price Index movements.
If a water licence contains a condition relating to a payment plan, the chief executive may cancel the licence if the licensee defaults on a payment. If a water licence contains a condition requiring the installation of works to take water, the chief executive may cancel the licence if the works are not installed within the specified timeframe.
Water taken under a licence may only be used within the boundaries of the land identified on the licence as 'attached land', except where:

- A regulation or water plan allows water to be seasonally assigned or relocated to other land.
- A water facility agreement is in place.
- Underground water is being taken under the water licence for stock and domestic purposes.

The maximum area or nominal volume specified on a licence is the quantity of water that may be taken in a water year. Water use in excess of this authorised amount is an offence. A water year is typically from 1 July to 30 June the following year, unless otherwise specified in a water plan or regulation.
For a licence that states a maximum area to be irrigated, the specified area is:

- The maximum area, in whole or as the aggregate of part areas, that may be irrigated in any one growing season.
- Measured in whole or in aggregate parts, as the 'fence to fence' area of the crop to which water is applied.

Water use on an area of land in excess of any authorised area or in excess of any authorised volume is an offence under the Act. During times of water shortage, the chief executive may, by notice, limit the time, purpose and volume of water that may be taken.

Land dealings

If the land attached to the licence changes ownership, the new owner of the land will become the licensee.
Should the registered owner dispose of part of the land to which the licence attaches, the licence becomes jointly held by all owners of the land to which the licence related before the disposal.
If you do not want the licence to change ownership upon part disposal of the land to which the licence attaches, you should contact your local business centre to discuss available options prior to disposal.

Metering

If you are located within a metered entitlement area or if your licence contains a condition requiring the installation of a meter, you must install and validate an approved meter prior to commencing the take of water. Taking water through a metered entitlement without an approved meter is an offence. If you are unsure whether your licence requires metering, you should contact your local business centre to discuss. If you identify a fault with your meter, you must notify the department within 3 business days. Tampering with a meter or approved measuring device is an offence under the Act.
Upon the sale of a property, the seller is responsible for the payment of any outstanding metering charges for the meter.

Dealings with water licences

The chief executive may amend, cancel or repeal a licence.
The licensee may apply for one or more dealings with a licence. Dealings include amending, renewing, reinstating, relocating, transferring, surrendering, amalgamating, subdividing and seasonal water assignments of a licence. A water licence may only be seasonally assigned or relocated to other land where a water plan, water management protocol or regulation allows. Before submitting any application for a dealing on the licence, it is suggested that you contact your nearest business centre to obtain details of what dealings can be applied for, the application process and current fees.

More information

Further information on water licences, dealings and metering and measurement requirements is available on the Business Queensland website at www.business.qld.gov.au or by contacting your local business centre.

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Appendix H – Flood study

Reid River flood study

Hydraulic assessment of proposed cattle feedlot

Reid River Export Depot Pty Ltd
1845-01-B1, 7 April 2022

Report Title	Reid River flood study, Hydraulic assessment of proposed cattle feedlot
Client	Reid River Export Depot Pty Ltd
Report Number	1845-01-B1

Revision Number	Report Date	Report Author	Reviewer
1	6 April 2022	MPB	MJB
2	7 April 2022	MPB	MJB

For and on behalf of WRM Water & Environment Pty Ltd
Level 9, 135 Wickham Tce, Spring Hill
PO Box 10703 Brisbane Adelaide St Qld 4000
Tel 07 3225 0200

Matthew Buckley

Lead Project Engineer

NOTE: This report has been prepared on the assumption that all information, data and reports provided to us by our client, on behalf of our client, or by third parties (e.g. government agencies) is complete and accurate and on the basis that such other assumptions we have identified (whether or not those assumptions have been identified in this advice) are correct. You must inform us if any of the assumptions are not complete or accurate. We retain ownership of all copyright in this report. Except

where you obtain our prior written consent, this report may only be used by our client for the purpose for which it has been provided by us.

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1 Introduction

The Reid River Export Depot is located south of the Reid River approximately 50 kilometres south of Townsville (as shown in the locality map in Figure 1.1). The site is located on lots 600 SPSP310657 and RP743456, on the southern side of the Reid River.

Reid River Export Depot Pty Ltd is seeking approval for a change in land use for the site from export depot to cattle feedlot. Schedule 2 of the EP regulations, require cattle feedlots to be above the 1% Annual Exceedance Probability (AEP) flood level or be protected by a levee.

WRM Water & Environment Pty Ltd (WRM) was engaged by RDC Engineers Pty Ltd on behalf of Reid River Export Depot Pty Ltd to undertake a hydraulic assessment of the Reid River to establish the 1% AEP Reid River flood levels at the site.

This report summarises the hydrologic and hydraulic modelling undertaken to establish the 1% AEP flood level in accordance with the best practice guidelines provided in Australian Rainfall and Runoff (AR&R) (Ball et al., 2019).

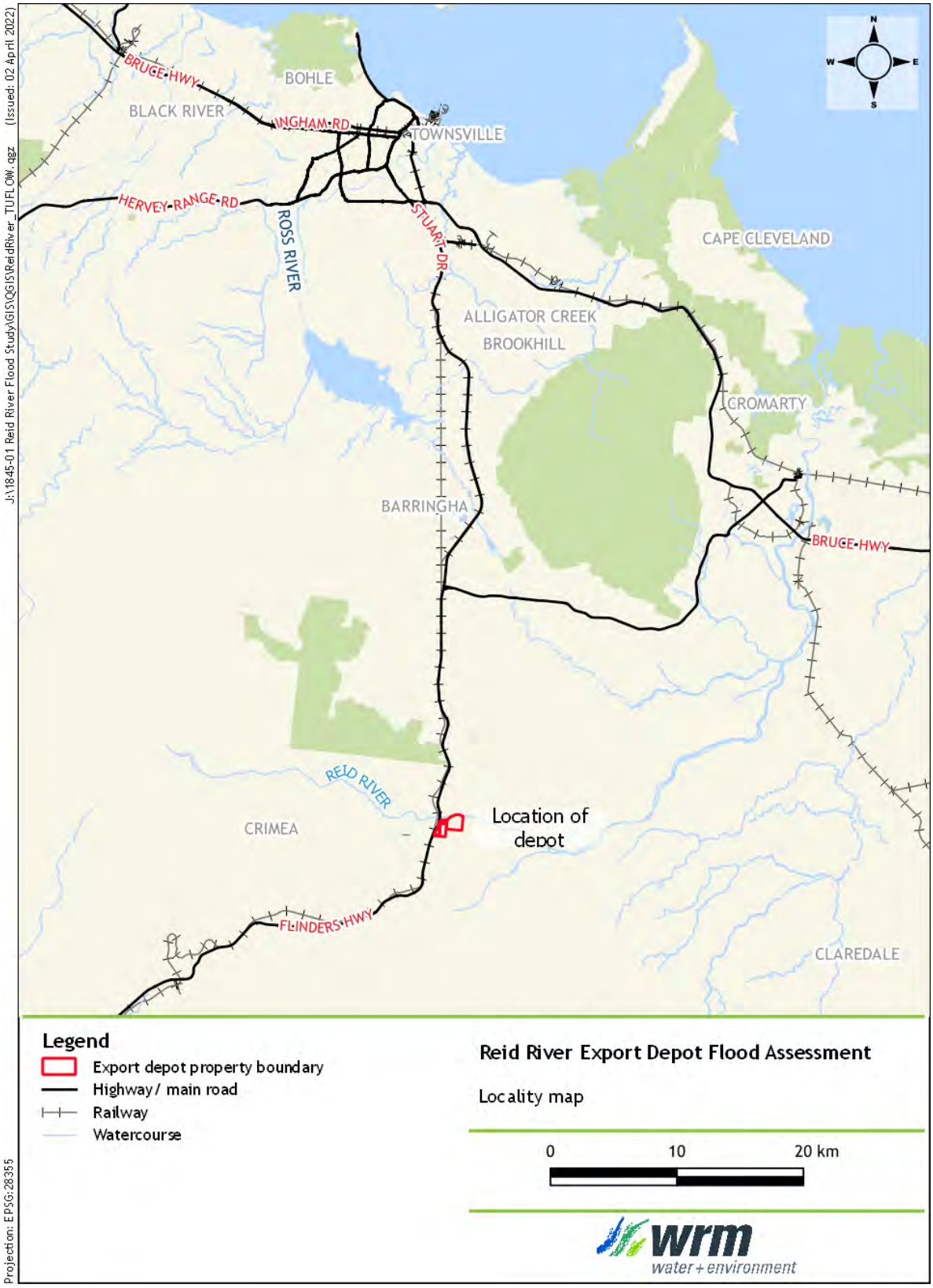


Figure 1.1 - Locality map

2 Hydrologic model

2.1 OVERVIEW

The Reid River is an ephemeral watercourse located in a rural catchment within the Haughton River Basin. The catchment has a total area of approximately 570 km^2 to its confluence with the Haughton River, approximately eight kilometres downstream of the Reid River Export Depot site. The catchment area upstream of the Reid River Export Depot site is approximately 510 km^2.

Ground surface elevations range from approximately 710 mAHD in the upper catchment to 50 mAHD at the Haughton River. The catchment is characterised by steeper upper slopes of approximately 12% becoming relatively flat downstream at the location of the depot, with average catchment slopes of 5%.

A hydrological model of the Reid River catchment was developed using the URBS modelling software to estimate design 1% AEP design flood hydrographs for use in the assessment.

2.2 URBS HYDROLOGICAL MODEL DEVELOPMENT

URBS is an industry recognised modelling program for simulating hydrological systems. As there is limited detailed LiDAR coverage of the topography of the Reid River catchment, the delineation of subcatchments was based on Shuttle Radar Topography Mission (SRTM) data freely available on a 30 m grid from Geoscience Australia.

Figure 2.1 shows the subcatchment delineation for the model, which extends to the Haughton River confluence. It includes 21 subcatchments ranging in area from 9 km^2 to 62 km^2.

Model parameters for each subcatchment were determined as follows:

- A percentage impervious of zero was adopted for all subcatchments;
- Catchment slopes were determined based on the available topographic data.

Rainfall varies significantly across the Reid River catchment. This is illustrated in Figure 2.2, which shows average annual rainfall varies from 710 mm in the southwestern corner of the catchment to 1,180 mm in the north. To account for this spatial variability, design rainfalls were obtained from the Bureau of Meteorology (BoM) for four locations (subcatchments RR01, RR06, RR11 and RR18) and distributed across the subcatchments with the nearest centroids. The adopted design rainfall intensities are shown in Table 2.1.

Table 2.1 - Design 1% AEP rainfall intensities

	1% AEP rainfall intensity			
Duration (h)	RR01	RR06	RR11	RR18
1	90.8	89.8	90.5	95.7
2	62.0	60.5	59.9	64.2
3	50.0	48.2	46.7	50.6
4.5	40.7	38.7	36.4	39.9
6	35.2	33.2	30.4	33.7
9	28.9	26.8	23.7	26.6
12	25.0	23.1	19.8	22.4
18	20.3	18.5	15.3	17.6
24	17.4	15.7	12.6	14.8

Figure 2.1 - URBS model configuration

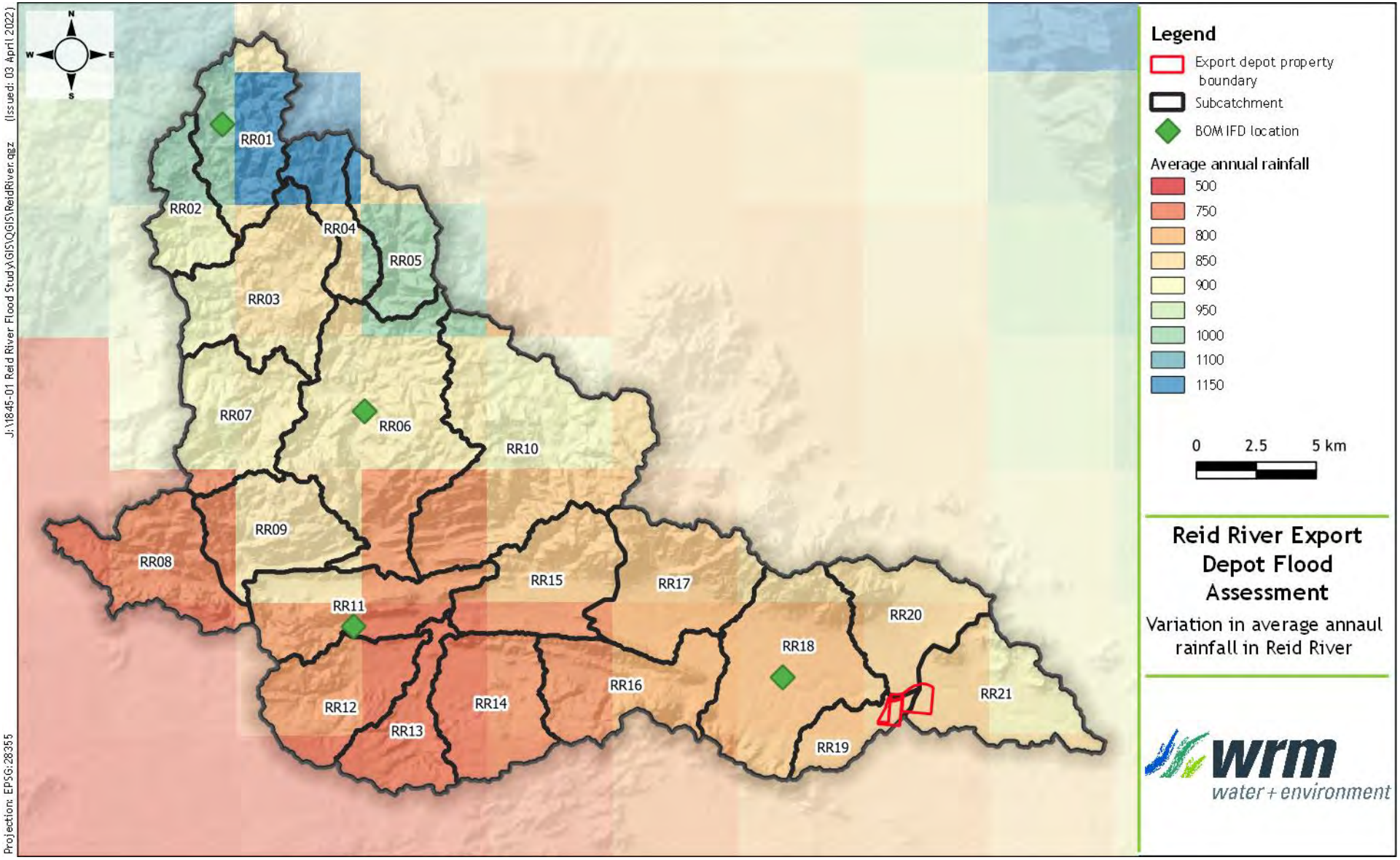


Figure 2.2 - Annual rainfall variation in the Reid River catchment

Areal reduction factors appropriate for the catchment were applied to the 1% AEP design event as recommend in AR&R.

The East Coast North temporal patterns from AR&R Data Hub (Geoscience Australia, 2019) were adopted.

There are no streamflow data available for calibration of the model, and as a result, design losses were selected based on the recommendations of the AR&R Data Hub and applied uniformly across the catchments (as catchment land use is consistent across the catchment). The adopted losses were 50 mm initial loss and 3.4 mm/h continuing loss.

2.3 VALIDATION AND DESIGN DISCHARGE

There is a manual water level gauging station (Flora Valley 533207) in the vicinity of the site however there is no available recording of any major flood event including the February 2019 event.

In the absence of calibration data, the hydrological model was validated against the Regional Flood Frequency Estimation Model (RFFE). The RFFE is an automated web-based tool developed as part of ARR 2019 (Ball et al, 2019) to estimate peak discharges for ungauged catchments based on data from nearby catchments. The RFFE is suitable for catchments with little (<10%) to no urbanisation or significant flood storage structures such as dams and less than 1,000 km^2 in area. The Reid River catchment is therefore a suitable catchment for validating against the RFFE.

As suggested in ARR 2019, there will be considerable uncertainty in RFFE estimates for ungauged catchments because of the limited number of gauged catchments available to develop the method and the wide range of catchment types that exist throughout Australia. It is also recognised that there will be uncertainty in the observed flood data due to factors such as limitations in record length and rating curve extrapolation. This uncertainty is reflected in the significant range of RFFE results between the confidence limits.

For the 1% AEP the RFFE estimates a mean expected quantile of 3,590 m^3/s at the location of the catchment draining to the Reid River Depot site. The design discharge derived using the URBS model at this location was 3,440 m^3/s which is within 5% of the RFFE mean expected quantile estimate.

This 1% AEP design discharge of 3,440 m^3/s was determined from URBS using the AR&R ensemble of 10 temporal patterns - which produces 10 design hydrographs (and peak discharges) for each duration for any given AEP. The temporal pattern which results in a peak discharge closest to, but higher than the ensemble mean is selected as the representative temporal pattern for that storm duration for use in hydraulic modelling. The storm duration with the representative temporal pattern that produces the maximum discharge at the location of interest is known as the critical duration. The critical duration for the Reid River at the location of the Reid River Export Depot site was determined to be 6 hours. The variation in modelled Reid River discharges at the Reid River Export Depot site (at the centroid of subcatchment RR18) is shown in Figure 2.3.

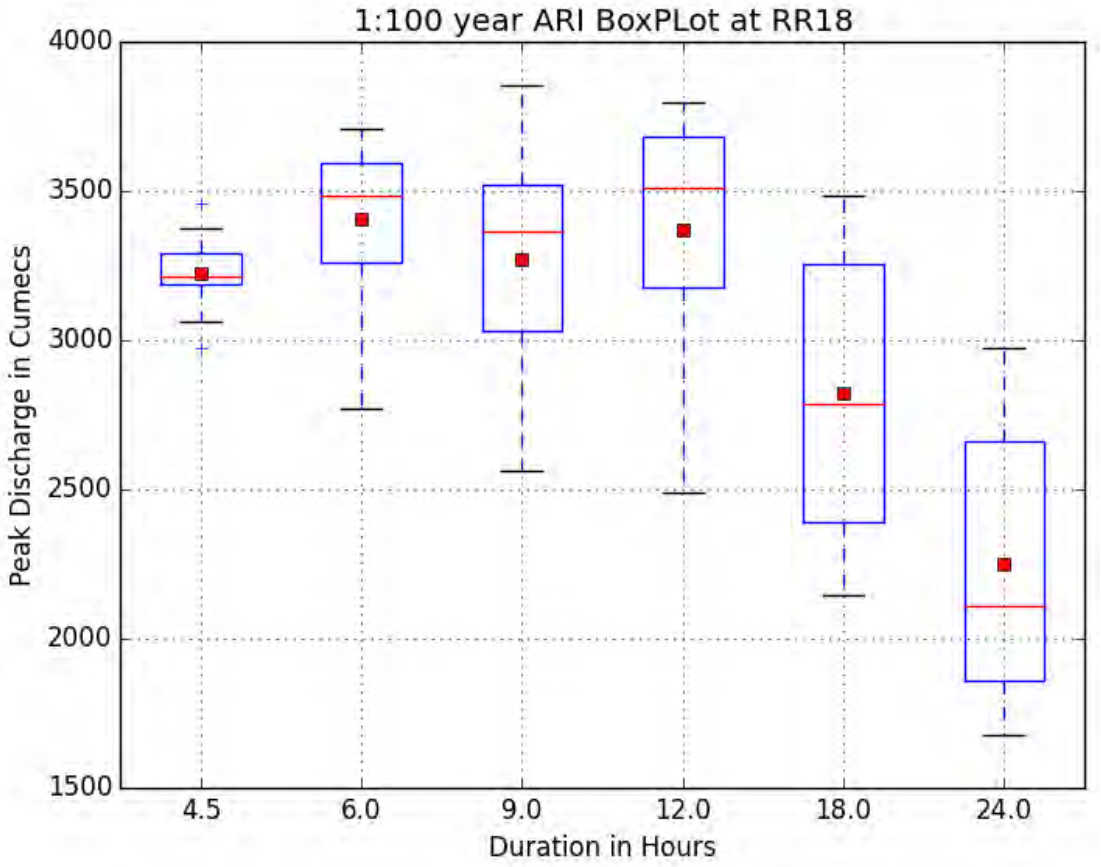


Figure 2.3 - Boxplot of discharges for a range of storm durations at RR18

3 Hydraulic model

3.1 OVERVIEW

A TUFLOW hydrodynamic model (BMT, 2018) was used to simulate the flow behaviour of the Reid River in the vicinity of the Reid River Depot site to determine flood extents and depths for the 1% AEP flood event.

TUFLOW represents hydraulic conditions on a fixed grid by solving the full two-dimensional depth averaged momentum and continuity equations for free surface flow (BMT, 2018). The model automatically calculates breakout points and flow directions within the study area. The most recent version of the TUFLOW software (Build 2020-10-AB) was used for this study. The TUFLOW model was run using the Heavily Parallelised Compute (HPC) GPU solver which uses adaptive time stepping.

3.2 MODEL CONFIGURATION

3.2.1 Grid resolution

Figure 3.1 shows the configuration of the TUFLOW model. The hydraulic model covers an area of approximately 13 km^2. It extends approximately three kilometres upstream of the Reid River Depot site and 300 m downstream.

The TUFLOW model uses topographical aerial survey data (LiDAR) supplied by DNRME and flown in 2019. The LiDAR data was supplied at a 1m grid resolution and used as the basis for the TUFLOW model. The model cell size was set at 2m grid resolution. TUFLOW's sub-grid sampling (SGS) feature was enabled so that each 2d cell face is represented using multiple elevation values at a 1 m sample distance i.e. at the same resolution as the underlying LiDAR. This feature enables the model to more accurately represent the stage storage along each 2d cell face.

3.2.2 Model boundaries

Figure 3.1 shows the locations of the 2D inflows and outflow boundaries used in the TUFLOW model. The discharge hydrographs estimated using the URBS model were adopted as inflows to the TUFLOW model.

The inflow from the hydrological model draining to the upstream extent of the hydraulic model was applied as a total hydrograph inflow at this location. The flows from the subcatchments within the model were applied as local source area inflows. These source areas supply the flow to the lowest cells within the source area polygons.

The outflow boundary on the Reid River is approximately 300 m downstream of the Reid River Export Depot site and uses an automatically generated rating curve based on a 0.25% hydraulic slope (which is the bed slope at that location).

3.2.3 Hydraulic roughness

The TUFLOW model uses Manning's 'n' values to represent hydraulic resistance. Manning's 'n' values were adopted based on typical published values (for example those of Chow (1959)). Roughness mapping was based on aerial imagery.

Table 3.1 shows the adopted Manning's 'n' values for the TUFLOW model and shows the location of each land use.

Table 3.1 – Adopted Manning's 'n' values

Land use	Manning's 'n'
Light vegetation	0.045
Open space	0.035
Medium vegetation	0.060
Vegetated riverbed	0.050

3.2.4 Hydraulic structures

The Reid River is traversed by two bridges upstream of the Export Depot site. The Flinders Highway bridge crossing is located immediately upstream of the site, and the Stuart to Charters Towers railway bridge crossing is located approximately 250 m further upstream. Design drawings for the road and rail crossings were provided by DTMR and QR respectively. The details most significant for the hydraulic modelling of the structures were:

- Flinders Highway crossing obvert is at 69.70 mAHD with a deck thickness of 1.5 m and width of 10 m;
- The rail bridge obvert is 75.5 mAHD with a deck thickness of 2.15 m and width of 5 m;
- Both bridges were modelled with standard loss values of 0.1 for the piers, 1.56 for the bridge deck and 0.7 for the railing;
- Both bridges were modelled in TUFLOW as layered flow constrictions.

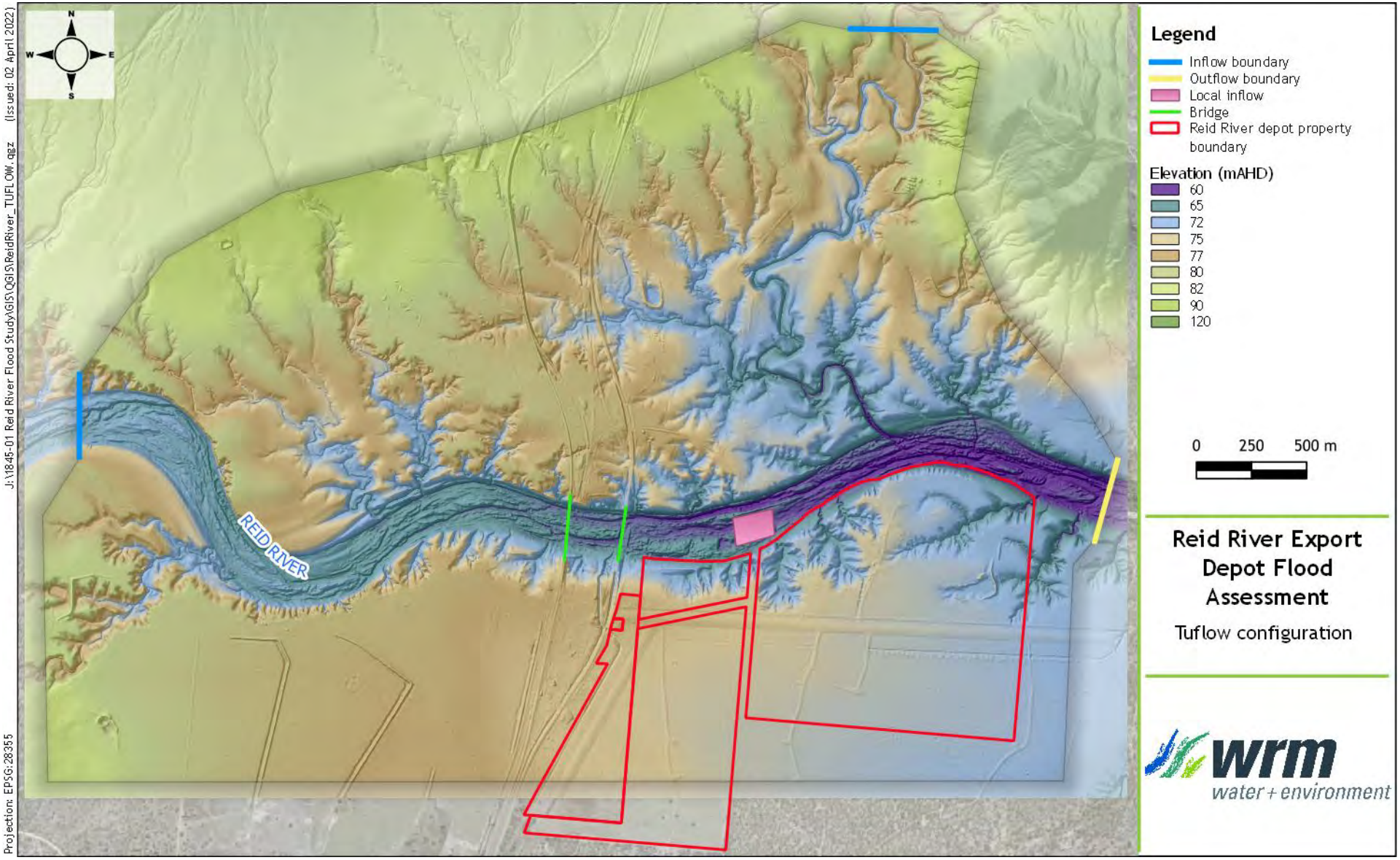


Figure 3.1 - TUFLOW model configuration

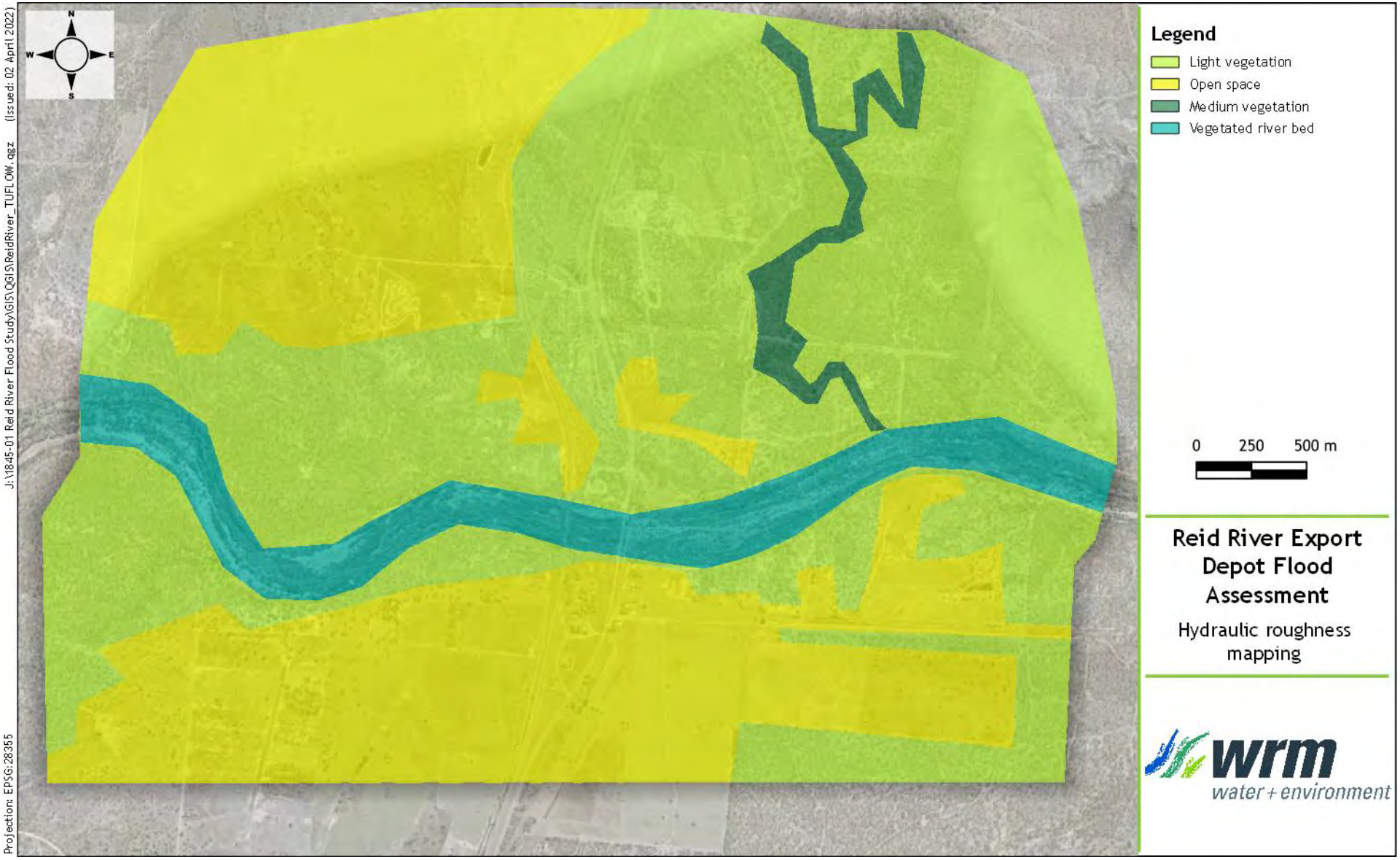


Figure 3.2 - TUFLOW roughness mapping

4 Results & conclusion

The results for the 1% AEP flood event for depths, heights and extent are shown in Figure 4.1. Flood levels adjacent to the lot on which the Reid River Export Depot is sited range from 70 mAHD at the Flinders highway to 66 mAHD at the eastern boundary. Reid River channel bank elevations vary between approximately 75 mAHD and 72 mAHD along this reach - i.e. the modelled 1% AEP flood levels are well within the channel banks.

The results indicate that (apart from limited backwater flooding in minor tributary gullies), Lot 600 SP310657 and Lot 1 and 2 RP743456 would not be inundated in a 1% AEP Reid River flood.

As the model is uncalibrated and the downstream boundary is located close to the site, sensitivity testing was undertaken to provide increased confidence in the conclusions drawn from modelling results. The downstream boundary slope was decreased to 0.001, which resulted in a localised increase in water level at the boundary of 1400 mm and increases in flood level of 900 mm to 150 mm across Lot 600 SPSP310657 and Lot 1 and Lot 2 RP743456. Flows remain well within bank. A second sensitivity test was undertaken on the hydraulic roughness by increasing roughness values by 50%. Flood level increases adjacent to the lots varied from 1200 mm to 1400 mm but flows remained in bank with no inundation of Lot 600 SP310657 and Lot 1 and Lot 2 RP743456 outside of the minor tributary gullies.

It should be noted that this assessment considered riverine flooding only and not inundation from short-duration events overflowing minor tributaries or localised overland flow. While the hydrologic and hydraulic models are uncalibrated, the results of the sensitivity analysis give a high level of confidence in the finding that the land on which the Reid River Export depot is located would not be significantly inundated by Reid River flooding in events up to the 1% AEP flood.

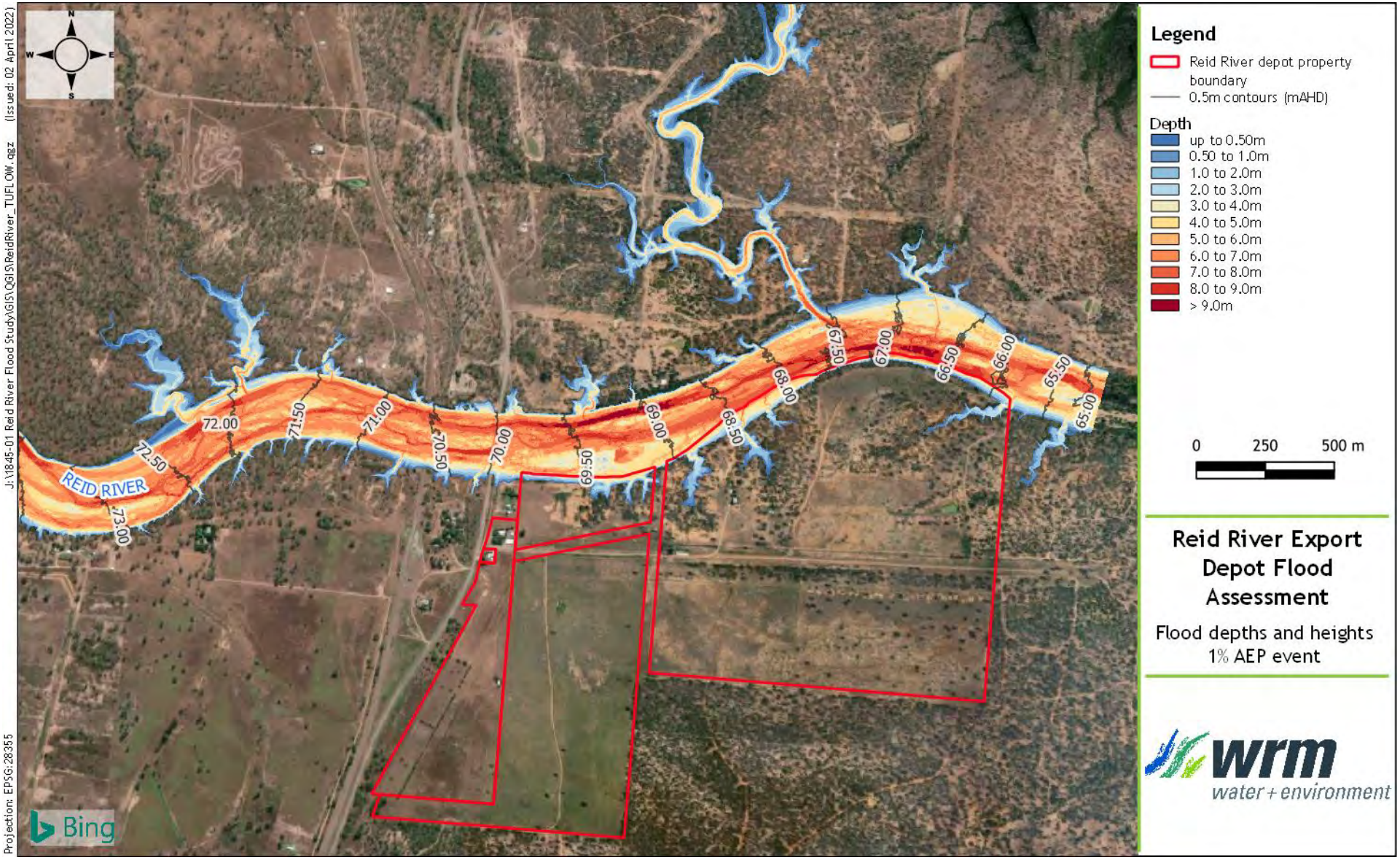
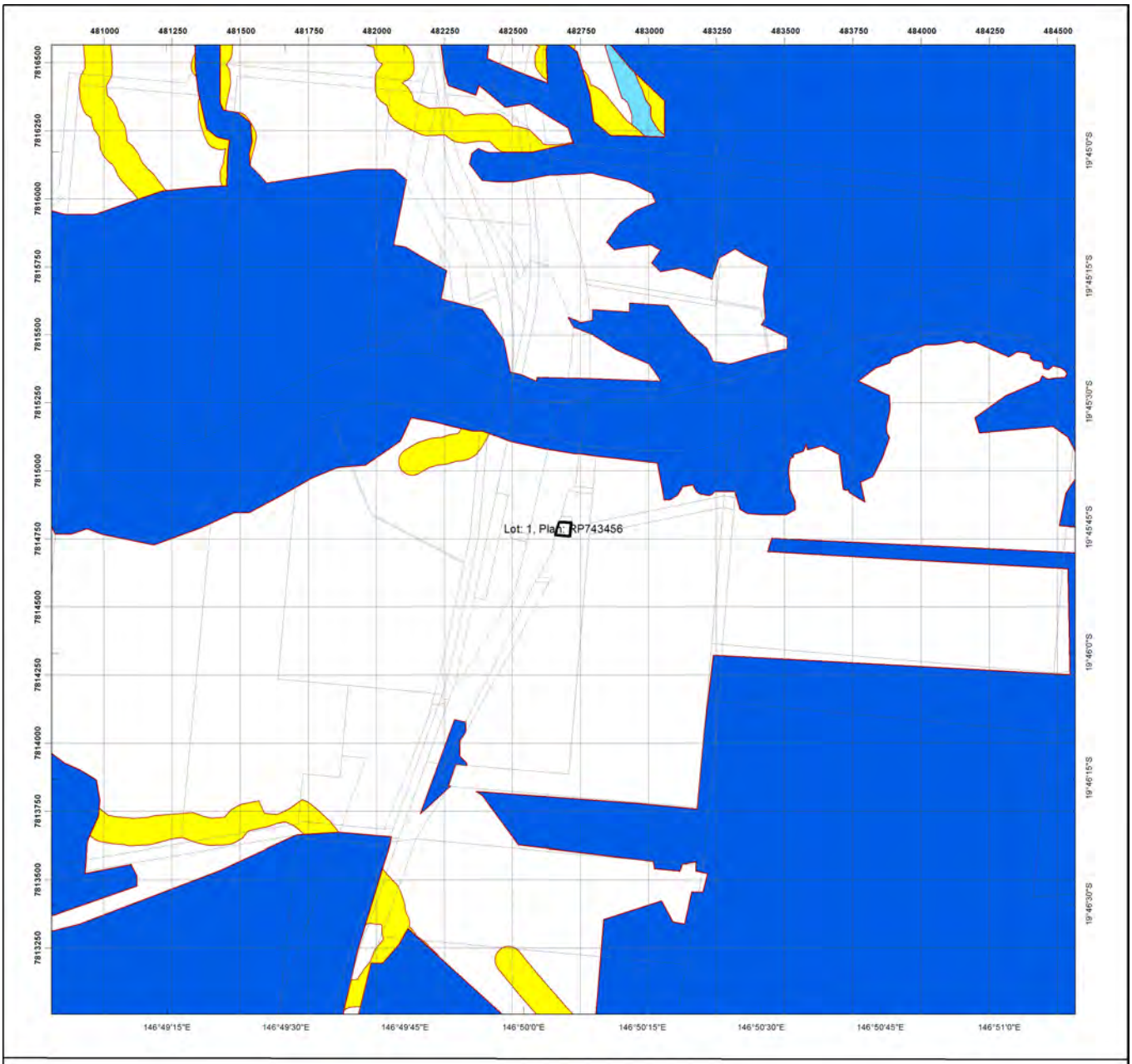


Figure 4.1 - 1% AEP flood depth and extent

5 References

Ball et al., 2019	*'Australian Rainfall and Runoff - A Guide to Flood Estimation',* Ball J, Babister M, Nathan R, Weeks W, Weinmann E, Retallick M, Testoni I, (Editors) © Commonwealth of Australia (Geoscience Australia), 2019.
BMT, 2018	*'TUFLOW Classic/HPC User Manual - Build 2019-03-AD'*, BMT Pty Ltd, 2018.
BMT, 2021	TUFLOW (software), BMT, version 2020-10-AB, 2021.
Chow, 1959	*Open Channel Hydraulics,* written by V.T. Chow, McGraw-Hill Book Company, NY, 1959.
Geoscience Australia, 2019	AR&R Data Hub (software), Geoscience Australia, Version 2019_v1, April 2019, <http://data.arr-software.org/>

Appendix I – Regulated vegetated mapping



Regulated Vegetation Management Map

Legend

- Selected Lot and Plan
- Category A area (Vegetation offsets/compliance notices/VDecs)
- Category B area (Remnant vegetation)
- Category C area (High-value regrowth vegetation)
- Category R area (Reef regrowth watercourse vegetation)
- Category X area (Exempt clearing work on Freehold, Indigenous and Leasehold land)
- Water
- Area not categorised
- Other land parcel boundaries

N

0 200 400 600 800 1,000 m

This product is projected into:
GDA 1994 MGA Zone 55

Disclaimer:
While every care is taken to ensure the accuracy of this product, the Department of Resources makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the product being inaccurate or incomplete in any way and for any reason.

Additional information required for the assessment of vegetation values is provided in the accompanying "Vegetation Management Supporting map". For further information go to the web site: www.resources.qld.gov.au or contact the Department of Resources.

Digital data for the regulated vegetation management map is available from the Queensland Spatial Portal at http://www.information.qld.gov.au/

Land parcel boundaries are provided as locational aid only.

This map is updated on a monthly basis to ensure new PMAVs are included as they are approved.

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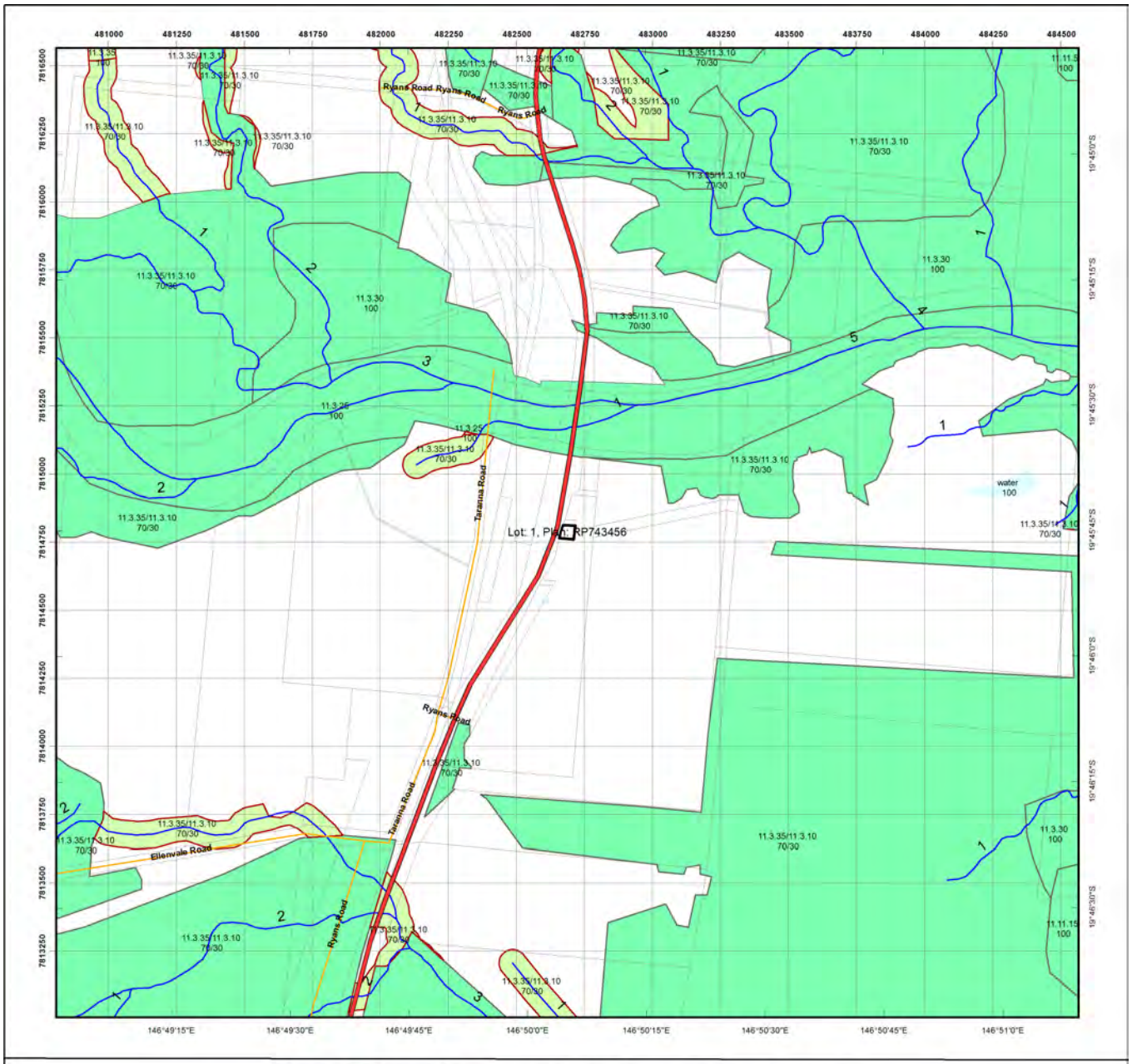

Vegetation Management Supporting Map

Legend

- Selected Lot and Plan
- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Category C or R area containing endangered regional ecosystems
- Category C or R area containing of concern regional ecosystems
- Category C or R area that is a least concern regional ecosystem
- Category X area
- Water
- Wetland on the vegetation management wetlands map
- Essential habitat on the essential habitat map
- Essential habitat species record
- Watercourses and drainage features on the vegetation management watercourse and drainage features map (Stream order shown as black number against stream where available)
- Highway
- Connector
- Street/Local Road
- National Parks, State Forest and other reserves
- Other land parcel boundaries

Queensland Government

LOCALITY DIAGRAM

N

0 140 280 420 560 700 m

This product is projected into: GDA 1994 MGA Zone 55

Labels for Essential Habitat are centred on the area of enquiry.

Regional ecosystem linework has been compiled at a scale of 1:100 000, except in designated areas where a compilation scale of 1:50 000 is available. Linework should be used as a guide only. The positional accuracy of RE data mapped at a scale of 1:100 000 is +/- 100 metres.

Disclaimer:
While every care is taken to ensure the accuracy of this product, the Department of Resources makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the product being inaccurate or incomplete in any way and for any reason.

Additional information may be required for the purposes of land clearing or assessment of a regional ecosystem map or PMAV applications. For further information go to the web site: www.resources.qld.gov.au or contact the Department of Resources.

Digital data for the vegetation management watercourse and drainage feature map, vegetation management wetlands map, essential habitat map and the vegetation management remnant and regional ecosystem map are available from the Queensland Spatial Portal at http://www.information.qld.gov.au/

Land parcel boundaries are provided as locational aid only.

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Vegetation Management Act 1999 - Extract from the essential habitat database

Essential habitat is required for assessment under the:

- State Development Assessment Provisions - State Code 16: Native vegetation clearing which sets out the matters of interest to the state for development assessment under the *Planning Act 2016*; and
- Accepted development vegetation clearing codes made under the *Vegetation Management Act 1999*

Essential habitat for one or more of the following species is found on and within 1.1 km of the identified subject lot/s on the accompanying essential habitat map.

This report identifies essential habitat in Category A, B and Category C areas.

The numeric labels on the essential habitat map can be cross referenced with the database below to determine which essential habitat factors might exist for a particular species.

Essential habitat is compiled from a combination of species habitat models and buffered species records.

The Department of Resources website (http://www.resources.qld.gov.au) has more information on how the layer is applied under the State Development Assessment Provisions - State Code 16: Native vegetation clearing and the *Vegetation Management Act 1999*.

Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated.

Essential habitat, for protected wildlife, means a category A area, a category B area or category C area shown on the regulated vegetation management map-

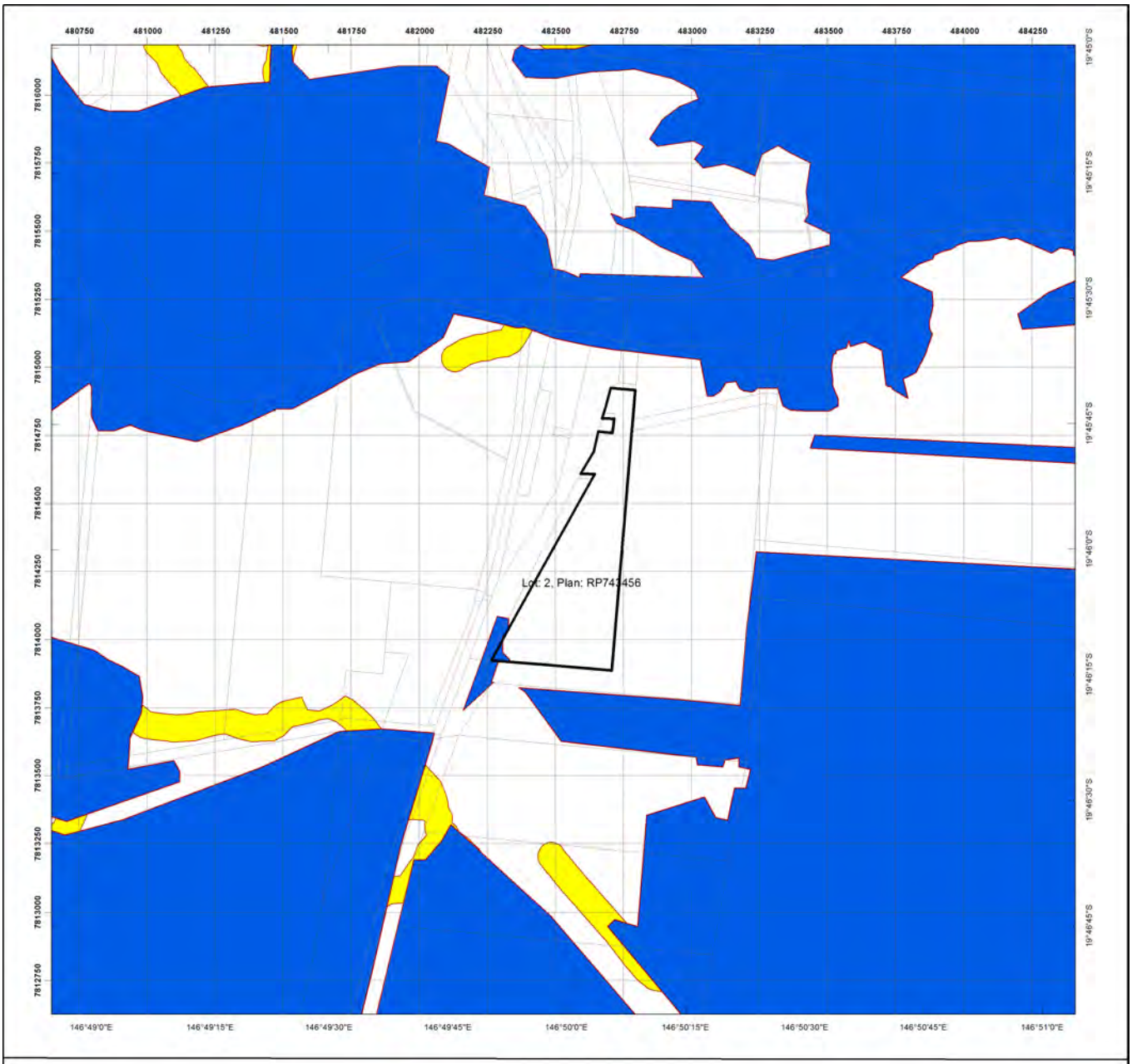
1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database; or

2) in which the protected wildlife, at any stage of its life cycle, is located.

Protected wildlife includes critically endangered, endangered, vulnerable or near-threatened native wildlife prescribed under the *Nature Conservation Act 1992*.

Essential habitat in Category A and/or Category B and/or Category C

No records



Regulated Vegetation Management Map

Legend

- Selected Lot and Plan
- Category A area (Vegetation offsets/compliance notices/VDecs)
- Category B area (Remnant vegetation)
- Category C area (High-value regrowth vegetation)
- Category R area (Reef regrowth watercourse vegetation)
- Category X area (Exempt clearing work on Freehold, Indigenous and Leasehold land)
- Water
- Area not categorised
- Other land parcel boundaries

N

0 200 400 600 800 1,000 m

This product is projected into:
GDA 1994 MGA Zone 55

Disclaimer:
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Additional information required for the assessment of vegetation values is provided in the accompanying "Vegetation Management Supporting map". For further information go to the web site: www.resources.qld.gov.au or contact the Department of Resources.

Digital data for the regulated vegetation management map is available from the Queensland Spatial Portal at http://www.information.qld.gov.au/

Land parcel boundaries are provided as locational aid only.

This map is updated on a monthly basis to ensure new PMAVs are included as they are approved.

Queensland Government

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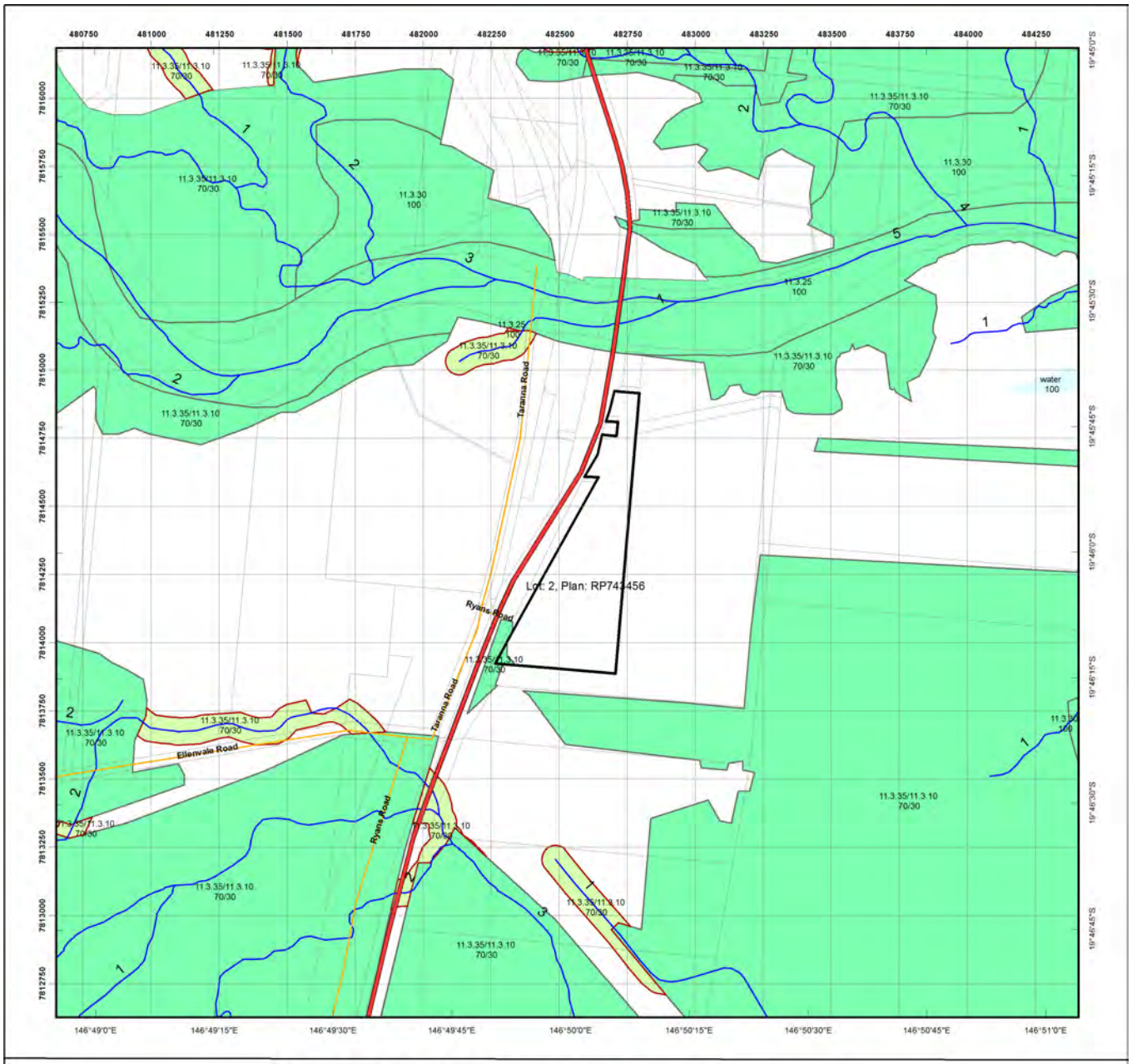

Vegetation Management Supporting Map

Legend

- Selected Lot and Plan
- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Category C or R area containing endangered regional ecosystems
- Category C or R area containing of concern regional ecosystems
- Category C or R area that is a least concern regional ecosystem
- Category X area
- Water
- Wetland on the vegetation management wetlands map
- Essential habitat on the essential habitat map
- Essential habitat species record
- Watercourses and drainage features on the vegetation management watercourse and drainage features map (Stream order shown as black number against stream where available)
- Highway
- Connector
- Street/Local Road
- National Parks, State Forest and other reserves
- Other land parcel boundaries

Queensland Government

LOCALITY DIAGRAM

N

0 140 280 420 560 700 m

This product is projected into: GDA 1994 MGA Zone 55

Labels for Essential Habitat are centred on the area of enquiry.

Regional ecosystem linework has been compiled at a scale of 1:100 000, except in designated areas where a compilation scale of 1:50 000 is available. Linework should be used as a guide only. The positional accuracy of RE data mapped at a scale of 1:100 000 is +/- 100 metres.

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Vegetation Management Act 1999 - Extract from the essential habitat database

Essential habitat is required for assessment under the:

- State Development Assessment Provisions - State Code 16: Native vegetation clearing which sets out the matters of interest to the state for development assessment under the *Planning Act 2016*; and
- Accepted development vegetation clearing codes made under the *Vegetation Management Act 1999*

Essential habitat for one or more of the following species is found on and within 1.1 km of the identified subject lot/s on the accompanying essential habitat map.

This report identifies essential habitat in Category A, B and Category C areas.

The numeric labels on the essential habitat map can be cross referenced with the database below to determine which essential habitat factors might exist for a particular species.

Essential habitat is compiled from a combination of species habitat models and buffered species records.

The Department of Resources website (http://www.resources.qld.gov.au) has more information on how the layer is applied under the State Development Assessment Provisions - State Code 16: Native vegetation clearing and the *Vegetation Management Act 1999*.

Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated.

Essential habitat, for protected wildlife, means a category A area, a category B area or category C area shown on the regulated vegetation management map-

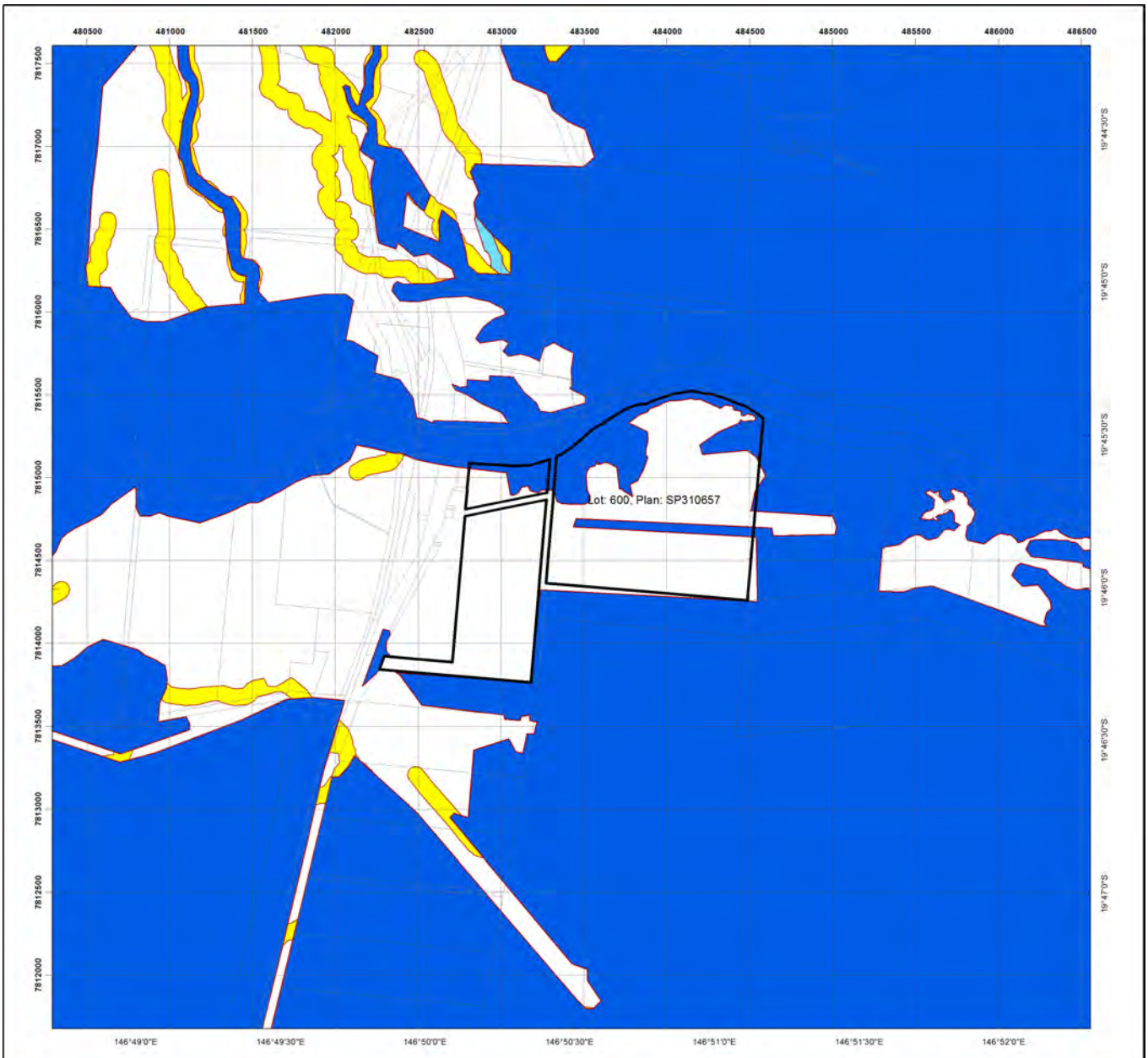
1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database; or

2) in which the protected wildlife, at any stage of its life cycle, is located.

Protected wildlife includes critically endangered, endangered, vulnerable or near-threatened native wildlife prescribed under the *Nature Conservation Act 1992*.

Essential habitat in Category A and/or Category B and/or Category C

No records



Regulated Vegetation Management Map

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- Area not categorised
- Other land parcel boundaries

N

0 340 680 1,020 1,360 1,700 m

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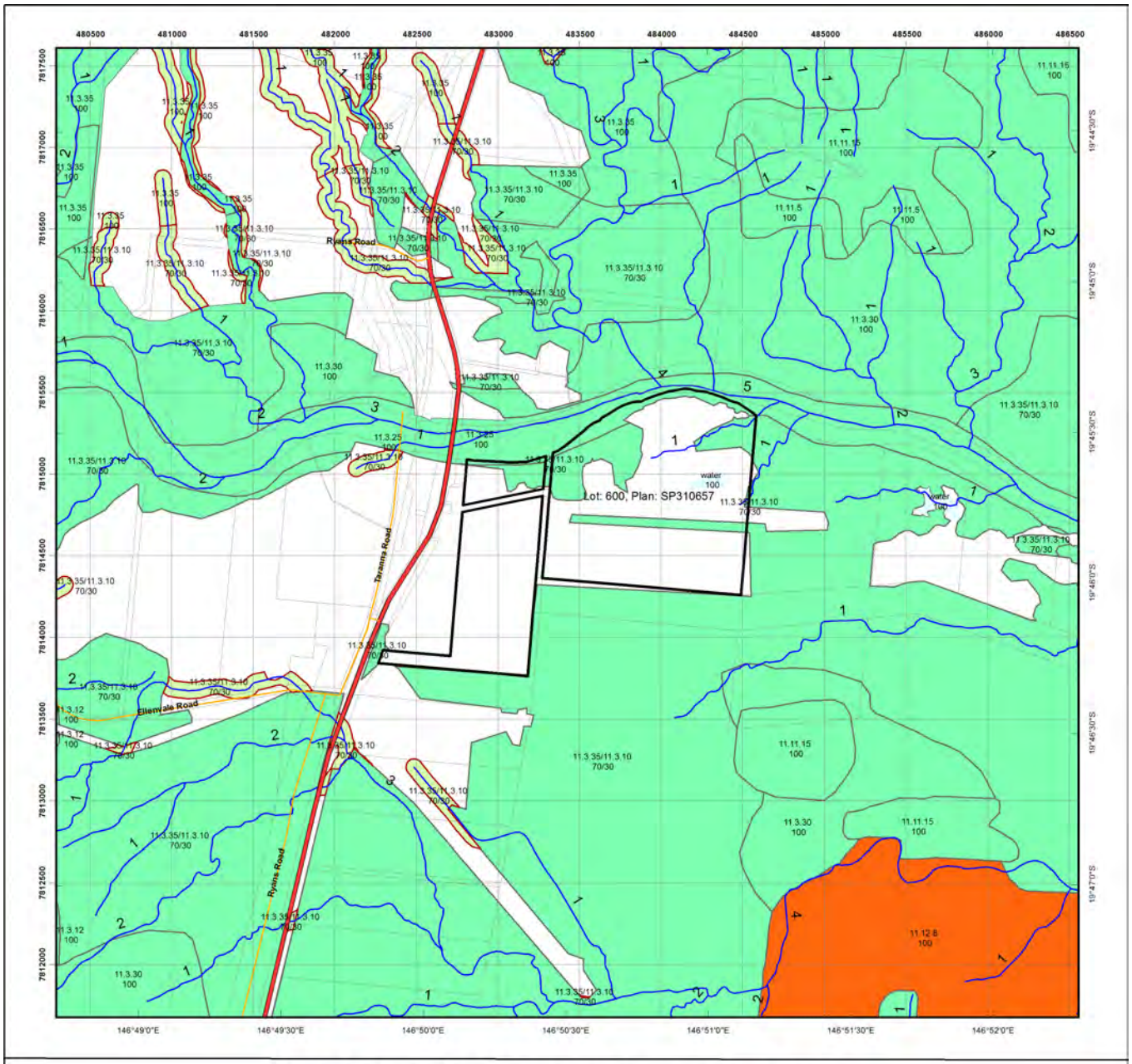

Vegetation Management Supporting Map

Legend

- Selected Lot and Plan
- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
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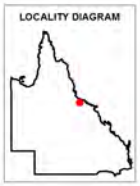
- Other land parcel boundaries

Queensland Government

LOCALITY DIAGRAM



N

0 240 480 720 960 1,200 m

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Essential habitat in Category A and/or Category B and/or Category C

No records

Appendix J – WildNet species list

Queensland Government

WildNet species list

Search Criteria: Species List for a Specified Point
Species: All
Type: All
Queensland status: All
Records: All
Date: All
Latitude: -19.7647
Longitude: 146.8444
Distance: 5
Email: rod.davis@rdcengineers.com.au
Date submitted: Sunday 06 Feb 2022 08:44:30
Date extracted: Sunday 06 Feb 2022 08:50:06

The number of records retrieved = 142

Disclaimer
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The State of Queensland disclaims all responsibility for information contained in this product and all liability (including liability in negligence) for all expenses, losses, damages and costs you may incur as a result of the information being inaccurate or incomplete in any way for any reason.
Information about your Species lists request is logged for quality assurance, user support and product enhancement purposes only.
The information provided should be appropriately acknowledged as being derived from WildNet database when it is used. As the WildNet Program is still in a process of collating and vetting data, it is possible the information given is not complete. Go to the WildNet database webpage (https://www.qld.gov.au/environment/plants-animals/species-information/wildnet) to find out more about WildNet and where to access other WildNet information products approved for publication. Feedback about WildNet species lists should be emailed to wildlife.online@des.qld.gov.au.

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Bufonidae	*Rhinella marina*	cane toad	Y			2
animals	birds	Accipitridae	*Accipiter fasciatus*	brown goshawk		C		1
animals	birds	Accipitridae	*Elanus axillaris*	black-shouldered kite		C		1
animals	birds	Accipitridae	*Haliastur sphenurus*	whistling kite		C		2
animals	birds	Accipitridae	*Milvus migrans*	black kite		C		2
animals	birds	Anatidae	*Anas gracilis*	grey teal		C		1
animals	birds	Anatidae	*Anas superciliosa*	Pacific black duck		C		2
animals	birds	Ardeidae	*Ardea alba modesta*	eastern great egret		C		2
animals	birds	Ardeidae	*Egretta novaehollandiae*	white-faced heron		C		1
animals	birds	Artamidae	*Artamus leucorynchus*	white-breasted woodswallow		C		1
animals	birds	Artamidae	*Artamus personatus*	masked woodswallow		C		1
animals	birds	Artamidae	*Artamus superciliosus*	white-browed woodswallow		C		1
animals	birds	Artamidae	*Cracticus nigrogularis*	pied butcherbird		C		2
animals	birds	Artamidae	*Cracticus torquatus*	grey butcherbird		C		1
animals	birds	Artamidae	*Gymnorhina tibicen*	Australian magpie		C		3
animals	birds	Cacatuidae	*Cacatua galerita*	sulphur-crested cockatoo		C		1
animals	birds	Cacatuidae	*Calyptorhynchus banksii*	red-tailed black-cockatoo		C		3
animals	birds	Campephagidae	*Coracina novaehollandiae*	black-faced cuckoo-shrike		C		2
animals	birds	Charadriidae	*Elseyornis melanops*	black-fronted dotterel		C		1
animals	birds	Charadriidae	*Vanellus miles*	masked lapwing		C		1
animals	birds	Columbidae	*Geopelia cuneata*	diamond dove		C		1
animals	birds	Columbidae	*Geopelia striata*	peaceful dove		C		3
animals	birds	Columbidae	*Ocyphaps lophotes*	crested pigeon		C		1
animals	birds	Corcoracidae	*Struthidea cinerea*	apostlebird		C		1
animals	birds	Corvidae	*Corvus orru*	Torresian crow		C		6/3
animals	birds	Corvidae	*Corvus sp.*			C		1
animals	birds	Cuculidae	*Cacomantis pallidus*	pallid cuckoo		C		1
animals	birds	Falconidae	*Falco cenchroides*	nankeen kestrel		C		1
animals	birds	Falconidae	*Falco peregrinus*	peregrine falcon		C		1
animals	birds	Halcyonidae	*Dacelo leachii*	blue-winged kookaburra		C		3
animals	birds	Halcyonidae	*Todiramphus sanctus*	sacred kingfisher		C		1
animals	birds	Hirundinidae	*Hirundo neoxena*	welcome swallow		C		1
animals	birds	Maluridae	*Malurus melanocephalus*	red-backed fairy-wren		C		1
animals	birds	Meliphagidae	*Entomyzon cyanotis*	blue-faced honeyeater		C		4
animals	birds	Meliphagidae	*Lichmera indistincta*	brown honeyeater		C		2
animals	birds	Meliphagidae	*Manorina flavigula*	yellow-throated miner		C		1
animals	birds	Meliphagidae	*Melithreptus albogularis*	white-throated honeyeater		C		1
animals	birds	Meliphagidae	*Stomiopera flava*	yellow honeyeater		C		2
animals	birds	Meropidae	*Merops ornatus*	rainbow bee-eater		C		1
animals	birds	Monarchidae	*Grallina cyanoleuca*	magpie-lark		C		4
animals	birds	Nectariniidae	*Cinnyris jugularis*	olive-backed sunbird		C		1
animals	birds	Nectariniidae	*Dicaeum hirundinaceum*	mistletoebird		C		1
animals	birds	Oriolidae	*Sphecotheres vieilloti*	Australasian figbird		C		2
animals	birds	Otididae	*Ardeotis australis*	Australian bustard		C		1
animals	birds	Pachycephalidae	*Pachycephala rufiventris*	rufous whistler		C		1
animals	birds	Pardalotidae	*Pardalotus striatus*	striated pardalote		C		2

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Phalacrocoracidae	*Microcarbo melanoleucos*	little pied cormorant		C		1
animals	birds	Phasianidae	*Synoicus ypsilophorus*	brown quail		C		1
animals	birds	Rhipiduridae	*Rhipidura albiscapa*	grey fantail		C		3
animals	birds	Rhipiduridae	*Rhipidura leucophrys*	willie wagtail		C		4
animals	birds	Threskiornithidae	*Threskiornis spinicollis*	straw-necked ibis		C		5
animals	mammals	Macropodidae	*Macropus giganteus*	eastern grey kangaroo		C		1
animals	mammals	Macropodidae	*Osphranter robustus*	common wallaroo		C		1
animals	reptiles	Boidae	*Morelia spilota*	carpet python		C		2
plants	land plants	Acanthaceae	*Rostellularia adscendens subsp. dallachyi*			C		1/1
plants	land plants	Apiaceae	*Centella asiatica*			C		1/1
plants	land plants	Apocynaceae	*Cryptostegia grandiflora*	rubber vine	Y			3
plants	land plants	Asteraceae	*Blumea benthamiana*			C		1/1
plants	land plants	Asteraceae	*Coronidium lanuginosum*			C		1/1
plants	land plants	Asteraceae	*Peripleura bicolor*			C		1/1
plants	land plants	Asteraceae	*Peripleura scabra*			C		1/1
plants	land plants	Asteraceae	*Streptoglossa odora*			C		1/1
plants	land plants	Boraginaceae	*Heliotropium ovalifolium*			C		1/1
plants	land plants	Campanulaceae	*Lobelia concolor*			C		1/1
plants	land plants	Casuarinaceae	*Allocasuarina luehmannii*	bull oak		C		1/1
plants	land plants	Centrolepidaceae	*Centrolepis exserta*			C		1/1
plants	land plants	Ceratophyllaceae	*Ceratophyllum*					1/1
plants	land plants	Convolvulaceae	*Ipomoea polymorpha*			C		1/1
plants	land plants	Cyperaceae	*Cyperus leptocarpus*			C		1/1
plants	land plants	Cyperaceae	*Cyperus pulchellus*			C		1/1
plants	land plants	Cyperaceae	*Cyperus squarrosus*	bearded flatsedge		C		1/1
plants	land plants	Cyperaceae	*Fimbristylis nuda*			C		1/1
plants	land plants	Cyperaceae	*Schoenoplectiella articulata*			C		1/1
plants	land plants	Cyperaceae	*Schoenoplectiella mucronata*			C		1/1
plants	land plants	Davalliaceae	*Davallia denticulata var. denticulata*			C		1/1
plants	land plants	Eriocaulaceae	*Eriocaulon pygmaeum*			C		1/1
plants	land plants	Euphorbiaceae	*Jatropha gossypiifolia*	bellyache bush	Y			1/1
plants	land plants	Gesneriaceae	*Boea hygroscopica*			C		1/1
plants	land plants	Goodeniaceae	*Goodenia mystrophylla*			C		1/1
plants	land plants	Goodeniaceae	*Scaevola spinescens*	prickly fan flower		C		1/1
plants	land plants	Haloragaceae	*Myriophyllum*					1/1
plants	land plants	Hydrocharitaceae	*Hydrilla verticillata*	hydrilla		C		1/1
plants	land plants	Hydrocharitaceae	*Vallisneria annua*			C		1/1
plants	land plants	Lamiaceae	*Basilicum polystachyon*			C		1/1
plants	land plants	Leguminosae	*Cajanus marmoratus*			C		2/2
plants	land plants	Leguminosae	*Cajanus scarabaeoides var. scarabaeoides*			C		1/1
plants	land plants	Leguminosae	*Crotalaria laburnifolia*		Y			1/1
plants	land plants	Leguminosae	*Crotalaria mitchellii subsp. mitchellii*			C		1/1
plants	land plants	Leguminosae	*Galactia tenuiflora var. lucida*			C		1/1
plants	land plants	Leguminosae	*Glycine tomentella*	woolly glycine		C		2/2
plants	land plants	Leguminosae	*Leucaena leucocephala*		Y			2
plants	land plants	Leguminosae	*Rhynchosia minima var. minima*			C		1/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Leguminosae	*Vachellia bidwillii*			C		1/1
plants	land plants	Leguminosae	*Vigna radiata var. sublobata*			C		1/1
plants	land plants	Leguminosae	*Vigna vexillata var. youngiana*			C		1/1
plants	land plants	Leguminosae	*Zornia dyctiocarpa var. filifolia*			C		1/1
plants	land plants	Leguminosae	*Zornia muelleriana subsp. muelleriana*			C		1/1
plants	land plants	Lentibulariaceae	*Utricularia*					1/1
plants	land plants	Lentibulariaceae	*Utricularia aurea*	golden bladderwort		C		1/1
plants	land plants	Lentibulariaceae	*Utricularia minutissima*			C		1/1
plants	land plants	Loganiaceae	*Mitrasacme prolifera*			C		1/1
plants	land plants	Lythraceae	*Ammannia multiflora*	jerry-jerry		C		2/2
plants	land plants	Malvaceae	*Abutilon guineense*		Y			1/1
plants	land plants	Malvaceae	*Hibiscus heterophyllus*			C		1/1
plants	land plants	Molluginaceae	*Glinus oppositifolius*			C		1/1
plants	land plants	Myrsinaceae	*Lysimachia ovalis*			C		1/1
plants	land plants	Myrtaceae	*Corymbia intermedia*	pink bloodwood		C		1/1
plants	land plants	Myrtaceae	*Corymbia lamprophylla*			C		1/1
plants	land plants	Myrtaceae	*Eucalyptus brownii*	Reid River box		C		1/1
plants	land plants	Myrtaceae	*Eucalyptus platyphylla*	poplar gum		C		2/2
plants	land plants	Myrtaceae	*Eucalyptus shirleyi*			C		1/1
plants	land plants	Myrtaceae	*Melaleuca leucadendra*	broad-leaved tea-tree		C		1/1
plants	land plants	Myrtaceae	*Melaleuca trichostachya*			C		1/1
plants	land plants	Najadaceae	*Najas*					2/2
plants	land plants	Najadaceae	*Najas browniana*			C		1/1
plants	land plants	Nymphaeaceae	*Nymphaea gigantea*			C		3/2
plants	land plants	Nymphaeaceae	*Nymphaea immutabilis*			C		1/1
plants	land plants	Nymphaeaceae	*Nymphaea jacobsii*			C		1/1
plants	land plants	Nymphaeaceae	*Nymphaea violacea*			C		2/2
plants	land plants	Phyllanthaceae	*Glochidion apodogynum*			C		1/1
plants	land plants	Plantaginaceae	*Limnophila brownii*			C		2/2
plants	land plants	Poaceae	*Arundinella nepalensis*	reedgrass		C		1/1
plants	land plants	Poaceae	*Bothriochloa bladhii subsp. bladhii*			C		1/1
plants	land plants	Poaceae	*Chloris inflata*	purpletop chloris	Y			1/1
plants	land plants	Poaceae	*Chrysopogon filipes*			C		1/1
plants	land plants	Poaceae	*Dichanthium fecundum*	curly bluegrass		C		1/1
plants	land plants	Poaceae	*Digitaria bicornis*			C		1/1
plants	land plants	Poaceae	*Echinochloa colona*	awnless barnyard grass	Y			1/1
plants	land plants	Poaceae	*Eulalia aurea*	silky browntop		C		2/2
plants	land plants	Poaceae	*Heteropogon triticeus*	giant speargrass		C		1/1
plants	land plants	Poaceae	*Setaria surgens*			C		2/2
plants	land plants	Poaceae	*Urochloa panicoides var. panicoides*		Y			1/1
plants	land plants	Poaceae	*Urochloa pubigera*			C		2/2
plants	land plants	Potamogetonaceae	*Potamogeton*					1/1
plants	land plants	Potamogetonaceae	*Potamogeton tepperi*			C		3/2
plants	land plants	Pteridaceae	*Adiantum atroviride*			C		1/1
plants	land plants	Rhamnaceae	*Ziziphus mauritiana*	Indian jujube	Y			1
plants	land plants	Rubiaceae	*Dentella repens*	dentella		C		2/2

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Rubiaceae	*Nauclea orientalis*	Leichhardt tree		C		1/1
plants	land plants	Rubiaceae	*Scleromitrion galioides*			C		1/1
plants	land plants	Rubiaceae	*Scleromitrion polycladum*			NT		2/2
plants	land plants	Vitaceae	*Clematicissus opaca*			C		1/1

CODES

I - Y indicates that the taxon is introduced to Queensland and has naturalised.

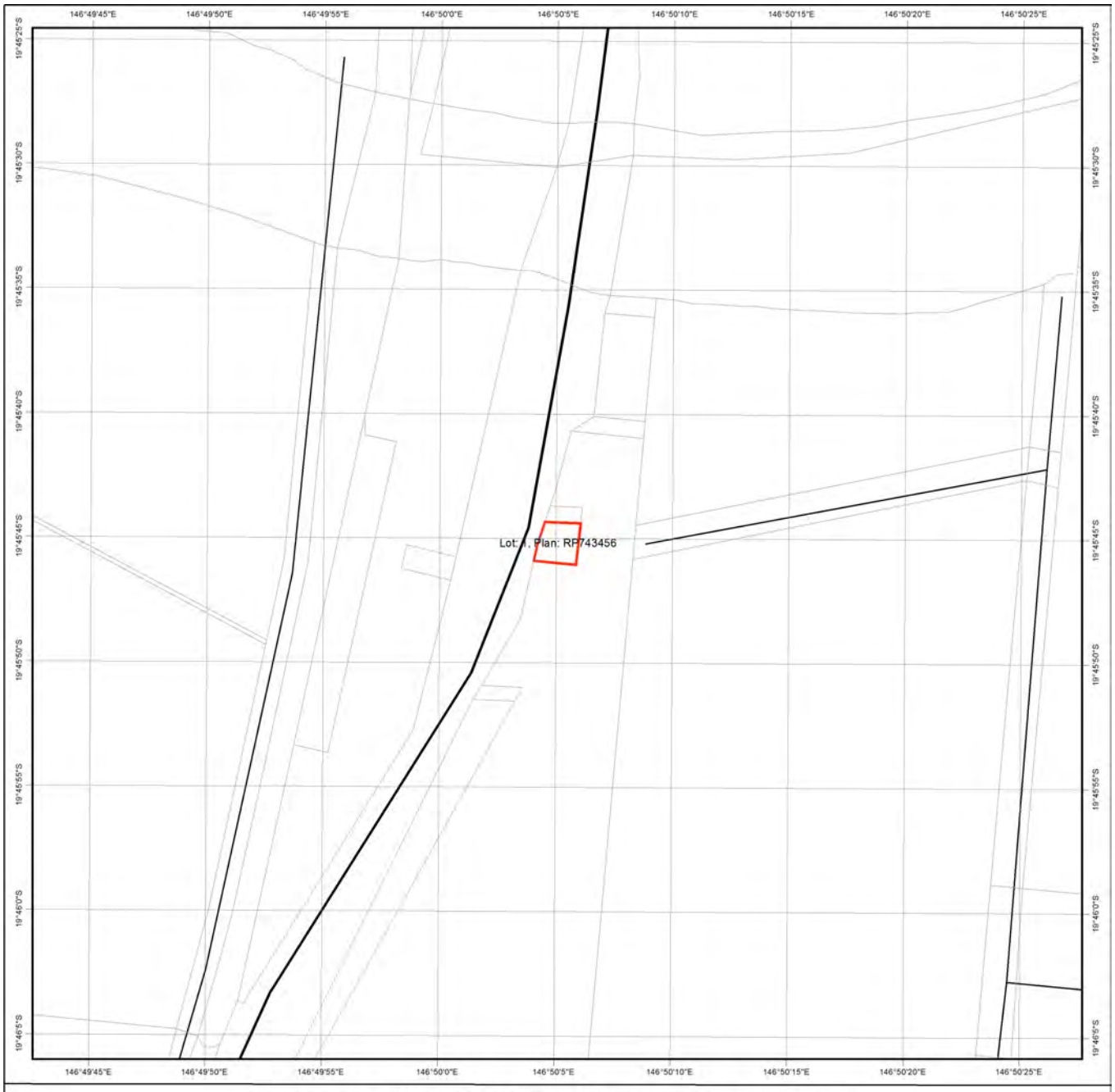
Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992.*
The codes are Extinct (EX), Extinct in the Wild (PE), Critically Endangered (CR), Endangered (E), Vulnerable (V), Near Threatened (NT), Special Least Concern (SL) and Least Concern (C).

A - Indicates the Australian conservation status of each taxon under the *Environment Protection and Biodiversity Conservation Act 1999.*
The values of EPBC are Extinct (EX), Extinct in the Wild (XW), Critically Endangered (CE), Endangered (E), Vulnerable (V) and Conservation Dependent (CD).

Records - The first number indicates the total number of records of the taxon (wildlife records and species listings for selected areas).
This number is output as 99999 if it equals or exceeds this value. A second number located after a / indicates the number of specimen records for the taxon.
This number is output as 999 if it equals or exceeds this value.

Appendix K – Protected Plants Flora Trigger Map

05/02/2022 14:45:39
Lot: 1 Plan: RP743456



Protected Plants Flora Survey Trigger Map

Legend

- Selected Lot and Plan
- High risk area
- Other land parcel boundaries.
- Freeways / motorways / highways
- Secondary roads / streets

N

0 40 80 120 160 200 m

This product is projected into:
GDA 1994 Queensland Albers

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

Land parcel boundaries are provided as locational aid only.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of Environment and Science at palm@des.qld.gov.au

Disclaimer:
While every care is taken to ensure the accuracy of the data used to generate this product, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damages) and costs which might be incurred as a consequence of reliance on the data, or as a result of the data being inaccurate or incomplete in any way and for any reason.

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Queensland Government

Protected plants flora survey trigger map

The protected plants flora survey trigger map identifies 'high risk areas' where endangered, vulnerable or near threatened plants are known to exist or are likely to exist. Under the *Nature Conservation Act 1992* (the Act) it is an offence to clear protected plants that are 'in the wild' unless you are authorised or the clearing is exempt, for more information see section 89 of the Act.

Please see the Department of Environment and Science webpage on the clearing of protected plants for information on what exemptions may apply in your circumstances, whether you may need to undertake a flora survey, and whether you may need a protected plants clearing permit.

Updates to the data informing the flora survey trigger map

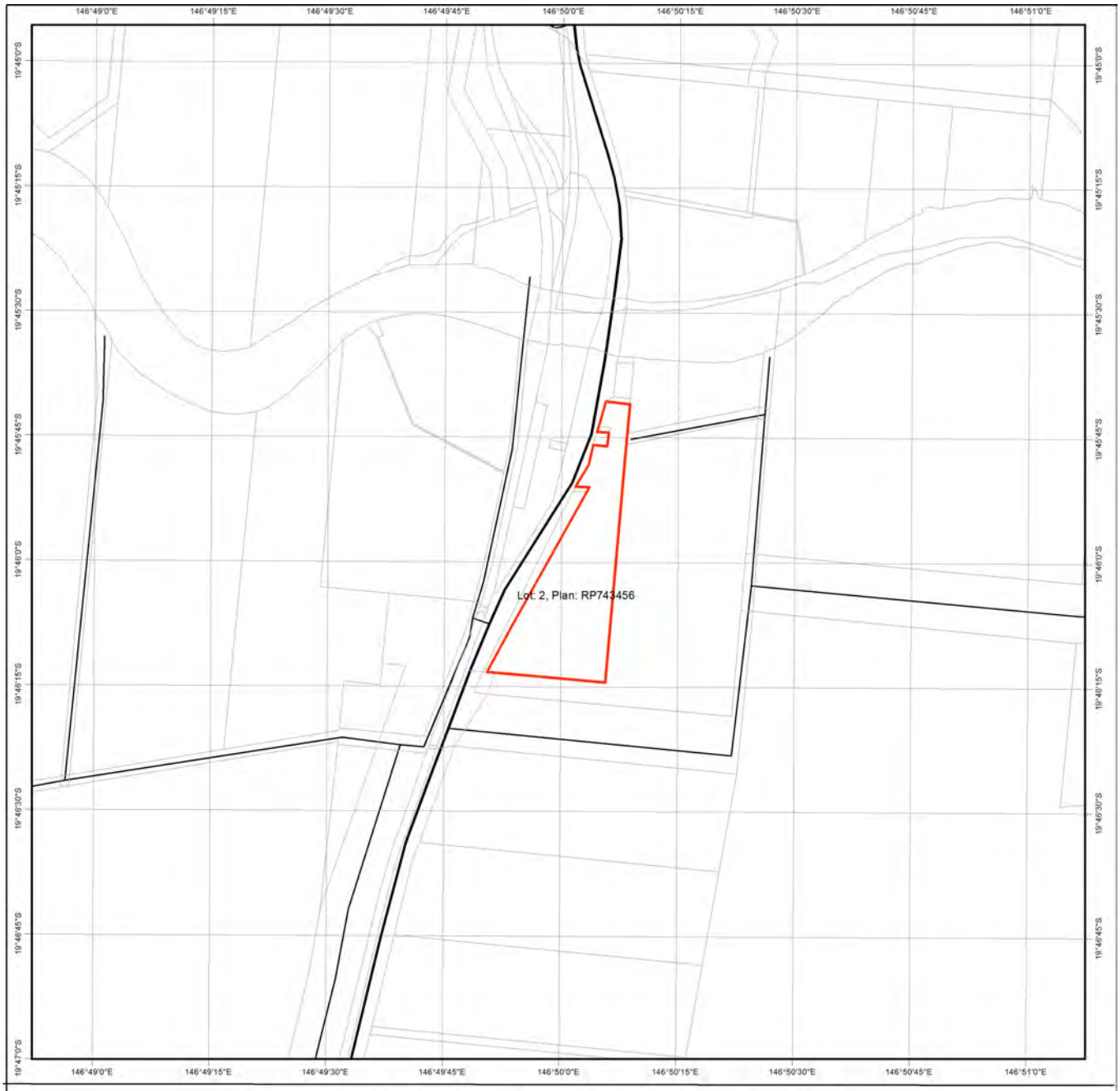
The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the Queensland Spatial Catalogue, the Department of Environment and Science does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment and Science webpage on the clearing of protected plants for more information.

Queensland Government

05/02/2022 14:45:42
Lot: 2 Plan: RP743456



Protected Plants Flora Survey Trigger Map

Legend

- Selected Lot and Plan
- High risk area
- Other land parcel boundaries
- Freeways / motorways / highways
- Secondary roads / streets

N

0 140 280 420 560 700 m

This product is projected into:
GDA 1994 Queensland Albers

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

Land parcel boundaries are provided as locational aid only.

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Queensland Government

Protected plants flora survey trigger map

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Queensland Government

05/02/2022 14:45:18
Lot: 600 Plan: SP310657

Protected Plants Flora Survey Trigger Map

Legend

- Selected Lot and Plan
- High risk area
- Other land parcel boundaries
- Freeways / motorways / highways
- Secondary roads / streets

LOCALITY DIAGRAM

N

0 240 480 720 960 1,200 m

This product is projected into:
GDA 1994 Queensland Albers

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

Land parcel boundaries are provided as locational aid only.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

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© The State of Queensland (Department of Environment and Science), 2022

Queensland Government

Protected plants flora survey trigger map

The protected plants flora survey trigger map identifies 'high risk areas' where endangered, vulnerable or near threatened plants are known to exist or are likely to exist. Under the *Nature Conservation Act 1992* (the Act) it is an offence to clear protected plants that are 'in the wild' unless you are authorised or the clearing is exempt, for more information see section 89 of the Act.

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Updates to the data informing the flora survey trigger map

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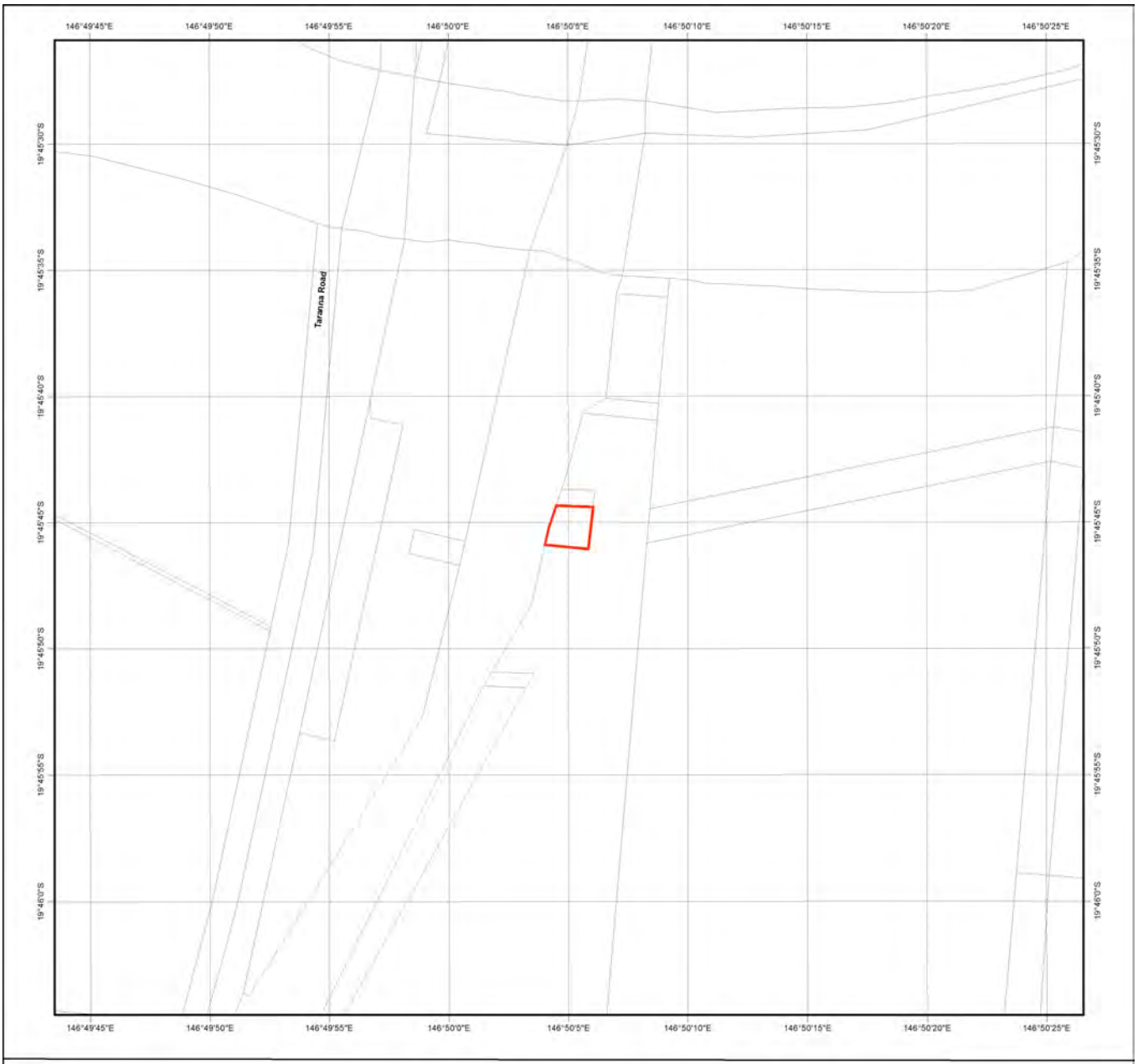
Species information

Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the Queensland Spatial Catalogue, the Department of Environment and Science does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment and Science webpage on the clearing of protected plants for more information.

Queensland Government

Appendix L – HES / GES wetlands mapping



Map of Great Barrier Reef Wetland Protection Areas

- Selected Lot and Plan
- Cadastral Boundary
- Wetland in a wetland protection area
- Great Barrier Reef wetland protection area

N

Note:
This map shows the location of wetland protection areas which are defined under the Environmental Protection Regulation 2008. Within wetland protection areas, certain types of development involving high impact earthworks are made assessable under Schedule 3 of the Sustainable Planning Regulation 2009.

The Department of State Development, Manufacturing, Infrastructure and Planning is the State Assessment Referral Agency (SARA) under Schedule 7 of the Sustainable Planning Regulation 2009 for assessable development involving high impact earthworks within wetland protection areas. The Department of Environment and Science is a technical agency.

The policy outcome and assessment criteria for assessing these applications are described in the State Development Assessment Provisions (SDAP) *State Code 9 : Great Barrier Reef Wetland Protection Areas*.

This map is produced at a scale relevant to the size of the lot on plan identified and should be printed at A4 size in portrait orientation. Consideration of the effects of mapped scale is necessary when interpreting data at a large scale.

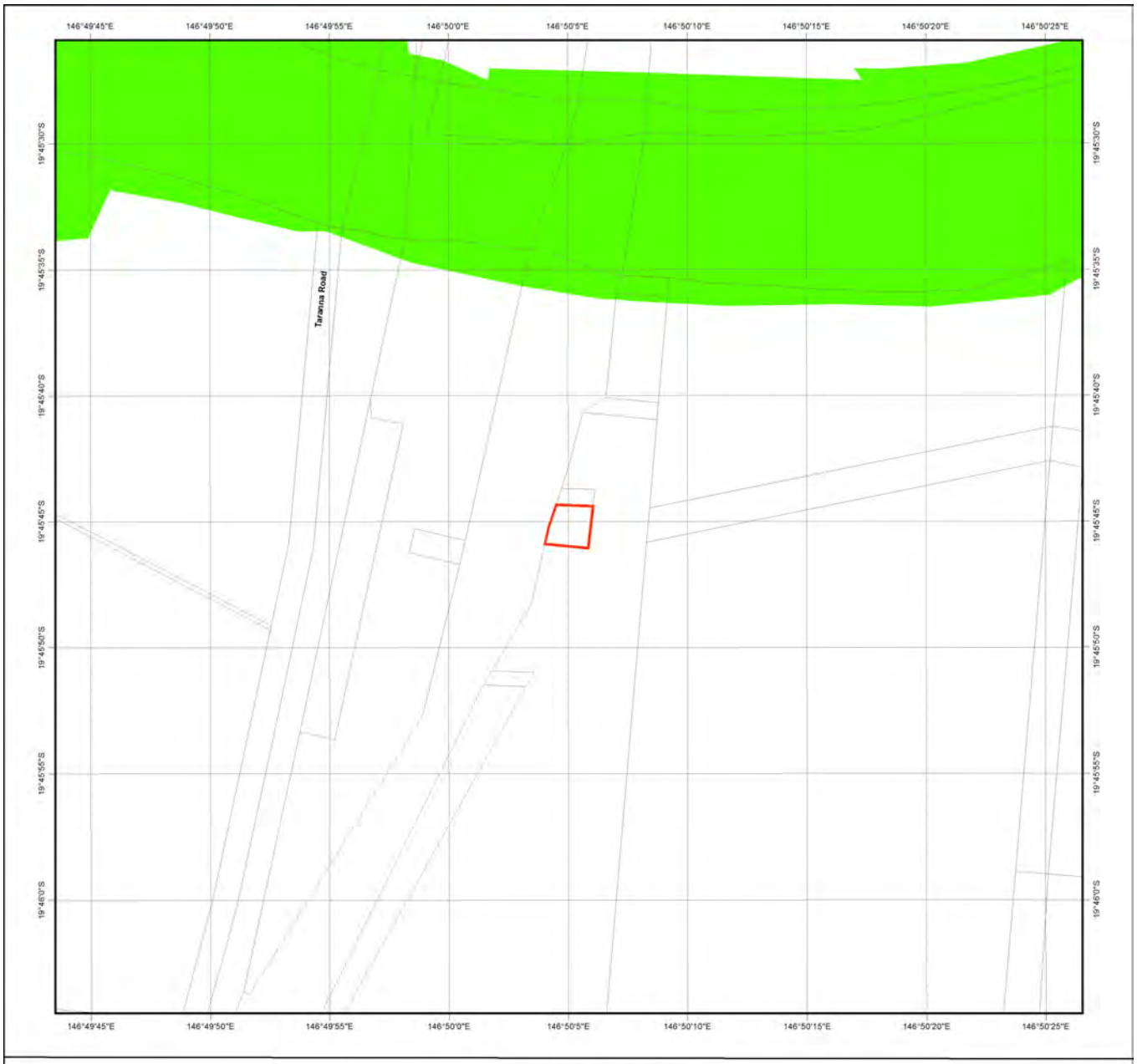
For further information or assistance with interpretation of this product, please contact the Department of Environment and Science, email planning.support@des.qld.gov.au.

0 60 120 180 240 300 m

This product is projected into GDA 1994 MGA Zone 55

© The State of Queensland, 2022

Queensland Government



Map of Queensland Wetland Environmental Values

Selected Lot and Plan

Cadastral Boundary

High ecological values waters management intent

Wetlands assessed under section 7

GBR wetland of high ecological significance

Wetland of high ecological significance

Wetland of general ecological significance

N

Note:
This map shows the location of wetlands on the Map of Queensland Wetland Environmental Values under the Environmental Protection (Wetland and Water Biodiversity) Policy 2019. The map also shows high ecological value waters management intent under Schedule 2 of the Environmental Protection (Water and Wetland Biodiversity) Policy 2019.

Wetlands are assessed for ecological significance using the environmental values for wetlands in section 7 of the Environmental Protection (Wetland and Water Biodiversity) Policy 2019. Wetlands are considered either High Ecological Significance (HES) or of General Ecological Significance (GES) for the purposes of the environmental values.

This map is produced at a scale relevant to the size of the lot on plan identified and should be printed at A4 size in portrait orientation. Consideration of the effects of mapped scale is necessary when interpreting data at a large scale.

For further information or assistance with interpretation of this product, please contact the Department of Environment and Science, email planning.support@des.qld.gov.au.

0 60 120 180 240 300 m

This product is projected into GDA 1994 MGA Zone 55

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Queensland Government

Map of Great Barrier Reef Wetland Protection Areas

- Selected Lot and Plan
- Cadastral Boundary
- Wetland in a wetland protection area
- Great Barrier Reef wetland protection area

N

Note:
This map shows the location of wetland protection areas which are defined under the Environmental Protection Regulation 2008. Within wetland protection areas, certain types of development involving high impact earthworks are made assessable under Schedule 3 of the Sustainable Planning Regulation 2009.

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For further information or assistance with interpretation of this product, please contact the Department of Environment and Science, email planning.support@des.qld.gov.au.

0 200 400 600 800 1000 m

This product is projected into GDA 1994 MGA Zone 55

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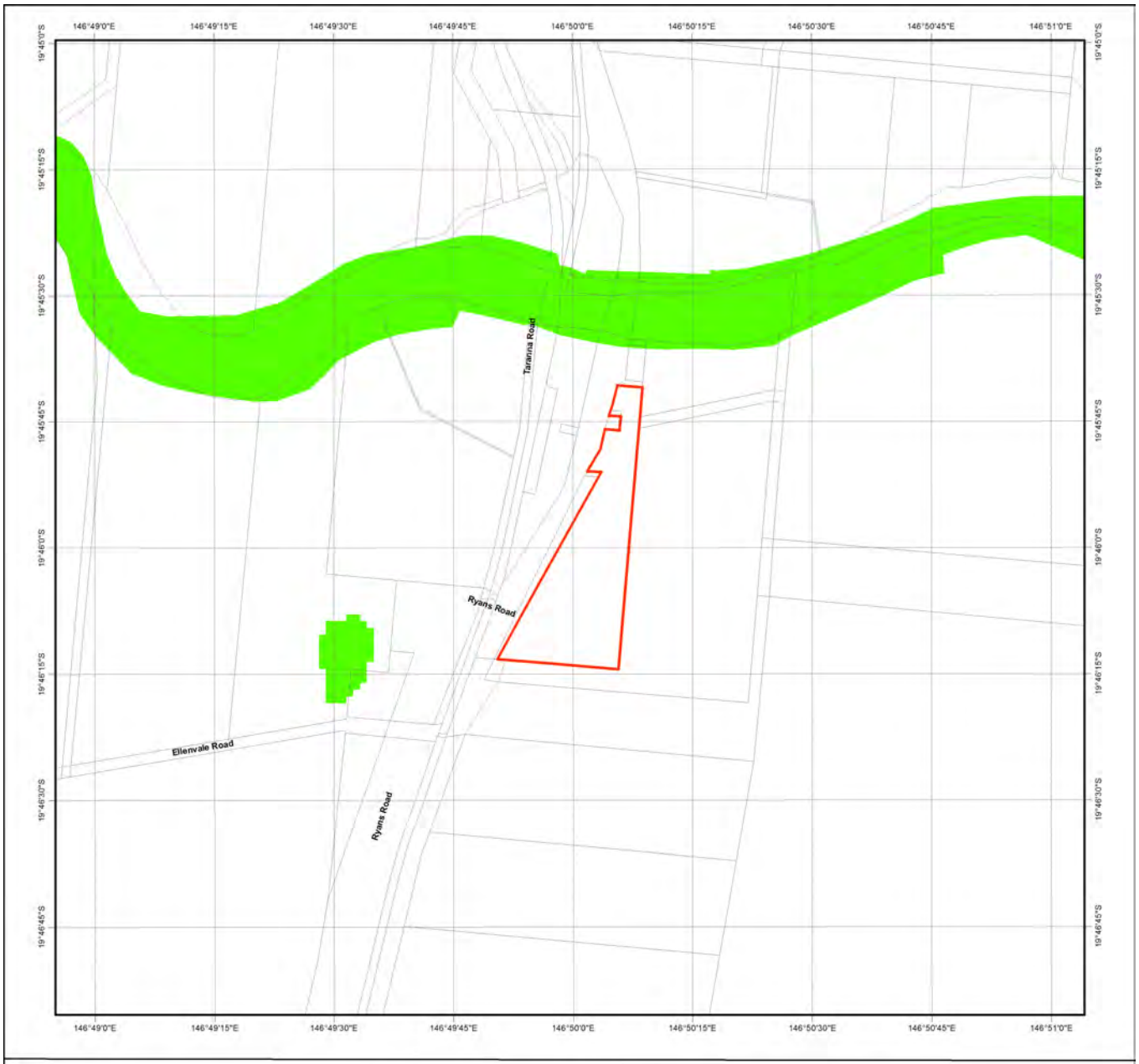
Queensland Government



Map of Queensland Wetland Environmental Values

Selected Lot and Plan

Cadastral Boundary

High ecological values waters management intent

Wetlands assessed under section 7

GBR wetland of high ecological significance

Wetland of high ecological significance

Wetland of general ecological significance

N

Note:
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This map is produced at a scale relevant to the size of the lot on plan identified and should be printed at A4 size in portrait orientation. Consideration of the effects of mapped scale is necessary when interpreting data at a large scale.

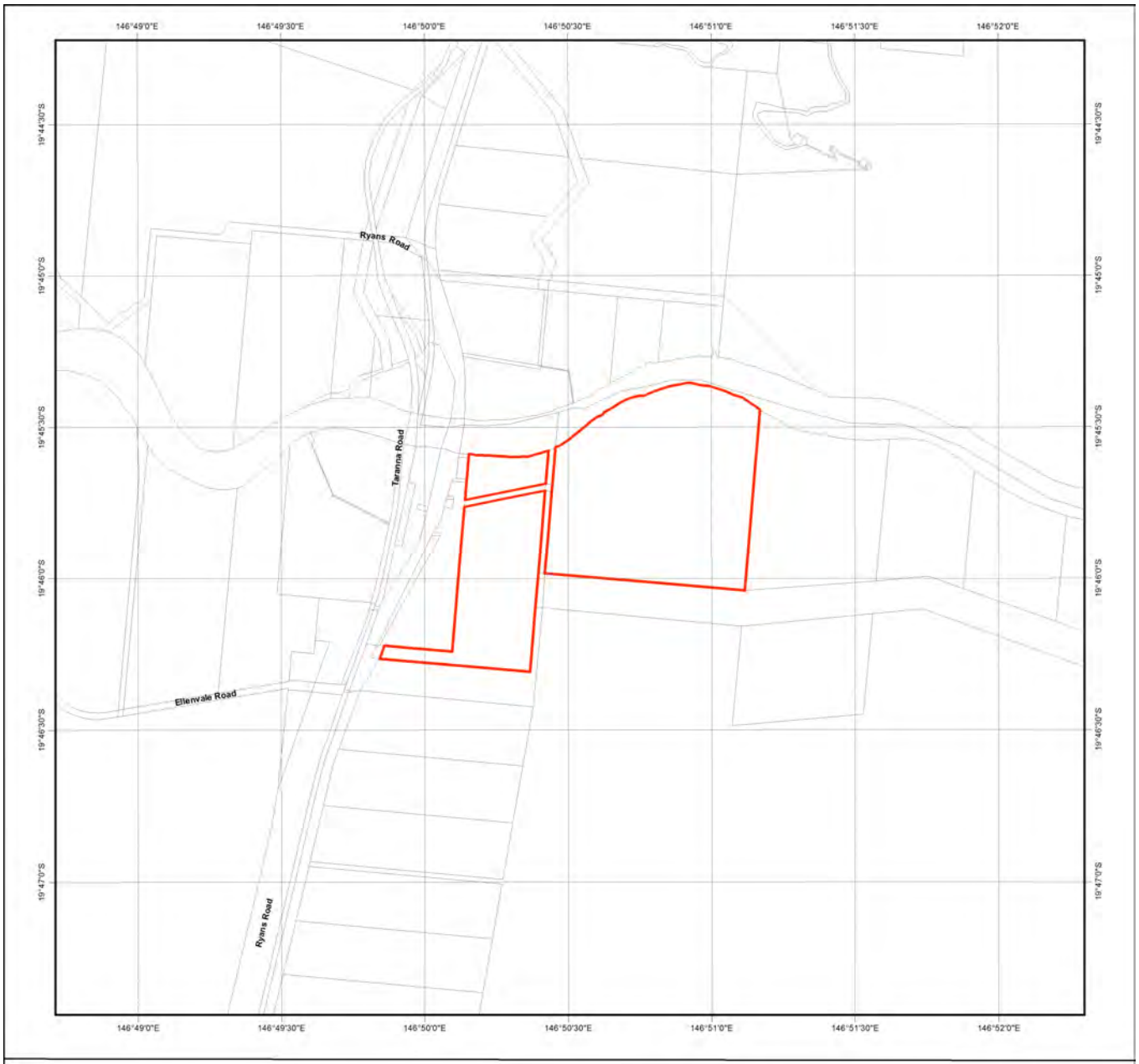
For further information or assistance with interpretation of this product, please contact the Department of Environment and Science, email planning.support@des.qld.gov.au.

0 200 400 600 800 1000 m

This product is projected into GDA 1994 MGA Zone 55

© The State of Queensland, 2022

Queensland Government



Map of Great Barrier Reef Wetland Protection Areas

- Selected Lot and Plan
- Cadastral Boundary
- Wetland in a wetland protection area
- Great Barrier Reef wetland protection area

N

Note:
This map shows the location of wetland protection areas which are defined under the Environmental Protection Regulation 2008. Within wetland protection areas, certain types of development involving high impact earthworks are made assessable under Schedule 3 of the Sustainable Planning Regulation 2009.

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0 340 680 1020 1360 1700 m

This product is projected into GDA 1994 MGA Zone 55

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Queensland Government

Map of Queensland Wetland Environmental Values

Selected Lot and Plan

Cadastral Boundary

High ecological values waters management intent

Wetlands assessed under section 7

GBR wetland of high ecological significance

Wetland of high ecological significance

Wetland of general ecological significance

LOCALITY DIAGRAM

N

Note:
This map shows the location of wetlands on the Map of Queensland Wetland Environmental Values under the Environmental Protection (Wetland and Water Biodiversity) Policy 2019. The map also shows high ecological value waters management intent under Schedule 2 of the Environmental Protection (Water and Wetland Biodiversity) Policy 2019.

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0 340 680 1020 1360 1700 m

This product is projected into GDA 1994 MGA Zone 55

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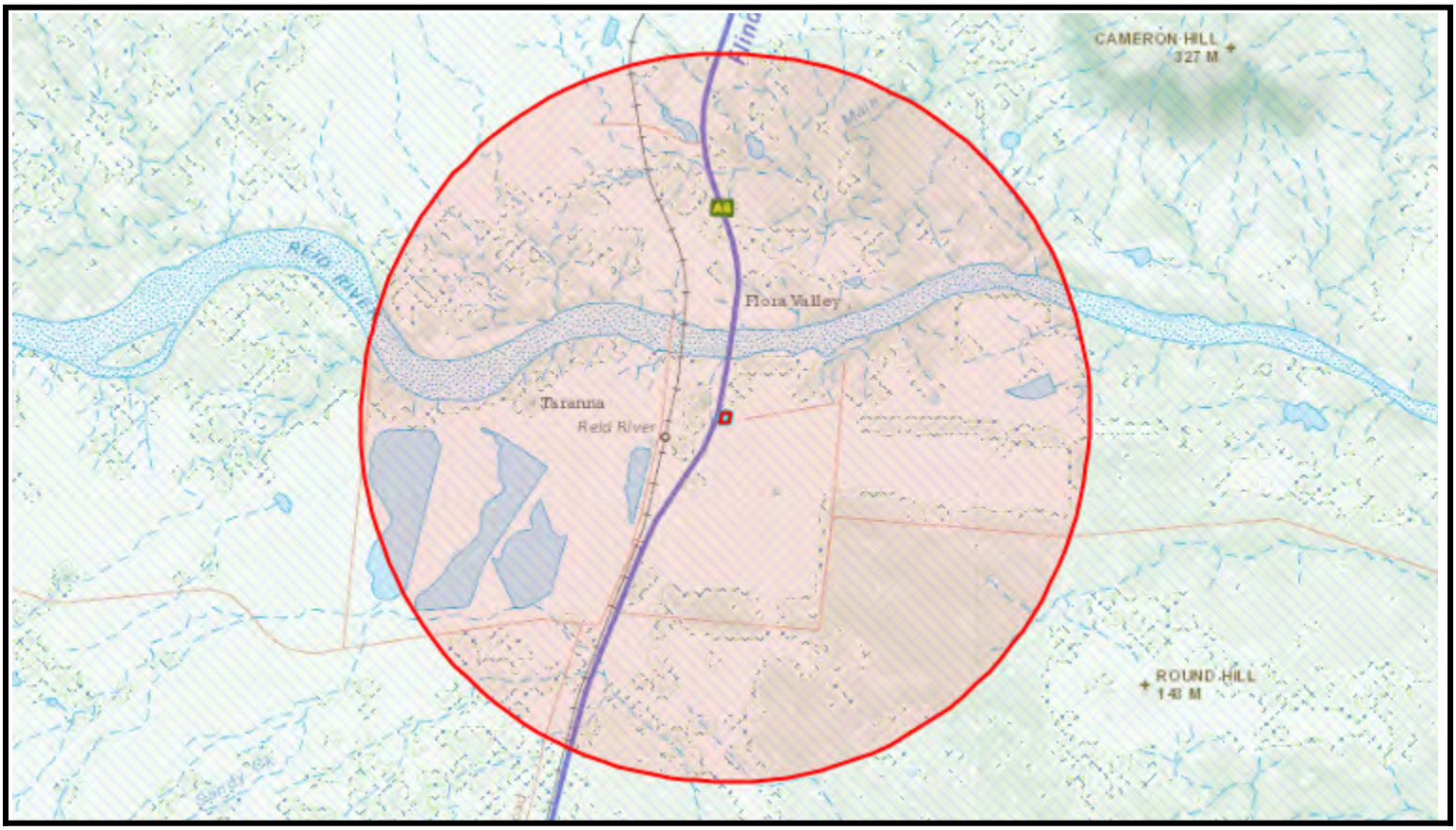
Appendix M – Cultural Heritage search extract

Lot on Plan Search

Reference Number:	107964
Lot:	1
Plan:	RP743456
LGA:	Charters Towers Regional
Buffer Distance:	2000 metres



There are no Aboriginal or Torres Strait Islander cultural heritage site points recorded in your specific search area.

There are no Aboriginal or Torres Strait Islander cultural heritage site polygons recorded in your specific search area.

GDA2020

Lot on Plan Search

Cultural heritage party for the area is:

QC Ref Number	QUD Ref Number	Party Name	Contact Details
QC2016/005	QUD503/2016	Bindal People #2	Bindal People #2 Just Us Lawyers PO Box 120 Red Hill QLD 4059 Phone: (07) 3315 2727 Email: ted.besley@justuslaw.com

Cultural heritage body for the area is:

Body Name	Contact Details
Gudjuda Reference Group Aboriginal Corporation	Gudjuda Reference Group Aboriginal Corporation PO Box 255 AYR QLD 4807 Phone: (07) 4782 8451 Email: info@gudjuda.com.au

There are no cultural heritage management plans recorded in your specific search area.

There are no Designated Landscape Areas (DLA) recorded in your specific search area.

There are no Registered Cultural Heritage Study Areas recorded in your specific search area.

Regional Coordinator:

Name	Position	Phone	Mobile	Email
Leigh Preston	Cultural Heritage Coordinator North Region	07 4796 7862	0427 142 782	Leigh.Preston@dsdsatsip.qld.gov.au

Disclaimer: The Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships is the custodian of spatial data provided by various third parties for inclusion in the Aboriginal and Torres Strait Islander cultural heritage online portal. This includes spatial data provided by the National Native Title Tribunal and Aboriginal and Torres Strait Islander parties. Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships is not responsible for the accuracy of information provided by third parties or any errors in this search report arising from such information.

Lot on Plan Search

Map Datum: Geographic Latitude & Longitude (GDA2020)

GDA2020

Lot on Plan Search

I refer to your submission in which you requested advice regarding Aboriginal or Torres Strait Islander cultural heritage recorded at your nominated location.

The Cultural Heritage Database and Register have been searched in accordance with the location description provided, and the results are set out in the above report.

Aboriginal or Torres Strait Islander cultural heritage which may exist within the search area is protected under the terms of the *Aboriginal Cultural Heritage Act 2003* and the *Torres Strait Islander Cultural Heritage Act 2003*, even if the Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships has no records relating to it.

Under the legislation a person carrying out an activity must take all reasonable and practicable measures to ensure the activity does not harm Aboriginal or Torres Strait Islander cultural heritage. This applies whether or not such places are recorded in an official register and whether or not they are located on private land.

Please refer to our website https://www.dsdsatsip.qld.gov.au/people-communities/aboriginal-torres-strait-islander-cultural-heritage for a copy of the gazetted Cultural Heritage Duty of Care Guidelines, which set out reasonable and practicable measure for meeting the cultural heritage duty of care.

In order to meet your duty of care, any land-use activity within the vicinity of recorded cultural heritage should not proceed without the agreement of the Aboriginal or Torres Strait Islander Party for the area, or by developing a Cultural Heritage Management Plan under Part 7 of the legislation.

If your proposed activity is deemed a Category 5 activity pursuant to the Duty of Care Guidelines, there is generally a high risk that it may harm cultural heritage. In these circumstances, the activity should not proceed without cultural heritage assessment.

Where a Category 5 activity is proposed that may impact on features set out in Paragraph 6 of the Guidelines, it is necessary to notify the Aboriginal or Torres Strait Islander Party and seek:

a. Advice as to whether the area is culturally significant;
b. If it is, agreement on how best the activity may be managed to avoid or minimise harm to any cultural heritage values.

The features set out in Paragraph 6 include:

- Rock outcrops

Lot on Plan Search

- Caves
- Foreshores and coastal dunes
- Sand Hills
- Areas of biogeographical significance, such as natural wetlands
- Permanent and semi-permanent waterholes, natural springs
- Native vegetation
- Some hill and mound formations

The extent to which the person has complied with Cultural Heritage Duty of Care Guidelines and the extent the person consulted Aboriginal or Torres Strait Islander Parties about carrying out the activity – and the results of the consultation – are factors a court may consider when determining if a land user has complied with the cultural heritage duty of care.

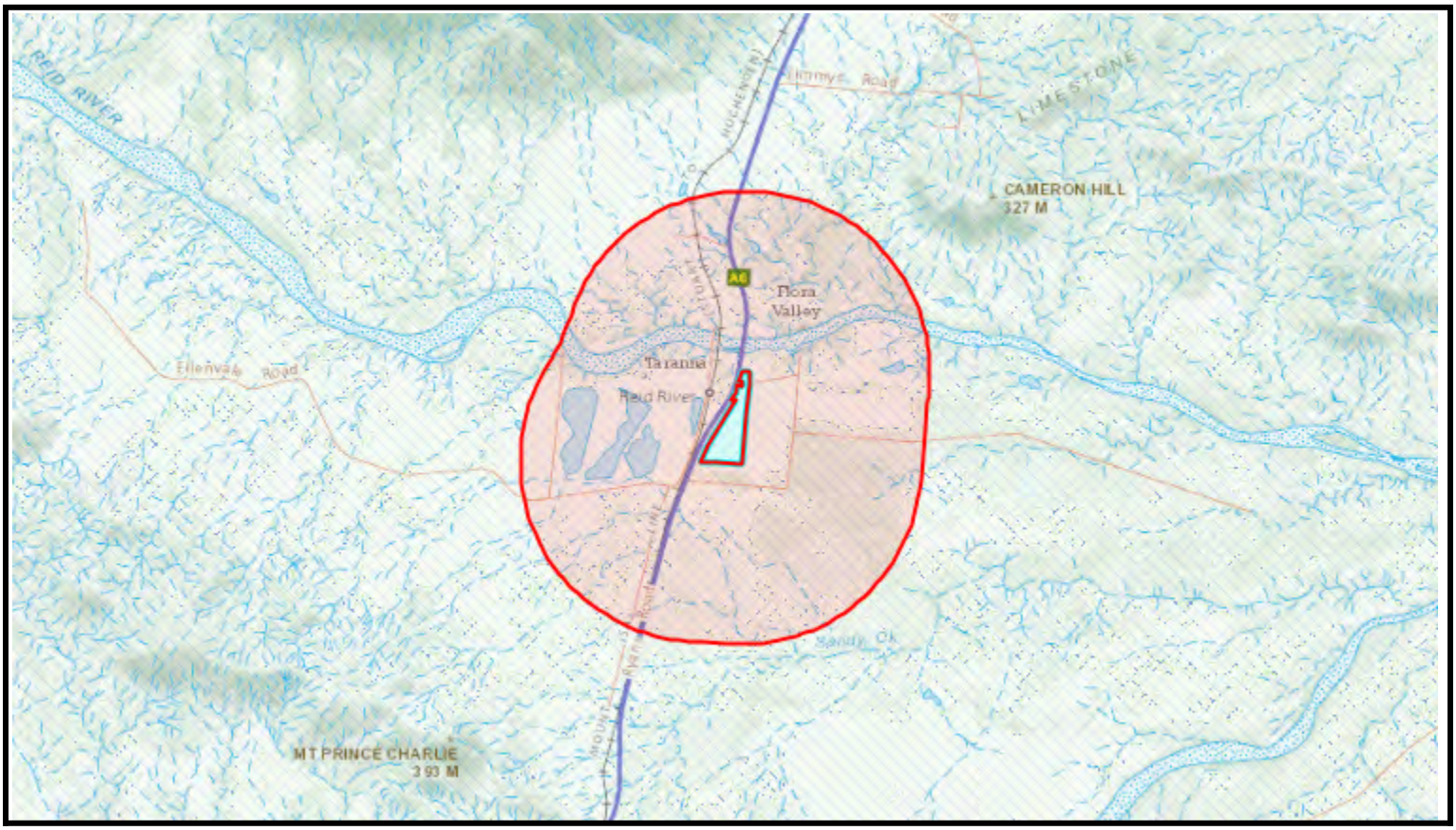
Should you have any further queries, please do not hesitate to contact the Search Approval Officer on 1300 378 401.

Kind regards

The Director
Cultural Heritage | Community Participation | Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships

Lot on Plan Search

Reference Number:	107964
Lot:	2
Plan:	RP743456
LGA:	Charters Towers Regional
Buffer Distance:	2000 metres



There are no Aboriginal or Torres Strait Islander cultural heritage site points recorded in your specific search area.

There are no Aboriginal or Torres Strait Islander cultural heritage site polygons recorded in your specific search area.

GDA2020

Lot on Plan Search

Cultural heritage party for the area is:

QC Ref Number	QUD Ref Number	Party Name	Contact Details
QC2016/005	QUD503/2016	Bindal People #2	Bindal People #2 Just Us Lawyers PO Box 120 Red Hill QLD 4059 Phone: (07) 3315 2727 Email: ted.besley@justuslaw.com

Cultural heritage body for the area is:

Body Name	Contact Details
Gudjuda Reference Group Aboriginal Corporation	Gudjuda Reference Group Aboriginal Corporation PO Box 255 AYR QLD 4807 Phone: (07) 4782 8451 Email: info@gudjuda.com.au

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There are no Designated Landscape Areas (DLA) recorded in your specific search area.

There are no Registered Cultural Heritage Study Areas recorded in your specific search area.

Regional Coordinator:

Name	Position	Phone	Mobile	Email
Leigh Preston	Cultural Heritage Coordinator North Region	07 4796 7862	0427 142 782	Leigh.Preston@dsdsatsip.qld.gov.au

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Lot on Plan Search

Map Datum: Geographic Latitude & Longitude (GDA2020)

GDA2020

Lot on Plan Search

I refer to your submission in which you requested advice regarding Aboriginal or Torres Strait Islander cultural heritage recorded at your nominated location.

The Cultural Heritage Database and Register have been searched in accordance with the location description provided, and the results are set out in the above report.

Aboriginal or Torres Strait Islander cultural heritage which may exist within the search area is protected under the terms of the *Aboriginal Cultural Heritage Act 2003* and the *Torres Strait Islander Cultural Heritage Act 2003*, even if the Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships has no records relating to it.

Under the legislation a person carrying out an activity must take all reasonable and practicable measures to ensure the activity does not harm Aboriginal or Torres Strait Islander cultural heritage. This applies whether or not such places are recorded in an official register and whether or not they are located on private land.

Please refer to our website https://www.dsdsatsip.qld.gov.au/people-communities/aboriginal-torres-strait-islander-cultural-heritage for a copy of the gazetted Cultural Heritage Duty of Care Guidelines, which set out reasonable and practicable measure for meeting the cultural heritage duty of care.

In order to meet your duty of care, any land-use activity within the vicinity of recorded cultural heritage should not proceed without the agreement of the Aboriginal or Torres Strait Islander Party for the area, or by developing a Cultural Heritage Management Plan under Part 7 of the legislation.

If your proposed activity is deemed a Category 5 activity pursuant to the Duty of Care Guidelines, there is generally a high risk that it may harm cultural heritage. In these circumstances, the activity should not proceed without cultural heritage assessment.

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a. Advice as to whether the area is culturally significant;
b. If it is, agreement on how best the activity may be managed to avoid or minimise harm to any cultural heritage values.

The features set out in Paragraph 6 include:

- Rock outcrops

Lot on Plan Search

- Caves
- Foreshores and coastal dunes
- Sand Hills
- Areas of biogeographical significance, such as natural wetlands
- Permanent and semi-permanent waterholes, natural springs
- Native vegetation
- Some hill and mound formations

The extent to which the person has complied with Cultural Heritage Duty of Care Guidelines and the extent the person consulted Aboriginal or Torres Strait Islander Parties about carrying out the activity – and the results of the consultation – are factors a court may consider when determining if a land user has complied with the cultural heritage duty of care.

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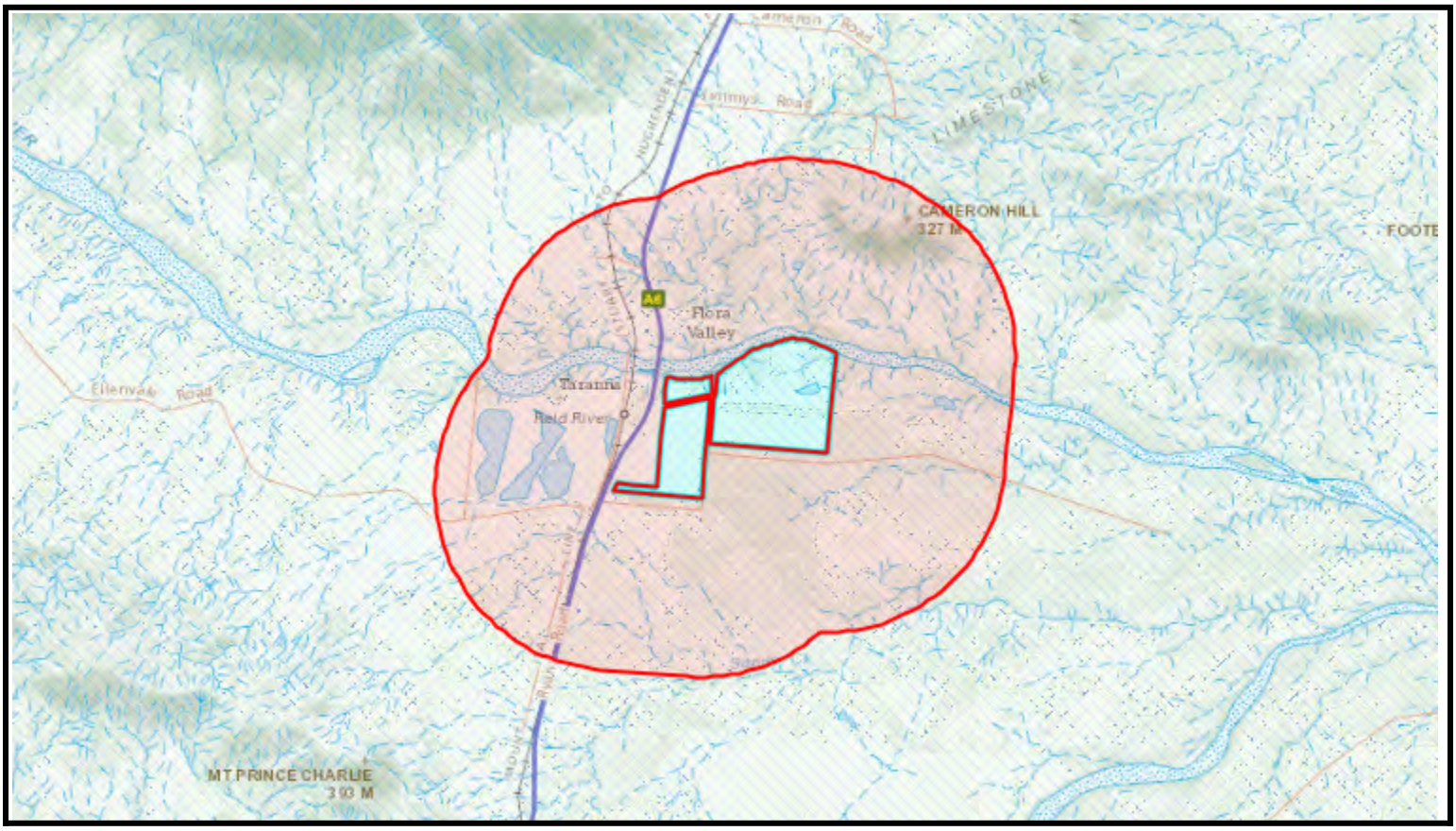
Kind regards

The Director
Cultural Heritage | Community Participation | Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships

Lot on Plan Search

Reference Number:	107964
Lot:	600
Plan:	SP310657
LGA:	Charters Towers Regional
Buffer Distance:	2000 metres



There are no Aboriginal or Torres Strait Islander cultural heritage site points recorded in your specific search area.

There are no Aboriginal or Torres Strait Islander cultural heritage site polygons recorded in your specific search area.

GDA2020

Lot on Plan Search

Cultural heritage party for the area is:

QC Ref Number	QUD Ref Number	Party Name	Contact Details
QC2016/005	QUD503/2016	Bindal People #2	Bindal People #2 Just Us Lawyers PO Box 120 Red Hill QLD 4059 Phone: (07) 3315 2727 Email: ted.besley@justuslaw.com

Cultural heritage body for the area is:

Body Name	Contact Details
Gudjuda Reference Group Aboriginal Corporation	Gudjuda Reference Group Aboriginal Corporation PO Box 255 AYR QLD 4807 Phone: (07) 4782 8451 Email: info@gudjuda.com.au

There are no cultural heritage management plans recorded in your specific search area.

There are no Designated Landscape Areas (DLA) recorded in your specific search area.

There are no Registered Cultural Heritage Study Areas recorded in your specific search area.

Regional Coordinator:

Name	Position	Phone	Mobile	Email
Leigh Preston	Cultural Heritage Coordinator North Region	07 4796 7862	0427 142 782	Leigh.Preston@dsdsatsip.qld.gov.au

Disclaimer: The Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships is the custodian of spatial data provided by various third parties for inclusion in the Aboriginal and Torres Strait Islander cultural heritage online portal. This includes spatial data provided by the National Native Title Tribunal and Aboriginal and Torres Strait Islander parties. Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships is not responsible for the accuracy of information provided by third parties or any errors in this search report arising from such information.

Lot on Plan Search

Map Datum: Geographic Latitude & Longitude (GDA2020)

GDA2020

Lot on Plan Search

I refer to your submission in which you requested advice regarding Aboriginal or Torres Strait Islander cultural heritage recorded at your nominated location.

The Cultural Heritage Database and Register have been searched in accordance with the location description provided, and the results are set out in the above report.

Aboriginal or Torres Strait Islander cultural heritage which may exist within the search area is protected under the terms of the *Aboriginal Cultural Heritage Act 2003* and the *Torres Strait Islander Cultural Heritage Act 2003*, even if the Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships has no records relating to it.

Under the legislation a person carrying out an activity must take all reasonable and practicable measures to ensure the activity does not harm Aboriginal or Torres Strait Islander cultural heritage. This applies whether or not such places are recorded in an official register and whether or not they are located on private land.

Please refer to our website https://www.dsdsatsip.qld.gov.au/people-communities/aboriginal-torres-strait-islander-cultural-heritage for a copy of the gazetted Cultural Heritage Duty of Care Guidelines, which set out reasonable and practicable measure for meeting the cultural heritage duty of care.

In order to meet your duty of care, any land-use activity within the vicinity of recorded cultural heritage should not proceed without the agreement of the Aboriginal or Torres Strait Islander Party for the area, or by developing a Cultural Heritage Management Plan under Part 7 of the legislation.

If your proposed activity is deemed a Category 5 activity pursuant to the Duty of Care Guidelines, there is generally a high risk that it may harm cultural heritage. In these circumstances, the activity should not proceed without cultural heritage assessment.

Where a Category 5 activity is proposed that may impact on features set out in Paragraph 6 of the Guidelines, it is necessary to notify the Aboriginal or Torres Strait Islander Party and seek:

a. Advice as to whether the area is culturally significant;
b. If it is, agreement on how best the activity may be managed to avoid or minimise harm to any cultural heritage values.

The features set out in Paragraph 6 include:

- Rock outcrops

Lot on Plan Search

- Caves
- Foreshores and coastal dunes
- Sand Hills
- Areas of biogeographical significance, such as natural wetlands
- Permanent and semi-permanent waterholes, natural springs
- Native vegetation
- Some hill and mound formations

The extent to which the person has complied with Cultural Heritage Duty of Care Guidelines and the extent the person consulted Aboriginal or Torres Strait Islander Parties about carrying out the activity – and the results of the consultation – are factors a court may consider when determining if a land user has complied with the cultural heritage duty of care.

Should you have any further queries, please do not hesitate to contact the Search Approval Officer on 1300 378 401.

Kind regards

The Director
Cultural Heritage | Community Participation | Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships

Appendix N – Matters of National Environmental Significance

Australian Government
Department of Agriculture, Water and the Environment

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. Please see the caveat for interpretation of information provided here.

Report created: 05-Feb-2022

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements

Summary

Matters of National Environment 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 (Ramsar	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	26
Listed Migratory Species:	18

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

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 Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	22
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	4
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands)		[Resource Information]
Ramsar Site Name	Proximity	Buffer Status
Bowling green bay	30 - 40km upstream from Ramsar site	In feature area

Listed Threatened Species			[Resource Information]
Status of Conservation Dependent and Extinct are not MNES under the EPBC Act. Number is the current name ID.			
Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area	In feature area
Neochmia ruficauda ruficauda Star Finch (eastern), Star Finch (southern) [26027]	Endangered	Species or species habitat likely to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Poephila cincta cincta			
Southern Black-throated Finch [64447]	Endangered	Species or species habitat likely to occur within area	In feature area
Rostratula australis			
Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Tyto novaehollandiae kimberli			
Masked Owl (northern) [26048]	Vulnerable	Species or species habitat likely to occur within area	In feature area
MAMMAL			
Dasyurus hallucatus			
Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area	In feature area
Hipposideros semoni			
Semon's Leaf-nosed Bat, Greater Wart-nosed Horseshoe-bat [180]	Vulnerable	Species or species habitat may occur within area	In feature area
Macroderma gigas			
Ghost Bat [174]	Vulnerable	Breeding likely to occur within area	In feature 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 likely to occur within area	In feature area
Rhinolophus robertsi			
Large-eared Horseshoe Bat, Greater Large-eared Horseshoe Bat [87639]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Saccolaimus saccolaimus nudicluniatus			
Bare-rumped Sheath-tailed Bat, Bare-rumped Sheathtail Bat [66889]	Vulnerable	Species or species habitat likely to occur within area	In feature area
PLANT			
Bulbophyllum globuliforme			
Miniature Moss-orchid, Hoop Pine Orchid [6649]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Dichanthium setosum			
bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Eucalyptus raveretiana Black Ironbox [16344]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Marsdenia brevifolia [64585]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Omphalea celata [64586]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Tephrosia leveillei [16946]	Vulnerable	Species or species habitat may occur within area	In feature area
REPTILE			
Denisonia maculata Ornamental Snake [1193]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Egernia rugosa Yakka Skink [1420]	Vulnerable	Species or species habitat may occur within area	In feature area
Lerista vittata Mount Cooper Striped Skink, Mount Cooper Striped Lerista [1308]	Vulnerable	Species or species habitat may occur within area	In buffer area only
SHARK			
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only

Listed Migratory Species		[Resource Information]	
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Marine Species			
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pristis pristis			
Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Migratory Terrestrial Species			
Cuculus optatus			
Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus			
White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area	In feature area
Monarcha melanopsis			
Black-faced Monarch [609]		Species or species habitat may occur within area	In feature area
Motacilla flava			
Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Myiagra cyanoleuca			
Satin Flycatcher [612]		Species or species habitat likely to occur within area	In feature area
Rhipidura rufifrons			
Rufous Fantail [592]		Species or species habitat likely to occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus			
Spectacled Monarch [83946]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area	In feature area
[Numenius madagascariensis](#) Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
[Tringa nebularia](#) Common Greenshank, Greenshank [832]		Species or species habitat may occur within area	In feature area

Other Matters Protected by the EPBC Act

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
[Anseranas semipalmata](#) Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area
[Apus pacificus](#) Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
[Bubulcus ibis as Ardea ibis](#) Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
[Myiagra cyanoleuca](#) Satin Flycatcher [612]		Species or species habitat likely to occur within area overfly marine area	In feature area
[Numenius madagascariensis](#) Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
[Rhipidura rufifrons](#) Rufous Fantail [592]		Species or species habitat likely to occur within area overfly marine area	In feature area
[Rostratula australis as Rostratula benghalensis (sensu lato)](#) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
[Symposiachrus trivirgatus as Monarcha trivirgatus](#) Spectacled Monarch [83946]		Species or species habitat may occur within area overfly marine area	In feature area
[Tringa nebularia](#) Common Greenshank, Greenshank [832]		Species or species habitat may occur within area overfly marine area	In feature area
Reptile			
[Crocodylus porosus](#) Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area	In feature area

Extra Information

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
CopperString Transmission Line Project, Nth Qld	2019/8416	Controlled Action	Assessment Approach	In feature area
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Re-opening of Marathon Quarry	2009/4877	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
275kV Transmission Line from Ross substation to Strathmore Substation (approx 180km)	2008/4390	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and 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

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

Where little information is available for a 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 detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

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

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

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

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

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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Department of Agriculture Water and the Environment
GPO Box 858
Canberra City ACT 2601 Australia
+61 2 6274 1111

Appendix O – State Development Assessment Provisions – State Codes – Compliance Statement

State code 1: Development in a state-controlled road environment

Table 1.1 Development in general

Performance outcomes	Acceptable outcomes	Response
Buildings, structures, infrastructure, services and utilities		
PO1 The location of the development does not create a safety hazard for users of the **state-controlled road.**	**AO1.1** Development is not located in a **state-controlled road**. AND **AO1.2** Development can be maintained without requiring access to a **state-controlled road**.	**Complies with AO1.1 and AO1.2** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and is setback over 950 m from the state-controlled road being the Flinders Highway. Consequently, all buildings, structures, infrastructure, services and utilities are not located in a state-controlled road. All infrastructure can be maintained without requiring access to a state-controlled road. Refer to section 2 and 5 and Figure 3, Figure 4, figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO2 The design and construction of the development does not adversely impact the **structural integrity** or physical condition of the **state-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**Complies with PO2** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and is setback over 950 m from the state-controlled road being the Flinders Highway. The proposed development does not involve a new or changed access to the state-controlled road or new infrastructure.

Performance outcomes	Acceptable outcomes	Response
		The design and construction of the proposed development does not adversely impact the structural integrity or physical condition of the state-controlled road or road transport infrastructure. Refer to section 2 and 5 and Figure 3, Figure 4, figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO3 The location of the development does not obstruct **road transport infrastructure** or adversely impact the operating performance of the **state-controlled road**.	No acceptable outcome is prescribed.	**Complies with PO3** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and is setback over 950 m from the state-controlled road being the Flinders Highway. The proposed development does not involve a new or changed access to the state-controlled road or new infrastructure. The location of the proposed development does not obstruct road transport infrastructure or adversely impact the operating performance of the state-controlled road. Refer to section 2 and 5 and Figure 3, Figure 4, figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO4 The location, placement, design and operation of advertising devices, visible from the **state-controlled road**, do not create a safety hazard for users of the **state-controlled road**.	No acceptable outcome is prescribed.	**Not applicable (PO4)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and is setback over

Performance outcomes	Acceptable outcomes	Response
		950 m from the state-controlled road being the Flinders Highway. The proposed development does not involve the establishment of an advertising device. Refer to section 2 and 5 and Figure 3, Figure 4, figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO5 The design and construction of buildings and **structures** does not create a safety hazard by distracting users of the **state-controlled road**.	**AO5.1** Facades of buildings and **structures** fronting the **state-controlled road** are made of non-reflective materials. AND **AO5.2** Facades of buildings and **structures** do not direct or reflect point light sources into the face of oncoming traffic on the **state-controlled road**. AND **AO5.3** External lighting of buildings and **structures** is not directed into the face of oncoming traffic on the **state-controlled road**. AND **AO5.4** External lighting of buildings and **structures** does not involve flashing or laser lights.	**Complies with AO5.1 and AO5.2 and AO5.3 and AO5.4** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and is setback over 950 m from the state-controlled road being the Flinders Highway. All facades of buildings and structures are made of non-reflective material and do not reflect point light sources into the face of oncoming traffic on a state-controlled road. All external lighting of buildings and structures shall be directed down and not into the face of oncoming traffic on a state-controlled road and the proposed development does not involve flashing or laser lights. All infrastructure can be maintained without requiring access to a state-controlled road. Refer to section 2 and 5 and Figure 3, Figure 4, figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.

Performance outcomes	Acceptable outcomes	Response
PO6 Road, pedestrian and bikeway bridges over a **state-controlled road** are designed and constructed to prevent projectiles from being thrown onto the **state-controlled road**.	**AO6.1** Road, pedestrian and bikeway bridges over the **state-controlled road** include throw protection screens in accordance with section 4.11 of the Design Criteria for Bridges and Other Structures Manual, Department of Transport and Main Roads, 2020.	**Not Applicable (AO6.1)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and is setback over 950 m from the state-controlled road being the Flinders Highway. Consequently, the proposed development does not involve road, pedestrian and bikeway bridges over a state-controlled road. The proposed development does not involve a new or changed access to the state-controlled road or new infrastructure. Refer to section 2 and 5 and Figure 3, Figure 4, figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
Landscaping		
PO7 The location of landscaping does not create a safety hazard for users of the **state-controlled road**.	**AO7.1** Landscaping is not located in a **state-controlled road**. AND **AO7.2** Landscaping can be maintained without requiring access to a **state-controlled road**. AND **AO7.3** Landscaping does not block or obscure the sight lines for vehicular access to a **state-controlled road**.	**Not Applicable (PO7)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and is setback over 950 m from the state-controlled road being the Flinders Highway. Consequently, the proposed development does not involve landscaping within a state-controlled road. Any landscaping associated with the proposed development can be maintained without requiring access to a state-controlled road and shall not block or obscure the sight lines for vehicular access to a state-controlled road. Refer to section 2 and 5 and Figure 3, Figure 4, figure 5, Figure 7 and Figure 35 of the material change of use

Performance outcomes	Acceptable outcomes	Response
		development application for the proposed development by RDC Engineers Pty Ltd.
Stormwater and overland flow		
PO8 Stormwater run-off or overland flow from the development site does not create or exacerbate a safety hazard for users of the **state-controlled road**.	No acceptable outcome is prescribed.	**Complies with PO8** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and is setback over 950 m from the state-controlled road being the Flinders Highway. The proposed development does not involve a new or changed access to the state-controlled road. Consequently, stormwater run-off and overland flow generation and paths shall be the same as pre-development and therefore create or exacerbate a safety hazard for users of the state-controlled road. Further, all stormwater runoff and overland flow from impervious areas shall be contained within a controlled drainage area and holding pond pending sustainable utilisation to land. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7, Figure 11, Figure 12 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO9 Stormwater run-off or overland flow from the development site does not result in a material worsening of the operating performance of the **state-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**Complies with PO9** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and is setback over 950 m from the state-controlled road being the Flinders Highway. The proposed development does not involve a new or changed access to the state-controlled road. Consequently, stormwater run-off and overland flow generation and paths shall be the same as pre-development and therefore shall not result in a material

Performance outcomes	Acceptable outcomes	Response
		worsening of the operating performance of the state-controlled road or road transport infrastructure. Further, all stormwater runoff and overland flow from impervious areas shall be contained within a controlled drainage area and holding pond pending sustainable utilisation to land. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7, Figure 11, Figure 12 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO10 Stormwater run-off or overland flow from the development site does not adversely impact the **structural integrity** or physical condition of the **state-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**Complies with PO10** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and is setback over 950 m from the state-controlled road being the Flinders Highway. The proposed development does not involve a new or changed access to the state-controlled road. Consequently, stormwater run-off and overland flow generation and paths shall be the same as pre-development and therefore does not adversely impact the structural integrity or physical condition of the state-controlled road or road transport infrastructure. Further, all stormwater runoff and overland flow from impervious areas shall be contained within a controlled drainage area and holding pond pending sustainable utilisation to land. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7, Figure 11, Figure 12 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.

Performance outcomes	Acceptable outcomes	Response
PO11 Development ensures that stormwater is lawfully discharged.	**AO11.1** Development does not create any new points of discharge to a **state-controlled road.** AND **AO11.2** Development does not concentrate flows to a **state-controlled road**. AND **AO11.3** Stormwater run-off is discharged to a **lawful point of discharge**. AND **AO11.4** Development does not worsen the condition of an existing **lawful point of discharge** to the **state-controlled road**.	**Complies with AO11.1 and AO11.2 and AO11.3 and AO11.4** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and is setback over 950 m from the state-controlled road being the Flinders Highway and stormwater is directed to existing natural drainage lines. Further, stormwater runoff from impervious areas shall be contained within a controlled drainage area and shall not significantly worsen stormwater runoff from the site. Stormwater run-off from the proposed development shall be discharged to the existing lawful point of discharge for the development site. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7, Figure 11, Figure 12 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
Flooding		
PO12 Development does not result in a material worsening of flooding impacts within a **state-controlled road**.	**AO12.1** For all flood events up to 1% **annual exceedance probability**, development results in negligible impacts (within +/- 10mm) to existing flood levels within a **state-controlled road**. AND **AO12.2** For all flood events up to 1% **annual exceedance probability**, development results in negligible impacts (up to a 10% increase) to existing peak velocities within a **state-controlled road**.	**Complies with AO12.1 and AO12.2 and AO12.3** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and is setback over 950 m from the state-controlled road being the Flinders Highway. The proposed development does not involve a new or changed access to the state-controlled road or new infrastructure.

Performance outcomes	Acceptable outcomes	Response
	AND **AO12.3** For all flood events up to 1% **annual exceedance probability**, development results in negligible impacts (up to a 10% increase) to existing time of submergence of a **state-controlled road**.	Consequently, the flood paths and impacts shall be the same as pre-development and therefore the proposed development shall not impact existing flood levels, existing peak velocities within the state-controlled road or existing time of submergence state-controlled road. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7, Figure 11, Figure 12, Figure 27 and Figure 35 and Appendix G of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
Drainage Infrastructure		
PO13 Drainage infrastructure does not create a safety hazard for users in the **state-controlled road**.	**AO13.1** Drainage infrastructure is wholly contained within the development site, except at the **lawful point of discharge**. AND **AO13.2** Drainage infrastructure can be maintained without requiring access to a **state-controlled road**.	**Complies with AO13.1 and AO13.2** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and is setback over 950 m from the state-controlled road being the Flinders Highway. The proposed development does not involve a new or changed access to the state-controlled road or new infrastructure. Consequently, all the drainage infrastructure is wholly contained within the development site, except at the lawful point of discharge. Further, all drainage infrastructure can be maintained without requiring access to a state-controlled road Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7, Figure 11, Figure 12, and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO14 Drainage infrastructure associated with, or within, a **state-controlled road** is	No acceptable outcome is prescribed.	**Not Applicable (PO14)**

Performance outcomes	Acceptable outcomes	Response
constructed, and designed to ensure the **structural integrity** and physical condition of existing drainage infrastructure and the surrounding drainage network.		The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and is setback over 950 m from the state-controlled road being the Flinders Highway. The proposed development does not involve a new or changed access to the state-controlled road or new infrastructure. Consequently, there is no drainage infrastructure with, or within, a state-controlled road. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7, Figure 11, Figure 12, and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.

Table 1.2 Vehicular access, road layout and local roads

Performance outcomes	Acceptable outcomes	Response
Vehicular access to a state-controlled road or within 100 metres of a state-controlled road intersection		
PO15 The location, design and operation of a **new or changed access** to a **state-controlled road** does not compromise the safety of users of the **state-controlled road**.	No acceptable outcome is prescribed.	**Not Applicable (PO15)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development does not require new or changed access to a state-controlled road and does not compromise the safety of users of the state-controlled road. The vehicular access to the proposed development is from Runway Station Road via the Flinders Highway. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use

Performance outcomes	Acceptable outcomes	Response
		development application for the proposed development by RDC Engineers Pty Ltd.
PO16 The location, design and operation of a **new or changed access** does not adversely impact the **functional requirements** of the **state-controlled road**.	No acceptable outcome is prescribed.	**Not Applicable (PO16)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development does not require new or changed access to a state-controlled road and shall not adversely impact the functional requirements of the state-controlled road. The vehicular access to the proposed development is from Runway Station Road via the Flinders Highway. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO17 The location, design and operation of a **new or changed access** is consistent with the **future intent** of the **state-controlled road**.	No acceptable outcome is prescribed.	**Not Applicable (PO17)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development does not require new or changed access to a state-controlled road and shall not adversely impact the functional requirements of the state-controlled road. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.

Performance outcomes	Acceptable outcomes	Response
PO18 New or changed access is consistent with the access for the relevant **limited access road policy**: 1. **LAR 1** where direct access is prohibited; or 2. **LAR 2** where access may be permitted, subject to assessment.	No acceptable outcome is prescribed.	**Not Applicable (PO18)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development does not require new or changed access to a limited access road. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO19 New or changed access to a **local road** within 100 metres of an intersection with a **state-controlled road** does not compromise the safety of users of the **state-controlled road**.	No acceptable outcome is prescribed.	**Not Applicable (PO19)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development does not involve new or changed access to a local road within 100 metres of an intersection with a state-controlled road does not compromise the safety of users of the state-controlled road. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO20 New or changed access to a **local road** within 100 metres of an intersection with a **state-**	No acceptable outcome is prescribed.	**Not Applicable (PO20)**

Performance outcomes	Acceptable outcomes	Response
controlled road does not adversely impact on the operating performance of the intersection.		The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development does not involve new or changed access to a local road within 100 metres of an intersection with a state-controlled road and does not adversely impact on the operating performance of the intersection. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
Public passenger transport and active transport		
PO21 Development does not compromise the safety of users of **public passenger transport infrastructure**, **public passenger services** and **active transport infrastructure**.	No acceptable outcome is prescribed.	**Complies with PO21** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development is not located within close proximity of public passenger transport infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO22 Development maintains the ability for people to access **public passenger transport**	No acceptable outcome is prescribed.	**Complies with PO22**

Performance outcomes	Acceptable outcomes	Response
infrastructure, public passenger services and **active transport infrastructure**.		The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. Consequently, the proposed development maintains the ability for people to access public passenger transport infrastructure, public passenger services and active transport infrastructure. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO23 Development does not adversely impact the operating performance of **public passenger transport infrastructure, public passenger services** and **active transport infrastructure**.	No acceptable outcome is prescribed.	**Complies with PO23** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. Consequently, the proposed development does not adversely impact the operating performance of public passenger transport infrastructure, public passenger services and active transport infrastructure. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.

Performance outcomes	Acceptable outcomes	Response
PO24 Development does not adversely impact the **structural integrity** or physical condition of **public passenger transport infrastructure** and **active transport infrastructure**.	No acceptable outcome is prescribed.	**Complies with PO24** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. Consequently, the proposed development does not adversely impact the structural integrity or physical condition of public passenger transport infrastructure and active transport infrastructure. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.

Table 1.3 Network impacts

Performance outcomes	Acceptable outcomes	Response
PO25 Development does not compromise the safety of users of the **state-controlled road** network.	No acceptable outcome is prescribed.	**Complies with PO25** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development does not increase the total approved holding capacity; no increase to the annual through-put; and no increase to the

Performance outcomes	Acceptable outcomes	Response
		number or size of haulage vehicles. When compared with the existing development Consequently, the proposed development does not compromise the safety of users of the state-controlled road network. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO26 Development ensures **no net worsening** of the operating performance of the **state-controlled road** network.	No acceptable outcome is prescribed.	**Complies with PO26** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development does not increase the total approved holding capacity; no increase to the annual through-put; and no increase to the number or size of haulage vehicles when compared with the existing development. Consequently, the proposed development ensures no net worsening of the operating performance of the state-controlled road network. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.

Performance outcomes	Acceptable outcomes	Response
PO27 Traffic movements are not directed onto a **state-controlled road** where they can be accommodated on the **local road** network.	No acceptable outcome is prescribed.	**Complies with PO27** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development shall utilise the existing point of access to the state-controlled road and no new or modified access or upgrade works are triggered by the proposed development. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development does not increase the total approved holding capacity; no increase to the annual through-put; and no increase to the number or size of haulage vehicles when compared with the existing development. Consequently, traffic movements are not directed onto a state-controlled road where they can be accommodated on the local road network. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO28 Development involving haulage exceeding 10,000 tonnes per year does not adversely impact the pavement of a **state-controlled road**.	No acceptable outcome is prescribed.	**Complies with PO28** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development shall utilise the existing point of access to the state-controlled

Performance outcomes	Acceptable outcomes	Response
		road and no new or modified access or upgrade works are triggered by the proposed development. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development does not increase the total approved holding capacity; no increase to the annual through-put; and no increase to the number or size of haulage vehicles when compared with the existing development. Consequently, the proposed development does not adversely impact the pavement of a state-controlled road. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO29 Development does not impede delivery of **planned upgrades** of **state-controlled roads**.	No acceptable outcome is prescribed.	**Complies with PO29** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development shall utilise the existing point of access to the state-controlled road and no new or modified access or upgrade works are triggered by the proposed development. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway.

Performance outcomes	Acceptable outcomes	Response
		The proposed development does not increase the total approved holding capacity; no increase to the annual through-put; and no increase to the number or size of haulage vehicles when compared with the existing development. Consequently, the proposed development does not impede delivery of planned upgrades of state-controlled roads. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO30 Development does not impede delivery of **corridor improvements** located entirely within the **state-controlled road corridor**.	No acceptable outcome is prescribed.	**Complies with PO30** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development shall utilise the existing point of access to the state-controlled road and no new or modified access or upgrade works are triggered by the proposed development. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development does not increase the total approved holding capacity; no increase to the annual through-put; and no increase to the number or size of haulage vehicles when compared with the existing development. Consequently, the proposed development does not impede delivery of corridor improvements

Performance outcomes	Acceptable outcomes	Response
		located entirely within the state-controlled road corridor. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.

Table 1.4 Filling, excavation, building foundations and retaining structures

Performance outcomes	Acceptable outcomes	Response
PO31 Development does not create a safety hazard for users of the **state-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**Complies with PO31** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development is setback over 950 m from the Flinders Highway and does not involve works on or adjacent to a state-controlled road. Consequently, filling and excavation shall not interfere with, or result in damage to, infrastructure or services in a state-controlled road. The proposed development shall utilise the existing point of access to the state-controlled road and no new or modified access or upgrade works are triggered by the proposed development. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the

Performance outcomes	Acceptable outcomes	Response
		proposed development by RDC Engineers Pty Ltd.
PO32 Development does not adversely impact the operating performance of the **state-controlled road**.	No acceptable outcome is prescribed.	**Complies with PO32** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development is setback over 950 m from the Flinders Highway and does not involve works on or adjacent to a state-controlled road. The proposed development shall utilise the existing point of access to the state-controlled road and no new or modified access or upgrade works are triggered by the proposed development. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. Consequently, filling and excavation does not adversely impact the operating performance of the state-controlled road. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO33 Development does not undermine, damage or cause subsidence of a **state-controlled road**.	No acceptable outcome is prescribed.	**Complies with PO33** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure.

Performance outcomes	Acceptable outcomes	Response
		The proposed development is setback over 950 m from the Flinders Highway and does not involve works on or adjacent to a state-controlled road. The proposed development shall utilise the existing point of access to the state-controlled road and no new or modified access or upgrade works are triggered by the proposed development. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. Consequently, the proposed development does not undermine, damage or cause subsidence of a state-controlled road Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO34 Development does not cause ground water disturbance in a **state-controlled road**.	No acceptable outcome is prescribed.	**Complies with PO34** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development is setback over 950 m from the Flinders Highway and does not involve works on or adjacent to a state-controlled road. The proposed development shall utilise the existing point of access to the state-controlled road and no new or modified access or upgrade works are triggered by the proposed development. The vehicular access to the proposed

Performance outcomes	Acceptable outcomes	Response
		development is from Runway Station Road onto the Flinders Highway. Consequently, the proposed development does not cause ground water disturbance in a state-controlled road. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO35 Excavation, boring, piling, blasting and fill compaction do not adversely impact the physical condition or **structural integrity** of a **state-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**Complies with PO35** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development is setback over 950 m from the Flinders Highway and does not involve works on or adjacent to a state-controlled road. The proposed development shall utilise the existing point of access to the state-controlled road and no new or modified access or upgrade works are triggered by the proposed development. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. Consequently, excavation, boring, piling, blasting and fill compaction do not adversely impact the physical condition or structural integrity of a state-controlled road or road transport infrastructure. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material

Performance outcomes	Acceptable outcomes	Response
		change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO36 Filling and excavation associated with the construction of **new or changed access** do not compromise the operation or capacity of existing drainage infrastructure for a **state-controlled road.**	No acceptable outcome is prescribed.	**Not Applicable (PO36)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development is setback over 950 m from the Flinders Highway and does not involve works on or adjacent to a state-controlled road. The proposed development shall utilise the existing point of access to the state-controlled road and no new or modified access or upgrade works are triggered by the proposed development. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. Consequently, filling and excavation associated with the construction of new or changed access do not compromise the operation or capacity of existing drainage infrastructure for a state-controlled road. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.

Table 1.5 Environmental emissions

Statutory note: Where a **state-controlled road** is co-located in the same transport corridor as a railway, the development should instead comply with Environmental emissions in State code 2: Development in a railway environment.

Performance outcomes	Acceptable outcomes	Response
Reconfiguring a lot		
Involving the creation of 5 or fewer new residential lots adjacent to a state-controlled road or type 1 multi-modal corridor		
PO37 Development minimises free field noise intrusion from a **state-controlled road.**	**AO37.1** Development provides a noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.1); 2. in accordance with: a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR **AO37.2** Development achieves the maximum free field acoustic levels in reference table 2 (item 2.1) by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound. OR **AO37.3** Development provides a **solid gap-free fence** or other **solid gap-free structure** along the full extent of the boundary closest to the **state-controlled road**.	**Not Applicable (PO37)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve reconfiguration of a lot. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
Involving the creation of 6 or more new residential lots adjacent to a state-controlled road or type 1 multi-modal corridor		

Performance outcomes	Acceptable outcomes	Response
PO38 Reconfiguring a lot minimises free field noise intrusion from a **state-controlled road.**	**AO38.1** Development provides noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.1); 2. in accordance with: a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR **AO38.2** Development achieves the maximum free field acoustic levels in reference table 2 (item 2.1) by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.	**Not Applicable (PO38)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve reconfiguration of a lot or the creation of 6 or more new residential lots adjacent to a state-controlled road or type 1 multi-modal corridor. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
Material change of use (accommodation activity)		
Ground floor level requirements adjacent to a state-controlled road or type 1 multi-modal corridor		
PO39 Development minimises noise intrusion from a **state-controlled road** in **private open space**.	**AO39.1** Development provides a noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.2) for **private open space** at the ground floor level; 2. in accordance with:	**Not Applicable (PO39)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve a material change of use (accommodation activity).

Performance outcomes	Acceptable outcomes	Response
	a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR **AO39.2** Development achieves the maximum free field acoustic level in reference table 2 (item 2.2) for **private open space** by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.	Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO40 Development (excluding a **relevant residential building** or **relocated building)** minimises noise intrusion from a **state-controlled road** in **habitable rooms** at the facade.	**AO40.1** Development (excluding a **relevant residential building** or **relocated building**) provides a noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum building façade acoustic level in reference table 1 (item 1.1) for **habitable rooms**; 2. in accordance with: a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019;	**Not Applicable (PO40)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve a material change of use (accommodation activity). Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.

Performance outcomes	Acceptable outcomes	Response
	c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR **AO40.2** Development (excluding a **relevant residential building** or **relocated building**) achieves the maximum building façade acoustic level in reference table 1 (item 1.1) for **habitable rooms** by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.	
PO41 Habitable rooms (excluding a **relevant residential building** or **relocated building**) are designed and constructed using materials to achieve the maximum internal acoustic level in reference table 3 (item 3.1).	No acceptable outcome is provided.	**Not Applicable (PO41)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve a material change of use (accommodation activity). Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
Above ground floor level requirements (accommodation activity) adjacent to a state-controlled road or type 1 multi-modal corridor		
PO42 Balconies, podiums, and roof decks include: 1. a continuous **solid gap-free structure** or balustrade (excluding gaps required for drainage purposes to comply with the Building Code of Australia); 2. highly acoustically absorbent material treatment for the total area of the soffit above balconies, podiums, and roof decks.	No acceptable outcome is provided.	**Not Applicable (PO42)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve a material change of use (accommodation activity).

Performance outcomes	Acceptable outcomes	Response
		Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO43 Habitable rooms (excluding a **relevant residential building** or **relocated building**) are designed and constructed using materials to achieve the maximum internal acoustic level in reference table 3 (item 3.1).	No acceptable outcome is provided.	**Not Applicable (PO43)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve a material change of use (accommodation activity). Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
Material change of use (other uses)		
Ground floor level requirements (childcare centre, educational establishment, hospital) adjacent to a state-controlled road or type 1 multi-modal corridor		
PO44 Development: 1. provides a noise barrier or earth mound that is designed, sited and constructed: a. to achieve the maximum free field acoustic level in reference table 2 (item 2.3) for all **outdoor education areas** and **outdoor play areas**; b. in accordance with: i. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; ii. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019;	No acceptable outcome is provided.	**Not Applicable (PO44)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve a material change of use (other uses) such as childcare centre, educational establishment, hospital adjacent to a state-controlled road or type 1 multi-modal corridor. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.

Performance outcomes	Acceptable outcomes	Response
iii. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020; or 2. achieves the maximum free field acoustic level in reference table 2 (item 2.3) for all **outdoor education areas** and **outdoor play areas** by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.		
PO45 Development involving a **childcare centre** or **educational establishment**: 1. provides a noise barrier or earth mound that is designed, sited and constructed: 2. to achieve the maximum building facade acoustic level in reference table 1 (item 1.2); 3. in accordance with: a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020; or 4. achieves the maximum building facade acoustic level in reference table 1 (item 1.2) by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.	No acceptable outcome is provided.	**Not Applicable (PO45)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve the establishment of a childcare centre or educational establishment. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO46 Development involving:	No acceptable outcome is provided.	**Not Applicable (PO46)**

Performance outcomes	Acceptable outcomes	Response
1. **indoor education areas** and **indoor play areas**; or 2. sleeping rooms in a **childcare centre**; or 3. **patient care areas** in a **hospital** achieves the maximum internal acoustic level in reference table 3 (items 3.2-3.4).		The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve the establishment of • indoor education areas and indoor play areas; or • sleeping rooms in a childcare centre; or • patient care areas in a hospital. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd
Above ground floor level requirements (childcare centre, educational establishment, hospital) adjacent to a state-controlled road or type 1 multi-modal corridor		
PO47 Development involving a **childcare centre** or **educational establishment** which have balconies, podiums or elevated **outdoor play areas** predicted to exceed the maximum free field acoustic level in reference table 2 (item 2.3) due to noise from a **state-controlled road** are provided with: 1. a continuous **solid gap-free structure** or balustrade (excluding gaps required for drainage purposes to comply with the Building Code of Australia); 2. highly acoustically absorbent material treatment for the total area of the soffit above balconies or elevated **outdoor play areas**.	No acceptable outcome is provided.	**Not Applicable (PO47)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve a material change of use (other uses) such as childcare centre, educational establishment, hospital adjacent to a state-controlled road or type 1 multi-modal corridor. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.

Performance outcomes	Acceptable outcomes	Response
PO48 Development including: 1. **indoor education areas** and **indoor play areas** in a **childcare centre** or **educational establishment**; or 2. sleeping rooms in a **childcare centre**; or 3. **patient care areas** in a **hospital** located above ground level, is designed and constructed to achieve the maximum internal acoustic level in reference table 3 (items 3.2-3.4).	No acceptable outcome is provided.	**Not Applicable (PO48)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve a material change of use (other uses) such as childcare centre, educational establishment, hospital adjacent to a state-controlled road or type 1 multi-modal corridor. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
Air, light and vibration		
PO49 Private open space, **outdoor education areas** and **outdoor play areas** are protected from air quality impacts from a **state-controlled road**.	**AO49.1** Each dwelling or unit has access to a **private open space** which is shielded from a **state-controlled road** by a building, **solid gap-free fence**, or other **solid gap-free structure**. OR **AO49.2** Each **outdoor education area** and **outdoor play area** is shielded from a **state-controlled road** by a building, **solid gap-free fence,** or other **solid gap-free structure**.	**Not Applicable (PO49)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve outdoor play area, private open space or outdoor education areas associated with a material change of use (other uses) such as childcare centre, educational establishment, hospital adjacent to a state-controlled road. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.

Performance outcomes	Acceptable outcomes	Response
PO50 Patient care areas within **hospitals** are protected from vibration impacts from a **state-controlled road** or **type 1 multi-modal corridor**.	**AO50.1 Hospitals** are designed and constructed to ensure vibration in the patient treatment area does not exceed a vibration dose value of $0.1m/s^{1.75}$. AND **AO50.2 Hospitals** are designed and constructed to ensure vibration in the ward of a **patient care area** does not exceed a vibration dose value of $0.4m/s^{1.75}$.	**Not Applicable (PO50)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve the establishment of a hospital adjacent to a state-controlled road or type 1 multi-modal corridor. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO51 Development is designed and sited to ensure light from infrastructure within, and from users of, a **state-controlled road** or **type 1 multi-modal corridor**, does not: 1. intrude into buildings during night hours (10pm to 6am); 2. create unreasonable disturbance during evening hours (6pm to 10pm).	No acceptable outcomes are prescribed.	**Not Applicable (PO51)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve a sensitive land use. The proposed development is setback over 950 m from the Flinders Highway and does not involve works on or adjacent to a state-controlled road. Consequently light from infrastructure within, and from users of, a state-controlled road or type 1 multi-modal corridor, does not intrude into buildings during night hours or create unreasonable disturbance during evening hours. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.

Table 1.6: Development in a future state-controlled road environment

State Development Assessment Provisions v3.0

Performance outcomes	Acceptable outcomes	Response
PO52 Development does not impede delivery of a **future state-controlled road**.	**AO52.1** Development is not located in a **future state-controlled road**. OR ALL OF THE FOLLOWING APPLY: **AO52.2** Development does not involve filling and excavation of, or material changes to, a **future state-controlled road**. AND **AO52.3** The intensification of lots does not occur within a **future state-controlled road**. AND **AO52.4** Development does not result in the landlocking of parcels once a **future state-controlled road** is delivered.	**Not Applicable (PO52)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development is setback over 950 m from the Flinders Highway and does not involve works on or adjacent to a future state-controlled road. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd
PO53 The location and design of **new or changed access** does not create a safety hazard for users of a **future state-controlled road**.	**AO53.1** Development does not include **new or changed access** to a **future state-controlled road**.	**Not Applicable (PO53)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development is setback over 950 m from the Flinders Highway and does not involve works on or adjacent to a future state-controlled road. The proposed development shall utilise the existing point of access to the state-controlled road and no new or modified access or upgrade works are triggered by the proposed development. The vehicular access to the proposed

Performance outcomes	Acceptable outcomes	Response
		development is from Runway Station Road onto the Flinders Highway. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd
PO54 Filling, excavation, building foundations and **retaining structures** do not undermine, damage or cause subsidence of a **future state-controlled road**.	No acceptable outcome is prescribed.	**Not Applicable (PO54)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development is setback over 950 m from the Flinders Highway and does not involve works on or adjacent to a future state-controlled road. The proposed development shall utilise the existing point of access to the state-controlled road and no new or modified access or upgrade works are triggered by the proposed development. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd
PO55 Development does not result in a material worsening of stormwater, flooding, overland flow or drainage impacts in a **future state-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**Not Applicable (PO55)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure.

Performance outcomes	Acceptable outcomes	Response
		The proposed development is setback over 950 m from the Flinders Highway and does not involve works on or adjacent to a future state-controlled road. The proposed development shall utilise the existing point of access to the state-controlled road and no new or modified access or upgrade works are triggered by the proposed development. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd
PO56 Development ensures that stormwater is lawfully discharged.	**AO56.1** Development does not create any new points of discharge to a **future state-controlled road**. AND **AO56.2** Development does not concentrate flows to a **future state-controlled road**. AND **AO56.3** Stormwater run-off is discharged to a **lawful point of discharge**. AND	**Not Applicable (PO56)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development is setback over 950 m from the Flinders Highway and does not involve works on or adjacent to a future state-controlled road. The proposed development shall utilise the existing point of access to the state-controlled road and no new or modified access or upgrade works are triggered by the proposed development. The vehicular access to the proposed

Performance outcomes	Acceptable outcomes	Response
	AO56.4 Development does not worsen the condition of an existing **lawful point of discharge** to the **future state-controlled road**.	development is from Runway Station Road onto the Flinders Highway. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd

State code 6: Protection of state transport networks

Table 6.2 Development in general

Performance outcomes	Acceptable outcomes	Response
Network impacts		
PO1 Development does not compromise the safety of users of the **state-controlled road** network.	No acceptable outcome is prescribed.	**Complies with PO1** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development shall not result in a worsening of the safety of a state-controlled road, being the Flinders Highway due to the following reasons: • No new or altered point of access to a state-controlled road is proposed; • The proposed development shall have no worsening and no net worsening as the current and forecast traffic generation is not significantly worse (>5%) when compared to existing daily traffic levels on the Flinders Highway; • No new safety issues are introduced by the proposed development; • The type and configuration of vehicles proposed to service the proposed development are identical to those currently servicing the existing development and agricultural enterprises on the subject land. • No increase the total approved holding capacity;

Performance outcomes	Acceptable outcomes	Response
		• No increase to the annual through-put; and • No increase to the number or size of haulage vehicles when compared with the existing development. Consequently, there is no expected worsening of the safety of a state-controlled road. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO2 Development does not adversely impact the structural integrity or physical condition of a **state-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**Complies with PO2** The proposed development does not adversely impact the structural integrity or physical condition of a state-controlled road or road transport infrastructure, being the Flinders Highway due to the following reasons: • No new or altered point of access to a state-controlled road is proposed; • The proposed development shall have no worsening and no net worsening as the current and forecast traffic generation is not significantly worse (>5%) when compared to existing daily traffic levels on the Flinders Highway; • No new safety issues are introduced by the proposed development; • The type and configuration of vehicles proposed to service the proposed development are identical to those currently servicing the existing development and agricultural enterprises on the subject land. • No increase the total approved holding capacity;

Performance outcomes	Acceptable outcomes	Response
		• No increase to the annual through-put; and • No increase to the number or size of haulage vehicles when compared with the existing development. Consequently, there is no expected worsening of the safety of a state-controlled road. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO3 Development ensures **no net worsening** of the operating performance the **state-controlled road** network.	No acceptable outcome is prescribed.	**Complies with PO3** The proposed development shall not result in a net worsening of the operating performance the state-controlled road network, being the Flinders Highway due to the following reasons: • No new or altered point of access to a state-controlled road is proposed; • The proposed development shall have no worsening and no net worsening as the current and forecast traffic generation is not significantly worse (>5%) when compared to existing daily traffic levels on the Flinders Highway; • No new safety issues are introduced by the proposed development; • The type and configuration of vehicles proposed to service the proposed development are identical to those currently servicing the existing development and agricultural enterprises on the subject land. • No increase the total approved holding capacity; • No increase to the annual through-put; and

Performance outcomes	Acceptable outcomes	Response
		• No increase to the number or size of haulage vehicles when compared with the existing development. Consequently, there is no expected worsening of the safety of a state-controlled road. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO4 Traffic movements are not directed onto a **state-controlled road** where they can be accommodated on the **local road** network.	No acceptable outcome is prescribed.	**Complies with PO4** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO5 Development involving haulage exceeding 10,000 tonnes per year does not damage the pavement of a **state-controlled road**.	No acceptable outcome is prescribed.	**Complies with PO5** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development shall utilise the existing point of access to the state-controlled road and no new or modified access or upgrade works are triggered by the proposed development.

Performance outcomes	Acceptable outcomes	Response
		The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development does not increase the total approved holding capacity; no increase to the annual through-put; and no increase to the number or size of haulage vehicles when compared with the existing development. Consequently, the proposed development does not adversely impact the pavement of a state-controlled road. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO6 Development does not require a new **railway** level crossing.	No acceptable outcome is prescribed.	**Complies with PO6** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development does not require a new railway level crossing as the subject land does not adjoin a rail corridor and a railway line does not need to be crossed by vehicles to access the proposed development or to access the wider road network. The point of access to the subject land does not crossover a railway line.

Performance outcomes	Acceptable outcomes	Response
		Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO7 Development does not adversely impact the operating performance of an existing **railway crossing**.	No acceptable outcome is prescribed.	**Complies with PO7** The proposed development does not adversely impact on the safety of a railway crossing as there is no new rail crossing required as the subject land does not adjoin a rail corridor and a railway line does not need to be crossed by vehicles to access the proposed development or to access the wider road network. The point of access to the subject land does not crossover a railway line. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO8 Development does not adversely impact on the safety of an existing **railway crossing**.	No acceptable outcome is prescribed.	**Complies with PO8** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development does not require a new railway level crossing as the subject land does not adjoin a rail corridor and a railway line does not need to be crossed by vehicles to access the proposed development or to access the wider road network. The point of access to

Performance outcomes	Acceptable outcomes	Response
		the subject land does not crossover a railway line. Consequently, the proposed development does not adversely impact on the safety of an existing railway crossing. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO9 Development is designed and constructed to allow for on-site circulation to ensure vehicles do not queue in a **railway crossing**.	No acceptable outcome is prescribed.	**Not applicable (PO9)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development does not require a new railway level crossing as the subject land does not adjoin a rail corridor and a railway line does not need to be crossed by vehicles to access the proposed development or to access the wider road network. The point of access to the subject land does not crossover a railway line. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO10 Development does not create a safety hazard within the **railway corridor**.	No acceptable outcome is prescribed.	**Complies with PO10**

Performance outcomes	Acceptable outcomes	Response
		The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development does not require a new railway level crossing as the subject land does not adjoin a rail corridor and a railway line does not need to be crossed by vehicles to access the proposed development or to access the wider road network. The point of access to the subject land does not crossover a railway line. Consequently, the proposed development does not create a safety hazard within the railway corridor. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO11 Development does not adversely impact the operating performance of the **railway corridor**.	No acceptable outcome is prescribed.	**Complies with PO11** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The subject land does not adjoin a rail corridor and a railway line does not need to be crossed

Performance outcomes	Acceptable outcomes	Response
		by vehicles to access the proposed development or to access the wider road network. The point of access to the subject land does not crossover a railway line. Consequently, the proposed development does not adversely impact the operating performance of the railway corridor. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO12 Development does not interfere with or obstruct the **railway transport infrastructure** or **other rail infrastructure**.	No acceptable outcome is prescribed.	**Complies with PO12** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The subject land does not adjoin a rail corridor and a railway line does not need to be crossed by vehicles to access the proposed development or to access the wider road network. The point of access to the subject land does not crossover a railway line. Consequently, the proposed development does not interfere with or obstruct the railway transport infrastructure or other rail infrastructure. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the

Performance outcomes	Acceptable outcomes	Response
		proposed development by RDC Engineers Pty Ltd.
PO13 Development does not adversely impact the structural integrity or physical condition of a **railway corridor** or **rail transport infrastructure**.	No acceptable outcome is prescribed.	**Complies with PO13** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The subject land does not adjoin a rail corridor and a railway line does not need to be crossed by vehicles to access the proposed development or to access the wider road network. The point of access to the subject land does not crossover a railway line. Consequently, the proposed development does not adversely impact the structural integrity or physical condition of a railway corridor or rail transport infrastructure. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
Stormwater and overland flow		
PO14 Stormwater run-off or overland flow from the development site does not create or exacerbate a safety hazard for users of a **state transport corridor** or **state transport infrastructure**.	No acceptable outcome is prescribed.	**Complies with PO14** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and is setback over 950 m from the state-controlled road being the Flinders Highway. The proposed development does not involve a new or changed access to the state-controlled

Performance outcomes	Acceptable outcomes	Response
		road. Consequently, stormwater run-off and overland flow generation and paths shall be the same as pre-development and therefore create or exacerbate a safety hazard for users of the state-controlled road. Further, all stormwater runoff and overland flow from impervious areas shall be contained within a controlled drainage area and holding pond pending sustainable utilisation to land. Consequently, stormwater run-off or overland flow from the proposed development site does not create or exacerbate a safety hazard for users of a state transport corridor or state transport infrastructure. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7, Figure 11, Figure 12 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO15 Stormwater run-off or overland flow from the development site does not result in a material worsening of operating performance of a **state transport corridor** or **state transport infrastructure**.	No acceptable outcome is prescribed.	**Complies with PO15** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and is setback over 950 m from the state-controlled road being the Flinders Highway. The proposed development does not involve a new or changed access to the state-controlled road. Consequently, stormwater run-off and overland flow generation and paths shall be the same as pre-development and therefore shall not result in a material worsening of the operating performance of the state-controlled road or road transport infrastructure. Further, all stormwater runoff and overland flow from impervious areas shall be contained within

Performance outcomes	Acceptable outcomes	Response
		a controlled drainage area and holding pond pending sustainable utilisation to land. Consequently, stormwater run-off or overland flow from the proposed development site does not result in a material worsening of operating performance of a state transport corridor or state transport infrastructure. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7, Figure 11, Figure 12 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO16 Stormwater run-off or overland flow from the development site does not interfere with the structural integrity or physical condition of the **state transport corridor** or **state transport infrastructure**.	No acceptable outcome is prescribed.	**Complies with PO10** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and is setback over 950 m from the state-controlled road being the Flinders Highway. The proposed development does not involve a new or changed access to the state-controlled road. Consequently, stormwater run-off and overland flow generation and paths shall be the same as pre-development and therefore does not adversely impact the structural integrity or physical condition of the state-controlled road or road transport infrastructure. Further, all stormwater runoff and overland flow from impervious areas shall be contained within a controlled drainage area and holding pond pending sustainable utilisation to land. Consequently, stormwater run-off or overland flow from the development site does not interfere with the structural integrity or physical condition of the state transport corridor or state transport infrastructure.

Performance outcomes	Acceptable outcomes	Response
		Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7, Figure 11, Figure 12 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO17 Development associated with a **state-controlled road** or **road transport infrastructure** ensures that stormwater is lawfully discharged.	**AO17.1** Development does not create any new points of discharge to a **state transport corridor** or **state transport infrastructure**. AND **AO17.2** Development does not concentrate flows to a **state transport corridor**. AND **AO17.3** Stormwater run-off is discharged to a **lawful point of discharge**. AND **AO17.4** Development does not worsen the condition of an existing **lawful point of discharge** to a **state transport corridor** or **state transport infrastructure**.	**Complies with AO17.1 and AO17.2 and AO17.3 and AO17.4** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and is setback over 950 m from the state-controlled road being the Flinders Highway and stormwater is directed to existing natural drainage lines. Further, stormwater runoff from impervious areas shall be contained within a controlled drainage area and shall not significantly worsen stormwater runoff from the site. Stormwater run-off from the proposed development shall be discharged to the existing lawful point of discharge for the development site. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7, Figure 11, Figure 12 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
Flooding		
PO18 Development does not result in a material worsening of flooding impacts within a **state transport corridor** or **state transport infrastructure**	*For a **state-controlled road** or **road transport infrastructure**, all of the following apply:* **AO18.1** For all flood events up to 1% **annual exceedance probability**, development ensures there are negligible impacts (within +/- 10mm) to	**Complies with AO18.1 and AO18.2 and AO18.3** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built

Performance outcomes	Acceptable outcomes	Response
	existing flood levels within a **state transport corridor**. AND **AO18.2** For all flood events up to 1% **annual exceedance probability**, development ensures there are negligible impacts (up to a 10% increase) to existing peak velocities within a **state transport corridor**. AND **AO18.3** For all flood events up to 1% annual exceedance probability, development ensures there are negligible impacts (up to a 10% increase) to existing time of submergence of a **state transport corridor**. *No acceptable outcome is prescribed for a **railway corridor** or **rail transport infrastructure**.*	infrastructure and is setback over 950 m from the state-controlled road being the Flinders Highway. The proposed development does not involve a new or changed access to the state-controlled road or new infrastructure. Consequently, the flood paths and impacts shall be the same as pre-development and therefore the proposed development shall not impact existing flood levels, existing peak velocities within the state-controlled road or existing time of submergence state-controlled road. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7, Figure 11, Figure 12, Figure 27 and Figure 35 and Appendix G of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
Drainage infrastructure		
PO19 Drainage infrastructure does not create a safety hazard in a **state transport corridor**.	*For a **state-controlled road** environment, both of the following apply:* **AO19.1** Drainage infrastructure associated with, or in a **state-controlled road** is wholly contained within the development site, except at the **lawful point of discharge**. AND **AO19.2** Drainage infrastructure can be maintained without requiring access to a **state transport corridor**. *For a **railway** environment both of the following apply:*	**Complies with AO19.1 and AO19.2 and AO19.3 and AO19.4** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and is setback over 950 m from the state-controlled road being the Flinders Highway. The proposed development does not involve a new or changed access to the state-controlled road or new infrastructure. Consequently, all the drainage infrastructure is wholly contained within the development site, except at the lawful point of discharge. Further, all drainage infrastructure can be maintained

Performance outcomes	Acceptable outcomes	Response
	AO19.3 Drainage infrastructure associated with a **railway corridor** or **rail transport infrastructure** is wholly contained within the development site. AND **AO19.4** Drainage infrastructure can be maintained without requiring access to a **state transport corridor**.	without requiring access to a state-controlled road The proposed development does not require a new railway level crossing as the subject land does not adjoin a rail corridor and a railway line does not need to be crossed by vehicles to access the proposed development or to access the wider road network. The point of access to the subject land does not crossover a railway line. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7, Figure 11, Figure 12, and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO20 Drainage infrastructure associated with, or in a **state-controlled road** or **road transport infrastructure** is constructed and designed to ensure the structural integrity and physical condition of existing drainage infrastructure and the surrounding drainage network is maintained.	No acceptable outcome is prescribed.	**Not Applicable (PO20)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure and is setback over 950 m from the state-controlled road being the Flinders Highway. The proposed development does not involve a new or changed access to the state-controlled road or new infrastructure. Consequently, there is no drainage infrastructure with, or within, a state-controlled road. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7, Figure 11, Figure 12, and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
Planned upgrades		
PO21 Development does not impede delivery of **planned upgrades** of **state transport infrastructure**.	No acceptable outcome is prescribed.	**Complies with PO21**

Performance outcomes	Acceptable outcomes	Response
		The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The proposed development shall utilise the existing point of access to the state-controlled road and no new or modified access or upgrade works are triggered by the proposed development. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development does not increase the total approved holding capacity; no increase to the annual through-put; and no increase to the number or size of haulage vehicles when compared with the existing development. Consequently, the proposed development does not impede delivery of planned upgrades of state-controlled roads. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.

Table 6.3 Public passenger transport infrastructure and active transport

Performance outcomes	Acceptable outcomes	Response
PO22 Development does not damage or interfere with **public passenger transport infrastructure**, **active transport infrastructure** or **public passenger services**.	No acceptable outcome is prescribed.	**Complies with PO22** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure.

Performance outcomes	Acceptable outcomes	Response
		The proposed development is not located within close proximity of public passenger transport infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. Consequently, the proposed development does not damage or interfere with public passenger transport infrastructure, active transport infrastructure or public passenger services. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO23 Development does not compromise the safety of **public passenger transport infrastructure**, **public passenger services** and **active transport infrastructure**.	No acceptable outcome is prescribed.	**Complies with PO23** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development is in a rural area. Consequently, the proposed development maintains the ability for people to access public passenger transport infrastructure, public passenger services and active transport infrastructure. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the

Performance outcomes	Acceptable outcomes	Response
		proposed development by RDC Engineers Pty Ltd.
PO24 Development does not adversely impact the operating performance of **public passenger transport infrastructure, public passenger services** and **active transport infrastructure**.	No acceptable outcome is prescribed.	**Complies with PO24** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development is in a rural area. Consequently, the proposed development does not adversely impact the operating performance of public passenger transport infrastructure, public passenger services and active transport infrastructure. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO25 Development does not adversely impact the structural integrity or physical condition of **public passenger transport infrastructure** and **active transport infrastructure**.	No acceptable outcome is prescribed.	**Complies with PO25** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. Consequently, the proposed development does not adversely impact the structural integrity or

Performance outcomes	Acceptable outcomes	Response
		physical condition of public passenger transport infrastructure and active transport infrastructure. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO26 Upgraded or new **public passenger transport infrastructure** and **active transport infrastructure** is provided to accommodate the demand for **public passenger transport** and **active transport** generated by the development.	No acceptable outcome is prescribed.	**Not applicable (PO26)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development is in a rural area and the use does not involve upgraded or new public passenger transport infrastructure and active transport infrastructure. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO27 Development is designed to ensure the location of **public passenger transport infrastructure** prioritises and enables efficient **public passenger services**.	No acceptable outcome is prescribed.	**Not applicable (PO27)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway.

Performance outcomes	Acceptable outcomes	Response
		The proposed development is in a rural area and the use does not involve upgraded or new public passenger transport infrastructure and active transport infrastructure. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO28 Development enables the provision or extension of **public passenger services**, **public passenger transport infrastructure** and **active transport infrastructure** to the development and avoids creating indirect or inefficient routes for **public passenger services**.	No acceptable outcome is prescribed.	**Not applicable (PO28)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development is in a rural area and the use does not involve the provision or extension of public passenger services, public passenger transport infrastructure and active transport infrastructure. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.

Performance outcomes	Acceptable outcomes	Response
PO29 New or modified road networks are designed to enable development to be serviced by **public passenger services**.	**AO29.1** Roads catering for buses are arterial or **sub-arterial roads**, collector or their equivalent. AND **AO29.2** Roads intended to accommodate buses are designed and constructed in accordance with: 1. Road Planning and Design Manual, 2nd Edition, Volume 3 – Guide to Road Design; Department of Transport and Main Roads; 2. Supplement to Austroads Guide to Road Design (Parts 3, 4-4C and 6), Department of Transport and Main Roads; 3. Austroads Guide to Road Design (Parts 3, 4-4C and 6); 4. Austroads Design Vehicles and Turning Path Templates; 5. Queensland Manual of Uniform Traffic Control Devices, Part 13: Local Area Traffic Management and AS 1742.13-2009 Manual of Uniform Traffic Control Devices – Local Area Traffic Management; AND **AO29.3** Traffic calming devices are not installed on roads used for buses in accordance with section 2.3.2 Bus Route Infrastructure, Public Transport Infrastructure Manual, Department of Transport and Main Roads, 2015.	**Not applicable (PO29)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development does not involve new or modified road networks. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO30 Development provides safe, direct and convenient access to existing and future **public passenger transport infrastructure** and **active transport infrastructure**.	No acceptable outcome is prescribed.	**Not applicable (PO30)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure.

Performance outcomes	Acceptable outcomes	Response
		The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development is in a rural area and the use does not require access to existing and future public passenger transport infrastructure and active transport infrastructure. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO31 On-site vehicular circulation ensures the safety of both **public passenger transport services** and pedestrians.	No acceptable outcome is prescribed.	**Not applicable (PO31)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development does not require new access or changed access to the state-controlled road network. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO32 Taxi facilities are provided to accommodate the demand generated by the development.	No acceptable outcome is prescribed.	**Not applicable (PO32)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure.

Performance outcomes	Acceptable outcomes	Response
		The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development is in a rural area and the use does not require or generate a need for taxi facilities. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO33 Facilities are provided to accommodate the demand generated by the development for community transport services, courtesy transport services, and **booked hire services** other than taxis.	No acceptable outcome is prescribed.	**Not applicable (PO33)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development is in a rural area and the use does not require or generate a demand for community transport services, courtesy transport services, and booked hire services other than taxis. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.

Performance outcomes	Acceptable outcomes	Response
PO34 Taxi facilities are located and designed to provide convenient, safe and equitable access for passengers.	**AO34.1** A **taxi facility** is provided parallel to the kerb and adjacent to the main entrance. AND **AO34.2 Taxi facilities** are designed in accordance with: 1. AS2890.5–1993 Parking facilities – on-street parking and AS1428.1–2009 Design for access and mobility – general requirements for access – new building work; 2. AS1742.11–1999 Parking controls – manual of uniform traffic control devices 3. AS/NZS 2890.6–2009 Parking facilities –off street parking for people with disabilities; 4. Disability standards for accessible public 5. transport 2002 made under section 31(1) of the Disability Discrimination Act 1992; 6. AS/NZS 1158.3.1 – Lighting for roads and public spaces, Part 3.1: Pedestrian area (category P) lighting – Performance and design requirements; 7. Chapter 7 Taxi Facilities, Public Transport Infrastructure Manual, Department of Transport and Main Roads, 2015.	**Not applicable (PO34)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development is in a rural area and the use does not require or generate a demand for taxis. Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.
PO35 Educational establishments are designed to ensure the safe and efficient operation of **public passenger services**, pedestrian and cyclist access and **active transport infrastructure**.	**AO35.1** Educational establishments are designed in accordance with the provisions of the Planning for Safe Transport Infrastructure at Schools, Department of Transport and Main Roads, 2011.	**Not applicable (PO35)** The proposed development is an Intensive Animal Industry being the establishment of a beef cattle feedlot using existing built infrastructure. The vehicular access to the proposed development is from Runway Station Road onto the Flinders Highway. The proposed development is in a rural area and is not an educational establishment.

Performance outcomes	Acceptable outcomes	Response
		Refer to section 2 and 5 and Figure 3, Figure 4, Figure 5, Figure 7 and Figure 35 of the material change of use development application for the proposed development by RDC Engineers Pty Ltd.

State code 22: Environmentally relevant activities

Guideline – SDAP State code 22: Environmentally Relevant Activities provides direction on how to address this code.

Table 22.1: All development

Performance outcomes	Acceptable outcomes	Response
All ERAs		
PO1 Development is suitably located and designed to avoid or mitigate **environmental harm** to the acoustic **environment**.	**AO1.1** Development meets the acoustic quality objectives for sensitive receptors identified in the Environmental Protection (Noise) Policy 2019.	**Complies with AO1.1** The proposed development has been sited and shall be constructed and operated to avoid or mitigate environmental harm to the acoustic environment as outlined in sections 5, 7.5.1.2, 7.6 and shown in Figure 3 and Figure 38.
PO2 Development is suitably located and designed to avoid or mitigate **environmental harm** to the air **environment**.	**AO2.1** Development meets the air quality objectives of the Environmental Protection (Air) Policy 2019.	**Complies with AO2.1** The proposed development has been sited and designed and shall be constructed and operated to avoid or mitigate environmental harm to the air environment as outlined in sections 5, 6.1, 7.5.1.9 and 7.6 and shown in Figure 3 and Figure 38.
PO3 Development (other than **intensive animal industry** for **poultry farming**), is suitably located and designed to avoid or mitigate **environmental harm** on adjacent **sensitive land uses** caused by odour.	No acceptable outcome is prescribed.	**Complies with PO3** The proposed development has been sited and designed and shall be constructed and operated to avoid or mitigate environmental harm on adjacent sensitive land uses caused by odour as outlined in sections 5, 6.1, 7.5.1.9 and 7.6 and shown in Figure 3 and Figure 38.
PO4 Development is suitably located and designed to avoid or mitigate **environmental harm** to the receiving waters **environment**.	**AO4.1** Development meets the management intent, water quality guidelines and objectives of the Environmental Protection (Water and Wetland Biodiversity) Policy 2019.	**Complies with AO4.1** The proposed development has been sited to avoid inundation during flood events as

Performance outcomes	Acceptable outcomes	Response
		outlined in section 6.4.6 and shown in Figure 25 and Figure 26.
PO5 Development is designed to include elements which: 1. prevent or minimise the production of **hazardous contaminants** and **waste** as by-products; or 2. contain and treat **hazardous contaminants** on-site rather than releasing them into the **environment**; and 3. provide secondary containment to prevent the accidental release of **hazardous contaminants** to the **environment** from spillage or leaks.	No acceptable outcome is prescribed.	**Complies with PO5** The proposed development has been sited and designed and shall be constructed and operated to prevent or minimise the production of hazardous contaminants and waste as by-products as outlined in sections 5, 7.5.7 and 7.6 and shown in Figure 10.
PO6 Environmentally hazardous materials located on-site are stored to avoid or minimise their release into the **environment** due to inundation during flood events.	No acceptable outcome is prescribed.	**Complies with PO6** The proposed development has been sited to avoid inundation during flood events as outlined in section 6.4.6 and shown in Figure 25 and Figure 26.
All development – matters of state environmental significance		
PO7 Development is designed and sited to: 1. avoid impacts on **matters of state environmental significance**; or 2. minimise and mitigate impacts on **matters of state environmental significance** after demonstrating avoidance is not reasonably possible; and 3. provide an **offset** if, after demonstrating all reasonable avoidance, minimisation and mitigation measures are undertaken, the development results in an acceptable **significant residual impact** on a **matter of state environmental significance**. Statutory note: For Brisbane core port land, an offset may only be applied to development on land identified as E1 Conservation/Buffer, E2 Open Space or Buffer/Investigation in the Brisbane Port LUP precinct plan.	No acceptable outcome is prescribed.	**Complies with PO7** The proposed development has been sited to avoid impacts to matters of state environmental significance as outlined in section 6.14.
Intensive animal industry – poultry farming (ERA 4(2))		
PO8 Poultry farming development (where farming more than 200,000 birds) is suitably located and designed to avoid or mitigate **environmental harm** on adjacent **sensitive land uses**, caused by odour.	**AO8.1** For poultry farming involving 300,000 birds or less, development meets the separation distances as determined using the S-factor methodology to: 1. a **sensitive land use** in a rural zone; and	**Not Applicable**

Performance outcomes	Acceptable outcomes	Response
	2. boundary of a non-rural zone. OR **AO8.2** Development meets the separation distances as determined by odour modelling using the following criteria: 1. 2.5 **odour units**, 99.5 percent, 1 hour average for a **sensitive land use** in a rural zone; or 2. 1.0 **odour units**, 99.5 percent, 1 hour average for the boundary of a non-rural zone.	The proposed development is for lot feeding of beef cattle and does not involve poultry farming as outlined in section 4.

Appendix P– Pre-lodgement consultation

Queensland Government

SARA reference: 2203-27666 SPL
Applicant reference: D1-130-RRH-RPL-SARA

22 March 2022

Reid River Export Pty Ltd as trustee for the Reid River Unit trust
C/- RDC Engineers
PO Box 1223
TOOWOOMBA QLD 4350
rod.davis@rdcengineers.com.au

Attention: Rod Davis

Dear Sir/Madam

SARA Pre-lodgement advice – 5291 Flinders Highway, Reid River

I refer to the pre-lodgement meeting held on 11 March 2022 in which you sought advice from the State Assessment and Referral Agency (SARA) regarding the proposed development at the above address. This notice provides advice on aspects of the proposal that are of relevance to SARA.

SARA's understanding of the project

The subject site is located at 5291 Flinders Highway, Reid River and is formally described as Lot 1 on RP743456, Lot 2 on RP743456 and Lot 600 on SP310657. The subject site is currently improved by an existing undefined use (cattle holding yards) (pre-quarantine export facility) (the facility) known as the Reid River Export Depot. The existing facility allows for short-term maintenance feeding of cattle for live export. The maximum head of cattle on site at any one time is 17,005 head.

The applicant is seeking pre-lodgement advice regarding further development of the subject site, requiring a material change of use (MCU) to establish an intensive animal industry and an environmentally relevant activity (ERA) for an intensive animal feeding lot (more than 1,000 but less than 10,000 standard cattle units) ("proposal").
The proposal will allow opportunity for extended production feeding on a higher energy ration to increase the weight of the cattle and to achieve minimum live export weight requirements before sale to live exporters or slaughter.

Far North Queensland regional office
Ground Floor, Cnr Grafton and Hartley Street, Cairns
PO Box 2358, Cairns QLD 4870

The number of cattle on site at any one time is not proposed to be increased and will remain at a total of 17,005 head at any one time. Of those, a maximum of 2,900 head of cattle at one time will utilise the proposed feed lot.

It is understood that the combined existing and proposed head of cattle within the facility per year will not exceed 200,000 (as previously considered and allowed for as part of the current approval (SARA Ref: 1805-5309 SRA).

Details of the proposal are as follows:

- provision of expanded effluent irrigation area;
- use of existing holding pen in existing facility for the 2,900 feed lot cattle;
- no additional built infrastructure including pen areas are proposed to be constructed;
- vehicles of equivalent size and capacity to the current approval;
- no additional traffic shall be generated;
- no new accesses are proposed; and
- no staging.

Supporting information

The advice in this letter is based on the following documentation that was submitted with the pre-lodgement request or tabled at the pre-lodgement meeting.

Drawing/report title	**Prepared by**	**Date**
Pre-lodgement request	RDC Engineers Pty Ltd	3 March 2022
Pre-lodgement advice request – SARA proposed development – layout plan	RDC Engineers Pty Ltd	3 March 2022

Pre-lodgement meeting record

Meeting date	11 March 2022
Meeting location	Microsoft Teams
Meeting chair	Catherine Hobbs
Meeting attendees	Refer to **Attachment 1**
Meeting notes	

The main issues for discussion

- Gauge SARA's support for a proposed MCU –Intensive animal industry and an ERA for an intensive animal feeding lot (more than 1,000 but less than 10,000 standard cattle units).
- Confirm: referral triggers, application fees and supporting materials.
- Applicant identified that the impacts on state-controlled road lessened with proposed addition of a feedlot.
- Applicant queried ability to apply for a refund of SARA application fees for proposed use.

Applicant comments

- Identified details of previous approval.
- Proposal: MCU – Undefined use (cattle holding yards) approved in 2018.
- Total head of cattle is not proposed to increase as part of the proposal. Of the approved 17,005 head of cattle, approximately 3,000 head of cattle at any one time will be included within the proposed feedlot portion. The ratio would be a sliding scale and will regularly change, but never exceeding the 17,005 head of cattle.

- Purpose of the proposed feedlot is to be able to utilise the existing infrastructure and hold the cattle for longer periods of time, fatten them up (more than just maintenance feeding) before being exported.
- No new infrastructure or building works proposed.
- No change to the development footprint (other than the increased irrigation area).
- No change to the existing access.
- Cattle will be on site for longer periods – approximately 30-80 days (possibly longer).
- The proposed development will not:
    - increase the total approved holding capacity of 17,005 head of cattle;
    - increase the total approved annual through-put capacity of 200,000 head of cattle;
    - increase the total number of hauling vehicles; and
    - increase/change the size of hauling vehicles (type 2 road train).

Department of Transport and Main Roads (DTMR) comments

- The existing cattle holding yard was approved in 2018 and was designed to have a holding capacity of 17,005 head of cattle with an annual through-put of 200,000 head of cattle.
- The proposal will increase the cattle on-site holding time which will reduce the traffic impact of state-controlled road.
- The existing constructed access is designed to accommodate the cattle holding yard and therefore can accommodate reduced traffic.
- No further upgrade is required.
- DTMR have no objection or any further comments to the proposed development.
- DTMR confirmed that for the purpose of the development application report and to address the relevant State Development Assessment Provisions (SDAP), an overarching statement is required identifying that the proposed development will operate within an existing facility, include the same vehicle type, maintain or reduce vehicle numbers and have no increases to the approved number of vehicles.

Department of Resources (DoR) comments

- Acknowledged no additional built infrastructure occurring.
- No referral for vegetation matters.
- No need for a new s22A under the *Vegetation Management Act 1994* as clearing has already occurred in accordance with associated approval.
- SARA suggested that the applicant consider how the conditions of the approval will relate to the new application as part of a possible ‘other change’ application.

Department of Agriculture and Fisheries (DAF) comments

- Key requirements to achieve:
    - Separation to the neighbours – distance of separation determines the total number of cattle and location of feedlot proposal within the existing development footprint.
    - The current separation from the existing house opposite the river is approximately 730m.
- Similar scenario in Calcium therefore important to ensure consistency. Achieving the minimum required distance (additional 50-60m) may also allow opportunity to increase the proposed head of cattle numbers.
- With a minimum of 650m from the closest receptor, the applicant could feed the animals anywhere within the existing facility.
- Existing drainage area (ponds) appear to be working well and twice the size as what they need to be.

SARA comments:

- Type of application (new development application or other change) should be determined by the applicant.
- Not a minor change application.
- Ensure the applicant is applying for the maximum number of head of cattle that they are wanting to be included within the proposed feedlot, noting that the total number of cattle are constrained by sensitive receptors.
- In response to the applicant's question, there will be an opportunity for the applicant to apply for a partial refund of SARA fees for both state-controlled roads and vegetation (if applicable).

Pre-lodgement advice

The following advice outlines the aspects of the proposal that are of relevance to SARA.

SARA's jurisdiction and fees	
1.	SARA would be the referral agency for the proposed application. The application will require referral to SARA under the following provisions of the Planning Regulation 2017: • Schedule 10, Part 9, Division 4, Subdivision 1, Table 1, Item 1 – aspect of development stated in schedule 20 (Development impacting on State transport infrastructure and thresholds), MCU – Item 20 Intensive Animal Industry (Total facility capacity of (a) for cattle – 2,000 head) This will require a fee of **$1,714.00** in accordance with Schedule 10, Part 9, Division 4, Subdivision 1, Table 1, Item 8(a)(ii). • Schedule 10, Part 9, Division 4, Subdivision 2, Table 4, Item 1 (a) and (c) – material change of use of premises near a State transport corridor This will require a fee of: - **$1,714.00** in accordance with Schedule 10, Part 9, Division 4, Subdivision 2, Table 4, Item 8(b)(ii); and - **$1,714.00** in accordance with Schedule 10, Part 9, Division 4, Subdivision 2, Table 4, Item 8(c)(ii). • Schedule 10, Part 5, Division 4, Table 2, Item 1 – Non-devolved environmentally relevant activities (ERA 2 Intensive Animal Feedlotting (1b) – more than 1,000 but not more than 10,000 – AES 28) This will require a fee of **$3,430.00** in accordance with Schedule 10, Part 5, Division 3, Table 1, Item 5(a). • **Note –** The Department of Resources (DoR) have confirmed that it has no requirements relating to the proposal regarding clearing native vegetation. The least concern category B area shown on the vegetation management support map that runs east-west across the development area has previously been cleared in accordance with prior approval (1805-5309 SRA) and thus will not trigger assessment. Please note that the assessment fees are subject to change. It is recommended you check Schedule 10 of the Planning Regulation 2017 or contact SARA prior to the lodgement of your application, to confirm the assessment fees applicable at the time.
State Development Assessment Provisions	
2.	The current SDAP will be used in assessing the application. Based on the location and scale of the proposal, the following State codes are relevant: • State code 6: Protection of state transport networks • State code 1: Development in a State-controlled road environment • State code 22: Environmentally relevant activities Please note, SARA recently released SDAP version 3.0 which took effect on 18 February 2022. SDAP 3.0 and the SDAP response templates are available at

	https://planning.statedevelopment.qld.gov.au/planning-framework/state-assessment-and-referral-agency/state-development-assessment-provisions-sdap
Development impacting on state transport infrastructure and thresholds	
3.	The proposal triggers referral agency assessment under Schedule 10, Part 9, Division 4, Subdivision 1, Table 1, Item 1. ***Assessment benchmarks*** The proposal will be assessed against the current State code 6: Protection of state transport networks. According to the pre-lodgement material provided, vehicle access is intended to be via Flinders Highway by the existing access location to the west. DTMR has confirmed in the pre-lodgement meeting held on 11 March 2022, that an overall statement addressing SDAP State code 6: protection of state transport networks to be sufficient where there has been: • no increase to the total approved holding capacity; • no increase to the annual through-put; and • no increase to the number or size of haulage vehicles.
Development in a State-controlled road environment	
4.	The proposal triggers referral agency assessment under Schedule 10, Part 9, Division 4, Subdivision 2, Table 4, Item 1 (a) and (c). ***Assessment benchmarks*** The proposal will be assessed against the current State code 1: Development in a State-controlled road environment. According to the pre-lodgement material given, vehicle access is intended to be provided via Flinders Highway by the existing access location to the west. DTMR has confirmed in the pre-lodgement meeting held on 11 March 2022, that an overall statement addressing SDAP State code 1: development in a State-controlled road environment to be sufficient where there has been: • no increase to the total approved holding capacity; • no increase to the annual through-put; and • no increase to the number or size of haulage vehicles.
Non-devolved environmentally relevant activities	
5.	The proposal triggers referral agency assessment under Schedule 10, Part 5, Division 4, Table 2, Item 1. The proposal is considered a concurrence ERA under Schedule 2, Part 1, Section 2, Item 1(b) of the Environmental Protection Regulation 2019: *(1) Keeping the following number of standard cattle units in a feedlot-* *(b) more than 1,000 but not more than 10,000.* The operation of the proposal has the potential to impact on a range of environmental values. The DAF have identified the following key environmental risks specific to this site including: • The nearest sensitive receptor (Lot 5 on RP745363) to the proposal is located approximately 750m to the north, north-east of the subject site. The second closest sensitive receptor (Lot 4 on N25591) is located approximately 920m to the north-west of

	the subject site. There are also several other sensitive receptors located within 1,500m of the facility. There is a risk that sensitive receptors may experience environmental nuisance caused by the proposed feedlot activity in the form of odour, noise and dust. The applicant should address these receptors against the relevant environmental values. • Groundwater vulnerability mapping of the proposed feedlot locality on Lot 600 on SP310657 indicates moderate groundwater vulnerability. A bore located approximately 300m west from the proposed development indicates the strata comprises of gravelly clay soil, clay, silty clay, silty sandy clay, sandy silt. It is understood that that the existing facility has pre-existing infrastructure to support the proposed development. It is recommended that information regarding the clay liner characteristics and permeability within the proposal is provided to mitigate and/or minimise risks to groundwaters. ***Assessment benchmarks*** The development application will be assessed against the current State code 22: Environmentally relevant activity.
Lodgement material	
6.	It is recommended that the following information is submitted when lodging the application to SARA: • A copy of completed DA form 1 and planning report or supporting information • A copy of completed Development application Form 1 – Application details – attachment for an application for an environmental authority (ESR/2015/1791) • Landowner's consent • A response to the relevant sections of SDAP: o SDAP Code 6: Protection of State transport networks o SDAP Code 1: Development in a State-controlled road environment o SDAP Code 22: Environmentally relevant activity • Description of the land intended to be developed, including the property address, tenure and real property description of the land. • Description of the development methodology, including: o any operational works occurring on site and expected timeframes o staging of the development if applicable o measures employed to minimise impacts to the local receiving environment • Detailed and appropriately scaled drawings and/or plans which clearly identify the location of proposed development, including: o location of all built structures, or structures to be modified or demolished, as a result of the proposed development o adjacent riverbanks, walls, sandbanks, structures, the limit of vegetation, and/or other principal features of the immediate area o the location and setting out details for cross-sections o any other information required to accurately define the area and to allow the site to be readily identified from the plan. • Relevant plans as per the DA Forms guide. • For an application for an **environmental authority**, a feedlot site-based environmental management system should be submitted that describes all management practices that is in accordance with section 3.5 of the National Beef Cattle Feedlot Environmental Code of Practice, and include : o a description of the environmental values likely to be affected by each relevant activity; o details of any emissions or releases likely to be generated by each relevant activity;

- a description of the risk and likely magnitude of impacts on the environmental values;
- details of the management practices proposed to be implemented to prevent or minimise adverse impacts; and
- details of how the land the subject of the application will be rehabilitated after the relevant activity ceases.

With consideration of the above points, the following should be submitted as part of the application:

(a) Surface waters –

i. provide a detailed surveyed site plan that shows that the proposed feedlot controlled drainage area (CDA) is designed to an acceptable hydrological standard that prevents unauthorised discharges of runoff from the feedlot CDA. This plan also should have the CDA broken down into pen area, hard and soft catchments in accordance with the National Guidelines for Beef Cattle Feedlots in Australia.
Note: For the purpose of the ERA component of the application, plans should show only the final proposed feedlot footprint and no aerial imagery in the background. Ideally all plans should be drawn by an appropriately qualified RPEQ accredited Engineer)

ii. provide a pen detail plan showing the typical pen dimensions, down and cross-slope in the pens.

iii. provide typical cross-sectional plans for the proposed feedlot CDA including the feedlot pens, drains, cattle lanes, manure stockpile area, sedimentation basins and effluent holding ponds. Details of the control weir on all sedimentation basins should be included to show how the weir is sized in accordance with the National Guidelines for Beef Cattle Feedlots in Australia.

iv. provide cut and fill diagrams for the feedlot CDA and associated sedimentation basins and effluent holding ponds.
Note: The proposed feedlot effluent holding ponds and sedimentation structures must be sized and designed in accordance with the National Guidelines for Beef Cattle Feedlots in Australia including the installation of appropriately designed weirs.

v. provide a properly scaled plan indicating the location and extent of all feedlot waste utilisation areas including the size of the areas and type of waste being applied (i.e. effluent or manure). This plan should also consider and describe any environmental values, including but not limited to surface waters, vegetation and wetlands, which may be at risk of harm due to proximity to utilisation areas.

vi. provide specific details for management of the feedlot waste utilisation areas in the form of a waste management plan including a description of the soils, crops grown and expected yields, method of application and application rate for effluent and manure. The waste management plan should also include visual and other triggers for implementing irrigation to de water the effluent ponds to minimise the risk of effluent spills from the effluent holding ponds and sedimentation basins causing environmental harm to surface waters.

(b) Groundwater –

i. provide details of the measures to be implemented in the design, construction and management phases of the proposed feedlot that will prevent or minimise the risk of leachate or percolate from the feedlot CDA contaminating ground water in accord with the National Guidelines for Beef Cattle Feedlots in Australia and National Beef Cattle Feedlot Environmental Code of Practice.

	(c) Community amenity – i. identify the proposed total capacity (Standard cattle units (SCU)) in the feedlot and the proposed stocking density (m2/SCU) in the feedlot. ii. provide a plan that shows the location of the feedlot CDA in relation to the property boundaries and all nearby sensitive receptors to show compliance with the separation distance guidelines described in the National Guidelines for Beef Cattle Feedlots in Australia. iii. provide a detailed description of all management practices that will be employed to prevent or minimise the risk of environmental harm to community amenity in the relevant feedlot site-based environmental management system as described in point 3 below. iv. provide a description of how the proposed activity location meets the separation distance guidelines described in Appendix B of the National Guidelines for Beef Cattle Feedlots in Australia 3rd Edition 2012, including the cumulative impact considering there are other feedlots in the area. (d) Ecology – i. provide details of the measures to be implemented in the design, construction and management phases of the proposed feedlot. Include measures that will prevent or minimise the risk of adverse impacts on native flora, fauna and ecological communities, including mapped regulated vegetation and wetlands. Provide the measures in the relevant feedlot site-based environmental management system as described in point 4 below. • For an application for an **environmental authority**, it is recommended that supporting information be provided addressing the following guidance material: (a) guideline: application requirements for activities with impacts to air, Version 4.00; (b) guideline: odour impact assessment from Developments Department of Environment and Heritage Protection, April 2013; (c) guideline: application requirements for activities with noise impacts, Version 3.00; (d) guideline: application requirements for activities with waste impacts, Version 4.00; (e) guideline: application requirements for activities with impacts to land, Version 4.00; (f) guideline: application requirements for activities with impacts to water, Version 4.00; (g) guideline: National Guidelines for Beef Cattle Feedlots in Australia, 3rd edition; (h) code: National Beef Cattle Feedlot Environmental Code of Practice, 2nd edition; (i) MLA beef-cattle-feedlots---design-and-construction-; and (j) MLA beef-cattle-feedlots---waste-management-and-utilisation. Note: All plans/drawings should be scaled and able to be read at A3 size, include a title, date and numbering suitable to identify the plan and should be mapped to GD94 projection.
Additional information – Feedlot assessment spreadsheet (not within SARA's jurisdiction)	
7.	It is recommended that the applicant contact Department of Agriculture and Fisheries (livestockregulator@daf.qld.gov.au) to obtain a copy of the feedlot assessment spreadsheet (Version 8.6) for use when drafting the development application.

This advice outlines aspects of the proposed development that are relevant to SARA's jurisdiction.
This advice is provided in good faith and is:

- based on the material and information provided to SARA

- current at the time of issue
- not applicable if the proposal is changed from that which formed the basis of this advice.

The advice in this letter does not constitute an approval or an endorsement that SARA supports the development proposal. Additional information may be required to allow SARA to properly assess the development proposal after a formal application has been lodged.

For further information please contact Mary McCarthy, Senior Planning Officer, on 4037 3222 or via email NQSARA@dsdilgp.qld.gov.au who will be pleased to assist.

Yours sincerely

Graeme Kenna
Manager (Planning)

enc **Attachment 1** – Pre-lodgement meeting attendance record

Development details	
Proposal:	MCU - Intensive animal industry and an ERA 2(1b) for an intensive animal feeding lot (more than 1,000 but less than 10,000 standard cattle units)
Street address:	5293 Flinders Highway, Reid River QLD 4816
Real property description:	Lot 1 on RP743456, Lot 2 on RP743456 and Lot 600 on SP310657
SARA role:	Referral agency
Assessment Manager:	Charters Towers Regional Council
Assessment criteria:	State Development Assessment Provisions (SDAP): • State code 6: Protection of state transport networks • State code 1: Development in a State-controlled road environment • SDAP Code 22: Environmentally relevant activity
Existing use:	Reid River Export Depot
Relevant site history:	(1805-5309 SRA) Existing Development Permit for a material change of use – undefined use (cattle holding yards) (pre-quarantine export facility)

Attachment 1 — Pre-lodgement meeting attendance record

Meeting attendees:

Name	Position	Organisation
Paul Heil	Applicant	Reid River Export
Kristy Heil	Applicant	Reid River Export
Kate Andison	Applicant	Reid River Export
Rod Davis	Director	RDC Engineers (C/- Reid River Export Depot)
Luke Boucher	Livestock Regulator	DAF
Aaron Sequeira	Livestock Regulator	DAF
Monique Pierce	Natural Resource Management Officer	DoR
Helena Z Xu	A/Senior Town Planner	DTMR
Lisa Brooks	Senior Town Planner	DTMR
Mary McCarthy	Senior Planning Officer	SARA
Catherine Hobbs	Principal Planning Officer	SARA

Appendix Q – Site Based Environmental Management Plan

Site Based Environmental Management Plan

Reid River Beef Cattle Feedlot

Property Identification Code: QHTG0093

"Runway Station"
5291 Flinders Highway
REID RIVER QLD 4816

Reid River Export Depot Pty Ltd
as trustee for the Reid River Unit Trust
PO Box 2499
IDALIA QLD 4811

[June 2022]

RDC ENGINEERS
AGRICULTURAL
ENVIRONMENTAL
PROJECT MANAGEMENT

PO Box 1223
TOOWOOMBA QLD 4350

rdcengineers.com.au

DOCUMENT INFORMATION RECORD

Project details

Client:	Reid River Export Depot Pty Ltd (ACN 623 197 124) as trustee for the Reid River Unit Trust (ABN 26 336 422 895)
Project:	Reid River beef cattle feedlot development
Project No:	D1-130

Document control

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Principal author:	Rod Davis	**Position:**	Director
Signature	R.J. Davis	**Date:**	04/06/2022
Reviewed by:	Rod Davis	**Position:**	Director
Signature	R.J. Davis	**Date:**	04/06/2022
Approved by:	Rod Davis	**Position:**	Director
	R.J. Davis	**Date:**	04/06/2022

Revision history

Version	Issue date	Reason for issue	Author	Reviewed	Approved
V1R1	29/05/2022	Draft for client review	Rod Davis	Rod Davis	Rod Davis
V1R2	04/06/2022	Final for lodgement to CTRC/SARA	Rod Davis	Rod Davis	Rod Davis

Distribution

Version	Recipient	Lodgement	Copies
V1R1	Reid River Export Depot Pty Ltd as trustee	Electronic	Soft
V1R2	Reid River Export Depot Pty Ltd as trustee/CTRC/SARA	Electronic	Soft

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Definitions

Term or Acronym	Meaning
AR	Annual Return
ANZECC	The Australian and New Zealand Environment Conservation Council
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
AS	Australian Standard
AWS	Automatic Weather Station
CTRC	Charters Towers Regional Council
Compliance audit	Verification of how implementation is proceeding with respect to the Site Based Environmental Management Plan (SBEMP) (which incorporates the relevant approval conditions).
DoE	Commonwealth Department of the Environment
DAF	Queensland Department of Agriculture and Fisheries
DES	Queensland Department of Environment and Science
DNRME	Queensland Department of Environment Natural Resources Mines and Energy
DRDMW	Queensland Department of Regional Development Manufacturing and Water
DTMR	Queensland Department of Transport and Main Roads.
EA	Environmental Authority
Effluent	Effluent means: Stormwater runoff from within the controlled drainage area that has a high organic matter and therefore a high pollution potential. Effluent is captured and temporarily stored in the holding ponds pending application to crops as a nutrient source.
Environmental aspect	Defined by AS/NZS ISO 14001:2015 as an element of an organisation's activities, products or services that can interact with the environment.
Environmental impact	Defined by AS/NZS ISO 14001:2015 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects.
Environmental incident	An unexpected event that is causing or threatening serious or material environmental harm and requires some action to minimise the impact or restore the environment.
Environmental harm	For the purposes of the EP Act, environmental harm is any adverse effect, or potential adverse effect (whether temporary or permanent and of whatever magnitude, duration or frequency) on an environmental value, and includes environmental nuisance.
Environmental nuisance	Environmental nuisance is unreasonable interference or likely interference with an environmental value caused by – (a) aerosols, fumes, light, noise, odour, particles or smoke; or (b) an unhealthy, offensive or unsightly condition because of contamination; or

	(c) another way prescribed by regulation.
EMS	Environmental Management System
EPBC	Environment Protection and Biodiversity Conservation Act
Environmental policy	Statement by an organisation of its intention and principles for environmental performance.
EP Act	Environmental Protection Act 1994.
Environmental Authority (EA)	Authority to undertake an environmentally relevant activity (ERA) under the Environmental Protection Act 1994.
ERA	Environmentally relevant activity (ERA). ERAs are industrial, resource or intensive agricultural activities with the potential to release contaminants into the environment.
ES	Environmental Specialist - A suitably qualified and experienced person independent of Development personnel engaged as required duration operation. The principal point of specialist advice in relation to all questions and complaints concerning environmental performance.
ESC	Erosion and Sediment Control
ESCP	Erosion and Sediment Control Plan
Environmental target	Defined by AS/NZS ISO 14001:2015 as a detailed performance requirement, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.
GHG	Greenhouse gases
Groundwater	Subsurface water contained within the saturated zone
GDE's	Groundwater Dependent Ecosystems
IPM	Integrated pest management
ISO	International Organization for Standardization
Liquid waste	Effluent and domestic sewage. Stormwater run-off from the controlled drainage area is referred to as effluent. Effluent is high in nutrients because it has been in contact with manure and has the potential to pollute surface water and groundwater. Effluent is valued as a source of nutrients for fertilising crops.
Manure	The solid waste produced by cattle. In feedlots this is the material that collects on the surface of the pen and principally consists of faeces and urine excreted by the cattle.
Material environmental harm	Material environmental harm is environmental harm (other than environmental nuisance) – (a) that is not trivial or negligible in nature, extent or context; or (b) that causes actual or potential loss or damage to property of an amount of, or amounts totalling, more than $5,000 but less than $50,000; or (c) that results in costs of more than $5,000 but less than $50,000 being incurred in taking appropriate action to – (i) prevent or minimise the harm; and (ii) rehabilitate or restore the environment to its condition before the harm.

NPI	National Pollutant Inventory (NPI) means the inventory established as a result of the National Environment Protection (National Pollutant Inventory) Measure
NFAS	National Feedlot Accreditation Scheme. An independently audited quality assurance scheme to develop a Quality System for beef cattle feedlots that impacts positively on product quality and acceptability and for which lot feeders maintain responsibility.
Non-compliance	Failure to comply with the requirements of the Development Consent or any applicable licence, permit or legal requirements.
Non-conformance	Failure to conform to the requirements of Development's system documentation including this SBEMP or supporting documentation.
Riparian Zone	The vegetated corridor along streams and rivers.
Sensitive use	In this SBEMP, sensitive use means – (a) use for residential purposes; or (b) use of a kind prescribed by regulation.
SBEMP	Site Based Environmental Management Plan. A Site Based Environmental Management Plan is a site based plan that describes how the activity will be managed to prevent/minimise environmental harm
Serious environmental harm	Serious environmental harm is environmental harm (other than environmental nuisance) – (a) that is irreversible, of a high impact or widespread; or (b) caused to an area of high conservation value or special significance; or (c) that causes actual or potential loss or damage to property of an amount of, or amounts totalling, more than the threshold amount; or (d) that results in costs of more than the threshold amount being incurred in taking appropriate action to – (i) prevent or minimise the harm; and (ii) rehabilitate or restore the environment to its condition before the harm.
Solid waste	In this SBEMP, solid waste is defined as: Manure – the faeces and urine excreted by beef cattle. Manure forms the largest component of solid waste. Waste ration – Feed ration that is spilled or spoiled and that is unpalatable for cattle. Composted mortalities – Lot fed cattle are vulnerable to sickness and disease. Whilst the Development has a high animal health maintenance and welfare program, periodically cattle deaths are experienced. Mortalities are anaerobically composted. Holding pond sludge – settled solids in holding pond removed to restore operational efficiency.
SWL	Standing water level
Waste	Waste includes anything, other than a resource approved under the Waste Reduction Act, chapter 8, that is - (a) left over, or an unwanted by-product, from an industrial, commercial, domestic or other activity; or

	(b) surplus to the industrial, commercial, domestic or other activity generating the waste.
Waste utilisation area	An area of land to which effluent or solid waste is applied.
Stakeholders	Primary stakeholder groups include the Development's workforce and customers, and the broader community. Other important stakeholders include regulatory bodies, suppliers, industry organisations and peak bodies and environmental groups.
Water Act	Water Act 2000

Preface

This is a Site Based Environmental Management Plan (SBEMP) for the operation of Reid River beef cattle feedlot (the Development) located at Reid River near Woodstock (QLD), which is owned and operated by Reid River Export Depot Pty Ltd.

This document is designed to ensure the Development continually achieves effective environmental management to prevent/minimise environmental harm. It aims to minimise impacts of the Development on the quality of groundwater, surface water and ecosystems, prevent the degradation of soils to which liquid waste (e.g. effluent) and solid waste (e.g. manure, carcass compost, holding pond sludge) may be applied and to minimise any impacts on the amenity of neighbours and neighbouring land.

The Development shall comply with industry policies and applicable legislation and regulation. The Development's owner and management are committed to continual improvement in environmental performance.

1 Introduction

1.1 Background

"Runway Station" is located some approximately 26 km by road northeast of Mingela and 60 km south of Townsville. Reid River Export Depot Pty Ltd as trustee operate a pre-quarantine export facility for cattle destined for live export and a beef cattle intensive finishing enterprise on "Runway Station".

Reid River beef cattle feedlot (the Development) is a conventional outdoor beef feedlot with permanent production pen area with adjoining feed alleys in which beef cattle are housed in the open air and fed scientifically formulated rations and water.

The Development is owned and operated by Reid River Export Depot Pty Ltd and licensed under the Planning Act (2016) for:

- ERA 2 - Intensive animal feedlotting – 1(b) – more than 1,000 but less than 10,000 standard cattle units.

Appendix A2 – Approvals, permits and licences provides the approval conditions for the Development.

The Development is located on 3 cadastral portions and has frontage to the Flinders Highway and the Reid River as shown in Figure 1. The Development is located in the Charters Towers Regional Council area.

The Development includes production pens for beef cattle, cattle handling facilities, feed storage and preparation facilities, two (2) controlled drainage areas and site office. Effluent and solid waste is sustainably utilised on-site when available and applied to land within the approved waste utilisation areas.

DATE PLOTTED: 4 June 2022 BY: - RDC Engineers PTY LTD

LEGEND

SUBJECT LAND BOUNDARY

NOTES

1. THIS MAP IS BASED ON DIGITAL GIS DATA FROM THE STATE OF QUEENSLAND (DEPARTMENT OF RESOURCES (DoR)) 2021 - QUEENSLAND SPATIAL CATALOGUE.
2. CADASTRAL INFORMATION BASED ON THE STATE OF QUEENSLAND (DoR) DIGITAL CADASTRAL DATABASE (DCDB) 2021, PROVIDED BY THE QUEENSLAND SPATIAL CATALOGUE AND ACCURACY IS LIMITED.
3. TOPOGRAPHIC PLAN EXTRACTED FROM QTOPO METADATA FEBRUARY 2022 AND ACCURACY IS LIMITED.
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RDC ENGINEERS
AGRICULTURAL ENVIRONMENTAL PROJECT MANAGEMENT
ABN 37 627 163 071
PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 829 203
E: info@rdcengineers.com.au

REV.	DATE	REVISION DESCRIPTION	DRAWN	CHECK	APPROVED
A	29/05/22	DRAFT ISSUE TO CLIENT	RJD	RJD	RJD
B	04/06/22	FINAL ISSUE FOR LODGEMENT TO CTRC	RJD	RJD	RJD

SCALE	1:440,000 (A3)
DRAWN	RJD
DATE	04/06/2022
CHECKED	RJD
DATE	04/06/2022
APPROVED	RJD
DATE	04/06/2022

CLIENT: REID RIVER EXPORT DEPOT PTY LTD AS TRUSTEE
PROJECT: REID RIVER BEEF CATTLE FEEDLOT
TITLE: SITE BASED ENVIRONMENTAL MANAGEMENT PLAN DEVELOPMENT - LOCATION PLAN

REPORT REFERENCE	SUPPLIED DRAWING NUMBER		DRAWING NUMBER	REV.
FIGURE 1		A3	D1-130-500-01	B

FILE PATH: C:\RDC Engineers\RDCE - Projects\01-139 Reid River Feedlot\05 - ACAD MasterPlan\05.1 Drawings - CURRENT FILE NAME: D1-130-00-MASTERPLAN-220228 v8.dwg

2 Proprietor and contact details

The Development is owned by Reid River Export Depot Pty Ltd (ACN 623 197 124) as trustee for the Reid River Unit Trust (ABN 26 336 422 895) and markets beef under the Reid River beef brand.

The contact details for Reid River Export Depot Pty Ltd are provided in Table 1.

Table 1 – Proprietor and contact details

Proprietor Entity:	Reid River Export Depot Pty Ltd (ACN 623 197 124) as trustee
Physical Address:	5291 Flinders Highway, Reid River, QLD 4816
Postal Address:	PO Box 2499, IDALIA, QLD 4811
Contact Person:	Paul Heil
Phone:	TBA
Facsimile:	TBA
Operator Entity:	Reid River Export Depot Pty Ltd
Contact Person:	Feedlot Manager
Phone:	TBA
Email:	TBA

2.1 Purpose and scope

Reid River Export Depot Pty Ltd have developed this Site Based Environmental Management Plan (SBEMP) to describe the Environmental Management System (EMS) for the operational phase of the Development. A detailed description of the Development is provided in section 3.

The SBEMP is a condition of the Development's environmental authority and will provide the systems and processes to ensure that Reid River Export Depot Pty Ltd as trustee establish and maintain appropriate controls to manage environmental impacts during operation of the Development.

The SBEMP has been prepared in accordance with the DEHP guideline Activity management plans ESR/2017/3561 Version 2 (DEHP, 2017).

The SBEMP describes how Reid River Export Depot Pty Ltd proposes to identify and manage the environmental aspects and potential impacts of the Development during its operational phase up to the maximum 3,075 SCUs capacity, in accordance with applicable legislative requirements as described further in Appendix A1 – Legal and other requirements.

This plan will be utilised for all aspects of the Development's operation. Effective implementation of this SBEMP will ensure that the Development meets the requirements of the conditions of approval and all other relevant regulatory and policy requirements in a systematic manner with continual improvement in performance.

Where there is any conflict between the provisions of this SBEMP and any statutory requirements (i.e. licences, permits, conditions of approval and relevant laws etc), the statutory requirements are to take precedence.

This SBEMP meets the requirements of the conditions of approval for a Site Based Environmental Management Plan for the operational phase of the Development. In accordance with the conditions of approval, this SBEMP provides the framework and overarching environmental management information relevant to the operation of the Development.

2.2 Objectives

This SBEMP provides a framework to ensure that any impacts of the activities conducted on-site during operation are managed, treated, monitored, reported and, if necessary, mitigated.

The SBEMP aims to achieve the following:

- Provide evidence of practical and achievable plans for the management of Development activities.
- To ensure that legislative and environmental requirements are complied with by producing an integrated planning framework for comprehensive monitoring and control of operational environmental impacts. Specific commitments on strategies and design standards to be employed are also given.
- A framework for regulatory authorities and the proprietor to confirm compliance with policies and conditions.
- Evidence to the community that the operations are being managed in an environmentally acceptable manner.

The objectives of this SBEMP are to:

- Describe the Development in detail including activities to be undertaken and relative timing;
- Provide specific mitigation measures and controls that can be applied on-site to avoid or minimise negative environmental impacts;
- Provide specific mechanisms for compliance with applicable policies, approvals, licences, permits, consultation agreements and legislation;

- Define and implement all obligations contained in the conditions of approval (including all environmental obligations relevant to the Development and obligations in the Development's environmental management documents) and other legal and regulatory obligations relevant to the Development;
- Describe the environmental management related roles and responsibilities of personnel;
- Ensure that environmental policies, objectives and targets satisfy the requirements of approval authorities;
- Define processes for formulating, resourcing, and implementing an environmental management system for operation of the Development;
- State objectives and targets for issues that are important to the environmental performance of the Development;
- Define processes for auditing, recording and monitoring the performance and effectiveness of the environmental management system; and
- Outline a monitoring regime to check the adequacy of controls as they are implemented during operation.

3 Development description

The Development is located approximately 26 km by road northeast of Mingela and 60 km south of Townsville within the Charters Towers Regional Council area.

Figure 1 is a locality plan highlighting the Development site to roads and the nearby townships of Mingela, Woodstock and Townsville.

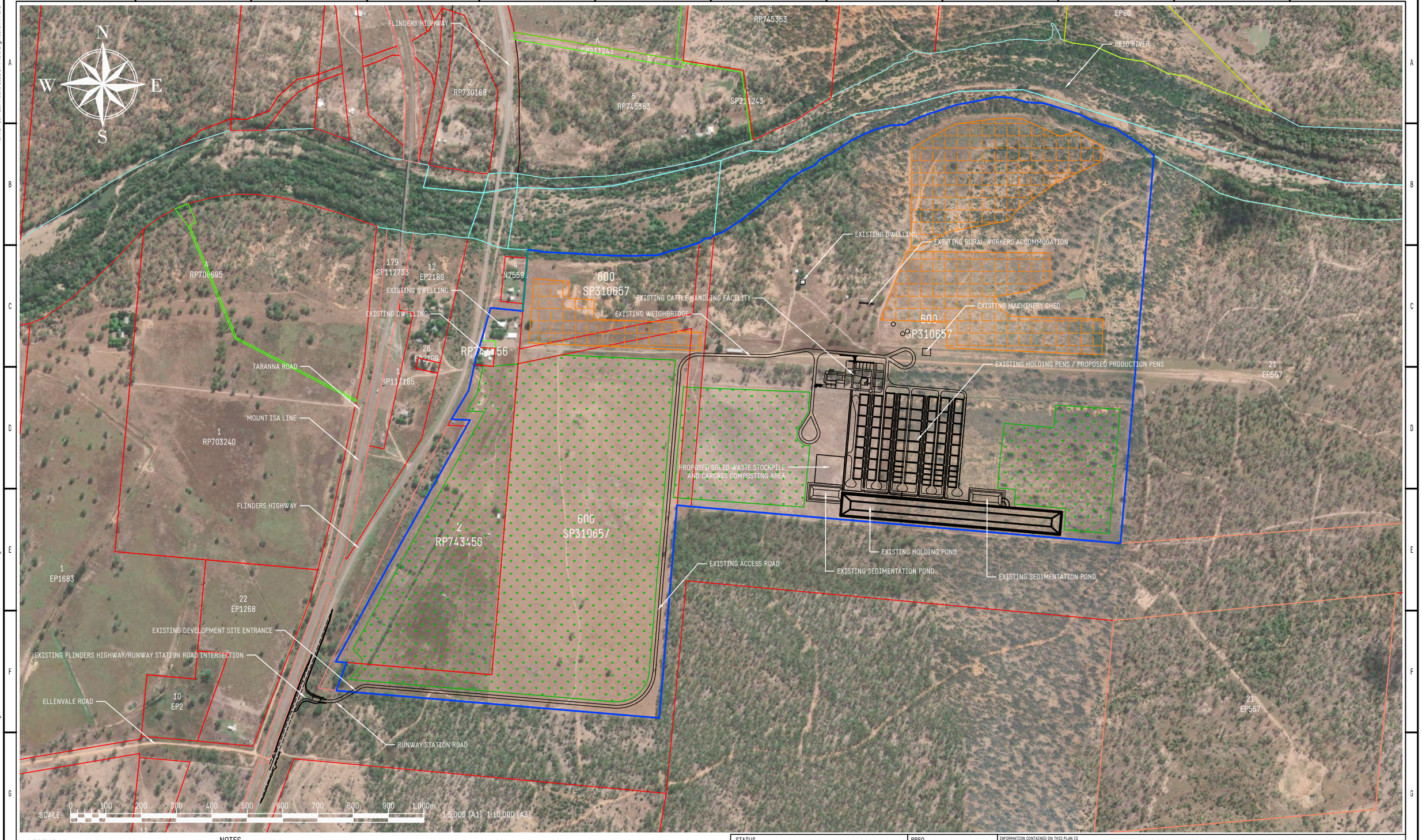
3.1 Overview

The Development is an intensive livestock enterprise which comprises a beef cattle feedlot with a pen capacity of 3,075 SCUs respectively. The Development occupies an area of approximately 130 ha and includes the following components in a functional configuration:

- Water supply/storage and reticulation infrastructure – A reliable and uninterrupted supply of clean water of the required volume to sustain operations is provided;
- Pens - Fenced areas are provided for accommodating production beef cattle (production pens) and sick animals (hospital pens);
- Livestock handling – Infrastructure and facilities are provided for cattle handling including unloading/loading and induction;
- Feed processing and commodity storage - Feed rations are prepared on-site in a facility, with associated commodity storage, handling and ration delivery infrastructure;
- Access and internal roads – All weather access to the Development site is provided;
- Administrative/maintenance infrastructure - A site office is provided for conducting management, maintenance and administrative functions at the Development;
- Controlled drainage areas – Rainfall runoff from areas such as pens, cattle handling facilities that has a high organic matter and therefore a high pollution potential is controlled within a system that collects and conveys this runoff to a sedimentation system and holding pond prior to environmentally sustainable utilisation;
- Drainage system - The controlled drainage area contains a system including catch drains, sedimentation system and holding pond for conveying stormwater, allow entrained sediment to 'settle out' and capture and storage of the stormwater from the controlled drainage areas until it can be sustainably utilised;
- Solid waste and effluent management areas – Solids wastes such as manure and mortalities are temporarily stockpiled and processed within the solid waste stockpile and carcass composting area prior to utilisation on-site or removed off-site. Effluent is stored in the holding pond pending application to the effluent utilisation area; and
- Effluent and solid waste utilisation areas (~115 ha) – Manure and mortalities compost are applied to an on-site utilisation area. Any solid wastes not utilised on-site are removed off-site. Effluent is applied to land via irrigation within a dedicated effluent utilisation area.

Figure 2 shows the layout of the Development on the subject land. The Development complex which includes beef cattle production pens, cattle handling, controlled drainage areas and drainage infrastructure elements occupies an area of approximately 17.1 ha as shown in Figure 3.

The Development has been designed, constructed and shall be managed as a Class 1 beef cattle feedlot. A Class One (1) beef cattle feedlot has highest standard of design, operation, maintenance, pad management and cleaning frequency and is defined in Skerman (2000) and MLA (2012a).



LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- EFFLUENT UTILISATION AREA (85Ha)
- SOLID WASTE UTILISATION AREA (30Ha)

NOTES

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RDC ENGINEERS
AGRICULTURAL
ENVIRONMENTAL
PROJECT MANAGEMENT
ABN 37 627 163 071
PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 629 203
E: info@rdcengineers.com.au

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DATE	04/06/2022
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DATE	04/06/2022
APPROVED	RJD
DATE	04/06/2022

CLIENT: REID RIVER EXPORT DEPOT PTY LTD AS TRUSTEE
PROJECT: REID RIVER BEEF CATTLE FEEDLOT
TITLE: SITE BASED ENVIRONMENTAL MANAGEMENT PLAN DEVELOPMENT - LAYOUT PLAN

REPORT REFERENCE	SUPPLIED DRAWING NUMBER	A3	DRAWING NUMBER	REV.
FIGURE 2			D1-130-500-02	B

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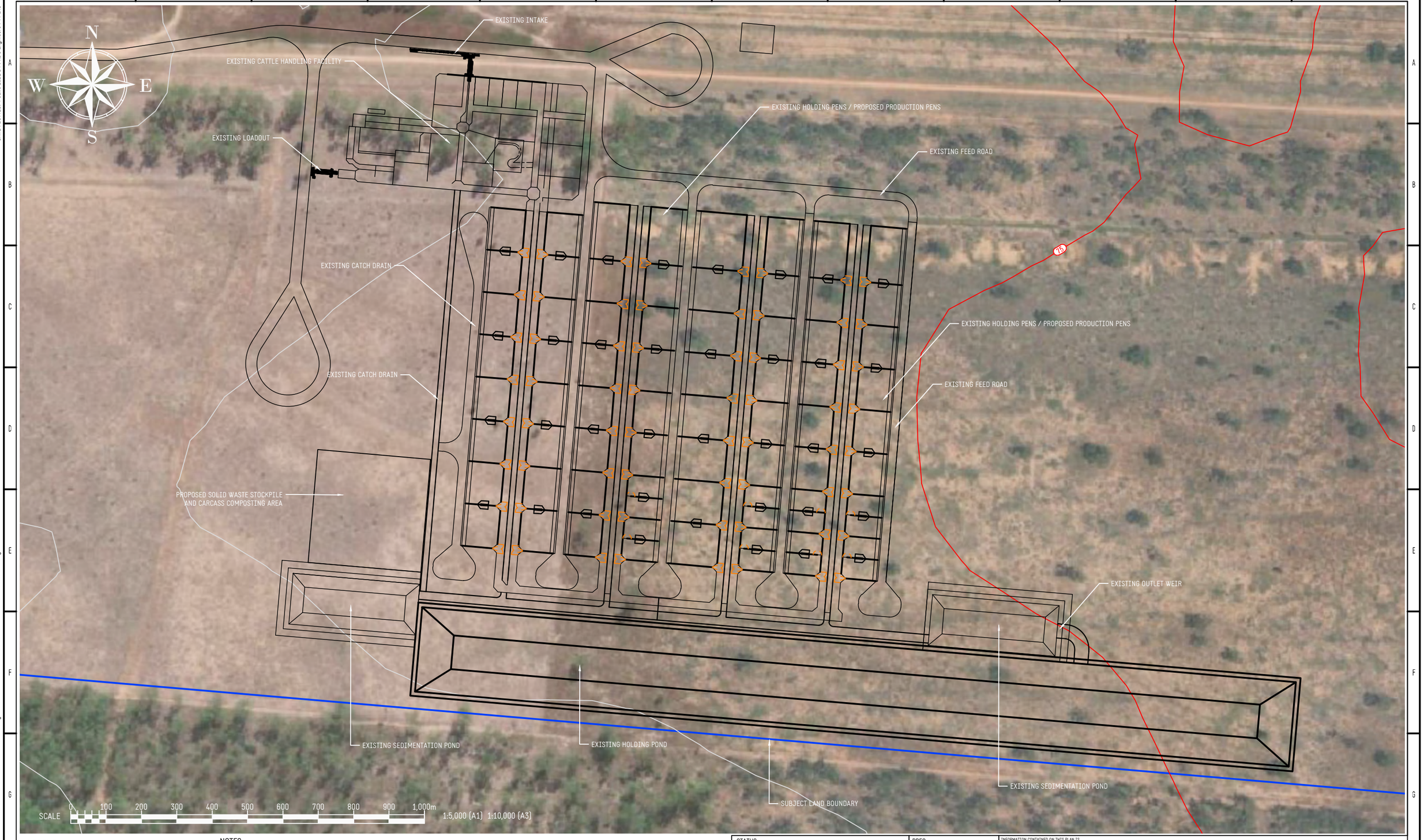

LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- CONTOUR - MAJOR (5m)
- CONTOUR - MINOR (1m)

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RDC ENGINEERS
AGRICULTURAL ENVIRONMENTAL PROJECT MANAGEMENT
ABN 37 627 163 071
PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 629 203
E: info@rdcengineers.com.au

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CLIENT: REID RIVER EXPORT DEPOT PTY LTD AS TRUSTEE
PROJECT: REID RIVER BEEF CATTLE FEEDLOT
TITLE: SITE BASED ENVIRONMENTAL MANAGEMENT PLAN DEVELOPMENT - COMPLEX LAYOUT PLAN

REPORT REFERENCE	SUPPLIED DRAWING NUMBER		DRAWING NUMBER	REV.
FIGURE 3		A3	D1-130-500-03	B

3.2 Site security and Traffic management

A livestock proof fence is installed around the perimeter of the property on which the Development in located and around the Development complex and effluent and solid waste utilisation areas.

The infrastructure of the Development is accessed from one entry/exit point and that is off the Flinders Highway. There is no other suitable operational access for heavy vehicles.

This access route is a dedicated safe and convenient access and is monitored/controlled to prevent entry of unauthorised persons/vehicles onto the site.

Access to the site is restricted to employee's, contractors, and pre-arranged visitors. All visitors must sign in and out of the site at the site office.

Once on-site, all incoming and outgoing vehicles; machinery and equipment are controlled by signage and or supervision.

All visitors to the Development must report to the site office and sign the Visitor Log (Appendix A7 – Environmental forms, checklists and registers) where their biosecurity risk (section 3.4) is assessed and recorded prior to accessing the Development. For visitors who visit the Development on a regular basis and are deemed by management to be a low risk will not need to be assessed prior to each visit (only monthly).

All site personnel must undergo site induction including the requirements of this SBEMP. For deliveries and visitors, a separate smaller induction shall be undertaken.

An access road connects to the site office which contains a car park facility for employees and visitors. A series of dedicated internal roads are provided around the site to give general access to the cattle handling facilities, the feed commodity storage infrastructure and the cattle pen area to facilitate feed, cattle and waste management.

Site roads have been designed to enable the safe movement of vehicles about the Development site for cattle, feed commodity and waste management movements and other maintenance vehicles as these will be required occasionally on the site.

3.3 Staging

The Development does not involve a staged construction. The Development has been designed with flexibility of use with the ability to increase or decrease the number of beef cattle on-site as market forces dictate at the time.

The approval may lapse if the first change of use does not happen within the period stated for that part of the approval or within 6 years after the approval starts to have effect unless that approval is extended by the Charters Towers Regional Council.

3.4 Biosecurity

Effective biosecurity is extremely important to the business operations of Reid River Export Depot Pty Ltd as trustee in mitigating the risk of the introduction or spread of diseases, pests and weeds. In relation to the Development, biosecurity measures protect the health of livestock, limit production losses and help maintain market access for beef.

Biosecurity standards, as identified in the Australian feedlot industry's biosecurity plan and supported by quality assurance programs such as the National Livestock Identification System (NLIS) and the Livestock Production Assurance (LPA) scheme, form an important component of quality assurance program for the Development.

Biosecurity best management practices are translated into operating procedures and work instructions within respective QA manuals.

A brief overview of the biosecurity measures in place to minimise the transfer of pests and pathogens during the operational phases of the Development is outlined in the following sections.

3.4.1 General requirements

The following measures are implemented to help minimise the likelihood of pests and disease entering and spreading within the Development during operation:

- Ensure all persons are aware of the potential for the introduction of diseases to the Development, including emergency diseases as defined in the AUSVETPLAN;
- Ensure all persons have an understanding of how pest and diseases are potentially introduced and can be spread in the following ways:
  - Livestock and commodities;
  - Visitors and employees;
  - Vehicles, equipment and machinery;
  - Other animals and wildlife (e.g. wild birds, rodents, domestic birds (poultry)); and
  - Solid waste and effluent.
- Ensure all incoming and outgoing vehicles; machinery and equipment are controlled by signage and or supervision;
- All personnel are vaccinated for zoonotic diseases where appropriate;
- All visitors to the Development must report to the site office and sign the Visitor Log (Appendix A7 – Environmental forms, checklists and registers) where their biosecurity risk is assessed and recorded prior to accessing the Development;
- Visitors and personnel are permitted access to various areas of the Development in accordance with their biosecurity risk level;
- Vehicle hygiene procedures are implemented to prevent the introduction of pest plants, spread of pest plants and disease; and

- All non-development vehicles, machinery and equipment are not permitted to enter existing cattle, commodity/feed areas or solid waste and effluent utilisation areas unless authorised to do so.

3.4.2 Additional requirements

In addition to general requirements further biosecurity measures are implemented during the operational phase of the Development as there is a higher biosecurity risk due to the higher exposure with livestock. These include:

- Ensure all staff involved in livestock handling are trained in the early detection of livestock diseases and are familiar with their responsibilities under the Emergency Animal Disease Action Plan;
- Ensure all animals are inspected on intake for illness and physical injuries;
- Check and observe cattle daily for health and well-being;
- Sick cattle are attended to as soon as discovered. A decision is made by a responsible and competent stock handler as to the solution, whether treatment or humane destruction is required;
- Ensure that all staff are aware that machinery or equipment are not routinely used for multiple activities such as handling stock feed, manure or dead stock; and
- In the event of a suspected disease outbreak, all staff must carry out the requirements of the Emergency Animal Disease Action Plan as detailed in the Contingency Planning Procedure of the Development's NFAS manual.

3.5 Animal husbandry and welfare

Reid River Export Depot Pty Ltd shall seek accreditation under the National Feedlot Accreditation Scheme. A NFAS manual shall be developed as part of the accreditation process.

Animal husbandry and welfare for beef cattle are translated into operating procedures and work instructions within the QA manual. The NFAS QA manual shall be the principal document in relation to animal husbandry and welfare for beef cattle associated with the Development.

A copy of the Development's QA manual is provided at the Development's site office.

3.6 Operational activities and sequence

When at full capacity, the Development shall be able to accommodate up to 3,075 SCUs of beef cattle on the site in a lot-fed system.

The following activities are undertaken during the operational phase of the Development.

3.6.1 Cattle management

The Development accommodates up to 3,075 SCUs of beef cattle at the design stocking density at any given time when fully constructed.

Beef cattle are transported to the Development at the entry weight of the target market, typically being about 350-450 kg liveweight. Loaded livestock transport vehicles enter the site via the Flinders Highway. Empty livestock vehicles then travel along the ingress route to exit the site.

Upon arrival at the Development, all beef cattle are counted to ensure that the number, breed and sex of cattle unloaded, balances with accompanying documentation. The cattle are inspected for signs of stress and general health and held in holding yards prior to induction. Any cattle with health problems are drafted-off and treated accordingly. All details of arrival cattle are recorded in the livestock herd management system.

After induction, beef cattle are allocated to a production pen ensuring that appropriate stocking densities are maintained, and pen allocation details are recorded in the livestock management system.

All sick or injured beef cattle are removed from the pens and taken to the cattle handling facility for treatment according to veterinary advice. If necessary, they are retained in the hospital pens. Once treated cattle recover, they are returned to their respective pen.

Low-stress handling techniques shall be employed to minimise stress, bruising and hide damage. Excessive noise and movement of beef cattle within the feeding period is avoided along with handling of cattle during adverse weather conditions (e.g. very hot and humid weather).

All livestock shall be provided with an adequate supply of feed and water.

For dispatch of beef cattle, empty livestock transport vehicles enter the site via the property entrance off the Flinders Highway. Loaded livestock vehicles then travel along the ingress route to exit the site. Type 2 Road Trains, Type 1 Road-Trains and B-double livestock vehicles are used to transport cattle to the processor.

Cattle are transported in a manner that protects their welfare, which maximises meat quality and which considers climatic conditions. Transport operators adhere to the Australian Standards and Guidelines for the Welfare of Animals — Land Transport of Livestock (AHA, 2012).

3.6.2 Feed management

The beef cattle are fed a formulated ration containing grain, roughage (fibre) and minerals. The ration for beef cattle is formulated to maximise beef production.

The ration composition will vary depending upon the availability and price of feed ingredients as well stage of feeding. For beef cattle, rations generally consist of the following ingredients:

- Grain (such as maize, barley or wheat) – 55-65%;
- Roughage (such as pasture hay, wheat or barley straw) – 15-25% ;
- Proteins (whole cottonseed) – (5-10%)
- Other ingredients (molasses, supplements) – 5-10%.

Rations are prepared on-site in a dedicated facility, with associated commodity storage, handling and ration delivery infrastructure.

Loaded feed commodity transport vehicles enter the site via the property entrance off the Flinders Highway to unload at the commodity storage facility. Empty feed commodity vehicles then travel along the ingress route to exit the site.

The processed grain and commodities would be stored in storage bays within the commodity shed where they are loaded into a tractor-drawn mixer wagon by front-end loader. The wagon has on-board mixing equipment. The ration would then be dispensed into the feed bunks directly from the tractor-drawn mixer wagon.

3.6.3 Water management

Water is a vital resource for the Development. Whilst most of the water used is for livestock drinking, water is also used for routine hygiene practices such as machinery washdown, other general practices around the Development, and in amenities for personnel.

Water is also lost through evaporation and seepage from open storages, such as water troughs. Water from the Development is sourced from groundwater and surface water sources and pumped to storage(s). The water within the storage(s) is reticulated around the Development via gravity or pressurised systems dependent on the proposed use.

The Development's water supply, storage and reticulation shall be managed to:

- meet the total annual water requirement of the Development;
- provide an unrestricted, reliable supply of water to beef cattle at all times of the year;
- provide water that is clean, fresh and free from contamination for beef cattle;
- meet the peak water intake requirement for the beef cattle, especially during the summer period;
- minimise losses and maximise water use efficiency;
- ensure that the quality of the water (which includes temperature, salinity and impurities) does not affect beef cattle performance or welfare; and
- provide water that is clean, fresh and free from contamination for personnel.

3.6.4 Solid waste management

The Development produces significant amounts of solid waste. Solid waste includes:

- Manure – the faeces and urine excreted by the beef cattle. Manure accumulates on the pen surface and is deposited in drains and the sedimentation basin after runoff-producing rainfall. Manure forms the largest component of solid waste.
- Waste feed – Very low levels of feed commodities or rations are wasted through spillage or spoilage. Feed in bunks may become wet and unpalatable in rainy weather and beef cattle may go off their feed. Under these circumstances the ration is spoiled and needs to be removed from the bunk and taken directly to the solid waste stockpile and carcass composting area.
- Mortalities – Lot fed livestock are vulnerable to sickness and disease. Whilst the Development has a high animal health maintenance and welfare program, periodically cattle deaths are experienced. The average mortality rate for the Development is around 0.25% expressed as a percentage of cattle throughput. Most mortalities occur relatively early in the feeding period;
- Sedimentation pond sludge – settled solids or sludge accumulation decreases the performance of the sedimentation pond and periodically requires removal.
- Holding pond sludge – settled solids or sludge accumulation decreases the performance of the holding pond and periodically requires removal (> 10 years).

Various activities are associated with solid waste management as outlined in section 3.6.4.1 to 3.6.4.7.

3.6.4.1 Pen cleaning

The pens are regularly cleaned to minimise the depth of manure on the pen surface. Pen cleaning and maintenance is not viewed as a cost, but as a method of minimising potential impacts to the environment and the potential to return income to the Development by the sale or sustainable utilisation of the harvested manure. Subsequently, pen cleaning is a major on-going activity of operational management.

Ideally, pen cleaning occurs at intervals not exceeding 13 weeks when the manure is moist but not wet, since moist manure is more easily scraped from the surface. However, more frequent cleaning may occur even when conditions are not ideal.

During pen cleaning, manure that has accumulated under fence lines and along the sides or feed bunks and water troughs is also removed and pen maintenance activities such as filling of potholes is undertaken as outlined in section 3.6.10.

The machinery to be used for pen and drain cleaning and maintenance activities includes:

- Skid-steer loader – under fence cleaning and removal of manure from around feed and water troughs;
- Front-end loader to remove manure out of the pens/drains and stockpile area;

- Rigid and articulated tip trucks for removing manure from the pens to the solid waste stockpile / carcass composting area, loading manure and carcass compost for transport to the utilisation areas; and
- Front-end loader for mixing and aerating the manure windrows and carcass compost.

Table 2 summarises the proposed pen cleaning interval for the Development.

3.6.4.2 Under-fence cleaning

The removal of manure from under fence lines is important for two reasons. Accumulated manure acts as a fly breeding area and a trap that prevents run-off leaving the pen. Removal of accumulated manure under fence lines shall be undertaken at the same time as pen cleaning.

Table 2 summarises the proposed under-fence cleaning interval for the Development.

3.6.4.3 Drain cleaning

During rainfall runoff events, manure from the pen surface can be entrained in runoff water and deposited in drains rather than flowing to the sedimentation basin. Solids deposited in drains are removed after each rainfall runoff event. Typically, solids are removed using a skid-steer loader or similar equipment.

Table 2 summarises the proposed drain cleaning interval for the Development.

Table 2 – Development – Pen and drain cleaning and maintenance schedule

Activity	Frequency and / or Action
Removal of spilt feed /feed residues	Weekly
Elimination of wet patches in pens	Weekly
Repairs to potholes in pens	Weekly
Clean water troughs	Weekly
Under fence cleaning	Monthly (or after manure obstructs pen drainage)
Pen cleaning	At intervals not exceeding 13 weeks
Pen surface checks	After runoff events and repaired as required
Diversion banks and drains	After runoff events and repaired as required

3.6.4.4 Pond cleaning

The sedimentation pond has been designed to separate larger solids in the stormwater runoff from the liquid component. Solids settle in the pond while excess effluent flows into the holding pond.

When suspended solids from the effluent settle, a layer of sediment material known as sludge is deposited on the base of the sedimentation pond and to a lesser degree in the holding pond. Over time the accumulated sludge reduces the effective storage volume of each respective pond. The sedimentation and holding pond are checked for efficacy after each runoff event.

Where practical, the liquid in the sedimentation pond is pumped into the holding pond and the sludge is removed using an excavator or similar equipment.

Consequently, sludge shall be removed periodically, although weather conditions may delay removal. With a well-designed and maintained sedimentation pond system, sludge accumulation in the holding pond should be minimal.

Where practical, the liquid in the sedimentation pond is pumped into the holding pond and the sludge is removed using an excavator or similar equipment.

3.6.4.5 Mortality management

3.6.4.5.1 Anticipated mortalities

All carcasses shall be anaerobically composted. Carcasses are removed from the pens on a daily basis and taken directly to the solid waste stockpile and carcass composting area. Typically, carcasses are lifted and carried using a front-end loader rather than being dragged away, which could result in the discharge of blood and other body fluids.

Carcasses shall be composted in separate windrows to the bulk manure windrows. The majority of carcass mass is moisture and will evaporate, significantly reducing the mass remaining after composting.

The mass of carcasses is considered negligible when compared to the mass and nutrient content of manure that will be handled.

The construction and management of a carcass compost windrow shall generally comprise the following:

- A bed of at least 300 mm of the material being used as the carbon source (e.g. sawdust or straw) is placed on the base of the composting storage area. This bed of material absorbs leachate from the carcasses.
- A carcass is placed on the straw or sawdust bed and covered with at least 500 mm of manure on all sides.
- The carcass windrow shall be no more than two levels of carcasses high. The second level of carcasses shall be placed on top of 50 mm of manure covering the first level of carcasses and covered with at least 500 mm of manure.
- The top of the windrow shall be shaped to an apex to shed rainfall.

- The windrow shall be periodically checked, and any exposed carcasses recovered. The carcasses must be covered to facilitate the composting process by adding a carbon source, and to control odours and in deterring vermin from disturbing the windrow.
- The carcasses are allowed to decompose for around 4 weeks before turning. Typically, a front-end loader shall be used for turning carcass compost.
- Active composting may last for up to 4-8 months. The windrow shall be turned every 2-3 months.
- After active composting the composted windrow is left to mature for at least 3-4 months.
- The carcass composting area shall be monitored for scavenging animals.

3.6.4.5.2 Mass mortalities

The management of mass mortalities is outlined in section 3.6.12.

3.6.4.6 Solid waste stockpile/processing

The manure collected from the pens and drains shall be temporarily stored in the solid waste stockpile and carcass composting area so that pen cleaning can regularly occur even though it may not be possible to continually spread the manure on land or remove it from the site. Sludge removed from the sedimentation pond and holding pond in time shall also be stored in the solid waste stockpile and carcass composting area.

The solid waste stockpile and carcass composting area is within a controlled drainage area of the Development, and therefore, runoff from the stockpile area is prevented from flowing uncontrolled into the natural environment.

The process of manure stockpiling and passive composting reduces the bulk and the moisture content of the manure. It also improves the handling properties of the manure by breaking up lumps. The solid waste stockpile and carcass composting area is also used to store composting mortalities until the compost is cured.

Typically, manure removed from the pens, drains and sedimentation basin will be laid out in windrows with the long axes perpendicular to the area contours to ensure free drainage.

The stockpiled manure will decompose anaerobically. The anaerobic decomposition process generates considerable heat that may be sufficient to sterilise any weed seeds and a significant proportion of potentially harmful pathogens contained in the manure.

To accelerate the decomposition process, further aeration of the windrows is achieved by regularly turning the windrows using a loader or similar equipment. Aerobically composting allows the manure to be stored or spread with little odour or fly breeding potential and eliminates most of the weed seeds and pathogens within the manure. Actively composting the manure windrows reduces moisture content, odour and makes the manure more friable for

spreading. This process also breaks down very large particles including slabs of dry manure prior to spreading.

3.6.4.7 Utilisation

Solid waste (i.e. manure, carcass compost, holding pond sludge) is a valuable source of nutrients and organic matter for soil conditioning and growing crops or pastures. Careful management is needed to gain the most benefit from utilisation while also protecting the environment and amenity.

The utilisation of solid wastes on-site will reduce the requirement for synthetic fertilisers that would otherwise be used in the cropping program on-site. Various crops shall be grown on the waste utilisation area. Crops will be harvested for hay, grain and straw to use as feed commodities in the Development.

Prior to utilisation, the solid waste shall undergo a screening process which shall remove any rocks/gravel in the accumulated solids, bones from carcasses and reduce any very large particles (including slabs of dry manure). On-site utilisation of solid wastes would involve the following principles:

- Solid wastes applied only to the approved waste utilisation areas;
- Annual application rates would be based on annual soil tests and would not exceed nutrient recommendations for a particular crop, soil type or yield goal;
- Solid waste is removed from the stockpile area in line with cropping program demands and placed directly onto the available solid waste utilisation area when possible and favourable weather conditions permit;
- A minimum 25 m buffer zone would be maintained between the utilisation area and drainage lines;
- A minimum 25 m buffer zone would be maintained between the utilisation area and property boundaries; and
- Neighbouring landholders are not subjected to odour and dust nuisance because of poorly timed and managed solid waste utilisation practices.

Solid waste from the stockpile area is removed in line with cropping program demands and placed directly onto the available solid waste utilisation area when possible and favourable weather conditions permit. Solid wastes are applied using a tractor-drawn manure spreader or a body truck.

3.6.5 Effluent management

Stormwater run-off from the controlled drainage areas is described as effluent because it has been in contact with manure, has a high nutrient concentration and has the potential to pollute surface water and groundwater. Effluent is valued as a source of nutrients for fertilising crops

and therefore shall be applied to land where it can improve soil agronomic properties and be sustainably utilised by crops.

Effluent is directed via catch drains to the sedimentation pond. Once the sediment pond is at capacity, effluent bywashes to and then stored in the holding pond until it can be utilised.

The volume of effluent generated from the operation of the Development is dependent on stormwater runoff from the controlled drainage area. Consequently, the volume of effluent generated is dependent on climatic factors such as rainfall and evaporation and pen surface conditions (manure depth) and operational factors.

When there is sufficient volume of effluent for utilisation, then effluent from the holding pond shall be removed in line with cropping program demands and applied to the crops on the approved effluent utilisation area when favourable weather conditions permit.

3.6.6 Hours of operation

Normal operating hours for general activities such as cattle feeding, waste management and cropping operations and transport activities such as feed commodity delivery and livestock movements would typically occur between 6:30 am and 6:30 pm. Heavy vehicle movements may occur outside of normal transport hours for example transport of beef cattle may occur either at night or in the early hours of the morning for animal welfare reasons.

3.6.7 Workforce requirements

The workforce servicing the pre-quarantine export facility shall also be utilised in activities associated with the Development. Approximately 4 FTE are required for administrative, livestock handling, feed storage, preparation and delivery, machinery maintenance, waste management and general farm activities associated with the Development.

About four staff can be accommodated on-site in the existing dwellings. About five staff can be accommodated on-site in the rural workers accommodation facility on the subject land. All other staff reside off-site.

All staff are trained to uphold strong guidelines in animal health and welfare and environment.

3.6.8 Administration

Administrative functions of the Development shall be undertaken within the site office and associated facilities for example.

The site office is located adjacent to the cattle handling facility a general workstation area, first aid station and an associated area for light vehicle parking.

3.6.9 Maintenance

Maintenance functions of the Development shall be undertaken within the machinery workshop and associated facilities.

The workshop building contains a stores section, general maintenance bay, unloading area and outdoor secure storage area. The store area is suitable for forklift access and adjacent unloading of heavy/oversize vehicles

3.6.10 Pen and drain maintenance

General pen maintenance activities shall be conducted after each pen cleaning event and the manure from the pens and under fence lines has been removed. General pen maintenance activities include:

- Depressions/potholes within the pen or drain are filled and compacted;
- Elimination of wet spots in the pen surface; and
- Removal of split feed residues from around feed bunks.

Attention shall be given to the area behind the feed bunk apron, as that area tends to become worn and hollowed out and, if not maintained, retains water, remains boggy and quickly becomes worn. Table 2 summarises the proposed pen maintenance interval for the Development.

3.6.11 General maintenance

General maintenance activities shall be conducted on an ongoing basis during operation. General maintenance activities include:

- Repairs to water reticulation system e.g. water trough leaks, damaged pipes etc;
- Repairs to damaged fences, gates, feed bunks etc.;
- Repairs to feed roads; and
- Servicing and repairs to machinery, plant and equipment.

3.6.12 Emergency animal disease and mass mortality contingency plans

Emergency animal disease outbreak and / or mass mortality contingency plans have been developed as part of biosecurity management and QA measures (section 3.4). A suitable site for mass burial of mortalities has been identified on the Development site as shown in Figure 2.

The burial pits shall be established in low permeability soils (reddish brown clay) on a site well removed from surface waters, drainage lines, gullies, groundwater bores and the Development

complex. The soils in this location are low permeability, thus lining of the pits with clay is unlikely to be required. If lining is required, then the pits shall be lined with at least 600 mm of clay.

Each burial pit shall be located so that all water runoff is directed away from the pit. Use of exclusion bunds or trenches may be required. Pits shall be deep but relatively narrow and excavated using an excavator.

Each carcass shall be opened at the time of placing in the pit and immediately covered by at least 500 mm of soil to reduce odour and exclude flies and vermin. Each pit shall be progressively filled with carcasses until sufficient pit capacity remains for the pit to be sealed with clay and compacted to a minimum depth of 1 m.

Soil shall be mounded over the top and replenished should the pit subside to below ground level.

The site where mass mortalities are buried shall be recorded for future reference.

Where the mortalities are suspected to be caused by an emergency/infectious disease AUSVETPLAN procedures shall be implemented and disposal managed under the AUSVETPLAN. In this case, advice shall be sought from:

- Biosecurity Queensland (Refer to Table 12 for contact details) if there is a suspected disease outbreak;
- Department of Agriculture and Fisheries (DAF) (Refer to Table 12 contact details) in the event of a suspected disease outbreak in accordance with relevant AUSVETPLAN manual procedures. DAF veterinary officers have the main responsibility and resources to combat an endemic disease outbreak;
- Consultant veterinarians (Refer to Table 12 for contact details); and
- Charters Towers Regional Council (Refer to Table 12 for contact details) to assist in the disposal of beef cattle (burial, composting) on or off-farm (land fill site) if required.

All emergency animal diseases must be reported to Biosecurity Queensland on 13 25 23 as soon as they are suspected. All Development staff involved in the daily monitoring and handling of stock shall be aware of unusual signs or signs of emergency animal diseases of concern to beef cattle.

3.6.13 Hazardous materials storage

Industry codes of practice, best management practices (BMP) and regulations apply to the storage, use and disposal of hazardous materials.

There shall be limited quantities of hazardous materials stored and used on-site during operation. To minimise the risk of environmental harm from liquid spills and leaks, all hazardous materials required to be stored on-site shall have a spill containment system

appropriate for the nature and pollution risk of that liquid in accordance with relevant guidelines and Australian Standards. Liquids that may be stored during the operation of the Development include:

- agricultural chemicals – herbicides, pesticides etc;
- veterinary chemicals;
- cleaning agents;
- detergents and sanitisers;
- engine coolant;
- oil, grease, lubricants;
- diesel, petrol fuels; and
- solvents.

A small volume of veterinary chemicals is stored on-site at the cattle handling facility in climate-controlled receptacles. The quantity of veterinary chemicals stored on-site is less than 5 L.

All hazardous materials to be stored on-site are liquids and shall be stored above-ground. The quantities of hazardous chemicals shall be kept to a minimum, commensurate with their usage and shelf life. With the exception of diesel fuel, hazardous materials shall be stored in steel drums (205L) or HDPE containers (20L) located in a dedicated secured facility.

Diesel fuel is the primary hazardous material required on-site with some ~2,500L currently able to be stored on-site in an above-ground tank. The majority of this fuel is used for feed delivery and cropping operations.

Very limited quantities (<205L) of other hazardous materials such as oils, solvents and veterinary chemicals etc may be stored if required for use at the Development. All agricultural chemicals are stored in a locked shed located adjacent to the workshop.

Only development personnel with chemical user accreditation are permitted to handle and apply chemicals. Personnel chemical qualifications are recorded in the Register of Staff Authorised to Use Farm Chemicals as outlined in the Development's NFAS manual.

Only development personnel with veterinary chemical user accreditation can handle and apply/administer veterinary chemicals. Personnel chemical qualifications are recorded in the Register of Staff Authorised to Use Farm Chemicals as outlined in the Development's NFAS manual.

Table 3 outlines the estimated storage quantities of hazardous materials and storage requirements.

Table 3 – Development – Hazardous materials storage quantities

Substance	Maximum pack size	Quantity	Use	Storage location
Agricultural chemicals	1,000L	2,500L	Weed control	Chemical store
Cleaning agents/detergents/ sanitisers	20L	20L	Plant & machinery maintenance	Workshop
Engine coolant	20L	80L	Plant and machinery maintenance	Workshop
Oil/grease/lubricants	205L	410L	Plant and machinery maintenance	Workshop
Diesel	2,500L	2,500L	Plant and machinery fuel	Bulk tank
Petrol	205L	205L	Small engines, ATV fuel	Bulk tank
Solvents	20L	20L	Plant & machinery maintenance/repairs	Workshop

4 Legislative and other requirements

4.1 Legal and other requirements

A register of legal and other requirements for the Development is contained in Appendix A1 – Legal and other requirements. The relevance of legislation is maintained through the Environmental Management System.

The legal requirements register will be reviewed at regular intervals, such as after management reviews, and updated with any applicable changes. Any changes made to the legal requirements register will be communicated to personnel where necessary through toolbox talks, specific training and other methods detailed in section 7.

4.2 Approvals, permits and licences

A number of approvals, permits and licences have and/or will be obtained and maintained for the Development under relevant legislation and Development Consent. For example, these include:

- Development approval under the Planning Act 2016; and
- Environmental Authority under Chapter 5 of the Environmental Protection Act 1994 (EP Act) for Environmentally Relevant Activity (ERA 2 1(b) – more than 1,000 but less than 10,000 standard cattle units.

Appendix A2 – Approvals, permits and licences contains a register of all relevant environmental approvals, permits and licences. The register will be maintained by the Feedlot Manager and will be reviewed prior to the commencement of operation, and at least annually as part of the management review.

5 Environmental management framework

5.1 Environmental policy and commitment

5.1.1 Environmental commitment

Reid River Export Depot Pty Ltd as trustee aim to have a productive, environmentally sustainable and economically viable intensive livestock operation. In order to achieve this, Reid River Export Depot Pty Ltd as trustee are committed to protecting the environment through continual improvement in environmental performance and compliance with applicable legal requirements.

To achieve continual improvement in environmental performance, the following principles will be applied.

Planning

- Include environmental considerations in decision-making;
- Provide adequate resources for people at all levels to fulfil their responsibilities;
- Implement procedures to enable activities to be carried out in an environmentally responsible way;
- Set environmental objectives and targets for activities and to review these on an annual basis;
- Conduct regular review of the environmental performance of the Development and act on the results;
- Continuously improve the environmental performance of the Development; and
- Continuously improve the environmental management system of the Development.

Practices

- Meet environmental standards in the Development's key activities;
- Assess the environmental impacts of the Development's activities;
- Plan, design, operate and complete any operation in a manner that reduces environmental risks;
- Monitor environmental compliance in a professional manner;
- Abide by and comply with the *Environmental Protection Act 1994* and all other applicable environmental laws, regulations, policies, standards and codes of practice;
- Comply with the codes of practice of appropriate industry representative organisations; and
- Prevent pollution from the Development's activities.

People

- Employ skilled people to carry out work in a way that is compatible with good environmental performance;
- Train people to the appropriate skill level to ensure that operations are completed with the utmost respect for the environment;
- Specify the need for all contractors to carry out their work in accordance with this policy and to supervise such compliance; and
- Communicate the Development activities to all relevant parties.

All Development personnel, including subcontractors and visitors, will be made aware of this commitment through the Development's induction process and ongoing awareness programs.

5.1.2 Commitment

Reid River Export Depot Pty Ltd as trustee commitment to continual improvement in environmental performance and compliance with applicable legal requirements is provided in Appendix A4 – Environmental commitment. This commitment by senior management is supported by the processes and activities described in this Plan and associated management plans.

5.1.3 Environmental management system documentation

5.1.4 Environmental management plan

This SBEMP is the overarching document in the environmental management system for the Development. This SBEMP provides the system to manage and control the environmental aspects of the Development during operation. It identifies all requirements applicable to activities described in section 3.6. It also provides the overall framework for the system and procedures to ensure environmental impacts are minimised and legislative and other requirements are fulfilled. The strategies defined in this SBEMP have been developed with consideration of the Development approval requirements, safeguards and mitigation measures presented in the environmental assessment and approval documents. This SBEMP establishes the system for implementation, monitoring and continuous improvement to minimise impacts from the Development on the environment.

This SBEMP is consistent with:

- Guideline for Activity management plans (DEHP, 2017); and
- AS/NZS ISO14001:2015, 'Environmental management systems - Requirements with guidance for use'.

5.1.5 Supporting environmental management plans and strategies

As outlined in section 3.4, Reid River Export Depot Pty Ltd as trustee has developed a Quality Assurance manual for the Development in accordance with the National Feedlot Accreditation Scheme.

The NFAS manual is a prescribed approved EMS (National Feedlot Accreditation Scheme, Rules of Accreditation) in accordance with the Environmental Protection Regulation 2008.

A copy of the NFAS manual is retained at the Development's site office.

5.1.6 Environmental procedures

In addition to the overarching SBEMP and management plans, a set of environmental procedures have been developed to provide further guidance for managing all activities that have the potential to negatively impact on the environment and to ensure consistency in approach and quality of outcome.

The procedures are the main site documents used by Development to identify and manage safety and environmental risks associated with all operational activities.

A copy of the listed procedures above is provided in Appendix A6 – Environmental procedures.

5.1.7 Forms, checklist and registers

A number of documents such as guidance notes and standard work instructions, checklists, forms and registers have been developed to assist in the implementation of processes described in the SBEMP, management plans or procedures. These types of documents will be further developed and continually improved to ensure consistency in approach and quality of outcome.

A register of relevant environmental forms and registers is maintained in Appendix A7 – Environmental forms, checklists and registers.

5.2 Obligations, roles, responsibilities and authority

All Development personnel are responsible for protecting the environment by ensuring that environmental protection measures identified in the SBEMP are planned for, resourced, communicated, installed, maintained and reviewed. All personnel working on the Development have the following general obligations:

- Undertaking work in accordance with relevant Development policies, approved SBEMP, procedures, management protocols and plans, statutory and contract requirements to minimise pollution of land, air and water;
- Implementing appropriate environmental and safety management measures;

- Use pollution control equipment and keep it in proper working order;
- Preserve the natural and cultural heritage environment;
- Minimise the occurrence of offensive odour;
- Minimise the occurrence of offensive noise;
- Be a good neighbour to surrounding land users;
- Take all feasible and reasonable steps to ensure compliance with the requirements of this SBEMP; and
- Reporting of actual and potential environmental incidents to their relevant line manager.

The key environmental management roles and responsibilities for the operational phase of the Development and structure of these roles are described in Appendix A5 – Obligations, Roles, Responsibilities and Authority.

5.3 Environmental specialists

The Development may also engage the services of a number of technical specialists / consultants to provide advice, undertake monitoring and direct site activities as required. A description of the types of consultants that may be engaged for the Development is detailed in Table 8.

6 Environmental aspects and impacts

A risk management approach has been used to determine the severity and likelihood of an activity's impact on the environment and to prioritise its significance. This approach considers potential regulatory and legal risks as well as taking into consideration the concerns of community and other key stakeholders.

The objectives of risk assessment are to:

- Identify activities, events or outcomes that have the potential to adversely affect the local environment and/or human health/property;
- Qualitatively evaluate and categorise each risk item;
- Assess whether risk issues can be managed by environmental protection measures; and
- Qualitatively evaluate residual risk with implementation of measures.

The environmental risk assessment was undertaken in accordance with the following standards:

- Australian Standard/New Zealand Standard (AS/NZS) ISO 31000:2018 Risk management – Principles and guidelines; and
- Australian Standard/New Zealand Standard Handbook 203:2012 Managing environment-related risk (Standards Australia/Standards New Zealand 2012).

The main components of the risk assessment methodology include:

- **Hazard Identification**: Identifying potential hazards that are applicable to the Development activities and determining the hazardous events to be evaluated.
- **Risk Assessment**: Determining the possible causes that could lead to the hazardous events identified; the consequences of the hazardous events; and the safeguards and controls currently in place to mitigate the events and/or the consequences.
- **Risk Evaluation**: Evaluating the risks using the Risk Prioritisation Matrix (section 6.1). The risk ranking is determined by a combination of the expected frequency of the hazard occurring (likelihood) and the consequence of its occurrence. Note that when assessing the consequence, no credit is given to the hazard controls. Hazard controls are taken into account in determining the likelihood of the event.
- **Residual Risk Treatment**: Reviewing the proposed management controls for each of the risks identified and proposing additional controls or making recommendations, if required.

6.1 Risk analysis

The risk analysis was conducted using the semi-quantitative approach in the Australian/New Zealand Standard AS/NZS ISO 31000:2018. Firstly, the 'likelihood' and 'consequence' definitions were defined for the risk analysis. These are presented in Table 4 and Table 5 for 'consequence' and 'likelihood' definitions respectively.

Table 4 – Environmental risk analysis – Consequence assessment

Consequence	Personal impact	Environmental impact	Commercial impact	Social impact
Insignificant	No Injuries	Low environmental impact inside Development area.	Commercial Impact < $5,000.	Internal complaints received
Minor	Minor injuries, first aid treatment required (graze, scratch)	Minor environmental impact inside Development.	Commercial Impact - $5,000-$50,000	External complaint received from community
Medium	Medical treatment (Off-site)	Contained environmental impact inside Development.	High Commercial Loss - >$50,000	External complaints received from community.
Major	Permanent human damage, including concussion (amputation, loss of sight)	Major environment damage outside Development boundary.	Major commercial loss - $500,000	Local media coverage (Newspaper, TV). Loss of revenue surrounding properties.
Extreme	Fatality or multiple fatalities	Extensive environmental disaster outside Development boundary.	Extensive commercial loss >$1M	National media coverage (approached by Media, TV, Paper, Protestors, etc)

Table 5 – Environmental risk analysis – Likelihood definitions

Likelihood	Description	Frequency
Almost certain	Expected to occur in most circumstances	Occur once in a day
Likely	Will probably occur in most circumstances	Occur once in a week
Possible	Might possibly occur at some time	Occur once in a month
Unlikely	Could occur at some time	Occur once in a year
Rare	May occur in exceptional circumstances	Occur once in 5 years

Table 6 – Environmental risk analysis – Risk assessment matrix

Likelihood		Consequence				
		Insignificant	Minor	Medium	Major	Extreme
		1	2	3	4	5
Almost certain	5	M8 – Moderate	H16 – High	H18 – High	E23 - Extreme	E25 - Extreme
Likely	4	M7 – Moderate	M10 – Moderate	H17 – High	H20 – High	E24 – Extreme
Possible	3	L3 – Low	M9 – Moderate	M12 – Moderate	H19 – High	H22 – High
Unlikely	2	L2 – Low	L5 – Low	M11 – Moderate	M14 – Moderate	H21 – High
Rare	1	L1 – Low	L4 – Low	L6 - Low	M13 – Moderate	M15 – Moderate

6.2 Objectives and targets

Objectives and targets enable developments to meet defined levels of performance against identified criteria. Objectives are statements of intent, while targets define the specific performance requirements that need to be met in order to achieve the objectives. Environmental objectives and targets have been established as a means of assessing environmental performance during operation of the Development. These objectives and targets have been developed with consideration of key issues identified through the environmental assessment and risk assessment process. Environmental objectives and targets for the Development are provided in Table 7. The objectives and targets are consistent with the environmental commitments of the Development (Appendix A4 – Environmental commitment) and will assist in monitoring whether the commitments are being met.

The performance of the Development against the objectives and targets will be documented in operation compliance reports, such as the Annual Return and at least on an annual basis as part of the management review.

The overall environmental objective is to undertake all aspects of the Development in an environmentally responsible manner and effectively manage risks to prevent or mitigate any impacts so as not to cause environmental harm or nuisance.

Table 7 – Environmental objectives and targets

Objective	Target	Measurement Tool
Compliance		
Ensure the Development operates in accordance with all relevant environment and planning related approvals and legislation.	Full compliance with statutory approvals.	Audits, operation compliance reporting, annual report, management review.
	No regulatory infringements (or prosecutions). No formal regulatory warning.	
Quality		
Implement a rigorous and comprehensive EMS that meets the requirements of AS/NZS ISO 14001.	Address non-conformances and corrective actions within specific timeframes.	Audits, management review.
Stakeholder and Community Relationships		
Engage with the potentially effected and broader community, minimise complaints and respond to any complaints within a suitable timeframe	Disseminate regular Development updates and other information via the pathways identified in this SBEMP and relevant sub-plans.	Review complaints, operation compliance reporting, annual report, audits
	Record and response to complaints within the timeframe specified in this SBEMP and relevant sub-plans.	
Continual Improvement		
Continuously improve environmental performance	Implement training and awareness programs that promote compliance, improving environmental performance and skill base of relevant staff on the Development and minimise environmental risk	Operation compliance reporting, annual report, audits, management review.
	Capture lessons learnt from environmental incidents to minimise repeat issues.	

Table 8 – Environmental specialists – Typical

Specialist	Services provided
Erosion and Sediment Control specialist	Erosion and Sediment control measures
Environmental scientist	Surface water sampling / solid waste (manure, compost, sedimentation /holding pond sludge) sampling / effluent sampling / soil sampling/results interpretation
Agronomist	Crop sampling, analysis, nutrient budgeting

6.3 Sub-contractor management

Environmental requirements and responsibilities for sub-contractors are specified in their contract documentation.

All sub-contractors are required to attend site inductions where the requirements and obligations of the SBEMP are communicated. A record of all sub-contractor inductions will be maintained on the Development's induction and training register.

During operation, contractors will be responsible for:

- Undertaking work in accordance with relevant Development policies, approved SBEMP, procedures, management protocols and plans, statutory and contract requirements;
- Implementing appropriate environmental and safety management measures; and
- Reporting of actual and potential environmental incidents to the Feedlot Manager or Assistant Feedlot Manager.

6.4 Certification and approval

The SBEMP shall be prepared to the reasonable satisfaction of the Department of Agriculture and Fisheries (DAF), with a copy of the endorsed plan provided to DAF prior to the commencement of operation.

The plans prepared under section 5.1.5 shall also be prepared to the reasonable satisfaction of the DAF and/or Charters Towers Regional Council (GRC), with a copy of the endorsed plan provided to DAF and/or CTRC prior to the commencement of operation.

6.5 Documentation review

An ongoing informal process of environmental management documentation review ensures that environmental documentation including this SBEMP is updated as appropriate for the specific works that are occurring on-site. The document review process is described in section 11.

Revised versions of the SBEMP will be made available through the processes described in section 6.6.

6.6 Distribution

This SBEMP is available to all personnel and sub-contractors via the Development's document control management system.

The document is uncontrolled when printed. One (1) controlled hard copy of the SBEMP and supporting documentation will be maintained by the Feedlot Manager on-site at the Development's site office.

7 Competence, training and awareness

The successful training of Development personnel in environmental requirements outlined in this SBEMP is a key factor in ensuring compliance with the objectives of this SBEMP. Training can be both verbal and written and includes induction, meetings and specific training. The processes for communicating relevant environmental requirements to all Development personnel prior to and during operation are outlined in the following sections.

The Feedlot Manager will review and approve the training program and monitor implementation.

7.1 Environmental induction

All personnel (including sub-contractors) are required to undergo a site induction that includes an environmental component which outlines key environmental issues prior to commencement of work on-site. This is done to ensure all personnel involved in the Development are aware of the requirements of the SBEMP and to ensure the implementation of environmental management measures.

Short-term visitors to site for purposes such as deliveries will be required to be accompanied by inducted personnel at all times.

The Feedlot Manager (or delegate) conducts the environmental induction and training to ensure that all personnel and sub-contractors working on the site achieve a level of awareness and competence appropriate to their assigned activities. The environmental induction will be reviewed for adequacy during management reviews of the environmental management system.

The environmental component of the induction will include, but not be limited to, an overview of:

- Site orientation;
- Key issues relating to the works and existing environment;
- Concepts of due diligence and duty of care;
- Relevant requirements of environmental documents and relevant conditions of environmental licences, permits and approvals;
- Relevant details of the SBEMP including purpose and objectives;
- Mitigation measures for the control of environmental issues;
- The roles and responsibilities of those receiving the training in achieving conformance with the environmental policies and requirements, including emergency preparedness and incident response and reporting requirements;
- Environmental personnel and contacts;

- Information relating to the location of environmental constraints;
- Site-specific environmental management requirements and responsibilities, such as:
    - location and protection of environmentally sensitive areas;
    - erosion and sediment control;
    - waste management and minimisation;
    - washing, refuelling and maintenance of vehicles, plant and equipment;
    - efficient use of plant, equipment and materials;
    - minimising potential environmental impacts including air, noise and water quality;
- The potential environmental impacts of their work activities; and
- The potential consequences of non-compliance with relevant statutory requirements and this SBEMP.

A record of all environment inductions, including the names and details of those who have been inducted, will be maintained and kept on-site. Amendments may be made to the induction at any time due to changes in activities, legislative changes or amendments to this SBEMP or related documentation (e.g. Environmental procedures).

The Feedlot Manager will review and approve the induction program and monitor implementation.

7.2 Toolbox talks, training and awareness

Toolbox talks are used to raise environmental awareness as well as familiarisation with specific site environmental controls and community involvement/relation requirements. All Development personnel including contractors when on-site attend toolbox talks. This type of training is provided on an as-needed basis, for example, following the identification of a new environmental risk, relevant changes in legislation or a change in operation methodologies.

Toolbox talks will be of adequate duration to cover relevant information and structured to encourage full participation by all personnel. Additional toolbox meetings may be called at any time by the Feedlot Manager (or delegate) to discuss or highlight any aspects relating to environment.

The Feedlot Manager (or delegate) will be responsible for preparing and conducting toolbox talks which will focus on issues relating primarily to safety, quality and the environment.

Toolbox talks will include details of procedures for relevant personnel or activities. Toolbox talks will also be tailored to specific environmental issues relevant to upcoming works in or near sensitive receivers or environmentally sensitive areas, or incidents that have occurred.

Relevant environmental issues may include (but are not limited to):

- Air quality – Odour / Dust control / GHG;

- Pen, drain, sedimentation/holding pond cleaning;
- Solid waste management and utilisation;
- Hours of work;
- Emergency and spill response;
- Weed management;
- Noisy works or works outside of normal working hours;
- Effluent management and utilisation;
- Soil and water quality;
- Environment incidents;
- Changes to previously communicated environmental mitigation measures; and
- Environmental procedures.

Toolbox talk attendance is mandatory and attendees of toolbox talks are required to sign an attendance form and the records maintained.

Targeted environmental awareness training will be provided to individuals or groups of workers with a specific authority or responsibility for environmental management or those undertaking an activity with a high risk of environmental impact. Topics covered may include those detailed above, or others deemed necessary during operation.

Operational personnel will also be informed of environmental issues through the development and distribution of awareness information in the form of notes, emails etc.

7.3 Pre-start meetings

A pre-start meeting or shed meeting as it is referred to on-site is a tool for informing the workforce of the day's activities, safe work practices, environmental protection practices, work area restrictions, activities that may affect the works, coordination issues with other trades, hazards and other information that may be relevant to the day's work.

The Feedlot Manager (or delegate) will conduct a shed meeting with the site workforce before the commencement of work each day or where changes occur during the day as needed. Shed meetings are generally succinct in nature and take approximately 10-15 minutes.

The environmental component of a shed meeting will be determined by the activity's relevant manager and /or environmental personnel and will include any environmental issues that could potentially be impacted by, or impact on, the day's activities.

8 Consultation and communication

8.1 Consultation

Extensive consultation with relevant stakeholders and regulatory authorities has been undertaken through the development of this SBEMP and prior to the submission and approval of the SBEMP. Relevant stakeholders consulted are outlined in Table 9 .

Table 9 – Relevant Stakeholders consulted

Stakeholder/ Authority consulted	Plan	Issue/Relevance
Charters Towers Regional Council	Site Based Environmental Management plan	Site based environmental issues – Odour, dust, water quality
DAF	Site Based Environmental Management plan	Site based environmental issues – Odour, dust, water quality
AUS-MEAT Limited	NFAS manual	Odour, dust, livestock, feed

Consultation with relevant stakeholders and government authorities will continue throughout the Development and during subsequent revisions involving significant modifications.

Appropriate communication and notification with relevant stakeholders and regulatory authorities is an essential element in establishing constructive communication channels to ensure the impact of potential or actual issues and incidents are prevented or minimised and dealt with efficiently and amicably.

8.2 Communication

On-going and clear communication throughout all levels and functions (e.g. management, staff and sub-contractors, stakeholders and community) on environmental requirements and progress are key to minimising environmental impacts and achieving continual improvements in environmental performance. Communication is both verbal and written and is managed via various delivery mechanisms (e.g. signage, noticeboards, toolbox meetings and pre-start meetings).

Reid River Export Depot Co Pty Ltd as trustee recognise that environmental issues are important to relevant stakeholders, especially when the Development interfaces with the general public. Consultation and communication activities are planned and approved before release to stakeholder groups.

8.2.1 Internal communication

The ongoing communication of environmental requirements and issues to Development personnel is a key element in ensuring compliance with the objectives of this SBEMP. Communication can be both verbal and written and can include meetings and notifications (e.g. bulletins) in addition to training discussed in section 7.

The Development's senior management will meet regularly to discuss any issues with environmental management on-site, any amendments to plans that might be required or any new / changes to operational activities.

Regular meetings may also be scheduled with environmental specialists / consultants and the Development's senior management. The purpose of these meetings would be to communicate ongoing environmental performance and to identify any issues to be addressed.

Further internal communications regarding environmental issues and aspects will be through awareness training as described in section 7.2.

8.2.2 External and regulatory consultation

The Feedlot Manager is the point of contact for external parties and regulatory authority regarding specific environmental issues.

The ongoing environmental performance of the Development including progress and any key environmental matters will be reported to the DAF via the Annual Return.

External communications regarding specific environmental issues will be managed through the Feedlot Manager.

8.3 Stakeholder and community communication

Communication with stakeholders is an important element of any development to ensure all potentially affected stakeholders are made aware of predicted or potential impacts and that an avenue for stakeholder input is made available. A number of groups including the Development's workforce and customers, regulatory authorities, Government departments (e.g. DAF), Local Government (Charters Towers Regional Council), suppliers, industry organisations and peak bodies (e.g. ALFA), and residences nearby to the property have been identified as stakeholders in relation to the operation of the Development.

8.3.1 Stakeholder communication strategy

Appropriate communication and notification with the relevant stakeholders are an essential element in establishing constructive communication channels to ensure the impact of potential or actual issues and incidents are prevented / minimised or dealt with efficiently and amicably.

Relevant stakeholders are outlined in section 8.3.

8.3.2 Community communication strategy

The community communications strategy includes a range of consultation and communication tools that are used for providing information and consulting with the community and stakeholders to inform the community of Development issues and receive comments and complaints during the operation of the Development. Key elements include:

- A phone number established for registering a comment / complaint and triggering the appropriate response procedure;
- A postal address to which written complaints and enquiries might be sent; and
- An email address to which electronic complaints and enquiries may be transmitted.

8.3.3 Enquiries and complaints response

A Complaints and Enquiries Procedure consistent with AS/NZS 10002:2014 Guidelines for complaint management in organisations and will be developed prior to commencement of operational activities and maintained for the duration of operations.

A telephone number, postal address and email address for community complaints and enquiries has been established for the Development.

Enquiries and complaints contact details are provided in Table 10.

Table 10 – Development – Enquiries and complaints contact details

Contact method	Details
Postal	5291 Flinders Highway, Reid River QLD 4387
Email	TBA
Phone	TBA

The following actions will be undertaken by the Feedlot Manager (or delegate) in responding to enquiries or complaints:

- Record details of all complaints received in the Complaints Register, including how they were addressed, whether resolution was reached and whether mediation was required or used. The information contained within the register will be made available to the regulatory authorities on request.
- Investigate the complaint – site investigation to identify potential causes, researching any previous issues, checking whether any requirement has been breached, what corrective action, if appropriate, will be undertaken, a time frame for this action and the appropriate feedback/response to the complainant.

- Provide at least an initial response to the complainant regarding what has been found and what corrective and / or preventative action is proposed as soon as possible and within a maximum of 48 hours from the time of the complaint.
- Where appropriate, provide a written response to the complainant within ten (10) days, outlining (but not limited to) whether a problem has been found, the reason for the problem and, if appropriate, corrective and preventative actions that have been implemented to resolve the issue. A signed electronic and hard copy of the written response will be kept on-site in the Development's document control and data management system at the Development's site office.
- Complaints and enquiries feedback will be evaluated quarterly as part of the review process in order to assess and adjust communication methods if required.

Corrective actions will be applied in consultation with the appropriate operational personnel to allow modifications and improvements in the management of any environmental issues resulting in community complaints.

8.3.4 Record of consultation and communication

External consultation via email will be undertaken using the Development's email system, which automatically records all email correspondence.

The uploading and management of documents is discussed further in section 12. In addition, any records of consultation including letters, review comments or the issue of approvals will be kept on-site in the relevant folder in the Development's site office.

Verbal consultation with stakeholders will be recorded using hard or soft diary notes or file notes and saved on-site in the filing system at the Development's site office.

Where relevant, verbal correspondence will also be entered in the community and stakeholder consultation register, as described in the section 12.

9 Incident and emergency management

All emergency and incident situations at the Development including actual or potential (near miss) for injury, or damage to equipment, property or the environment will be reported to the Feedlot Manager, Assistant Feedlot Manager or immediate supervisor as soon as practicable after the occurrence.

An emergency situation is an event that could present significant risk to the environment, personnel or the community, as determined by the Feedlot Manager.

All emergency and incident situations in relation to the Development shall be managed according to the Development's QA system.

All incidents will be investigated, and the appropriate course of action will be taken to address the issues. Environmental incidents that harm the environment will be reported to the Department of Agriculture and Fisheries in accordance with sections 320 to 320G, Chapter 7 Part 1 of the *Environmental Protection Act 1994*.

The Feedlot Manager has the authority and independence to require reasonable actions to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such actions, to instruct those relevant actions be ceased immediately should an adverse impact on the environment be likely to occur.

9.1 Incident investigation, reporting and recording

Environmental incidents do not necessarily comprise a breach of legislation and can involve (but not be limited to) the following:

- spills of fuels, oils, chemicals and other hazardous materials;
- unauthorised discharge from holding ponds or other containment devices;
- any adverse health or well-being impacts on persons due to activities causing adverse environmental conditions;
- an unexpected find of contaminated soils or other potentially hazardous substances;
- impacts to native vegetation, habitat for endangered/threatened native flora and fauna species;
- potential contamination of waterways or land;
- accidental starting of a fire or a fire breaking out of containment;
- any breach of legislation including a condition of an environment authority, development approval; or any government agency permit condition;
- works impacting outside an approved area or undertaken without appropriate approval or assessment under the *Environmental Protection Act 1994*; and

- unauthorised dumping of waste.

The incident must be assessed immediately, and action taken promptly to correct any existing danger and to prevent repetition.

Reid River Export Depot Pty Ltd as trustee has developed an Incident/Hazard reporting record to classify and report environmental incidents that may occur during the Development's operational activities and to comply with its statutory obligations to report certain incidents. Incidents are reported, investigated and recorded according to this form. The form provides references to:

- Types of environmental incidents.
- Criteria for classifying of environmental incidents.
- Processes for systematically responding to and managing emergency situations.
- Processes and legal requirements (e.g. Acts, Regulations, EA etc) for reporting and notification of an environmental incident.

The form is provided in Appendix A7 – Environmental forms, checklists and registers.

Typically, the Feedlot Manager or delegated nominee in their absence, will be immediately notified verbally of serious or material environmental harm caused or threatened. In accordance with sections 320 to 320G, Chapter 7 Part 1 of the EP Act, the person must, as soon as reasonably practicable after becoming aware of the harm or threatened harm, notify the administering authority of the harm, its nature, the circumstances in which it occurred, and the action taken to deal with it, and this will be followed up in writing within twenty four hours of any incident occurring. All efforts will be undertaken immediately to avoid and reduce impacts of incidents and suitable controls put in place. Incidents will be closed out as quickly as possible, taking all required action to resolve each environmental incident.

The Department of Agriculture and Fisheries (DAF) as the administering authority will be notified of material environmental harm or serious environmental as a result of the Development via the pathways outlined in Table 11 in accordance with sections 320 to 320G, Chapter 7 Part 1 of the EP Act.

Table 11 – Administering Authority (DAF) notification

Contact method	Details
Phone	13 25 23
Phone	+61 7 4529 4192
Email	LivestockRegulator@daf.qld.gov.au

For the purposes of the EP Act, the following provisions are to be applied in determining environmental harm:

1. Environmental harm is any adverse effect, or potential adverse effect (whether temporary or permanent and of whatever magnitude, duration or frequency) on an environmental value, and includes environmental nuisance.
2. environmental harm is to be treated as material environmental harm (other than environmental nuisance) if –
   (a) that is not trivial or negligible in nature, extent or context; or
   (b) that causes actual or potential loss or damage to property of an amount of, or amounts totalling, more than the threshold amount but less than the **maximum amount**; or
   (c) that results in costs of more than the **threshold amount** but less than the maximum amount being incurred in taking appropriate action to –
      (i) prevent or minimise the harm; and
      (ii) rehabilitate or restore the environment to its condition before the harm.

   In this section, **maximum amount** means the threshold amount for serious environmental harm.

   In this section, **threshold amount** means $5000 or, if a greater amount is prescribed by regulation, the greater amount.

3. serious environmental harm is environmental harm (other than environmental nuisance) –
   (a) that is irreversible, of a high impact or widespread; or
   (b) caused to an area of high conservation value or special significance; or
   (c) that causes actual or potential loss or damage to property of an amount of, or amounts totalling, more than the **threshold amount**; or
   (d) that results in costs of more than the threshold amount being incurred in taking appropriate action to –
      (i) prevent or minimise the harm; and
      (ii) rehabilitate or restore the environment to its condition before the harm.

   In this section, **threshold amount** means $50000 or, if a greater amount is prescribed by regulation, the greater amount.

All records relating to environmental incidents shall be maintained on the Development's document control and data management system to remain legible, identifiable and traceable.

9.2 Environmental emergency

9.2.1 Preparation

Major environmental incidents, natural disasters or adverse weather events may require an emergency response.

To ensure that all site personnel know their responsibilities during an emergency, an Emergency procedure for the Development is in place. The Emergency procedure covers both WHS and environmental emergencies and is included in Appendix A6 – Environmental procedures.

9.2.2 Response

The Emergency procedure details the preparation for emergency and the actions to be taken in the event of an actual emergency event and reporting requirements. Table 12 lists the key contacts for environmental emergencies.

Table 12 – Environmental emergency contact details

Emergency contact/Organisation	Contact details (Phone)
Police	000
Ambulance	000
QLD Rural Fire Service	000
Department of Agriculture and Fisheries	13 25 23
Consultant veterinarian	Charles Vaughan Veterinary Services - Export & Pastoral 0400 662 921
Charters Towers Regional Council	07 4761 5300
Emergency Disease Hotline	1800 675 888

10 Inspections, monitoring and auditing

10.1 Environmental inspections

Regular site inspections are an important part of maintaining an environmental presence and reviewing operation activities to ensure compliance with controls described in the SBEMP, associated management plans and procedures.

10.1.1 Site inspections

Site inspections will be performed by the Feedlot Manager, Assistant Feedlot Manager and/or Farm Manager during site attendance and will focus on the protection of environmentally sensitive areas, impact on sensitive receivers and compliance with all applicable environmental documentation and conditions.

Site inspections will be conducted on an on-going basis and prior to 'forecasted' and following heavy rainfall events to evaluate the effectiveness of environmental controls.

Site inspections provide a forum for the Feedlot Manager to liaise directly with respective personnel to ensure satisfactory environmental outcomes during works.

The Feedlot Manager will document any relevant or notable outcomes of site inspections by:

- Taking diary notes of work locations, activities, times, conversations or other relevant information that may be of environmental interest, both positive and negative;
- Taking photographs of environmental mitigation measures, operation activities or other areas of interest both positive and negative;
- Recording any minor non-conformances and associated control actions required to be undertaken by operational personnel - these will be recorded in the Non-compliance Record (Appendix A7 – Environmental forms, checklists and registers); and
- Recording details of any maintenance required and undertaken, the nature of the deficiency, any actions required and an implementation priority.

The process for recording and managing a non-conformance with a procedure or other management document is described in section 10.5.

10.2 Monitoring

Environmental monitoring is important in ensuring that operational activities are not adversely affecting the environment or sensitive receivers and that control measures are working effectively. Monitoring will be undertaken to validate the impacts predicted for the

Development, to measure the effectiveness of management plans, environmental controls and implementation of this SBEMP, and to address approval requirements.

Environmental monitoring will involve routine collection and interpretation of data to assess operational performance, environmental performance and compliance with requirements.

The timing, frequency, methodology and location for the environmental monitoring programs are provided in the conditions of consent for the Development. All environmental monitoring equipment will be maintained and calibrated according to manufacturer's specifications and appropriate records kept.

The Environmental Specialist will advise the Feedlot Manager of any non-conformances from monitoring and details reported in the Annual Return.

Where a non-conformance is detected or monitoring results are outside of the expected range and are directly attributable to the Development (i.e. are influenced by factors under the direct control of the Development e.g. soil nutrient levels), the process described in section 10.5 will be implemented.

10.3 Auditing

10.3.1 Internal audits

Internal auditing will be undertaken, generally on a six-monthly basis, with the initial audit to occur within six months of the commencement of operation and then at regular intervals thereafter. These internal audits will be timed to provide input into annual compliance tracking, so that the results can be used in annual reports.

The purpose of the internal audits is to:

- Check compliance with the Development Approval;
- Check compliance with any relevant legal and other requirements (e.g. licences, permits, regulations, client contract documentation);
- Check compliance with the mitigation measures in the SBEMP;
- Review the SBEMP, and all other environmental documentation to ensure relevance to current activities and recommend changes or improvements;
- Review results of monitoring against criteria;
- Review environmental incidents to determine trends or additional controls required;
- Review non-conformance information to determine trends or additional controls required; and
- Review Non-compliance Record to ensure timely and adequate close-out of actions.

An audit checklist will be developed and amended as necessary to reflect changes to this SBEMP, subsequent approvals and changes to Acts, regulations or guidelines.

The outcomes of the internal audit may trigger the requirement to update the SBEMP and/or any associated environmental documents. Document revision will be done in accordance with section 11 of this SBEMP.

10.3.2 External audits

External auditing may be undertaken by an independent environment auditor in accordance with ISO 19011:2014 - Guidelines for auditing management systems if requested to do so by the relevant authority or as part of a quality assurance program. The scope of an external audit will, as a minimum focus on compliance with the Development approval, environmental authority or management documents.

10.4 Reporting

During operation, various reports may be prepared to fulfil reporting needs, and requirements under the conditions of consent for the Development. Table 13 sets out the reporting requirement applicable to the Development, timing of the reporting, who is responsible for managing preparation of the reports and the intended recipient(s).

Additional reporting may be necessary as the operation continues. In such a circumstance, Table 13 will be amended to reflect these changes.

Table 13 – Development reporting requirements

Phase	Requirement	Timing	Responsibility	Recipient
Operation	Annual Return	Yearly	Feedlot Manager	DAF

10.5 Non-conformances, corrective and preventive actions

A non-conformance is the failure or refusal to comply with the requirements of this SBEMP and or conditions of consent for the Development. Environmental non-conformance will be detected through verification processes such as monitoring, inspections, audits, receipt of complaints, and Annual Return.

Any member of the Development's personnel may raise a non-conformance /or improvement opportunity. The administering authority may also raise a non-conformance or improvement opportunity using the same process.

Non-conforming activities may be stopped, if necessary, by the Maintenance Manager, Feedmill Manager, or Farm Manager following consultation with the Assistant Feedlot Manager or Feedlot Manager or delegate. The works will not commence until a corrective /

preventative action has been closed out. The Environmental Specialist may also stop works in these circumstances.

For each non-conformance identified, a corrective/preventative action (or actions) will be implemented. In addition, any environmental management improvement opportunities can be initiated as a result of incidents or emergencies, monitoring and measurement, audit findings or other reviews. Improvement opportunities may also result in the implementation of corrective/preventative actions. Where a non-conformance is identified, the following process will be followed:

- An analysis of the issue by the Feedlot Manager in more detail with a view of determining possible causes for the non-conformance;
- A site inspection by the Feedlot Manager, Assistant Feedlot Manager, Maintenance Manager, Feedmill Manager, Farm Manager or delegate;
- Advising relevant personnel of the problem;
- Identifying and agreeing on actions to resolve or mitigate the non-conformance; and
- Implementing actions to rectify or mitigate the non-conformance.

Corrective/preventative actions and improvement opportunities will be entered in a database and include detail of the issue, action required and timing and responsibilities. The record will be updated with date of close out and any necessary notes. The database will be reviewed regularly to ensure actions are closed out as required.

The timing for any improvement will be agreed between the Feedlot Manager and the relevant section manager based on the level of risk (e.g. a significant risk will require immediate action). Tracking of environmental and associated corrective actions will be the responsibility of the Feedlot Manager.

Non-conformance to the requirements of this SBEMP or sub-plans is recorded as a non-compliance. Non-compliance is recorded in the Non-compliance Record (Refer Appendix A7 – Environmental forms, checklists and registers).

11 Review and Improvement

An ongoing document review process ensures that environmental documentation including this SBEMP is updated as appropriate for the specific activities that are occurring on-site.

Review of the SBEMP may be undertaken as a result of the following types of trigger mechanism:

- Issue of stop-work orders;
- Staff and agency/authority name changes;
- Non-compliance raised as part of the audits, monitoring, inspections; and
- Representations by on-site management staff.

As part of the continual improvement process, environmental management reviews are undertaken at least annually to confirm the continuing suitability and effectiveness of the SBEMP to ensure that it meets current contractual and legislative requirements. The management review involves Reid River Export Depot Pty Ltd as trustee representatives, Feedlot Manager, Assistant Feedlot Manager, Farm Manager and senior staff and Environmental Specialist (if required) and relevant staff personnel and stakeholders (if required). The management review covers, but not limited to the following:

- A review of the aspects and impacts register, legal register and environmental induction;
- Communications from agencies, regulators and other external stakeholders;
- Consideration of monitoring, inspection and audit results;
- Consideration of incidents and any lessons learnt;
- Consideration of any new regulatory issues;
- Systemic issues arising from site inspections;
- A review of the effectiveness of environmental controls;
- Training needs;
- Consideration of issues raised by senior management of the Development;
- Status of corrective and preventive actions;
- The extent to which objectives and targets have been met;
- Non-conformances and environmental incidents;
- Consideration of changes in operational needs such as resourcing;
- Follow-up actions from previous management reviews (as applicable);
- Effectiveness of environmental management documentation implementation;
- Management effectiveness;
- Potential improvements to the environmental management documentation;
- Adequacy of resources;

- Findings of audits;
- Environmental objectives and targets;
- Environmental performance;
- Compliance with legal and other requirements;
- Critical non-conformance or repeated non-conformances;
- Organisation changes; and
- Effectiveness of training and inductions.

The outcomes of the management reviews could include amendments to this SBEMP and related documentation, revision to the Development's environmental management system, risk assessment review, re-evaluation of the Development's objectives and targets as well as amendments to other management plans.

Should the document review process identify any issues or items within the documents that are either redundant or in need of updating, it is the responsibility of the Feedlot Manager (or delegate) to update the relevant documentation.

The revised document(s) will then be issued to the Feedlot Manager and the Environmental Specialist (if required) for certification of the changes. The Feedlot Manager (or delegate) can approve minor changes to the SBEMP. Minor changes would typically include those that:

- Do not increase the magnitude of impacts on the environment when considered individually or cumulatively;
- Are editorial in nature e.g. staff and agency/authority name changes; and
- Do not compromise the ability of the Development to meet approval or legislative requirements.

Where the Feedlot Manager deems it necessary, the amended SBEMP will be forwarded to DAF for approval.

12 Document control and records management

Environmental documents and records will be maintained during operation through the Development's document control and safety management system to remain legible, identifiable and traceable.

12.1 Document control

The Feedlot Manager (or delegate) will coordinate the preparation, review and distribution, as appropriate, of the environmental documents. During operation of the Development, hard copies of all environmental documents will be stored on-site at the Development's site office.

All environmental management documents are subject to ongoing review and continual improvement. This includes times of change to scheduled activities or to legislative or licensing requirements.

The SBEMP, on approval, will be available on-site at the Development's site office and will be subject to update and revision in accordance with the process described in section 11.

Reid River Export Depot Pty Ltd as trustee will implement a document control procedure to control the flow of documents within and between stakeholders and subcontractors. The procedure will ensure that documentation is:

- Developed, reviewed and approved prior to issue;
- Issued for use;
- Controlled and stored for the legally required timeframe;
- Removed from use when superseded or obsolete; and
- Archived.

A register and distribution list will identify the current revision of particular documents or data. If significant changes to the SBEMP are required, a revised copy will be issued to controlled copy holders. The controlled copy will always remain on-site at the Development's site office. The Feedlot Manager will notify all relevant personnel of any revision of the SBEMP or procedures. If any SBEMP Appendices are required to be updated at any stage of the Development, a revised copy of the relevant Appendix only will be forwarded to controlled copy holders if required.

12.2 Environmental records

A range of environmental management records will be retained by the Development. The types of records include but not limited to those outlined in Table 14. The Feedlot Manager is responsible for maintaining all environmental management documents as current at the point of use. The person listed under "Responsibility" in Table 14 ensures that the record is appropriately identified, completed and systematically retained by the Development.

Table 14 – Environmental management records

Record Type	Activity	Responsibility
Induction and training records	Development inception / new staff / changed practices	Feedlot Manager
Online waste tracking	Waste required to be tracked	Feedlot Manager
Environmental Non-conformances, complaints and follow-up actions	Event basis	Feedlot Manager
Environmental monitoring records	Waste utilisation area soil monitoring	Farm Manager
Annual report	Yearly monitoring data sets to DAF	Feedlot Manager

The approved SBEMP will be maintained in the Development's document control and data management system with a document number and a revision number. At any given time, the latest version can be viewed with the ability to view the historical versions and track changes. All environmental records will be maintained electronically on the Development's document control and data management system. Environmental records are kept as a means of assessing the effectiveness of the Development's management of environmental issues and risks, and to demonstrate compliance with conditions of the Development approval. Records that will be retained as evidence of environmental management implementation and effectiveness include, but not limited to:

- SBEMP and sub-plans;
- Environmental procedures, forms, checklists;
- Details of qualifications held by individuals responsible for environmental monitoring;
- Licences and permits;
- Records of environmental training and inductions;
- Environmental incident reports;
- Reports on compliance with approval, licence and permit conditions;
- Reports from environmental inspections (internal and external);
- Reports from environmental audits (internal and external);
- Details of complaints / non-conformance/ preventative / corrective and preventative actions;
- Monitoring data/assessment of results against compliance; and
- Meteorological (rainfall) monitoring.

13 References

Animal Health Australia, 2012, Australian Animal Welfare Standards and Guidelines — Land Transport of Livestock. Animal Health Australia (AHA) 2012, Canberra.

Animal Health Australia 2013, National biosecurity Manual for Beef Cattle Feedlots, Animal Health Australia, Deakin ACT.

AUS-MEAT Limited, 2018, NFAS Rules and Standards 2017, Murarrie QLD.

Department of Environment and Heritage Protection (DEHP), 2017, Guideline Environmental Management, Activity management plans, ESR/2017/3561, Version 2, Department of Environment and Heritage Protection, Brisbane, Queensland.

Environment Protection (Air Quality) Policy 2019 (QLD)

Environment Protection (Noise) Policy 2019 (QLD)

Environment Protection (Water and Wetlands Biodiversity) Policy 2019 (QLD)

International Erosion and Sediment Control (IECA) (Australasia) 2008, Best Practice Erosion and Sediment Control, IECA, International Erosion and Sediment Control Association (Australasia), Picton, NSW.

Meat and Livestock Australia, 2012a, National Guidelines for Beef Cattle Feedlots in Australia 3rd Edition, Meat & Livestock Australia, North Sydney, NSW.

Meat and Livestock Australia, 2012b, National Beef Cattle Feedlot Environmental Code of Practice 2nd Edition, Meat & Livestock Australia, North Sydney, NSW.

Meat and Livestock Australia, 2015a, Beef Cattle Feedlots: Design and Construction, Meat and Livestock Australia, North Sydney, NSW

Meat and Livestock Australia, 2015b, Beef cattle feedlots: waste management and utilisation, Meat and Livestock Australia, North Sydney, NSW

Skerman, A, 2000, Reference manual for the establishment and operation of beef cattle feedlots in Queensland, Information Series QI99070, Queensland Cattle Feedlot Advisory Committee (FLAC), Department of Primary Industries, Queensland

Standards Australia, 2004, AS/NZS ISO 14001:2015 Environmental management systems – Requirements with guidance for use, Sydney, NSW.

Standards Australia, 2006, AS/NZS ISO 31000:2018, Risk Management – Principles and guidelines, Sydney, NSW.

Standards Australia, 2012, Australian Standard/New Zealand Standard Handbook 203:2012 Managing environment-related risk, Sydney NSW.

Standards Australia, 2014a, AS/NZS ISO 19011:2014 Guidelines for auditing management systems, Sydney, NSW.

Standards Australia, 2014b, AS/NZS 10002:2014 Guidelines for complaint management in organizations, Sydney, NSW.

Appendix A1 – Legal and other requirements

Legislation/Policy	Relevance
Aboriginal Cultural Heritage Act 2003	An Act to provide for the effective recognition, protection and conservation of Aboriginal cultural heritage in Queensland.
Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	The EPBC Act provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places – defined in the EPBC Act as matters of national environmental significance and environmental impacts on Commonwealth land.
National Greenhouse and Energy Reporting Act 2007	An Act to provide for the reporting and dissemination of information related to greenhouse gas emissions, greenhouse gas projects, energy production and energy consumption, and for other purposes.
Environmental Protection Act 1994	The EP Act 1994 provides the regulatory framework to protect Queensland's environment, including land, air and water. The purpose of the EP Act is to control pollution and set up a licensing regime for certain activities. An environmental protection licence will be required for prescribed activities of environmental significance (i.e. Cattle feedlots). In the case of a beef cattle feedlot, the licence would be issued by DAF.
Environmental Protection (Air Quality) Policy 2019	The purpose of this policy is to achieve the object of the EP Act in relation to the air environment by identifying environmental values to be enhanced or protected; and stating indicators and air quality objectives for enhancing or protecting the environmental values; and providing a framework for making consistent, equitable and informed decisions about the air environment.
Environment Protection (NPI) Policy 2008	The purpose of this policy is to provide for the collection of information for inclusion in the National Pollutant Inventory (NPI).
Environmental Protection (Noise) Policy 2019	The purpose of this policy is to achieve the object of the EP Act in relation to the acoustic environment by identifying environmental values to be enhanced or protected; and stating acoustic quality objectives for enhancing or protecting the environmental values; and providing a framework for making consistent, equitable and informed decisions about the acoustic environment.
Environmental Protection (Waste Management) Regulation 2000	The aim of this regulation is to protect the environment by minimising the impact of waste on the environment including, in particular, the impact of waste so far as it directly affects human health; and establishing an integrated framework for minimising and managing waste under the principles of ecologically sustainable development.
Planning Act 2016	An Act to providing for an efficient, effective, transparent, integrated, coordinated and accountable system of land use planning and development assessment to facilitate the achievement of ecological sustainability in Queensland.
Planning Regulation 2017	This Regulation is made under the Planning Act 2016 and plays an important role in the planning provisions of the Planning Act 2017.
Water Act 2000	This Act aims to provide for the sustainable and integrated management of the water sources of the state of Queensland in line with ecologically sustainable development principles.
AS/NZS ISO *14001:*2015 Environmental management systems	All organisations have some impact on the environment. An EMS is a structured system or management tool designed to help an organisation to reduce its negative impacts on the environment and improve its environmental performance. The system can also provide a methodical approach to planning, implementing and reviewing an organisation's environmental management.

Guideline/Standard	Relevance
Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC and ARMCANZ 2000)	Provides a framework for recognising and protecting water quality for the full range of existing environmental values.
AS 3580.1.1:2007 Methods for sampling and analysis of ambient air: Part 1.1: Guide to siting air monitoring equipment. Standards Association of Australia, Sydney	This Standard sets out general guidelines for the siting of ambient air monitoring equipment and specifies a number of siting parameters for individual air pollutants. In practice, an ideal site satisfying all the criteria is rarely achieved.
AS 3580.10.1:2003 Methods for sampling and analysis of ambient air: Method 10.1: Determination of particulate matter – Deposited matter – Gravimetric method. Standards Association of Australia, Sydney	This Standard sets out a method for the sampling of particulate matter that is deposited from the atmosphere, and procedures for the gravimetric determination of the mass deposition rate of insoluble solids, ash, combustible matter, soluble solids and total solids from ambient air.
AS 3580.14-2011 Methods for sampling and analysis of ambient air - Meteorological monitoring for ambient air quality monitoring applications. Standards Association of Australia, Sydney	This Standard sets out methods for the collection of meteorological data for use in ambient air quality monitoring and modelling applications.
AS/NZS 5667.1—1998: Water Quality—Sampling— Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples. Standards Association of Australia, Sydney	This Standard provides general principles to be applied in sampling for the physical, chemical, microbiological or radiological analysis of waters and waste waters, including bottom sediment and sludges, for the purposes of process control, quality characterization, identification of sources of pollution and the monitoring of background levels.
AS/NZS 5667.6—1998: Water Quality—Sampling—Guidance on sampling of rivers and streams. Standards Association of Australia, Sydney	This part of ISO 5667 sets out the principles to be applied to the design of sampling programmes, sampling techniques and the handling of water samples from rivers and streams for physical, chemical and microbiological assessment.
AS/NZS 5667.10—1998: Water Quality—Sampling—Guidance on sampling of waste waters. Standards Association of Australia, Sydney	This part of ISO 5667 contains details on the sampling of domestic and industrial wastewater, i.e. the design of sampling programmes and techniques for the collection of samples. It covers wastewater in all its forms, i.e. industrial wastewater, and crude and treated domestic wastewater.
Reference manual for the establishment and operation of beef cattle feedlots in Queensland (Department of Primary Industries and Fisheries (DPI&F), 2000)	The guidelines incorporate feedlot industry best management practices and current environmental management requirements and are intended to assist orderly development and economic operation of feedlots in Queensland while minimising their environmental impact.
Guideline for Activity management plans (2017)	This guideline will assist in protecting the environment by providing a standard approach to describing how activities undertaken during the operation phase of the Development will be managed to prevent or minimise environmental impacts on site and how those environmental management requirements will be implemented.
International Erosion and sediment Control (IECA) Australasia, 2008	Provides guidance for local councils and practitioners for the design, construction and implementation of measures to improve

	stormwater management, primarily erosion and sediment control, during the construction-phase of development.
Resource manual of development of Indicators of sustainability for effluent reuse in the intensive livestock industries: Piggeries and Cattle Feedlots, Project No 1816, Australian Pork Limited, Canberra, 2003.	Provides readily available data and analysis techniques for evaluating the sustainability of effluent and solid by-product reuse for piggeries and cattle feedlots and suggested sustainability indicators for these intensive livestock industries.
Meat Livestock Australia - National Guidelines for Beef Cattle Feedlots (MLA, 2012a)	The Guidelines provide a broad framework of generally acceptable principles for the establishment and operation of feedlots based on the best technical information available at the time of publication. They also provide information on specific topics, particularly where specific guidance might be useful in assisting operators to meet the performance measures. The National Guidelines for Beef Cattle Feedlots in Australia is a companion document to the National Beef Cattle Feedlot Environmental Code of Practice.
Meat Livestock Australia - National Beef Cattle Feedlot Environmental Code of Practice (MLA, 2012b)	The National Beef Cattle Feedlot Environmental Code of Practice – 2nd Edition (Code of Practice) provides a key mechanism to help deliver improvements to environmental practices within the Australia cattle feedlot industry. The Environmental Code of Practice is a companion document to the National Guidelines for Beef Cattle Feedlots in Australia (Guidelines).
National Environment Protection Council's (NEPC) - National Environment Protection (Ambient Air Quality) Measure.	The purpose of this Part is to set standards that consist of quantifiable characteristics of the air against which ambient air quality can be assessed.
Sampling manual for environmental monitoring by intensive livestock industries (DPI, 2003)	The purpose of this manual is to assist owners and managers of intensive livestock enterprises carry out their monitoring responsibilities under the Environmental Protection (EP) Act (1994).
Department of Environment and Heritage Protection (2009) Monitoring and Sampling Manual 2009, Version 2, July 2013	The Monitoring and Sampling Manual 2009 provides the common techniques, methods and standards for sample collection, handling and data management for use by Queensland Government agencies, relevant persons and other organisations.

Appendix A2 – Approvals, permits and licences

This section has been left intentionally blank
Copies of all relevant approvals , permits and licences to be included after Development approval.

Appendix A3 – Environmental aspects and impacts

Table 15 – Operation environmental aspects and impacts

Category	Operation Activities / Aspect	Potential Impacts	Risk level prior to mitigation	Indicative Mitigation Measures	Risk level after mitigation	Relevant Management Document / Training required
Air quality	• Dry commodity storage, handling and processing • High moisture commodity (e.g. silage, molasses, oils) storage and handling • Grain handling and processing • Pen, drain and sedimentation basin cleaning • Mortality management • Split feed management • Solid waste handling, processing and spreading • Effluent storage • Effluent utilisation • Vehicular movements on unsealed roads • Ration delivery • Exposed bare earth areas • Vehicle emissions	Complaints from neighbours, including loss of amenity and impacts of dust.	**M9 – Moderate**	• All Development employees and contractors are given adequate training in environmental awareness, legal responsibilities, and air quality control methods. • The air quality and meteorological monitoring network is maintained, and results are routinely analysed, assessed and reported. • Pen cleaning and surface maintenance is undertaken on a planned basis to ensure that pen surfaces dry quickly following rainfall, can drain freely and do not become overly dry and cause excessive dust emissions. • Elimination of wet areas within the pens by repairing potholes, eliminating accumulated manure from under fencelines and fixing leaks from water troughs. • Spilt and spoilt feed and feedstuffs are regularly removed from around feed storage and preparation areas, feed bunks, feed processing equipment, etc. • The effluent is removed from the sedimentation pond as soon as practical after the wet season. • Solids are removed from the sedimentation pond as soon as practical after deposition. • Mortalities are placed within the solid waste stockpile and carcass composting area and covered with high carbon material as soon as practicable after placement. • Wet manure stockpiles are not turned to minimise release of emissions generated from the anaerobic decomposition process. • Controlled aeration of solid waste composting windrows. • Dewatering of the holding pond by irrigation to crops as soon as possible after rainfall. • Receiving, reporting and responding to any complaints in relation to air quality. • Adapting the cattle stocking density in pens to maintain the moisture content of the manure on the pen surface at 25-35% to minimise dust generation. For example, stocking density may change from lighter rates in winter to heavy rates in summer. • Setting and enforcing speed limits on internal road network. • Dust suppression measures, such as watering access and feed roads and solid waste (manure) stockpiles as required. • Any operations involving the movement of dusty materials such as grain movement, solid waste (manure) turning and spreading shall be	**L3 - Low**	Site Based Environmental Management Plan Meat and Livestock Australia, 2015b, Beef cattle feedlots: waste management and utilisation, Meat and Livestock Australia, North Sydney, NSW Development approval conditions NFAS manual Environment Protection (Air quality) Policy 2019 Complaints Register Personnel training and awareness Personnel induction
		Impacts on residential sensitive receivers, including impacts on living areas, swimming pools and general amenities.	**M9 – Moderate**		**L2 - Low**	
		Potential adverse health effects.	**M11 – Moderate**		**L1 - Low**	
		Impacts on water quality and other aspects of the natural environment.	**L5 – Low**		**L1 - Low**	
		Dust on crops including broadacre crops or other agricultural crops.	**L5 – Low**		**L2 - Low**	

				timed and managed where possible when materials have adequate moisture content. • Ceasing dust generating activities such as pen cleaning, and solid waste (manure, carcass compost, pond sludge) stockpiling, screening and spreading during periods of high wind. • Any grain processing dust-suppression equipment is maintained and operational at all times. • The loads on vehicles moving dusty materials (e.g. feedstuffs) onto or off the site are covered during transit. • All visual screens (e.g. vegetative buffers) are kept in good order (including the replanting of gaps in vegetative buffers due to trees failing to establish, the death or loss of established trees or other factors which would cause the buffer not the perform its intended function). • Application of solid (manure, carcass compost, holding pond sludge) and effluent to land when wind conditions and dispersion conditions are favourable. • The best animal production genetics shall be used - Improved production traits, particularly good feed conversion efficiency will contribute significantly to reducing animal emissions intensity. • Sourcing livestock and feed commodities from as close to the Development as practical as well as on-site production to minimise fugitive emissions during transport. • Rations formulated to minimise enteric methane emissions • Use of appropriately sized plant and equipment for respective processes • Where practical, solid wastes (manure, carcass compost, holding pond sludge) incorporated directly into the soil. • Routine service and maintenance of mobile equipment used on-site to ensure efficient operation • Continuous improvement of GHG intensity of production by identifying and controlling energy intensive processes • A suitable buffer is applied where effluent and solid waste (manure, carcass compost, pond sludge) applications take place within close proximity to roads, dwellings or other areas likely to be used by the public at that time (the appropriateness of the applied buffer distances is determined having consideration for the qualities of the materials being applied, weather conditions and other environmental factors; as well as the anticipated level of public usage or exposure at those times). • A complaints register is kept, including details of the nature of any complaint received, the response made, and any mitigation measures implemented. • Hazardous materials are stored and used in accordance with relevant guidelines and Australian Standards for the storage of hazardous and dangerous goods and spill management.		

Groundwater – Quantity and quality	• Groundwater use exceeding Development's allocation and entitlements • Leachate of effluent through the liner underlying the controlled drainage area as a result of integrity failure or exceedance of design criteria. • Spills or leaks of hazardous materials stored or used on-site such as fuels, chemicals etc. • Inappropriate storage of solid wastes such as outside of the controlled drainage area. • Inappropriate utilisation of solid wastes (manure, carcass compost, holding pond sludge) and effluent on-site such as high application rates and ponding of effluent.	Potential for localised drawdown of groundwater resources.	**M11 – Moderate**	• Preparation of an environmental management framework for operation of the Development. • Development and implementation of emergency and contingency plans detailing methods to manage spills or other emergencies on site, such as pipe breakages, holding pond overflows, pump failures etc. • Sustainable use of groundwater in accordance with the Development's allocation and entitlements. • Groundwater extraction managed to ensure sustainable drawdown rates. • Groundwater monitoring (quantity and quantity) is undertaken as prescribed by the Development approval conditions. • Solid waste stockpiles established within controlled drainage area to prevent contaminated leachate into groundwater resources. • The land application of solid wastes and effluent is made at rates consistent with the ability of soils and crops grown in the on-site utilisation areas to sustainably utilise the applied nutrients, salts and organic matter, under the climatic conditions prevailing at the site. • Application rate of effluent is controlled to ensure that excessive ponding does not occur • Effluent and solid waste only applied to dedicated waste utilisation areas. • Application rate of effluent should not necessitate the routine and specific leaching of salts from the soil profile in order to obtain acceptable crop performance. • The liner of all elements of the controlled drainage area such as drains, sedimentation pond, holding pond etc is maintained to ensure the integrity and ongoing compliance with specified design criteria • When available, effluent stored, treated and sustainably applied to land on-site by irrigation. • Hazardous materials are stored and used in accordance with relevant guidelines and Australian Standards for the storage of hazardous and dangerous goods and spill management.	**L6 – Low**	Site Based Environmental Management Plan NFAS manual Meat and Livestock Australia, 2015b, Beef cattle feedlots: waste management and utilisation, Meat and Livestock Australia, North Sydney, NSW Development approval conditions Personnel training and induction
		Impacts to the quality of groundwater in the vicinity of the Development.	**M12 – Moderate**		**L6 – Low**	
Surface water – Quantity and quality	Surface water use exceeding Development's allocation and entitlements Uncontrolled release of liquid (effluent) wastes from controlled drainage	Potential for drawdown of surface water resources.	**M13 – Moderate**	• Preparation of environmental management framework for operation of the Development. • Development and implementation of emergency and contingency plans detailing methods to manage spills or other emergencies on site, such as pipe breakages, pond overflows, pump failures etc.	**L6 – Low**	Site Based Environmental Management Plan NFAS manual

	area as a result of overflows, integrity failure or exceedance of design criteria Spills or leaks of hazardous materials stored or used on-site such as fuels, chemicals etc Surface runoff from the inappropriate application of liquid wastes (effluent) to land impacting water chemistry, clarity, nutrient and toxicants, for example Inappropriate storage of solid wastes (manure, carcass compost, holding pond sludge) such as outside of the controlled drainage area On-site utilisation of solid and liquid wastes	Loss of or damage to aquatic habitat.	**M11 – Moderate**	• Liquid and solid wastes only applied to dedicated waste utilisation areas. • Vegetative buffers around drainage lines designed to help protect surface water are maintained in their intended condition. • Solid waste (manure, carcass compost, holding pond sludge) stockpiles would be established within controlled drainage area to prevent contaminated runoff into clean water areas. • Sustainable use of surface water in accordance the Development's allocation and entitlements. • The land application of solid waste and effluent is made at rates consistent with the ability of soils and crops grown in the on-site utilisation areas to sustainably utilise the applied nutrients, salts and organic matter, under the climatic conditions prevailing at the site. • Soil condition is monitored periodically, and soil tests are used where there is potential for deterioration of soil condition • Application rates of effluent are controlled to ensure that excessive runoff does not occur • All elements of the controlled drainage area such as drains, sedimentation pond, holding pond etc are cleaned and maintained to ensure their integrity and ongoing compliance with specified design criteria. • When available, effluent shall be stored, treated and sustainably applied to land on-site by irrigation. • Design discharge events from the holding ponds shall be directed to a natural grassed discharge area. This grassed area shall filter and disperse the liquid waste whilst allowing some infiltration. As the design discharge events are at a frequency of one in 10 years the concentration of nutrients shall be sustainably adsorbed and utilised by vegetation in between events. • DAF is notified of any overtopping event or similar threats to surface water quality • Hazardous materials are stored and used in accordance with relevant guidelines and Australian Standards for the storage of hazardous and dangerous goods and spill management.	**L6 – Low**	Meat and Livestock Australia, 2015b, Beef cattle feedlots: waste management and utilisation, Meat and Livestock Australia, North Sydney, NSW Development approval conditions Personnel training and induction
		Erosion of exposed soils causing sedimentation of waterways and aquatic environments	**M11 – Moderate**		**L6 – Low**	
		Changes to water chemistry, in particular pH values altering aquatic habitats, including threatened species habitats.	**M11 – Moderate**		**L6 – Low**	
		Impact to water quality due to fuels and leaks and inappropriate storage of hazardous material.	**M11 – Moderate**		**L6 – Low**	
Biodiversity	Access and internal road alignments and traffic movements. Dry commodity storage, handling and processing High moisture commodity (e.g. silage, molasses, oils) storage and handling Grain handling and processing Mortality management	Loss of or damage to habitat for threatened species	**L5 – Low**	• Any significant flora and fauna habitat areas required to be protected shall be identified and marked. • Clearing restricted to those areas required for Development's operation and firebreaks. • Induct personnel on biodiversity issues and safeguards. • Implement ongoing weed monitoring and management program to remove pest plant species and weeds. Control shall be achieved by regular mowing or herbicide application. Knockdown or residual herbicides (or a combination of the two) shall be used depending on whether the weeds have emerged, the time of year and the weeds present.	**L4 – Low**	Site Based Environmental Management Plan Weed management procedure Vehicle hygiene procedures Personnel induction
		Potential impact on endangered ecological communities	**L5 – Low**		**L4 – Low**	
		Loss and fragmentation of riparian and aquatic habitat	**L5 - Low**		**L4 – Low**	
		Mortality of protected and threatened fauna	**M9 – Moderate**		**L5 – Low**	

	Split feed management
	Solid waste handling, processing and utilisation.
	Liquid waste storage, handling and utilisation
	Vehicular movements on unsealed roads
	Use of chemicals
	Noise impacts
	Uncontrolled fires/bushfires
		Creation of barriers to fauna movement	**L5 – Low**	• Disturbed areas to be rehabilitated will be monitored for effective restoration and rehabilitation.
				• All habitat trees retained where practicable.
				• Major drainage lines are to be bridged and loss of riparian vegetation to be minimised.
				• Waterway crossings for fish passage are maintained.
				• Implement vehicle hygiene procedures to prevent the introduction of pest plants, spread of pest plants and disease.
				• Provisions to limit heavy vehicle speeds and for signage along access roads.
				• Methods and communication tools to monitor road strike and mortality of wildlife.
				• Aquatic weeds in water storages shall be controlled via mechanical and/or chemical means. Chemical control shall be undertaken with considerable care, considering the identity of the weed, the effect of herbicides on desirable plants, fish and other aquatic life and the eventual use of the water.
				• Implement a pest management program to control pest animal species already present, using acceptable methods as well as identifying potential pest species, their likely distribution and methods to prevent their spread.
				• Wild dog, fox and vermin pest species populations on the Development site shall be monitored and managed to prevent proliferation and spread.
				• Pest animal control programs shall use the most humane, target specific, cost effective and efficacious techniques available.
				• Mice and rat populations will be mitigated:
				  ◦ by minimising feed wastage and spillage to minimise likelihood of attracting vermin)
				  ◦ implementing a baiting program if the vermin population reaches a nuisance level.
				• Fly breeding sites shall be mitigated using:
				  ◦ Several control methods such as biological, chemical and physical methods following integrated pest management (IPM) principles shall be used.
				  ◦ Best practice sanitation methods such as solid waste management practices (pen cleaning, under-fence cleaning) to minimise fly breeding sites.
				  ◦ Controlling weeds and keeping grass and other vegetation short, particularly around pens, drains, sedimentation systems and holding ponds makes it more difficult for flies to find resting places and reduces the vegetation–manure interface, a preferred breeding substrate for stable flies.
				• Composting carcasses shall be covered with manure.
				• Domestic waste shall be managed appropriately and in accordance with any relevant statutory requirements.
					L4 – Low	

		Edge effects from road noise and light	**L5 – Low**		**L4 – Low**	
		Introduction and spread of terrestrial and /or aquatic weeds and pest fauna species	**M9– Moderate**		**L5 – Low**	

Hydrology and flooding	• Waterway and drainage line crossings • Transverse drainage	Restricted flow paths causing localised flooding due to access road infrastructure structures placed on floodplain	**L6 – Low**	• The Development is sited above the height of a 100-year average recurrence interval (Q_{100}) flood level. • Development designed, constructed and operated in accordance with the conditions of approval of the Development. • Evacuation and access assessed in consultation with landowners. • Monitor rain radar and flooding forecasts and ensure response preparedness. • Prepare site for flood and severe rainfall events (where forecast) to minimise inundation impacts. • Waterway and drainage crossings maintained to ensure the integrity and ongoing compliance with specified design criteria. • Solid waste and effluent application infrastructure sited so that they do not pose an unacceptable risk to flood afflux levels. • Solid waste and effluent are not applied to on-site utilisation areas where and when there is a reasonable probability that the applied materials will cause pollution of surface water (e.g. on land directly abutting a watercourse or when a flood event is imminent).	**L6 – Low**	Site Based Environmental Management Plan National Guidelines for Beef Cattle Feedlots in Australia 3rd Edition, MLA, 2012a) Personnel induction and training
		Changes to flood afflux levels during flood events – increased impact to receivers	**L6 – Low**		**L6 – Low**	
		Flood damage to plant, equipment or infrastructure	**L6 – Low**		**L6 – Low**	
		Erosion of access road during large flood events	**L6 - Low**		**L6 – Low**	
		Change to flood regime due to topographical changes and modification of catchments	**L6 - Low**		**L6 – Low**	
		Impacts to flood evacuation and access movements	**L6 - Low**		**L6 – Low**	
Noise and vibration	• Livestock handling and movement • Feed processing and preparation equipment (electric motors, conveyors, roller mills) • Feed delivery mobile plant (feed trucks) • Solid waste management (front-end loaders, haulage trucks, screening equipment, tractors etc) • Effluent management (pumping and generators) • Water supply and reticulation (pumping) • Farming plant and equipment (tractors, front-end loaders etc)	Noise impacts on sensitive receivers during operation	**L5 – Low**	• Low-stress cattle handling techniques employed to manage cattle to ensure they are handled quietly and efficiently. • Adherence to working hours in conditions of approval unless otherwise approved. • Minimising heavy vehicles' entry to site and departure from site outside the nominated operational hours. • Respite periods for noisy activities (in accordance with regulatory guidelines). • Operation equipment selected, operated and maintained to minimise noise impacts and where necessary fitted with silencers and "smart" reversing safety devices. • Managing operation vehicle routes and speed of vehicles. • Establish and maintain complaints management system. • Awareness training for staff and contractors in environmental noise issues. • Minimising the use of horn signals and consideration of alternative methods of communication. • Switching off any equipment not in use for extended periods. • All plant and equipment required would be well maintained and regularly serviced. • Community consultation with local residents to assist in the alleviation of community concerns.	**L4 - Low**	Site Based Environmental Management Plan Environment Protection (Noise) Policy 2019 Complaints register Personnel induction and training
		Noise exceeding regulatory criteria levels	**L5 – Low**		**L4 - Low**	
		Vibration impacts on sensitive receptors during operation	**L6 - Low**		**L4 - Low**	

				• Selection of machines that are inherently free of or have low vibration. • Vibration-producing machinery shall be supported on stiff structural components and be provided with efficient vibration isolation systems. • Maintenance of plant and equipment machinery – ensuring rotating parts are balanced, vibration isolators are functioning as intended etc.		
Traffic and transport	• Light vehicle travel to / from site – staff, visitors etc • Heavy vehicle travel to and from site - livestock, commodities and general deliveries etc • Operation vehicle movements – feed trucks, solid waste management etc	Temporary disruptions / delays to local traffic	**L5 – Low**	• Identify and assess roads likely to be affected by Development's operation and develop methods to minimise traffic impacts. • All vehicles carrying materials to be adequately covered (using a tarpaulin) as required to prevent any loss of material, which may cause driver safety issues. • Maintain principal haulage route, advance and position intersection signage. • Monitoring of any traffic delays.	**L4 - Low**	Site Based Environmental Management Plan Complaints register Personnel induction
		Temporary restrictions to private access roads	**L5 – Low**		**L4 – Low**	
		Permanent adjustment to some private property access roads and local/regional roads	**L5 – Low**		**L4 – Low**	
		Changed traffic patterns	**M11 – Moderate**		**L4 – Low**	
		Accidents - Safety of commuters, pedestrians, contractors and subcontractors.	**H22 – High**		**M15 – Moderate**	
Indigenous cultural heritage	• Routine maintenance activity • Excavation of soils	Impact to undiscovered or undocumented aboriginal sites, artefacts and cultural places	**L5 – Low**	• Induct personnel on heritage issues, safeguards, and the location of indigenous heritage items. • If design changes or operation activities impact on areas outside of those identified in the Development Consent, relevant stakeholders will be consulted. • Protect identified heritage items with protective fencing or flagging from being disturbed during operation. • Regular inspection of heritage protection fencing.	**L4 – Low**	Site Based Environmental Management Plan Personnel induction
		Finding / disturbing burials or human remains	**L5 - Low**		**L4 – Low**	
Resource and waste management	• Water usage • Energy usage • Generation of general waste during operation activities including building materials, excess unsuitable spoil material, vegetation material • Generation of solid waste	Improper disposal of waste material	**M12 – Moderate**	• Sustainable use of groundwater and surface water in accordance with the Development's allocation and entitlements. • Waste materials contained in waste bins or other suitable containers, and collected for recycling, reuse or disposal by the licensed waste contractor. • Use recycled products where possible. • Separate, contain, manage and dispose contaminated waste to prevent migration and further contamination whilst maintaining compliance with regulatory requirements. • Label and store all liquid waste containers in a bunded area prior to removal off-site.	**L6 – Low**	Site Based Environmental Management Plan Meat and Livestock Australia, 2015b, Beef cattle feedlots: waste management and utilisation, Meat and Livestock Australia, North Sydney, NSW
		Direct impacts to land, groundwater or surface waters.	**M12 – Moderate**		**L6 – Low**	
		Depletion or sterilisation of non-renewable resources, including water and energy	**M11 – Moderate**		**L6 – Low**	
		Difficult disposal of waste material	**M13 – Moderate**		**L6 – Low**	

	• Generation of liquid wastes (effluent/sewage) • Handling of chemicals, waste and hazardous goods. • Fuel storage and distribution and waste oil disposal	including hazardous waste.		• Undertake inspections of the worksite and waste storage areas to ensure litter / debris is regularly cleaned up and contained on site. • Bunding of areas used for fuel, oil and chemical storage in accordance with Australian Standards and regulatory guidelines. • Locate appropriate waste removal contractor and/or appropriately licenced waste facilities in the area. • Sustainable on-site utilisation of effluent and solid waste. • Modern and well-maintained equipment is to be used to encourage fuel efficiency • Stormwater from roof structures captured for incidental uses. • Water recycling measures are implemented where practical.		Personnel induction and training
		Potential leaks and spills of fuels and/or hazardous materials.	**M12 – Moderate**		**L6 – Low**	
		Impact to water quality due to inappropriate solid and/or liquid waste management.	**M12 – Moderate**		**L6 – Low**	
Visual amenity and landscaping	• Revegetation /landscaping • Solid waste management • Rehabilitation of disturbed land • Removal of visually prominent native vegetation • Evening / night activities	Change to landscape character and visual environment as a result of large embankments, disturbed areas, night activities, removal of vegetation, and access road.	**L5 – Low**	• Landscape revegetation will incorporate the surrounding landscape types and vegetation patterns. • Embankments will be stabilised by appropriate landscape treatments. • The use of night-lighting will be minimised and directed away from rural residences where possible. • Site facilities and areas surrounding them will be kept tidy and be regularly mowed, cleaned and maintained. • Solid waste management in accordance with DAF guidelines. • Monitoring, evaluation and management of landscape revegetation areas including treatment of weeds.	**L2 – Low**	Site Based Environmental Management Plan Meat and Livestock Australia, 2015b, Beef cattle feedlots: waste management and utilisation, Meat and Livestock Australia, North Sydney, NSW Obtrusive Effects of Outdoor Lighting, Sydney, Australia. Personnel induction
		Visual impacts as a result of solid waste management	**L5 – Low**		**L2 – Low**	
		Poor management of revegetation	**L5 – Low**		**L2 – Low**	
		Visual impacts as a result of obtrusive lighting	**L5 – Low**		**L4 - Low**	
Fire	Handling of hazardous materials. Fuel storage and distribution Hot works Materials handling and storage e.g. hay storage, grain dust	Fire damage to plant, equipment or infrastructure	**M9 – Moderate**	Establish fuel free zones around materials which are adjacent to bush fire hazard areas. Provide fuel reduced zones in areas of high ignition potential (e.g. along roads, refuelling areas, infrastructure etc) to slow the development of fires. Access tracks maintained on the site. Ensure any hot works have been approved by site management beforehand and adequate controls are in place e.g. fire extinguishers Hazardous materials are stored and used in accordance with relevant state guidelines and Australian Standards for the storage of hazardous and dangerous goods and spill management. Fire-fighting equipment will be held on-site to respond to any fires that may occur during operation.	**L5 – Low**	Site Based Environmental Management Plan Personnel induction and training
		Impacts to surrounding properties.	**M11 – Moderate**		**L6 – Low**	
Soils and sediments	Rehabilitation of disturbed land Solid waste handling, processing and utilisation.	Erosion of exposed soils causing sedimentation of waterways and aquatic environments	**M11 – Moderate**	• Clean and dirty water runoff will be adequately separated to avoid mixing where possible through the use of diversions, clean water drains, and the installation of permanent drainage infrastructure.	**L6 – Low**	Site Based Environmental Management Plan

	Liquid waste storage, handling and utilisation Handling of chemicals, waste and hazardous goods. Fuel storage and distribution and waste oil disposal Maintenance of plant and equipment, servicing and refuelling Holding pond / sediment basin management Noxious weed treatment	Impacts to the quality of soils in the solid waste and effluent utilisation areas	**M12 – Moderate**	• Exposed areas will be progressively rehabilitated. Methods will include permanent vegetation, or temporary protection with cover crops. • Exposed batter slopes and embankments, and other areas exposed but not worked, will be protected from erosion through implementation of permanent stabilisation measures e.g. seeding, revegetation. • Vehicle movements from site will be minimised during wet weather if the tracking of mud onto public sealed roads becomes an issue. • Hazardous materials storage meets regulatory requirements for bunding/storage and spill kits available. • Solid waste will be stored in designated solid waste stockpile/carcass composting area in accordance with relevant guidelines. • Solid waste will be sustainably applied to land within the solid waste utilisation area. • When available, effluent from the holding pond will be sustainably applied to land within the effluent utilisation area. • The land application of solid waste and effluent is made at rates consistent with the ability of soils and crops grown in the on-site utilisation areas to sustainably utilise the applied nutrients, salts and organic matter, under the climatic conditions prevailing at the site.	**L6 – Low**	IECA (2008) Best Practice Erosion and Sediment Control
		Contamination of soils due to spills and leaks and inappropriate storage of hazardous material	**M9 – Moderate**		**L4 – Low**	Meat and Livestock Australia, 2015b, Beef cattle feedlots: waste management and utilisation, Meat and Livestock Australia Personnel induction and training

Appendix A4 – Environmental commitment

Reid River Export Depot Pty Ltd as trustee is committed to protect the environment by reducing the present and future environmental risks of activities associated with the operation of the Development.

This means that we are committed to:

Sustainable development

Integrate environmental management into our planning and decision-making processes, to ensure sustainability and minimum impact on the environment.

Pollution prevention

Conduct our operations in a manner that prevents pollution, conserves resources, and proactively addresses past environmental contamination (if any).

Legal compliance

Ensure our operations comply with applicable environmental regulations and requirements and licence conditions.

Employee involvement

Foster environmental responsibility among our employees to be responsible environmental stewards through recycling, conserving resources and ultimately eliminating waste and the environmental risks of our business operations.

Continual improvement

Regularly measure our performance, and practice continual improvement.

Training

Reid River Export Depot Pty Ltd as trustee will ensure all staff involved in the operation of the Development is adequately trained in relevant operational issues and relevant training and education is undertaken.

Signed: _____ Date: _____

Position: _____

Appendix A5 – Obligations, Roles, Responsibilities and Authority

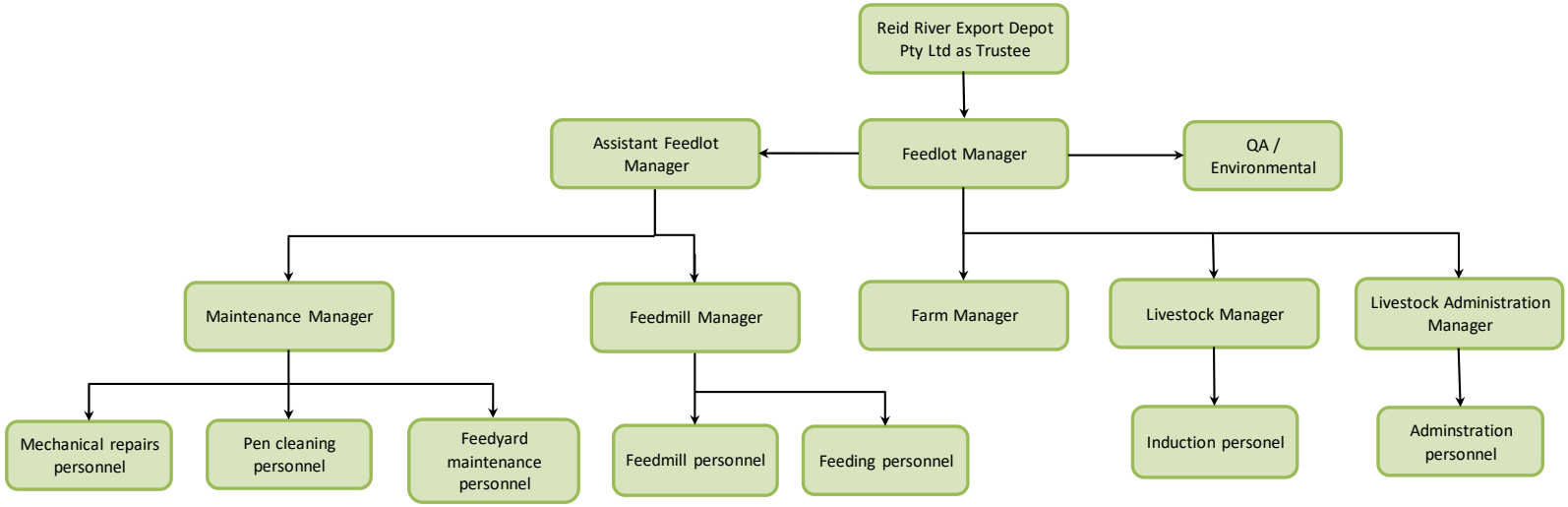

Figure A6.1 – Development management structure (Operational phase)

Table 16 – Development personnel key environmental responsibilities (Operational phase)

Roles	Responsibilities	Authority	Accountability
Feedlot Manager	Plan, implement and oversee day to day running of overall operation within business, QA and health and safety. Prepare and monitor budgets including capital expenditure and running costs. Plan and oversee improvement and development programs for business in a manner that avoids or minimises impact to environment. Endorse and support the owner's environmental commitment attached at Appendix A4 – Environmental commitment. Maintain records within property and QA Guidelines. Hire and oversee, train and lead staff. Liaise with customers, suppliers and industry stakeholders. Organise and attend staff training and development. Manage the cattle feedlot operations at the Development to achieve an optimal return on funds invested. Ensure all cattle feedlot activities comply with relevant regulatory and Development requirements. Ensure the requirements of the SBEMP are fully implemented, and in particular, that environmental requirements are not secondary to other operation requirements. Endorse and support the owner's environmental commitment attached at Appendix A4 – Environmental commitment. Liaise with relevant stakeholders as required. Participate and provide guidance in the regular review of this S B E M P and supporting documentation. Ensure that all feedlot personnel receive appropriate induction training, including details of the environmental requirements. Ensure that complaints are investigated to ensure effective resolution. Plan and direct feedlot activities in a manner that avoids or minimises impact to environment.	Stop work within the immediate vicinity of a major environmental incident or significant non-compliance with approval conditions and/or environmental authority. Direct implementation of environmental protection measures within the beef cattle production pens, hospital and holding pens.	Reid River Export Depot as Trustee

	Stop any activity immediately where material or serious environmental harm from pollution is caused or threatened. Report any activity where material or serious environmental harm from pollution is caused or threatened and advise the Proprietor. Undertake regular task observations to check compliance with relevant procedures. Coordinate action in emergency situations and allocate required resources.		
Assistant Feedlot Manager	Plan, implement and oversee day to day running of activities within maintenance and feeding activities. Endorse and support the owner's environmental commitment attached at Appendix A4 – Environmental commitment. Hire and oversee, train and lead staff. Liaise with customers and suppliers. Organise and attend staff training and development. Plan and direct maintenance and feeding activities in a manner that avoids or minimises impact to environment. Stop any activity immediately where material or serious environmental harm from pollution is caused or threatened. Report any activity where material or serious environmental harm from pollution is caused or threatened and advise the Feedlot Manager. Undertake regular task observations to check compliance with relevant procedures. Coordinate action in emergency situations and allocate required resources.	Stop activities where there is an actual or immediate risk of harm to the environment and advise the Feedlot Manager. Direct implementation of environmental protection measures within the feedyard.	Feedlot Manager
Livestock Manager	Supervise the receival, processing, handling, animal health and dispatch of all cattle in the feedlot. Communicate with all feedyard personnel and sub-contractors regarding compliance with the SBEMP and site-specific environmental issues relating to feedyard activities. Supervise staff involved with receival, processing, handling, animal health and dispatch of cattle in the feedyard. Ensure all feedyard workers attend an environmental induction prior to the commencement of works. Plan and direct feedyard activities in a manner that avoids or minimises impact to environment.	Stop activities where there is an actual or immediate risk of harm to the environment and advise the Feedlot Manager. Direct implementation of environmental protection measures within the feedyard.	Feedlot Manager

	Ensure feedyard personnel manage operation activities in accordance with statutory and approval requirements. Ensure environmental management procedures and protection measures are implemented within the feedyard and associated activities. Identify resources required for implementation of the SBEMP and relevant associated sub-plans. Report any feedyard activity that has resulted, or has the potential to result, in an environmental incident immediately to the Feedlot Manager. Undertake regular task observations to check compliance with SOPs. Coordinate action in emergency situations and allocate required resources.		
Feedmill Manager	Manage the procurement, delivery, receivals and storage of all feed commodities and delivery activities. Ensure all feedmill personnel attend an environmental induction prior to the commencement of works. Plan and direct feedmill activities in a manner that avoids or minimises impact to environment. Ensure feed processing, preparation and delivery personnel manage operation activities in accordance with statutory and approval requirements. Ensure environmental management procedures and protection measures are implemented within the feed processing and preparation facility and associated activities. Identify resources required for implementation of the SBEMP and relevant associated subplans. Identify and implement opportunities to reduce water and energy usage in feed preparation and storage. Report any feed processing, preparation or ration delivery activity that has resulted, or has the potential to result, in an environmental incident immediately to the Feedlot Manager. Undertake regular task observations. Coordinate action in emergency situations and allocate required resources.	Manage the procurement, delivery, receivals and storage of all feed commodities Direct implementation of environmental protection measures within feed storage, processing and preparation areas.	Assistant Feedlot Manager
Farm Manager	Manage the irrigated and dryland farming operation to optimise returns through activities that are complementary to the beef feedlot operations. Ensure the environmentally sustainable use of effluent and solid by-products from Development operations in accordance with the Developments approval conditions. Supervise staff involved with farming operations.	Stop activities where there is an actual or immediate risk of harm to the environment and advise the Feedlot Manager.	Feedlot Manager

	Communicate with all farmhands and sub-contractors regarding compliance with the SBEMP and site-specific environmental issues relating to solid waste and effluent utilisation activities. Plan and direct solid waste and effluent utilisation activities in a manner that avoids or minimises impact to environment. Ensure environmental management procedures and protection measures are implemented for cropping activities specifically in relation to solid waste and effluent utilisation. Identify resources required for implementation of the SBEMP and relevant associated sub-plans in relation to solid waste and effluent utilisation. Report any solid waste and effluent utilisation activity that has resulted, or has the potential to result, in an environmental incident immediately to the Feedlot Manager. Undertake regular task observations to check compliance with relevant QA procedures. Coordinate action in emergency situations and allocate required resources. Assist the Feedlot Manager with preparation of budgets including capital expenditure and running costs. Operate and maintain machinery and irrigation systems according to production and OHS requirements. Maintain records within property and QA Guidelines. Oversee and monitor correct handling and use of hazardous materials. Follow and adhere to QA and OHS procedures and Guidelines.	Direct implementation of environmental protection measures on cropping land.	
Maintenance Manager	Supervise staff involved with cleaning and maintenance activities of feedyard pens, troughs, roads, water supply and plant and equipment. Plan and direct maintenance activities in a manner that avoids or minimises impact to environment. Identify resources required for implementation of the SBEMP and relevant associated sub-plans. Report any maintenance activity that has resulted, or has the potential to result, in an environmental incident immediately to the Feedlot Manager. Identify and implement opportunities to reduce water and energy usage in the feedyard and recycling opportunities for solid wastes. Undertake regular task observations to check compliance with SOPs.	Stop activities where there is an actual or immediate risk of harm to the environment and advise the Assistant Feedlot Manager. Direct implementation of environmental protection measures within workshop, pens or around the Development complex.	Assistant Feedlot Manager

	Coordinate action in emergency situations and allocate required resources		
Administration Manager	Oversee all administration operations to ensure compliance with relevant regulatory and Development requirements.	No specific environmental authority	Feedlot Manager
Other Development Personnel including sub-contractors	Comply with the relevant requirements of the SBEMP, or other environmental management guidance as instructed by a member of the Development's management. Participate in the mandatory Development/site induction program. Report any environmental incidents to the line manager immediately or as soon as practicable if reasonable steps can be adopted to control the incident. Undertake remedial action as required to ensure environmental controls are maintained in good working order. Stop activities where there is an actual or immediate risk of harm to the environment and advise their line Manager or Feedlot Manager.	Report any activity that has resulted, or has the potential to result, in an environmental incident immediately to their line manager or Feedlot Manager.	Farm Manager, Feedmill Manager, Livestock Feedlot Manager

Appendix A6 – Environmental procedures

SBEMP SOP 1 – Staff environmental induction, training and awareness

Aspect	Staff environmental induction, training and awareness
Objectives	To implement a staff environmental induction, training and awareness to ensure that new and existing personnel are adequately trained to perform the tasks assigned to them without leading to environmental or personal harm.
Potential Impacts	Occupational health and safety of employees and contractors. Animal health and performance. Receiving environment such as surface water and aquatic and terrestrial ecosystems affected by pollution events. Community amenity and health.
Control Actions	Training of employees to enable them to fulfil their duties in a competent manner and consistent with the aims of the environmental policy and environmental management system. Ensure that all staff are aware of their responsibilities in general environmental management. Provide staff training as required internally and allow for appropriate external environmental courses, seminars or workshops are available. Ensure that sub-contractors working on site have the necessary experience and competence with regard to environment and health & safety issues.
Relevant Standards, Management Plans, Records	Personnel induction, training and awareness record. Non-compliance record. Incident
Responsibility	As required by the specific requirements outlined in section 5.2.
Performance Indicators	Ensure all personnel are adequately trained with respect to the environmental management system and emergency preparedness. No non-compliances with conditions of approval. No adverse impacts to environmental values.
Monitoring	As required by the specific requirements outlined in section 10.2.
Reporting	As required by the specific requirements outlined in section 10.4.
Corrective Actions	Review staff training program.

SBEMP SOP 2 – Feedlot cattle numbers

Aspect	Feedlot cattle numbers
Objectives	To ensure that the number of cattle on feed does not exceed conditions of approval.
Potential Impacts	Occupational health and safety of employees and contractors. Animal health and performance. Receiving environment such as surface water and aquatic and terrestrial ecosystems affected by pollution events. Community amenity and health.
Control Actions	The number of beef cattle-on-feed is checked on a daily basis and correlated with expected incoming and outgoing cattle numbers. Ensure beef cattle numbers on feed do not exceed conditions of approval. Details of all cattle introduced to and removed from the site, including: • Number and actual or average live weight of cattle; • Date of introduction/removal; and • Sickness or deaths of animals.
Relevant Standards, Management Plans, Records	Personnel induction, training and awareness record. Non-compliance record. Incident
Responsibility	As required by the specific requirements outlined in section 5.2.
Performance Indicators	No non-compliances with conditions of approval. No adverse impacts to environmental values.
Monitoring	As required by the specific requirements outlined in section 10.2.
Reporting	As required by the specific requirements outlined in section 10.4.
Corrective Actions	Review livestock management system.

SBEMP SOP 3 – Environmental emergency preparedness and response

Aspect	Environmental emergency preparedness and response
Objectives	To implement a mechanism to contain and control an emergency incident to minimise the effects on personnel, livestock, facilities and the environment.
Potential Impacts	Occupational health and safety of employees and contractors. Animal health and performance. Receiving environment such as groundwater, surface water and aquatic and terrestrial ecosystems affected by pollution events. Community amenity and health.
Control Actions	All emergency scenarios relating to the Development will be identified and documented through the emergency response instruction. All significant emergency scenarios will be assessed in consultation with employees in the environmental induction and toolbox meeting. **Medical Emergency** • First Aid Officer to initiate usual first aid procedures. • Make sure the injured person is as comfortable as possible without moving them until the ambulance arrives. • The First Aid Officer is in charge of the casualty until the emergency services arrive. **Fire Emergency** • Contact the emergency services on "000" if required. • Use fire extinguisher to contain fire only if safe to do so. • Move all site personal to a safe area and await fire brigade. **Environmental Emergency Response** • In the event of a Spill or contamination of product causing reaction. • Assess damage/injury……contain spill if safe to do so. • Evacuate the area if necessary and await emergency services. **Emergency Service Contacts** • Emergency services contacts will be displayed near all phones. **Material/Product Spill** Hazardous material/dangerous good spills may occur on sites. • In the event that a hazardous material/dangerous good is spilt the Feedlot Manager must be contacted immediately. • Attempt to clean up spill with spill kit, only if safe to do so.
Relevant Standards, Management Plans, Records	Personnel induction, training and awareness. Non-compliance Record. Corrective Action Report.
Responsibility	As required by the specific requirements outlined in section 5.2.

Performance Indicators	No adverse impacts to environmental values.
Monitoring	As required by the specific requirements outlined in section 10.2.
Reporting	As required by the specific requirements outlined in section 10.4.
Corrective Actions	Recommendations for safety improvements and changes to the emergency response instruction will be actioned via the specific requirements outlined in section 10.5.

SBEMP SOP 4 – Environmental compliance monitoring

Aspect	Environmental compliance monitoring
Objectives	To implement a defined monitoring programme to obtain data for verification of environmental performance in accordance with the conditions of approval.
Potential Impacts	Occupational health and safety of employees and contractors. Animal health and performance. Receiving environment such as groundwater, surface water and aquatic and terrestrial ecosystems affected by pollution events. Community amenity and health.
Control Actions	Develop and implement an appropriate monitoring program for environmental parameters in accordance with this Plan and sub-plans as a verification measure for preventive controls. Undertake routine environmental monitoring from the relevant monitoring points in accordance with the conditions of approval. Collect, analyse and interpret environmental monitoring data in a standardised and technically sound manner. Review and evaluate the environmental monitoring program and results for compliance with conditions of approval. Regular liaison with the DAF on efficacy of the monitoring program and sustainability indicators. Develop and implement a corrective action plan before impacts to the receiving environment.
Relevant Standards, Management Plans, Records	Conditions of approval. Personnel induction, training and awareness. Environmental data records
Responsibility	As required by the specific requirements outlined in section 5.2.
Performance Indicators	Ensure all personnel responsible for monitoring are adequately trained. No non-compliances with conditions of approval. No adverse impacts to environmental values.
Monitoring	As required by the specific requirements outlined in section 10.2.
Reporting	As required by the specific requirements outlined in section 10.4.
Corrective Actions	Review environmental monitoring program. Seek specialist advice where a significant level of environmental risk or impact is identified with environmental indicators of sustainability.

SBEMP SOP 5 – Environmental compliance reporting

Aspect	Environmental compliance reporting
Objectives	To implement a routine reporting system that provides accurate, reliable and timely environmental information in accordance with the conditions of approval.
Potential Impacts	Non-compliance with conditions of approval.
Control Actions	Develop and implement an appropriate reporting program for the assessment of the environmental management of the Development. Prepare and submit to the CEO of the Department administering the Environmental Protection Act 1994 an Annual Return on the anniversary date every year. No false or misleading environmental monitoring data in a material respect is reported.
Relevant Standards, Management Plans, Records	Conditions of approval. Annual Return Personnel induction, training and awareness Non-compliance Record Corrective Action Report
Responsibility	As required by the specific requirements outlined in section 5.2.
Performance Indicators	An Annual Return is submitted each year.
Monitoring	As required by the specific requirements outlined in section 10.2.
Reporting	As required by the specific requirements outlined in section 10.4.
Corrective Actions	Review environmental reporting program.

SBEMP SOP 6 – Environmental records management

Aspect	Environmental management records
Objectives	To implement an environmental records management system that meets minimum requirements for conditions of approval.
Potential Impacts	Non-compliance with conditions of approval.
Control Actions	Establish and maintain an effective and efficient environmental records management system to ensure the creation and capture of environmental records. To ensure sensitive information is managed appropriately. Apply sound records management practices including an appropriate governance framework to assist in effectively managing records.
Relevant Standards, Management Plans, Records	Conditions of approval. Personnel induction, training and awareness
Responsibility	As required by the specific requirements outlined in section 5.2.
Performance Indicators	No non-compliances with conditions of approval.
Monitoring	As required by the specific requirements outlined in section 10.2.
Reporting	As required by the specific requirements outlined in section 10.4.
Corrective Actions	Review environmental records management system.

Appendix A7 – Environmental forms, checklists and registers

Form 1 – Induction and training record

Date	Induction and/or training content	Trainer name	Signature	Attendee name	Signature

Form 2 – Development Visitor Log

Date	Name	Company	Contact number	Time in	Time out	Purpose of visit	Biosecurity risk	Signed

Form 3 – Biosecurity Risk Assessment for Visitors and Staff

Date:		**Visitor Name:**	
Service or Occupation:		**Contact Number:**	
Reason for Visit:			

Exposure Assessment

(Please record relevant exposure (risk) for each activity. Note that the highest risk is the final result)

Activity	Low Risk		Low Risk		High Risk	
Other farm visits per day	One farm, little to no animal contact	☐	Occasionally visits more than one farm/day with minimal animal contact	☐	Visits many farms or livestock facilities. Much animal contact	☐
Ownership of similar animals	Does not own similar species at home	☐	Similar species at home, but different production type	☐	Owns and/or cares for similar species and production type at home	☐
Contact with potentially ill or infectious animals	Minimal or no contact with potentially ill or infectious animals	☐	Contact with healthy animals but avoids contact with potentially infection animals	☐	May own or be exposed to many animals of unknown or poor health status	☐
Foreign travel	Does not travel outside Australia or New Zealand	☐	Limited travel outside Australia or New Zealand with minimal or no animal contact	☐	**Foreign Visitor** or travels to foreign countries with animal contact in those countries	☐
Exposure Summary	☐		☐		☐	

Mitigation Practices

(Identify the relevant risk mitigation practices utilised to offset the exposure risk)

Activity	High Benefit		Moderate Benefit		No Benefit	
Use of protective clothing	Wears sanitised shoes or boots. One pair of protective clothes per site	☐	Wear sanitised boots and clean clothes. If clothes are clean, then will not be changed	☐	Does not change into clean boots or clothes when moving from on farm to another	☐
Use of equipment	Supplies and equipment kept away from animals or feed areas or are thoroughly washed and disinfected prior to leaving	☐	Supplies and equipment are in areas of minimal animal or feed contact	☐	Supplies and equipment may have been left or used in animal or feed areas	☐
Work in animal contact areas	Does not work in areas with highly susceptible animals	☐	Minimal exposure to high risk animals and only with protective clothing	☐	Works with highly susceptible animals. Few precautions taken	☐
Biosecurity knowledge	Understand and promotes biosecurity practices	☐	Exposed to biosecurity principles but is not an advocate	☐	Little appreciation for biosecurity principles and does not view it as important to industry	☐

Visitors signature:_____ **Date:**_____

Final Risk Assessment

(Determine final risk assessment considering individuals exposure and associated benefit from utilising mitigation practices)

Final Risk Assessment	**Low**	☐	**Moderate**	☐	**High**	☐
Comments:						

(Please note that any visitor presenting a moderate or high risk must be managed as per the Developments documented Biosecurity procedures)

Management review signature:_____ **Date:**_____

Form 4 – Complaints register

Time / Date	Method of communication and complainant name	Complainant contact details	Details of complaint	Action taken	Responsible person	Signature	Statutory authority notified (Y/N)

Form 5 – Site inspection record

Time / Date	Inspection person	Problem description	Action taken	Requirement/ Recommendation for changes to SBEMP	Signature of responsible person

Form 6 – Non-compliance record

Time / Date	Inspection officer	Compliance problem description	Corrective actions taken	Recommendation for changes to SBEMP	Signature

Form 6 – Environmental Incident reporting form

Date:	
Reported by:	
Site location:	
Incident description:	

What happened:	

Why:	

Incident date and time:	
Where:	
Actual and/or potential impact on off-site people and environment:	

Authorities informed:	
Manager informed and when:	
Action taken / planned:	

Name:	
Signature:	

Manager comment:	

Manager signature:	

Appendix R – Bushfire Hazard Assessment

Site Based Bushfire Hazard Assessment and Management Plan

Reid River Beef Cattle Feedlot

"Runway Station"
5291 Flinders Highway
REID RIVER QLD 4816

Reid River Export Depot Pty Ltd
as trustee for the Reid River Unit Trust
PO Box 2499
IDALIA QLD 4811

[June 2022]

RDC ENGINEERS
AGRICULTURAL
ENVIRONMENTAL
PROJECT MANAGEMENT

PO Box 1223
TOOWOOMBA QLD 4350

rdcengineers.com.au

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Version	Recipient	Lodgement	Copies
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V1R2	Reid River Export Depot Pty Ltd as trustee/CTRC/SARA	Electronic	Soft

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1 Introduction

1.1 Background

Reid River Export Depot Pty Ltd currently operate a pre-export quarantine facility on the property "Runway Station" in the Reid River region approximately 26 km by road northeast of Mingela and 60 km south of Townsville within the Charters Towers Regional Council area.

Reid River Export Depot Pty Ltd has current development approval under the Charters Towers Regional Council (Reference No MC18/63) for Undefined Use (Cattle Holding Yards) dated 25 September 2018. Reid River Export Depot Pty Ltd has approval for the pre-quarantine facility under Section 120(2) of the Export Control Act 2020 (Export Control Act), as an establishment where livestock of the species and numbers specified in the Certificate of Registration (LAE343) may be assembled and held prior to export.

The existing development is located on land described as Lot 600 on SP310657 formerly Lots 1 – 10 RP715678, 5291 Flinders Highway, Reid River and is known as Reid River Export Depot.

The pre-export quarantine facility has approval for 17,005 head at 400 kg held for under 30 days and 7,545 head at 400 kg held for over 30 days. The existing development has a constructed pen area of 4.92 ha along with an associated controlled drainage area which includes sedimentation ponds and holding pond.

The pre-export quarantine facility employs about 10 full time equivalent personnel and operates for 12 months of the year.

The pre-export quarantine facility is normally used for short-term maintenance feeding of cattle for live export using pellets and hay. However, Reid River Export Depot Pty Ltd see an opportunity for extended production feeding on a higher energy ration if the opportunity arises to put weight onto cattle to achieve minimum live export weight requirements during drought periods; production feeding of live export cattle to add additional weight before sale to live exporters or slaughter.

Consequently, Reid River Export Depot Pty Ltd wish to establish an opportunity production feeding enterprise within the existing facility up to a maximum capacity of 3,075 standard cattle units.

Consequently, the establishment of a beef cattle feedlot involves a material increase in the intensity or scale of the existing use on the subject land and accordingly comprises a Material Change of Use pursuant to Schedule 2 of the *Planning Act 2016.*

The proposed development is defined as "Intensive Animal Industry" under the *Charters Towers Regional Town Plan* (Charters Towers Regional Council, 2020) and is a consistent use and impact assessable development within the subject land's land use zoning (Rural zone). Consequently, a development permit for change approval - Material Change of Use for

Intensive Animal Industry is required to authorise the establishment and operation of the proposed development on the subject land.

High and Very High hazard bushfire potential is mapped along the northern boundary of the subject land along the Reid River. Medium hazard bushfire potential is mapped along the eastern and southern boundary of the subject land and to the north and south of the existing and proposed development complex site. The potential impact buffer overlaps the existing and proposed development complex site and existing subject land dwellings.

1.2 Purpose and scope

The *Charters Towers Regional Town Plan* (Charters Towers Regional Council, 2020) requires that a site-specific bushfire hazard assessment be prepared to assess the degree of bushfire hazard acting on a development site captured within a mapped Designated Bushfire Hazard Area. The SPP Bushfire Prone Area mapping prevails over the Charters Towers Regional Council (CTRC) Bushfire Hazard Area mapping with respect to the currency of the methodology adopted to prepare the mapping. Accordingly, the site-specific hazard mapping required by the Bushfire Hazard Overlay Code is to be prepared consistent with the methodology adopted to prepare the SPP mapping.

The methodology used to prepare the SPP mapping is described in:

- Department of Infrastructure, Local Government and Planning's *Natural Hazards, Risk and Resilience — Bushfire (December 2019) State Planning Policy – state interest guidance material; and*
- Queensland Fire and Emergency Services - (2019) *Planning for Bushfire Resilient Communities.*

The purpose of this Site Based Bushfire Hazard Assessment and Management Plan is to:

- determine the vegetation type, the expected fire behaviour and the threat to the proposed development;
- demonstrate that the proposed development siting, layout, design and access minimises the risks to personal safety, damage to property, infrastructure and other assets during a bushfire event;
- demonstrate that the proposed development is compatible with the nature of the bushfire hazard and identify any other such measures as to improve the chances of property, infrastructure and other assets survival during a bushfire event;
- assist staff to prepare for bushfire events in proximity to the proposed development site;
- outline the evacuation and disaster management response including firefighting and access for emergency services during bushfire events;
- to show that the proposed development will satisfy the broad aims and objectives of *Bushfire Resilient Communities Technical Reference Guide for the State Planning Policy State Interest 'Natural Hazards, Risk and Resilience - Bushfire'* (Queensland Fire and Emergency Services, 2019) and Australian Standard AS 3959-2018 'Construction of buildings in bushfire-prone areas as (AS 3959 – 2018); and

- assist the Charters Towers Regional Council in the determination of the development application subject to this proposed development.

The scope of this report is limited to the bushfire hazard assessment for the proposed development and only contains recommendations for the subject land. Where reference is made to adjacent or adjoining lands, this report does not purport to assess those lands; rather it may discuss bushfire progression on and through those lands with the possible bushfire impact to the subject land and the proposed development.

1.3 Method

This site based bushfire hazard and management plan (SBBHMP) has been prepared in accordance with the requirements of *Bushfire Resilient Communities Technical Reference Guide for the State Planning Policy State Interest 'Natural Hazards, Risk and Resilience - Bushfire'* (Queensland Fire and Emergency Services, 2019) and has included:

- a review of the SPP bushfire prone area map on the DSDMIP State Planning Policy (SPP) Interactive Mapping System (IMS); DoR regulated vegetation and regional ecosystem map for the subject land, NQ vegetation hazard class map (QSpatial), fire scars queensland (QSpatial);
- a walk over the site and assessment of land within 140 m of the proposed development area for vegetation characteristics, current land management practices, slope, and evidence of previous fires;
- a review of *Bushfire Resilient Communities Technical Reference Guide for the State Planning Policy State Interest 'Natural Hazards, Risk and Resilience - Bushfire'* (Queensland Fire and Emergency Services, 2019) and *Australian Standard 3959–2018 Construction of buildings in bushfire-prone areas;*
- bushfire hazard assessment in accordance with the method in Bushfire resilient communities;
- assessment of the proposed development against the SPP bushfire prone area code.

2 Locality and site

2.1 Subject land

The subject land on which the development is proposed is located approximately 26 km by road northeast of Mingela and 60 km south of Townsville in North Queensland.

The subject land has primary frontage to the Flinders Highway (sealed) of approximately 325 m and the Reid River of approximately 2 km. The subject land is the site of the former WWII Reid River Airfield.

Figure 1 is a locality plan highlighting the subject land to state and local roads and the nearby township of Mingela, Woodstock and Townsville.

2.1.1 Real property description

The subject land comprises three (3) cadastral portions separated in part by land designated as roads. The subject land is part of the property "Runway Station". The real property description of the subject land is provided in Table 1. The total area of the subject land is approximately 222.9 ha (~550 acres). The subject land is in the Charters Towers Regional Council (CTRC) local government area. Figure 2 is a aerial plan highlighting the cadastral parcels that comprise the subject land.

Table 1 – Subject land – Real property description

Property Name	Lot No.	Plan No.	Easements	County	Parish	Area ha
"Runway Station"	1	RP743456	Nil	Elphinstone	Cardington	0.2499
"Runway Station"	2	RP743456	A/RP808273	Elphinstone	Cardington	24.080
"Runway Station"	600	SP310657	Nil	Elphinstone	Cardington	198.587
Total area						222.92

2.1.1.1 Easement

The subject land contains an easement in gross No 601328258 (T521486P) 12/02/1991 as listed on the Certificate of Title for Lot 2 RP743456, burdening the land to Lot 1 on RP743456 over easement A on RP808273.

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LEGEND

SUBJECT LAND BOUNDARY

NOTES

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PO BOX 1223
TOOWOOMBA QLD 4350

M: 0427 829 203
E: info@rdcengineers.com.au

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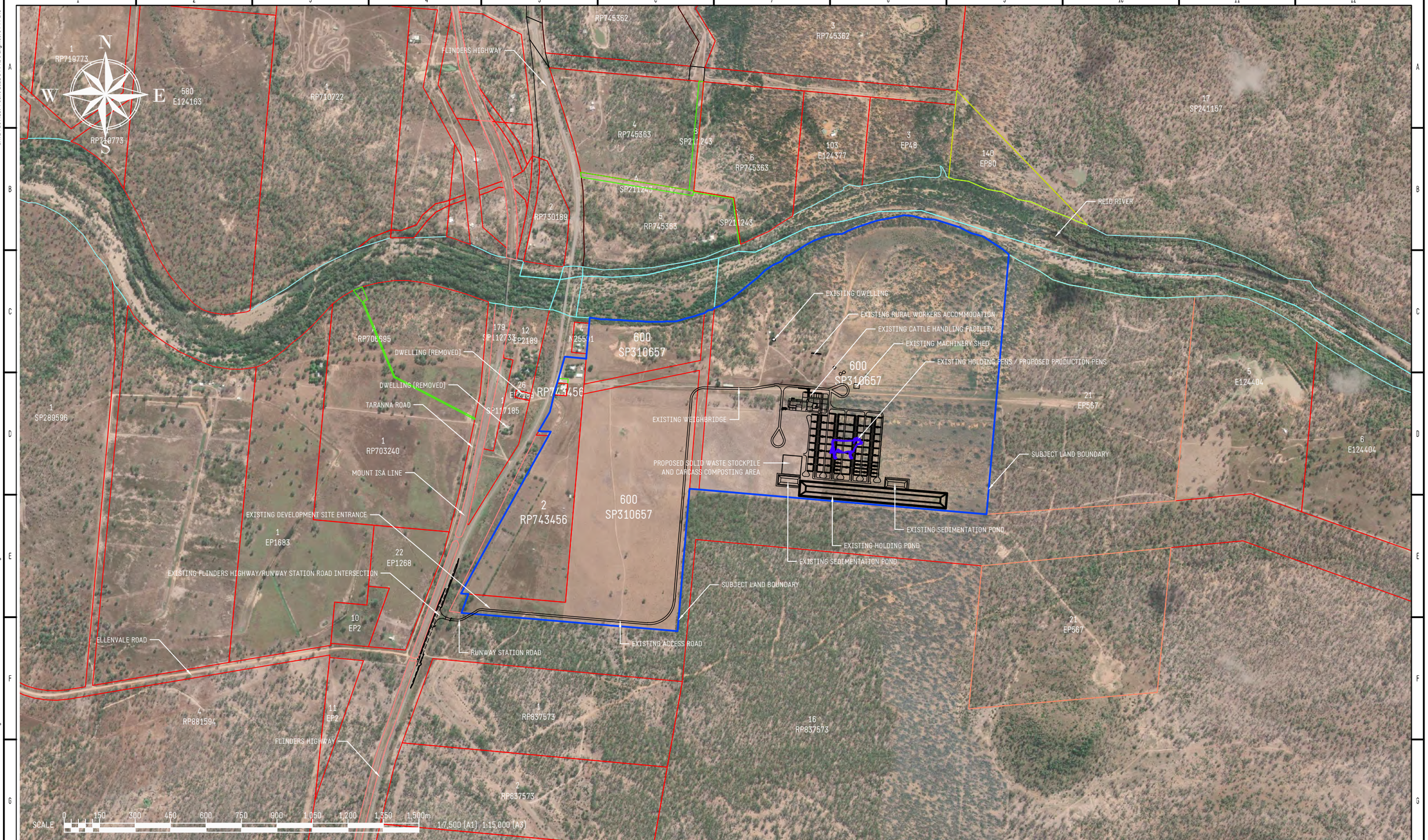
PROJECT: PROPOSED INTENSIVE ANIMAL INDUSTRY DEVELOPMENT

TITLE: DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE
SITE BASED BUSHFIRE HAZARD ASSESSMENT AND MANAGEMENT PLAN
SUBJECT LAND - LOCALITY PLAN

REPORT REFERENCE	SUPPLIED DRAWING NUMBER		DRAWING NUMBER	REV.
FIGURE 1		A3	D1-130-1000-01	B

FILE PATH: C:\RDC Engineers\RDCE - Projects\01-139 Reid River FeedLot\05 - ACAD MasterPlan\05.1 Drawings - CURRENT FILE NAME: D1-130-00-MASTERPLAN-220228 v8.dwg



LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- UNDEFINED USE – CATTLE HOLDING YARDS

NOTES

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ABN 37 627 163 071
PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 629 203
E: info@rdcengineers.com.au

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DATE	04/06/2022

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PROJECT: PROPOSED INTENSIVE ANIMAL INDUSTRY DEVELOPMENT

TITLE: DEVELOPMENT APPLICATION – MATERIAL CHANGE OF USE
SITE BASED BUSHFIRE HAZARD ASSESSMENT AND MANAGEMENT PLAN
SUBJECT LAND – AERIAL PLAN

REPORT REFERENCE	SUPPLIED DRAWING NUMBER		DRAWING NUMBER	REV.
FIGURE 2		A3	D1-130-1000-02	B

DATE PLOTTED: 4 June 2022 BY: RDC Engineers PTY LTD
FILE NAME: D1-130-00-MASTERPLAN-220228 vB.dwg
FILE PATH: C:\RDC Engineers\RDCE - Projects\D1-130 Reid River Feedlot\05 - ACAD MasterPlan\05.1 Drawings - CURRENT

2.2 Topography

A topographic plan of the subject land and surrounding area was prepared from topographic data at a scale of 1:25,000 with a 1 m contour interval and is shown in Figure 3. This shows that the subject land lies on the levee and plains adjacent to the Reid River and has low relief landforms gently sloping away from the Reid River from approximately 78 m AHD to around 76 m AHD.

A major determinant of fire behaviour is the slope of land. Fire burns faster as it travels upslope via preheating of unburnt fuels ahead of the fire front which increases the rate of spread and fireline intensity. Conversely, fires move more slowly as they travel downslope. Fireline intensity is a function of the rate of spread (Queensland Fire and Emergency Services, 2019).

The proposed development site is situated on relatively flat land and exhibits slopes of 0.2-0.5 percent (0.9-1.8 degrees) with a southerly facing aspect. Figure 3 depicts the natural topography within and adjacent to the subject land and proposed development site. The topography of the proposed development complex site has been modified by earthworks associated with the existing development.

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FILE PATH: C:\RDC Engineers\RDCE - Projects\01-130 Reid River Feedlot\05 - ACAD MasterPlan\05.1 Drawings - CURRENT FILE NAME: D1-130-00-MASTERPLAN-220228 v8.dwg

REID RIVER
EXISTING DWELLING
EXISTING RURAL WORKERS ACCOMMODATION
EXISTING MACHINERY SHED
EXISTING HOLDING PENS / PROPOSED PRODUCTION PENS
EXISTING CATTLE HANDLING FACILITY
EXISTING WEIGHBRIDGE
TARANNA ROAD
MOUNT ISA LINE
FLINDERS HIGHWAY
PROPOSED SOLID WASTE STOCKPILE AND CARCASS COMPOSTING AREA
EXISTING SEDIMENTATION POND
EXISTING HOLDING POND
EXISTING SEDIMENTATION POND
EXISTING DEVELOPMENT SITE ENTRANCE
EXISTING FLINDERS HIGHWAY/RUNWAY STATION ROAD INTERSECTION
ELLENVALE ROAD
RUNWAY STATION ROAD
EXISTING ACCESS ROAD

LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- EFFLUENT UTILISATION AREA
- SOLID WASTE UTILISATION AREA
- CONTOUR - MAJOR (5m)
- CONTOUR - MINOR (1m)

NOTES:

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PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 829 203
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TITLE: DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE
SITE BASED BUSHFIRE HAZARD ASSESSMENT AND MANAGEMENT PLAN
SUBJECT LAND - TOPOGRAPHIC PLAN

REPORT REFERENCE	SUPPLIED DRAWING NUMBER	A3	DRAWING NUMBER	REV.
FIGURE 3			D1-130-1000-03	B

2.3 Vegetation

A regulated vegetation overlay of the subject land was prepared based on digital data obtained from the Queensland Spatial Catalogue (QSpatial) Vegetation management - regulated vegetation management map - version 5.03. An overlay of cadastral, regulated vegetation, and the proposed development was prepared and is shown in Figure 4.

Figure 4 shows there are areas of Category X (not regulated under the Vegetation Management Act 1999) and areas of Category B (remnant vegetation) areas on the subject land. There are no areas of Category C (high-value regrowth vegetation) on the subject land.

Clearing activities can be conducted within Category X areas without obtaining a permit or notifying the DoR. However, other state or Commonwealth laws may apply. Category B areas are subject to clearing requirements. In these areas, vegetation can only be cleared in accordance with an exemption, a self-assessable vegetation clearing code, an area management plan or a development approval.

The proposed development is sited to avoid areas of regulated vegetation as shown on Figure 4 as far as practical. The proposed development complex utilises built infrastructure as shown in Figure 6 and Figure 7 and is located some 35 m from the closest regulated vegetation that is Category B Area containing 'least concern' regional ecosystems located on the subject land.

The State's mapping within Queensland Globe's Regulated Vegetation Overlay maps vegetation within the Site and adjacent to the site as Category B area containing of concern or endangered vegetation and is described as having the following Regional Ecosystems:

2.3.1 RE 11.3.10 – Eucalyptus brownii woodland on alluvial plains

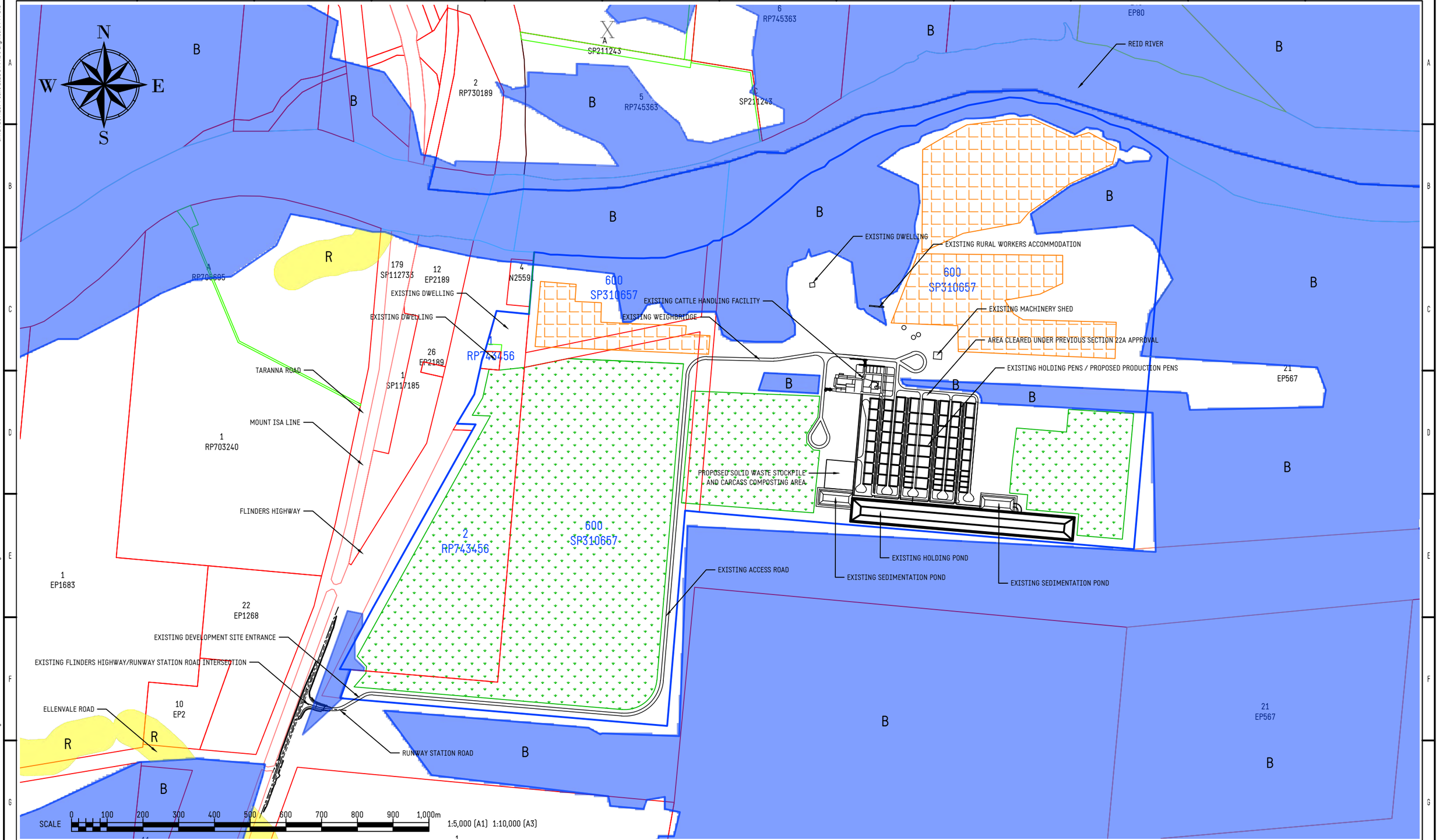
Eucalyptus brownii (Reid River box) woodland to open woodland. The ground layer is typically tussock grasses, including Aristida spp., Chloris spp., Fimbristylis dichotoma, Eriachne spp., Eragrostis spp. and Chrysopogon fallax. Areas on fertile soils may contain Heteropogon contortus, Bothriochloa bladhii and Chrysopogon fallax. Occurs on Cainozoic alluvial plains. (BVG1M: 17a)

Photograph 1 – Subject land – Remnant vegetation

2.3.2 RE 11.3.35 – Eucalyptus platyphylla, Corymbia clarksoniana woodland on alluvial plains

Eucalyptus platyphylla (White gum), Corymbia clarksoniana (Grey Bloodwood) woodland, occasionally with Corymbia tessellaris (Ghost gum). A secondary tree layer commonly occurs, including Planchonia careya, Pandanus spiralis, Melaleuca viridiflora or M. nervosa and Petalostigma pubescens. The ground layer is usually tussock grasses, including Themeda triandra, Heteropogon contortus, Mnesithea rottboellioides and Bothriochloa decipiens, together with herbs or forbs such as Glycine tabacina, Galactia tenuiflora or Sida hackettiana. Occurs on Cainozoic alluvial plains. Older floodplain complexes, major stream levees and lighter deltaic deposits. (BVG1M: 9e)

Photograph 2 – Subject land – Remnant vegetation



LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- EFFLUENT UTILISATION AREA
- SOLID WASTE UTILISATION AREA
- CATEGORY A AREA (VEGETATION OFFSETS/COMPLIANCE NOTICES/VDECS
- CATEGORY B AREA (REMNANT VEGETATION)
- CATEGORY C AREA (HIGH-VALUE REGROWTH)
- CATEGORY R AREA (REEF REGROWTH WATERCOURSE)
- CATEGORY X AREA (EXEMPT CLEARING WORK ON FREEHOLD LAND)
- STREAM ORDER 1
- STREAM ORDER 2
- STREAM ORDER 3
- STREAM ORDER 4
- STREAM ORDER 5
- STREAM ORDER 6

NOTES

1. THIS IS A REGULATED VEGETATION MANAGEMENT MAP AS DEFINED BY s20A OF THE VEGETATION MANAGEMENT ACT 1999. THE MAP INCORPORATES ELEMENTS OF THE REGULATED VEGETATION MANAGEMENT MAP VERSION 5.0.
2. THIS MAP IS BASED ON DIGITAL GIS DATA FROM THE STATE OF QUEENSLAND (DEPARTMENT OF RESOURCES) 2021 - QUEENSLAND SPATIAL CATALOGUE - VEGETATION MANAGEMENT REGULATED VEGETATION - VERSION 5.0.
3. REGULATED VEGETATION HAS BEEN COMPILED AT A MAP SCALE OF 1:100,000, EXCEPT IN DESIGNATED AREA, WHERE COMPILATION SCALE OF 1:50,000 OR 1:25,000 IS AVAILABLE. LINEWORK SHOULD BE USED AS A GUIDE ONLY.
4. REGULATED VEGETATION MAPPING IN PART, BASED ON SURVEYS OF VEGETATION COMMUNITIES AND RELATED LANDFORM, SOILS AND GEOLOGY IS BASED ON LANDSAT IMAGERY FOR 2015.
5. THE POSITIONAL ACCURACY OF REGULATED VEGETATION DATA MAPPED AT A SCALE OF 1:100,000 IS ±100 METRES.

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SUBJECT LAND - REGULATED VEGETATION OVERLAY

REPORT REFERENCE	SUPPLIED DRAWING NUMBER		DRAWING NUMBER	REV.
FIGURE 4		A3	D1-130-1000-04	B

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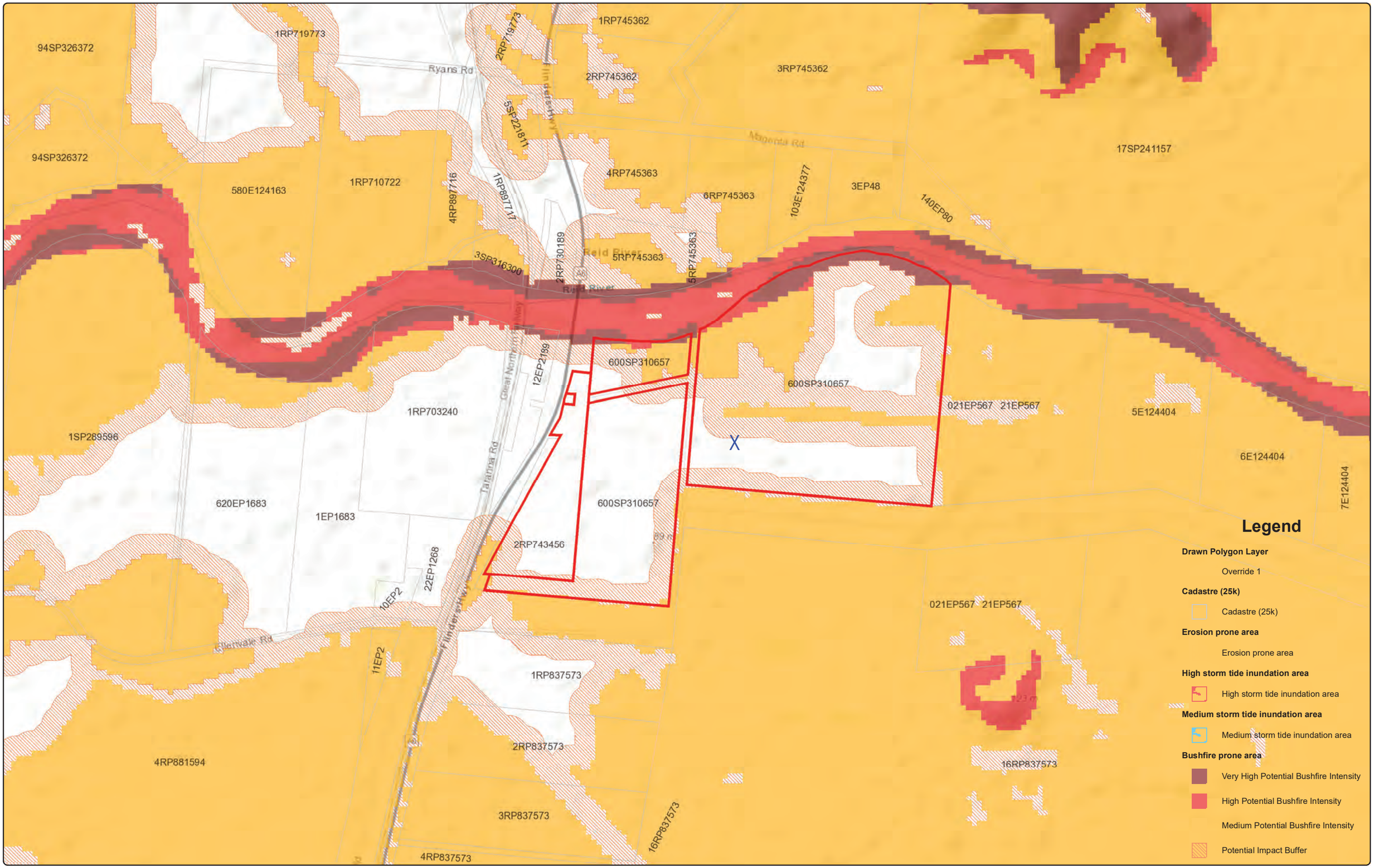
2.4 Bushfire prone areas

Bushfire mapping overlay of the subject land shows areas with a Very High, High and Medium Potential Bushfire Intensity and land within a Potential Impact Buffer of 100 m. Charters Towers Regional Council has adopted the state-wide bushfire hazard mapping as outlined on the SPP Mapping – Safety and Resilience to Hazards, Bushfire hazard area.

An overlay of bushfire hazard areas relating to the subject land was obtained from the DSDMIP State Planning Policy (SPP) Interactive Mapping System (IMS) and shown in Figure 5.

Figure 5 shows that there are regions of medium potential bushfire intensity risk on the subject land and potential impact buffer. These regions correlate with areas mapped as regulated vegetation and isolated clumps of paddock trees as shown on Figure 4 and Photograph 2.



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N

State Planning Policy

Making or amending a local planning instrument and designating land for community infrastructure

0 300 600 900 1,200

Metres

X - PROPOSED DEVELOPMENT COMPLEX SITE

Date: 31/03/2022

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FIGURE 5

2.5 Water resources

The subject land is in the Haughton drainage basin. Water planning in the Haughton basin is managed under the Water Plan (Burdekin Basin) 2007. The subject land is not located within a sub-artesian groundwater management area of the Water Plan (Burdekin Basin) 2007 or within the Water Plan (Great Artesian Basin and Other Regional Aquifers) 2017 water plan area.

Consequently, the taking of groundwater for stock and domestic or any other purpose within the subject land is not regulated. There are four (4) groundwater production bores on the subject land equipped for irrigation and stock intensive purposes with solar, diesel or electric powered pumps.

The surface drainage systems in the Haughton River catchment are characterised by the Haughton River and its major tributaries the Reid River and Major Creek and several minor tributaries including Four Mile Creek and Redbank Creek for example. For part of its length the Reid River forms the northern boundary of the subject land.

Streamflow of creek and rivers of the region reflect the seasonal distribution of rainfall. Most of the rainfall occurs during the wet season between November and April. Consequently, most of the streamflow within the region occurs between December and April.

The area is drained by well incised creeks and rivers with limited catchments, short lengths and fast rates of run-off. Consequently, all waterways are very responsive to rainfall from coastal influences and depressions and are characterised by dry stream beds during the dry season with fast stream rises, and occasional major over-bank flows during the wet season.

An authorisation for the taking of watercourse water from the Reid River with the point of take on or adjacent to Lot 3 on RP715678 with a nominal entitlement of 80 ML is attached to the subject land.

The proposed development has onsite water storage to overcome differences in supply and demand of groundwater and surface water supply and to also provide an emergency storage for temporary supply failures. Groundwater and surface water is temporarily stored in three 250 kL steel tanks.

Currently, the taking of overland flow water is not regulated under the Water Plan (Burdekin Basin) 2019 for any purpose other than stock and domestic if the works for taking the overland flow water have a capacity of not more than 250 ML or not more than the amount necessary to satisfy the requirements of an environmental authority issued under the Environmental Protection Act 1994.

The subject land is not within Charters Towers Regional Council's reticulated water supply area. No extensions or upgrades to the Charters Towers Regional Council's reticulated water supply are required. The proposed development shall not be connected to a reticulated water supply.

3 Development description

The proposed development is located approximately 26 km by road northeast of Mingela and 60 km south of Townsville within the Charters Towers Regional Council area.

Figure 1 is a locality plan highlighting the proposed development site to roads and the nearby townships of Mingela, Woodstock and Townsville.

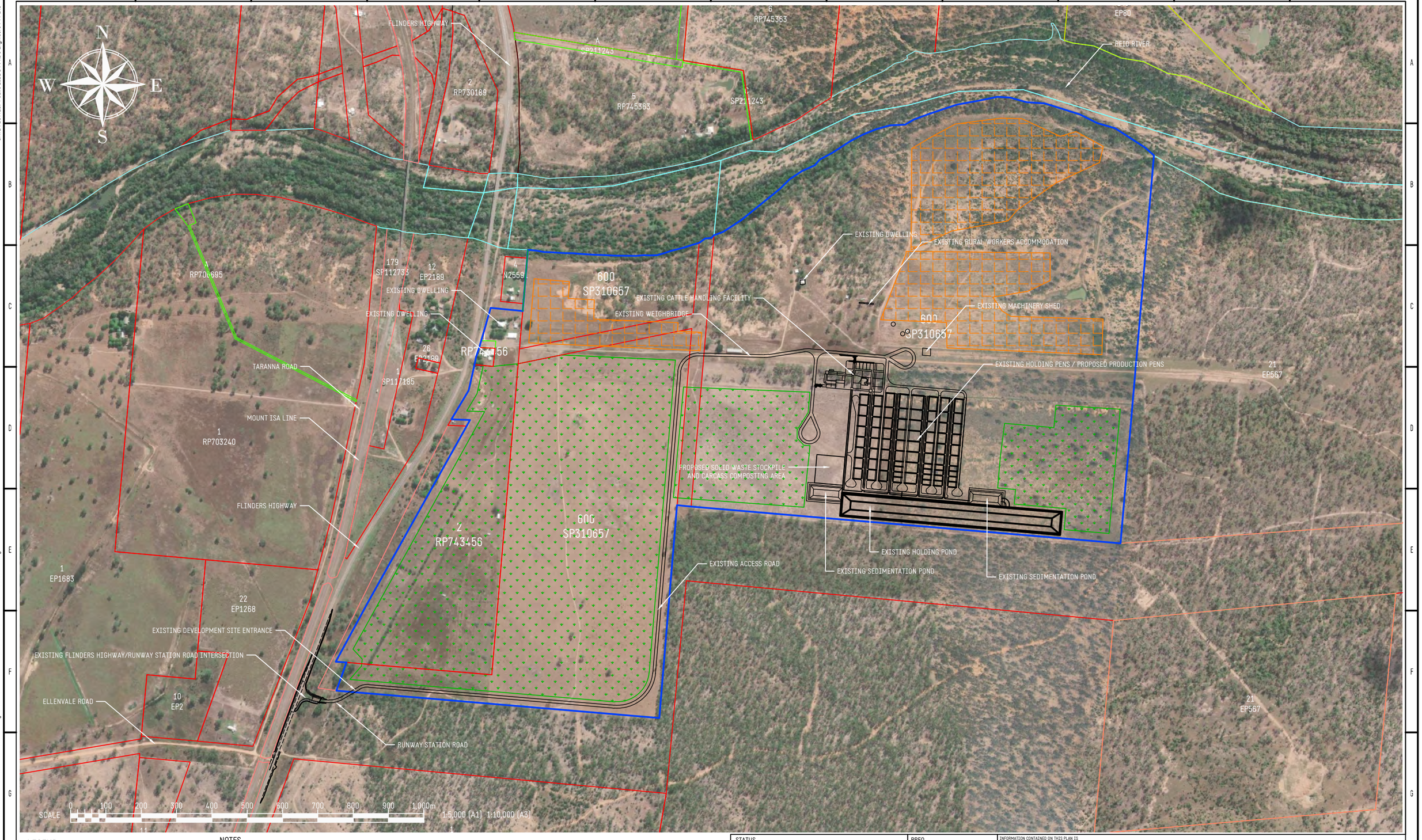
3.1 Overview

The proposed development is an intensive livestock enterprise which comprises a beef cattle feedlot with a pen capacity of 3,075 SCUs respectively. The proposed development occupies an area of approximately 130 ha and includes the following components in a functional configuration:

- Water supply/storage and reticulation infrastructure – A reliable and uninterrupted supply of clean water of the required volume to sustain operations is provided;
- Pens - Fenced areas are provided for accommodating production beef cattle (production pens) and sick animals (hospital pens);
- Livestock handling – Infrastructure and facilities are provided for cattle handling including unloading/loading and induction;
- Feed processing and commodity storage - Feed rations are prepared on-site in a facility, with associated commodity storage, handling and ration delivery infrastructure;
- Access and internal roads – All weather access to the proposed development site is provided;
- Administrative/maintenance infrastructure - A site office is provided for conducting management, maintenance and administrative functions at the proposed development;
- Solid waste and effluent management areas – Solids wastes such as manure and mortalities are temporarily stockpiled and processed within the solid waste stockpile and carcass composting area prior to utilisation on-site or removed off-site. Effluent is stored in the holding pond pending application to the effluent utilisation area; and
- Effluent and solid waste utilisation areas (~115 ha) – Manure and mortalities compost are applied to an on-site utilisation area. Any solid wastes not utilised on-site are removed off-site. Effluent is applied to land via irrigation within a dedicated effluent utilisation area.

Figure 6 shows the layout of the proposed development on the subject land. The proposed development complex which includes beef cattle production pens, cattle handling, controlled drainage areas and drainage infrastructure elements occupies an area of approximately 17.5 ha as shown in Figure 7.

The proposed development utilises existing built infrastructure. No new infrastructure or dwellings are proposed.



LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- EFFLUENT UTILISATION AREA (85Ha)
- SOLID WASTE UTILISATION AREA (30Ha)

NOTES

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RDC ENGINEERS
AGRICULTURAL
ENVIRONMENTAL
PROJECT MANAGEMENT
ABN 37 627 163 071
PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 629 203
E: info@rdcengineers.com.au

REV.	DATE	REVISION DESCRIPTION	DRAWN	CHECK	APPROVED
A	29/05/22	DRAFT ISSUE TO CLIENT	RJD	RJD	RJD
B	04/06/22	FINAL ISSUE FOR LODGEMENT TO CTRC	RJD	RJD	RJD

SCALE	1:10,000 (A3)
DRAWN	RJD
DATE	04/06/2022
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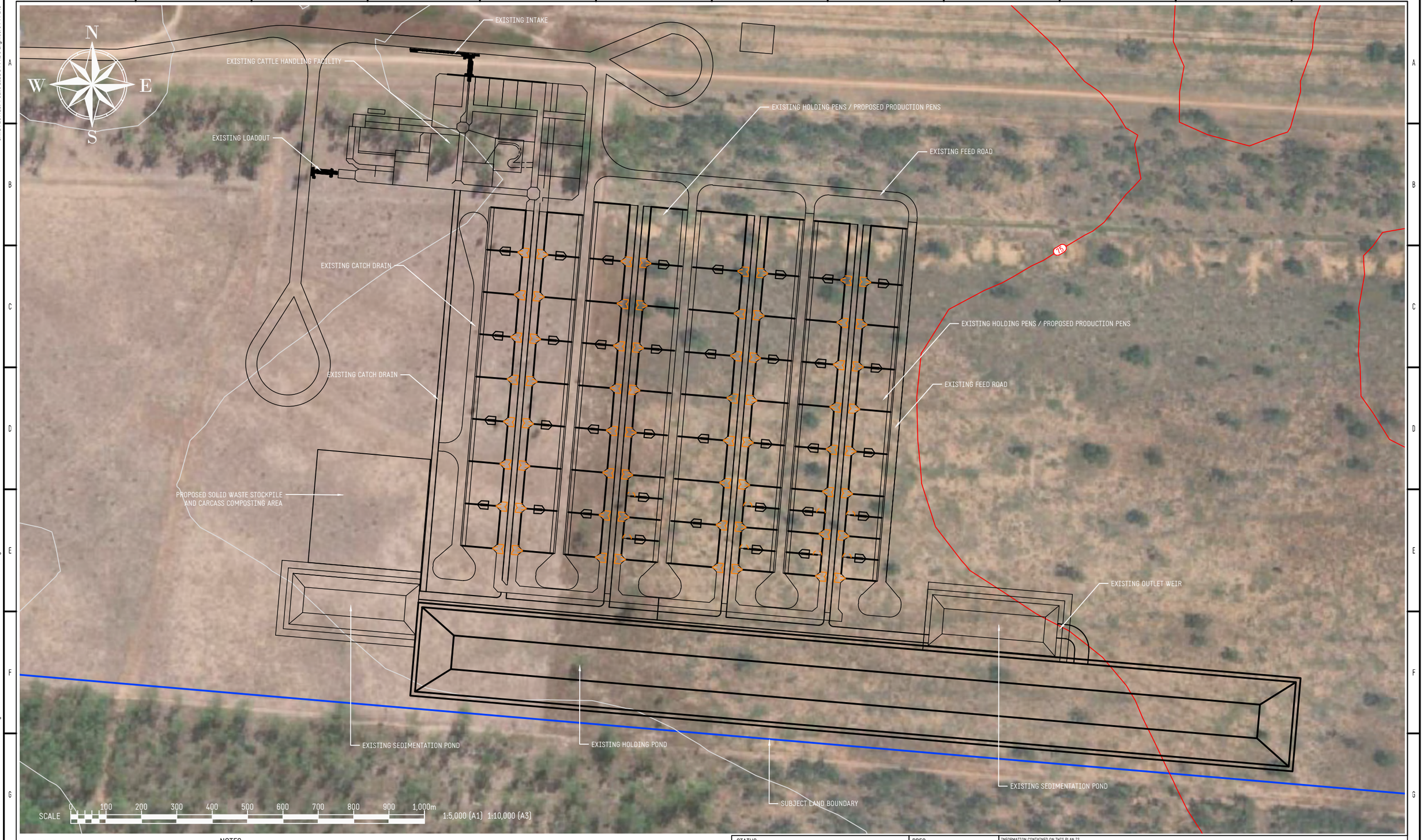
DATE	04/06/2022
APPROVED	RJD
DATE	04/06/2022

CLIENT: REID RIVER EXPORT DEPOT PTY LTD AS TRUSTEE
PROJECT: PROPOSED INTENSIVE ANIMAL INDUSTRY DEVELOPMENT
TITLE: DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE
SITE BASED BUSHFIRE HAZARD ASSESSMENT AND MANAGEMENT PLAN
PROPOSED DEVELOPMENT - DEVELOPMENT LAYOUT

REPORT REFERENCE: FIGURE 6
SUPPLIED DRAWING NUMBER:
A3
DRAWING NUMBER: D1-130-1000-06
REV.: B

DATE PLOTTED: 4 June 2022 BY: - RDC Engineers PTY LTD
FILE NAME: D1-130-00-MASTERPLAN-220228 v8.dwg
FILE PATH: C:\RDC Engineers\RDCE - Projects\D1-130 Reid River Feedlot\05 - ACAD MasterPlan\05.1 Drawings - CURRENT

DATE PLOTTED: 4 June 2022 BY: - RDC Engineers PTY LTD
FILE NAME: D1-130-00-MASTERPLAN-220228 v8.dwg
FILE PATH: C:\RDC Engineers\RDCE - Projects\01-130 Reid River Feedlot\05 - ACAD MasterPlan\05.1 Drawings - CURRENT



LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- CONTOUR - MAJOR (5m)
- CONTOUR - MINOR (1m)

NOTES

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RDC ENGINEERS
AGRICULTURAL ENVIRONMENTAL PROJECT MANAGEMENT
ABN 37 627 163 071
PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 629 203
E: info@rdcengineers.com.au

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TITLE: DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE
SITE BASED BUSHFIRE HAZARD ASSESSMENT AND MANAGEMENT PLAN
PROPOSED DEVELOPMENT - DEVELOPMENT COMPLEX LAYOUT

REPORT REFERENCE	SUPPLIED DRAWING NUMBER		DRAWING NUMBER	REV.
FIGURE 7		A3	D1-130-1000-07	B

3.2 Site access

The proposed development is accessed from one entry/exit point and that is off Runway Station Road. Runway Station Road intersects with the Flinders Highway some 100 m west of the subject land entrance. There is no other suitable operational access for heavy vehicles.

This access route is a dedicated safe and convenient access and is monitored/controlled to prevent entry of unauthorised persons/vehicles onto the site.

An access road connects to the site office which contains a car park facility for employees and visitors. A series of dedicated internal roads are provided around the site to give general access to the cattle handling facilities, the feed commodity storage infrastructure and the cattle pen area to facilitate feed, cattle and waste management.

Site roads have been designed to enable the safe movement of vehicles about the proposed development site for cattle, feed commodity and waste management movements and other maintenance vehicles as these will be required occasionally on the site.

3.3 Staging

The Development does not involve a staged construction. The Development has been designed with flexibility of use with the ability to increase or decrease the number of beef cattle on-site as market forces dictate at the time.

The approval may lapse if the first change of use does not happen within the period stated for that part of the approval or within 6 years after the approval starts to have effect unless that approval is extended by the Charters Towers Regional Council.

3.4 Cattle management

The Development accommodates up to 3,075 SCUs of beef cattle at the design stocking density at any given time when fully constructed.

Beef cattle are transported to the Development at the entry weight of the target market, typically being about 350-450 kg liveweight. Loaded livestock transport vehicles enter the site via the Flinders Highway. Empty livestock vehicles then travel along the ingress route to exit the site.

Cattle shall be held on-site for about 125 days and provided with an adequate supply of feed and water during this period.

For dispatch of beef cattle, empty livestock transport vehicles enter the site via the property entrance off the Flinders Highway. Loaded livestock vehicles then travel along the ingress route to exit the site. Type 2 Road Trains, Type 1 Road-Trains and B-double livestock vehicles are used to transport cattle to the processor.

3.5 Feed management

The beef cattle are fed a formulated ration containing grain, roughage (fibre) and minerals. The ration for beef cattle is formulated to maximise beef production.

Rations are prepared on-site in a dedicated facility, with associated commodity storage, handling and ration delivery infrastructure.

Loaded feed commodity transport vehicles enter the site via the property entrance off the Flinders Highway to unload at the commodity storage facility. Empty feed commodity vehicles then travel along the ingress route to exit the site.

The processed grain and commodities would be stored in storage bays within the commodity shed where they are loaded into a tractor-drawn mixer wagon by front-end loader.

3.6 Water management

Water is a vital resource for the Development. Whilst most of the water used is for livestock drinking, water is also used for routine hygiene practices such as machinery washdown, other general practices around the Development, and in amenities for personnel.

Water for the proposed development is sourced from groundwater and surface water sources and pumped to storage tanks as shown in Photograph 3. The water within the storage tanks is reticulated around the proposed development via gravity or pressurised systems dependent on the proposed use.

The proposed development has an adequate water supply, storage and reticulation system to meet the total annual water requirement of the proposed development in accordance with the National Guidelines for Beef Cattle Feedlots in Australia (MLA, 2012).

Photograph 3 – Existing development – Water storage tanks

3.7 Solid waste management

The Development produces significant amounts of solid waste. Solid waste includes:

- Manure – the faeces and urine excreted by the beef cattle. Manure accumulates on the pen surface and is deposited in drains and the sedimentation basin after runoff-producing rainfall. Manure forms the largest component of solid waste.
- Waste feed – Very low levels of feed commodities or rations are wasted through spillage or spoilage. Feed in bunks may become wet and unpalatable in rainy weather and beef cattle may go off their feed. Under these circumstances the ration is spoiled and needs to be removed from the bunk and taken directly to the solid waste stockpile and carcass composting area.
- Mortalities – Lot fed livestock are vulnerable to sickness and disease. Whilst the Development has a high animal health maintenance and welfare program, periodically cattle deaths are experienced. The average mortality rate for the Development is around 0.25% expressed as a percentage of cattle throughput. Most mortalities occur relatively early in the feeding period;
- Sedimentation pond sludge – settled solids or sludge accumulation decreases the performance of the sedimentation pond and periodically requires removal.
- Holding pond sludge – settled solids or sludge accumulation decreases the performance of the holding pond and periodically requires removal (> 10 years).

3.7.1 Solid waste stockpile/processing

The manure collected from the pens and drains shall be temporarily stored in the solid waste stockpile and carcass composting area so that pen cleaning can regularly occur even though it may not be possible to continually spread the manure on land or remove it from the site. Sludge removed from the sedimentation pond and holding pond in time shall also be stored in the solid waste stockpile and carcass composting area.

Typically, manure removed from the pens, drains and sedimentation ponds will be laid out in low windrows with the long axes perpendicular to the area contours to ensure free drainage. Manure aging or composting shall not be undertaken in large piles as these are more likely to catch on fire.

The stockpiled manure will decompose anaerobically. The anaerobic decomposition process generates considerable heat that may be sufficient to sterilise any weed seeds and a significant proportion of potentially harmful pathogens contained in the manure.

3.7.1.1 Utilisation

Solid waste (i.e. manure, carcass compost, holding pond sludge) is a valuable source of nutrients and organic matter for soil conditioning and growing crops or pastures.

Solid waste from the stockpile area is removed in line with cropping program demands and placed directly onto the available solid waste utilisation area when possible and favourable weather conditions permit. Any solid wastes not utilised on-site are removed off-site and applied to other land owned by Reid River Export Depot Pty Ltd.

3.8 Effluent management

Stormwater run-off from the controlled drainage areas is described as effluent because it has been in contact with manure, has a high nutrient concentration and has the potential to pollute surface water and groundwater. Stormwater run-off (effluent) is temporarily stored in a holding pond with a capacity of 176 ML. The holding pond is designed to store stormwater runoff (effluent) from major storm events (design storm method) and/or when extended wet periods prevent irrigation of effluent so that pond overtopping events are prevented and / or limited to an acceptable frequency.

The volume of effluent generated from the operation of the proposed development is dependent on stormwater runoff from the controlled drainage area. Consequently, the volume of effluent generated is dependent on climatic factors such as rainfall and evaporation and pen surface conditions (manure depth) and operational factors.

When there is sufficient volume of effluent for utilisation, then effluent from the holding pond shall be removed in line with cropping program demands and applied to the crops on the approved effluent utilisation area when favourable weather conditions permit.

3.9 Hours of operation

Normal operating hours for general activities such as cattle feeding, waste management and cropping operations and transport activities such as feed commodity delivery and livestock movements would typically occur between 6:30 am and 6:30 pm. Heavy vehicle movements may occur outside of normal transport hours for example transport of beef cattle may occur either at night or in the early hours of the morning for animal welfare reasons.

3.10 Workforce requirements

The workforce servicing the pre-quarantine export facility shall also be utilised in activities associated with the Development. Approximately 4 FTE are required for administrative, livestock handling, feed storage, preparation and delivery, machinery maintenance, waste management and general farm activities associated with the Development.

About four staff can be accommodated on-site in the existing dwellings. About five staff can be accommodated on-site in the rural workers accommodation facility on the subject land.

All staff are trained to uphold strong guidelines in animal health and welfare and environment.

3.11 Administration

Administrative functions of the proposed development shall be undertaken within the existing site office and associated facilities for example.

The site office is located adjacent to the cattle handling facility and includes a general workstation area, first aid station and an associated area for light vehicle parking as shown in Photograph 4.

Photograph 4 – Existing development – Office

3.12 Maintenance

Maintenance functions of the proposed development shall be undertaken within the machinery workshop and associated facilities.

The workshop building contains a stores section, general maintenance bay, unloading area and outdoor secure storage area. The store area is suitable for forklift access and adjacent unloading of heavy/oversize vehicles.

3.13 Hazardous materials storage

Industry codes of practice, best management practices (BMP) and regulations apply to the storage, use and disposal of hazardous materials.

There shall be limited quantities of hazardous materials stored and used on-site during operation. To minimise the risk of environmental harm from liquid spills and leaks, all hazardous materials required to be stored on-site shall have a spill containment system appropriate for the nature and pollution risk of that liquid in accordance with relevant guidelines and Australian Standards. Liquids that may be stored during the operation of the Development include:

- agricultural chemicals – herbicides, pesticides etc;
- veterinary chemicals;

- cleaning agents;
- detergents and sanitisers;
- engine coolant;
- oil, grease, lubricants;
- diesel, petrol fuels; and
- solvents.

All hazardous materials to be stored on-site are liquids and shall be stored above-ground. The quantities of hazardous chemicals shall be kept to a minimum, commensurate with their usage and shelf life. With the exception of diesel fuel, hazardous materials shall be stored in steel drums (205L) or HDPE containers (20L) located in a dedicated secured facility.

Diesel fuel is the primary hazardous material required on-site with some ~10,000L currently able to be stored on-site in an above-ground tank. The majority of this fuel is used for feed delivery and cropping operations.

Very limited quantities (<205L) of other hazardous materials such as oils, solvents and veterinary chemicals etc may be stored if required for use at the Development. All agricultural chemicals are stored in a locked shed located adjacent to the workshop.

Table 2 outlines the estimated storage quantities of hazardous materials and storage requirements.

Table 2 – Proposed development – Hazardous materials storage quantities

Substance	Maximum pack size	Quantity	Use	Storage location
Agricultural chemicals	1,000L	2,500L	Weed control	Chemical store
Cleaning agents/detergents/ sanitisers	20L	20L	Plant & machinery maintenance	Workshop
Engine coolant	20L	80L	Plant and machinery maintenance	Workshop
Oil/grease/lubricants	205L	410L	Plant and machinery maintenance	Workshop
Diesel	10,000L	10,000	Plant and machinery fuel	Bulk tank
Petrol	205L	205L	Small engines, ATV fuel	Workshop
Solvents	20L	20L	Plant & machinery maintenance/repairs	Workshop

4 Hazard assessment

4.1 Severe fire weather

The forest fire danger index (FFDI) for the site was taken from Fire Weather Severity mapping for Queensland (Leonard et al., 2014) as shown in Figure 8. The severe fire weather map indicates the 5 % annual exceedance probability forest fire danger index (FFDI) for the site is 55.

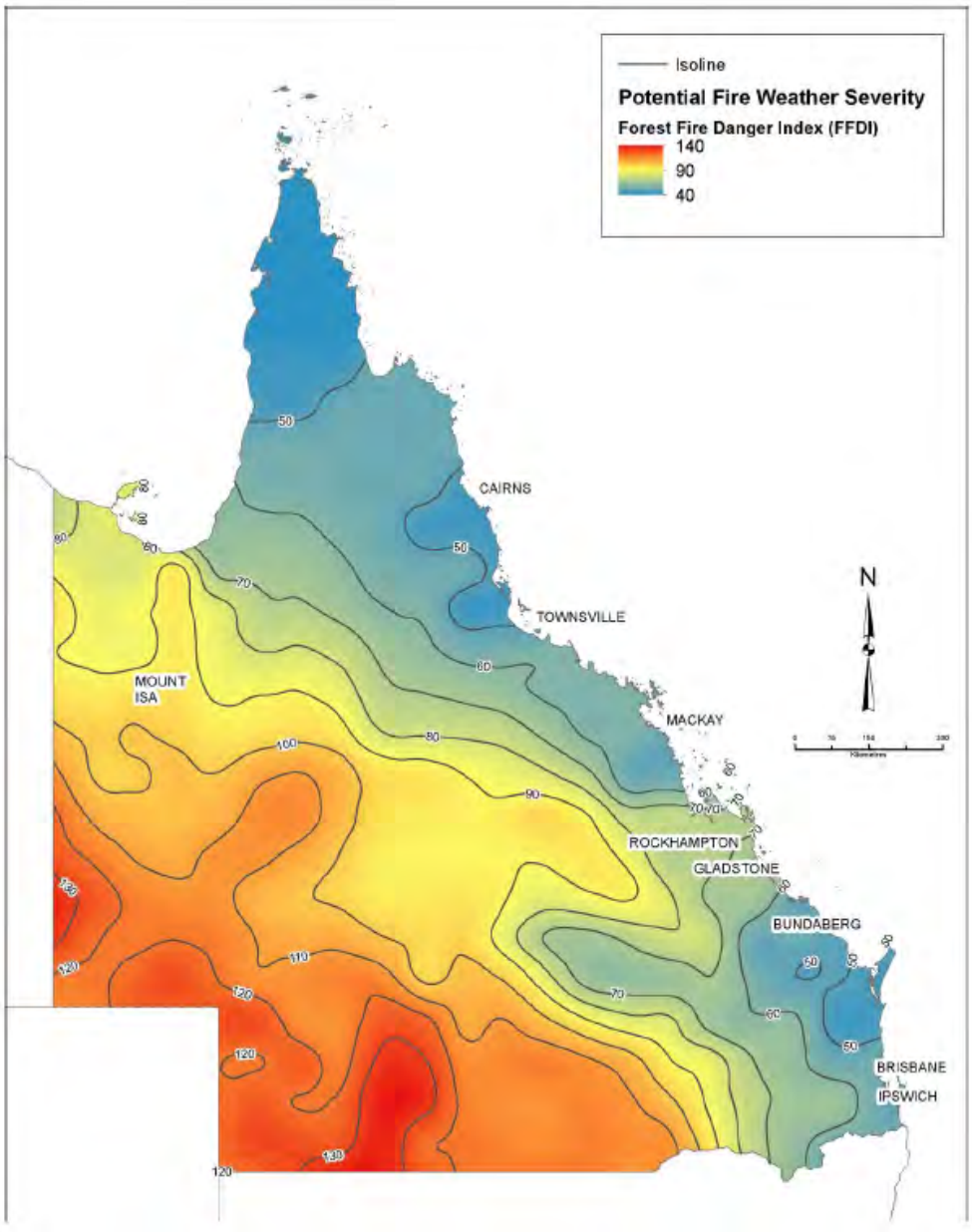


Figure 8 – Queensland Fire Weather Severity mapping (Leonard et al., 2014)

This FFDI value has been used for the bushfire hazard assessment in section 4 and the radiant heat exposure assessment in section 4.5.

4.2 Fire history

Fire scar history data indicates no fires have occurred within 1 km of the subject land during the past 10 years. Typically each year, the Queensland Parks and Wildlife Service, within the Department of Environment and Science undertake controlled forest fuel load reduction burns within the Mingela State Forest some 5 km northwest of the subject land. Whilst in some years these fires have escaped the state forest they are quickly contained. Further, there has been spot fires along the railway line resulting from passing trains. However, these have been quickly contained and extinguished.

4.3 Site assessment

A walk over within 140 m of the proposed development complex and existing infrastructure was undertaken on the 25th and 26th of May 2022. Observations were recorded about current land use and management, vegetation characteristics, slope of land and evidence of previous fires.

The locations of site assessment reference points are shown on Figure 6.

4.3.1 Vegetation hazard classes

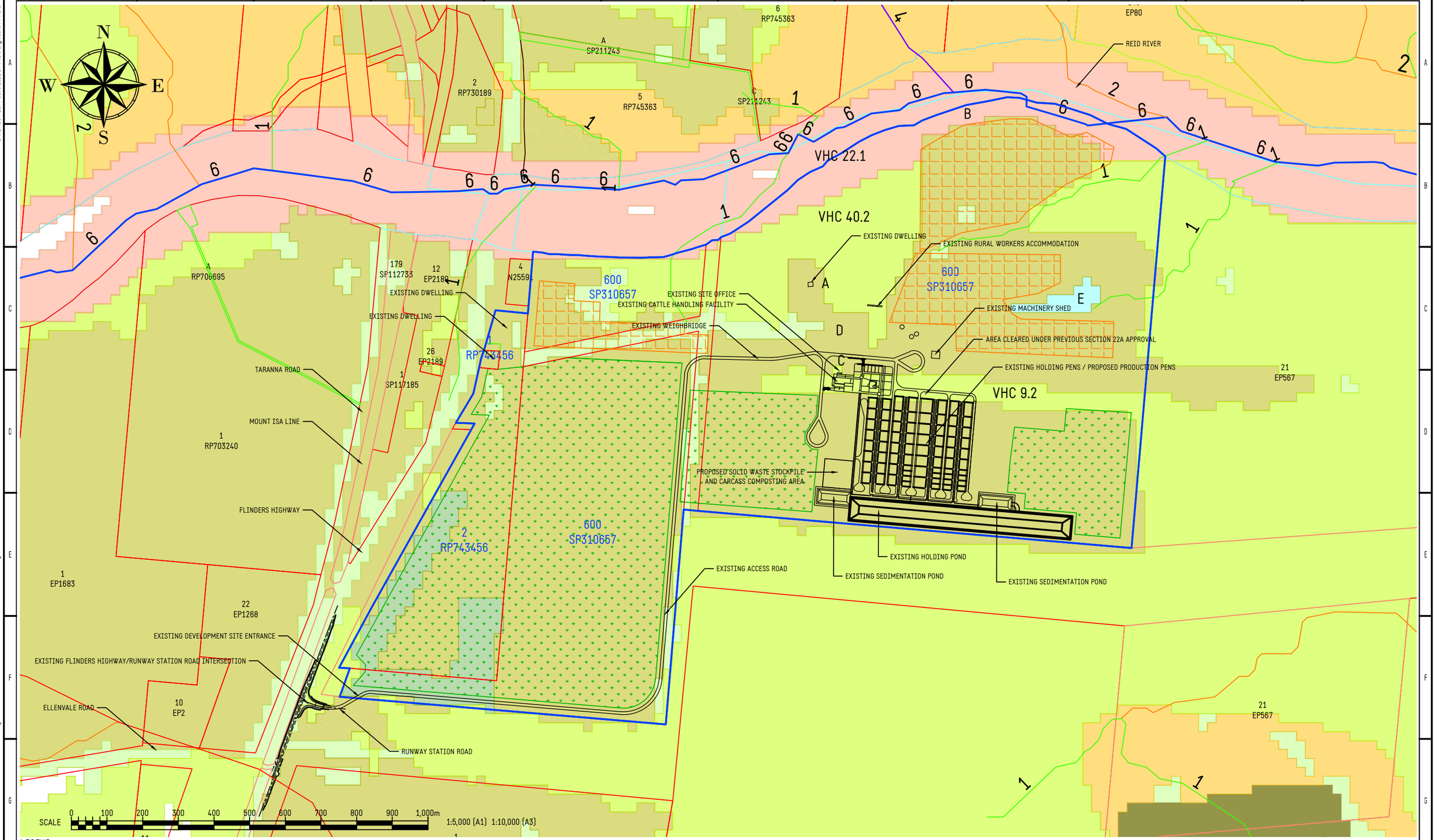
A vegetation hazard class overlay of the subject land was prepared based on digital data obtained from the Queensland Spatial Catalogue (QSpatial) Bushfire prone area - Vegetation hazard class - North Queensland. An overlay of cadastral, regulated vegetation and the proposed development was prepared and is shown in Figure 9.

It should be noted that a large portion of vegetation, currently mapped by the State as bushfire hazard, has been cleared for the existing development.

Five (5) vegetation hazard classes classified in accordance with Queensland Fire and Emergency Services (2019) were identified within the subject land as shown in Table 2. Table 3 provides a summary of observations associated with site assessment reference points and their features are shown in Photograph 5 to Photograph 9 and location on Figure 9.

Table 3 – Subject land – Vegetation hazard classes

Reference location	Vegetation hazard Class		Notes
	Mapped	Groundtruthed	
A	VHC 9.2. Eastern eucalypt woodlands to open forests	VHC 9.1	Regulated bushland vegetation adjoining the western and southern boundary of the subject land. Regulated bushland vegetation to the north of the proposed development. This will be retained as part of the proposed development.
B	VHC 22.1 Melaleuca open forests on seasonally inundated lowland coastal swamps	VHC 22.1	Regulated riparian vegetation along the northern boundary of the subject land and within Reid River. This will be retained as part of the proposed development.
C	40.4 Low grass or tree cover in rural areas	VHC 40.4	Managed vegetation surrounding the existing development complex site.
D	42.6 Nil to very low vegetation cover	VHC 42.6	Existing development complex and associated infrastructure. Holding pens, steel fencing, concrete elements and roads.
E	43.6 Water bodies or very low vegetation cover	VHC 43.6	Existing water storage dams.



LEGEND

- SUBJECT LAND BOUNDARY
- LAND PARCEL BOUNDARY
- EFFLUENT UTILISATION AREA
- SOLID WASTE UTILISATION AREA
- VHC 9.2
- VHC 22.1
- VHC 38.2
- VHC 40.4
- VHC 43.6
- STREAM ORDER 1
- STREAM ORDER 2
- STREAM ORDER 3
- STREAM ORDER 4
- STREAM ORDER 5
- STREAM ORDER 6

NOTES

1. THIS IS A REGULATED VEGETATION MANAGEMENT MAP AS DEFINED BY s20A OF THE VEGETATION MANAGEMENT ACT 1999. THE MAP INCORPORATES ELEMENTS OF THE REGULATED VEGETATION MANAGEMENT MAP VERSION 5.0.
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4. REGULATED VEGETATION MAPPING IN PART, BASED ON SURVEYS OF VEGETATION COMMUNITIES AND RELATED LANDFORM, SOILS AND GEOLOGY IS BASED ON LANDSAT IMAGERY FOR 2015.
5. THE POSITIONAL ACCURACY OF REGULATED VEGETATION DATA MAPPED AT A SCALE OF 1:100,000 IS ±100 METRES.

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ABN 37 627 163 071
PO BOX 1223
TOOWOOMBA QLD 4350
M: 0427 829 203
E: info@rdcengineers.com.au

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TITLE: DEVELOPMENT APPLICATION - MATERIAL CHANGE OF USE
SITE BASED BUSHFIRE HAZARD ASSESSMENT AND MANAGEMENT PLAN
SUBJECT LAND - VEGETATION HAZARD CLASS OVERLAY

REPORT REFERENCE	SUPPLIED DRAWING NUMBER		DRAWING NUMBER	REV.
FIGURE 9		A3	D1-130-1000-09	B

DATE PLOTTED: 4 June 2022 BY: - RDC Engineers PTY LTD

FILE PATH: C:\RDC Engineers\RDCE - Projects\D1-130 Reid River Feedlot\D5 - ACAD MasterPlan\D5.1 Drawings - CURRENT FILE NAME: D1-130-00-MASTERPLAN-220228 v8.dwg

The characteristics of each observed vegetation hazard class are described in the following sections.

4.3.1.1 Vegetation Hazard Class 9.2 – Moist to dry eucalypt woodland on coastal lowlands and ranges

Vegetation Hazard Class 9.2 (VHC 9.2) is located to the east, south and north of the proposed development complex as shown in Figure 9.

The average canopy height is approximately 12-16 m with crown cover percentage of 40-60%. The vegetation community is dominated by Reid River box (*Eucalyptus brownii*), White gum (*Eucalyptus platyphylla*) and Grey bloodwood (*Corymbia clarksoniana*) open woodland.

A secondary tree layer commonly occurs and is dominated by Chinee apple (*Ziziphus mauritiana*) with Cockatoo apple (*Planchonia careya*) and Broad leaved paperbark (*Melaleuca viridiflora*). The ground layer comprises tussock grasses, including Aristida spp, Kangaroo grass (*Themeda triandra*), Chloris spp and Heteropogon contortus, together with herbs or forbs such as Galactia (*Galactia tenuiflora*) and Spiked sida (*Sida hackettiana*).

VHC 9.2 is attributed a potential surface fuel load of 11.4 t/ha and a potential total fuel load of 17.2 t/ha (Leonard & Opie, 2017). Photograph 5 depicts typical vegetation conditions within VHC 9.2.

Photograph 5 – Subject land – Characteristic vegetation – VHC 9.2

4.3.1.1 Vegetation Hazard Class 22.1 – Melaleuca open forests on seasonally inundated lowland coastal swamps

Vegetation Hazard Class 22.1 (VHC 22.1) dominates the riparian areas along the Reid River to the north of the proposed development complex along the subject land boundary as shown in Figure 9.

The average canopy height is approximately 12-16m with crown cover percentage of 60-80%. The vegetation community is dominated by broad leaved paperbark (*Melaleuca viridiflora*) and Reid River box (*Eucalyptus brownii*). A secondary tree layer is dominated by Chinee apple (*Ziziphus mauritiana*). The ground layer comprises tussock grasses, including Aristida spp and Kangaroo grass (*Themeda triandra*).

VHC 22.1 is attributed a potential surface fuel load of 7.8 t/ha and a potential total fuel load of 14.9 t/ha (Leonard and Opie, 2017). Photograph 6 illustrates the typical vegetation conditions within VHC 22.1.

Photograph 6 – Subject land – Characteristic vegetation – VHC 22.1

4.3.1.2 Vegetation Hazard Class 40.4 – Low grass or tree cover in rural areas

Vegetation Hazard Class 40.4 (VHC 40.4) dominates areas to the south and west of the proposed development complex and comprises extensive monoculture of grassland, the existing development infrastructure and a sparse distribution of native and exotic trees. VHC 40.4 is attributed a potential surface fuel load of 0.5 t/ha and a potential total fuel load of 5 t/ha (Leonard and Opie, 2017). Photograph 7 illustrates the typical vegetation conditions within VHC 40.4.

Photograph 7 – Subject land – Characteristic vegetation – VHC 40.4

4.3.1.3 Vegetation Hazard Class 42.6 – Nil to very low vegetation cover

Vegetation Hazard Class 42.6 (VHC 42.6) dominates areas to the north of the site which include roadways, highly developed areas and regularly maintained areas. VHC 42.6 is attributed a potential surface fuel load of 1 t/ha and a potential total fuel load of 2 t/ha (Leonard and Opie, 2017). Photograph 8 illustrates the typical vegetation conditions within VHC 42.6.

Photograph 8 – Subject land – Characteristic vegetation – VHC 42.6

4.3.1.4 Vegetation Hazard Class 43.6 – Water bodies or very low vegetation cover

On-site water bodies including overland flow dams are mapped as Vegetation Hazard Class 43.6 (VHC 43.6). VHC 43.6 is attributed a potential surface fuel load of 0 t/ha and a potential total fuel load of 0 t/ha (Leonard and Opie, 2017). Photograph 9 illustrates the typical vegetation conditions within VHC 43.6.

Photograph 9 – Subject land – Characteristic vegetation – VHC 43.6

4.4 Potential bushfire intensity classes

The Potential Bushfire Intensity classes and their corresponding potential fire-line intensity (KW/m) values as prescribed by Leonard et. al. (2014) are provided in Table 4.

Table 4 – Potential bushfire intensity classes (Leonard et al., 2014)

Potential bushfire intensity class	Potential fire-line intensity
1. Very high (potential intensity)	40,000+ kW/m
2. High (potential intensity)	20,000 – 39,999 kW/m
3. Medium (potential intensity)	4,000 – 19,999 kW/m

4.5 Radiant heat exposure modelling

Quantitative modelling of the potential bushfire conditions that may be experienced within the various vegetation hazard classes identified on the subject land has been undertaken to assist in determining the suitability of the development design and any asset setback requirements.

Planning for Bushfire Resilient Communities (Queensland Fire and Emergency Services, 2019) provides 2 options for radiant heat exposure modelling, being the Queensland Fire and Emergency Services Bushfire asset protection zone width calculator (Queensland Fire and Emergency Services, 2019), or 'method 2 of AS 3959-2018, subject to the adoption of site-specific values. Both methods were utilised for this bushfire management plan.

The models used comprise industry standard bushfire equations which have been built into the FPAA endorsed FLAMESOL computer model (http://www.flamesol.com.au/). FLAMESOL allows numerous input variables to be adjusted including fuel loads, fire danger index, site slope and distance to vegetation. FLAMESOL uses the following algorithms:

- Rate of Spread – McArthur (1973) and Nobel *et al*. (1980)
- Flame Length – NSW Rural Fire Service (2001) and Nobel *et al*. (1980)
- Elevation of Receiver – Douglas and Tan (2005)
- Flame Angle – Douglas and Tan (2005)
- Radian Heat Flux – Drysdale (1999), Sullivan *et al*. (2003) and Douglas and Tan (2005)

The FLAMESOL Minimum Distance calculator has been used and comprises an AS 3959:2018 Method 2 (Appendix B) based calculator which can determine a suite of bushfire behaviour variables including flame length and the minimum distances required to achieve a range of different radiant heat flux exposures.

Fuel load inputs have been drawn from *Planning for Bushfire Resilient Communities* (Queensland Fire and Emergency Services, 2019) based on the calculated potential fuel loads for each vegetation hazard class.

1.8º effective slope was adopted for the slope underlying the VHC 9.1 Eucalypt open forest given upslope conditions underlying the hazardous vegetation.

A flame width of 60 m has been adopted commensurate with the edge width of the eastern most edge of the VHC 9.1 vegetation located to the west of the site.

A Forest Fire Danger Index of 55 has been adopted for the proposed development site consistent with the assignment by Queensland Fire and Emergency Services (2019).

Site-specific hazard maps are referred to as Local Hazard Area Maps in the SPP documents. The preparation of Local Hazard Area Maps has been undertaken for the site in accordance with the methodology described in the above referenced documents.

Bushfire Attack Levels were calculated using the Australian Standard - Construction of buildings in bushfire-prone areas Method 2(AS 3595-2018). Fuel loads used in the calculation were based on the VHCs identified in the areas surrounding the proposed development site.

Table 4 provides a summary of the key attributes generated from the Flamesol online calculator.

Table 5 – Proposed development – Bushfire attack levels

Attribute	Vegetation Hazard class		
	VHC 9.2	VHC 22.1	VHC 40.4
Effective slope, degrees	1.0	1.8	1.0
Site slope, degrees	1.0	1.8	1.0
Vegetation classification	Woodland	Woodland	Low grass or trees
Distance to vegetation, m	50	200	60
Fire Danger Index[1]	55	55	55
Surface fuel load, t/ha	11.4	7.8	0.5
Overall fuel load, t/ha	17.2	14.9	5
Vegetation height, m	16	12	n/a
Flame temperature, K	1,090	1,090	1,090
Flame width, m	100	100	100
Flame length, m	11.04	8.67	4.73
Flame angle, degrees	81.15	89.8	87.4
Elevation of receiver, m	5.32	1.84	1.52
Radiant heat flux, kw/m^2	6.03	0.78	0.0
Bushfire Attack Level	BAL-12.5	BAL – Low	BAL – Low

Note 1: AS3959-2018 identifies an FDI of 40 to be used in Queensland. A higher FDI of 55 has been used in these calculations to more accurately reflect actual weather conditions that may be experienced on the site.

4.6 Conclusion

Results of the potential bushfire intensity calculations determined that medium and high potential bushfire intensity areas occur in bushland vegetation along the north and west boundaries of the site, i.e. assessment reference points A and B, and generally agree with the SPP bushfire prone area map.

Land within 100 m of a medium or high potential bushfire intensity area is vulnerable from exposure to radiant heat, ember attack and burning debris. To mitigate these potential impacts, the SPP bushfire hazard assessment manual identifies this land as a potential impact buffer area. Land affected by a potential impact buffer area is defined as a bushfire prone area for planning purposes.

Therefore, the bushfire hazard assessment has confirmed that the proposed development is affected by medium and high potential bushfire intensity areas and potential impact buffer area and is subject to compliance with outcomes of the SPP bushfire prone area code.

The bushfire attack level is considered to be low. There is a risk of ember attack. The existing constructed elements are expected to be exposed to a heat flux not greater than 12.5 kW/m^2.

5 Bushfire hazards associated with the site

5.1 Fire danger season

The fire danger season in North Queensland starts in July, peaks in September and begins to fall in November, but will remain elevated until consistent summer rainfall occurs. Typically, the worst fire weather conditions will be experienced during the fire danger season when the wind direction is from the north.

FFDI values represent the chance of a fire starting, its rate of spread, its intensity and the difficulty of its suppression, according to various combinations of air temperature, relative humidity, wind speed and both the long and short-term drought effects. The severe fire weather map indicates the 5% annual exceedance probability FFDI for the site is 55.

Fire danger ratings (FDR) are based on the forecast weather conditions, i.e. FFDI, and gives advice about the level of bushfire threat on a day. An FFDI of 55 is commensurate with a very high FDR and will be associated with hot, dry and windy conditions. If a fire starts and takes hold under these conditions, it will be difficult to control in large areas of natural vegetation.

5.2 Fire history

As discussed in section 3.2, no fires have occurred within 1 km of the proposed development complex site during the past 10 years.

5.3 Likely direction of bushfire attack

The likely directions of bushfire attack on the proposed development are from the north, i.e. assessment reference points A and B, where very high, high and medium potential bushfire intensity areas occur respectively.

The potential impact of these bushfire attack scenarios on the proposed development is partially mitigated by the Reid River waterway corridor which contains a sparse density of trees and flowing water.

5.4 Potential bushfire hazard from adjacent land use

The subject land is surrounded by riparian areas, bushland (including stock route reserve) and open grassland and agricultural land. Based on fire history data discussed in section 4.2, these land uses are not a bushfire hazard in relation to the proposed development.

Prescribed burning could be performed in the Stock route reserve for conservation and/or fuel hazard reduction purposes but is unlikely as the Stock route is integrated with the adjoining properties and grazed by livestock. Prescribed burns are carefully planned and controlled and except for temporary nuisance from smoke and increased traffic are unlikely to have any significant impacts on the proposed development.

Typically each year, the Queensland Parks and Wildlife Service, within the Department of Environment and Science undertake controlled forest fuel load reduction burns within the Mingela State Forest some 5 km northwest of the subject land. Whilst in some years these fires have escaped the state forest they have been quickly contained. Further, there have been spot fires along the railway line resulting from passing trains. However, these have been quickly contained and extinguished.

5.5 Water and access

The proposed development has access to on-site water supply from multiple sources and a public road network capable of accommodating emergency vehicles.

6 Bushfire hazards associated with the proposed development

6.1 Population

The proposed development will not materially increase the number of people exposed to bushfire hazard given the existing development on the site and that the proposed development shall be established within the existing pre-quarantine export facility.

The proposed development does not involve additional dwellings.

Existing subject land dwellings adjoining bushland vegetation will include provisions to ensure appropriate separation from bushfire hazard.

6.2 Hazardous materials

The proposed development does involve storage of hazardous materials as defined in the glossary of the State Planning Policy (DILGP, 2017). The proposed development does not involve the manufacture of hazardous materials as defined in the glossary of the State Planning Policy (DILGP, 2017).

There shall be limited quantities of hazardous materials stored and used on-site during operation. All hazardous materials required to be stored on-site shall have a spill containment system appropriate for the nature and pollution risk of that liquid in accordance with relevant guidelines and Australian Standards. Industry codes of practice, best management practices (BMP) and regulations apply to the storage, use and disposal of hazardous materials.

Diesel fuel is the primary hazardous material required on-site. Diesel fuel storage may be in the order of 10,000 L due to the rural location of the proposed development.

Limited quantities (<200 L) of other hazardous materials such as oils, solvents, pesticides and veterinary chemicals etc may be stored if required for use at the proposed development. All agricultural chemicals shall be stored in accordance with regulatory requirements.

6.3 Vulnerable use

Vulnerable uses are often more difficult to evacuate, and occupants may not be able to support themselves or assist in property protection during a bushfire event. A vulnerable use is defined by the SPP bushfire prone area code (DILGP, 2021) as:

"childcare centre, community care centre, detention facility, educational establishment, hospital, nature-based tourism, relocatable home park, rooming accommodation, residential care facility, resort complex, retirement facility, tourist park"

The proposed development does not include retirement living and childcare precincts which are defined as 'vulnerable use' development under the SPP bushfire prone area code.

6.4 Emergency access

Emergency access to the proposed development will be via the existing public road network.

Primary access to the proposed development will be from Runway Station Road via the existing subject land entrance. Secondary access will be provided from the Flinders Highway via the original subject land entry for use by emergency vehicles ensuring safe evacuation in case of a bushfire and ensuring efficient access to the proposed development by emergency vehicles.

Roads and firebreaks within the proposed development will be designed to provide efficient access for emergency vehicles and the orderly evacuation of the proposed development site.

6.5 Fire-fighter water supply

The proposed development will be connected to several water sources and onsite storage. Storages will have an appropriately designed connection for fire-fighting purposes.

6.6 Warnings and emergency planning

Queensland emergency services use a range of methods to warn the community about bushfire, severe weather and other emergencies that require preparation and action at the property level.

Residents of the proposed development will have exposure to advice and warnings by Queensland emergency services via radio, online media, and local community safety announcements.

6.7 Radiant heat exposure

Inputs used to model these bushfire attack scenarios and results from the BAL calculator are provided in section 4.5.

The SPP bushfire prone area code seeks residential lots to provide building locations for residential dwellings which achieve a radiant heat flux < 29 kW/m^2. The context of the results in terms of mitigation measures for the residential dwellings are discussed in section 7 and show that residential dwellings may be exposed to a radiant heat flux of less than 12.5 kW/m^2.

A calculated radiant heat flux of 6.03 kW/m^2 requires a minimum distance of 33 m between the high risk vegetation class and the proposed development. The existing 35 m protection zone around the mapped medium potential risk bushfire area allows the development adequate protection from the bushfire prone area.

7 Bushfire mitigation plan

7.1 General

The following section describes bushfire impact reduction measures to be incorporated into the proposed development to reduce the risk of bushfire impacts to people and property. Implementation of the identified measures are not implied nor intended to advocate that building occupants remain on the site during a bushfire event, nor that people and property will be protected from bushfire impacts. The measures are intended to reduce the potential severity of bushfire impact to the proposed development and not prevent bushfire impact. The bushfire mitigation measures have been derived from:

- Department of State Development, Manufacturing, Infrastructure and Planning's *State Planning Policy – State interest guidance material – Natural hazards, risk and resilience – Bushfire (December 2019);* and
- Queensland Fire and Emergency Services (2019). *Planning for Bushfire Resilient Communities.*

7.2 Asset protection zones

Asset Protection Zones (APZ) provide a defensive tool to assist in the reduction of potential bushfire impact to people and property situated in bushfire prone areas. An asset protection zone (APZ) is a low-fuel area that separates the perimeter of the building (or proposed building footprint) and the bushfire hazard by a distance that achieves a certain radiant heat flux. For most uses this is 29 kW/m² or less. For illustrative purposes, Figure 10 depicts the concept of an APZ surrounding a building in a bushfire prone area.

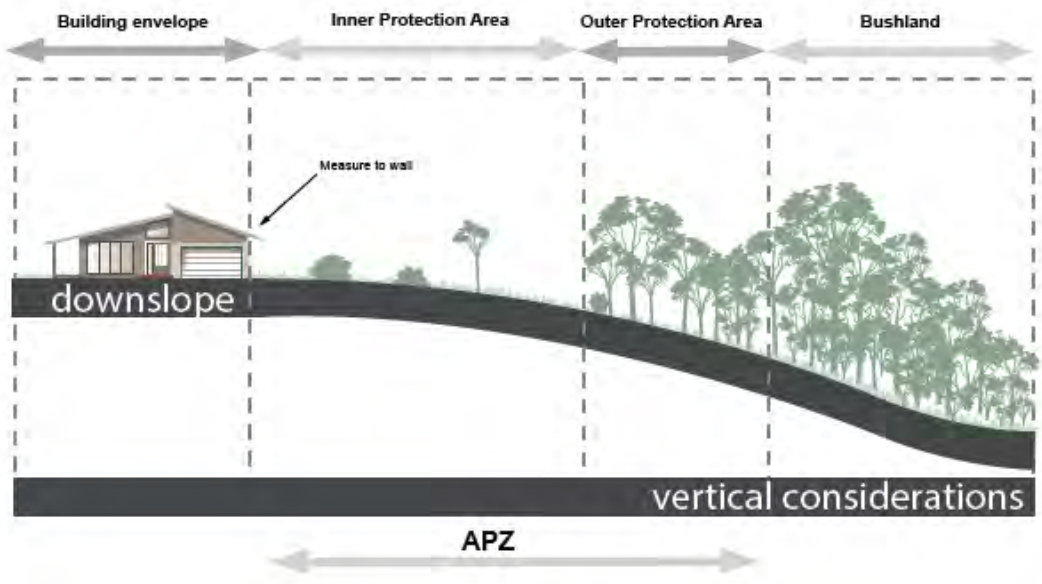

Figure 10 – Asset Protection Zone (NSW RFS, 2019)

7.3 Landscaping and regrowth

Existing landscaping within the proposed development complex should avoid increasing the potential for bushfire hazard. Assessment Benchmark 5 of the *State Planning Policy – State interest guidance material – Natural hazards, risk and resilience – Bushfire* (Department of State Development, Manufacturing, Infrastructure and Planning, 2019) seeks that the site layout places the landscape and open spaces within the site between premises and adjacent mapped medium, high or very high potential bushfire intensity areas.

This landscaping and open space comprises protective landscape treatments that:

1. Comprise only low threat vegetation (for example grassland managed in a minimal fuel condition, maintained lawn); or
2. Are designed to ensure a potential available fuel load is maintained at less than 8 tonnes/hectare in aggregate and with a fuel structure that remains discontinuous.

To reduce the potential for bushfire impact to buildings, structures and occupants as a result of future regrowth and landscaping works within the site, it is recommended:

- Any landscaping within the site satisfies Assessment Benchmark 5 of the SPP Bushfire 2019, including the low threat vegetation criteria prescribed in section 2.2.3.2 of AS 3959:2018 or later iterations thereof;

- Future landscaping works/plantings maximise the use of locally indigenous, low flammability species and or low-density plantings of suitable open forest /woodland species with low bark shedding characteristics.

7.4 Building approvals

The proposed development does not involve a new dwelling or accommodation use or Building Code of Australia (BCA) residential classification of buildings.

Consequently, assessment against the Building Code of Australia (BCA) and Australian Standard AS3959-2018 Construction of buildings in bushfire-prone areas is not triggered.

7.5 Water supply

The availability of a reliable water supply for firefighting purposes is a vital tool in the defence of bushfire impact. Reticulated water supply is currently not available to the proposed development site and is not proposed to be connected to the proposed development.

The proposed development site has reliable water supply for fire fighting available from groundwater, surface water and overland flow dams.

The proposed development shall have an on-site water supply and storage comprising multiple steel tanks for water supply with a minimum capacity of 750,000 litres as shown in Photograph 3. Access to existing dams on the subject land to the west and northeast of the proposed development are readily accessible to fire-fighting vehicles.

In addition to this the site has approved water allocations for extraction of water from the Reid River for 65 litres per second (5.62 ML/day). Any water accumulated in the effluent containment areas (i.e. sediment ponds and holding pond) will also be made available for use in the event of a bushfire emergency.

Therefore, the development satisfies the water supply provisions set in Assessment Benchmark 4 of the *State Planning Policy – State interest guidance material – Natural hazards, risk and resilience – Bushfire* (Department of State Development, Manufacturing, Infrastructure and Planning, 2019) and Assessment Benchmark 5 Charters Towers Regional Council Bushfire hazard overlay code (Charters Towers Regional Council, 2020).

No further design recommendations regarding water supply are deemed necessary.

7.6 Fire breaks

The provision of fire breaks and fire trails within a site located in a bushfire prone area offers an important bushfire defence measure to assist in reducing the risk and severity of bushfire ingress onto and through a site.

The proposed development site has access and internal roads which act as fire breaks and fire trails along the edge of the hazardous vegetation to the north, west and east of the development. The sealed and formed Flinders Highway also provides a readily trafficable fire break between the site and the vegetation further west. Therefore, no further firebreak requirements are deemed necessary.

7.7 Vehicular access

Development in bushfire prone areas should be serviced by safe access/exit points for both occupants and emergency services personnel.

Emergency services vehicular access to the site will be available from the existing public road network. Primary access to the proposed development will be from Runway Station Road on the southwest boundary of the subject land via the existing subject land entrance. Secondary access will be provided directly from the Flinders Highway via the former subject land entrance adjacent to Lot 1 RP743456 for use by emergency vehicles ensuring safe evacuation in case of a bushfire and ensuring efficient access to the proposed development site by emergency vehicles. These access perimeters comprise existing road formations and are expected to be readily suitable for QFES vehicles.

Roads and driveways within the proposed development will be designed to provide efficient access for emergency vehicles and the orderly evacuation of the site.

The vehicular access design for the proposed development is considered acceptable being as far as relevant for the use in accordance with the *Fire Hydrant and Vehicle Access Guidelines for residential, commercial and industrial lots* (Queensland Fire and Emergency Services, 2015).

7.8 Service installation

All services (water, electricity) shall be installed underground where practical. The proposed development does not require gas reticulation.

7.9 Emergency response planning

Management of the proposed development will be responsible for preparing for the bushfire season. The Queensland Rural Fire Service has publicly available information to assist the community prepare for the bushfire season which includes an online template to prepare a bushfire survival plan which can be accessed at Create Your Bushfire Survival Plan | Queensland Fire and Emergency Services (qfes.qld.gov.au).

Employees will be trained in the proper use of fire-fighting equipment available for use on site.

7.10 General maintenance

An appropriate level of property maintenance shall be undertaken throughout the year, and in particular prior to the fire season to reduce the severity of bushfire event. The following general actions be undertaken to prepare for the fire season:

7.10.1 Structure

- Clear leaves, twigs, bark and other debris from roofing and gutters;
- Install fine steel wire mesh screens on all windows, doors, vents and weep holes;
- Point LPG cylinder relief valves away from the hazard; and
- Conduct maintenance checks on pumps, generators and water systems.

7.10.2 Access

- Check rural road numbering signage and entry signage in case it is required in an emergency.

7.10.3 Vegetation

- Reduce vegetation loads along the access roads;
- Grassed areas are regularly mown and maintained;
- Remove excess ground fuels and combustible material (long dry grass, dead leaves and branches).
- Trim low-lying branches two metres from the ground surrounding residential dwellings.

8 Conclusion

This bushfire management plan demonstrates how the proposed development will comply with outcomes of the SPP bushfire prone area code and considers technical guidance for bushfire hazard assessment.

A bushfire hazard assessment of land within 140 m of the subject land, including retained bushland vegetation within the subject land, confirmed that the proposed development is affected by bushfire hazard and is subject to compliance with outcomes of the SPP bushfire prone area code.

Mitigation measures that will be implemented as part of the proposed development are specified in section 7. With the implementation of these mitigation measures, the proposed development complies with outcomes in the SPP bushfire prone area code as demonstrated at Appendix A1 – SPP Development Assessment Requirements - Bushfire.

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Appendix A1 – SPP Development Assessment Requirements - Bushfire

Outcome		Measure		Compliance Assessment
Section A				
Reconfiguring a lot (RaL) – where creating lots of more than 2,000 square metres				
O1	The subdivision layout: a) enables future buildings to be located away from slopes and land forms that expose people or property to an intolerable risk to life or property; and b) facilitates emergency access and operational space for firefighters in a reduced fuel area between future buildings and structures and hazardous vegetation, that reduce risk to an acceptable or tolerable level. Note – An applicant may seek to undertake a site-level verification of the location and nature of hazardous vegetation and resulting potential bushfire intensity levels, for example where changes in foliage have occurred (e.g. as a consequence of adjoining permanent urban development) or where an applicant seeks to verify the regional ecosystem map inputs. This verification should form part of a bushfire hazard assessment in accordance with the methodology in the QFES *Bushfire resilient communities* document. The outcomes of this assessment can demonstrate how an alternate solution to the acceptable outcome can deliver an acceptable or tolerable level of risk.	**M1.1**	A development footprint plan is identified for each lot that avoids ridgelines, saddles and crests where slopes exceed 15 per cent.	**Not applicable (M1.1)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 3 and does not involve reconfiguration of a lot. Refer to section 1 and 3 and Figure 6 and Figure 7.

Outcome		Measure		Compliance Assessment
		M1.2	A development footprint plan is identified for each lot that is separated from the closest edge to the adjacent mapped medium, high or very high potential bushfire intensity area by: a distance that is no closer than the distances specified in Table 5 at all development footprint plan boundaries; or a distance that achieves a radiant heat flux level of 29 kW/m2 or less at all development footprint plan boundaries. Note – This separation area is often termed an asset protection zone. Note – The radiant heat flux levels can be established by undertaking a bushfire hazard assessment in accordance with the methodology in the QFES Bushfire resilient communities document.	**Not Applicable (M1.2)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 3 and does not involve reconfiguration of a lot. Refer to section 1 and 3 and Figure 6 and Figure 7.
O2	The subdivision layout enables: future buildings to be located as close as possible to property entrances to facilitate safe evacuation during a bushfire event; and future site access to be located and designed to allow safe evacuation of the site by occupants and maintain access by emergency services under critical event conditions.	**M2**	A development footprint plan is identified for each lot that: is located within 60 metres of the street frontage; and sited to enable a route between the development footprint plan and the street frontage with a gradient that does not exceed of 12.5 per cent.	**Not applicable (M2)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 3 and does not involve reconfiguration of a lot. Refer to section 1 and 3 and Figure 6 and Figure 7.
Section B				

Outcome	Measure	Compliance Assessment
Reconfiguring a lot (RaL) – where creating lots of 2,000 square metres or less		
O3 The subdivision layout: a) avoids creating lots on slopes and land forms that expose people or property to an intolerable risk to life or property; and b) facilitates emergency access and operational space for firefighters in a reduced fuel area between future buildings and structures and hazardous vegetation, that reduce risk to an acceptable or tolerable level. Note – An applicant may seek to undertake a site-level verification of the location and nature of hazardous vegetation and resulting potential bushfire intensity levels, for example where changes in foliage have occurred (e.g. as a consequence of adjoining permanent urban development) or where an applicant seeks to verify the regional ecosystem map inputs. This verification should form part of a bushfire hazard assessment, in accordance with the methodology in the QFES *Bushfire resilient communities* document. The outcomes of this assessment can demonstrate how an alternate solution to the acceptable outcome can deliver an acceptable or tolerable level of risk.	**M3.1** The subdivision layout results in lots that are sited so that they are separated from the closest edge to the adjacent mapped medium, high or very high potential bushfire intensity area by: a) a distance that is no closer than the distances specified in Table 5 at all lot boundaries; or : b) a distance that achieves a radiant heat flux level of 29 kW/m^2 or less: (i) at the building envelope, if identified at RaL stage; or (ii) where a building envelope is not identified, at all lot boundaries. Note – This separation area is often termed an asset protection zone. Note – The radiant heat flux levels can be established by undertaking a bushfire hazard assessment in accordance with the methodology in the QFES *Bushfire resilient communities* document.	**Not Applicable (M3.1)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 3 and does not involve reconfiguration of a lot. Refer to section 1 and 3 and Figure 6 and Figure 7.

Outcome		Measure		Compliance Assessment
			Note – For staged developments, temporary separation areas may be absorbed as part of subsequent stages. Note - Existing cleared areas external to the site may only be used in calculating necessary separation where tenure ensures that the land will remain cleared of hazardous vegetation (for example the land is a road, watercourse or highly managed park in public ownership).	
		M3.2	The subdivision layout does not create lots that are within bushfire prone areas and on ridgelines, saddles and crests where slopes exceed 15 per cent (roads and parks may be located in these areas).	**Not Applicable (M3.2)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 3 and does not involve reconfiguration of a lot. Refer to section 1 and 3 and Figure 6 and Figure 7.
Section C				
Reconfiguring a lot (RaL) – where creating more than 20 lots				
O4	The subdivision layout is designed to minimise the length of the development perimeter and number of lots exposed to hazardous vegetation. Note – For example, avoid finger-like subdivision patterns or substantive vegetated corridors between lots.	**M4**	No measure is prescribed	**Not applicable (O4)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 3 and does not involve reconfiguration of a lot. Refer to section 1 and 3 and Figure 6 and Figure 7.

Outcome		Measure		Compliance Assessment
O5	The subdivision layout provides for adequate access and egress and safe evacuation routes, to achieve an acceptable or tolerable risk to people.	**M5.1**	The subdivision layout: a) avoids the creation of bottle-neck points in the movement network within the development (for example, avoids hourglass patterns); and b) ensures the road network has sufficient capacity for the evacuating population.	**Not Applicable (M5.1)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 3 and does not involve reconfiguration of a lot. Refer to section 1 and 3 and Figure 6 and Figure 7.
		M5.2	The subdivision layout ensures evacuation routes: a) direct occupants away from rather than towards or through areas with a greater potential bushfire intensity; and b) minimise the length of route through bushfire prone areas.	**Not Applicable (M5.2)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 3 and does not involve reconfiguration of a lot. Refer to section 1 and 3 and Figure 6 and Figure 7.
O6	The subdivision layout provides adequate buffers between hazardous vegetation and development. Note – An applicant may seek to undertake a site-level verification of the location and nature of hazardous vegetation and resulting potential bushfire intensity levels, for example where changes in foliage have occurred (e.g. as a consequence of adjoining permanent urban	**M6.1**	The subdivision layout results in an asset protection zone being located to create a separation area from adjacent mapped medium, high or very high potential bushfire intensity areas.	**Not Applicable (M6.1)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 3 and does not involve reconfiguration of a lot. Refer to section 1 and 3 and Figure 6 and Figure 7.

Outcome	Measure		Compliance Assessment
development) or where an applicant seeks to verify the regional ecosystem map inputs. This verification should form part of a bushfire hazard assessment, in accordance with the methodology in the QFES Bushfire resilient communities document. The outcomes of this assessment can demonstrate how an alternate solution to the acceptable outcome can deliver an acceptable or tolerable level of risk.	**M6.2**	The asset protection zone is comprised of: a) parks and open spaces; and/or b) lots greater than 2000 square metres; and/or c) public roads (termed perimeter roads). Note – Parks and open space may be located within the mapped medium, high and very high potential bushfire intensity areas to create a separation between the development and the balance of the bushfire prone area. Note – Portions of lots greater than 2000 square metres may be located within the mapped medium, high and very high potential bushfire intensity areas. Refer Figure 5.	**Not Applicable (M6.2)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 3 and does not involve reconfiguration of a lot. Refer to section 1 and 3 and Figure 6 and Figure 7.
	M6.3	Where the asset protection zone includes lots greater than 2000 square metres a development footprint plan is identified for each lot that is located in accordance with AO1.2.	**Not Applicable (M6.3)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 3 and does not involve reconfiguration of a lot. Refer to section 1 and 3 and Figure 6 and Figure 7.

Outcome		Measure		Compliance Assessment
O7	Parks or open space provided as part of the asset protection zone do not create additional bushfire prone areas. Note –The undertaking of a bushfire hazard assessment, in accordance with the methodology in the QFES *Bushfire resilient communities* document may assist in demonstrating compliance with this performance outcome.	**M7**	Where the asset protection zone includes parks or open spaces, they: a) comprise only low threat vegetation, including grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, cultivated gardens and nature strips; or b) are designed to ensure a potential available fuel load is maintained at less than eight tonnes/hectare in aggregate and with a fuel structure that remains discontinuous. Note – Minimal fuel condition means there is insufficient fuel available to significantly increase the severity of the bushfire attack, for example short-cropped grass to a nominal height of 10 centimetres.	**Not Applicable (M7)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 3 and does not involve reconfiguration of a lot. Refer to section 1 and 3 and Figure 6 and Figure 7.
O8	Perimeter roads are accessible for fire-fighting vehicles, to facilitate emergency access and operational space for fire- fighting, maintenance works and hazard reduction activities.	**M8.1**	Where the asset protection zone includes a perimeter road it: a) has a two-lane sealed carriageway clear of hazardous vegetation; and b) is connected to the wider public road network at both	**Not Applicable (M8.1)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 3 and does not involve reconfiguration of a lot.

Outcome	Measure		Compliance Assessment
		ends and at intervals of no more than 200 metres; and c) does not include design elements that may impede access for fire-fighting and maintenance for fire- fighting purposes (for example traffic calming involving chicanes).	Refer to section 1 and 3 and Figure 6 and Figure 7.
	M8.2	Where the subdivision contains a reticulated water supply, the road network and fire hydrants are designed and installed in accordance with: a) *Fire Hydrant and Vehicle Access Guidelines for residential, commercial and industrial lots*, Queensland Fire and Emergency Services, 2015, unless otherwise specified by the relevant water entity; and **b)** the *Road Planning and Design Manual 2nd edition*, Department of Transport and Main Roads, 2013.	**Not Applicable (M8.2)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 3 and does not involve reconfiguration of a lot. Refer to section 1 and 3 and Figure 6 and Figure 7.
Section D			
Reconfiguring a lot (RaL) – where creating additional lots for the purpose of residential development and a reticulated water			

Outcome		Measure		Compliance Assessment
O9	The subdivision layout provides for perimeter roads or fire trail and working areas that are accessible by the type of fire-fighting vehicles servicing the area, to facilitate emergency access and operational space for fire-fighting, maintenance works and hazard reduction activities.	**M9.1**	The subdivision layout includes: a) a fire trail and working area designed and constructed in accordance with the design parameters in Table 6 that separates the residential lot or development footprint plan from adjacent mapped medium, high or very high potential bushfire intensity areas; or b) a perimeter road designed and constructed in accordance with AO8.1.	**Not Applicable (M9.1)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 3 and does not involve reconfiguration of a lot. Refer to section 1 and 3 and Figure 6 and Figure 7.
Section E				
Material change of use				
O10	Site layout achieve an acceptable or tolerable risk to people. Landscape or open space provided as part of the development: a) acts as a buffer between hazardous vegetation and development; and b) does not create additional bushfire prone areas. Note – An applicant may seek to undertake a site-level verification of the location and nature of hazardous vegetation and resulting potential bushfire intensity levels, for example where changes in foliage have occurred (e.g. as a	**M10.1**	Site layout places the landscape and open spaces within the site between premises and adjacent mapped medium, high or very high potential bushfire intensity areas. Refer Figure 7.	**Complies with M10.1** Access to the proposed development is via an internal access road from Runway Station Road which intersects with the Flinders Highway. The internal access road is an unsealed gravel road with a cleared width of greater than 6 m which follows the boundary of the subject land for part of its length. The proposed development incorporates an area of managed vegetation that separates lot boundaries from hazardous vegetation by a distance of at least 10 m.

Outcome	Measure		Compliance Assessment
consequence of adjoining permanent urban development) or where an applicant seeks to verify the regional ecosystem map inputs. This verification should form part of a bushfire hazard assessment in accordance with the methodology in the QFES *Bushfire resilient communities* document. The outcomes of this assessment can demonstrate how an alternate solution to the acceptable outcome can deliver an acceptable or tolerable level of risk.			The rural dwellings associated with proposed development are located 50 m from mapped Medium Potential Bushfire Hazard area which is regulated least concern vegetation. The setback area is open space which contains all-weather access roads and open grassland which is regularly mowed. Consequently, the setback area provides an adequate fire break. The site based bushfire hazard assessment and management plan provides mitigation measures for the design and management of the bushfire protection zone with the objective of it providing a low fuel hazard area with discontinuous fuels.
	M10.2	This landscaping and open space comprises protective landscape treatments that: a) comprise only low threat vegetation, including grassland managed in a minimal fuel condition, maintained lawns, golf courses and cultivated gardens; or b) are designed to ensure a potential available fuel load is maintained at less than 8 tonnes/hectare in aggregate and that fuel structure remains discontinuous.	**Complies with M10.2** The proposed development incorporates an area of open space surrounding infrastructure which comprises all-weather access roads and open grassland which is regularly mowed. Refer to section 2 and 3, Photograph 4 and Figure 6.

Outcome		Measure		Compliance Assessment
			Note – Minimal fuel condition means there is insufficient fuel available to significantly increase the severity of the bushfire attack, for example short- cropped grass to a nominal height of 10 centimetres.	
O11	The development establishes evacuation areas, to achieve an acceptable or tolerable risk to people.	**M11**	If in an isolated location, development establishes direct access to a safe assembly/evacuation area. Note – Guidance on identifying safe evacuation areas is contained in the QFES *Bushfire resilient communities* document.	**Not applicable (M11)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 2 and 3 and does not involve establishment of essential community infrastructure. The proposed development complex has an established direct access to a safe assembly/evacuation area within an open grassed area which is regularly moved.
O12	If on a lot of over 2000m^2, where involving a new premises or an existing premises with an increase in development footprint, development: a) locates occupied areas as close as possible to property entrances to facilitate safe evacuation during a bushfire event; and b) ensures vehicular access is located and designed to allow safe evacuation of the site by occupants and maintain access by emergency services under critical event conditions	**M12**	No measure is prescribed.	**Not applicable (O12)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 2 and 3 within existing built infrastructure. The proposed development does not propose an increase in development footprint. Refer to section 2 and 3 and Figure 6 and Figure 7.

Outcome		Measure		Compliance Assessment
O13	Development is located within a reticulated water supply area or includes a dedicated static water supply that is available solely for fire-fighting purposes and can be accessed by fire-fighting vehicles. Note – Swimming pools, farm ponds and dams are not considered reliable sources of static water supply in Queensland due to regular drought events. [Note for Local Government – Information on how to provide an appropriate static water supply, may form a condition of a development approval. For further information on preferred solutions refer to the QFES *Bushfire resilient communities* document.]	**M13**	No measure is prescribed	**Complies with O13** The subject land is not in Council's reticulated potable water supply area. The proposed development is self sufficient as far as water supply is concerned and does not require connection to Council's reticulated potable water supply infrastructure. Refer to section 2, 3.6 and Photograph 3. The proposed development has surface water allocation under the Water Plan (Burdekin Basin) 2007 as outlined in section 2.5. The proposed development has several equipped groundwater bores which supply water to the existing development. This infrastructure shall provide a safe and sufficient water supply for fire-fighting purposes as outlined in section 2.5. The proposed development shall have an on-site water supply and storage comprising multiple tanks for water supply with a minimum capacity of 750,000 litres. Access to existing dam on the subject land to the northeast of the proposed development is also accessible to fire-fighting vehicles as outlined in section 3.6. The subject land also contains several large dams that are maintained at a sufficient water level to act as a safe and sufficient water supply for fire-fighting purposes.

Outcome		Measure		Compliance Assessment
				The drainage infrastructure (sedimentation ponds and holding pond) can also act as a water supply source for fire-fighting purposes if required.
O14	Vulnerable uses listed in Table 3 are not established or intensified within a bushfire prone area unless: a) there is an overriding need in the public interest for the new or expanded service the development provides; and b) there are no other suitable alternative locations within the required catchment; and c) site planning can appropriately mitigate the risk (for example, siting ovals for an educational establishment between the hazardous vegetation and structures. Note – The preparation of a bushfire management plan in accordance with the methodology in the QFES *Bushfire resilient communities* document may assist in demonstrating compliance with this performance outcome	**M14**	No measure is prescribed	**Not Applicable (O14)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 3 and does not involve the establishment of a vulnerable use or community infrastructure for essential services and materials that are hazardous in the context of bushfire hazard. Refer to section 1 and 3 and Figure 6 and Figure 7.
O15	Community infrastructure providing essential services listed in Table 3 are	**M15**	No measure is prescribed	**Not Applicable (O15)**

Outcome		Measure		Compliance Assessment
	not established within a bushfire prone area unless: a) there is an overriding need in the public interest for the new or expanded service the development provides (for example, there are no other suitable alternative locations that can deliver the required level of service or meet emergency service response times during and immediately after a bushfire event); and b) the infrastructure can function effectively during and immediately after a bushfire event. Note – The preparation of a bushfire management plan in accordance with the methodology in the QFES *Bushfire resilient communities* document may assist in demonstrating compliance with this performance outcome			The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 3 and does not involve the establishment of community infrastructure providing essential services listed in Table 3 of the Natural hazards, risk and resilience state interest – Bushfire such as educational establishment, emergency services, hospital. Refer to section 1 and 3 and Figure 6 and Figure 7.
O16	Development avoids or mitigates the risks to public safety and the environment from the manufacture or storage of materials listed in Table 3 that are hazardous in the context of bushfire to an acceptable or tolerable level. Note – The preparation of a bushfire management plan in accordance with	**M16**	No measure is prescribed	**Complies with O16** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot using existing built infrastructure and does not involve the manufacture or storage of materials. Refer to section 1 and 3 and Figure 6 and Figure 7.

Outcome	Measure	Compliance Assessment
the methodology in the QFES *Bushfire resilient communities* document may assist in demonstrating compliance with this acceptable outcome. Editor's note – In addition to the requirements of this code the *Work Health and Safety Act 2011* and associated Regulation and Guidelines, the *Environmental Protection Act 1994* and the relevant building assessment provisions under the *Building Act 1975* contain requirements for the manufacture and storage of hazardous substances. Information is provided by Business Queensland on the requirements for storing and transporting hazardous chemicals, available at: www.business.qld.gov.au/running-business/protecting-business/risk-management/hazardous- chemicals/storing-transporting.		The quantity of hazardous chemicals that are stored on the proposed development site are not present at the levels or in the quantities that would constitute the use being a hazardous chemical facility. Refer to section 3.13. The quantity of hazardous materials that are stored on the proposed development site are not present in the quantities identified in the Work Health and Safety Regulation, schedule 15. Refer to section 3.13.
Section F		
Where involving an asset protection zone		
O17 Asset protection zones are designed and managed to ensure they do not increase the potential for bushfire hazard. Note – The preparation of a landscape management plan undertaken in accordance with the methodology in the QFES *Bushfire resilient communities* document may assist in demonstrating compliance with this performance outcome.	**M17.1** Landscaping treatments within any asset protection zone comprise only low threat vegetation, including grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks.	**Complies with M17.1** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 3 and does not involve the establishment of class 1, 2, 3 or 4 buildings on the subject land. Refer to section 1 and 3 and Figure 6 and Figure 7. The proposed development incorporates an area of open space as an asset protection zone surrounding existing infrastructure which

Outcome	Measure		Compliance Assessment
		Note – Minimal fuel condition means there is insufficient fuel available to significantly increase the severity of the bushfire attack, for example short- cropped grass to a nominal height of 10 centimetres.	comprises all-weather access roads and open grassland which is regularly mowed. Refer to section 2 and 3, Photograph 4 and Figure 6. The landscaping treatments within the asset protection zone comprises only low threat vegetation, including grassland managed in a minimal fuel condition, maintained lawns and windbreaks. Refer to Photograph 4.
	OR		
	M17.2	Landscaping management within any asset protection zone maintains a: a) potential available fuel load which is less than eight tonnes/hectare in aggregate; and b) fuel structure which is discontinuous. Note – The preparation of a landscape management plan undertaken in accordance with the methodology in the QFES *Bushfire resilient communities* document may assist in demonstrating compliance with this acceptable outcome.	**Complies with M17.2** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot as outlined in section 3 and does not involve the establishment of class 1, 2, 3 or 4 buildings on the subject land. Refer to section 1 and 3 and Figure 6 and Figure 7. The proposed development incorporates an area of open space as an asset protection zone surrounding existing infrastructure which comprises all-weather access roads and open grassland which is regularly mowed. Refer to section 2 and 3, Photograph 4 and Figure 6. This area separated bushland vegetation from building areas. The landscaping treatments within the asset protection zone comprises only low threat vegetation, including grassland managed in a

Outcome		Measure		Compliance Assessment
				minimal fuel condition, maintained lawns and windbreaks. Refer to Photograph 4.
O18	Revegetation or rehabilitation areas are designed and managed to ensure they do not result in an unacceptable level of risk or an increase in bushfire intensity level. Note – The undertaking of a bushfire hazard assessment in accordance with the methodology in the QFES *Bushfire resilient communities* document may assist in demonstrating compliance with this performance outcome.	**M18.1**	Required revegetation or rehabilitation: a) is located outside of any asset protection zone; or b) maintains a potential available fuel load which is less than eight tonnes/hectare in aggregate and fuel structure which is discontinuous. Note – The preparation of a landscape management plan undertaken in accordance with the methodology in the QFES *Bushfire resilient communities* document may assist in demonstrating compliance with acceptable outcome (b).	**Not Applicable (M18.1)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot utilising existing built infrastructure as outlined in section 3 and does not involve earthworks or the establishment of new infrastructure on the subject land. Consequently, there are no proposed revegetation or rehabilitation areas. Refer to section 1 and 3 and Figure 6 and Figure 7.
		M18.2	Revegetation or rehabilitation of areas located within mapped medium, high or very high potential bushfire intensity areas, revegetate and rehabilitate in a manner that maintains or reduces the existing fuel load. OR Revegetation or rehabilitation of areas located within the mapped potential impact buffer area, revegetate and rehabilitate in a	**Not Applicable (M18.2)** The proposed use is for "Intensive Animal Industry" being the establishment of a beef cattle feedlot utilising existing built infrastructure as outlined in section 3 and does not involve earthworks or the establishment of new infrastructure on the subject land. Consequently, there are no proposed revegetation or rehabilitation areas. Refer to section 1 and 3 and Figure 6 and Figure 7.

Outcome	Measure	Compliance Assessment
	manner that maintains or reduces the existing fuel load. Note – The preparation of a vegetation management plan undertaken in accordance with the methodology in the QFES *Bushfire resilient communities* document may assist in demonstrating compliance with this acceptable outcome.	