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Sorell Council
47 Cole St
SORELL TAS 7172
C/O email:
sorell.council@sorell.tas.gov.au
CC: Tasmanian Dairy Industry Authority



26th October 2025

To the Receiving Officer,

**RE: Application for Intensive Animal Husbandry (Dairy) - Stroud Dairies
106 Bream Creek Road, Bream Creek**

We would like to thank the Sorell Council representatives for the consultation time and guidance provided to date. In accordance with the information identified as required for lodgment, please find below links to the documents prepared and submitted in support of this application.:

Separate Documents

- Title searches for each title relating to the building footprint,
- Owners consent from each of the owners of the titles relating to the development (our policy to provide),
- Application form,
- Site survey plans including:
 - Existing site conditions survey,
 - Proposed site development work,
 - Staging plan,
 - Detailed earthwork plans for Pond 1, Pond 3 and silage area,
 - Shed elevation and sections, and
 - Facility development plan.
- Environmental Impact Statement.

Also attached Appendices to the EIS:

- Property Planning Reports,
- Geotechnical Report,
- Biodiversity Searches,
- Aboriginal Heritage searches and Unexpected Finds,
- European Heritage searches,
- S-Factor odour assessment and management plan,
- Draft Complaints Management Plan,
- Property summary table.



In accordance with the application document size requirements, we have divided the application document into multiple volumes. For ease of reference and application management, we have also saved the document as separate items within the linked folder: [APPLICATION DOCUMENTS](#).

Please note: this link will be open for 7 days only, however we are happy to update as required.

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We are pleased to submit this application for a state-of-the-art dairy housing facility within the Sorell Council area for the Bignell Family. We trust that the information and accompanying assessments will meet the expectations of Council and the relevant referral authorities.

We look forward to continuing to work collaboratively with Council to progress this application. Please do not hesitate to contact me if you require any further information or clarification.

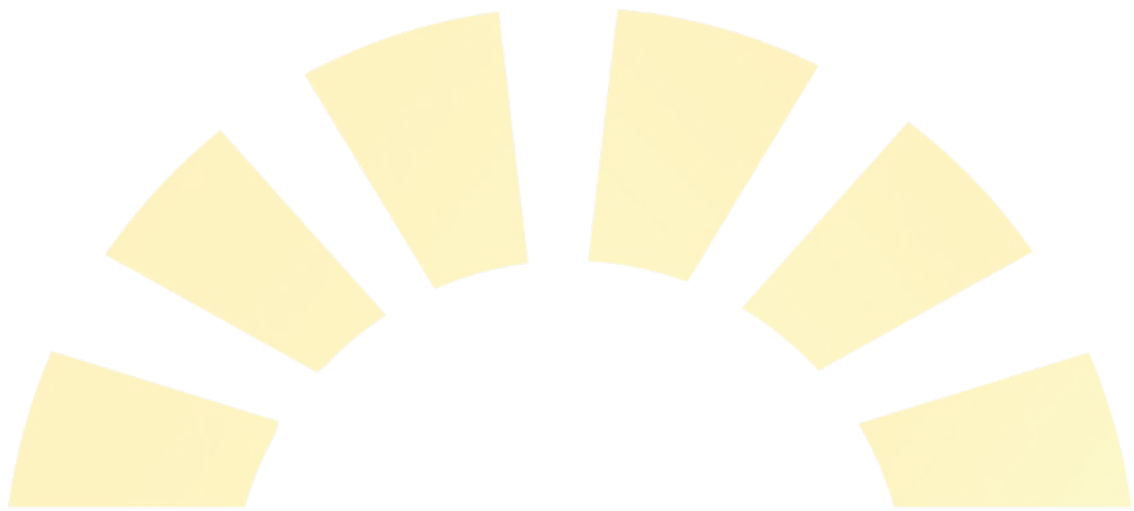
Yours faithfully,

Clare Fitzpatrick

Director

Progressive Rural Solutions





Environmental Impact Statement

For the construction and operation of a 1,000 cow intensive animal husbandry - dairy (loose housing) system at Bream Creek, Tasmania

October 2025

VOLUME ONE



Progressive Rural Solutions

www.prs ltd.com.au



Document Information Record

Project Details

Client name:	Stroud Dairies
Project:	Construction and operation of a 1,000 cow intensive animal husbandry - dairy (loose housing) system at Bream Creek, Tasmania
Project No:	373-0

Document Control

Document Title	Environmental Impact Statement for the conversion of pasture-based dairy to a restricted loose housing system including updated effluent management system 106 Bream Creek Rd Bream Creek, Tasmania				
File Name:	J373 – EIS – V1R5				
Revision:	V1R5				
Author	Rebecca Moodie	Position:	Lead Consultant		
Signature:	<i>RMoodie</i>	Date:	26/10/2025		
Reviewed by:	Clare Fitzpatrick	Position:	Director		
Signature:	<i>Clare Fitzpatrick</i>	Date:	26/10/2025		
Approved by:	Mr Jack Bignell	Position:	Dairy Manager		
Signature:	Via email	Date:	26/10/2025		

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Version	Issue date	Reason for issue	Author	Reviewed by	Approved by
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V1R3	17/09/2025	Draft for client review	Clare Fitzpatrick	Jack Bignell	Clare Fitzpatrick
V1R4	14/10/2025	Final draft	Clare Fitzpatrick	Project Team	Jack Bignell
V1R5	26/10/2025	FINAL	Clare Fitzpatrick	Clare Fitzpatrick	Relevant Authorities

Distribution

Version	Recipient	Lodgement	Copies
V1R3	Client and team review	Electronic	1
V1R4	Client and team review	Electronic	1
V1R5	Sorell Council	Electronic	1
V1R5	TIDA and Referral Authorities	Electronic	1
V1R5	Client/Contractor	Electronic & Hard	1

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Related Documents

Type	Author	Name	Date
Planning Report	Plan Build Tasmania	Property Planning Report	15/07/2025
Title Search	The List	Title search documents	16/10/2025
Geotechnical Investigation	GeoTon Pty Ltd	Geotechnical Investigation - Stroud Dairies	10/02/2025
Effluent Management Plan	South East Soil and Water	Effluent Management Plan for Stroud Daires Loose Housing Barn V4	24/10/2025
Odour Assessment and Management Plan	Progressive Rural Solutions	J373-OAMP-R1V5	26/10/2025
Complaints Management Plan	Progressive Rural Solutions	J373-C&FMP-R1V3	26/10/2025

Related Plans

Plan Number	Sheet	Rev	Plan Title	Prepared by	Date
			Site Plan – Existing	NJC Irrigation Solutions	-
50001-F IS-674	1	2	Layout Plan	NJC Irrigation Solutions	12/09/2025
51462 IS-674	1	1	Cross Sections	NJC Irrigation Solutions	01/08/2025
51462 IS-674	2	0	Cross Sections	NJC Irrigation Solutions	01/08/2025
51493 IS 674	1	0	Stage Plan	NJC Irrigation Solutions	20/10/2025
51493 IS-674	1	0	Proposed new effluent solids pond 1	NJC Irrigation Solutions	30/09/2025
51493 IS-674	2	0	Proposed commodities area and run-off storage	NJC Irrigation Solutions	30/09/2025
51493 IS-674	3	0	Proposed new effluent storage pond 3	NJC Irrigation Solutions	30/09/2025
Nil	-	A	Shed Plan & Elevations	Quingdao	24/07/2023
-	G1	-	Cover	Provost and Pritchard	14/10/2024
-	G2	-	General	Provost and Pritchard	14/10/2024
-	C1	-	Existing Site	Provost and Pritchard	14/10/2024
-	C4	-	Floor Plan 1	Provost and Pritchard Plans	14/10/2024
-	C5	-	Floor Plan 2	Provost and Pritchard Plans	14/10/2024
-	C6	-	Loafing barn floor plan	Provost and Pritchard Plans	14/10/2024
-	C7	-	Maternity barn floor plan	Provost and Pritchard Plans	14/10/2024
-	D1	-	Details 1	Provost and Pritchard Plans	14/10/2024

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DECLARATION

The name and address of the person by whom the Environmental Impact Statement is prepared as follows: -

***Progressive Rural Solutions Pty Ltd
ACN 634 646 825
PO Box 74
Deniliquin NSW 2710
Representative: Clare Fitzpatrick***

The name and address of the responsible person by whom the development and licence application is made is as follows:

***Mr Jack Bignell with Authority of the Landowner:
Stroud Daries Pty Ltd
198 Burnt Hill Road, Bream Creek, Tasmania, 7175***

The address of the land in respect of which the development application relates is described as:-

106 Bream Creek Rd Bream Creek, Tasmania, 7175

The development to which the Environmental Impact Statement relates is described as:-

"Construction and operation of a 1,000 productive cow intensive animal husbandry - dairy (loose housing) system and supporting infrastructure at 106 Bream Creek Rd, Bream Creek"

Assessment of the environmental impact of the development has been prepared to review potential impacts and identify mitigation and management measures for the construction and operation of the project.

Declaration

I, Clare Fitzpatrick, on behalf of Progressive Rural Solutions Pty Ltd hereby declare that: -

- 1) This Environmental Impact Statement has been prepared in accordance with the requirements of the
 - a) National guidelines for dairy feed pads and contained housing, V3 2024
 - b) Tasmanian Dairy Industry Authority Licence, and
 - c) Dairy Industry Act 1994 and Dairy Industry Regulation 2024,
 - d) Dairy Effluent Management Guidelines Tasmania 2025
 - e) Farm Dairy Premises Effluent Management Code of Practice, 2010
- 2) This Environmental Impact Statement contains all known available information that is relevant to the environmental assessment of the development, and
- 3) The information contained in the Statement is neither false nor misleading.



C.E Fitzpatrick

Dip. App. Sci (Agricultural Services)

Dated: 26th October 2025

GLOSSARY AND ABBREVIATIONS

Table 0-1 - Terms used in this EIS

Abbreviation	Term
AgVic	Agriculture Victoria
AHD	Australian Height Datum
ARA	Appropriate Regulatory Authority
BOM	Australian Bureau of Meteorology
Dairy Complex	The activity area related to the intensive animal system. This area includes the facilities, dairy, feed and manure storage and effluent ponds. It does not include freshwater storage or the effluent application areas.
DNRET	Department of Natural Resources and Environment Tasmania
DCCEEW	Department of Climate Change, Energy, the Environment and Water (Commonwealth)
EC	Electro Conductivity
EM31	Electromagnetic 31 Survey
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EPI	Environmental Planning Instruments
ESD	Ecologically Sustainable Development
ESP	Exchangeable Sodium Percentage
Facility	Housing areas within the dairy complex. Also referred to as sheds or internationally as 'Barns'.
GDEs	Groundwater Dependant Ecosystems
Guidelines	National Guidelines for Feedpads and Contained Housing, Version 3
ha	hectare
km	kilometre
LGA	Local Government Area
m	metre
ML	Megalitres, 1,000,000 litres
MNES	Matters of National Environmental Significance
PMST	Protected Matters Search Tool
Project	The construction and operation of a 1,000 productive cow intensive animal husbandry - dairy (loose housing) system and ancillary infrastructure

Note: The National Guidelines for Feedpads and Contained Housing, V3 contains an extensive glossary of terms used within this document.

EXECUTIVE SUMMARY

The proposal and project

This proposal seeks approval for Tasmania's first transition from a pasture-based dairy to an Intensive Animal Husbandry (Dairy) system, establishing a benchmark for sustainable, housed dairy farming in the State. The applicant, **Stroud Dairies**, also operates Bream Creek Dairy and is a long-standing, family-owned enterprise. The change is the result of extensive research, international study tours, and professional advice, positioning the farm at the forefront of Tasmanian dairy innovation.

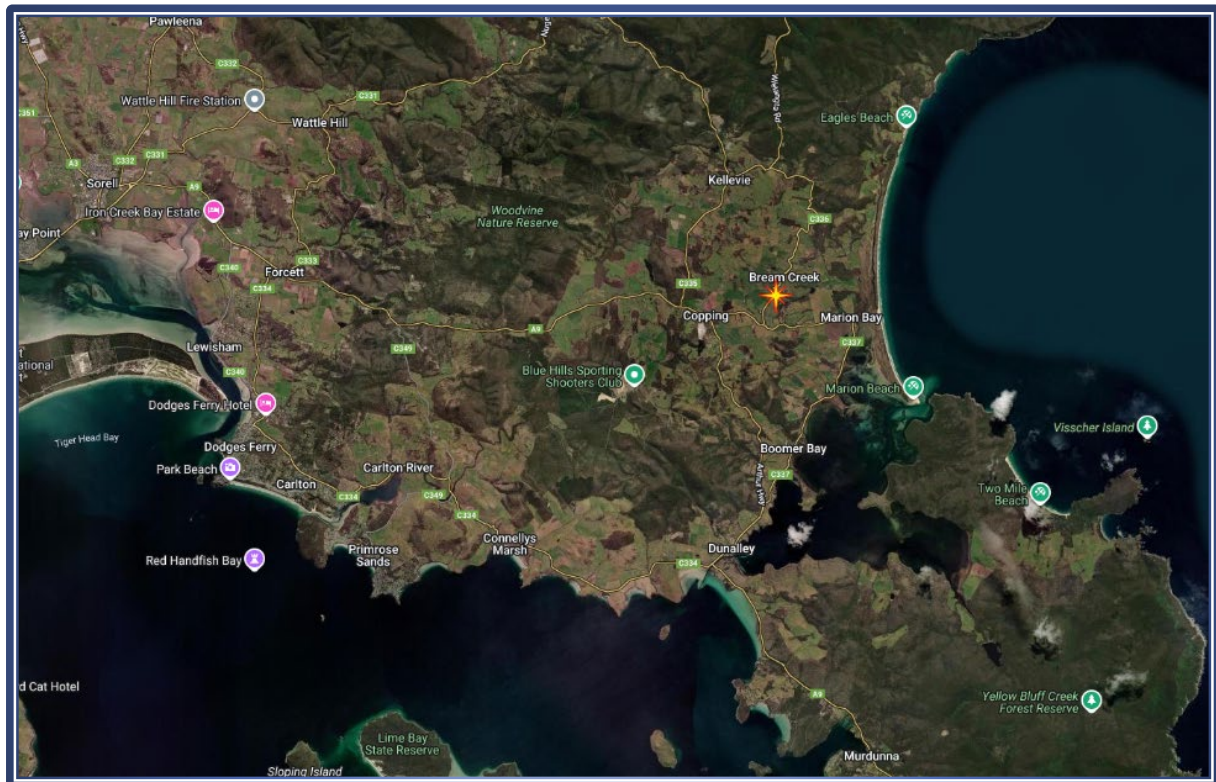
The operation for many years has included the use of a fixed feed pad systems feeding cows a partial mixed ration to support their daily needs whilst still grazing cattle within the broader property. This property has significant topographic change and cows walk long distances on formed cattle lanes to access the dairy and the grazing areas within the property. The proposed activity seeks approval to change the operation into an intensive animal husbandry - dairy (loose housing, compost bedded pack) system, utilizing two housing facilities (open sheds) as a productive herd housing area and a future roofed maternity and welfare management area over the existing feedpad. Additional infrastructure, including a new effluent ponds and upgraded effluent management equipment will be constructed to manage increased effluent generation.

This project is essential for the ongoing improvement and positioning the farm at the forefront of Tasmanian dairy innovation and sustainability, while ensuring long-term resilience against climate variability. The proposal seeks to increase its current herd from 780 cows to 1,000 cows and transition its management into a new purpose-built loose housing dairy facility at 106 Bream Creek Road, Bream Creek, Tasmania. The project is located on titles 2/35297, 1/35298, 1/100903 and 2/106067 and will integrate with the family-owned property operations within the Sorell Council area.

This change recognises the benefits of cow health and comfort on milk production and demonstrates a commitment to the operations current and future standing within the Tasmanian and Australian dairy industry.



Location of project within the State (Source: PRS QGIS)



Location of project (indicated by star) within the Region. (Source: PRS QGIS)

Housing systems for dairies are not defined within the Tasmanian Planning Scheme and the operation is considered to be best described as *'Intensive Animal Industries'* which is formally defined as *the use of land to keep or breed farm animals, including birds, within a concentrated and confined animal growing operation by importing most food from outside the animal enclosures and includes a feedlot, poultry farm or piggery.*

Table C9.1 of the Attenuation Code under *Feedlot* provides a description of the Activity of *Intensive animal husbandry (excluding piggeries, poultry farms, horse stables, and any such operation carried out at an abattoir, slaughterhouse or saleyard or for the purpose only of drought or other emergency feeding)* - emissions such as odour, noise and dust, and nominates that a Level 1 Activity triggers a 3,000m Attenuation Distance. Level 1 activities and their assessment remain within the responsibility of the Local Government to administer.

The National Guidelines makes recommendations on making an application for housed dairy systems which includes the preparation and submission of an Environmental Impact Statement (EIS). The EIS must include an assessment of the environment impacts of any construction activities and the ongoing management. It must also provide a framework for the ongoing evaluation and active management of the proposed system and its risks to the environment and amenity.

Project Need

Tasmania's dairy industry is experiencing strong growth, producing over 930 million litres in 2023–24 and contributing a record \$684 million at the farm gate. Despite seasonal challenges, output has increased by more than 30% over the past decade, supported by rising export demand and processor investment. However, this growth places pressure on pasture-based systems, which are increasingly vulnerable to climate variability and seasonal feed shortages. To meet rising milk demand reliably and sustainably, farms are transitioning toward housed systems that provide greater control over feed, animal welfare, and effluent management while ensuring year-round productivity.

This project supports Tasmania's ability to meet rising milk demand through a proven, sustainable system that enhances productivity, protects animal welfare, and supports local industry. The family business stems from an extensive history within the dairy industry and is operated by a team of hard-working family members and supported by long-term advisors who continue to provide expert advice with the results evident in the herd and milk produced.

The objectives of this project are summarised as:

- **Improve animal welfare and productivity** by providing cows with a cleaner, more comfortable environment that extends herd longevity and supports consistent milk output.
- **Be an employer of choice** through safer, more comfortable working conditions and opportunities for skill development and career growth.

- **Lower environmental impacts** by minimising feed and water waste, reducing reliance on synthetic fertilisers, and maximising the value of effluent as a nutrient resource.
- **Build resilience to seasonal variability** by protecting milk production and farm performance from adverse weather conditions such as storms, wet winters, and droughts.
- **Optimise resource use and efficiency** to increase the value of feed, fertiliser, and labour inputs while improving daily operational performance.
- **Deliver community benefits** by reducing traffic risks and disruptions from cows crossing roads, presenting a tidier farm frontage, and protecting local waterways through better land management.

This project positions Tasmania's dairy sector to meet rising demand while protecting animal welfare, environmental values, and regional employment.

Environmental Assessment

WATER

The project has been designed to protect existing catchments and improve on-site water management. Clean water will continue to flow naturally through existing drainage lines, while all runoff from roofs, yards, and silage areas will be fully contained in engineered ponds and effluent systems. Compared to current operations, this will provide stronger controls on stormwater and effluent, reducing risk of off-site impacts.

Groundwater investigations show limited resources in the area and no groundwater interception at the site. With clay liners, separation distances, and protective design features in place, the risk of groundwater impacts is negligible.

In summary, will maintain natural catchment behaviour while delivering measurable improvements in water management outcomes. By going beyond baseline compliance, the project provides a model for sustainable dairy development in Tasmania, balancing productivity with robust environmental protection.

SOIL

The soils at the project site are well suited for the proposed dairy expansion. Independent geotechnical testing confirms that they provide a stable foundation for effluent ponds, manure pads, and housing infrastructure. The operation also has more than sufficient land to sustainably reuse all nutrients produced, with clear safeguards to protect soil health, waterways, and neighbours. With these measures in place, the project transforms effluent from a potential waste stream into a valuable nutrient resource, improving soil fertility and sustaining long-term productivity while maintaining protective safeguards.

BIODIVERSITY

The biodiversity assessment found that the project site is a long-established agricultural landscape with no remnant native vegetation within the works area. The development avoids all native vegetation and will not impact threatened species or communities. Weed risks are minimal and will be controlled through existing farm practices and construction safeguards.

By consolidating herd activities within a contained housing system, the project reduces pressure on surrounding paddocks, safeguards remnant vegetation, and protects biodiversity values in line with state and Commonwealth requirements.

HERITAGE

ABORIGINAL HERITAGE

An Aboriginal Heritage Property Search confirmed that no Aboriginal sites are recorded within the project area. While the site is considered low in archaeological sensitivity, the project will comply with the *Aboriginal Heritage Act 1975* by keeping an Unanticipated Discovery Plan on site. This ensures that any unexpected Aboriginal heritage finds will be managed in line with legislative requirements and best-practice cultural heritage protection ensuring full compliance while respecting Tasmania's cultural heritage values.

EUROPEAN HERITAGE

Heritage register searches confirmed that no European heritage places occur within the project site. The nearest listed site (Marchwiell farm complex) is more than 1.5 km away and will not be affected. An unexpected discovery procedure will be implemented during construction to manage any unrecorded finds in accordance with the *Historic Cultural Heritage Act 1995*.

AIR QUALITY

The proposed development has been carefully designed to minimise potential dust and odour impacts. During construction, short-term dust emissions will be controlled through standard site management practices such as dust

suppression, vehicle speed limits, and progressive rehabilitation. Once operational, the housed dairy system will be supported by best-practice effluent and odour management strategies, ensuring that potential impacts on neighbours and the broader community remain low.

The project adopts best-practice odour and dust management, ensuring air quality outcomes consistent with or better than current operations, and maintaining strong community confidence.

NOISE AND VIBRATION

Construction of the proposed dairy complex will generate temporary noise associated with earthworks and building, but these impacts will be short-term, occur within standard working hours, and be managed in line with EPA requirements. Once operational, noise levels will remain consistent with existing farming activities and are unlikely to cause nuisance or exceed regulatory thresholds. With appropriate safeguards in place, the project will have minimal noise impacts on the surrounding community.

TRAFFIC AND TRANSPORT

Traffic impacts from the proposal are minimal. Construction movements will be short-term and controlled, while operational traffic will remain consistent with existing farming activities, with only a very small increase in daily vehicle movements. By housing the herd, the project eliminates daily cow crossings, improving road safety and reducing disruption to local traffic while maintaining compliance with planning requirements. The project will not adversely affect local road safety or capacity and complies with relevant planning requirements.

WASTE MANAGEMENT

The project will generate typical construction wastes and operational by-products (effluent, manure, and bedding), all of which will be managed through best practice systems already integrated into the farm. Construction waste volumes are minor and will be recycled or disposed of off-site, while operational wastes will be reused sustainably on farm in line with the Effluent Management Plan. With safeguards in place, the project poses a low risk of waste-related environmental impact.

VISUAL IMPACTS

The project has been carefully designed and sited to blend with the surrounding agricultural landscape and comply with the Ragged Tier Scenic Protection Code. With measures in place to maintain a tidy site and use natural building materials, the design reinforces the rural character of the area, complies with the Ragged Tier Scenic Protection Code, and enhances landscape harmony within the broader farming setting.

GREENHOUSE GAS EMISSIONS

The project provides a platform for emissions monitoring and reduction through Dairy Australia's frameworks, positioning the farm to contribute to Tasmania's climate-smart agriculture goals. Construction impacts are short-term and minor, while operational emissions will remain consistent with normal dairy practices. The adoption of industry best practice and participation in Dairy Australia's emissions monitoring and improvement frameworks will ensure that the project actively manages its footprint. Overall, the proposal represents a low emissions risk and supports long-term sustainable farm operations.

MANAGEMENT OF IMPACTS

Comprehensive management, mitigation, and monitoring measures are embedded in the design and will be implemented during both construction and operation. Management, mitigation, and monitoring are embedded into the project design, construction and operation phases, ensuring the development sets a high benchmark for responsible housed dairying in Tasmania.

CONCLUSION

This EIS demonstrates that the proposed housed dairy development can be delivered as a sustainable, well managed and innovative system, setting a benchmark for Tasmanian dairying housed systems. The project not only safeguards soil water, air quality, biodiversity and community amenity but actively improves farm resilience, animal welfare, and resource efficiency. With robust safeguards, modern infrastructure, and on-going monitoring in place, the proposal represents a justified, future-focused investment that strengthens the regional economy, supports local employment and aligns with Tasmania's long-term agricultural and environmental objectives.

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1. INTRODUCTION

This Environmental Impact Statement has been prepared by Progressive Rural Solutions on behalf of **Stroud Dairies** represented by Mr Jack Bignell as Dairy Manager and operator. Stroud Dairies will be the site operator following construction and commissioning and they will be referred to as the **Applicant, Operator** and **Manager** in this document.

This document has been prepared to accompany a Development Application to construct and operate a new loose housing facility and effluent management system. The operation of the site is described as a change in use and seeks approval to construct and operate a 1,000 productive cow intensive animal husbandry - dairy (loose housing) system and related infrastructure on the property addressed as 106 Bream Creek Rd, Bream Creek.

1.1. APPLICANT DETAILS

The relevant entity relating to this application being the applicant is provided below in

Table 1-1 - Applicant and operator details

	Application	Operation
Land Ownership Organisations		Stroud Pty Limited J.M Bignell Pty Ltd Chubcak Pty Ltd
ABN		24 008 226 433
ACN		008 226 433
Operation Organisation		Stroud Dairies Pty Ltd
Business Address		198 Burnt Hill Rd Bream Creek TAS 7175
Property address		106 Bream Creek Rd Bream Creek, Tasmania
Contact Name		Mr Jack Bignell
Position		Dairy Manager

1.2. AUTHORS AND GUIDELINES

This Environmental Impact Statement has been prepared by Progressive Rural Solutions, an organisation with extensive expertise in intensive animal industry applications, particularly in the dairy, beef, and sheep sectors. The author, Clare Fitzpatrick, holds a Diploma in Applied Science (Agriculture) and is a qualified Effluent System Designer with over 15 years of specialist practice. She brings more than 25 years of experience in natural resource management, irrigation system design, and the planning and development of intensive animal operations such as dairies. This depth of knowledge, combined with the client's operational expertise and input from specialist advisors, has informed the design and assessment of the proposal presented in this application.

Clare is widely recognised as a technical expert in the field. She contributed to the *National Guidelines for Dairy Feedpads and Contained Housing V2*, National Guidelines, (Dairy Australia, 2023) and authored Chapters 3 and 4 of Version 3 of the revised National Guidelines (Dairy Australia, 2024). In addition, she is a member of the Technical Review Panel for the NSW Dairy Environmental Guidelines, where she played a key role as a major contributor. She also regularly delivers workshops and presentations across Australia on effluent management, intensive animal planning, and sustainable development for the beef, sheep, and dairy industries.

The following documents have been utilised and referenced in the preparation of the design and supporting documents for the proposed compost bedded pack loose housing system. These documents form the most up to date and relevant best practice methods for construction and operation:

Table 1-2 - Project related guidelines

Document	Relevant to	
	Construction	Operation
<i>National Guidelines Dairy Feedpads and Contained Housing – Third Edition, Dairy Australia 2024</i>	X	X
<i>Australian Animal Welfare Standards and Guidelines for Cattle, Edition 1, Animal Health Australia, January 2016</i>	X	X
<i>Effluent and Manure Management Database for the Australian Dairy Industry, Dairy Australia, Dec 2008</i>	X	X
<i>Management of dairy effluent, DPI Victoria, May 2008</i>	X	X
<i>Feedlot covered housing systems: Best practice design and management manual, MLA, Sept 2023</i>	X	NA
<i>Beef cattle feedlots: design and construction, MLA, August 2016 (As relevant)</i>	X	NA
<i>Beef Cattle feedlots: Waste management design and utilisation, Sept 2015 (As relevant)</i>	X	NA
<i>Farm Dairy Effluent Management Code of Practice, TDIA, 2010</i>	X	X
<i>Effluent Management Guidelines Tasmania, TDIA 2025</i>	X	X
Quality Assurance Systems as audited and required by milk supplier annually.		X
Permits as received from Sorell Council and TDIA (See Section 1.6.1)	X	X
Licence received from TDIA	X	X
<i>Guidelines for Preparing and Environmental Impact Statement, EPA Tasmania, 2019</i>	This report	

1.3. PROJECT OVERVIEW

The existing enterprise operates the ‘Stroud Dairies’ at Bream Creek Tasmania. The current dairy operation is a mixture of pasture based and supplementary fed dairy herds which currently maintains a 780 cow productive herd. The operation for many years has included the use of fixed feed pad system as a supplementary feed tool within their pasture based dairy system. This application seeks approval for a change in use on the property to an intensive animal husbandry - dairy (loose housing) system.

The change in use and operational activities at the site propose the incorporation of a loose housing (compost bedded pack) system which includes the full-time use of a single productive cow housing facility (open shed) and construction and use of the existing feedpad as a roofed maternity housing facility and young/dry cow housed area. Other associated existing ancillary infrastructure will continue to support this operation and additional effluent ponds will be constructed to meet the future effluent generation and management within the site.

The property is an aggregation of contiguous properties purchased by the Bignell family over the last 65 years and includes extensive areas historically utilised for grazing which will now support the growth of the feed for the facility. This includes the incorporation of the beneficial effluent captured and re-used reducing synthetic fertiliser use and incorporating a cyclic system within the farming operation.

‘Stroud Dairies’ as a property is addressed as 106 Bream Creek Rd, Bream Creek Tasmania, and is located south of the town of Bream Creek in the Hobart region of Tasmania. The following figures identify the location in relation to the State and Region.



Figure 1-1 - Map showing location of project site within the State (source PRS QGIS)



Figure 1-2 – Map showing location of the project within the region (source PRS QGIS)

The formal conversion of the dairy operation to a loose housing – compost bedded pack system, aims to improve animal welfare and productivity by providing a cleaner, more comfortable environment that supports herd longevity and consistent milk supply. It will also create a safer and more rewarding workplace for staff, while reducing environmental impacts through more efficient use of feed, water, fertiliser, and effluent. By housing cows, the system builds resilience against seasonal variability, ensuring stable farm performance in adverse weather. In addition, the project delivers community benefits by reducing traffic disruptions, improving farm presentation, and protecting local waterways through better land management.

The project is made up of the following components:

Table 1-3 - Summary of project components

Detail	Unit	Existing		Expansion		Total
		Milking	Feed pad	Milking	Maternity	
Milking herd size	Number	780	780	1,000 (total)		1,000
Loose housing facility (shed) size	m	Nil	1 (110 x 30)	1 (300 x 60)	-	1
Maternity facility	Number	-	-	-	1 (55 x 80)	1
Calf rearing shed	Number	1		-		1
Freshwater storage size	ML	35		No Change		35
Solids Trap and sump	M	TST – 3.5 x 30 x 2 Sump 4.5 x 4.5 x 6		TST – 3.5 x 30 x 2 Sump – Nil		TST – 7 x 30x 2 Sump 4.4 x 4.5 x 6
Effluent pond 1 capacity (solids)	ML	Nil		9.1		9.1
Effluent pond 2 capacity (storage)	ML	15		Nil		15
Effluent pond 3 capacity (storage)	ML	Nil		29.3		29.3
Manure solids storage area	Concrete	M ²	30m x 30m = 900m ²	Nil area - Concrete		900m ²
	Earth	M ²	Nil	16m x 87.5m		1,400m ²
Commodities Area	Silage storage	ha	0.2	1.08		1.28
	Catchment pond	ML	Nil	5.34		5.34
Mass Mortality contingency area	-	Nil		1,000 cow capacity		1,000 cow
Project Area (ha)	ha	3.5		7.5		11
Effluent land application area	ha	60.5		37		97.5
Sludge Land Application Area	ha	9.8		24.3		34.1
Access to property	Type	Existing (no change)				Existing
Utility connection	Type	Existing (upgraded)		No change		No change
Estimated Cost	\$	NA		\$3.5Mill		\$3.5Mill

1.4. PROJECT OBJECTIVES

Project objectives outline the primary goals and intended outcomes of a proposal. They are important because they provide an understanding the reason for the application and a focus of the outcomes of the proposed project. The objectives of this project are to:

- **Improve animal welfare and productivity** by providing cows with a cleaner, more comfortable environment that extends herd longevity and supports consistent milk output.
- **Be an employer of choice** through safer, more comfortable working conditions and opportunities for skill development and career growth.
- **Lower environmental impacts** by minimising feed and water waste, reducing reliance on synthetic fertilisers, and maximising the value of effluent as a nutrient resource.
- **Build resilience to seasonal variability** by protecting milk production and farm performance from adverse weather conditions such as storms, wet winters, and droughts.
- **Optimise resource use and efficiency** to increase the value of feed, fertiliser, and labour inputs while improving daily operational performance.
- **Deliver community benefits** by reducing traffic risks and disruptions from cows crossing roads, presenting a tidier farm frontage, and protecting local waterways through better land management

The proposed project involves transitioning the operation from a traditional grazing system supported by supplementary feeding to a loose housing system. The primary objective is to improve production efficiency, animal welfare, and long-term

operational sustainability in response to changing environmental, economic, and market pressures. With Tasmania's dairy industry is experiencing strong growth, producing over 930 million litres in 2023–24 and contributing a record \$684 million at the farm gate, producers are under increasing pressure to maintain consistent output despite climate variability. Recent seasonal dry conditions have already caused a 4% drop in production statewide, highlighting the vulnerability of pasture-based systems.

This project and proposal commit to a sustainable increase in cow number and milk production and leads the business forward providing additional flow on affects to the associated family business and supporting industries within the region. The family business stems from an extensive history within the dairy industry and is operated by a team of hard-working family members and supported by long-term advisors who continue to provide expert advice, with the results evident in the herd and milk produced.

Stroud Dairies, a third-generation family business, has diversified its operations by marketing its own Bream Creek Dairy-branded milk and cheese. Product consistency and animal welfare are core to its brand and market position. The transition to loose-housing for the herd supports these values while also aligning with rising consumer demand for premium, traceable dairy products. Additionally, the system enhances environmental management by capturing and reusing effluent and manure to fertilize on-farm fodder production, reducing nutrient runoff and pasture pressure. The shift enables modest herd growth without expanding land use and will create new employment opportunities in herd management, milking operations, and feed production. Overall, the project is a strategic response to industry challenges, positioning the business for economic resilience, environmental sustainability, and intergenerational viability.

1.5. WHAT IS A LOOSE HOUSING FACILITY?

A loose housing facility can be described as a loose cow housing system (shed) which has no stalls or partitions where cows can rest and exercise. The internal area of the facility (shed) is divided by a central feed alley where feed is placed along each side for cattle to access from an adjoining concrete washed lane. Water troughs are located within the access lane along the opposite side of the feed alley. The compost bedded pack system within the resting area of the open sided shed consists of a maintained loose bedding area which uses wood chips for bedding. This area is tilled twice daily to ensure a loose, fluffy and dry surface for cows to rest on.



Figure 1-3 – Photos showing bedded pack loose housing systems (Source: Entegra sheds)

1.6. PROJECT HISTORY

Stroud Dairies is a family-run dairy enterprise located on Tasmania's southeast coast at Bream Creek. The dairy traces its roots to 70 acres purchased by John Bignell as a 20-year-old, where he began milking 12 cows and supplying Baker's Milk in Hobart's Lenah Valley. Over time, John and his wife Kay expanded the operation by acquiring ten surrounding farms, gradually building the landholding now known as Stroud Dairies.

Today, Stroud Dairy operates across 2,000 acres and milks 780 Friesian cows, supporting three generations of the Bignell family – six adults and six children – alongside eight employees from the local area. In late October 2018, the family launched the Bream Creek Dairy brand, marking a significant diversification from traditional milk supply to direct-to-consumer product development. The dairy now produces a range of premium products including fresh milk, four varieties of artisan cheese, and a selection of wines marketed under the "Stroud by Bream Creek Dairy" label.

In line with its focus on sustainability, cow welfare, and long-term productivity, Stroud Dairies has proposed the construction of a 1,000-cow loose housing facility. This system is designed to offer shelter, comfort, and optimal care for the milking herd. The new infrastructure will provide year-round protection from wet and cold conditions, helping reduce lameness, environment stress, and other health issues common in pasture-based or partially sheltered systems.

The loose housing model will allow cows the freedom to move, lie down, and feed as they choose, with access to Total Mixed Ration (TMR) feeding and bedding materials designed to maximise cow comfort and hygiene. By consolidating the herd in a purpose-built facility, the dairy aims to significantly improve animal health, longevity, and overall productivity, while also enabling more efficient management of manure, feed inputs, and labour.

The proposed development is central to Stroud Dairies and the Bream Creek brand's vision of high-welfare, environmentally responsible, and locally driven dairy farming. It represents the next phase in the evolution of the farm, aligning with both the family's values and the expectations of modern consumers.

The Stroud and Bream Creek Dairies team are also a key participant in local events such as the Bream Creek Show, Bream Creek Farmer's Market, and proudly supplies milk to other artisan producers including Wicked Cheese, Coal River Farm, Bruny Island Cheese, and Hobart Milk. The business continues to support regional enterprise by engaging local contractors, designers, and suppliers in every aspect of its expansion.



Figure 1-4 – Map showing property owned boundary (white), property leased boundary (orange) and activity boundary (yellow) within the property

This application seeks approval for the construction of key elements of the new dairy complex and a change in use on the property to transition from a part pasture based and supplementary fed dairy herd management system to a loose housing (compost bedded pack) system. The system includes the full-time use of a single productive cow housing facility (open shed) and construction and future use of the existing feedpad as a roofed maternity housing facility and young/dry cow housed

area. Other associated existing ancillary infrastructure will continue to support this operation and additional effluent ponds will be constructed to meet the future effluent generation and management within the site.

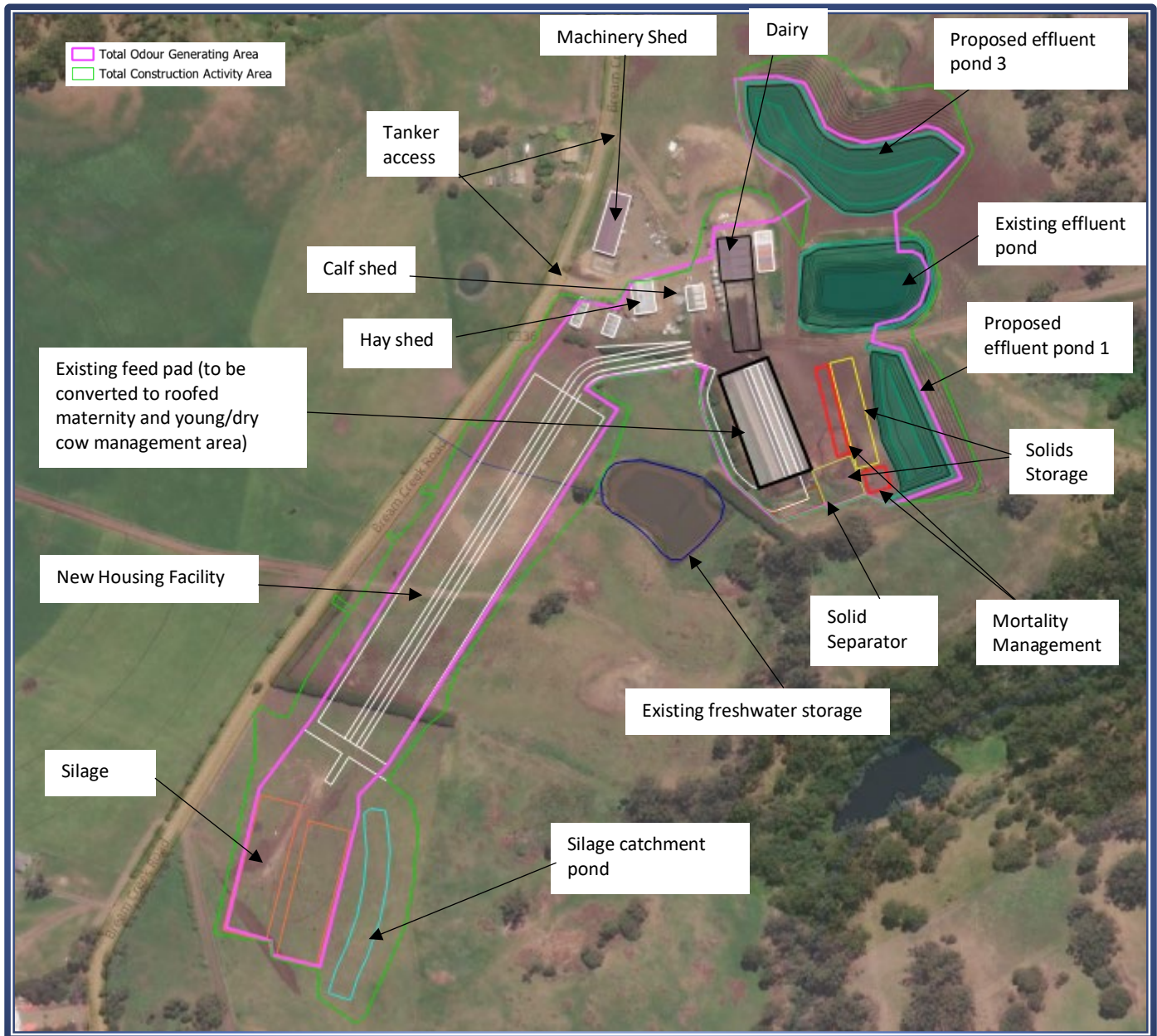


Figure 1-5 - Photo showing dairy complex with existing and proposed infrastructure (Source: PRS QGIS)

1.6.1. APPROVALS

The operation maintains a current licence through the Tasmanian Dairy Industry Authority SORF177, Exp 31/12/2025. An approval has also recently been obtained for the site's existing cheese processing operation – Occupancy Permit 133/2024. The property has approved access to multiple water supply points and dams which are detailed in the following **Section 3.3**.

1.6.2. SITE SELECTION

There are several key criteria required in siting a loose housing complex. These are as follows:

- **Animal requirements** – water supply (quality and volume), feed supply and welfare considerations,
- **Separation distances and buffers** from neighbouring properties, general public and other facilities,
- **Suitable soils** for construction of earthen pads, freshwater storage and effluent containment areas,
- **Sufficient land** for the management, storage and application of effluent and waste,
- **Proximity to services**, supplies, maintenance and service specialists and where required commodities,
- **Suitable staffing** resources and accommodation,
- **Site** in relation to existing facilities and any potential future expansion,
- **Recognition of the existing natural and built environment** and the minimisation of potential impacts, and
- **Safe access** arrangements for construction, ongoing management and deliveries.

The property maintains property site access points with main access from Bream Creek Road and alternate access via Burnt Hill Road. These access points are of sufficient design and size for the ongoing and future operational requirements. The site is within an acceptable distance to source suitable labour to undertake work within the operation which includes a number of houses for staff on the property. Where required, other farming properties and local business can be utilised as a source of fodder, silage and forage in years of low growth.

The complex has been designed for and to operate in line with ongoing specialist advice from consulting vets, nutritionists, agronomists and industry research. The housing design specifically the cow utilisation areas have been proposed following significant time and input to maximise animal comfort and welfare and mitigate risks from any exposure to climatic stress and the elements.

1.7. PLANNING CONSIDERATIONS AND THEIR LOCATION IN THE EIS

The Tasmanian Environmental Protection Authority's (EPA's) 'Guidelines for preparing and Environmental Impact Statement, May 2023' have been utilised as a basis for this assessment and Environmental Impact Statement (EIS). **Table 1-4** below provides a cross reference of the requirements and their address within the EIS.

Table 1-4 - EIS requirement identifying where addressed

Requirements	Location in the EIS
Proposal Description	
Summary Table	Below
Detailed description of the proposal	Section 2
Definition of the land	Section 2.2
Planning aspects	Section 3
Socio-economic context	Section 2.3
Off-site infrastructure	Nil required
Project Alternatives	Section 2.8
Public Consultation	Section 4
Potential Impacts and Management	Section 5
Air Quality	Section 5.7
Water Quality	Section 5.2
Groundwater	Section 5.2
Waste Management	Section 5.10
Dangerous Goods	Section 2.7.6
Biodiversity and Natural Values	Section 5.4
Marine and Coastal	Section 5.2
Greenhouse gas emissions, ozone depleting substances and climate change	Section 5.12
Socio-economic issues	Section 9
Fire risk	Section 2.7.6
Infrastructure and off-site ancillary facilities	Not Applicable
Monitoring and Review	Section 6
Decommissioning and Rehabilitation	Section 7

Requirements	Location in the EIS
Management Measures Table	Section 8
Conclusion	Section 9

In addition to the above the below table has provided to meet the requirements under the *Guidelines for preparing an Environmental Impact Statement*.

Table 1-5 – EIS Summary Table

Area	
Land Use	The surrounding land use consists of farming activities typically found within the area including dairy, beef and high rainfall cropping.
Topography	The area between Copping and Marion Bay transitions from gently rolling uplands to coastal plains and dune systems. Elevations range from about 28 m to 400 m above sea level, with farming on the lower slopes and forest on the higher ground. Further information is in section 5.1.2 of this report
Geology	The region consists of coastal plains ranging from cool to warm subhumid climates, located along a deeply indented shoreline and backed by low mountain ranges composed of Jurassic dolerite and Permo-Triassic sedimentary rocks. The soils are mostly clay to sandy loams. See Section 5.1.4 for further information
Soils	The project site is identified as being located across the Quaternary period talus (Qpt) and Paleogene-Neogene period basalt (Tb) land systems which is described as having dominant soils. See Section 5.3 for further site specific information
Hydrology	The site is within the Tasman water catchment and is surrounded by unnamed and named streams and creeks. Named waterways include Ravenscroft Rivulet, Sedbury Creek and Bream Creek all which is managed by Natural resources and Environment (NRE) Tasmania. For further information see Section 5.2 of this report
Natural Values	The project footprint has been considered in terms of suitable habitat and its value and considers the area’s potential utilisation based on species recorded within the broader area (5kms of the site). A review of the species requirements in relation to breeding, habitat, food sources and utilisation has identified that the project site does not contain a suitable environment for utilisation for any species identified. See Section 5.4 for further information on Biodiversity and Natural Values
Potential Hazards	A review of the hazard code overlays has been undertaken for the site and identified Bushfire prone area and Low land slip hazard overlays. These have been addressed in Section 3.2.2.1 of this report
Local Region	
Climate	Tasmania is described as a cool temperate oceanic climate (Cfb) under the Koppen climate classification. This classification system indicates a cool summer, mild winter, steady year-round rain with no extreme heat or cold. Further information on climate has been included in Section 5.1.3 of this report
Surrounding land zoning, tenure and land uses	The surrounding land use consists of farming activities typically found within the area including dairy, beef and high rainfall cropping. As part of the proposal an assessment of the potential impact on sensitive receptors has been undertaken. This is discussed further in Section 5.7 . and the appended Odour Assessment and Management Plan
Species, sites or areas of conservation significance	The site has been considered with relation to natural assets along with indigenous and non-indigenous heritage. These aspects are covered further in Sections 5.4, 5.5 and 5.6 of this report.
Proposed Infrastructure	
Major equipment	See Section 2.4 for details around the proposed infrastructure.
Other Infrastructure	
Inputs	
Water	A detailed assessment of water requirements for the proposed operation has been undertaken and the application holds sufficient water entitlement to meet these requirements. See Section 5.2 of this report for further detail.
Energy	The sites operation has been designed to utilise low energy lighting and proposes the installation of new equipment replacing old inefficient equipment currently used in the operation. No upgrade to electrical infrastructure is proposed.
Other raw materials	An assessment of inputs such as bedding, feed and fodder is provided in the following Section 2.7

Wastes and Emissions	
Liquid	See Section 5.10 and appended Effluent Management Plan
Atmospheric	See Section 5.7 – Air and Odour , and the appended Odour Assessment and Management Plan
Controlled wastes	The application does not propose off-site disposal of waste – on-site used of effluent is proposed.
Noise	An assessment of construction and operation noise has been provided in Section 5.8 .
Greenhouse gases	See Section 5.12 for details relating to GHG and climate change.
Construction, Commission and Operation	
Proposal timetable	A proposed staged development timeframe is provided in Section 2.7.1
Construction hours	The proposed hours for construction are detailed in Section 2.7.2
Operating hours (ongoing)	The proposed operation hours are detailed in Section 2.8.8
Other Key Characteristics	
Other	Provided in the following document.

2. PROJECT DESCRIPTION AND ANALYSIS

This section aims to provide a detailed description of the project including the construction and operation phases and their elements.

2.1. OVERVIEW

This project proposes the construction and full-time operation of a loose housing dairy complex at Stroud Dairies, incorporating a new facility designed to accommodate up to 1,000 Holstein dairy cows. The development will be delivered in stages and includes a state-of-the-art loose housing system, the conversion of the existing feedpad into a maternity and dry-cow housing area, and the expansion of effluent management infrastructure to accommodate increased volumes and improve environmental performance.

The proposed transition from a paddock-based and supplementary feedpad system to a fully housed dairy operation provides a significant opportunity to improve animal welfare and reduce environmental impacts. Under the current system—typical of dairies worldwide—manure and effluent are dispersed across paddocks and feedpads, where they mix with soil and water, creating muddy areas and increasing nutrient and odour risks during wet periods. By contrast, the proposed housed system will collect and manage effluent within a controlled environment, allowing for more consistent treatment and reuse. This design will minimise odorous and anaerobic areas around troughs and laneways, reduce runoff potential, and enhance the overall nutrient recovery and waterway protection outcomes across the property.

2.2. LOCATION AND EXTENT

The property is located in the Hobart region of Tasmania and the Sorell Council Local Government Area. The property address is identified as ‘106 Bream Creek Rd, Bream Creek Tasmania’ and the property adjoins multiple roads including Bream Creek Road, Burnt Hill Road and Marion Bay Road, south of the small Village of Bream Creek. The business operates over 1,029ha (owned and leased) and is divided by each of the above referenced roads with the activity area that is the subject of this application being located on the southeast side of the Bream Creek Road.

The activity area which includes existing dairy, supporting buildings, feedpad and effluent pond, is located centrally on the contiguous property aggregation referred to as “Stroud Dairies”. The complex’s infrastructure and supporting works are proposed on titles 2/35297, 1/35298, 1/100903 and 2/106067. The remaining portions of the property will be integrated for the beneficial use of effluent and manure generated by the system which will be utilised in crops grown to meet the grain and fodder requirements of the operation.

The location of the project site is shown in the figures and tables below.

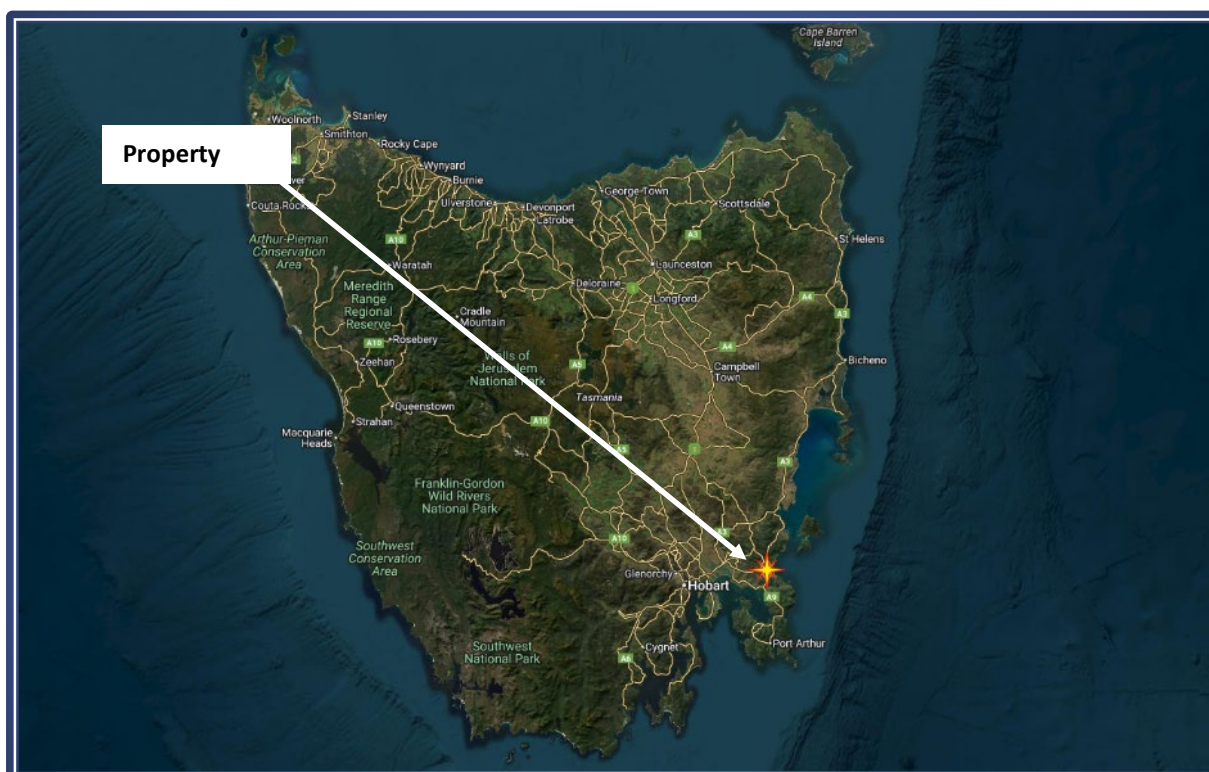


Figure 2-1 – Map identifying location of project site in relation to the State (Source: PRS QGIS)

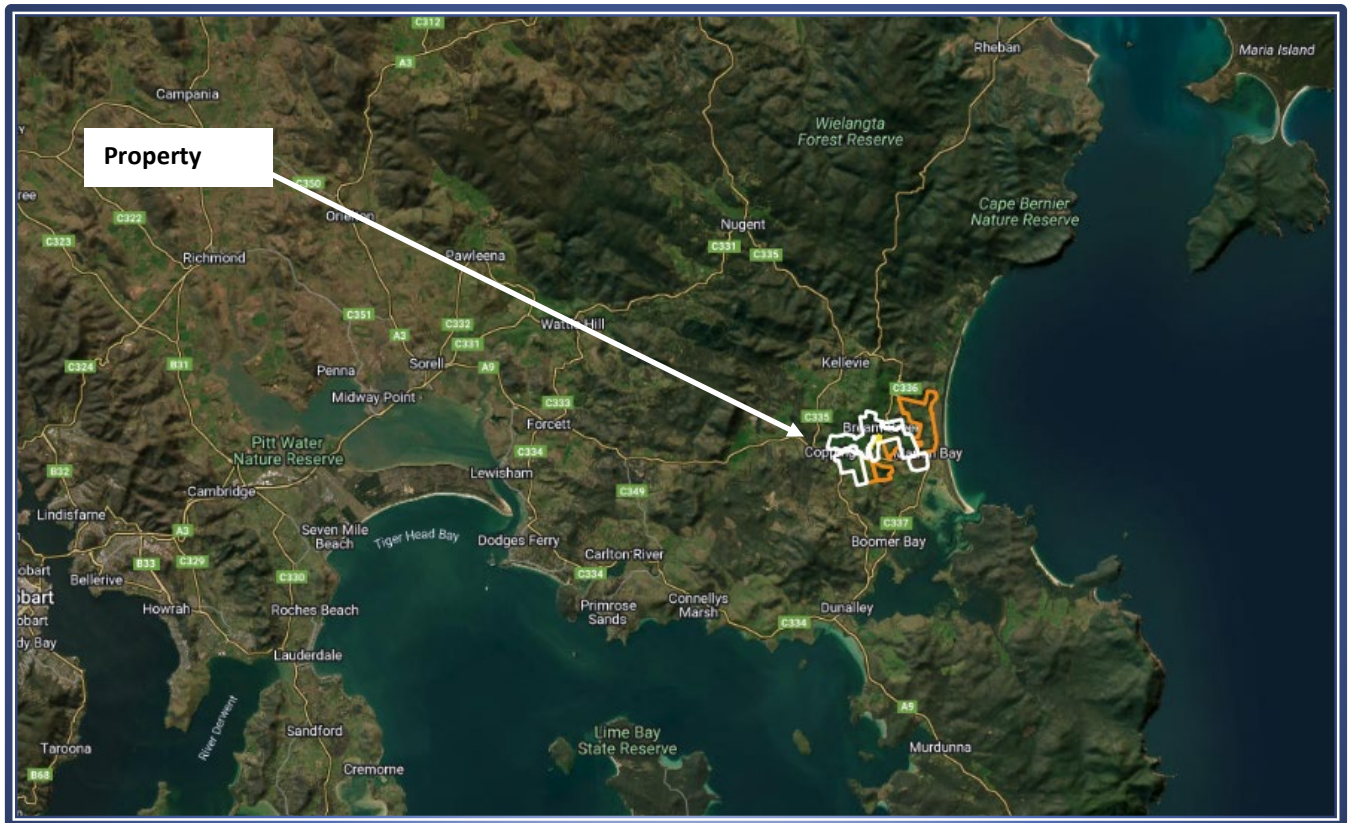


Figure 2-2 – Map identifying properties owned (white), properties leased (orange) in relation to the region (Source: PRS QGIS)

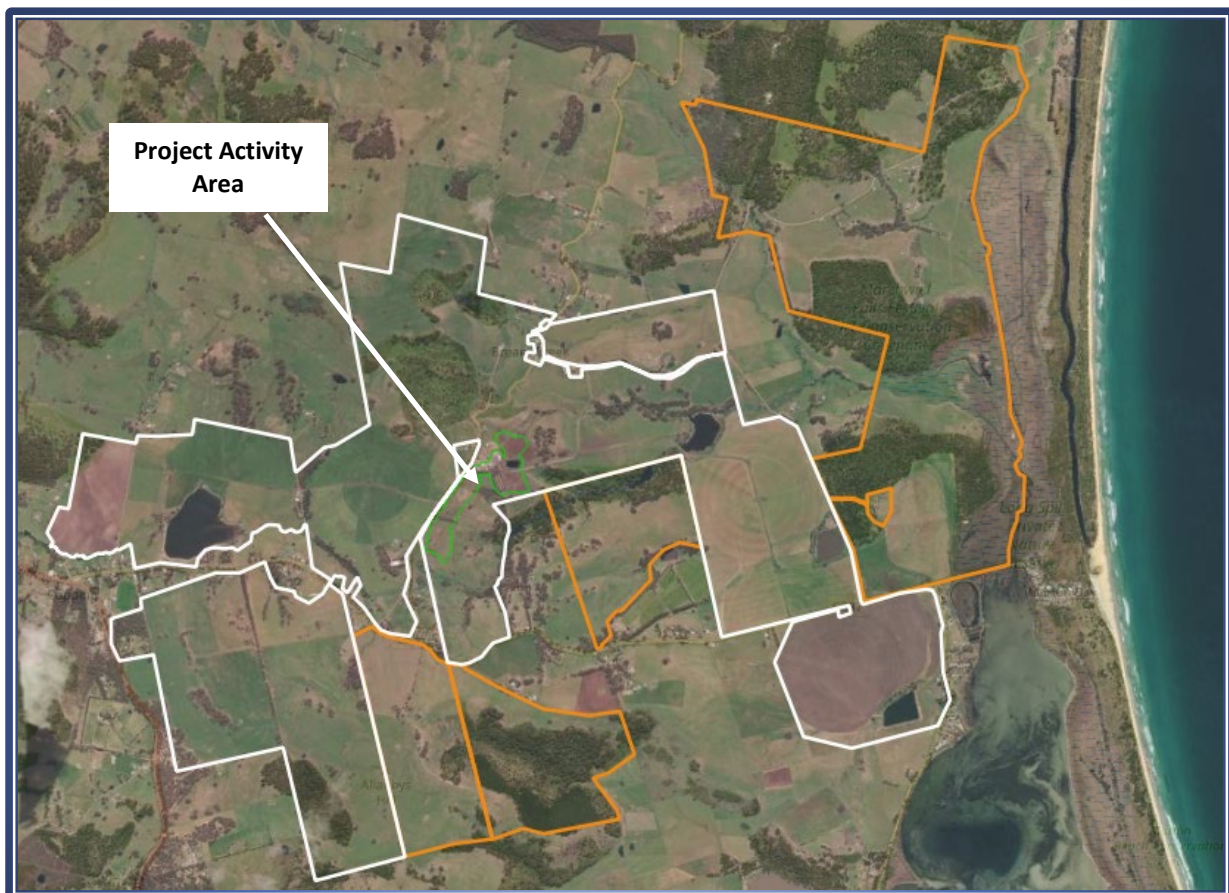


Figure 2-3 – Map identifying location of project area (green) in relation to the property owned (white) and property leased (orange) (source: PRS QGIS)

The land details of the project are summarised as follows:

Table 2-1 - Land details of the project

Details	Specific related to project site			
Address	106 Bream Creek Rd, Bream Creek Tas 7175			
Title Reference Lot	2	1	1	2
Title Reference Plan	35297	35298	100903	106067
Property ID	3370760	3370760	7873947	3370752
Municipality	Sorell Council			
Land Zoning	Rural Zone (20)			
Use Class	Use Class 3 & 4			
Catchment Area	South-East Coastal Catchment			
IBRA	Tasmania South East			
Floodplain Management Plan	Nil			
Land Tenure	Freehold			
Area of project works	Approx. 11ha			
Area of this property	642Ha plus 387ha leased			
GPS Reference	Zone:	55		
	Easting:	567788		
	Northing:	5259440		
	Latitude:	-42.814596		
	Longitude:	147.829187		

2.3. KEY CRITERIA OF THE PROJECT

The proposed dairy housing facility has been assessed against key criteria sourced from industry standards, legislation, and best practice guidelines. The project will enhance animal welfare and productivity through improved housing; provide safer workforce conditions; and deliver robust effluent and nutrient management systems that protect land, water, and community amenity. Odour and emissions will be actively managed, while the facility design builds resilience to climate extremes and ensures efficient use of feed, fertiliser, water, and labour. Community benefits will be realised through reduced traffic hazards and improved visual amenity. Importantly, the project will comply with all relevant regulatory requirements, including LUPAA, the Dairy Industry Act, and TDIA standards

The criteria used in the assessment and review stage of the proposed housing facility complex which has been sourced from a range of locations and resources that include the following:

- ✓ **Animal Welfare and Productivity**
The housing system will provide cows with a clean, dry, and comfortable environment that reduces exposure to weather extremes, prolongs herd longevity, and maintains consistent milk production levels.
- ✓ **Workforce Conditions**
The development will deliver a safer, all-weather working environment that reduces manual handling risks and creates opportunities for skills development in line with modern dairy practices.
- ✓ **Environmental Protection**
Effluent management will incorporate solids separation and a multi-stage pond system designed to TDIA and National Dairy Feedpads and Contained Housing Guidelines (2024) standards.
Nutrient recycling from effluent will be demonstrated to reduce reliance on synthetic fertilisers and minimise nutrient losses to land and water.
- ✓ **Odour and Emissions**
Odour impacts are to be assessed through site factor analysis and demonstrate that sensitive receptors will not be unreasonably affected. Bedding and pond systems will be managed under conditions that minimises odour.
- ✓ **Land and Waterway Protection**
The system is proposed to reduce grazing cattle impacts on paddocks, laneways and roads to prevent soil erosion and minimise nutrient runoff, protecting nearby creeks, rivers, and coastal waters.
- ✓ **Climate and Operational Resilience**
Milk production and farm performance will be maintained under seasonal climate variability, with the system capable of withstanding drought, storms, and prolonged wet conditions.
- ✓ **Resource Efficiency**

Feed, fertiliser, water, and labour inputs will achieve improved utilisation rates and efficiency benchmarks relative to current open-grazing systems.

✓ **Community Benefits**

The project will reduce traffic hazards by eliminating daily cow road crossings and unnecessary machinery movements.

The farm entrance and surrounding paddocks will present as visually tidy and well-maintained, improving the amenity of the local area.

✓ **Regulatory Compliance**

All works and operations will comply with the Land Use Planning and Approvals Act 1993 (LUPAA), the Dairy Industry Act 1994 and the Dairy Industry Regulations 2020, as administered by the Tasmanian Dairy Industry Authority (TDIA). Licensing requirements, including the development and implementation of a Food Safety Program and an Effluent Management Plan, will be met to ensure industry and environmental compliance.

2.4. PROJECT COMPONENTS

The project is made up of the following components:

Table 2-2 – Dairy Complex Components

Detail	Type	Number	Size	Status	Stage
Facility 1 Shed 1	Shed	1	300m x 60m	Proposed	1
Facility 2 Shed 2 (Maternity)	Shed	1	55m x 80m	Proposed	3
Feedpad	Feedpad	1	110m x 30m ¹	Existing	Existing
Calf shed	Shed	1	25m x 15m	Existing	Existing
Dairy (60 unit rotary)	Shed	1	25m x 32m	Existing	Existing
Dairy Yard	Concrete pad	1	50m x 22m	Existing	Existing
Freshwater storage	Dam system	multiple	35ML	Existing	Existing
Manure temporary storage area	Concreted	1	30m x 30m	Updated to concrete	1
	Compacted Pad	1	16m x 87.5m	Proposed	1
General mortality Area	Compacted Pad	1	In manure storage area	Proposed	1
Mass Mortality Area	Designated Area	1	10m x 67m	Allocated	NA
Grain storage	Grain containers	1	Varies	Existing	Existing
Silage & fodder storage	Earthen pad	1	Silage - 6,200m ²	Proposed	2
			Other – 3,000m ²		
Trafficable Solids Trap (reconfigured)	Concrete trap/sump system	1	TSS – 30m x 7m x 2m Sump – 4.5 x 4.5 x 6m	Upgrade proposed	1
Pond 1 Solids collection	Dam	1	9.11ML	Proposed	1
Pond 2 Storage (existing pond)	Dam	1	15ML	Existing	Existing
Pond 3 Storage	Dam	1	29.3ML	Proposed	1

1 – feedpad will be re-configured as part of the project works and will

2.4.1. HOUSED SYSTEMS

HOUSING COMPLEX

The area used for the housing of the productive cow herd is the main component proposed within the dairy complex and comprises a single shed or facility that will be utilised as a loose housing compost bedded pack system. Occupation of this area will include a maximum proposed capacity of 1,000 cows divided generally equally into areas of up to 500 cows occupying each side of the internal area.

The following image displays a typical internal layout of systems of this type. The shed pad will be constructed on a 2% slope from balanced earth within the dairy complex, prior to the shed's installation. No additional earth is proposed to be imported to the site. The slope of the pad allows for the flood washing of the concreted cow alleys and drainage of the effluent flood wash system and meets the requirements of the National Guidelines. The areas surrounding the buildings are vegetated with low level vegetation to manage runoff and reduce erosion from the surrounds.

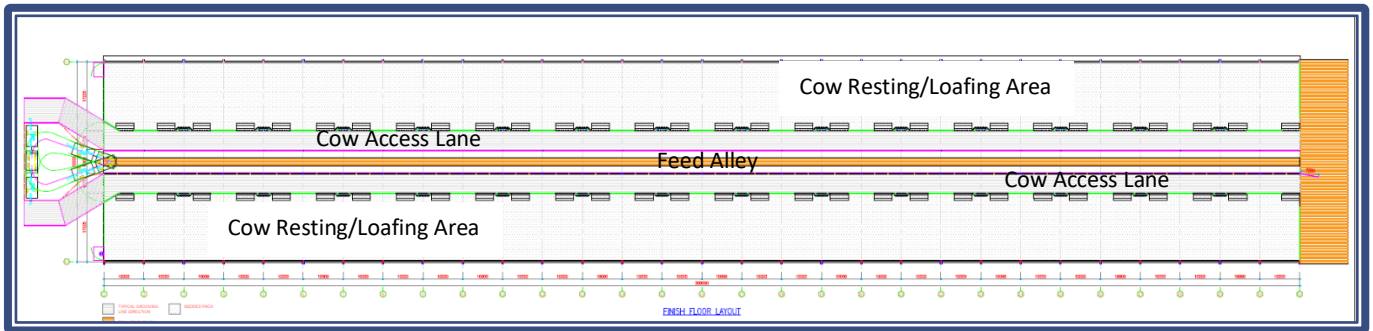


Figure 2-4 – Snapshot of plan indicating internal facility layout utilised (Source: PRS library)

As seen in the following cross section of the site plan, the productive herd facility is 60m wide (including eaves) and is divided by a central feed alley system, 6m in width, running the full length of the facility. The feed alley is used by feeding machinery to supply specific balanced feed rations to each section and herd. A feed alley allows the delivery and placement of feed along the length of the alley reducing the requirement for machinery to enter any part of the livestock accommodation areas.

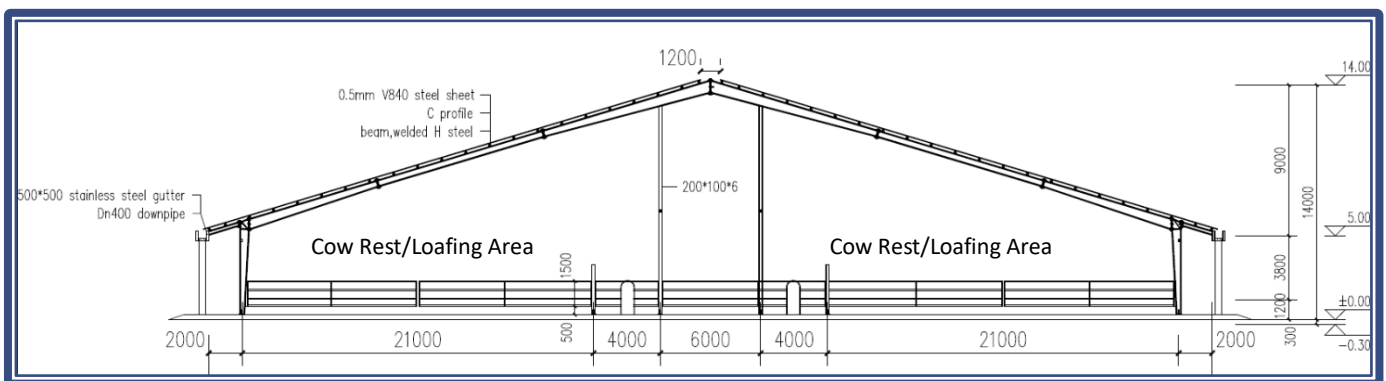


Figure 2-5 – Snapshot of cross-sectional plan of housing area (Source Qingdao Plan)

Either side of the feed alley has a cow alley or feed access lane of 4.0m width. This area consists of a concrete surface which is flood washed during each milking (min two times daily) with recycled water from the effluent system. This width provides sufficient area for cows to access feed, water and pass within the lane without causing distress to each other. Considering an 80% utilisation rate of cow feeding activities, each cow within the housing system has an allowable space for feeding of 60cms which is in line with the guideline recommended 60cm width.

Each housing area incorporates a cow drinking trough system of 3.66m long raised troughs located every 16.3m the full length of each of the cow access lanes. Troughs will be only open to the cow alley with protective shields to prevent water being introduced into the bedding area. The location, design and spacing allows cows to access water close to feed and reduces potential moisture issues within the bedding areas.

Cows access the feed alley at any point around the water troughs along the full length of the bedding/loafing area. This ensures that cows have free and unrestricted access to feed and water at all times of the day or night and reduces high impact areas within the bedding area. The following image depicts a typical loose housing system showing the access and water trough systems connection to the loafing and feed areas.

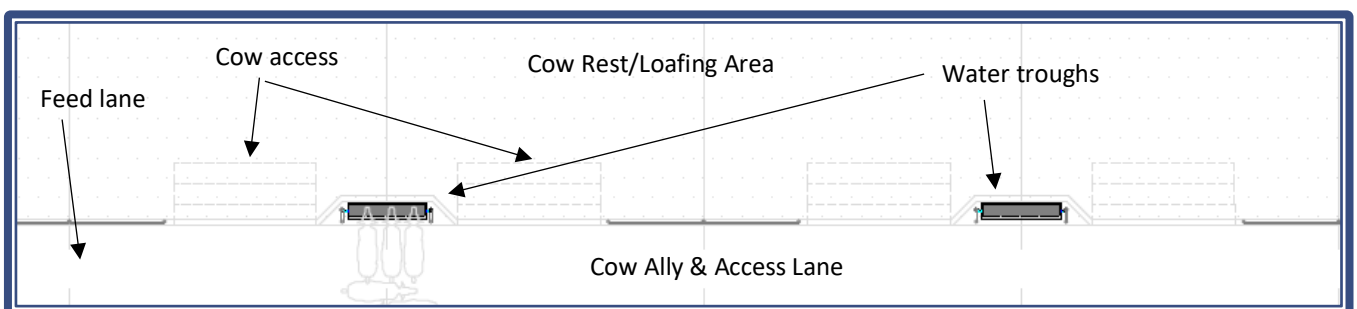


Figure 2-6 – Overview of single side of housing area (Source: National Guidelines)

The internal area of each housing system (productive and maternity area) includes a loafing area where cows can freely loaf, interact and rest. These areas incorporate a woodchip style bedding system which provides a total area of 15m² per cow and 12.6m² per cow for resting/loafing. Fans are typically incorporated into these areas to assist with airflow, moisture reduction and in most areas cow cooling. The internal design of this housing area allows for the installation and use of a full fan system within the site however due to its climatic location fans are not proposed within the site's commencement. Should moisture management of the bedding system determine they will be of beneficial use, fans can be installed at a later time.

Careful and vigilant management of the bedding system is required to ensure that the moisture level in the bedding area is maintained at between 40% to a maximum of 60%. Daily management of the bedding area includes tilling the entire bedding area at least twice. The depth of tilling is undertaken to ensure that the bedding is maintained at an ambient temperature, aerated, fluffy and dry to touch with no moist 'chunky' areas. Where the bedding area does not meet this description, management to reduce the moisture and temperature levels of the bedding must be undertaken – usually through the addition of dry bedding material. This is a key component to ensuring cow welfare objectives are maintained within the system.

Ongoing, twice weekly monitoring of moisture and temperature will be undertaken throughout areas within the bedding area to identify any early change to the bedding and allow for management actions to occur to maintain moisture levels. The operation will maintain a small, shed supply of dry bedding material for this purpose which is available through the wetter months when air humidity levels are high. Access to the bedding materials is ongoing and there are no delays from order to delivery for this material.

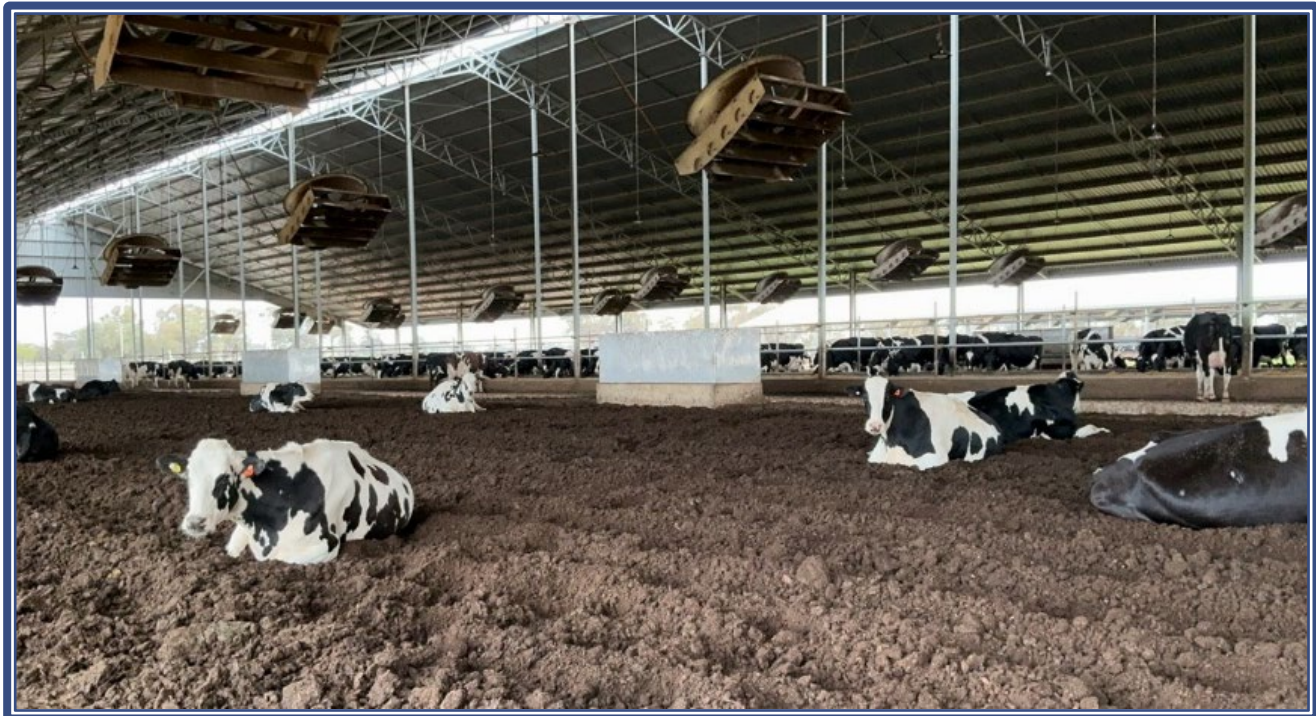


Figure 2-7 - Photo showing compost bedding management within the facility (Source: PRS Library)

FEEDPAD CONVERSION TO MATERNITY COW AREA AND YOUNG/DRY COW HOUSING (SHED 2)

EXISTING

The current operation includes a dual feed lane feed pad which has four feed faces available for cows to access following milking. Cows access this area following each milking before returning to grazing areas on the property.

This use will continue until the transition to the housed system is complete and the operation identifies the need for a dedicated maternity, dry cow and veterinary area.



Figure 2-8 - Aerial photo showing existing feedpad (Source: PRS)

PROPOSED

Following transition to the loose housing system, it is proposed the feedpad area will be converted to a roofed maternity and young/dry cow housing system. This will include the reconfiguring of the feedpad and installation of a loafing area.

The proposed maternity management system will include a single open shed that includes a bedding area for resting and small animal welfare area to assist cows during the calving process where required. Cows will be brought into the converted area prior to their expected calving times to await their natural calving date. Once calving has occurred, cows are monitored and transition into the productive herd in the main sheds at an appropriate time.

Cows housed within this system are allowed free access to feed and water and are feed on an internal concreted feedpad in the central portion of the housing area. The bedding system is managed in line with the productive cow area with daily tilling undertaken to manage moisture levels.

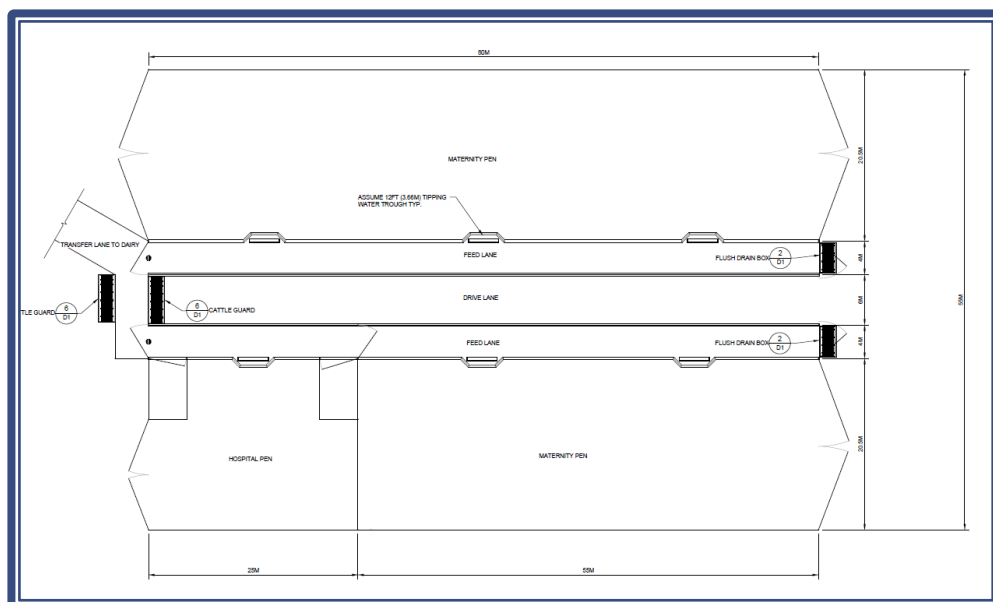


Figure 2-9 – Plan showing proposed layout of maternity and dry cow system (Source: Provost & Pritchard)

DAIRY AND MILKING SYSTEM

EXISTING

The existing dairy is a 60-stand rotary which was constructed on the site in 2009. Cows access the dairy from the concrete lead up yard between the dairy and the feedpad which is connected to the existing earthen farm laneway systems throughout the property. The size of the dairy and average cow production volume determines the median cow time on yards which is calculated as up to 1.5 hours per milking, or up to 3 hours per day. Cow's exit the rotary returning along the western side of the dairy yard to the feedpad shortly following milking where supplementary feeding is provided. Cows are then removed from this area walking to grazing paddocks on the property.

Milking activities currently commence at 5:00AM and 2:30PM daily with no change proposed to these times or the milking system. The existing milk cooling (plate cooler) system, vat and water supply system within the dairy is sufficient to meet the current and proposed activities on site.

PROPOSED

There are no major changes proposed to the existing dairy system. The operation is proposing a future upgrade of milk vat size as part of its typical O&M however no change is proposed to the building or site to facilitate these changes.

The length of time that the rotary will operate will slightly increase in total time for each milking to reflect the small increase in cow number and potential increase in cow production volume.

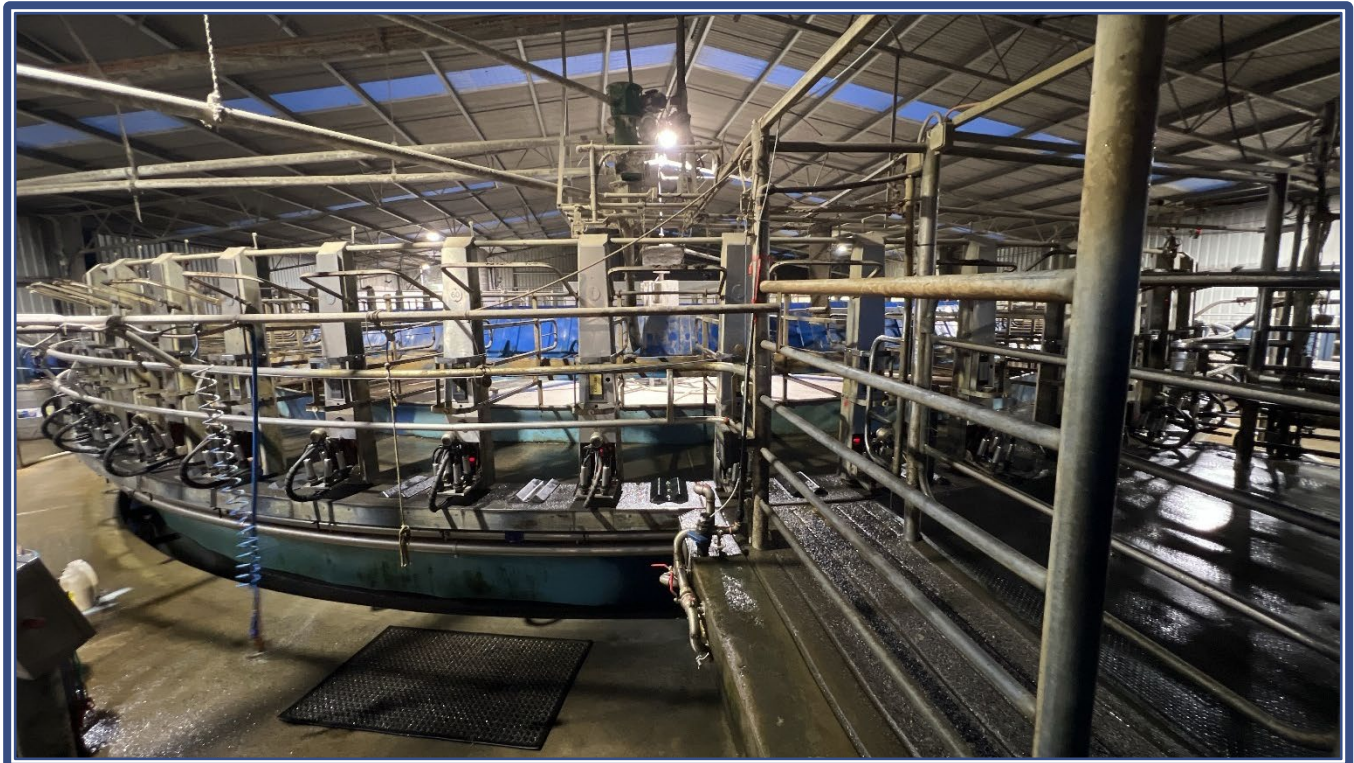


Figure 2-10 - Photos of existing dairy milking platform (Source: PRS)

SUMMARY

A summary of the housing systems within the dairy complex is included below:

Table 2-3 –Proposed facility 1 areas (Max 1,000 cow system)

Area of each shed	Length (m)	Width (m)	Area (m ²)	Area/cow
Bedding area (left side)	300	21.0	6,300	12.6m ²
Bedding area (right side)	300	21.0	6,300	12.6m ²
Lane left (internal)	300	4.0	1,200	2.4m ²
Lane right (internal)	300	4.0	1,200	2.4m ²
Feed Alley (internal)	300	6.0	1,800	0.6m
Eaves (both)	300	4	1,200	-
Total	300	60	18,000	12.6-15m² Avg

Table 2-4 – Maternity area (re-purposed feedpad)

Area	Length (m)	Width (m)	Area (m ²)	Area/cow
Maternity	55	20	1,100	13.75m ²
Hospital	25	20	500	15m ²
Feed pad (left)	80	4	320	2.9m ²
Dry cows	80	20	1,600	13.3m ²
Feed pad (right)	80	4	320	2.6m ²
Feed Alley	80	6	480	0.69m
Total	80	55	4,400	12.25m² Avg

Table 2-5 – Calf Shed (Existing)

Area	Length (m)	Width (m)	Area (m ²)	Area/cow
Bedding area	25	15	375	NA
Total Project	25	15	375	NA

2.4.2. FRESHWATER USE, STORAGE AND SUPPLY SYSTEM

The operation undertaken on the property has existing access to significant storage and water licences. The property maintains extensive storage, pump and pipeline infrastructure that facilitates the connection of, and access to, licenced water volumes for the supply of drinking water, dairy operations and irrigation for fodder production. The following sections identify the licences and approvals held and considers the current and proposed water use at the site.

WATER ACCESS LICENCES

Water access for the property is from surface water supplied through the following licenced water managed by NRE – Tasmania. The **Applicant** has existing licences of 1,118.2ML with a maximum daily extraction volume of 11ML.

Table 2-6 - Water Licence approvals

Water License No	Allocation ID	Water Source	Volume (ML)	Max Daily Take (ML)
8862	14776	Bream Creek	500	4.5
3215	2541	Ravenscroft Rivulet	4.2	0.5
	2542		370	3.5
4001	2274	U/N Trib of Sedbury Creek	80	1
	2275	Sedbury Creek Tributary	164	1.5
Total			1,118.2	11

WORK (DAM) APPROVAL DETAILS

The property and operation have the following existing Water Supply Work (dam) licences.

Table 2-7 -Property work approvals

Dam #	Name	Work Type	Status	Purpose	Capacity (ML)	Wall height (m)	Property PID
3364	Big Paddock Dam	On-stream	Existing	Irrigation	170	9	3025182
3363	Opp Bob's no	On-stream	Existing	Irrigation	80	6	3025182
3146	Copping Dam	On-stream	Existing	Irrigation	370	9	7873947
8016	Bush	On-stream	Existing	Irrigation	1300 (500ML)	19	3107444
3145	NW corner dairy pivot	On-stream	Existing	Irrigation	4.5	5	3025115
NA	Dairy	On-stream	Existing	Dairy	35	-	
Total					1160		

As demonstrated in the above table, the property maintains access to multiple licenced freshwater storage dams which have been employed as part of the existing farming system. A network of pumps and pipelines allow the connection and use of water for the licenced purposes across the property and operation. Freshwater for use within the dairy system is sourced or pumped to the closest dam where it is held prior to supplying water into the existing dairy complex for plant wash down, vat cleaning and other washing activities.

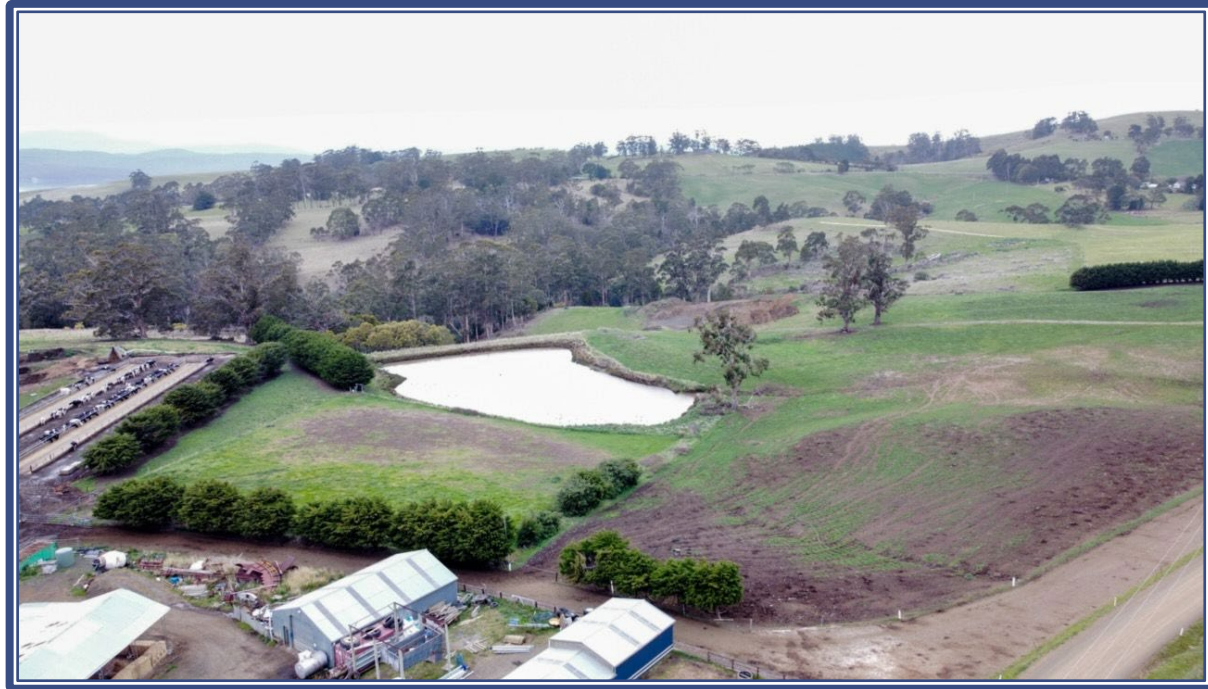


Figure 2-11 - Photo showing existing licenced freshwater dam on property (Source: PRS)

WATER USE

Water use for dairy systems is required for multiple components. These include washing and cleaning, drinking, feed preparation, administration (amenities etc).

WASHING AND CLEANING

A comprehensive assessment of the existing and proposed water use within the facility has been undertaken as part of the effluent management plan prepared by South East Soil and Water, 2025. As part of the assessment, minor recommendations for amendments to the existing dairy operation were made and the total water use has been determined as acceptable. The results of this assessment showing the existing operation, revised operation and proposed operation are summarised below:

Table 2-8 – Summary of daily washdown and cleaning water use (Source SESW EfMP Table 8 & 9)

Summary of Effluent Plan Daily Water Use Calculations	Existing system	Proposed system	Difference (existing to proposed)
Cows	780	1,000	220
Rainwater			
Vat wash	1,500	1,500	0
Plant wash	3,000	3,000	0
Plate cooler – Nil (recycled)	0	0	0
Rotary platform spray (1)	14,850	40,500	25,650
Rotary Hose 2 Cups	-	27,000	27,000
Rotary hose 3 Bottom	-	20,250	20,250
Dairy shed and yard wet up	2400	3,000	600
Dairy Shed during milking	2,640	4,500	1,860
Dairy shed hose (during milking)	4,800	9,000	4,200
Hand held hoses during milking	36	180	144
Yard Blasters	7,920	7,920	0
Calf milk washdown	240	600	360
Calf Shed Washdown	0	11	11
Cheese processing area	357	357	0
Total Dam use	37,743	117,818	80,075
Recycle Flood Wash			
Dairy	0	0	0

Summary of Effluent Plan Daily Water Use Calculations	Existing system	Proposed system	Difference (existing to proposed)
Loose Housing	0	160,000	160,000
Maternity	0		
Total Flood Wash	0	160,000	160,000
Grand Total	0.04ML	0.28ML	0.24ML

DRINKING WATER

Drinking water is determined differently depending on the type of animal and its current status (lactating, pregnant, dry etc). An assessment of the existing and proposed drinking water volumes has been undertaken in accordance with the calculation method identified in the National Guidelines which are identified as follows:

Pregnant Cows

Table 2-9 – Daily water calculation for pregnant cows

Consideration	Value	Result
Water requirement	7.1L of water per kg of dry matter consumed.	13kg = 7.1L = 92.3L Per cow per day
Dry matter consumed	Assume 2% of body weight	650kg x 2% = 13kg
Average bodyweight of cows	Per management	650kg
Max number of cows	20	1,846/day

Lactating Cows

Table 2-10 – Daily water calculation for lactating cows

Consideration	Value	Result
Water requirement	- 5L of water per kg of dry matter plus: - 1L of water per L of milk produced - additional requirement during hot (+25 degrees)	145L + 38L + 0L = 183L Per cow per day
Dry matter consumed	24kgs assuming: - 6kg dry matter in maize - 9kg DM in ryegrass - 8kg DM Grain - 3kg DM Canola meal - 2kg DM hay - 1.2kg DM in additives	29kg x 5L = 145L
Milk volume produced/cow	Management	38L x 1L = 38L
Hot day capacity	Nil	Reviewed below
Existing number of cows	780	142,740L/day max
Proposed number of cows	1,000	183,000L/day max

Table 2-11 – Total annual drinking water calculations for complex

Month	Days	% of total	L/Cow/Day	Monthly Requirement Facility 1 (ML)	Monthly Requirement Maternity (ML)	Total Daily Requirements at capacity (L)	Total Monthly Requirement (ML)
Jan	31	100%	183	5.7	0.06	184,846	5.7
Feb	28	95%	174	4.9	0.05	175,604	4.9
Mar	31	85%	156	4.8	0.05	157,119	4.9
Apr	30	85%	156	4.7	0.05	157,119	4.7
May	31	85%	156	4.8	0.05	157,119	4.9
June	30	85%	156	4.7	0.05	157,119	4.7
July	31	85%	156	4.8	0.05	157,119	4.9
Aug	31	85%	156	4.8	0.05	157,119	4.9
Sep	30	85%	156	4.7	0.05	157,119	4.7

Month	Days	% of total	L/Cow/Day	Monthly Requirement Facility 1 (ML)	Monthly Requirement Maternity (ML)	Total Daily Requirements at capacity (L)	Total Monthly Requirement (ML)
Oct	31	85%	156	4.8	0.05	157,119	4.9
Nov	30	95%	174	5.2	0.05	175,604	5.3
Dec	31	100%	183	5.7	0.06	184,846	5.7
Total	365			59.5	0.60	184,846	60.1

The above calculation identify that the existing operation requires an estimated 12.6ML of freshwater annually for drinking at the dairy. The proposed facility will require an additional 47.5ML to meet the drinking water demand.

Note: should any of the baseline information alter (Table 2-9 and Table 2-10) this total calculation should be revised.

COOLING WATER REQUIREMENTS

No water-cooling system (soakers or misting) are proposed for installation within this facility based on the climatic location of this operation.

FEED RATION WATER REQUIREMENTS

No water contributions have been allocated to the management of this facility based on the climatic location and the type of feed ration utilised within this system. Noting that a high moisture content feed ration is available at all times throughout the year. Should an alternate high dry matter ration be incorporated into the ration, this water use should be revised.

OTHER WATER REQUIREMENTS BY STAGE

No other water contributions for uses such as administration staff amenities or domestic use have been included in the existing and proposed total dairy water use calculations.

TOTAL WATER USE

The total water use determined within this assessment has been summarised in the following tables showing the existing and proposed operation.

Table 2-12 – Total proposed complex water use calculations

Month	Days in month	Drinking Water (ML)	Dairy Shed (ML)	Recycled Flood wash (ML)	% Fresh contribution (ML) ¹
Jan	31	5.73	3.65	8.61	29.8%
Feb	28	4.92	3.30	7.78	29.8%
Mar	31	4.87	3.65	8.61	29.8%
Apr	30	4.71	3.53	8.33	29.8%
May	31	4.87	3.65	8.61	29.8%
June	30	4.71	3.53	8.33	29.8%
July	31	4.87	3.65	8.61	29.8%
Aug	31	4.87	3.65	8.61	29.8%
Sep	30	4.71	3.53	8.33	29.8%
Oct	31	4.87	3.65	8.61	29.8%
Nov	30	5.27	3.53	8.33	29.8%
Dec	31	5.73	3.65	8.61	29.8%
Total	365	60.1	43.00	101.4	30%

The above summaries identify that the proposed operation requires a total annual operation volume of 103ML of freshwater annually. The current operation maintains sufficient water to support this use under its existing licence capacity, and no changes are required to the water holdings as part of the proposal.

2.4.3. SURFACE WATER, EFFLUENT AND MANURE MANAGEMENT AND STORAGE SYSTEM

The existing facility maintains significant surface water and effluent management infrastructure. This includes existing rainwater management, sumps, solids separation, drains, pump and piped conveyance systems, effluent ponds for solids and storage and mixing and application equipment. These are further described below and in detail within the effluent management plan prepared by South East Soil and Water (**Appendix 5**).

RAINWATER CAPTURE AND MANAGEMENT

EXISTING

Rainwater from the dairy shed is captured and stored in tanks for freshwater use within the dairy system. Where the rainfall exceeds the storage, overflow from the tanks is conveyed via stormwater pipes outside the complex controlled drainage system and discharging to natural drainage lines on the property. This practice reduces rainwater contributions to the effluent system and allows for some use of the freshwater reducing the requirement to pump from the dam systems.

PROPOSED

The new buildings (loose housing and maternity) roof systems will include gutters and piped conveyance to the existing freshwater dam outside of the controlled drainage system to the freshwater dams. The existing dam system includes a spillway to facilitate natural passage of overland flows.

EFFLUENT CAPTURE AND CONVEYANCE

EXISTING

Dairy washdown water, sourced from farm dams and rooftop rainwater, averages approximately 48 L/cow/day, including contributions from the on-site cheese processing activities. All washdown and runoff from the dairy platform, cow yards, and feedpad is directed to a trafficable solids trap (85kL) and agitation sump (111kL). Effluent is then pumped through a screw press, achieving a minimum of 20% solids removal before entering the pond system. Daily feedpad scraping ensures solids are managed effectively and directed into the effluent stream.



Table 2-13 - images showing existing effluent pond (Source: PRS)

PROPOSED

Under the proposed development, effluent capture will expand to include the new loose housing facility and connecting concrete laneways. The trafficable solids trap will be doubled in size to accommodate floodwash volumes, and the agitation sump will remain central to solids-liquid separation. Effluent from the housing, yards, and feedpad will be directed through the upgraded conveyance system to ensure continuous capture and treatment.

MANURE AND BEDDING MANAGEMENT AREA

EXISTING

Screened manure is stockpiled on an earthen manure storage pad of 900 m² which captures and drains any run-off into the effluent pond system, ensuring that nutrient-rich leachate is captured and managed.



Figure 2-12 – Solids Separator (left) Manure storage area (right) (Source: PRS)

PROPOSED

This application proposes to formalize the separated manure storage area by concreting the existing earthen pad. An additional earthen impermeable surface (1,400m²) will be incorporated into the adjoining area which will be utilised for temporary storage of separated solids, spent bedding and any feed refusal not used in the system.

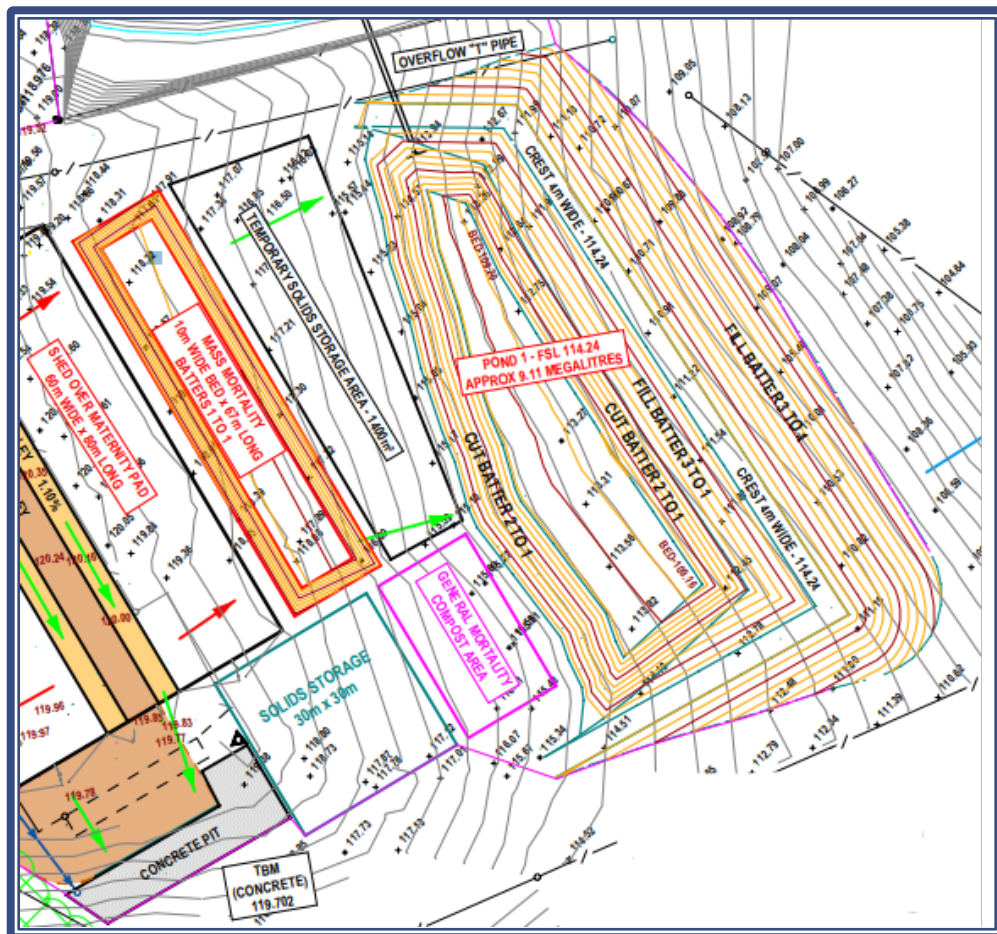


Figure 2-13 - Proposed upgraded manure storage area (Source: PRS QGIS replicating NJC Irrigation Solutions Plans)

EFFLUENT PONDS

EXISTING

The operation currently uses a single pond effluent system for the management and storage of solid and liquid effluent. The capacity of the system is currently 15ML (including 0.6 m freeboard) in total. The separated liquid effluent enters the pond as described in the above sections. The pond is sized to provide six months of winter storage (April–September). Sludge accumulates in the pond and is removed annually for land application with the liquid component applied to the irrigation area.

PROPOSED

With an increase in cow number and intensification of the site to full time housing, the duty of the effluent pond system will be enhanced to a three-pond system. Significant assessments have been undertaken and detailed within the Effluent Management Plan prepared by South East Soil and Water with a summary of those volumes provided below.



Figure 2-14 - Proposed upgraded manure storage area (Source: PRS GIS replicating NJC Irrigation Solutions Plans)

The assessment details the existing system as currently operated and the proposed 1,000 cow housing system. The operation of the system includes the following annual activities that form part of the calculation:

- 6 month clean out interval of Pond 1,
- Pond 1 proposed is a new pond defined as a sedimentation pond with a capacity of 9.11ML,
- Pond 2 (existing pond) is defined as a storage pond with a capacity of 15ML,
- Pond 3 proposed is a new pond defined as a storage pond with a capacity of 29.3ML.

Table 2-14 - Effluent storage components

Effluent Component	Existing system (current)	Proposed 1,000 productive cow	Proposed available storage	Proposal Complies?
Pond 1	Nil	9.11ML	9.11ML	Yes
Pond 2	15ML	15.00ML	15.00ML	Yes
Pond 3	-	29.30ML	29.30ML	Yes
Commodities	-	5.54ML	5.54ML	Yes
Total	15ML	58.95ML	58.95ML	Yes

It can be identified from the above table that the proposed system at full capacity is of sufficient size to manage a 12-month accumulation of solids within the proposed effluent sediment system at a capacity of 9.11ML exceeding the required volume of 6.3ML. There is also sufficient storage capacity to meet the 6-month winter storage requirement of 44.068ML with a total proposed volume of 44.3ML within the existing and proposed green water storage area.

EFFLUENT AND MANURE UTILISATION

EXISTING

The Effluent Management Plan has also reviewed the required areas for effluent utilisation. The effluent on the property can be sustainably utilised within the farming areas on the property through direct application via the existing pivot irrigation network. The calculated requirements for effluent applications are shown below:

Table 2-15 – Calculated area required for application of effluent and sludge

	Area required for effluent application (Ha)	Area required for sludge application (Ha)	Total area required (Ha)	Area available irrigation (Ha)	Area available for sludge (ha)	Complies?
Existing	70.0	22.7	92.7	207ha – total 139ha (buffers)	434.5ha	Yes
Proposed	97.5	34.1	131.6			Yes

PROPOSED

The land area requirements for effluent and sludge have been calculated as requiring a total footprint of 131.6ha being separated into 97.5ha for irrigation and 34.1ha for sludge application. The property has a significant footprint encompassing a total area of 1,040ha. Considering application area constraints, protective measures for sensitive areas e.g. waterways and boundary offsets, a total consistent productive area for the purpose of irrigation and sludge available is 573.5ha. This exceeds the total area required.

The following image identifies the areas adjoining the project site that are available to utilise effluent, sludge and spent bedding at suitable times. The yellow areas define cropping and farming areas, and the green areas nominate existing irrigation footprint.



Figure 2-15 -Replication of the SESW EfMP Figure 31 identifying waste utilisation areas within the properties and waterway buffers (Source EfMP SES&W)

SUMMARY

The Effluent Management Plan (EfMP) has identified the following updates and components for the management of effluent:

Table 2-16 - Effluent management updates and components

Component	Action	Address
Dairy and cow yard	Maintain rooftop diversion to tanks and natural drainage. (12.5% time manure contribution).	Nil works.
	Increase in water use within dairy for the provision of higher quality water for the purpose of recycle.	Nil works
Loose Housing	New housing system with two floodwash lanes. (12.5% manure contribution)	Construction loose housing
	Bedded pack loafing area within housing area (woodchip base). (75% manure contribution)	Construction loose housing
	Rooftop diversion to dam/natural drainage.	Construction
Feedpad & future conversion to maternity	Maintain connection of open feedpad to effluent system.	Nil works.
	Conversion of feedpad to roofed maternity housing system.	Construction
	Rooftop diversion to tanks and natural drainage.	Construction
Calf Shed	Maintain rooftop diversion to tanks/natural drainage.	Nil works
Manure Management Area	Trafficable solids trap. Increase capacity (doubling existing trap size) to match total daily flood wash water and effluent.	Construction of loose housing
	Converting existing solids storage area to concrete pad and maintaining connection to effluent pond.	Construction of loose housing
	Earthen pad for temporary manure management area (stockpiling spent bedding/feed/excess separated solids) over the winter storage period. 1400m ² footprint.	Construction of loose housing
Effluent Ponds	Effluent Pond 1 with capacity of 9.11ML construction in line with plans and Effluent Management Plan, (SESW 2025)	Construction of loose housing
	Effluent Pond 3 with a capacity of 29.3ML, construction in line with design plans, Effluent Management Plan and Geotechnical Report.	Construction of loose housing
	Concreting surface of existing manure solids storage area (30m x 30m).	Construction of loose housing
	Construction of an earthen impermeable pad for temporary storage of manure solids, spent bedding and feed refusal.	Construction of loose housing
	Run-off pond collection pond at the silage area to capture run-off from feed storage system. Catchment stored prior to use on irrigation.	Construction of silage area.
	Gravity pipes must be installed between ponds 1 and 2 and 2 and 3.	Design reflective of requirement.
	The pump must be installed connecting the system to both Pond 2 and Pond 3 with pipelines installed to: - Supply irrigators across effluent irrigation areas - Supply the recycled effluent tank at the loose housing flood wash and cow lane to the dairy.	Design reflective of requirement.
Effluent & Sludge Application	Application must occur sustainably to support crop or pasture production as a double cropped system. On this basis the following areas are nominated: - Irrigation 139ha - Sludge 34.1	Proposal and system have the capacity to meet this requirement.
	Application must not occur within - 30-metres of a waterway, drainage line or farm dam. - 10m of a property boundary - Where less than 10mm soil moisture deficit occurs	Application and operation can meet this requirement through vigilant attention to application areas.

Component	Action	Address
	- Winds speeds of less than 5 m/s of more than 18km/hr - Winter storage period.	
Commodities Area	The commodities area proposes silage storage areas and will require preparation and compaction to an impervious standard prior to use.	Construction of silage area.
	Upslope diversion bank to be installed around the commodities area and runoff pond to prevent stormwater ingress from other areas from entering this pond.	Construction of silage area.

2.4.4. ACCESS



Figure 2-16 - Overview of the site showing existing access

EXISTING

Access to the existing dairy complex is via the existing property entrance on Bream Creek Rd which is suitable for access of all sized heavy vehicles allowable via this transport route.

PROPOSED

This proposal seeks to slightly increase herd size to up to 1,000 productive cows. Improving cow welfare and incorporating a housed system within the operation also typically results in an increase in milk production. Further information on the traffic generation at the site is considered in **Section 5.9**.

2.4.5. FEED PROCESSING AND STORAGE

EXISTING

The property maintains existing feed storage and management capacity which is located adjoining the dairy with the current silage stored on the north side of Bream Creek Road. There is no change proposed to the area adjoining the dairy. Feed mixing and storage activities will continue at the dairy.

PROPOSED

A new silage storage area is proposed as part of the proposed system. This is to support the removal of grazing of the milking herd from the farming areas allowing fodder to be harvested and stored on site for the use within the housing system. This area consisting of two new pads and a catchment dam for the management of run-off water within the area will be constructed as part of the proposed housing system.

This area is and will continue to be accessed via the existing internal farm access from Bream Creek Road.

The commodities storage area is an odd shape of approx. 1.3ha and is generally 75m wide x 125m long and includes two silage bund areas, a detention pond, and related internal access tracks and drainage.

Table 2-17 - Estimated annual feed requirements for existing and proposed operation

Feed type	Feed required		Total annual (tonne)		Source	
	Kg/Cow/day	Kg/Cow/year	Existing	Proposed	Current	Proposed
Grazed grass	2	0	1830	600		
Maize	6	1,830	1,400	1,830	On-farm	On-farm
Ryegrass	9	2,745	1,600	2,830	On-farm	On-farm
Grain	8	2,440	2,500	3,000	Off farm	Off farm
Canola Meal	3	915	600	1,095	Off farm	Off-farm
Hay	2	610	450	610	On-farm	On-farm
Mineral Pallets*	1.2	366	285	366	Off farm	Off farm
Total		8,906¹	6,835	9,731		

1 – excludes grazing when not in lactation.

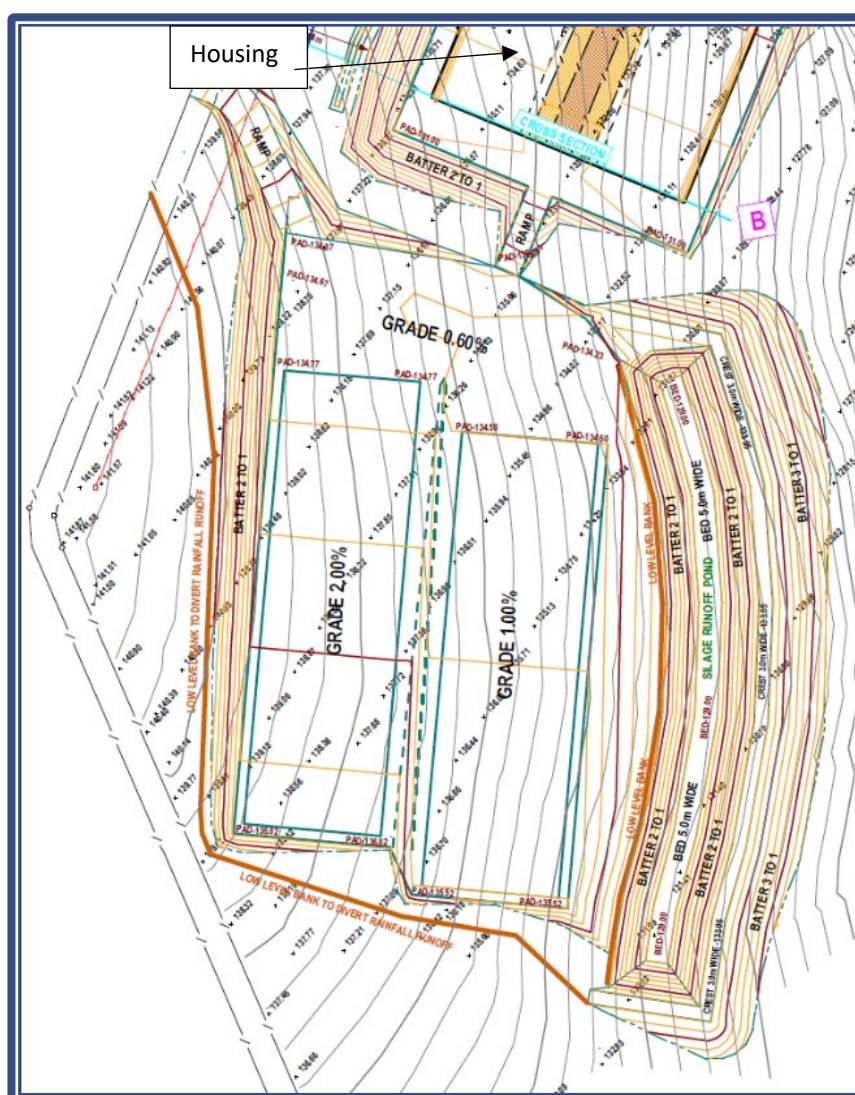


Figure 2-17 - Snapshot of plan showing existing commodities management area (Source: NJC Irrigation Plans)

2.5. PROJECT CONSTRUCTION METHODOLOGY

The proposed development will comprise the following main elements:

- Preparation,
- Earthworks,
- Shed construction and fit out and connection of effluent and water system, and
- Commissioning.

2.5.1. PREPARATION

Several areas within the proposed construction footprint require preparation.

LOOSE HOUSING & SILAGE AREA

The area of the proposed loose housing system and connected access areas will require preparation work prior to the commencement of the earthworks. These works include:

- Removal of fencing.
- Removal of plantation trees adjoining Bream Creek Road, and internal fence lines adjoining and within the proposed loose housing construction area.
- Removal of plantation trees adjoining the northern side of the works area.
- Protection of existing native vegetation adjoining the works area via visual marking.

POND 1 & SOLIDS STORAGE

The area of the proposed Pond 1, solids storage area and connected access will require preparation work prior to the commencement of the earthworks. These works include:

- Removal of any fencing within the access and construction area.
- Installation of temporary fencing for the management of cattle movements on the site.
- Grass and manure removed from construction area.

POND 3

The area of the proposed Pond 3 and connected access area will require preparation work prior to the commencement of the earthworks. These works include:

- Removal of any fencing within the access and construction area.
- Installation of temporary fencing for the management of cattle on the site.
- Grass and manure removed from construction area.

MATERNITY HOUSING

The area of the existing feedpad/proposed maternity housing will require preparation work prior to the commencement of the building work. These works include:

- Reconfiguration and removal of excess feed management area (concrete bunks).
- Installation of temporary fencing for the management of cattle on the site.
- Grass and manure removed from construction area.

2.5.2. EARTHWORKS

Project earthwork volumes as described above have been provided by activity area in the following tables.

Table 2-18 - Proposed earthwork volumes

Work Area	Area (m ²)	Cut (m ³)	Fill (m ³)*	Short/Excess	Construction timeframe (weeks)
Effluent Pond 1	13,917	6,001	9,881	-3,880	2 months
Effluent Pond 2	5,990	NA	NA	NA	
Effluent Pond 3	14,907	18,475	25,827	-7,352	
Loose Housing	22,400	31,748	26,480	+1,958	
Silage Area	19,610	19,036	9,296	+8,578	
Total	76,824	72,260	75,956	-696	

* **Note:** Earthwork volumes are calculated at a 1:1.125 volume compaction ratio.

ALL AREAS

Earthworks for the proposed project will to be undertaken prior to works:

1. Review of existing site condition prior to works.
2. Installation of erosion and sediment control where appropriate.

3. Peg out and where required site calibration for GPS control.

Following earthworks, the following actions will occur:

1. Topsoil replaced on batters and stabilisation works completed.
2. Erosion control material installed at pipe inlets and outlets.
3. Revegetation of batters and slopes.
4. Erosion and sediment control measures monitored and removed following rehabilitation completion.
5. Vegetation protection temporary fencing removed.

LOOSE HOUSING

Earthworks for the proposed loose housing area is proposed to be undertaken in the following works order:

1. Install site drainage management:
 - a. Pit and twin pipeline installed prior to the pad earthworks.
 - b. Erosion control around end of pipe in dam.
 - c. Diversion banks installed upstream of shed pad area directing drainage to pit.
 - d. Topsoil stockpile area established on silage area.
2. Initial topsoil removed from pad area.
3. Bulk earthworks completed in line with design plans.
4. Floor compacted to specified condition,
5. Floor and bank/batters testing progressively monitored,
6. Batters completed and finished to design level.
7. Drainage pipelines completed.

POND 1 AND MANURE STORAGE AREA

Earthworks for the proposed Pond 1, manure storage and connecting area is proposed to be undertaken in the following works order:

1. Groundcover vegetation stripped and removed.
2. Topsoil progressively removed from construction area and stockpiled.
3. Bulk earthworks completed in line with design plans including:
 - a. Cut off trench excavated at pond site.
 - b. Cut of wall constructed.
 - c. Embankments progressively constructed.
4. Floor and manure storage area compacted to specified condition.
5. Floor, manure storage area and bank/batters testing progressively monitored.
6. Connecting drainage and effluent pipelines installed.
7. Batters completed and finished to design level.
8. Topsoil replaced on batters and stabilisation works completed.
9. Erosion control material installed at pipe inlets and outlets.

It must be noted that the mass mortality area is identified for use in a mass mortality event and no construction activities are proposed within this area unless area is required.

POND 3

Earthworks for Pond 3 is proposed to be undertaken in the following works order:

1. Groundcover vegetation stripped and removed.
2. Diversion bank constructed upstream of pond area.
3. Topsoil progressively removed from construction area and stockpiled.
4. Bulk earthworks completed in line with design plans including:
 - a. Cut off trench excavated at pond site.
 - b. Cut of wall constructed.
 - c. Embankments progressively constructed.
5. Floor and manure storage area compacted to specified condition.
6. Floor, manure storage area and bank/batters testing progressively monitored.
7. Connecting drainage and effluent pipelines installed.
8. Batters completed and finished to design level.
9. Topsoil replaced on batters and stabilisation works completed.
10. Erosion control material installed at pipe inlets and outlets.

SILAGE

Earthworks for the proposed silage area is proposed to be undertaken in line with the above works progressively as it provides a source of earth for the other works. Works will occur in the following works order:

1. Groundcover vegetation stripped and removed.
2. Diversion bank constructed and pond started.
3. Topsoil storage area used for housing area works.
4. Earth from pond progressively removed to match Pond earthworks.
5. Bulk earthworks completed in line with design plans including:
 - d. Cut off trench excavated at pond site.
 - e. Cut of wall constructed.
 - f. Embankments progressively constructed.
6. Silage pad area compacted to specified condition.
7. Silage pad area and bank/batters testing progressively monitored.
8. Connecting internal roads culverts installed.
9. Batters completed and finished to design level.
10. Topsoil replaced on batters and stabilisation works completed.
11. Erosion control material installed at pipe inlets and outlets.

MATERNITY HOUSING

No earthworks are required for the conversion of the feedpad to the maternity area.

2.5.3. BUILDING CONSTRUCTION**LOOSE HOUSING**

1. Site preparation
 - a. Survey and set out the building footprint.
 - b. Clear vegetation, debris, and topsoil from the construction area.
 - c. Establish laydown area on silage area, and safety fencing.
2. Foundations
 - a. Excavate footings and install reinforcement.
 - b. Pour concrete strip footings/piers to support structural columns.
 - c. Install service conduits (power, water, effluent drains) before slab pour.
3. Structural framework
 - a. Erect steel columns and beams using cranes and lifting equipment.
 - b. Bolt and weld connections according to engineered specifications.
 - c. Install roof trusses or rafters to form the main frame.
4. Roofing and cladding
 - a. Fix purlins and girts to support roofing and wall cladding.
 - b. Install roofing sheets (iron/Colorbond) with insulation where specified.
 - c. Install side cladding (open, partial, or full) depending on design.

POND 1

No building work required in this area

POND 3

No building work required in this area

MATERNITY HOUSING

The same methodology will be used for the maternity construction as the loose housing system.

2.5.4. COMMISSIONING

This stage relates to the installation of and connection to all parts of the system. These works include electrical work, concreting of laneways and solids storage area, water supply systems for drinking and flood washing, bedding installation, effluent management systems and fencing.

It is estimated that these works will be undertaken over a 12-week period and will incorporate several contractors simultaneously to complete interrelated works.

1. Internal shed works
 - a. Excavate and level the site to concrete lane design grades; compact soil as required.
 - b. Pour and cure the main concrete floor/slab (laneways, feed alleys).

- c. Construct feed barriers, trough structures and access ramps.
 - d. Install water troughs and flood-wash systems.
 - e. Complete drainage channels connected to effluent collection points.
2. Mechanical and electrical services
 - a. Install electrical wiring, lighting, fans (where installed), and backup generator connections.
 - b. Fit water supply lines, pumps, and plumbing for wash-down systems.
3. External works
 - a. Construct access roads, cow laneways, and loading/unloading areas.
 - b. Install stormwater management systems (drains, swales, culverts).
 - c. Landscape and reinstate disturbed areas to reduce erosion/dust
4. Effluent system
 - a. Complete installation of pump and redundancy pump area at Pond 3.
 - b. Check and test installed pipelines or recycle and irrigation systems.
 - c. Review connections and test.
5. Fencing, signage and Monitoring
 - a. Construct fencing of site.
 - b. Install warning systems.
 - c. Complete all signage and safety measures at nominated areas.
 - d. Install monitoring systems as required.

2.6. CONSTRUCTION ELEMENTS

The project proposal includes construction works which have been described above.

2.6.1. STAGES & TIMEFRAMES

The project will be completed in several distinct stages. These are as follows:

- **Stage 1** – Loose housing, effluent ponds, connections and silage pond. This Stage will commence immediately on approval.
- **Stage 2** – Transition of silage area to proposed area. This stage will be completed within 2 years of commissioning of the main loose housing system.
- **Stage 3** – Maternity housing system building. This area will be completed within 10 years of commencement.

The construction activities on the site are proposed within the following estimated timeframes:

Table 2-19 – Stages and Timing

Activities	Stage 1	Stage 2	Stage 3
Site Preparation	3 weeks	Nil	1 week
Earthworks	8 weeks	1 week	Nil
Shed Construction	10 weeks	Nil	2 weeks
Commissioning	12 weeks	Nil	1 week

2.6.2. CONSTRUCTION HOURS

A review of the project activities in relation to noise generation has indicated that impacts from construction activities are proposed to be managed through mitigation measures and in conjunction with relevant Approval conditions. To manage project expectations and allow a review of the proposed construction times, the following times are recommended.

- Monday to Friday: 7AM to 6PM,
- Saturday: 8AM to 6PM, and
- Sundays and public holidays: no work.

2.6.3. LIKELY PLANT AND EQUIPMENT

The likely equipment that is proposed to be utilised for the construction activities is as follows.

Table 2-20 - Major items of construction plant and equipment

Works	Plant	Number on site
All	Grader	1 (part time)
Earthworks	Scraper (self-elevating)	2
	D9 dozer	1
	Water Truck (pending compaction tests)	1

Works	Plant	Number on site
	Roller – sheep foot (pending compaction tests)	1
	Dump truck	1
	Excavator – 50t	1 (part time)
	Other – Vehicles/Utilities	3
Fit out	Concrete trucks	Varies
	Excavator	1
	Bob-cat	1
	Loaders (from farm)	1
	Other vehicles and utilities	3

2.6.4. COMPOUND AREAS

A construction vehicle parking and laydown area is proposed within the existing informal staff car park or silage area within the controlled drainage area. These areas are connected to dedicated controlled drainage where all site run-off is contained.

2.6.5. EMPLOYMENT

The project, wherever possible, will utilise local contractors within their area of expertise. Where there is a shortage in available resources, other contractors within the region will be sourced to undertake works. Local contractors are proposed to be utilised due to the ongoing services and maintenance that will be required for the operation (pumps etc).

It is expected that this portion of the project construction will employ a total of 2 full time equivalent staff as part of the direct project works however this does not include related employment as part of the equipment manufacturing.

2.6.6. HAZARDOUS SUBSTANCES & DANGEROUS GOODS

No explosives are required for the project construction works. No chemicals are required relating to construction activities. Construction machinery will require re-fuelling and diesel fuel will be stored on site in a 2000L diesel fuel trailer. This will be stored on the compacted laydown area with the related spill kit and MSDS.

2.7. OPERATION ELEMENTS

The operation is proposed to meet the following guidelines and codes of practices where appropriate:

- Development Approval and conditions as approved by the Sorell Council and the related State and Local Planning Scheme Codes,
- Licence conditions as approved by Tasmanian Dairy Industry Authority and the related *Farm Dairy Premises Effluent Management Code of Practice and Guidelines, 2025*,
- *Dairy Feedpads and Contained Housing – National Guidelines, 3rd Edition (2024)*
- *Australian Nutrient Management Guidelines – Dairy Soils and Fertiliser Manual (2013)*.
- *Effluent and Manure Management Database for the Australian Dairy Industry (2008)*.
- *Australian Animal Welfare Standards and Guidelines for Cattle, Edition 1, Animal Health Australia, January 2016*,
- *Effluent and Manure Management Database for the Dairy Industry, Dairy Australia, December 2008*.
- Quality Assurance Systems as audited and required by milk supplier annually.
- Relevant water licences and approvals held by the operation.

2.7.1. ANIMAL WELFARE

This operation is proposing a transition the existing milking herd from a grazed pasture with supplementary feed-based system to a fully contained housing management system. The primary driver for this transition is to improve herd health, welfare, and overall productivity by ensuring cattle are managed in an environment that consistently meets their physical and behavioural needs.

The *Australian Animal Welfare Standards and Guidelines for Cattle (2016)* establish minimum requirements that are directly incorporated into the design and operational management of the facility. These include:

- **Adequate nutrition and water:** All cows will be provided with a nutritionally balanced, total mixed ration designed in consultation with nutritionists. A pressurised water reticulation system within the complex ensures continuous access to high-quality drinking water at all times.
- **Social contact and freedom of movement:** The facility design provides open, group-housed areas that facilitate natural social interaction while ensuring each animal has adequate lying, standing, and feeding space consistent with the *National Guidelines for Feedpads and Contained Housing (2024)*.

- **Comfortable resting and loafing areas:** Bedded pack systems are designed to provide soft, dry resting areas. Bedding moisture and temperature will be monitored and managed to maintain optimal comfort and minimise lameness or mastitis risks.
- **Low-stress handling and equipment design:** Laneways, pens, and handling areas have been designed to facilitate calm movement, reduce slipping, and minimise staff–animal stress interactions in line with best-practice handling standards.
- **Health and disease prevention:** Effluent and manure are managed through a multi-pond effluent system and regular cleaning of lanes and loafing areas, significantly reducing disease risks. Preventive herd health plans (vaccination, mastitis monitoring, hoof trimming) will be implemented in consultation with veterinarians.
- **Weather and disaster protection:** The housing system provides year-round protection from Tasmanian winter pugging, storms, and heat stress, while still allowing airflow and natural lighting to reduce humidity and respiratory issues.
- **Breeding and husbandry practices:** Selection and breeding decisions are aligned with the proposed housing system to ensure cattle are suited to higher-yield, housed management environments. Any required husbandry procedures will be carried out by trained staff using low-stress methods, and where pain relief is appropriate, it will be provided.
- **Emergency care and humane management:** Facilities and procedures are in place for the timely treatment of sick or injured animals, including humane euthanasia when required.

In addition to the loose housing system, the proposal includes the conversion of the existing feedpad into a dedicated maternity and transition cow facility, ensuring that animals in late gestation, calving, or early lactation are managed separately in lower-stress environments that meet their specific needs. This includes:

- A proposed 55m × 80m maternity facility designed to house pre-calving and transitional cows in a clean, monitored environment.
- An existing 25m × 15m calf rearing facility, supported by existing calf sheds on the property, ensuring appropriate nutrition, shelter, and biosecurity are maintained for young stock.

These facilities improve calf and cow outcomes by reducing stress at calving, minimising disease transfer, and providing safe, well-managed environments for vulnerable animals.

The operation's commitment to animal welfare is also reinforced through industry-wide quality assurance programs (including those required under the Australian Dairy Industry's milk supply and factory QA systems) and regulatory oversight under Tasmania's planning and environmental framework. Animal comfort and welfare are therefore not only a design driver for the project but a central feature of its day-to-day management.

Heat Load

Heat load and Total Heatload Index (THI) is not considered within this proposal due to the location and climatic conditions of the facility.

2.7.2. FEED MANAGEMENT AND SUPPLIES

The dairy system includes existing feed management infrastructure as described above in **Section 2.4.5**. The main feed ration requirements (hay and silage) are grown on farm with sufficient conservative estimates undertaken on the total feed requirements in an average year. Where this requirement is not met within the farming operation, local producers within the region will be utilised as an alternate source of grain and fodder.

Additional dietary requirements in the form of canola meal, supplement pellets, and grain will also continue to be required to meet the high production requirements of cows. The site maintains a dedicated area near the dairy dedicated to maintaining sufficient volume of these additives to ensure at least 1 weeks supply is stored at all times.

Careful consideration and long-term planning has gone into the storage, handling and management of the feed processing system which includes, minimising feed machinery movements, operating times, wind impacts, volume and location stored and timing of operations. All feeding activities will transition to occurring on-farm with any requirement for farm equipment to use local roads removed.

2.7.3. BIOSECURITY

The operation recognises that strong biosecurity practices are essential for maintaining herd health, safeguarding product quality, and meeting obligations under the *Biosecurity Act 2019* (Tasmania) and national dairy industry expectations. A number of practical measures are already integrated into day-to-day farm management, and these will be extended and formalised as part of the transition to the proposed contained housing system.

Current measures include property signage, designated entry points, and informal monitoring of staff and contractors on arrival. The design of the new dairy complex further strengthens biosecurity by incorporating controlled access points and clear separation of operational areas, helping to limit the introduction and spread of pests, weeds, and livestock diseases.

Feed management is another key element of biosecurity. The majority of forage is produced on-farm, which reduces external risk pathways. Where supplementary feed must be purchased, suppliers are required to provide biosecurity declarations or equivalent assurances, and all imported feed is stored and handled to minimise contamination risks.

As the new facilities are commissioned, biosecurity practices will be embedded within formal operating procedures. These will include:

- reinforcing restricted access to animal areas,
- recording stock and feed movements,
- maintaining clean feed and water systems, and
- adopting protocols for the isolation and treatment of any sick or newly introduced animals.

Together, these measures—supported by the operation’s ongoing focus on animal welfare and effective effluent and nutrient management—will minimise biosecurity risks and ensure compliance with regulatory expectations. The system is designed to evolve into a structured biosecurity framework consistent with both state requirements and national dairy industry standards.

2.7.4. VERMIN AND PEST CONTROL

Vermin such as rodents, flies, and lice can be attracted to intensive livestock operations through the availability of feed and shelter. To minimise these risks, the operation will extend its existing dairy shed and commodity storage practices to the new facility. Key management measures include maintaining strict feed handling protocols to reduce spillage and waste, thereby limiting the attraction of pests.

If vermin populations reach nuisance levels, targeted control strategies will be applied. These may include baiting programs around feed storage and processing areas, together with the use of fly traps in and around the barns and dairy complex.

Livestock health programs also play a role in pest management. Routine vaccination will continue for clostridial diseases (including botulism), leptospirosis, pestivirus, and other diseases identified as relevant through veterinary advice.

Effective control of flies and other pests is not only important for biosecurity but also for animal welfare. Cattle that are affected by vermin are prone to stress and reduced productivity. As part of its animal welfare management framework, the operation is committed to keeping pest levels at low, manageable thresholds across the site and its surrounds.

2.7.5. LIGHTING

Lighting within the proposed housing facility has been designed to support both cow welfare and staff safety while minimising off-site impacts.

The National Guidelines (2024) recommend that light and dark periods be managed to support cow health and behaviour. Cows should have access to 6–8 hours of darkness daily, delivered in a minimum 6-hour interval, particularly if three-times-daily milking is undertaken, which may be a future consideration at this site. In addition, light intensity within housing areas should be maintained at between 160–215 lux, measured at a uniform level 0.9 m above the resting surface. These requirements have been incorporated into the facility design.

The housing system will therefore provide controlled lighting to ensure consistent cow comfort, resting behaviour, and herd productivity. Artificial lighting will supplement natural daylight where required, with even coverage across barns and work areas.

There are no changes proposed to the existing external lighting layout within the site which will be maintained to provide safe and efficient operations during early or late milking and management tasks within the lanes, dairy yard and associated handling facilities.

This approach ensures that lighting design not only complies with national guidelines but also contributes to animal welfare, safe working conditions, and minimal amenity impacts.

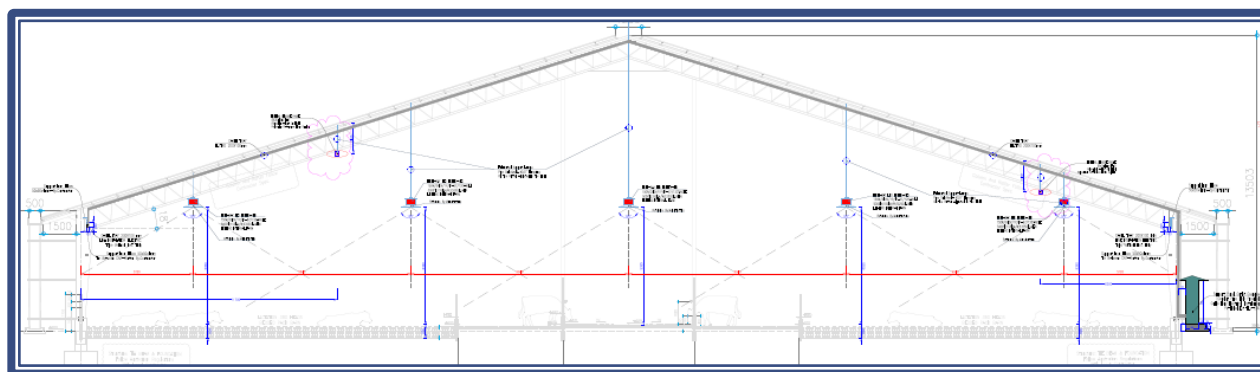


Figure 2-18 – Snapshot of image showing typical internal lighting system within the housing area (Source: PRS library)

2.7.6. HAZARDS & RISK

Fire Management Strategy

FIRE MANAGEMENT

The proposed dairy housing facility is located within a rural farming landscape characterised by a cooler, high-rainfall climate, which reduces but does not eliminate bushfire risk. The site is covered by the Bushfire-Prone Areas Overlay under the Tasmanian Planning Scheme, and therefore compliance with the Bushfire-Prone Areas Code is required. Fire management measures have been incorporated into the design and operation of the facility to ensure the safety of livestock, staff, and surrounding land uses.

FACILITY DESIGN AND CONSTRUCTION

Loose housing facilities are classified as Class 10a structures under the National Construction Code. They are constructed using fire-resistant and non-combustible materials, including steel frames, iron roofing, and concrete laneways. The open-sided design improves ventilation and reduces heat accumulation, while internal and adjoining concrete cow lanes and gravel/earthen feed access tracks act as defensible spaces to limit the spread of fire.

INFRASTRUCTURE AND EQUIPMENT

Effluent flood-wash systems maintain clean, low-risk surfaces on concrete cow lanes. All electrical and mechanical equipment is proposed in dedicated areas kept free of vegetation and combustible material. The site is connected to mains power and supported by a diesel generator for emergency backup, ensuring critical systems such as water supply, effluent handling and lighting can continue to operate during an outage.

FARM FIRE PLAN AND PREPAREDNESS

The property maintains a farm fire management plan consistent with the Bushfire-Prone Areas Code requirements, setting out responsibilities, actions, and coordination with the Tasmania Fire Service. Firefighting equipment—including pumps, hoses, and personal protective equipment—is maintained and tested regularly, particularly prior to each fire season. Staff and family members are trained in the use of equipment and emergency response procedures. The property and operation were a key safe haven for locals during fires future supporting the on-going management of the property to reduce fire risk.

ACCESS AND WATER SUPPLY

Clear access and egress are provided for firefighting appliances, ensuring safe entry and exit for emergency services. Several freshwater dams are available across the property and provide reliable, accessible water supplies for firefighting vehicles.

ONGOING RISK REDUCTION

Separation distances from adjoining paddocks and vegetation will be maintained through regular mowing and slashing, in line with fuel management requirements of the Bushfire-Prone Areas Code. These measures, combined with defensible construction, access to reliable water sources, and operational preparedness, demonstrate that the proposed facility meets the bushfire management objectives of the Tasmanian Planning Scheme.

Chemical and Hazardous Substances

The proposed loose housing system does not require the routine use of chemicals for its direct operation, with all fixed plant powered by electricity. However, as part of the broader dairy complex, a range of chemicals and farm inputs are required to support animal health, milking operations, plant cleaning, and pasture management.

These include veterinary medicines, cleaning agents, udder hygiene products, footbath treatments, fuels, and agricultural chemicals. While the volumes involved are generally small and consistent with normal dairy industry practice, appropriate controls are in place to ensure safe storage, handling, and disposal in accordance with the *Work Health and Safety Act 2012* (Tasmania), relevant Australian Standards, and the Australian Dairy Industry's quality assurance programs.

Chemicals are stored in designated, secure areas across the dairy complex, separated from livestock housing and effluent ponds to prevent contamination risks. Safety Data Sheets (SDS) are available for all products, and staff are trained in the use of personal protective equipment (PPE) and spill management. Where fuels are required for emergency power generation, storage will be via a double-bunded tank system.

Table 2-21 – Chemicals and controls

Chemical Type	Typical use/type	Typical Use in Dairy Operation	Storage / Management Measures
Veterinary medicines & vaccines	clostridial, leptospirosis, pestivirus vaccines; antibiotics where prescribed	Herd health management and disease prevention	Stored in lockable cabinet/refrigerator; restricted access; veterinary oversight; expired products disposed via licensed collection
Dairy detergents & sanitisers	alkali cleaners, acid rinses, chlorine/peracetic acid	Cleaning and disinfection of milking plant, lines, vats, and effluent handling systems	Bunded storage in original containers; SDS available; staff trained in safe handling and PPE
Teat disinfectants	iodine sprays/dips, chlorhexidine	Udder hygiene and mastitis prevention	Stored in labelled, sealed containers; chemical cupboard storage; handled with gloves/eye protection
Footbath chemicals	copper sulphate, zinc sulphate, formalin if used	Hoof health management and lameness prevention	Stored in ventilated, secure location; prepared in designated footbaths; wash-down water directed into effluent system
Fuel	diesel for backup generator only	Emergency power supply	Stored in double-bunded tank system; located away from livestock/effluent ponds; spill kits on site; regular inspections
Agricultural chemicals	herbicides, pesticides, rodenticides, fly baits	Weed, pest, and vermin control in pastures, feed storage, and housing areas	Stored in secure, bunded chemical shed; products labelled and separated; PPE used; container disposal via drumMUSTER
Fertilisers	granular and liquid	Pasture and fodder crop nutrient management	Stored in sealed containers or tanks in dry covered areas; separated from effluent system; applied in line with nutrient management plan

Across the dairy complex, chemical use is limited to standard industry products and volumes necessary for herd health, cleaning, and crop production. By restricting dangerous goods storage, securing designated chemical areas, and adopting bunded systems for fuel, the operation ensures compliance with statutory requirements while minimising risks to staff, livestock, and the environment.

Deaths and Mass Mortality

All livestock operations lose stock which can die from a range of common ailments associated with animal husbandry. General mortality rates in dairy farms suggest 2%-4% mortality rate and as a result, the operation will plan for a loss of 40 cows annually. This only proposes a minimal increase in number due to an increase in herd however where animal welfare will be improved, this total number may well reduce even with a modest increase in herd number.

The current management of mortality is for on-site composting with the revised area adjoining proposed pond 1 to be dedicated for this purpose.

Emergency situations can occur and although are rare, must be considered in planning for an intensive animal system. To manage a mass mortality event, an area within the site has been allocated for a single pit to be constructed should an event of this type occur (only being opened at the time of the event). This area meets the following criteria:

- It is accessible for earthmoving equipment and machinery to deliver dead animals to the site,
- The site has low permeability soils and a depth of approximately 4.59m to local groundwater,
- There is a low probability of impacting on the surrounding environment based on the absence of a sensitivity overlay,

- No native vegetation is required to be removed,
- The site will not interact with local and regional groundwater,

A single burial pit within the nominated area of 10m wide and a total depth of 3.5m deep below the natural surface with batters of 1:1 would be constructed utilising an excavator. Cattle would be placed within the pit allowing a 2m covering of replaced earth the pit length would be 67m to allow sufficient capacity to bury all housed stock on site.



Figure 2-19 - Image identifying mass mortality pit location (Source: PRS QGIS)

Waste Milk Disposal

This project does not propose change to milk storage and management areas as milking will continue to utilise existing infrastructure. The dairy milking parlour is connected to the effluent management system which relies on an effluent utilisation area that works correctly. It is important that waste milk is not disposed of within the effluent system. Current waste milk disposal practices will continue which include the following:

- Where suitable, utilisation by calves,
- Where suitable, export off site to piggery or other industry for utilisation,
- Drainage of milk to irrigation sump or irrigation channel for irrigation (ensuring that it will not impact on the environment) and at a utilisation rate of 1:10,
- Will not be incorporated with any effluent management system.

2.7.7. FOOD SAFETY

The dairy operation has and maintains a Dairy Food Safety Licence (SORF177) as a milk producer and processor through the Tasmanian Dairy Industry Authority (TDIA) and Sorrell Council. The housing facilities do not relate to milking operations however consider their herd management in relation to food safety. The operation will continue to meet their requirements for this licence.

2.7.8. OPERATION HOURS

The project, being an intensive animal site, will operate over 24 hours every day however there are activities that will not occur at all times. Items of plant such as water supply pumps and cooling systems will operate on an as needed basis. Milking activities and related feed deliveries are expected to occur between the hours of 3:45AM and 9PM at night pending season and herd requirements. These activities will require the use of feed mixing and delivery systems and lighting for safe working areas. These activities will remain consistent with the current operation and based on the distance of receivers unlikely to cause any impacts on surrounding users.

2.7.9. EMPLOYMENT

The conversion of the operations to the loose housing system will require a higher level of inputs in the form of management, feeding and within the cropping systems. This will generate an expected two additional labour unit requirements being full time and seasonal. At full capacity, it is estimated that the operation will employ up to 10 full time equivalent staff and local contractors and seasonal staff as required.

It is also expected that this project will provide additional flow on benefits to the region which will continue to utilise local machinery sales and service business, fuel, rural supplies, etc. Estimates on the flow on effects of dairy investment show that \$8 is spent within the local economy for every \$1 spent by the dairy operation.

2.8. ALTERNATIVES

The proposed works have been designed based on extensive research, site-based assessments and review of alternative options. The alternate options considered include:

- Continue to operate without the change,
- Construction at an alternate location, and
- This project

2.8.1. CONTINUE TO OPERATE WITH NO CHANGE

The applicant has been engaged in dairy production for more than 65 years, beginning with a small herd and progressively expanding to the current 780-cow operation. The existing system is predominantly pasture-based, supplemented with feed on a concrete feedpad. While this approach has been effective historically, it is increasingly constrained by factors outside the operations control. Extreme weather conditions, variable feed quality, long walking distances for cows, and seasonal pugging all impact animal welfare, production levels, and overall farm efficiency.

Continuing with the current system is technically possible but would expose the business to rising risks associated with climate variability, pasture utilisation limits, and fluctuating production outcomes. By contrast, a transition to a loose housing contained system provides a pathway to secure the long-term viability of the operation.

2.8.2. CONSTRUCTION AT AN ALTERNATE LOCATION

The site selection process has included a review of the feasibility of developing the contained housing facility and associated effluent management system at other locations across the applicant's property. As outlined in **Section 1.6.2**, several key requirements were considered in the assessment of alternate sites, including:

- cow welfare and minimisation of travel distances,
- proximity to existing dairy infrastructure and property access,
- soil capability and land area suitability,
- availability of sufficient separation distances and buffers from neighbouring properties and public facilities, and
- alignment with long-term operational plans.

Alternate locations were reviewed with a focus on maintaining efficient integration with the existing dairy complex. This included consideration of areas on the opposite side of Bream Creek Road and other paddocks within the holding.

However, these sites were ruled out due to:

- ✓ **Soil suitability** — certain areas were found to have poorer load-bearing capacity, increased land slip hazard or drainage characteristics, increasing construction costs and long-term management risks.
- ✓ **Operational logistics** — relocating facilities across Bream Creek Road would require cattle to cross a public road, introducing animal welfare, traffic safety, and biosecurity risks.
- ✓ **Infrastructure duplication** — moving away from the existing dairy complex would necessitate significant new investment in feed delivery systems, effluent transfer infrastructure, power supply, and laneways.
- ✓ **Cost and efficiency** — the duplication of infrastructure and reduced integration with existing assets would result in higher capital costs and increased ongoing labour and operational requirements.

The selected location, immediately adjoining the current dairy complex, therefore provides the most practical, efficient, and sustainable option. It allows continued use of existing infrastructure and services, minimises disruption to operations, and ensures that animal welfare, environmental performance, and planning requirements can be met effectively.

2.8.3. THIS PROJECT

This proposal is the outcome of extensive research, site-based analysis, and input from a team of specialist consultants. The design has been carefully integrated with the existing dairy complex to enable the continued use of established infrastructure while minimising the need for duplication of services.

The development represents a strategic transition of the operation to a modern loose housing contained system, providing:

- ✓ improved animal welfare through controlled housing conditions,
- ✓ greater efficiency in feed use, effluent capture, and nutrient recycling,
- ✓ reduced vulnerability to seasonal and climate variability, and
- ✓ long-term productivity gains that secure the viability of the enterprise.

By aligning with National Guidelines, Tasmanian regulatory requirements, and best-practice environmental management, the project will not only sustain the family farming business into the future but also deliver wider benefits to the local community and regional economy.

2.8.4. JUSTIFICATION OF THE SELECTED OPTION

The selected option — development of a loose housing contained system integrated with the existing dairy complex — provides the best balance of animal welfare, efficiency, environmental protection, and economic viability.

- ✓ It improves cow welfare by providing a controlled, comfortable environment that reduces stress, disease risk, and production variability.
- ✓ It maximises operational efficiency by building alongside existing infrastructure, avoiding costly duplication and simplifying herd and effluent management.
- ✓ It enhances environmental performance through improved effluent capture, treatment, and nutrient recycling, reducing risks to land and water.
- ✓ It ensures economic sustainability by stabilising production, reducing climate-related risks, and supporting the long-term viability of the enterprise.

Alternate options — such as continuing with the current pasture-based system or constructing facilities elsewhere on the property — were assessed but found to be less practical, less cost-effective, and less beneficial for animal welfare and environmental outcomes.

In summary, the selected option is the most sustainable and practical pathway to secure the long-term future of the operation while meeting regulatory and industry standards.

3. STRATEGIC AND STATUTORY CONTEXT

This section reviews Commonwealth and State Legislation as well as the Local Planning Policies that apply to the project. A number of statutory planning controls need to be addressed for the purposes of the project assessment.

3.1. COMMONWEALTH LEGISLATION

3.1.1. ENVIRONMENTAL PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

This Act is the Australian Governments central piece of environmental legislation. The *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)* provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places – defined in the *EPBC Act* as matters of National environmental significance.

The objects of this Act are:

- a) *to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance; and*
- b) *to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources; and*
- c) *to promote the conservation of biodiversity; and*
- ca) *to provide for the protection and conservation of heritage; and*
- d) *to promote a co-operative approach to the protection and management of the environment involving governments, the community, land-holders and indigenous peoples; and*
- e) *to assist in the co-operative implementation of Australia's international environmental responsibilities; and*
- f) *to recognise the role of indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity; and*
- g) *to promote the use of indigenous peoples' knowledge of biodiversity with the involvement of, and in co-operation with, the owners of the knowledge.*

These nine matters to which this Act applies are:

- *World heritage sites,*
- *National heritage places,*
- *Wetlands of international importance (Ramsar wetlands)*
- *Nationally threatened species and ecological communities*
- *Migratory species*
- *Commonwealth marine areas*
- *The Great Barrier Reef Marine Park*
- *Nuclear actions.*

The *EPBC Act* confers jurisdiction over actions that have a significant impact on the environment where the actions affect, or are taken on, Commonwealth land, or are carried out by a Commonwealth agency.

COMMENT

This EIS provides an assessment of impacts and measures provided to protect the environment, promote the conservation of and ecologically sustainable use of natural resources, promote biodiversity conservation and provide for the protection and conservation of heritage. Matters of National Environmental Significance (MNES) have been assessed and identified that no Commonwealth land or MNES are likely to be significantly impacted by the project. As a result, approval from the Commonwealth Minister will not be sought. Further information relating to this is found in **Section 5.4**.

3.2. STATE AND LOCAL PLANNING PROVISIONS

A number of statutory planning controls need to be addressed for the project. This section reviews State and Local planning legislation and policies to determine what approvals are likely to be required to allow the proposed development to proceed.

The table provided below identifies relevant clauses within the Tasmanian State Planning Provisions, identifies their consistency and provides an explanation where required. Where a detailed response is required, additional information is addressed below the following table.

3.2.1. STATE PLANNING PROVISIONS (SPPs)

The Tasmanian Planning Scheme outlines the State Planning Provisions (SPPs) which include administration clauses, general provisions, use and development standards for zones and codes and Local Provisions Schedule requirements for each municipal area in Tasmania.

The purpose of the planning scheme is to further the objectives of the Resource Management and Planning System and the planning process set out in Parts 1 and 2 of Schedule 1 of the Land Use Planning and Approvals Act 1993 and be consistent with State Policies in force under the State Policies and Projects Act 1993

Below is a review of the project proposal in relation to SPPs.

Table 3-1 – Tasmanian Planning Scheme planning provisions

Clause	Description	Consistent	Explanation
3.0	Interpretation		
3.1	Planning Terms and Definitions – intensive animal husbandry, means use of land to keep or breed farm animals, including birds, within a concentrated and confined animal growing operation by importing most food from outside the animal enclosures and includes a feedlot, poultry farm or piggery. Agricultural use, means use of the land for propagating, cultivating or harvesting plants or for keeping and breeding of animals, excluding domestic animals and pets. It includes the handling, packing or storing of plant and animal produce for dispatch to processors. It includes controlled environment agriculture and plantation forestry. Prime agricultural land, means agricultural land classified as class 1, 2 or 3 land using the class definitions and methodology from the Land Capability Handbook, Guidelines for Classification of Agricultural Land in Tasmania, 2nd edition, 1999.	Yes	In the absence of a specific definition for “Intensive Dairy” the activity has been considered to fall under the Intensive Animal Husbandry definition. The site use is agricultural use The site where the proposed operation is classified as Class 3 & Class 4 which in turn classifies the site as prime agricultural land
4.0	Exemptions		
4.0.1	Use or development listed in Tables 4.1 – 4.6 is exempt from requiring a permit provided it meets the corresponding requirements.	Yes	Activity is not exempt, and a planning permit is required. This document is to support the planning permit application to be lodged with Sorell City Council
6.0	Assessment of an Application for Use or Development		
6.0		Yes	This application has been development in line with the requirements of this section of the SPPs
6.2	Use Classes		
Resource Development	use of land for propagating, cultivating or harvesting plants or for keeping and breeding of livestock or fishstock. If the land is so used, the use may include the handling, packing or storing of produce for dispatch to processors. Examples include agricultural use, aquaculture, controlled environment agriculture, crop production, horse stud, intensive animal husbandry, plantation forestry, forest operations, turf growing and marine farming shore facility.		Although in both the Rural and Agricultural Zones a use class or Resource Development does not trigger a Development Approval consultation with council and Tasmania Dairy Industry Authority indicates that this development requires authority consideration and therefore a Permit

Clause	Description	Consistent	Explanation
	Zones		
20	Rural zone	Yes	See below for further details
21	Agricultural Zone	Yes	See below for further details
C9	Attenuation Code		
C9.1.1	The purpose of the Attenuation Code is: To minimise adverse impacts on the health, safety and amenity of sensitive use from activities which have the potential to cause emissions.	Yes	The site has been designed specifically considering the attenuation distances nominated within the SPPs
C9.1.2	To minimise the likelihood for sensitive use to conflict with, interfere with, or constrain, activities which have the potential to cause emissions.		
C9.5	Use Standards		
C9.5.1	Activities with potential to cause emissions		With the absence of a definition for an intensive dairy in the planning provisions this application has been prepared applying the Intensive animal husbandry definition and as such have applied the Feedlot classification which is considered an activity with potential to cause emissions. An odour assessment and management plan has been prepared to support this application and is discussed further in Section 5.7 below.
Table C9.1	Attenuation Distances Feedlot Intensive animal husbandry (excluding piggeries, poultry farms, horse stables, and any such operation carried out at an abattoir, slaughterhouse or saleyard or for the purpose only of drought or other emergency feeding) - emissions such as odour, noise and dust. <i>Attenuation Distance 3,000m</i> Milk processing works The conduct of works at which milk is evaporated or otherwise processed for the manufacture of milk powder, cheese, butter, ice cream or other similar dairy products - emissions such as odour and noise. <i>Attenuation Distance 100m</i> Milking shed (dairy) Milk shed operations on dairy farms - emissions such as odour, noise and dust. <i>Attenuation Distance 300m</i>		The activity at the site is not described as a feedlot – however does relate to the intensive use of the site for dairy cattle. A separation distance utilising industry relevant data is provided in the attached Odour Assessment. The activity at the site would be classed as a Level 1 activity under the <i>Environmental Management and Pollution Control Act 1994</i> and as such the attenuation distance would be 100m. The activity at the site would be classed as a Level 1 under the <i>Environmental Management and Pollution Control Act 1994</i> and as such the attenuation distance would be 300m

3.2.1.1. ZONES

The property is identified as being within the Rural Zone and surrounded by the Agricultural Zone.



CLAUSE 20 - RURAL ZONE

The purpose of the Rural Zone is:

- To provide for a range of use or development in a rural location:
 - a) where agricultural use is limited or marginal due to topographical, environmental or other site or regional characteristics;
 - b) that requires a rural location for operational reasons;
 - c) is compatible with agricultural use if occurring on agricultural land; and
 - d) minimises adverse impacts on surrounding uses.
- To minimise conversion of agricultural land for non-agricultural use.
- To ensure that use or development is of a scale and intensity that is appropriate for a rural location and does not compromise the function of surrounding settlements.

CLAUSE 21 - AGRICULTURAL ZONE

The purpose of the Agriculture Zone is:

- To provide for the use or development of land for agricultural use
- To protect land for the use or development of agricultural use by minimising:
 - a) conflict with or interference from non-agricultural uses;
 - b) Non-agricultural use or development that precludes the return of the land to agricultural use; and
 - c) use of land for non-agricultural use in irrigation districts
- To provide for use or development that supports the use of the land for agricultural use.

COMMENT

The project is defined as use class **Resource Development** and specifically **Intensive Animal Husbandry (Intensive dairy farm)**.

Resource Development, use of land for propagating, cultivating or harvesting plants or for keeping and breeding of livestock or fish stock. If the land is so used, the use may include the handling, packing or storing of produce for dispatch to processors. Examples include agricultural use, aquaculture, controlled environment agriculture, crop production, horse stud, **intensive animal husbandry**, plantation forestry, forest operations, turf growing and marine farming shore facility.

intensive animal husbandry, means use of land to keep or breed farm animals, including birds, within a concentrated and confined animal growing operation by importing most food from outside the animal enclosures and includes a feedlot, poultry farm or piggery.

The proposal directly supports the purpose and objectives of the Rural Zone, as it:

- Strengthens the long-term viability of the existing agricultural business;
- Does not fragment or sterilise agricultural land; and
- Locates intensive operations in proximity to existing farm infrastructure.

The proposed works meet the minimum setback of 5m from property boundaries and the 200 m attenuation distance from dwellings not in the same ownership.

Watercourse setback

The Planning Scheme specifies a 50 m setback from a watercourse.

- Where this standard can be met on the site, the design complies.
- In one location, due to existing infrastructure and site layout, the development (e.g. loose housing pad) is located closer within a mapped watercourse.

In this case, the proposal is considered consistent with the Performance Criteria, as it incorporates the following safeguards to ensure there are no off-site impacts:

- Effluent ponds, manure storage areas and bedding areas are fully lined and constructed to TDIA, NRE and EPA guidelines and the site's Effluent Management Plan, preventing seepage.
- Diversion drains and erosion/sediment controls will separate clean stormwater from operational areas.
- Vegetated buffer strips will be maintained along drainage lines to provide additional filtration and soil stability.
- Routine soil monitoring will be undertaken to confirm system performance.

On this basis, although the numeric setback cannot be achieved in full, the project satisfies the objectives of the Planning Scheme by protecting water quality, maintaining ecosystem values, and ensuring compatibility with adjoining land uses.

3.2.1.2. LAND CAPABILITY CLASSIFICATION

The site is mapped under the Tasmanian Land Capability Classification System (*Land Capability Handbook – Guidelines for the Classification of Agricultural Land in Tasmania*, 1999) as containing areas of both Class 3 and Class 4 land.



CLASS 3 - Land suitable for cropping and intensive grazing. Land in this class is moderately productive and suitable for a wide range of agricultural uses, including cropping and intensive grazing. However, moderate limitations apply, which

restrict crop choice or reduce productivity compared to Class 1 or 2 land. Soil conservation practices and careful management are required to sustain use, and cropping should typically be limited to three to five years out of ten within a pasture-based rotation.

CLASS 4 - Land primarily suitable for grazing Land in this class is primarily suited to grazing with only occasional cropping possible. Severe limitations restrict both the range and frequency of crops that can be grown. Major conservation practices are required to avoid soil degradation, and cropping is generally confined to one to two years out of ten within a pasture rotation. Although some regions currently allow more frequent cropping due to drier-than-average conditions, this carries a higher risk of soil or crop damage if ‘normal’ rainfall patterns return.

COMMENT

The property is classified as a mix of Class 3 and Class 4 land, with approximately 60% mapped as Class 4 (non-prime agricultural land) and up to 40% mapped as Class 3 (prime agricultural land). Under the Planning Scheme, Classes 1–3 are identified as Prime Agricultural Land due to their capacity to support intensive agricultural activities such as cropping, horticulture, and improved pasture systems. Class 4 is not considered prime, as it is generally limited to grazing and unsuitable for regular cropping.

The proposed development will be sited primarily on Class 4 land, with the exception of approximately 1.8 hectares of Class 3 land required for the loose-housing facility. This area is not currently a key fodder production area and represents only a small proportion of the property’s overall agricultural resource. Importantly, the housing system will directly support the broader farm enterprise by improving efficiency, animal welfare, and long-term viability of production. On this basis, the project does not result in a significant loss of prime agricultural land and is consistent with the purpose of both the Rural and Agriculture Zones to protect and enhance agricultural use.

3.2.2. LOCAL PLANNING PROVISIONS (LPPs)

The Sorell Local Planning Schedule (LPS) includes zone maps, overlay maps, local area objectives, particular purpose zones, specific area plans, site-specific qualifications and code lists for the Sorell municipal area in Tasmania.

Table 3-2 - Sorell Local Planning Schedule assessment

Code	Description	Consistent	Explanation
Planning Scheme Code Overlay			
7	<i>Natural Assets Code</i> Waterway and coastal protection area	Yes	The project design incorporates closed-catchment drainage, ensuring no off-site run-off to mapped waterways. The existing drainage line intersecting the site will be piped beneath the housing pad to maintain natural flows to the farm dam.
	Priority vegetation	Yes	The Priority Vegetation overlay applies; however, no clearing of native vegetation is required. Trees previously identified in the housing footprint were storm-damaged and removed. All other vegetation to be removed is non-native.
8	<i>Scenic Protection Code</i> Ragged Tier	Yes	The development has been assessed against the Scenic Protection Code. Siting, colour, and design ensure compatibility with the rural landscape. Views are limited and have been addressed in Section 5.11 (Visual Amenity).
13	<i>Bushfire-Prone Areas Code</i> Bushfire Prone Area	Yes	The site is within the Bushfire-Prone Area overlay, but the development is not a vulnerable or hazardous use under the SPPs. Fire management measures will be applied to ensure safety.
15	<i>Landslip Hazard Code</i> Low landslip hazard band - Low	Yes	Surrounding land contains low hazard areas, but the development footprint itself is not within a mapped landslip hazard area. Geotechnical investigations confirm the site is suitable and no Landslip Hazard Plan is required.

3.2.2.1. CODE OVERLAYS

CODE 7: NATURAL ASSET CODE

The purpose of the Natural Asset Code is:

- To minimise impacts on water quality, natural assets including native riparian vegetation, river condition and the natural ecological function of watercourses, wetlands and lakes.
- To minimise impacts on coastal and foreshore assets, native littoral vegetation, natural coastal processes and the natural ecological function of the coast.
- To protect vulnerable coastal areas to enable natural processes to continue to occur, including the landward transgression of sand dunes, wetlands, saltmarshes and other sensitive coastal habitats due to sea-level rise.
- To minimise impacts on identified priority vegetation.
- To manage impacts on threatened fauna species

WATERWAY AND COASTAL PROTECTION AREA

The site is shown below with the waterway and coastal protection area overlay shaded in light blue.



Figure 3-1 - Image showing Waterway & Coastal Protection Area (Source: QGIS with Tasmania's Code Overlay)

The Code gives the following definition for the overlay - *means land:*

- shown on an overlay map in the relevant Local Provisions Schedule as within a waterway and coastal protection area; or*
- within the relevant distance from a watercourse, wetland, lake or the coast shown in the Table C7.3 below, but does not include a piped watercourse or piped drainage line.*

If an inconsistency for the width exists between Table C7.3 and the area shown on the overlay map, the greater distance prevails, excluding the width measured from the high-water mark of tidal waters where the distance shown on the overlay map in the relevant Local Provisions Schedule prevails.

The depiction of a watercourse, or a section of a watercourse on an overlay map in the relevant Local Provisions Schedule, is definitive regardless of the actual area of the catchment.

COMMENT

The project design has been developed to avoid impacts on mapped waterways and drainage lines. The site is configured as a closed catchment system, ensuring that runoff is directed into the effluent management system and not discharged to natural waterways.

A small, mapped drainage line traverses the location of the proposed housing facility. To maintain natural drainage function, the design incorporates a piped culvert system beneath the housing pad, ensuring that catchment flows continue uninterrupted to the on-farm dam on the eastern side.

This arrangement, in conjunction with upstream diversion drains and controlled effluent management, ensures that:

- Natural catchment volumes and downstream flows are maintained.
- No untreated runoff is discharged to natural waterways.
- The project remains compliant with the purpose of the Waterway and Coastal Protection Area overlay.

PRIORITY VEGETATION

The site is shown below with the Priority Vegetation overlay shown in green hatching.



Figure 3-2 - Image showing Priority Vegetation Area (Source: QGIS with Tasmania's Code Overlay)

Under the code priority vegetation area is defined as *land shown on an overlay map in the relevant Local Provisions Schedule, as within a priority vegetation area.*

COMMENT

The project site includes a mapped Priority Vegetation overlay in the vicinity of the proposed housing facility. However, site inspections confirm that the mapped area does not currently contain intact native vegetation. The vegetation previously identified at this location was storm-damaged and subsequently removed. The remaining trees to be cleared as part of the project are non-native plantings associated with past farm activities.

The development footprint has been designed to avoid removal of remnant native vegetation, with no clearance proposed in areas of mapped or confirmed ecological value. All surrounding vegetation of conservation significance will be retained and protected.

Accordingly, the proposal is consistent with the objectives of the Priority Vegetation provisions of the Code, as it avoids unnecessary clearing, minimises ecological impacts, and maintains the site's capacity for continued agricultural production.

Further discussion is included in **Section 5.4** of this document.

CODE 8: SCENIC PROTECTION CODE

The purpose of the Scenic Protection Code is to recognise and protect landscapes that are identified as important for their scenic values. The figure below shows the site with the Scenic Protection overlay, which identifies the Ragged Tier Scenic Protection Area hatched in blue.



Figure 3-3 - Image showing Scenic Protection Code Overlay (Source: QGIS with Tasmania's Code Overlay)

SOR C8.1.13 - RAGGED TIER

The area is characterised by farmland extending from the foothills to the coast and the vegetated skylines and hill faces of the northern hills.

Scenic Value:

- Agricultural uses are an integral part of the landscape character.
- (Farmland in the gently sloping valley is framed by vegetated skylines and hill faces along the range that runs north /south.

Management Objectives:

- Maintain the rural character and significant views to the coast and Marion Bay.
- Development must be compatible with surrounding rural character including scale, exterior building materials and colours.
- Discourage development along significant skylines, ridge lines and visually prominent locations that are visible from main public roads, such as Marion Bay Road Bay Roads.
- Development on the vegetated hills must be unobtrusive by its siting, design, exterior finish and landscaping, or be designed to have minimal visual impact consistent with the quality of the scenic and landscape values of the site and area.

COMMENT

The proposed development has been assessed in detail against the Scenic Protection Code and the Ragged Tier management objectives. Key considerations are as follows:

- **Location and siting:** The facility is located within an established agricultural setting and cut into the slope, which reduces its prominence when viewed from Bream Creek Road.

- **Materials and finishes:** Natural, muted exterior colours will be used to ensure compatibility with the surrounding rural character.
- **Public vantage points:** Views from Bay Road are screened by topography and vegetation. On Marion Bay Road, only a short 200 m clearing east of Bream Creek Road may provide partial views. This exposure is brief and further softened by vegetation, distance, and the use of natural finishes.
- **Scenic values retained:** The rural landscape character, including farmland framed by hills and skylines, will be maintained, with no intrusion into ridgelines or visually prominent locations.

This assessment aligns with and should be read in conjunction with **Section 5.11** Visual Amenity which provides the supporting site photographs, cross-sections, and analysis. Together, these sections demonstrate that the proposal is consistent with the objectives of the Ragged Tier Scenic Protection Area and the Scenic Protection Code more broadly

CODE 13: BUSHFIRE PRONE AREA

The purpose of the Bushfire-Prone Areas Code is to ensure that use and development is appropriately designed, located, serviced, and constructed to reduce the risk to human life and property, and the cost to the community, caused by bushfires.

The project site is mapped within the Bushfire-Prone Areas Overlay. The proposed development comprises non-habitable agricultural infrastructure (dairy housing facility, feed and effluent management structures), which is not classified as a vulnerable or hazardous use under the Tasmanian Planning Scheme. As such, a full Bushfire Hazard Management Plan (BHMP) is not automatically required.

Nonetheless, the project has been assessed against the intent of the Code. The following matters have been considered:

- The development does not involve habitable buildings and therefore does not require bushfire protection measures equivalent to residential or vulnerable uses.
- The site is located within a cleared agricultural landscape, where surrounding pasture and existing access tracks provide a natural buffer and facilitate access for firefighting equipment.
- Fire safety measures are incorporated into the design and operation of the facility, including:
 - Maintaining defendable space around all new infrastructure.
 - Ensuring that vegetative fuels (e.g. plantations, grassed laneways) are managed to reduce fine-fuel loads.
 - Providing all-weather access for emergency vehicles via Bream Creek Road and internal laneways.
 - Maintaining on-farm water storages that can be made available for fire-fighting purposes.

The below image shows the site with the bushfire prone area overlay.



Figure 3-4 - Image showing Bushfire Prone Areas (Source: QGIS with Tasmania's Code Overlay)

COMMENT

The proposed development is consistent with the purpose of the Bushfire-Prone Areas Code. While a full BHMP has not been prepared, the nature of the use (non-habitable farm buildings), the cleared agricultural setting, and the proposed fire-sensitive management practices ensure that bushfire risk is minimised.

It should be noted that the property and its owners were able to provide safe haven during the Dunalley bushfires in 2013. The operation has and continues to provide support to local fire crews assisting in the protection of local infrastructure.

CODE 15: LANDSLIP HAZARD CODE

The purpose of the Landslip Hazard Code is to ensure that a tolerable risk can be achieved and maintained for the type, scale, intensity, and intended life of use or development on land within a landslip hazard area.

The project site has been reviewed against the Landslip Hazard Overlay mapping. The proposed dairy housing facility and associated effluent infrastructure are located outside of any mapped landslip hazard area. Surrounding land to the east and south of the property includes small areas of Low Landslip Hazard Band, however these are not within the proposed development footprint.

Extensive site-specific geotechnical investigations have been undertaken as part of the project planning. These investigations confirm that the soils and underlying geology are suitable for the construction of the shed pad, effluent ponds, and related infrastructure, provided the recommended engineering design and construction practices are followed.

The below image shows the site with the landslip hazard overlay.

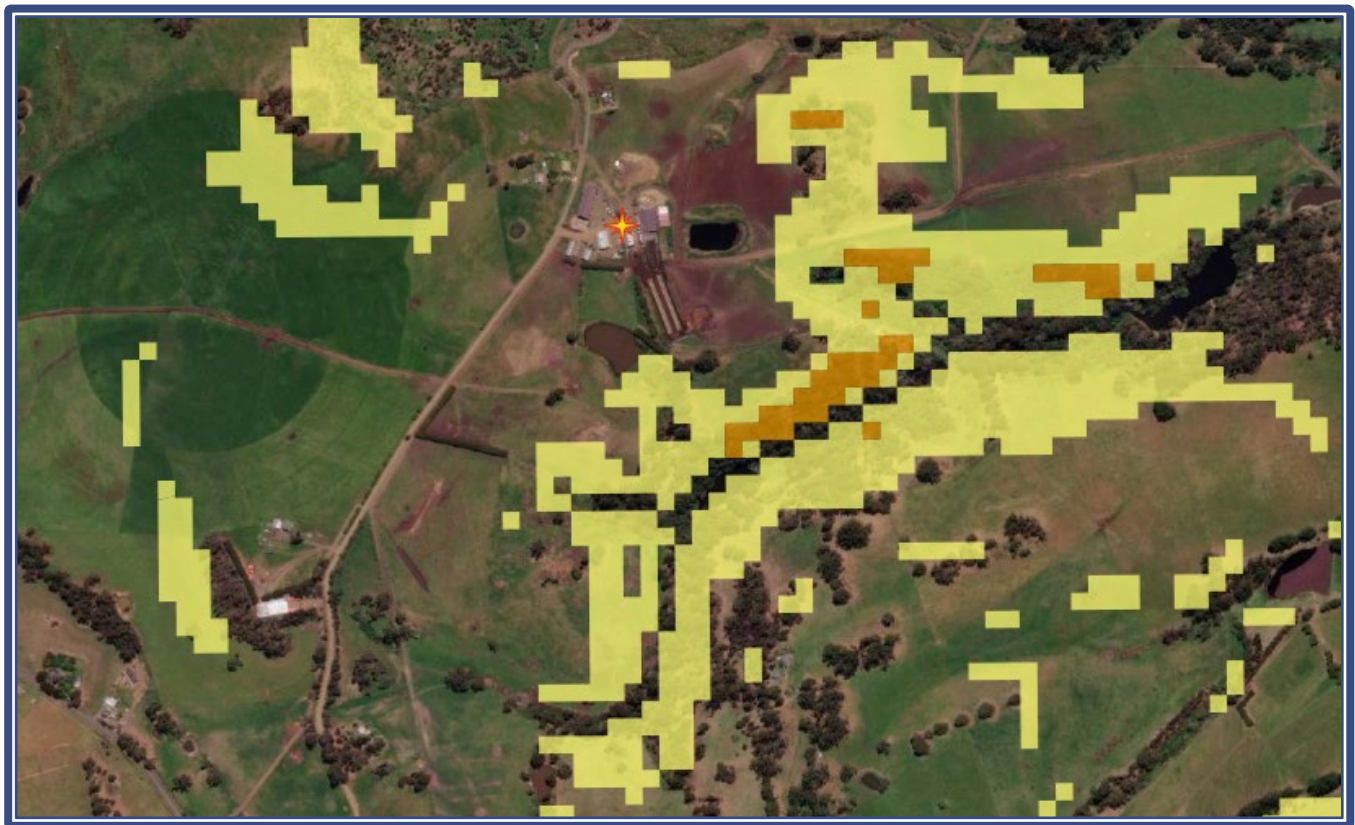


Figure 3-5 - Image showing Low (yellow) and Medium (orange) landslip hazard overlays (Source: QGIS with Tasmania's Code Overlay)

COMMENT

As the development footprint is located outside mapped hazard areas, the Landslip Hazard Code does not apply. Nevertheless, the project incorporates geotechnical recommendations, including engineered batters, erosion protection, and drainage management, to further reduce any residual risk.

On this basis, the proposal is consistent with the intent of the Code, and a Landslip Hazard Management Plan is not required. See **Section 5.3** below for further information.

3.3. APPROVALS REQUIRED

A List of required approvals, their governing Departments and status are provided below:

Table 3-3 - Approvals required

Authority	Type	Notes	Report Response
TDIA – Tasmanian Dairy Industry Authority	Dairy Farm Licence	Mandatory for all dairy farms and operation must comply with the <i>Dairy Industry Act 1994</i> , Dairy Industry Regulations, and the Effluent Management Code of Practice.	Report included information to support Licence Application.
NRE / DPIPWE – Department of Natural Resources & Environment Tasmania	Water Licence / Water Allocation	Needed if you divert, store or use water for commercial purposes from streams, rivers, or in-stream dams.	Existing licences held for dams and allocation with no change proposed to these activities.
NRE / DPIPWE – Department of Natural Resources & Environment Tasmania	Dam Works Permit	Division 3 or Division 4 dam (higher or lower risk). A “Notice of Intention” may be needed if Division 4.	Effluent ponds are Division 4 – Low risk dams is likely to be triggered.
Local Council / Planning Authority	Planning Permit / Development Application	For land use, building / infrastructure, setbacks, visual amenity, code overlays (scenic, natural assets, etc.).	Development Application for use and building required.
EPA Tasmania	Approvals under Environmental Management & Pollution Control Act (if required)	May require assessments, emissions controls, licences depending on scale.	Application is a Level 1 Activity. TDIA will refer to the EPA for review.
Building / Construction Authority	Building Permit / Engineering Certification	For shed construction — ensuring structural, geotechnical, safety compliance.	Building Permit required for building works.
NRE / DPIPWE – Watercourse Authority / Riparian Rights	Review of works on natural waterways or discharges	May be triggered as a result of works within and adjoining waterways.	Measures proposed to detail the management of catchment and surface water.

4. ENGAGEMENT AND CONSULTATION

As part of preparing this Environmental Impact Statement (EIS), consultation was undertaken with key regulatory authorities, industry specialists, and neighbouring landholders. The purpose of engagement was to clarify approval requirements, incorporate technical guidance, and ensure that community and regulatory expectations are reflected in the project design and management framework.

The following subsections summarise the relevance of each authority or group to the proposal, along with the consultation undertaken and outcomes received.

4.1. SORREL COUNCIL

Sorell Council, as the Planning Authority under the *Land Use Planning and Approvals Act 1993*, is responsible for assessing the Development Application against the Tasmanian Planning Scheme – Sorell. Early engagement with the Environment and Health team confirmed that the project must be assessed under the use class of Intensive Animal Husbandry with a specific focus on the environment protection measures to be implemented. Council advised that the application should specifically address odour, noise, traffic, effluent management, waste, and visual amenity and relevant Scheme Codes.

Preliminary consultation occurred with the Environmental Health division followed by the Planning Department. This include Council representatives, Mr Shane Wells (Manager Planning) and Ms Rachel Tenni (Senior Planner) to confirm the scope of the Environmental Impact Statement (EIS), the lodgement process, and supporting documentation requirements.

Council confirmed that the EIS topics looked to adequately addresses the relevant assessment issues and that the proposal could proceed to lodgement once finalised. The following requirements were identified:

- A completed planning application form must accompany the submission. If the applicant is not the landowner, notification to the owner is required (no formal consent signature needed).
- Full title documentation (cover page, title plan, and schedule of easements) must be provided and be less than three months old.
- If significant works are proposed to vehicular accesses, the General Manager's landowner consent may be required.
- Upon lodgement, Council will issue an invoice within five days, and the application becomes valid once paid.
- Council will then have 21 days to review the application and may request further information if required.
- If satisfactory, the application will proceed to public exhibition for 14 days, with notices sent to adjoining owners, site signage, and a public advertisement in *The Mercury*.
- During the assessment period, Council will undertake informal referrals to relevant agencies (e.g., EPA Tasmania, Dairy Tas).
- A site inspection will be arranged following lodgement to review the proposed development footprint.
- Overall, the consultation confirmed that the EIS structure and scope are appropriate and that Council is supportive of progressing the application to formal lodgement.

RESPONSE:

The application has been prepared to consider the application and planning requirements relevant to the proposed development and use of the property and the required information will be supplied with the application.

4.2. TASMANIAN DAIRY INDUSTRY AUTHORITY

The Tasmanian Dairy Industry Authority (TDIA) administers the *Dairy Industry Act 1994* and licenses all dairy premises in Tasmania. As such, the proposed intensive housed dairy system will require a TDIA licence prior to operation. Consultation with TDIA confirmed the need for an effluent management plan, assessment of the proposed effluent pond system and design, and demonstration of compliance with industry standards for effluent reuse, pond freeboard, and environment protection measures.

Further to the detailed requirements, due to the nature of the application, TDIA will refer the application to the Environment Protection Agency (Tasmania) for review.

RESPONSE:

The application has been prepared to consider the application and planning requirements relevant to the proposed and considered the EPA's EIS Guidelines as part of the proposed referral from TDIA. A detailed Effluent Management Plan has been prepared to meet the requirements of the TDIA and is appended to the EIS and referenced throughout.

4.3. ENVIRONMENT PROTECTION AGENCY

EPA Tasmania, established under the *Environmental Management and Pollution Control Act 1994*, regulates Level 2 activities in the State. This project does not meet the Level 2 thresholds and will therefore be assessed at the local government level.

RESPONSE:

TDIA have advised that they will refer the application to the EPA and as a result the EPA guidance documents were reviewed and applied in the assessment and application for the project. These included guidance on construction and operational noise, odour management, effluent containment, and the reuse of wastewater on agricultural land. Although no formal consultation was required, the project has been designed in line with EPA expectations and best practice to ensure odour, noise, and surface water impacts remain within acceptable thresholds.

4.4. DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT – TASMANIA

NRE Tasmania holds a range of statutory responsibilities relevant to this project, including the management of water licensing under the *Water Management Act 1999*, dam safety approvals under the *Water Management (Safety of Dams) Regulations 2015*, and biodiversity management under the *Nature Conservation Act 2002* and *Threatened Species Protection Act 1995*.

RESPONSE:

The Application undertook a review of the NRE database and undertook consultation to confirm that the property holds valid water licences and storages sufficient for the proposed operation. Effluent pond design has been considered against dam safety requirements, including embankment construction and freeboard standards. Biodiversity overlays were also reviewed, with no threatened vegetation or species requiring referral. NRE Tasmania's frameworks have therefore informed the design and siting of water storages and biodiversity protection measures.

4.5. DAIRY AUSTRALIA

Dairy Australia provides industry best practice guidance through its (combined with Agriculture Victoria) Dairy feedpads and Contained Housing National Guidelines resource, effluent reuse guidelines, and greenhouse gas monitoring tools. Mrs Karen Romano, Intensive Animal Production Specialist, has provided valuable support to the operation throughout the early design phase.

RESPONSE:

These recommendations were incorporated into the project design, ensuring alignment with national industry benchmarks. Dairy Australia will continue to provide a framework for the farm's monitoring and improvement programs, particularly in relation to operational management, sustainability and emissions.

4.6. AGRICULTURE VICTORIA

Although not a Tasmanian regulator, Agriculture Victoria specialists were engaged due to their extensive experience with large-scale intensive dairies. Mr Scott McDonald, Dairy Development Specialist with Agriculture Victoria, has extensive expertise in intensive dairy housing, effluent management, and farm systems design across southern Australia. His advice was sought to benchmark the project against best practice and ensure that the proposed Bream Creek facility reflects lessons learned from similar developments interstate. Mr McDonald provided guidance on siting, buffer distances, nutrient reuse strategies, and operational management considerations.

RESPONSE:

The effluent management plan was prepared by Mr Christian Bannan of South East Soil & Water and peer-reviewed by Ms Clare Fitzpatrick, both with extensive experience in intensive animal facilities. This external consultation ensured that the effluent system design is robust, scientifically defensible, and consistent with national dairy industry standards. It is understood that this application will also be referred to Mr McDonald for a complete review and comment from TDIA.

4.7. SURROUNDING RESIDENTS

Mr Jack Bignell, **Applicant** and Farm Manager has met with the closest adjoining landowners to the dairy complex and who may be considered within the permit application. The proposed change in operation and site activities were reviewed with each neighbour with no issues identified in these meetings. Further details on the consultation undertaken are included in the attached Odour Assessment and Management Plan (**Appendix 9**).

5. ENVIRONMENTAL IMPACT ASSESSMENT

5.1. ENVIRONMENTAL SETTING

5.1.1. INTRODUCTION

The descriptions of various environmental aspects of this project throughout this section are reliant upon a range of background information common to many of the key environmental issues. In this section, the local setting is described, and background information is provided on topography, climate, geological setting, land ownership and land uses of the project sites and surrounds. The information presented in this sub-section provides a general overview of the environmental setting of the project site with more specific information in relation to particular environmental aspects of the project being presented in the following subsections.

5.1.2. TOPOGRAPHY AND DRAINAGE

The following survey and contour plans demonstrate the areas topographic features. The location of the dairy complex and surrounds is located on a within an undulating hill and valley setting. The following images identify the elevation changes within the landscape with the major contours identified in dark lines and minor in light. The elevation of the site in Australia Height Datum has been identified through survey as ranging between 140m within the proposed housing area to 104m at the lowest side of effluent ponds 3.

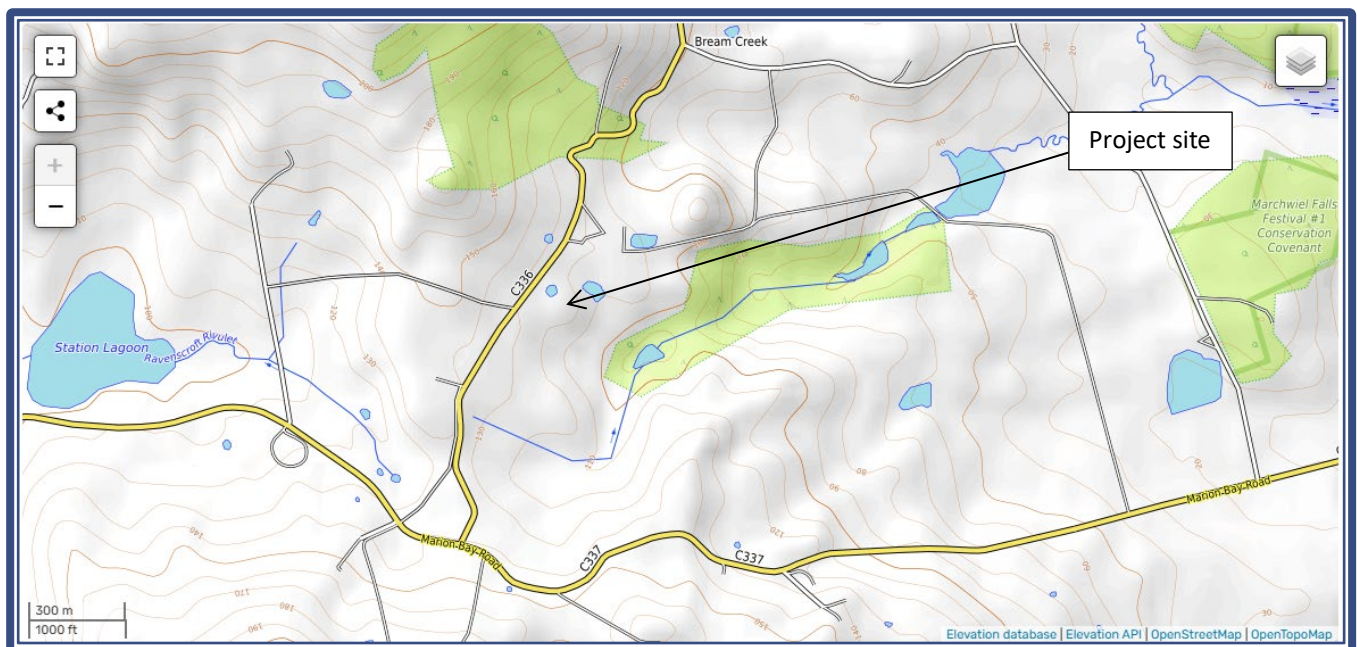


Figure 5-1 – Map indicating regional topography of the area (Source: PRS QGIS)

REGIONAL TOPOGRAPHY AND DRAINAGE

The following images have been provided to identify the digital elevation within the area. **Figure 5-2** shows the elevation variation from the highest (red) to lowest (blue) at Marion Bay. **Figure 5-1** demonstrates the site with relation to contours. These images show that the region located between Copping and Marrion Bay which transitions from gently rolling uplands to coastal plains and dune systems. The elevations range from approximately 28m to 400m above sea level with farming areas common on the gentler slopes and forested rises in the higher elevations. Eastward towards the coast, the terrain slopes steadily down through farmland and small valleys. The coastline in this area features broad sandy beaches, dunes and a long spit formed by sediment deposition at the mouth of Bream Creek.

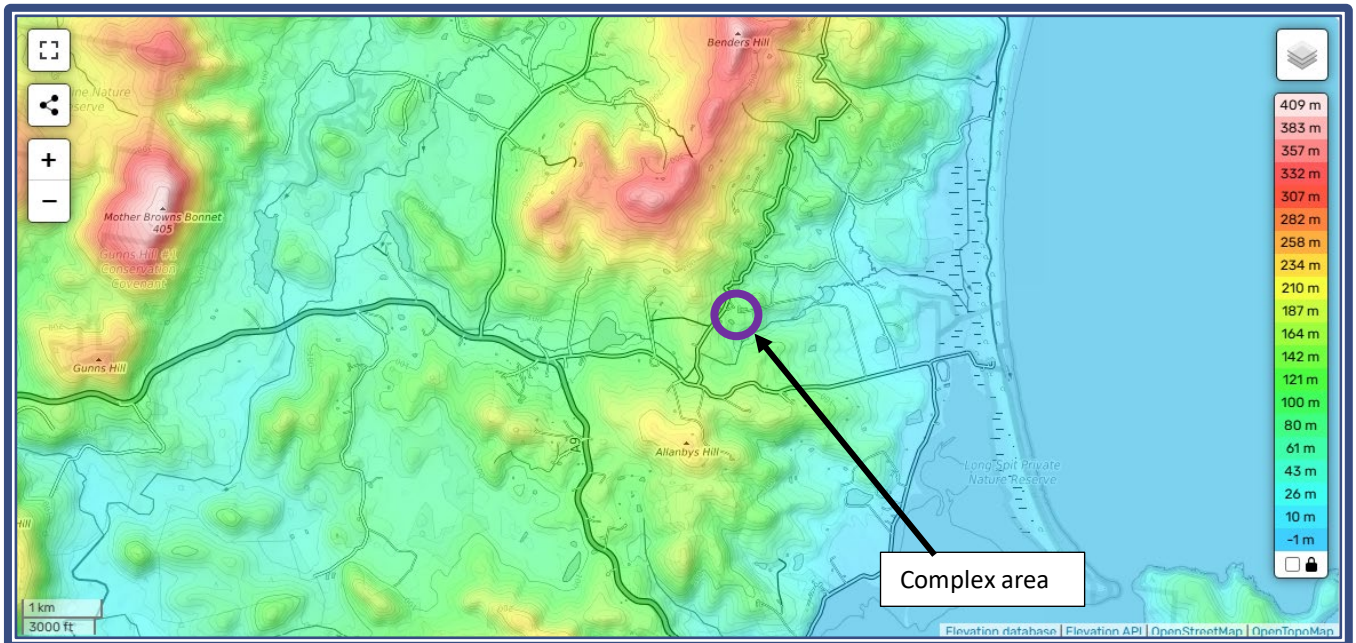


Figure 5-2 - Topography of the site (Source: en-au.topographic map)

SITE TOPOGRAPHY AND DRAINAGE

The dairy complex area within the property contains existing buildings and infrastructure commonly associated with a functional dairy system. Within the broader areas of the property is a gravity and pressurised irrigation network that allows the application of irrigation and recycled effluent through a pumped and piped delivery system where irrigation is applied through a travelling pivot irrigator.

The image below identifies the total project footprint within the green outline including the area identified as the dairy complex including buildings and infrastructure. The green arrows located within the complex show the direction of contained and managed drainage within the complex. The blue arrows show the natural drainage direction surrounding the site with red arrows showing roof catchment. The image shows how natural run-off has been managed to continue to flow to catchment with internal run-off of the effluent system contained within the controlled drainage area.

The blue lines indicate the natural waterway lines within the area as mapped within the LIST mapping system. It can be seen from the provided contours and flows that the proposal has been designed to align with the natural surface water and slope with very limited change to the catchment contributions to the freshwater dam and downstream waterway.



Figure 5-3 – Map identifying site slope and drainage. (Source: PRS QGIS)

5.1.3. CLIMATE

INTRODUCTION AND DATA SOURCES

Meteorological conditions have the potential to influence a range of operational activities within the development. An overview of the conditions at the property and surrounds, with a focus on their potential influencing factors to proposed activities, has been recorded below.

CLIMATE RECORDS

The climate records utilised in this assessment have been sourced from both the Hobart airport Weather Site (site 094008) (since 1958) and the Silo data portal (records between 1900 and 2024). The grid point utilised for the Silo search is Lat: -42.80 and Long: 147.85 which is located 2.3km to the north-east of the site.

Tasmania is described as a cool temperate oceanic climate (Cfb) under the Koppen climate classification. This classification system indicates a cool summer, mild winter, steady year-round rain with no extreme heat or cold. Temperatures seen within this climate zone typically see the coldest month averaging above 0°C and all months with an average temperature of 17°C. The average annual rainfall is 743mm.

Table 5-1 - Climate data

	Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
Temperat	Highest High	41.4	39.8	38.1	31.8	25.6	19.6	20.4	23.7	31.1	33.4	38.5	40.8	41.4
	Mean Max	22.7	22.4	20.9	18.2	15.3	13.0	12.6	13.5	15.5	17.4	19.1	20.8	17.6
	Mean Min	12.2	12.1	10.9	8.8	6.7	4.7	4.2	4.7	6.1	7.6	9.3	10.9	8.2

	Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
	Lowest Low	3.7	3.4	2.2	-0.6	-2.2	-3.9	-3.2	-2.0	-2.3	-1.0	1.7	2.7	-3.9
Rain	Mean mm	54.5	54.2	58.0	66.2	59.0	68.5	63.0	63.8	53.2	66.9	62.0	73.6	743.0
	Mean days	9.0	8.2	10.1	10.4	11.4	11.3	13.2	13.9	13.7	13.6	12.8	11.9	139.5
Wind Speed	Mean 9AM	14.5	13.2	12.8	13.4	12.3	12.3	12.3	13.8	16.1	16.4	15.8	15.5	14.0
	Mean 3PM	23.9	22.2	20.1	18.1	15.5	14.0	15.2	17.6	20.9	22.5	23.7	24.2	19.8
Mean evaporation		164.5	128.4	105.2	66.1	44.1	29.6	34.6	49.7	73.5	104.8	125.3	154.3	1080.3

RAINFALL

Rainfall data for the property has been reviewed for the years between 1900-2024. Across this period the average annual rainfall is 989mm, with monthly rainfall amounts increasing being higher on average late in the year than earlier. Average rainfall amounts vary between 53mm in September and January to 74mm in December. The driest year on record was 1968 when 395mm of rainfall was recorded. By contrast the wettest year on record was 1916 when 1,3334mm of rain was recorded.

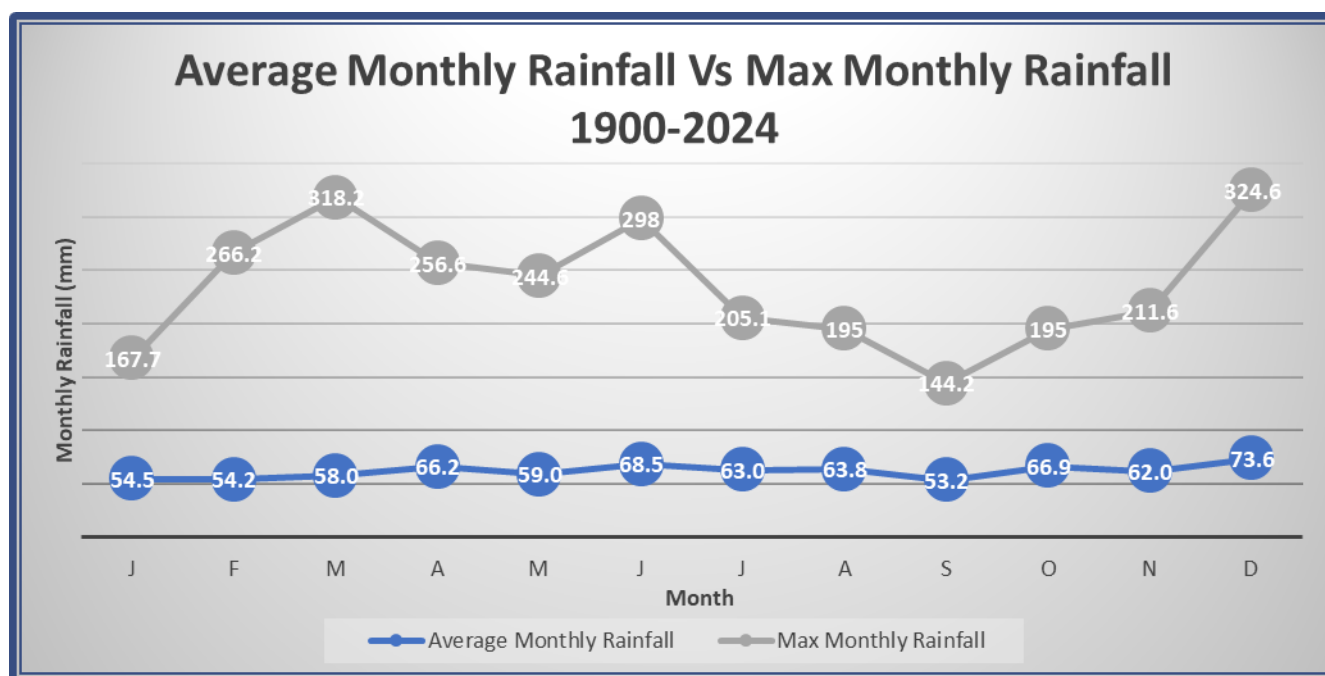


Figure 5-4 – Graph of average monthly rainfall (Source: Silo)

The maximum daily rainfall recorded in the area is 130.3mm which was recorded in 23 April 1960. The following graph shows the rainfall patterns of highest daily rainfall and average rainfall. In summary, the area normally receives moderate, evenly spread rainfall, but it is occasionally hit by intense, short-lived rain events—especially in April and May. These spikes in daily rainfall greatly exceed what's typical for a full month.

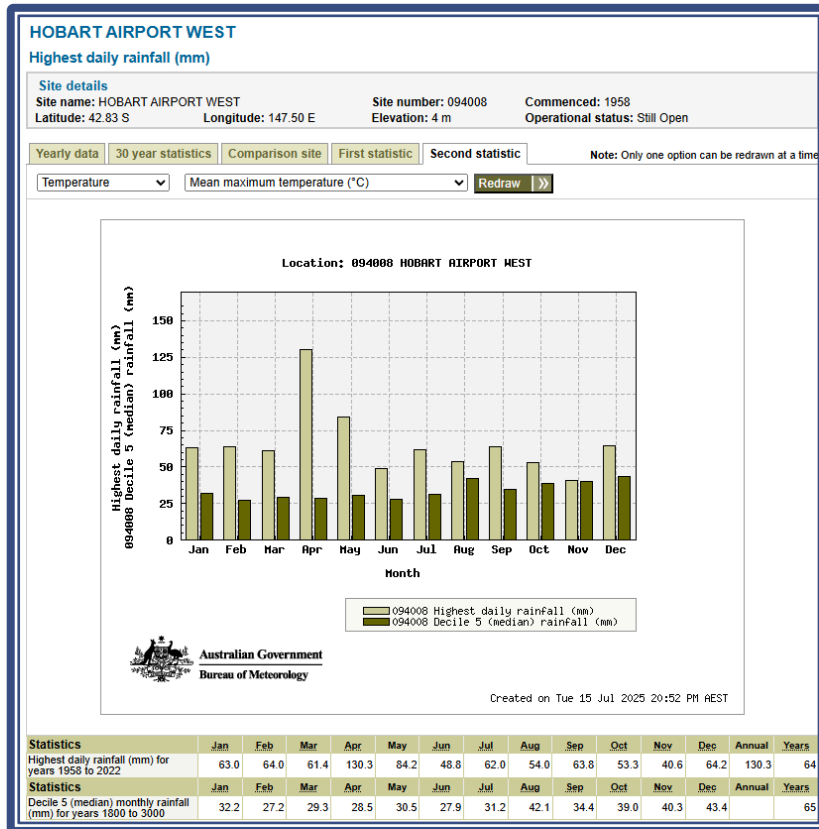


Figure 5-5 – Hobart weather station median monthly rainfall vs highest daily rainfall (1958-2024) (Source: BOM)

EVAPORATION

The average annual evaporation at the property is 948mm. The highest evaporation months are January and December and the lowest months are May, June and July. The following graph compares the monthly evaporation against the monthly rainfall which shows rainfall exceeds evaporation between May and August during the winter months and this is inverse through the summer months where evaporation increases as expected.

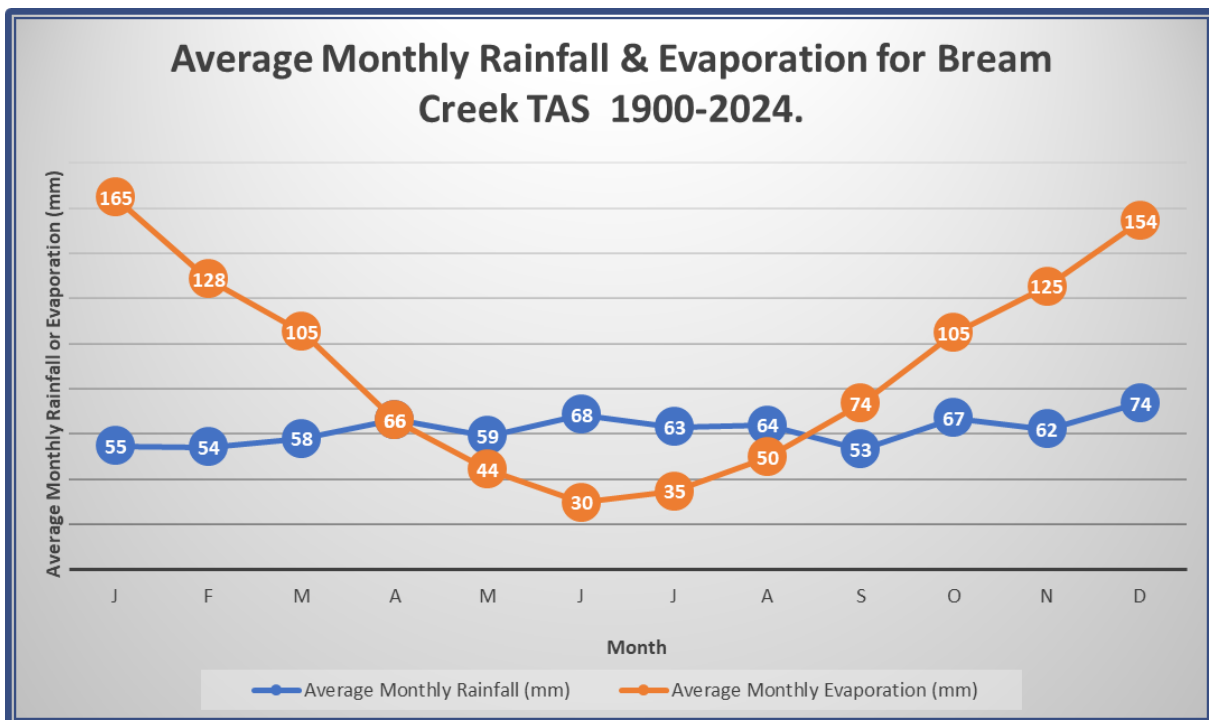


Figure 5-6 – Graph of total monthly evaporation vs rainfall

WIND

The annual wind records displayed as a wind rose for the area has been provided below. These average wind roses for 9AM and 3PM show the difference between wind direction within the area and are used to determine wind patterns and identify site activities within relation to any potential odour generation. It can be identified from the above that the site and surrounds are subject to winds predominantly from the northwest and southeast.

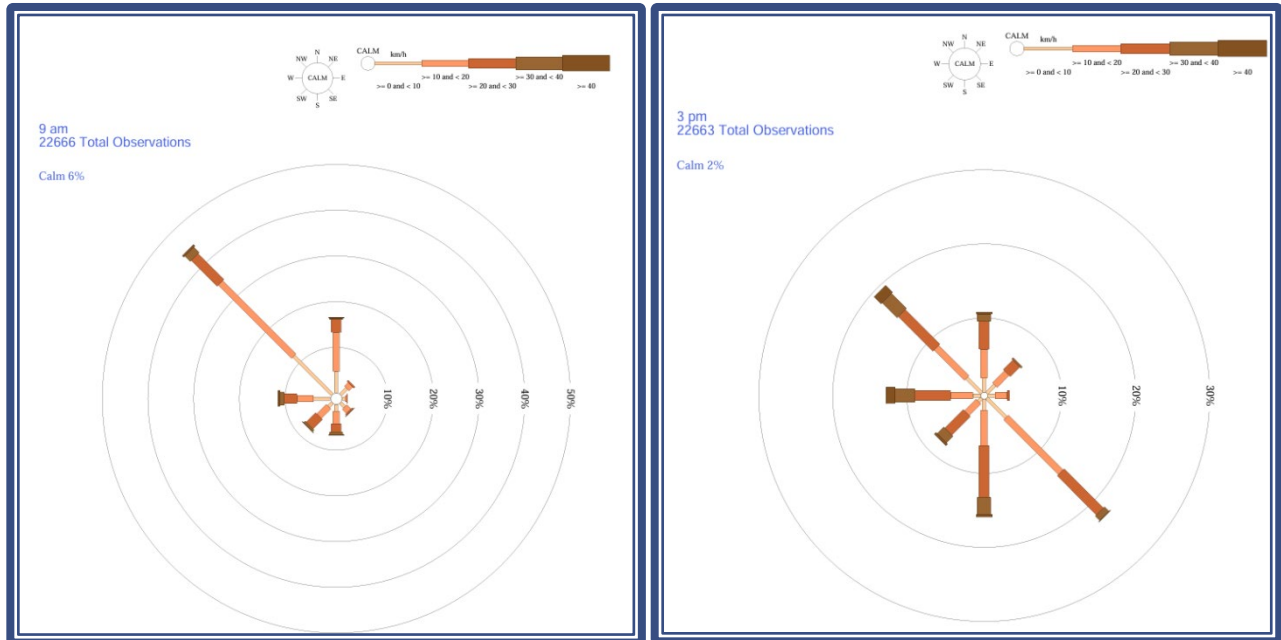


Figure 5-7 - 9AM and 3PM wind rose data (Source: BOM Hobart weather station)

The wind roses for the Hobart area identify the following:

- Winds in the area are calm (0.1 - 1km/hr) 4% of the time (6% at 9AM and 2% at 3PM).
- Winds are light (1.1-12.6km/hr) primarily early in the morning.
- Winds are gentle (12.6-19.8km/hr) 27.75% of the time.
- Winds are moderate (19.8-28.8 km/h), respectively, most frequently making up the majority of observed conditions.
- Winds are fresh (28.8-38.9km/h) and strong (38.9-50km/h) more common in the afternoon, indicating higher intensity later in the day.
- Winds are rarely near gale or gale force (50-74.9km/hr).
- Winds blow most often from the west, especially WNW in the morning, and in the afternoon they are more variable coming from both east-southeast and west.

Wind conditions at the site indicate a predominant north-westerly influence during the morning period, with light breezes recorded at 9AM and calm conditions occurring in approximately 6% of observations. By the afternoon, wind direction becomes more variable, with south-easterly, southerly, westerly and continued north-westerly flows commonly observed. Afternoon winds are typically stronger, most frequently occurring in the moderate range of 20–30 km/h, reflecting the coastal influence on local wind behaviour. Calm conditions in the afternoon are rare, accounting for only 2% of observations.

The observed patterns suggest that potential dispersion is likely to be greatest during the afternoon period when wind speeds increase and directional variability enhances mixing. In contrast, the relatively lighter morning breezes may reduce dispersion capacity, however the low frequency of calm periods at both 9AM and 3PM reduces the risk of odour stagnation events.

5.1.4. GEOLOGY AND SOILS

GENERAL PHYSIOGRAPHY OF THE SOUTH EAST COASTAL PLAIN

The project site is located in the South East Bioregion of Tasmania under the IBRA classification. The region consists of coastal plains ranging from cool to warm subhumid climates, located along a deeply indented shoreline and backed by low mountain ranges composed of Jurassic dolerite and Permo-Triassic sedimentary rocks. The soils are mostly clay to sandy loams.

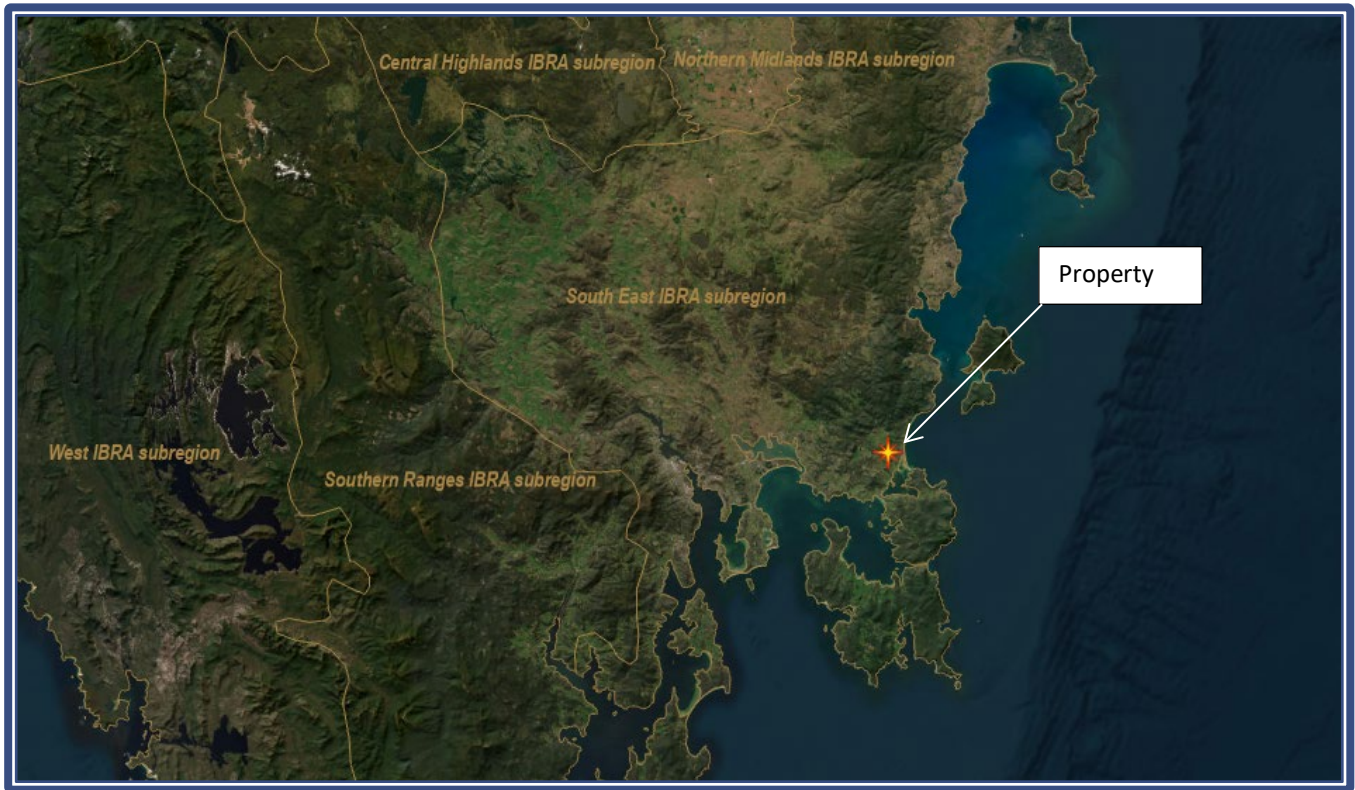


Figure 5-8 - The Interim Biogeographic Regionalisation for Australia (IBRA) South East Region

GEOLOGY

The site geology has been mapped by Mineral Resources Tasmania (MRT, 2010) within the Sorell 1:50,000 geological map. The property is underlain by a range of geological units, including Quaternary talus of basalt (Qtb), Tertiary basalt (Tb), Triassic quartz sandstone (Rss), Quaternary river alluvium, swamp and marsh deposits (Qha), and Tertiary sandstone, claystone, conglomerate and pyroclastic rocks (Ts). Soils across the site vary in accordance with these geological formations; however, the dairy and proposed pond construction areas are predominantly located on basalt soils of Quaternary origin. These basaltic soils are typically well-suited to effluent pond development due to their low permeability and stable engineering properties, which support long-term containment and groundwater protection.

Figure 5-9 below is a replication of the geology map sourced of the project area.

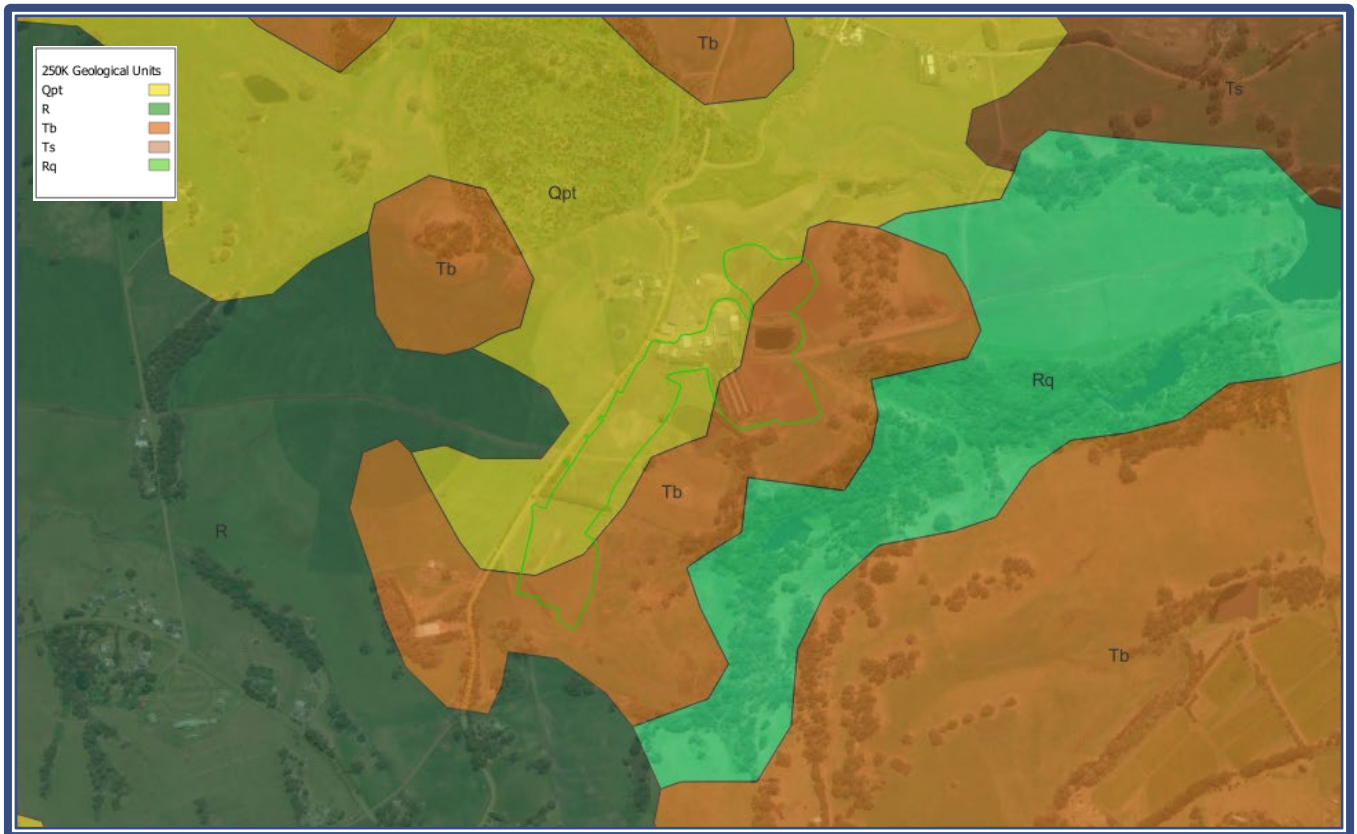


Figure 5-9 - Project Activity area (yellow) shown with the 250K geology units (Source; PRS QGIS with Mineral Resources Tasmania Overlay)

SOILS

Extensive soil testing and assessment has been completed within the site works area to consider the site suitability for the proposed activities. These are described in detail in the appended Geotechnical investigation undertaken by GeoTon Pty Ltd, also detailed in the following **Section 5.3**.

5.1.5. LAND OWNERSHIP, RESIDENCES AND LAND USE

LAND OWNERSHIP

The following **Figure 5-10** displays the land ownership and residences surrounding the project site. The white outline defines the property owned by the applicant and orange area leased. The green shows the construction area and pick the operational activity boundary. Houses identified in green are owned by the applicant and houses identified in yellow are not owned by the applicant. Residences and their distance from the operational elements at the site are listed in **Table 5-2** below.



Figure 5-10 – Map identifying project in relation to local property ownership (Source: PRS QGIS)

Table 5-2 – Receptors surrounding project area

Receptor	Existing Distance	Closest activity	Proposed distance	Closest activity	Change
Copping	1,400	Silage	1,580	Silage	-180
Marion Bay	2,360	Pond 2	2,310	Pond 1	+50
R1	110	Dairy	130	Pond 3	-20
R2	Owned				
R3	Owned				
R4A	505	Pond 2	415	Pond 3	-90
R4B	525	Pond 2	430	Pond 3	-95
R4C	575	Pond 2	480	Pond 3	-95
R4D	615	Pond 2	525	Pond 3	-90
R4E	620	Pond 2	530	Pond 3	-90
R4F	715	Pond 2	625	Pond 3	-90
R5A	790	Pond 2	700	Pond 3	-90
R5B	960	Pond 2	865	Pond 3	-95
R6A	770	Pond 2	680	Pond 3	-90
R6B	815	Pond 2	720	Pond 3	-95
R6C	890	Pond 2	800	Pond 3	-90
R6D	930	Pond 2	845	Pond 3	-85
D6E	965	Pond 2	875	Pond 3	-90
R6F	970	Pond 2	880	Pond 3	-90
R7	500	Pond 2	415	Pond 3	-85
R8	Owned				
R9A	1,470	Pond 2	1,430	Pond 3	-40
R9B	1,600	Pond 2	1,605	Pond 3	-5
R9C	1,695	Pond 2	1,670	Pond 3	-250
R10	1,885	Pond	1,845	Pond 1	-40
R11A	1,545	Solids Storage	1,458	Pond 1	-87
R11B	1,340	Solids Storage	1,270	Pond 1	-70
R11C	1,220	Solids Storage	1,160	Pond 1	-60
R11D & E	1,105	Solids Storage	1,040	Pond 1	-65
R11F	870	Solids Storage	831	Pond 1	-39
R11G	1,130	Solids Storage	1,084	Pond 1	-46
R11H	1,190	Solids Storage	1,092	Pond 1	-98
R11I	995	Solids Storage	955	Pond 1	-40
R12	455	Solids Storage	455	Solids Storage	0
R13	887	Solids Storage	840	Silage Stack	-47
R14	995	Solids Storage	770	Silage Stack	-225
R15	1,230	TSS	830	Silage Stack	-400
R16A	830	TSS	465	Silage Stack	-365
R16B	850	TSS	420	Silage Stack	-430
R16C	805	TSS	400	Silage Stack	-405
R17	160	Silage	225	Silage Stack	+66
R18	Owned				
R19A	Owned				
R19B	340	Silage	520	Silage Stack	+180
R20A	185	Silage	390	Silage Stack	+205
R20B	260	Silage	465	Silage Stack	+205
R21A	430	Silage	635	Silage Stack	+205
R21B	460	Silage	660	Silage Stack	+200
R21C	485	Silage	655	Silage Stack	+170
R21D	440	Silage	645	Silage Stack	+205
R21E	500	Silage	695	Silage Stack	+195
R21F	550	Silage	755	Silage Stack	+205

Receptor	Existing Distance	Closest activity	Proposed distance	Closest activity	Change
R22	1,055	Feedpad	760	Loose Housing	-295
R23	995	TSS	895	Silage Stack	+100

5.1.6. SURROUNDING LAND USE

The surrounding land use consists of farming activities typically found within the area including dairy, beef and high rainfall grazing and cropping. The renewable timber industry is also active within the region. The property is located within the vicinity of Copping zoned as a village with a population 183 people, Marion Bay zoned as Low Density Rural with a population of 72 people and locality of Bream Creek which is not formally identified or zoned as residential or rural residential area.

There are several houses located within the vicinity of the property, many of which are owned by the applicant. The following table is a summary of those receptors and their details in relation to the development.

The property and surrounding area is zoned Rural.

SERVICE INFRASTRUCTURE

Electricity infrastructure connects the property and dairy infrastructure at the site to the electricity grid. The property maintains adequate electrical connection and capacity to meet the current and proposed operation requirements. Power supply to the site has been reasonably reliable with outages manageable over short periods however the site maintains a/proposes to install a 250 kVA generator to manage any supply outage periods and allow continued operation and cattle welfare management.

The property maintains existing access from multiple roads surrounding the property. The dairy complex will retain the existing access locations from the Bream Creek Rd with no change proposed.

5.2. WATER

5.2.1. EXISTING SURFACE WATER ENVIRONMENT

The property and project site is located within the Tasman catchment, a coastal catchment characterised by numerous small permanent and ephemeral streams that generally drain toward the coast. Within the local area, named waterways include Ravenscroft Rivulet, Sedbury Creek and Bream Creek, all of which are managed by Natural Resources and Environment (NRE) Tasmania. These creeks ultimately connect with Marion Bay to the east.



Figure 5-11 - Project Site in relation to surrounding waterways

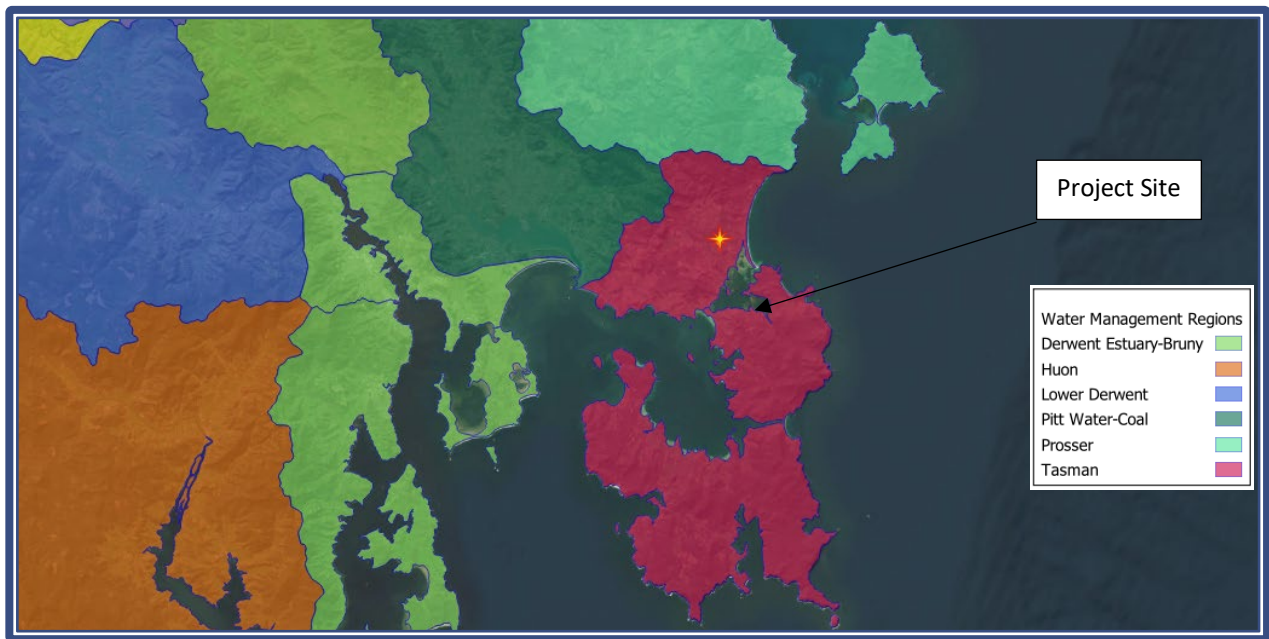


Figure 5-12 – Map identifying the Tasman Water Management Region Basin. (Source: PRS QGIS with Water Management Region Overlay)

The property itself is intersected by several minor mapped drainage lines and small catchments. These waterways exhibit low baseflows and high seasonal variability, with flows largely driven by rainfall and land management conditions. Such systems typically have limited assimilative capacity, making them sensitive to sediment, nutrient or organic matter inputs.



Figure 5-13 - Image showing Waterway & Coastal Protection Area overlays relating to the property. (Source: QGIS with Tasmania's Code Overlay)

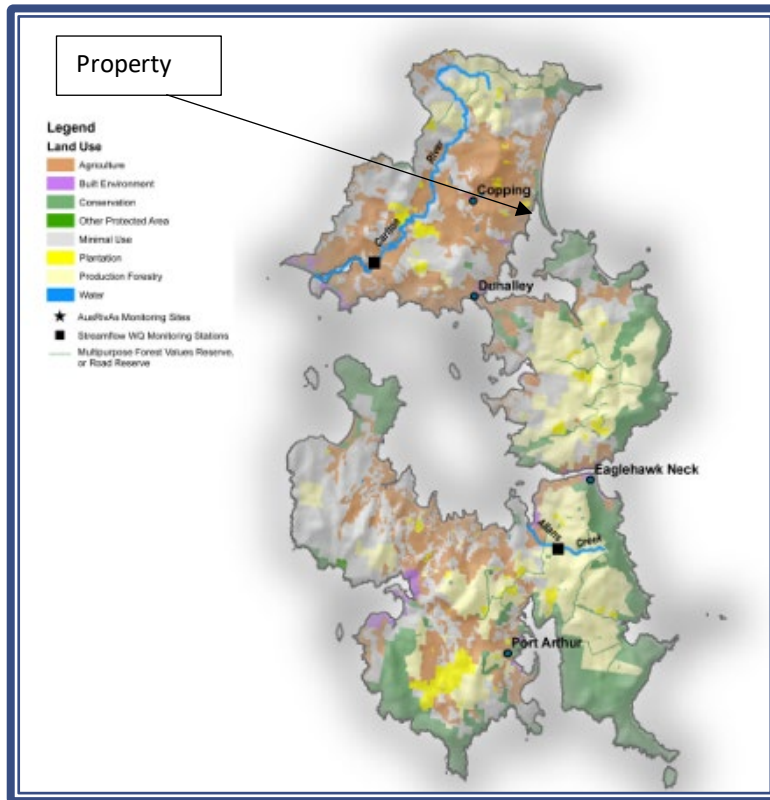


Figure 5-14 – Tasman Catchment Overview with Land Use (Source: Annual Waterway Report, Water Assessment Branch, 2009)

Surface water flows across the farm currently reflect long-established agricultural use. Improved pastures and infrastructure have modified natural overland flow paths, but the overall catchment volumes and drainage directions remain intact. Overland stormwater flows continue to flow toward local drainage depressions and creeks, while farm activities are supported by licensed on-farm water storages and allocations.

The broader Tasman catchment is recognised as a mosaic of agricultural land uses interspersed with remnant vegetation, with surface waters playing an important role in supporting both environmental values and irrigation. Importantly, the proposed development is not located within a riparian corridor, and no significant diversions to waterway flow paths of catchments are proposed.

A detailed assessment has been undertaken which reviews the site's current water use and considers the water requirements of the proposal as part of this assessment. It has been identified that the site maintains water licences of 1,118ML and access to a catchment storage volume of 1,160ML. The approved use of the water from the approvals is listed as 'dairy' and or 'irrigation'

5.2.2. EXISTING GROUNDWATER ENVIRONMENT

REGIONAL GROUNDWATER SYSTEM

Tasmania's groundwater is held within a range of geological formations, including igneous, sedimentary, and metamorphic rocks, as well as unconsolidated sediments. These resources are unevenly distributed across the State, with groundwater quality and availability varying significantly based on factors such as the type of aquifer, landscape position, and local rainfall patterns. Mapping of the State suggests that the project site is likely overlying Dolerite & granite with limited ground water resources or Permo-Triassic Sedimentary rocks that yield supply suitable for livestock, some domestic and irrigation needs. The below **Figure 5-15** shows Tasmania and the location of fractured and porous rock aquifers.

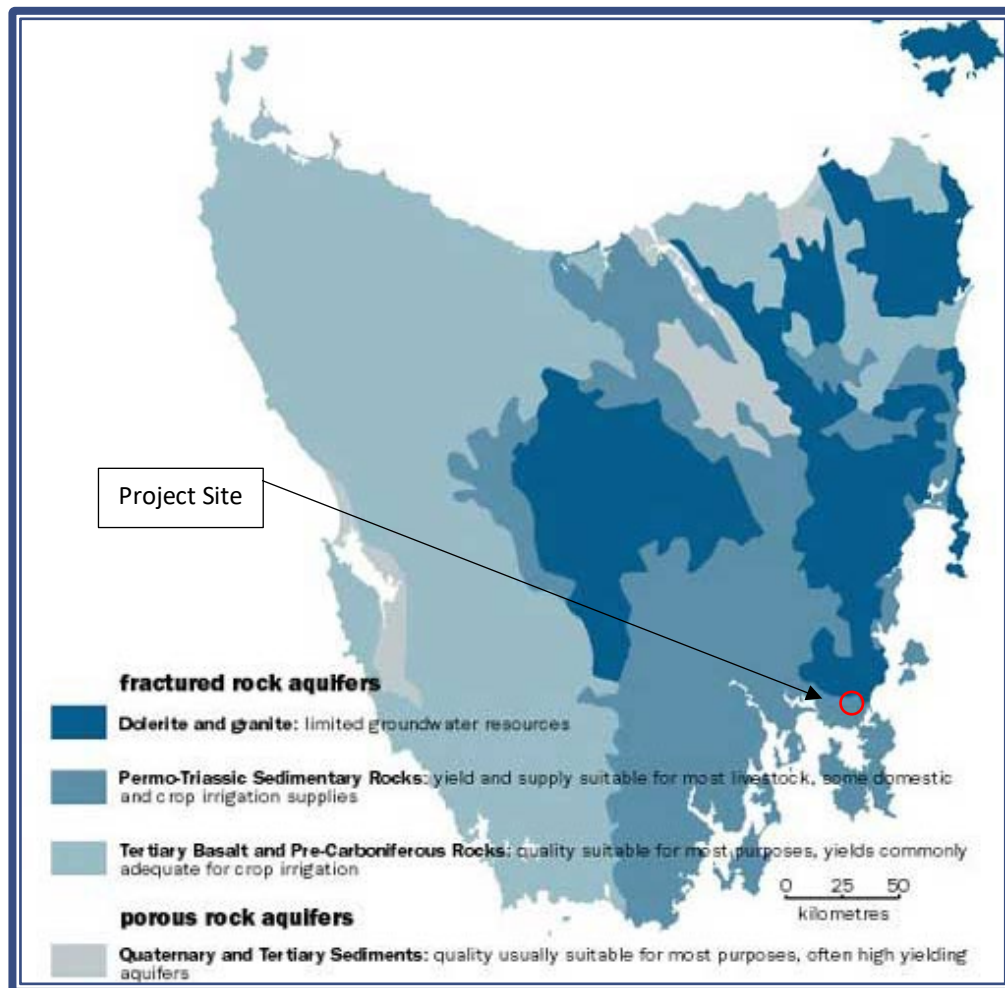


Figure 5-15 - The location of fractured and porous rock aquifers in Tasmania (Source: DNRE Tasmania)

The Southeast Tasmania Groundwater Map indicates that the property is located within an area where there may be low to moderate prospectivity of groundwater. The property and surrounds do not have any existing bores to allow for a site-specific review of groundwater availability however the Bore hole yield marked on the map as coloured dots suggests the possibility of yields between 0-0.5 litres per second.

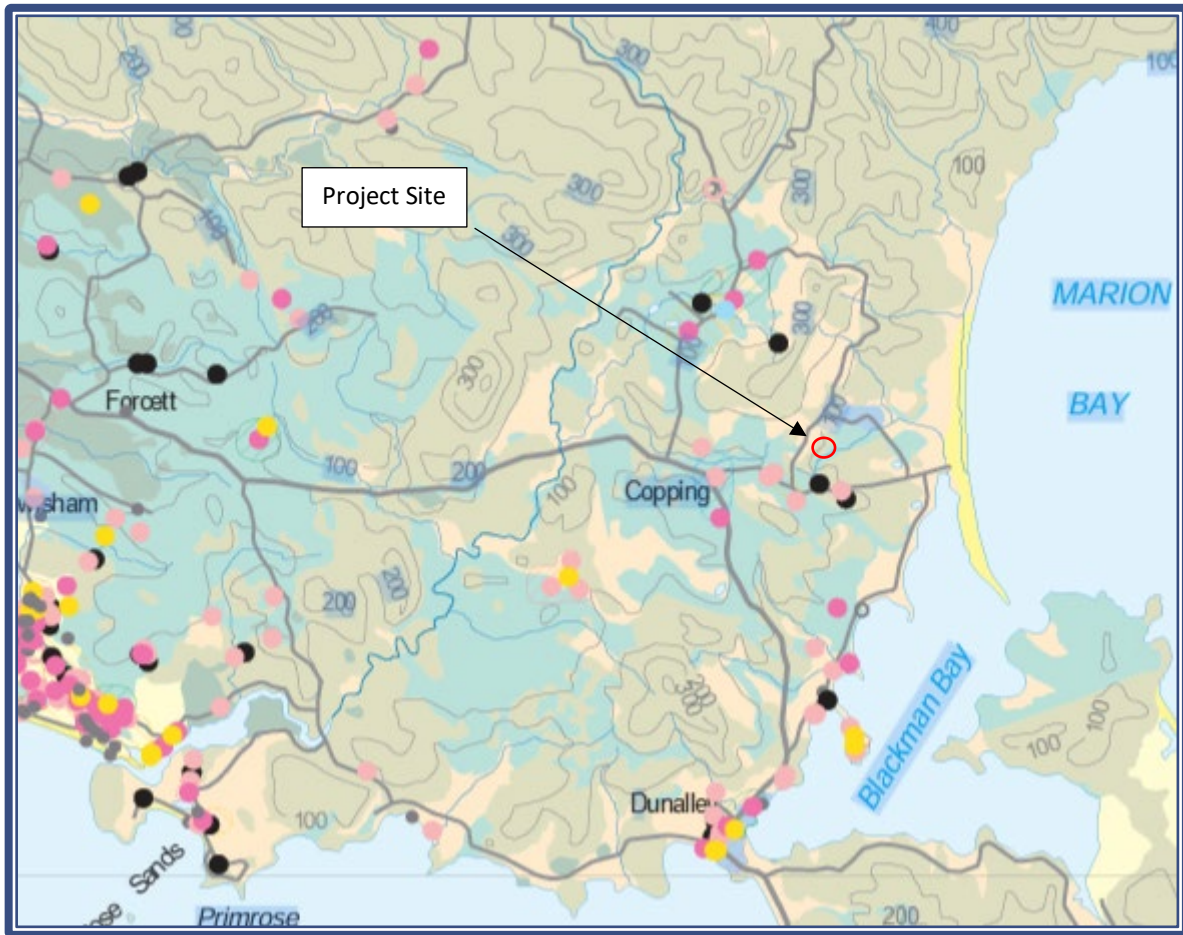


Figure 5-16 – Excerpt from the Southeast Tasmania Groundwater Map (Source: Dept Infrastructure, Energy and Resources, Tasmania)

A search of regional groundwater records was undertaken utilising the Groundwater Information Access Portal tool with the results providing historical information on groundwater within the area. This search revealed several groundwater bores in the district with the closest operating site located 500m to the southeast of the proposed housing facility. The locations of these monitoring bores are identified below in **Figure 5-17**.

Groundwater level data from these bores has not been able to be acquired however summary information on the surrounding bores indicates the following information is relevant:

- There are three bores within a 5km radius of the site
- There are several capped or abandoned bores within a 5km radius of the site,
- The likely yield is less than 0.5 litres per second
- The salinity in the area is between 1000-3000mg/l TDS
- Bore depths range between 30 and 120m



Figure 5-17 – Map identifying groundwater bore locations surrounding the project area (Source PRS QGIS)

GROUNDWATER DEPENDENT ECOSYSTEMS

Australia recognises six types of Groundwater Dependent Ecosystems (GDEs), including wetlands, vegetation, and baseflow systems. Regional mapping (Geoscience Australia, 2020) and the BOM GDE Atlas indicate several high-value GDEs in the broader southeast region, particularly coastal wetlands and freshwater springs.

However, the project site itself is not located on or adjacent to any mapped GDE, and the separation distances to identified ecosystems are sufficient to avoid direct interaction. **Figure 5-18** and **Figure 5-19** illustrate the nearest mapped GDEs and their relative distribution.

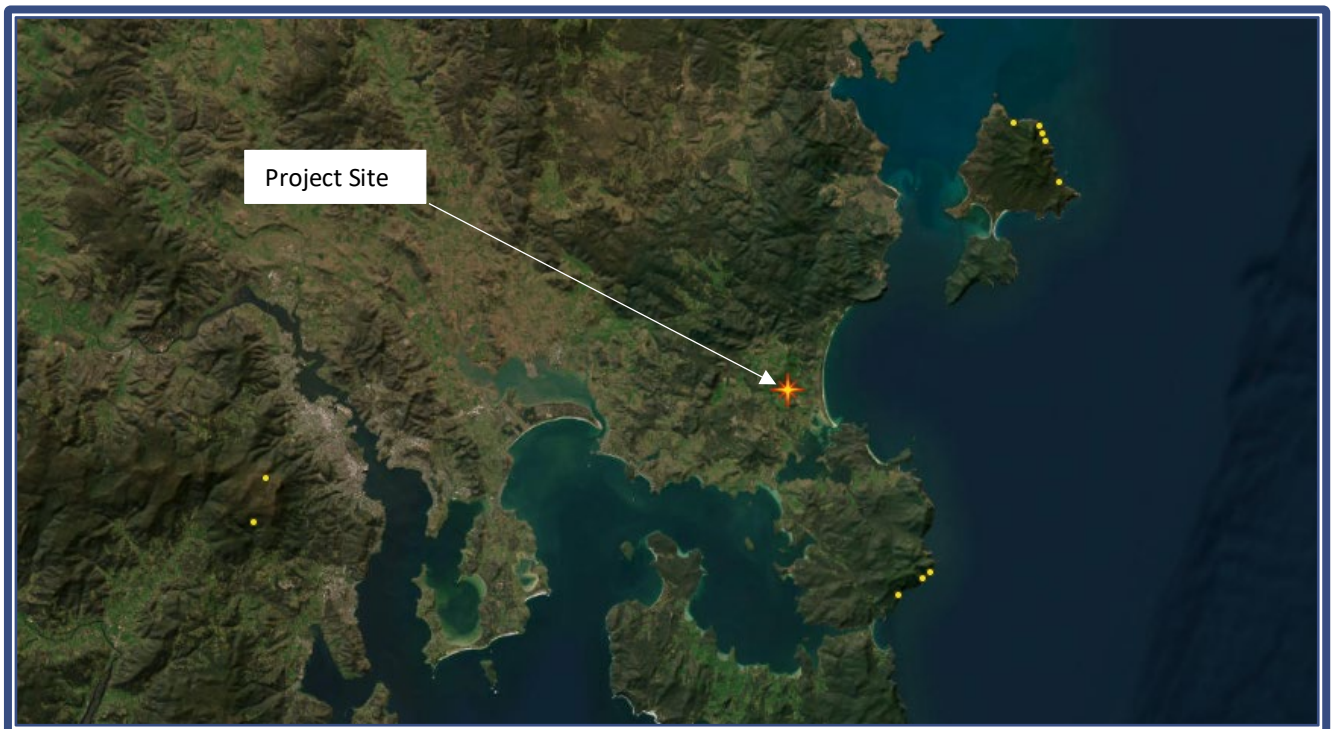


Figure 5-18 – Map identifying point locations where freshwater Groundwater Dependant Ecosystems are highly likely (Source: PRS QGIS with Conservation of Freshwater Ecosystem Values Overlay)

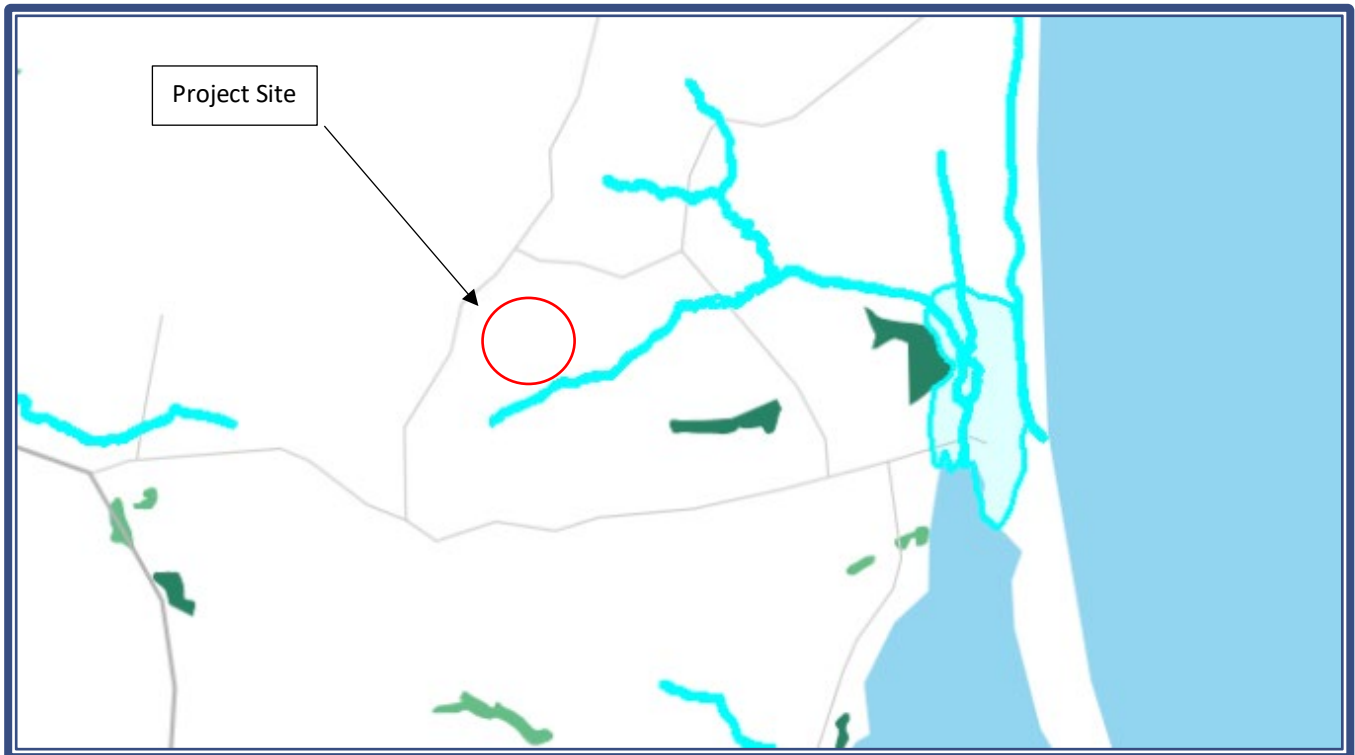


Figure 5-19 – BOM Groundwater Dependent Ecosystem (GDE) Map showing potential terrestrial and aquatic GDEs.

Areas indicated in the above map both indicate a moderated potential for GDE presence. Green identifies terrestrial GDE potential and blue shows aquatic potential GDE.

5.2.3. ASSESSMENT

The proposed development has been assessed in relation to potential impacts on both surface water and groundwater during construction and operation. Given the property's location within the Tasman catchment, characterised by small ephemeral and permanent streams with limited assimilative capacity, careful management of stormwater, effluent and construction practices is essential. Importantly, the project has been designed to avoid diversion of natural waterways, maintain existing catchment flows and volumes, and operate within licensed water entitlements.

SITING AND DESIGN

A feature and level survey has been completed across the project site and adjoining areas to confirm elevation, drainage, and surface water behaviour. This survey, supported by overlay mapping, has confirmed that the proposed ponds, silage storage area, and effluent systems are not located within or on a defined waterway. The design has been developed with careful consideration of inflows, culvert connectivity, and catchment volumes to ensure that the proposed infrastructure does not alter upstream or downstream water flows.

The Bream Creek Road and an adjoining internal farm access track is located adjoining and parallel to the proposed loose housing area. The road infrastructure divides a small catchment area from the site and includes four culverts which carry surface water run-off from the west side of the road to the east site connecting catchment flows to the dairy supply dam. The majority of the area on the east side of the road also connects to the catchment dam with a small area of the proposed silage storage following a minor tributary (first order stream) and connecting to an unnamed waterway (second order stream).

The project design has been proposed with very careful consideration of the management of both inflows and catchment volumes to ensure that the proposed infrastructure does not impact on the up or downstream waterway. The proposed development incorporates specific measures to maintain the catchment integrity, as outlined below.

➤ Northern Bream Creek Road culvert (300mm).

- Installation of a new pit connecting to two new 450 mm HDPE pipelines beneath the proposed laneway access to the shed.
- Outfall directed to the catchment (dairy) dam at the original entry point.
- Cow access restricted to the new concrete flood-washed laneway, with flows captured by the effluent system.

- **Remaining Bream Road Culverts (3 x 300mm, 1 x 450mm)**
 - Extension of the 300 mm northern culvert (6 m) with upturn into drain and erosion control.
 - Extension of the 300 mm southern culvert (12 m) with upturn into drain and erosion control.
 - Extension of the 300 mm southernmost culvert (18 m) with upturn into drain and erosion control.
 - Extension of the 450 mm central culvert (16 m) connecting to a new pit.
 - Consolidation of stormwater flows via an interception drain and eastern bank into a central concrete pit.
 - Discharge of consolidated flows to the existing catchment dam through two 450 mm HDPE PN12.5 pipelines, with erosion controls installed at the outlet.
 - Outfall directed to the catchment (dairy) dam at the original entry point.
- **Silage storage area**
 - Upstream diversion bank to divert clean water around silage storage area and silage area runoff pond.
 - Culvert under the ramp entrance to allow clean upstream flows to continue along their natural path.
 - Internal containment system to manage silage runoff within the storage area.
- **Other**
 - All roof run-off water will be diverted to existing catchment.
 - No change proposed to existing catchment dam on site.
 - All concrete and trafficable surfaces within the complex will be linked to controlled drainage and effluent ponds.

With the proposed design measures in place, the project will maintain the integrity of existing drainage lines and catchments. No alterations to catchment volumes, flow directions, or downstream hydrology are anticipated. All stormwater, clean water, and operational runoff will either be diverted around the development or captured and treated within controlled drainage and effluent systems. As such, the project is not predicted to impact the function of Bream Creek Road culverts, adjoining farmland, or natural waterways.

CONSTRUCTION

SURFACE WATER

Construction of the effluent ponds, shed pads and general earthworks have the potential to temporarily increase erosion and sediment mobilisation if soils are exposed without adequate management. The project area is underlain by clay-rich soils that are moderately erodible when disturbed, particularly on batters and in drainage lines. To protect local waterways and ensure compliance with the *State Policy on Water Quality Management 1997*, a proactive surface water management approach will be adopted.

Key elements of the construction methodology include:

- **Early establishment of drainage controls.**
 - Construct clean-water diversion drains around the perimeter of the site prior to bulk earthworks to prevent stormwater ingress into disturbed areas.
 - Install dirty-water drains to temporarily direct runoff from active work areas into the effluent management system or designated sediment basins.
- **Erosion and sediment controls**
 - Temporary silt fences and sediment traps will be installed downslope of disturbed areas and stockpiles.
 - Stabilised entry/exit pads will be provided at site access points to prevent tracking of sediment onto public roads.
 - All batters will be shaped to stable slopes and progressively topsoiled and seeded as soon as practicable.
- **Stockpile and material management**
 - Topsoil stripped from construction areas will be stockpiled in designated, bunded areas away from waterways.
 - Stockpiles will be stabilised by seeding or covering with geotextile where they remain in place for extended periods.
 - Spoil or waste material will not be placed within drainage lines or low points.
- **Staged earthworks**
 - Earthworks will be staged to limit the extent of exposed surfaces at any one time.
 - Completed areas will be stabilised before progressing to new works.
- **Stormwater quality management**
 - Any runoff from disturbed areas will be retained on site and settled prior to discharge for irrigation.
 - Spillway or discharge points will be protected with rock armouring or energy dissipaters to prevent scour.
- **Site supervision and monitoring**

- The contractor will be responsible for daily inspection of erosion and sediment controls, particularly after rainfall events.
- Any failures or blockages will be rectified immediately.
- Weekly site inspections will be documented and corrective actions logged.
- **Progressive rehabilitation**
 - Revegetation of disturbed areas will occur progressively using pasture species consistent with surrounding farm use.
 - Final surfaces will be stabilised with permanent pasture cover to ensure long-term stability.

These measures will ensure that surface water impacts from construction remain localised and temporary, with no off-site transport of sediment or contaminants to adjoining creeks or drainage lines.

GROUNDWATER

The likelihood of groundwater being impacted during construction is very limited. Site investigations, including geotechnical test pits and regional bore mapping, confirm that groundwater in the area is typically deep, low yielding, and saline, with no groundwater encountered during testing. This indicates that interaction with groundwater during excavation is unlikely.

To ensure protection if unexpected groundwater is encountered:

- Effluent ponds, manure pads and storages will be constructed with low-permeability clay liners to minimise any risk of seepage.
- A minimum separation will be maintained between excavation depths and any potential groundwater level.
- If groundwater is intercepted, works will be adjusted (e.g. raising pond floors or importing additional clay) to maintain integrity.

Overall, the project design and proposed construction methods are consistent with best-practice standards and provide confidence that groundwater will not be adversely impacted.

OPERATION

SURFACE WATER

During operation of the loose-housing dairy system, the primary potential surface water risks are associated with runoff containing nutrients, organic matter, or sediment entering natural waterways. The design of the facility and effluent system has been developed to ensure these risks are minimised through permanent infrastructure and management practices.

Key operational surface water management measures include:

- **Separation of clean and dirty water**
 - Roof water from the loose housing facility and dairy will be directed to existing drainage lines as clean stormwater, preventing it from entering the effluent system.
 - All runoff from within the operational area — including manure storage pads, feed lanes, laneways, and effluent ponds — will be collected and managed within the effluent management system.
- **Effluent pond system performance**
 - Effluent ponds are designed with sufficient storage capacity and a minimum freeboard of 0.6m to prevent overtopping in extreme rainfall events.
 - Compact clay liners and well-constructed embankments ensure containment of effluent, with no seepage to groundwater or surface waters.
 - Regular inspections of pond levels and embankments will ensure integrity is maintained.
- **Nutrient and manure reuse**
 - Irrigation of effluent will only occur in accordance with the Effluent Management Plan (SESW, 2025), which specifies agronomic application rates and setback distances (e.g. 30 m from watercourses, 10 m from boundaries).
 - Applications will avoid periods of heavy rainfall, saturated soils, or strong winds (>18 km/h), reducing the risk of runoff or drift.
 - Solid manure and spent bedding will be stored on impervious, drained pads prior to reuse and not within areas where runoff could reach drainage lines.
- **Stormwater drainage**
 - All external hardstand areas (laneways, traffic areas) will be graded to direct contaminated flows toward collection drains linked to the effluent system.
 - Perimeter drains will continue to manage clean stormwater, ensuring that off-site runoff volumes remain consistent with pre-development conditions.

- **Monitoring and adaptive management**
 - Regular inspections will be conducted after significant rainfall events to check for overtopping, erosion, or discharge risks.
 - Soil and water monitoring will be undertaken to confirm compliance with nutrient loading limits and water quality objectives.
 - Adaptive management (e.g. adjusting effluent irrigation frequency, crop rotations) will be implemented where monitoring indicates elevated risk.
- **Safeguards for sensitive areas**
 - Vegetated buffer zones will be maintained along drainage lines to filter any incidental runoff.
 - Stock will be excluded from effluent reuse areas during withholding periods, avoiding direct access to potentially contaminated areas.

Together, these operational measures ensure that surface water catchments remain unaltered by the project and that runoff volumes and quality are consistent with existing agricultural land use. The design and management framework ensures compliance with the *State Policy on Water Quality Management* 1997 and relevant TDIA and EPA Tasmania requirements, while supporting sustainable nutrient reuse within the farming system.

GROUNDWATER

Groundwater impacts during operation are considered highly unlikely. Regional mapping shows groundwater in the area is of low yield and not a primary supply source, while the farm's water use is already licensed and based on surface storages. No bores exist within the project footprint.

Safeguards are in place through design and ongoing management:

- All effluent ponds and manure storage pads will use compacted clay liners to prevent seepage.
- Effluent and solids will be managed in accordance with the Effluent Management Plan, ensuring reuse on crops at agronomic rates rather than disposal to land or water.
- Regular inspection and maintenance of storages will confirm liner integrity and protect against leakage. Pond level monitoring systems may also be incorporated for this purpose.

With these measures, operational activities are not expected to impact groundwater quality or availability.

OTHER WATER USER IMPACTS

As discussed above, the **Applicant** has sufficient existing water licences which comprises a small proportion of the area's consumptive water pool. Should the applicant look to expand their water portfolio, this is unlikely to impact other water users. All water use is and will continue to operate within the licensed water requirements which will ensure that there will be no impacts to other water users within the surface and groundwater system.

5.2.4. MITIGATION, MANAGEMENT AND MONITORING MEASURES

Mitigation and monitoring measures will be applied throughout the project lifecycle to minimise potential impacts on surface water and groundwater. These measures include the adoption of best practice erosion and sediment controls, appropriate design and maintenance of drainage, use of impervious liners in effluent systems, and regular monitoring of water quality and storage performance. Responsibilities will be allocated to contractors and qualified personnel, with contingencies in place to address unexpected issues.

Table 5-3 - Water mitigation, management and monitoring measures

ID	Potential Impact	Timing	Responsible	Safeguard
W1	Mobilisation of sediments to streams and waterways	Pre-construction	Contractor	Erosion and sediment control (ESC) measures to be implemented and maintained in accordance with the Guidelines for Soil and Water Management on Construction Sites (DPIPWE/NRE Tas, 2015) and EPA Tasmania best-practice requirements under the EMPCA.
W2	Mobilisation of sediments to waterways	Construction	Contractor	Progressive rehabilitation to stabilise disturbed areas as soon as practicable.
W3	Mobilisation of sediments to streams and waterways	Operation	Farm Manager	Maintain vegetation cover on embankments to prevent erosion and drain failure.
W4	Contamination of surface/groundwater	Construction	Contractor	Refuelling and maintenance to occur only on compacted, designated areas (e.g. manure storage pad) or prior to site entry.

ID	Potential Impact	Timing	Responsible	Safeguard
	from fuels and lubricants			
W5	Contamination of surface/groundwater from machinery washdown	Pre-construction	Contractor	Vehicles to be washed prior to site entry. Any on-site washdown must be contained and directed to controlled drainage.
W6	Contamination of surface/groundwater from leaks	Construction	Contractor	Daily plant maintenance checks to ensure no leaks of fuel, oil, or other liquids. Staff trained in spill prevention and management.
W7	Contamination from accidental spills	Construction	Contractor	Emergency spill kits to be maintained on site. Staff trained in location and use.
W8	Ponding of surface water / inadequate drainage	Pre-construction	Contractor	Inspect and prepare site drainage before works. Install ESC measures and maintain until stabilisation.
W9	Ponding of surface water / inadequate drainage	Construction	Contractor	Maintain ESC measures throughout construction and until permanent stabilisation is achieved.
W10	Groundwater contamination during excavation	Construction	Contractor / Geotechnical specialist	If groundwater is intercepted, works must cease and geotechnical advice sought. All effluent and manure storages to be constructed with impervious compacted clay liners.
W11	Inadequate site drainage	Operation	Farm Manager	Maintain site drainage to ensure all water drains freely to designated areas and away from sensitive areas.
W12	Failure of pond or effluent storage	Operation	Farm Manager / Geotechnical specialist	Follow recommended filling and management measures. In case of failure, engage geotechnical engineer for rectification.

5.2.5. CONCLUSION

The assessment of surface water, drainage, siting, and groundwater demonstrates that the proposed development has been carefully designed to protect and enhance site water management. Feature and level surveys, together with hydrological mapping and site inspections, confirm that the ponds, silage area, and effluent management system are not located within defined waterways and do not intercept sensitive catchments. All culverts and drainage infrastructure have been engineered to maintain existing catchment volumes and flow directions, ensuring no alteration to upstream or downstream hydrology. Surface water runoff from roofs, laneways, yards, and silage pads will be fully directed into controlled drainage and effluent systems, while clean water will continue to flow through existing culverts and natural flowpaths. This represents an improvement on current conditions, where stormwater and operational flows are less formally managed.

Groundwater assessments indicate that the region has low yields and moderate salinity, with no groundwater encountered during site investigations. Design measures ensure a minimum separation between pond floors and groundwater levels, while compacted clay liners, engineered embankments, and construction monitoring provisions provide further safeguards. These measures ensure that groundwater resources will remain protected from contamination risk.

Overall, the development not only avoids adverse impacts but also introduces significant improvements to water quality protection and drainage control. The proposed design aligns with the Tasmanian Planning Scheme, EPA guidelines, NRE and TDIA recommendations and the Dam Works Code, ensuring best practice water management. With mitigation and monitoring measures in place, the project will safeguard catchment integrity, maintain natural flows, and support long-term sustainability of both surface and groundwater systems.

5.3. SOIL

5.3.1. METHODOLOGY

The soils assessment was undertaken to identify potential constraints and confirm the suitability of on-site materials for use in the construction of effluent ponds, manure storage pads, and shed platforms. The methodology followed a staged approach consistent with *AS 1726–2017 Geotechnical Site Investigations* and standard dairy effluent guidelines.

The methodology used in the preparation of the assessment, design and project proposal is as follows:

- A desktop review of published geology, soil mapping, and hazard overlays (landslide, ASS, and karst).
- A geotechnical site investigation (Geoton Pty Ltd, 4 December 2024), including a walkover, excavation of 20 test pits (1.4–4.3 m deep), logging of subsurface conditions, and sample collection.
- Laboratory testing of six representative samples for particle size, Atterberg limits, shrinkage, moisture-density, permeability, and Emerson Class for dispersiveness.
- Field observations of erosion, gully, and dispersive behaviour.
- Assessment of suitability for use in construction of ponds and pads, and for effluent reuse under operational conditions.
- Identification of mitigation measures, informed by the geotechnical findings, effluent management plan, and national guidelines.

A copy of the full Geotechnical assessment is included in **Appendix 4** and the Effluent Management Plan in **Appendix 5**.

5.3.2. EXISTING ENVIRONMENT

GENERAL SOIL CONDITIONS

The project site is underlain by three principal geological units, with soil conditions typical of basaltic, sandstone, and talus formations. These soils were described and logged by Geoton Pty Ltd as follows:

- **Paleogene–Neogene basalt** – clayey silts overlying medium–high plasticity silty to gravelly clays, underlain by weathered basalt at 1.4–4.0 m depth.
- **Late Carboniferous–Triassic sandstone** – silty clays and sandy clays overlying sand and weathered sandstone at depths of 1.5–4.0 m.
- **Quaternary talus** – clayey silts overlying medium–high plasticity silty to sandy clays to depths of 2.0–4.3 m.

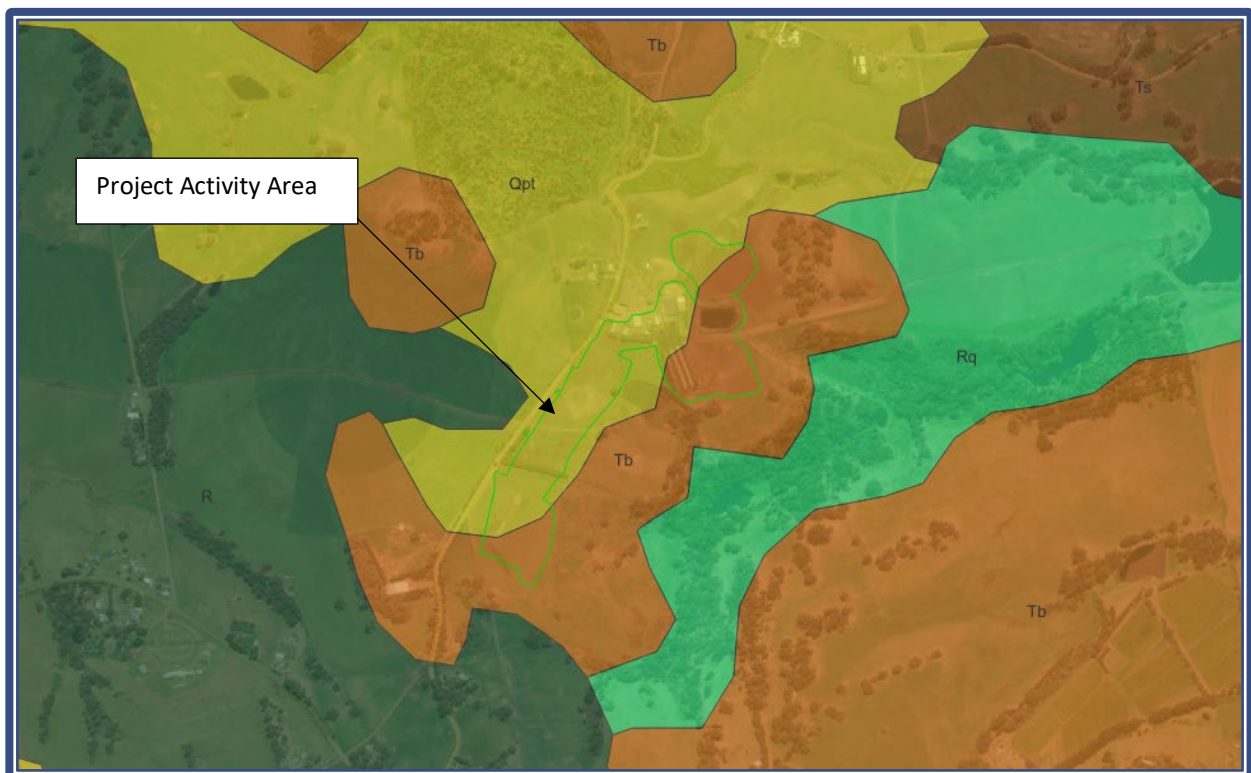


Figure 5-20 – Project Activity area (green) shown with the 250K geology units (Source; PRS QGIS with Mineral Resources Tasmania Overlay)

LANDSLIP HAZARD

The project site has been examined with relation to the Landslide Planning Map shown below. The map indicates that low and medium landslide hazard bands are present on the property however project area is not within a mapped landslide hazard band.

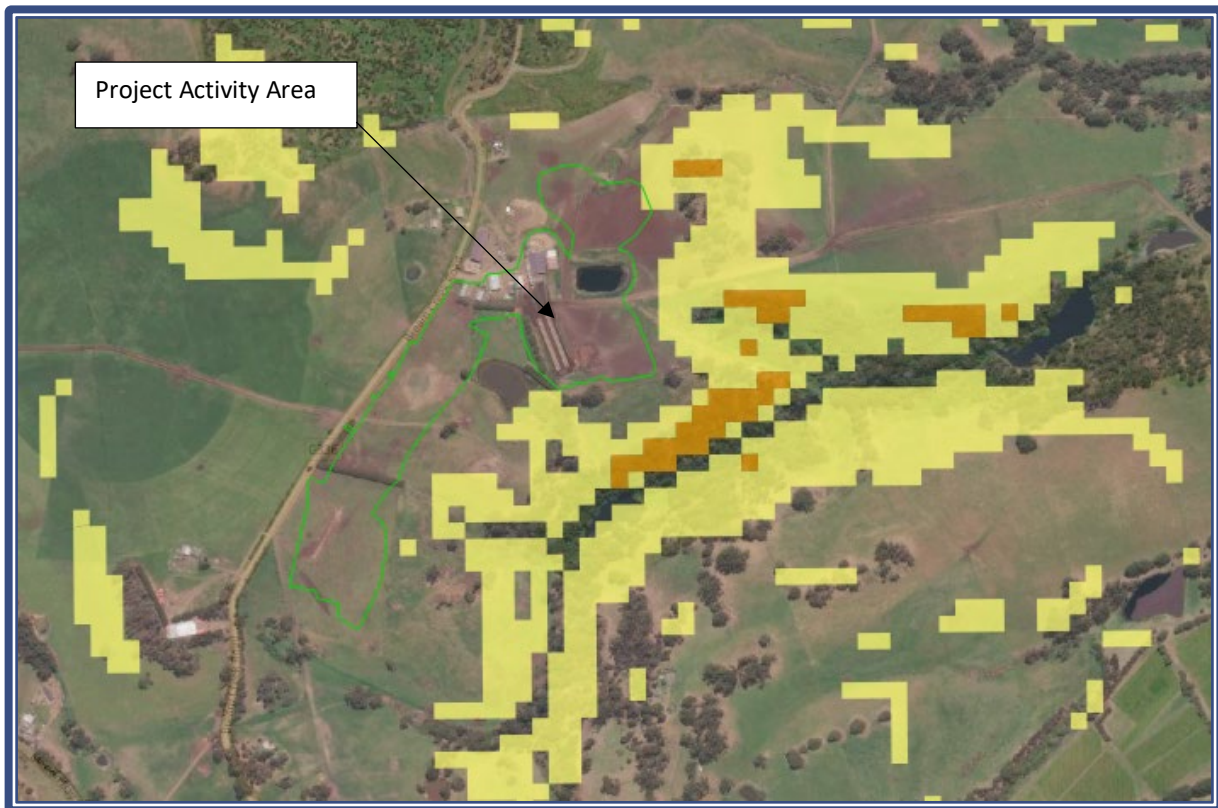


Figure 5-21 – Project Activity area (green) shown with the landslide overlay (yellow low risk and orange medium risk) (Source; PRS QGIS with Landslip Hazard Overlay)

LABORATORY TESTING

Laboratory testing was undertaken on six of the twenty test pits investigated. The below shows the results

Table 5-4 - Soil chemistry testing results (replicate Geoton table 1)

Sample Identification	TP05 0.6m-0.8m	TP07 1.0m-1.2m	TP08 0.5m-0.7m	TP11 1.3m-1.5m	TP13 2.5m-3.0m	TP17 1.6m-1.8m
Liquid Limit (%)	51	N/O	49	44	60	54
Plastic Limit (%)	21	N/O	20	23	40	19
Plastic Index (%)	30	Non-plastic	29	21	20	35
Linear Shrinkage (%)	14.5	N/O	13.0	12.0	10.0	15.0
Emerson Class Number		5	6	4	5	6
Natural Moisture Content (%)		15.2	32.9	21.5	20.7	29.6
Optimum Moisture Content (%)		14.8	30.7	23.8	24.3	27.6
Maximum Dry Density (t/m³)		1.79	1.41	1.57	1.59	1.47
Permeability (m/sec)		1.4×10^{-9}	1.2×10^{-10}	2.7×10^{-10}	2.1×10^{-9}	1.3×10^{-10}
Unified Classification	Silty CLAY (CH)	Silty SAND (SM)	Silty CLAY (CI)	Silty CLAY (CI)	Extremely weathered Basalt (GW)	Silty CLAY (CH)

N/O: Not Obtainable

As summarised in the geotechnical assessment, Fell et al. note that while laboratory testing is a valuable tool for identifying dispersive soils, field observations—such as the presence of deep erosion gullies or piping failures in existing farm dams—can also provide strong indicators of soil dispersiveness. During the field investigation, no notable signs of dispersive soils were found in the area designated for the proposed dairy effluent infrastructure.

Considering both the laboratory test results and on-site observations, the soils at the site are assessed to be non-dispersive.

5.3.3. ASSESSMENT

The assessment considered both construction suitability and operational performance of the soils. Overall, soils were found to be appropriate for pond linings, embankments, and manure pads, provided standard engineering practices are applied.

CONSTRUCTION

Soils within the project footprint were evaluated for their suitability to support excavation, embankment construction, and the formation of low-permeability liners. The geotechnical investigation confirmed that clay-rich soils of moderate to high plasticity are present across the site, providing a suitable resource for earthworks. This section outlines the consideration of potential impacts of the development on the immediate and surrounding landscape.

Key considerations include:

- **Foundation suitability:** Subsoils are clay-dominant with adequate bearing capacity for shed pads, pond embankments, and pad bases. Removal of topsoil and deleterious materials will be required prior to placement of structural fill.
 - Strip and remove topsoil, vegetation, and unsuitable materials from construction areas.
 - Excavate cut-off trenches/keyways beneath embankments and key into clay or weathered rock to minimise seepage pathways.
- **Fill and liner material:** On-site clays, with low permeability (10^{-10} m/s), are suitable for constructing compacted clay liners for ponds and pads. Laboratory testing confirmed these soils are non-dispersive, reducing the risk of piping or internal erosion.
 - Source clay-rich soils of moderate to high plasticity from within the site.
 - Exclude sands and gravels from use in liners, although they may be suitable for general fill.
- **Placement and compaction:** To achieve design permeability and density, the following construction methods must be employed:
 - Place soils in lifts no greater than 250 mm loose (150 mm compacted).
 - Compact each lift to at least 98% of standard maximum dry density (MDD).
 - Maintain moisture content within +3% to -1% of optimum moisture.
 - Use pad foot rollers or scrapers to achieve effective compaction.
- **Liner protection:** Topsoil must be retained and reapplied to disturbed surfaces, and temporary silt control structures installed during construction. Where sodic or dispersive soils are encountered, gypsum or lime stabilisation should be applied.
 - Cover compacted clay liners with ≥ 100 mm of sand or gravel to prevent desiccation and mechanical damage.
 - Ensure pond floors are not left exposed; retain a shallow effluent layer during operation to prevent drying and cracking.
- **Embankments:** Embankment construction is a key criteria for the successful future protection of the ponds and pad:
 - Pond batters should be no steeper than 1V:3H to minimise slippage risk.
 - Maintain embankments free from trees and exclude cattle to avoid rutting and instability.
 - Protect internal faces from erosion by wave action.
 - Landslide hazards are mapped outside the project area, further supporting slope stability in the proposed location.
- **Quality Assurance:** To prevent risks such as embankment settlement, liner cracking from drying, or failure due to erosion, these can be managed through
 - Undertaking field density testing throughout construction to verify compaction meets specifications.
 - Record soil types, compaction effort and moisture conditioning as part of the construction QA.

The design of the ponds, pad and site have been proposed in line with the above specifications. The specialist reports prepared conclude that overall, soils are considered well-suited for the construction of ponds and pads provided these safeguards are applied.

OPERATION

The operational aspects within this section relate to the management of the soils used in the construction of the pond and pads and the use of the nutrients generated within the proposed operation considering effluent irrigation and solids and sludge use.

PONDS AND PADS

Once constructed, the soils within the ponds, pads, and surrounding areas must perform effectively to ensure long-term containment and stability. The investigation and supporting management plans confirm that the soils are suitable for these purposes, subject to ongoing management. The key operational considerations are as follows:

- **Pond performance:**
 - Non-dispersive, low-permeability clays provide effective containment of effluent and sludge.
 - Maintain ≥ 0.6 m freeboard in all effluent ponds to prevent overtopping.
 - Retain a shallow effluent layer on pond floors to prevent drying, shrinkage cracking, and loss of liner integrity.
 - Install monitoring systems to notify of ponds approaching full supply level.
- **Embankment stability:**
 - Exclude cattle and vehicles from embankments to prevent rutting, collapse, or seepage.
 - Keep embankments free of trees or woody vegetation to avoid root penetration and structural weakness.
 - Inspect regularly for cracks, erosion rills, or animal burrows, and repair promptly.
- **Manure pads:**
 - Maintain pad surfaces as compacted, well-drained clay bases to prevent seepage.
 - Manage stockpiling of manure/bedding/feed to avoid ponding water or leaching.
 - Manage and rotate areas of storage and pad cleaning (where possible) to preserve compaction and reduce odour or vermin attraction.
- **Shed pad management:**
 - Shed pads must be built and maintained on compacted fill in accordance with geotechnical recommendations.
 - Regularly check for settlement, cracking, or ponding water around the outside areas of the pad.
 - Ensure moisture and bedding levels within the shed are maintained to protect the shed pad. If water leaks occur and intercept the shed pad, rectification of the pad surface must be immediately undertaken.
 - Ensure stormwater drains away from the pad into designated collection systems.
- **Cut batter protection:**
 - Maintain batter slopes at stable grades in line with approved design.
 - Cover exposed batters with topsoil and establish vegetation cover to prevent erosion.
 - Install drainage controls in line with the design (diversion drains) to intercept runoff and reduce water velocity across batters.
 - Inspect after heavy rainfall for erosion or slumping and repair promptly.

NUTRIENT REUSE

The sustainable use of effluent and manure is a critical component of the operation, as it provides both nutrient recycling for crops and protection of soils and water resources. The effluent management plan demonstrates that the nutrient loading from the proposed system can be fully utilised within the existing farming enterprise, provided application is managed in accordance with best-practice standards and setback requirements. With significant total area of available reuse land, including 207 ha serviced by centre pivots, and 434ha of dryland, the property has sufficient area to meet the land required (132 ha) to sustainably manage effluent nutrient outputs and an abundance of area for the application of sludge and manure solids (separated solids & spent bedding). This ensures that soils will not be overloaded, crops will benefit from enhanced fertility, and off-site environmental risks will be minimised.

- **Nutrient reuse:**
 - Effluent and sludge are to be applied at agronomic rates:
 - 264 kg N/ha (nitrogen), or approx. 73% of nutrient removal
 - 54 kg P/ha (phosphorus) at 100% nutrient removal
 - 226 kg K/ha (potassium) at 75% nutrient removal
 - Land available for effluent and sludge reuse (139 ha) exceeds the 132-ha required for balance.
 - Paddocks used for effluent irrigation will be integrated with the farm's maize and ryegrass production system.

- Livestock external of the houses system (dry cows and young stock) will be excluded from treated paddocks until withholding periods are met, to prevent animal health risks.
 - **Soil health monitoring:**
 - Regular monitoring of soil pH, EC (salinity), and phosphorus accumulation will be undertaken.
 - Nutrient loading will be rotated across reuse areas to prevent localised build-up.
 - Soil amelioration with gypsum or lime will be used if sodic or dispersive conditions emerge.
 - **Environmental safeguards and setbacks:**
 - Effluent and sludge application must comply with all setback requirements identified in the effluent management plan to protect waterways, infrastructure, and sensitive receptors:
 - 30m from watercourses and waterways.
 - 10m from property boundaries.
 - Considering climatic conditions with regard to potential run-off, sensitive receptors, roads and local activities.
- In addition, safeguards will include:
- Avoiding application during heavy rainfall events or when soils are saturated.
 - Not irrigating in wind speeds above 18 km/h, to reduce drift risk.
 - Maintaining vegetated buffers around irrigation areas to further filter runoff.
 - Coordinating irrigation with crop nutrient demand to maximise uptake and minimise leaching.

Detailed monitoring measures are covered in **Section 6**.

Figure 5-22 below shows the areas currently available for effluent and sludge application.



Figure 5-22 Overview of site showing effluent and sludge application areas (green) with relation to the required waterways 30m buffer (Source SES&W Effluent management Plan Figure 31)

In summary, the available reuse land and defined application rates demonstrate that effluent and manure can be managed sustainably within the farming system. The Effluent Management Plan confirms that with adherence to agronomic loadings, setback requirements, and routine soil monitoring, nutrient reuse will support crop production while minimising risks of leaching or off-site impacts.

5.3.4. MITIGATION, MANAGEMENT AND MONITORING MEASURES

Mitigation and monitoring measures relating to the project construction and operation will be implemented to minimise potential soil impacts. These are shown in the table below.

Table 5-5 - Soil mitigation, management and monitoring measures

ID	Potential Impact	Timing	Responsible	Safeguard
S1	Use of unsuitable soils for liners or pads	Pre-construction / Design	Engineer / site supervisor	Verify clay source suitability; exclude sands, gravels, and organic soils from liner use.
S2	Loss of topsoil resource	Pre-construction	Site supervisor	Plan for strip and stockpile topsoil separately for reuse on batters and rehabilitation areas.
S3	Inadequate foundation preparation	Construction	Contractor	Remove topsoil and unsuitable materials; excavate cut-off trenches and key into clay/rock beneath embankments.
S4	Poor compaction of liners and fill	Construction	Contractor / QA	Place soils in ≤ 250 mm lifts (150 mm compacted); compact to $\geq 98\%$ MDD at $+3\%/-1\%$ OMC; use pad foot rollers or scrapers.
S5	Liner damage or desiccation	Construction	Contractor	Cover clay liners with ≥ 100 mm topsoil/sand/gravel; retain shallow effluent layer during operation to prevent drying.
S6	Embankment instability or erosion	Construction & Operation	Farm manager / contractor	Batter slopes no steeper than 1V:3H; exclude cattle and vehicles; keep free of trees; protect internal faces against wave action.
S7	Cut batter erosion beside shed pad	Construction & Operation	Contractor Farm manager	Topsoil and revegetate exposed batters; install diversion drains; inspect after rainfall and repair erosion promptly.
S8	QA failures in construction process	Construction	QA	Undertake field density tests; record soil type, compaction effort, and moisture conditioning.
S9	Pond overtopping or liner failure	Operation	Farm manager	Maintain ≥ 0.6 m freeboard; retain shallow effluent layer; install pond level monitoring systems.
S10	Embankment damage (cracks, burrows, erosion)	Operation	Farm manager	Inspect regularly; exclude stock/vehicles; remediate cracks, rills, or burrows immediately.
S11	Manure pad seepage or instability	Operation	Farm staff	Maintain compacted clay base; manage stockpiles to avoid ponding/leaching; rotate cleaning schedules.
S12	Shed pad settlement or damage	Operation	Farm manager	Maintain compacted fill; check for settlement, cracking, ponding water; ensure stormwater drains away.
S13	Nutrient overloading of soils	Operation	Farm manager / agronomist	Apply effluent at agronomic rates (264N, 54P, 226K kg/ha); rotate reuse areas; exclude stock until withholding periods met.
S14	Off-site nutrient loss (runoff, drift)	Operation	Farm manager Contractor	Maintain setbacks (30 m waterways; 10 m boundaries; ≥ 100 m dwellings/roads); avoid irrigation during heavy rain or winds >18 km/h.
S15	Water quality impacts from reuse	Operation	Farm manager	Maintain vegetated buffers; monitor adjacent waterways where required.

5.3.5. CONCLUSION

The geotechnical investigation and soils assessment confirm that the project site contains clay-rich, low-permeability, non-dispersive soils that are suitable for the construction of effluent ponds, manure storage, silage and shed pads. With correct preparation, placement, compaction and drainage control/containment, these soils can achieve the required engineering standards for liners and embankments.

Operationally, the soils provide long-term containment for effluent and manure, while the property has sufficient land capacity to sustainably reuse nutrients generated from the proposed housing system. The Effluent Management Plan

demonstrates that nutrient loadings can be managed well within agronomic limits, with setbacks and safeguards in place to protect waterways, neighbours, and sensitive receptors.

By adopting the identified mitigation, management, and monitoring measures, risks of soil failure, erosion, or nutrient loss are low. The proposed system ensures that soil and water resources are protected, infrastructure remains stable, and the farm can operate sustainably in compliance with Tasmanian guidelines and National standards.

5.4. BIODIVERSITY AND NATURAL VALUES

5.4.1. METHODOLOGY

A review of the project works area has been undertaken to assess and identify potential impacts to biodiversity as part of the construction or operation of the project. The assessment methodology included:

- Background review including:
 - Database searches of Natural Values Atlas, the Tasmanian Threatened Native Vegetation Communities, EPBC Protected Matters and Atlas of Groundwater Dependent Ecosystems, and
 - Desktop assessment.
- Site review including:
 - Presence of mature trees with hollows, fissures and/or other suitable roosting/nesting places,
 - Presence of hollow logs/debris and areas of dense leaf litter,
 - The presence of preferred feed tree species,
 - Condition, flow and water quality of drainage lines and bodies of water,
 - Plant Community Type and condition,
 - Presence of fruiting flora species and blossoming flora species, particularly winter flowering species,
 - Vegetation connectivity and proximity to neighboring areas of vegetation,
 - Presence of caves, hollow trees and/or man-made structures suitable as bat roost sites,
 - Native flora species and vegetation communities present,
 - Opportunistic fauna sightings, and
 - Weed species present and their abundance.

5.4.2. EXISTING ENVIRONMENT

The project area has been progressively converted to agriculture production since the early 1800s, with extensive clearing of native vegetation to enable pasture and cropping. Current on-site and immediate adjoining vegetation is dominated by exotic plantings and improved pasture, with native vegetation confined to areas outside the works footprint.

Over time the property has established shelter belts and blocks, predominantly consisting of Monterey cypress (*Cupressus macrocarpa*) for the protection and shelter for livestock. These stands are mature to over-mature. As an exotic conifer, Monterey cypress provides low foraging value for native fauna, limited ground-level habitat, and functions primarily as windbreak/shelter. The species is also susceptible to disease and sudden decline (e.g., cypress canker) and is not relied upon for significant biodiversity values. These trees also pose significant cattle health risks by causing abortions.

Remnant native vegetation persists on steeper knobs and in incised valleys elsewhere on the property. These areas are being actively protected and rehabilitated (e.g., stock-exclusion fencing and weed control). All proposed works, with the exception of the loose-housing area, are well separated from these remnants. Near the proposed loose-housing footprint there are several isolated native eucalypts (e.g., *Eucalyptus globulus*—Southern blue gum) that are mapped as Priority Vegetation Area under the Tasmanian Planning Scheme (Natural Assets Code). No removal of native vegetation is proposed, and construction will be confined to previously modified surfaces.

Groundcover across the works area comprises improved pasture and annual species used for grazing and for hay/silage production. Long-term cultivation and herbicide use have eliminated native grass/forb signatures within the works footprint; no native groundcovers were recorded during inspection. Ongoing farm management has kept weed loads low, with no State-listed or regionally prohibited weeds recorded within the project area.



Figure 5-23 - Photo showing existing site condition at the location of the dairy complex area (Source: PRS)

VEGETATION

Background searches of the Tasmanian Threatened Native Vegetation Communities (TNVC) database, the Commonwealth Protected Matters Search Tool (PMST), and relevant Council planning overlays were undertaken within a 5km radius of the project site. These searches identified:

- Four threatened ecological communities under the EPBC Act (PMST), and
- Five TNVC types mapped within the broader area.
- Priority Vegetation Overlay identifies an area of mapped vegetation within and immediately adjoining the proposed loose-housing footprint.

The property as a whole supports areas of remnant native vegetation in steeper or less accessible parts and thus provides habitat for species and communities considered threatened at a regional or state scale. However:

- No native standing vegetation was recorded within the proposed construction footprint, and
- Several native trees (e.g. *Eucalyptus globulus*—Southern blue gum) are present adjoining the loose-housing site, outside of the immediate disturbance zone.
- Existing exotic shelterbelts (e.g. planted cypress rows) are present in parts of the project area. Some of these exotic plantings will require removal to accommodate the proposed infrastructure.

Overall, the project footprint has been extensively modified through past agricultural use, and vegetation present today is a product of historical disturbance and management. Importantly, no clearing of native vegetation is proposed as part of the works, and the project will avoid impacts to remnant vegetation adjoining the development area

WEEDS

Relating to the project area, reference has been made to the *Sorell Council – Weed Management Plan*. This plan identifies priority weeds in the council area. The project site does not contain any state or Regionally Prohibited weeds.

5.4.3. ECOLOGICAL SETTING OF THE PROJECT SITE

The regional, environmental and landscape context of the project area is shown below in **Table 5-6**.

Table 5-6 - Regional and environmental landscape context

Project Area	Description
Bioregion	Tasmania South East
Water Management Area	Tasmin
Land Capability Class	Class 3 & 4
Local Government Area	Sorrell Council
Surrounding Land use	Agriculture

5.4.4. ASSESSMENT

NATIONAL ENVIRONMENTAL SIGNIFICANCE

The search of the EPBC Act Protected Matters within a 5km radius of the project site has the following results:

Table 5-7 - Matters of National Environmental Significance in relation to this project site

Matter	Response
World Heritage Properties	None
National Heritage Properties	None
Wetlands of International Importance	None
Great Barrier Reef Marine Park	None
Commonwealth Marine Park	None
Listed Threatened Ecological Communities	4
Listed Threatened Species	67
Listed Migratory Species	42

OTHER MATTERS PROTECTED BY THE EPBC ACT

This section identifies other matters protected under the Act relating to the area nominated in the search.

Table 5-8 - Other matters protected by the EPBC Act

Matter	Response
Commonwealth Land	None
Commonwealth Heritage Places	None
Listed Marine Species	65
Whales and Other Cetaceans	9
Critical Habitats	None
Commonwealth Reserves Terrestrial	None
Commonwealth Reserves Marine	None

EXTRA INFORMATION

Table 5-9 - Extra information in relation to the EPBC Act

Matter	Response
State and Territory Reserves	14
Regional Forest Agreements	1
Nationally Important Wetlands	None
EPBA Act Referrals	2
Key Ecological Features (Marine)	None
Biologically Important Areas	7
Bioregional Assessments	None
Geological and Bioregional Assessments	None

LISTED THREATENED SPECIES

A search of the Tasmania Natural Values Atlas and the Protection Matters Search Tool records provided the following results with relation Threatened Species recorded within a 5km radius of the project site.

Table 5-10 - Listed threatened species recorded within 5kms of project site

Scientific Name	Common Name	Record Source	Status		On site
			Tas	PBC	
Birds (Aves)					
<i>Diomedea antipodensis</i>	Antipodean Albatross	P	NL	V	No
<i>Botaurus poiciloptilus</i>	Australasian Bittern	NV,P	E	E	No
<i>Sternula nereis nereis</i>	Australian Fairy Tern	P	V	V	No
<i>Thalassarche melanophrys</i>	Black-Browed Albatross	P	NL	V	No
<i>Halobaena caerulea</i>	Blue Petrel	P	NL	V	No
<i>Neophema chrysostoma</i>	Blue-Winged Parrot	NV,P	NL	V	No

Scientific Name	Common Name	Record Source	Status		On site
			Tas	PBC	
<i>Thalassarche bulleri</i>	Buller's Albatross	P	NL	V	No
<i>Thalassarche impavida</i>	Campbell Albatross	P	NL	V	No
<i>Tringa nebularia</i>	Common Greenshank	NV,P	NL	E	No
<i>Calidris ferruginea</i>	Curlew Sandpiper	NV,P	NL	CE	No
<i>Numenius madagascariensis</i>	Eastern Curlew	NV,P	E	CE	No
<i>Thinornis cucullatus cucullatus</i>	Eastern Hooded Plover	NV,P	NL	V	No
<i>Sternula nereis subsp. nereis</i>	Fairy Tern	NV	V	V	No
<i>Pachyptila turtur subantarctica</i>	Fairy Prion (Southern)	P	NL	V	No
<i>Pardalotus quadragintus</i>	Forty-Spotted Pardalote	NV,P	V	E	No
<i>Diomedea antipodensis gibsoni</i>	Gibson's Albatross	P	NL	V	No
<i>Pterodroma leucoptera leucoptera</i>	Australian Gould's Petrel	P	NL	E	No
<i>Thalassarche chrysostoma</i>	Grey-Headed Albatross	P	NL	E	No
<i>Pluvialis squatarola</i>	Grey Plover	NV	NL	V	No
<i>Thalassarche carteri</i>	Indian Yellow-Nosed Albatross	P	NL	V	No
<i>Gallinago hardwickii</i>	Latham's Snipe	NV, P	NL	V	No
<i>Sternula albifrons</i>	Little Tern	NV, P	E	V	No
<i>Tyto novaehollandiae castanops</i>	Masked Owl (Tasmanian)	NV, P	E	V	No
<i>Thalassarche bulleri platei</i>	Northern Buller's Albatross,	P	NL	V	No
<i>Macronectes halli</i>	Northern Giant Petrel	P	NL	V	No
<i>Diomedea sanfordi</i>	Northern Royal Albatross	P	NL	E	No
<i>Limosa lapponica baueri</i>	Nunivak Bar-Tailed Godwit	P	NL	E	No
<i>Calidris canutus</i>	Red Knot	NV.P	NL	V	No
<i>Arenaria interpres</i>	Ruddy Turnstone	NV.P	NL	V	No
<i>Thalassarche salvini</i>	Salvin's Albatross	P	NL	V	No
<i>Calidris acuminata</i>	Sharp-Tailed Sandpiper	NV.P	NL	V	No
<i>Thalassarche cauta</i>	Shy Albatross	NV.P	V	E	No
<i>Ardenna grisea</i>	Sooty Shearwater	NV.P	NL	V	No
<i>Macronectes giganteus</i>	Southern Giant-Petrel	P	NL	E	No
<i>Diomedea epomophora</i>	Southern Royal Albatross	P	NL	V	No
<i>Lathamus discolor</i>	Swift Parrot	NV.P	E	CE	No
<i>Ceyx azureus diemenensis</i>	Tasmanian Azure Kingfisher	P	NL	E	No
<i>Aquila audax fleayi</i>	Wedge-Tailed Eagle	NV, P	E	E	No
<i>Diomedea exulans</i>	Wandering Albatross	P	NL	V	No
<i>Haliaeetus leucogaster</i>	White-Bellied Sea-Eagle	NV, P	V	NL	No
<i>Fregetta grallaria grallaria</i>	White-Bellied Storm-Petrel	NV, P	NL	V	No
<i>Thalassarche steadi</i>	White-Capped Albatross	P	NL	V	No
<i>Hirundapus caudacutus</i>	White-Throated Needletail	NV, P	NL	V	No

Scientific Name	Common Name	Record Source	Status		On site
			Tas	PBC	
Mammals					
<i>Balaenoptera musculus</i>	Blue Whale	P	NL	E	No
<i>Perameles gunnii gunnii</i>	Eastern Barred Bandicoot	NV, P	NL	V	No
<i>Dasyurus viverrinus</i>	Eastern Quoll, Luaner	NV, P	NL	E	No
<i>Mirounga leonina</i>	Southern Elephant Seal	NV	E	V	No
<i>Eubalaena australis</i>	Southern Right Whale	NV, P	E	E	No
<i>Dasyurus maculatus maculatus</i> (Tasmanian population)	Spot-Tailed Quoll(Tasmanian Population)	NV, P	R	V	No
<i>Arctocephalus tropicalis</i>	Sub-Antarctic Fur Seal	NV	E	V	No
<i>Sarcophilus harrisii</i>	Tasmanian Devil	NV, P	E	E	No
Aquatic					
<i>Prototroctes maraena</i>	Australian Grayling	P	NL	V	No
<i>Seriolella brama</i>	Blue Warehou	P	NL	CD	No
<i>Thymichthys politus</i>	Red Handfish	P	NL	CE	No
<i>Brachiopsilus ziebelli</i>	Ziebell's Handfish	P	NL	V	No
<i>Parvulastra vivipara</i>	Tasmanian Live-Bearing Seastar	NV	NL	V	No
<i>Carcharodon carcharias</i>	Great White Shark	NV	NL	V	No
Insect					
<i>Lissotes latidens</i>	Broad-Toothed Stag Beetle	NV, P	E	V	No
<i>Theclinesthes serpentatus</i>	Chequered Blue	NV	R	NL	No
<i>Antipodia chaostola leucophaea</i>	Tasmanian Chaostola Skipper	P	NL	E	No
Mollusk					
<i>Gazameda gunnii</i>	Gunn's Screw Shell	NV	V	NL	No
Anphibian					
<i>Litoria raniformis</i>	Southern Bell Frog	P	NL	V	No
Flora					
<i>Lepidium hyssopifolium</i>	Basalt Pepper-cress	P	NL	E	No
<i>Corunastylis morrisii</i>	Bearded midge-orchid	NV	E	NL	No
<i>Prasophyllum castaneum</i>	Chestnut Leek-orchid	P	NL	CE	No
<i>Stuckenia pectinata</i>	Fennel Pondweed	NV	R	NL	No
<i>Corunastylis firthii</i>	Firths Midge-Orchid	NV	E	CE	No
<i>Odixia achlaena</i>	Golden Everlastingbush	NV	R	NL	No
<i>Pterostylis ziegeleri</i>	Grassland Greenhood	P	NL	V	No
<i>Boronia gunnii</i>	Gunn's Boronia	P	NL	V	No
<i>Acacia ulicifolia</i>	Juniper Wattle	NV	R	NL	No
<i>Ruppia megacarpa</i>	Largefruit Seatassel	NV	R	NL	No
<i>Vittadinia muelleri</i>	Narrowleaf New-Holland-Daisy	NV	R	NL	No

Scientific Name	Common Name	Record Source	Status		On site
			Tas	PBC	
<i>Epacris virgata</i>	Pretty Heath	P	NL	E	No
<i>Bolboschoenus caldwellii</i>	Sea Clusledge	NV	R	NL	No
<i>Lepilaena marina</i>	Sea Watermat	NV	R	NL	No
<i>Wilsonia humilis</i>	Silky Wilsonia	NV	R	NL	No
<i>Thelymitra jonesii</i>	Sky-Blue Sun-Orchid	P	NL	E	No
<i>Lepilaena preissii</i>	Slender Watermat	NV	R	NL	No
<i>Persicaria decipiens</i>	Slender Waterpepper	NV	V	NL	No
<i>Deyeuxia minor</i>	Small Bentgrass	NV	R	NL	No
<i>Spyridium lawrencei</i>	Small-Leaf Spyridium	P	NL	E	No
<i>Pterostylis atriola</i>	Snug Greenhood	NV	R	NL	No
<i>Lepidium hyssopifolium</i>	Soft Peppergrass	NV	E	E	No
<i>Frankenia pauciflora</i> var. <i>gunnii</i>	Southern Seaheath	NV	R	NL	No
<i>Stenanthemum pimeleoides</i>	Spreading Stenanthemum	P	NL	V	No
<i>Senecio psilocarpus</i>	Swamp Fireweed	P	NL	V	No
<i>Xerochrysum palustre</i>	Swamp Paper Daisy	NV,P	V	V	No
<i>Caladenia caudata</i>	Tailed Spider-orchid	P	NL	V	No
<i>Lachnagrostis robusta</i>	Tall Blowngrass	NV	R	NL	No
<i>Prasophyllum apoxychilum</i>	Tapered Leek-Orchid	P	NL	E	No
<i>Corunastylis nuda</i>	Tiny Midge-Orchid	NV	R	NL	No
<i>Ruppia tuberosa</i>	Tuberous Seatassel	NV	R	NL	No

*CD = Conservation Determined, CE = Critically Endangered, V = Vulnerable, E = Endangered, R = Rare, Ex = Extinct, NL = Not Listed

Searches did not include any records of threatened species on the property.

NESTS

A review of the proposed dam works (effluent and silage catchment pond) has been undertaken in accordance with Part 8 of the *Water Management Act 1999* and the Division 4 Permit *Dam Works Code 2015* ("the Code"). Under the Code, dam works must be assessed for potential impacts on nesting raptors, particularly the Wedge-tailed Eagle (*Aquila audax fleayi*), which is listed as endangered in Tasmania.

Spatial analysis (See Figure 5-24 below) confirmed that areas south and east of the project footprint are mapped as having potential nesting habitat for Wedge-tailed Eagles. However, no active or recorded nests are identified within the project area or immediate vicinity.

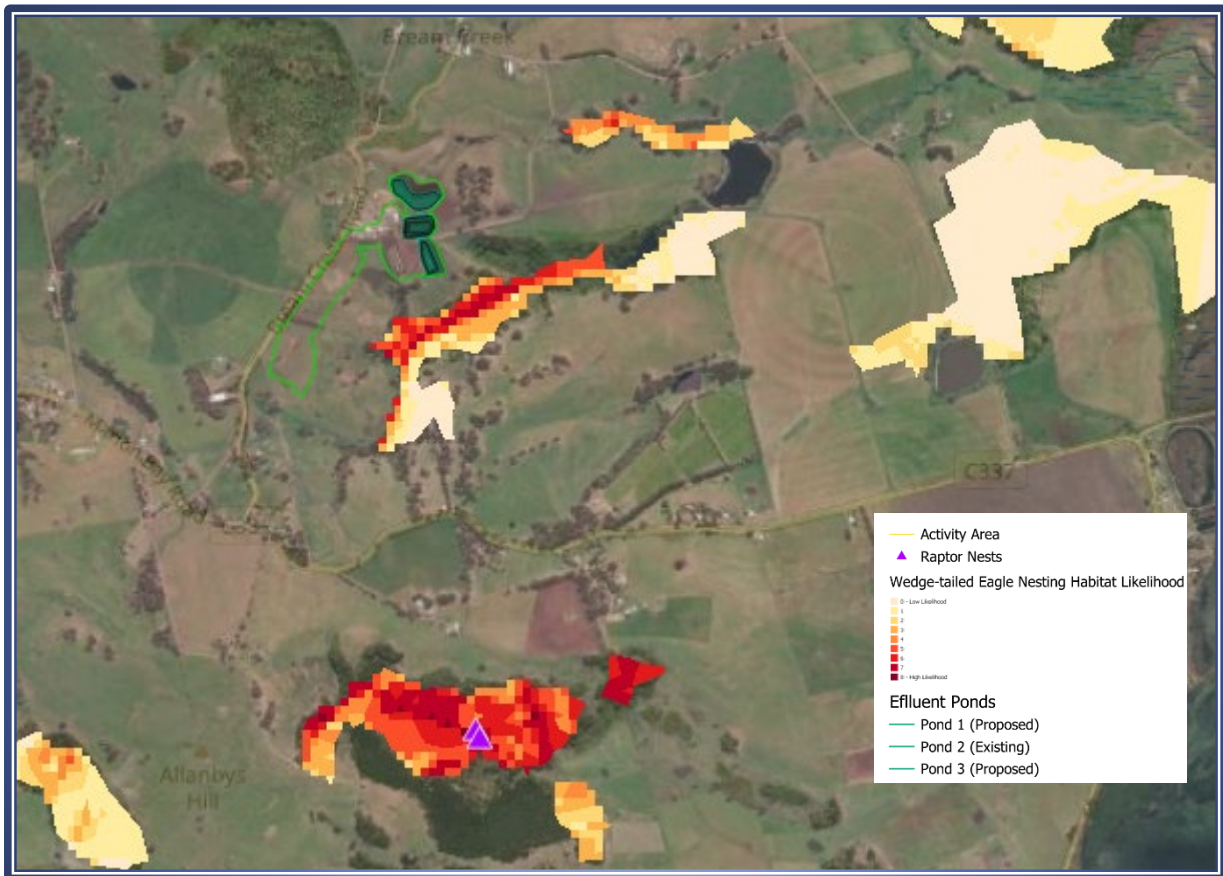


Figure 5-24 – Site overview with the Wedge-tailed Eagle nesting habitat likelihood overlay and Identified Raptor Nests (Source: PRS QGIS with overlays)

Part 8.1 of the Code requires that:

“If dam works are within 500 metres of, or within 1000 metres line of sight of, a recorded eagle’s nest, the dam works must not be carried out between 1 June and 31 March without prior written approval from the Department.”

The proposed dams do not fall within these trigger distances. The nearest recorded nest is located more than 1 km from the closest project feature (the silage runoff pond), well outside the regulatory thresholds.

The proposed works do not conflict with the Dam Works Code provisions relating to eagle nests. No timing restrictions or additional approvals are required, though general awareness of potential raptor activity should be maintained during construction.

LISTED THREATENED ECOLOGICAL COMMUNITIES

Searches undertaken did identified the potential for 9 listed Threatened Ecological Communities within the surrounding area. These are:

- **PMST**
 - *Lowland Native Grasslands of Tasmania*
 - *Giant Kelp Marine Forests of South East Australia*
 - *Tasmanian white gum (Eucalyptus viminalis) wet forest*
 - *Tasmanian Forests and Woodlands dominated by black gum or Brookers gum (Eucalyptus ovata / E. brookeriana)*
- **TNVC**
 - *Eucalyptus tenuiramis forest and woodland on sediments*
 - *Eucalyptus globulus dry forest and woodland*
 - *Eucalyptus amygdalina forest and woodland on sandstone*
 - *Eucalyptus viminalis - Eucalyptus globulus coastal forest and woodland*
 - *Eucalyptus ovata forest and woodland*

A review of the Tasmanian Threatened Native Vegetation Communities (TNVC) mapping identified a small polygon of *Eucalyptus globulus dry forest and woodland* within and in close proximity to the project activity area. Field inspection

confirmed that the vegetation within this mapped area has been substantially modified and is now represented by only a few scattered, isolated *Eucalyptus globulus* trees rather than an intact community.

The proposed works have been sited to avoid this remaining vegetation, and no removal of native trees or vegetation is required. Protective measures can be implemented during construction (e.g. fencing or exclusion zones) to ensure that the scattered trees are not inadvertently disturbed. Accordingly, the project will not directly impact any TNVC and is consistent with the avoidance principles of the Natural Assets Code under the Tasmanian Planning Scheme.



Figure 5-25 – Overview of the site, activity area (yellow) and the Threatened Native Vegetation Communities Overlay.

5.4.5. POTENTIAL IMPACTS

LOSS OF VEGETATION AND HABITAT

The proposed works will not result in the removal of native vegetation within the project footprint, which is confined to previously modified agricultural land. A small polygon of *Eucalyptus globulus* dry forest and woodland is mapped as Priority Vegetation under the Natural Assets Code. Field inspection confirmed that this area has been substantially modified and now comprises only a few scattered remaining *Eucalyptus globule* (Southern blue gum) adjoining the loose-housing area however no clearing of these species is proposed.

Exotic Monterey cypress shelterbelts within the project footprint will be removed, though these provide limited biodiversity value beyond transient shelter for birds or mammals. The footprint contains no hollow-bearing trees, coarse woody debris, intact understorey or aquatic features, and as such provides minimal habitat for threatened fauna. Raptor nest assessments under the Dam Works Code confirmed no Wedge-tailed Eagle nests within 500 m or 1,000 m line of sight of the proposed dams; Code timing restrictions are therefore not triggered.

WEEDS

Weed load within the project site is low due to ongoing pasture and cropping management. There is some potential for colonisation of disturbed areas during and after construction, and a minor risk of weed or pathogen introduction via machinery or vehicles if hygiene protocols are not followed. These risks are considered low and can be managed through farm best management practices, including the “come-clean, go-clean” approach.

GROUNDWATER DEPENDENT ECOSYSTEMS

The proposed works are not expected to adversely affect groundwater dependent ecosystems. The site does not contain mapped GDEs, and the proposed dams and effluent storages are not predicted to alter groundwater levels or flows. Accordingly, no direct or indirect impacts on groundwater dependent ecosystems are anticipated.

5.4.6. MITIGATION, MANAGEMENT AND MONITORING MEASURES

Mitigation and monitoring measures relating to the project construction and operation will be implemented to minimise potential impacts to biodiversity. These are shown in the table below.

Table 5-11 - Biodiversity mitigation, management and monitoring measures

ID	Potential Impact	Timing	Responsible	Safeguard
B1	Native vegetation accidentally cleared	Pre-construction /construction	Contractor	No native vegetation to be removed; clearly mark exclusion zones around adjoining native vegetation; confine works to designated footprint.
B2	Vegetation outside site impacted by works	Pre-construction	Contractor	Prepare and implement erosion and sediment controls before any soil disturbance to minimise off-site impacts.
B3	Weed and pathogen spread via machinery	Pre-construction & construction	Contractor	Apply 'come-clean, go-clean' machinery hygiene protocols; inspect vehicles entering/exiting site; source clean fill.
B4	Site and surrounding areas contaminated due to chemical spill	Pre-construction & construction	Contractor	Store fuels/chemicals in bunded areas; implement spill prevention and response plan; provide spill kits at work areas.
B5	Disturbance to Priority Vegetation adjoining footprint	Construction	Contractor	Install temporary fencing or flagging; monitor during earthworks to ensure no encroachment.
B6	Removal of exotic shelterbelts (cypress)	Construction	Contractor	Undertake removal in staged, controlled manner; monitor for weed regrowth; replace shelter values where required with alternative plantings.
B7	Weed proliferation (construction traffic)	Construction	Contractor	Limit traffic to existing access and farm roads; enforce hygiene protocols; monitor and control outbreaks as part of BMP weed program.
B8	Vegetation or water impacted by chemical spill or contamination	Construction	Contractor / site supervisor	Cease works immediately if spill occurs; implement spill management procedure; notify regulators as required.
B9	Water quality risks (sediment or pollutants)	Construction	Contractor	Implement erosion/sediment controls (silt fencing, diversion drains, check dams); stabilise disturbed areas progressively; report any pollution events to EPA and SRW.
B10	Indirect impacts (dust, traffic, drainage)	Construction	Contractor / site supervisor	Confine construction to defined footprint; enforce speed limits; implement ESC measures; stabilise banks promptly.
B11	Weed colonisation of disturbed soils	Construction & operation	Farm manager	Progressively stabilise exposed areas with topsoil and seeding; monitor quarterly; apply spot spraying if outbreaks occur.
B12	Weed proliferation (long-term)	Operation	Farm manager	Regularly monitor and maintain to suppress weeds; continue rotational cropping/pasture practices; integrate into ongoing farm maintenance.

Implementation of the above safeguards will be supported by regular environmental inspections during construction, including checks after significant rainfall to confirm erosion and sediment controls are functioning effectively. Weed monitoring will occur quarterly for two years post-construction, then revert to routine farm maintenance schedules. Any chemical spills, pollution events, or non-compliances must be reported immediately to the property owners and, where required, to the EPA and relevant authorities. Records of inspections, incidents, and corrective actions will be maintained.

5.4.7. CONCLUSION

The biodiversity assessment has confirmed that the project footprint is highly modified through past agricultural activity and does not support remnant native groundcover, understorey, or intact vegetation communities. No threatened flora species or ecological communities will be directly impacted by the proposed works. Although several isolated native trees occur adjoining the proposed loose housing site, these will be avoided, and protective measures will be implemented to prevent inadvertent disturbance.

Weed risks are considered low, with existing farm management practices effectively minimising their spread. Potential for indirect impacts, such as altered drainage, sediment mobilisation, or chemical spills, will be managed through standard safeguards, erosion and sediment control measures, and spill management procedures.

Given the absence of native vegetation within the construction footprint, the distance to recorded raptor nests, and the avoidance of Priority Vegetation areas, the project is not expected to significantly affect threatened species, ecological communities, or Matters of National Environmental Significance. With the implementation of mitigation and monitoring measures, the project is consistent with the objectives of the Natural Assets Code of the Tasmanian Planning Scheme. No Commonwealth listed Matters of National Environmental Significance were identified at the site or as being impacted by the project.

5.5. INDIGENOUS HERITAGE

5.5.1. METHODOLOGY

The methodology used to assess Aboriginal cultural heritage considerations for the project has involved:

- A search of the Aboriginal Heritage Property Search Tool administered by Aboriginal Heritage Tasmania (AHT).
- Review of the **Aboriginal Heritage Standards and Procedures (2024)**, particularly Section 2, which outlines the Aboriginal heritage assessment procedure.
- Consideration of the project site's landform and environmental setting in the context of known Aboriginal heritage sensitivity indicators.

A full copy of the results page of the tool is provided in **Appendix 7a**.

5.5.2. ASSESSMENT FINDINGS

Proposed works have been reviewed in relation to the *Aboriginal Heritage Standards and Procedures 2024* section 2 re the Aboriginal heritage assessment procedure. A summary of the results is included below:

Use the Aboriginal Heritage Property Search website or the Before You Dig Australia referral service to determine if your activity may impact registered Aboriginal heritage.

Search of the property (PID 3370760) was conducted, and results are provided in Appendix 7a.



This search has not identified any registered Aboriginal heritage or apparent risk of impacting registered Aboriginal heritage

The search did not identify any registered Aboriginal relics or apparent risk of impacting registered relics.



Project activity to proceed with Search Record and Unanticipated Discovery Plan issued.

The Aboriginal Heritage Property Search confirmed that no Aboriginal heritage places are recorded within the project site boundary. However, it is noted that the absence of a record on the Aboriginal Heritage Register does not confirm the absence of Aboriginal relics or cultural material. Under the *Aboriginal Heritage Act 1975*, all Aboriginal relics are protected, whether recorded or not.

The project site is located on land that has been historically cleared and used for agricultural purposes. It comprises gently undulating slopes and does not contain major waterways, dune systems, or prominent ridgelines, which are landforms generally associated with higher archaeological sensitivity. While no Aboriginal sites are registered on the property, registered sites are present within the broader region, reflecting the long-term cultural connection of Aboriginal people to the landscape.

In accordance with the *Aboriginal Heritage Standards and Procedures (2024)*, the project will maintain an Unanticipated Discovery Plan, to be held onsite alongside the Aboriginal Heritage Property Search record. A copy of this plan is attached in **Appendix 7b**.

5.5.3. MITIGATION, MANAGEMENT AND MONITORING MEASURES

Mitigation and monitoring measures relating to the project construction and operation will be implemented to minimise potential impacts to Aboriginal heritage. These are shown in the table below.

Table 5-12 – Indigenous heritage mitigation and monitoring measures

ID	Potential Impact	Timing	Owner	Safeguard
ACHA 1	Unexpected Discovery of Aboriginal Relics other than Skeletal Material	Construction	Site Supervisor / Contractor	Establish a temporary no-go or buffer zone of at least 10 m × 10 m around the suspected relics. Contact Aboriginal Heritage Tasmania on 1300 487 045 and email documentation to aboriginalheritage@dpac.tas.gov.au as soon as possible. Works will not recommence until further advice is received from AHT.
ACHA 2	Unexpected Discovery of Skeletal Material	Construction	Site Supervisor / Contractor	Cease all works immediately and protect the remains in situ. Notify Tasmanian Police without delay. If the remains are suspected to be Aboriginal, also notify Aboriginal Heritage Tasmania. All subsequent instructions from the relevant authorities must be strictly followed

5.5.4. CONCLUSION

The Aboriginal Cultural Heritage assessment for the proposed works has been undertaken in accordance with the *Aboriginal Heritage Standards and Procedures, 2024* and the requirements of the *Aboriginal Heritage Act 1975*. The Aboriginal Heritage Property Search confirmed that there are no recorded Aboriginal sites within the project area; however, the Act applies to all relics regardless of registration status.

The project site has been historically cleared and is of relatively low archaeological sensitivity, with no landforms such as significant waterways, dune systems, or ridgelines typically associated with higher cultural heritage potential. Notwithstanding, mitigation measures have been prepared in the form of an Unanticipated Discovery Plan and documented notification procedures, which will be maintained on site for the duration of construction.

Implementation of the mitigation measures, combined with site management responsibilities, ensures that any unexpected discovery of Aboriginal relics or skeletal remains will be appropriately managed in compliance with the *Aboriginal Heritage Act 1975* and the cultural heritage objectives of the *Tasmanian Planning Scheme (Schedule 1 Objective (e))*.

5.6. NON-INDIGENOUS HERITAGE

5.6.1. METHODOLOGY

The assessment of potential impacts on non-Indigenous (European) heritage values associated with the project was undertaken using the following approach:

- Undertake searches of relevant heritage lists and registers, including State, National, and international databases.
- Record and document the results of these searches for future reference.
- Where searches identify listed items, review their significance and potential sensitivity to project activities.
- Identify project management and mitigation measures to minimise any potential impacts.

This methodology has been developed with reference to the *Historic Cultural Heritage Act 1995* (Tas), the *Tasmanian Planning Scheme – Local Provisions Schedule* (Heritage Code), and the relevant provisions of the EIS Guidelines.

The results of this assessment have been included below.

5.6.2. RESULTS

Searches have been finalised on 5 August 2025 considering the following available lists and registers:

- Australia's National Heritage List,
- Commonwealth Heritage List,
- Tasmanian Heritage Register, and
- Local heritage listings identified through the *Tasmanian Planning Scheme Heritage Code*.

A copy of these searches and results has been included in **Appendix 8** and further discussed below.

5.6.3. EXISTING ENVIRONMENT AND ASSESSMENT

A search undertaken of the World, Commonwealth, National and State Heritage registers did not identify any listed items at or within the vicinity of the project site.

A search undertaken of the Tasmania *Heritage Overlay* identifies several listed heritage items within the wider locality. The closest items are located over 1.5km from the project site and include *Marchwiel*, a series of buildings that form a Victorian-era farm complex of recognised historical value.

Given the separation distance (>1.5 km) and the absence of works proposed within or near the identified site, it is concluded that the project will not result in direct or indirect impacts on any recognised non-Indigenous heritage places.

5.6.4. MITIGATION, MANAGEMENT AND MONITORING MEASURES

While no heritage places are identified within the project site, the possibility of unrecorded historic features or artefacts cannot be excluded. Accordingly, the following management measures will be adopted.

Table 5-13 – Non-indigenous heritage mitigation, management and monitoring measures

ID	Potential Impact	Timing	Owner	Safeguard
NI1	Damage to unknown heritage item.	Construction	Site Supervisor / Contractor	All site personnel will be instructed to stop work immediately if any suspected heritage artefact or structure is identified.
NI2	Unexpected archaeological remains discovered	Construction	Site Supervisor / Contractor	Cease work in the vicinity of the find and establish a temporary no-go buffer zone. Seek specialist advice from a suitably qualified heritage consultant. Notify the relevant local Council and the Tasmanian Heritage Council for further direction under the <i>Historic Cultural Heritage Act 1995</i> .

5.6.5. CONCLUSION

Comprehensive searches of international, Commonwealth, National, State and local heritage registers have confirmed that there are no heritage-listed places within or adjacent to the project site. The nearest listed heritage items, including *Marchwiel* (Victorian farm complex), are located more than 1.5 km away.

Given this distance and the absence of works within or near these places, the project is not expected to impact non-Indigenous heritage values. Nevertheless, the project will implement a clear unexpected discovery protocol to ensure

compliance with the *Historic Cultural Heritage Act 1995* (Tas) and the heritage objectives of the Tasmanian Planning Scheme.

5.7. AIR QUALITY AND ODOUR

5.7.1. METHODOLOGY

Potential air quality impacts have been assessed for both the construction and operational phases of the project. Construction impacts are expected to relate primarily to dust generation from earthworks and vehicle movements, while possible operational impacts include dust (from access roads and commodity handling) and odour (from housing, effluent and manure management).

The assessment method and results are recorded below.

DUST

Dust generation (particulate matter) has most relevant potential impact during construction. Particulate matter includes a range of airborne particles, typically:

- Total Suspended Particulates (TSP): particles $<30\ \mu\text{m}$ that remain suspended in air.
- PM_{10} and $\text{PM}_{2.5}$: finer particles $<10\ \mu\text{m}$ and $<2.5\ \mu\text{m}$ that are of greatest concern for human and animal health as they can penetrate the respiratory system, contributing to respiratory and cardiovascular conditions.
- Deposited dust ($>35\ \mu\text{m}$): particles that settle quickly, generally causing nuisance impacts (e.g. reduced visibility, soiling surfaces) rather than health risks.

To establish baseline conditions, records from the EPA Tasmania air quality station at Bream Creek were reviewed. Day-averaged data for 2024 showed:

- $\text{PM}_{2.5}$ levels between $1.2\text{--}8.3\ \mu\text{g}/\text{m}^3$.
- PM_{10} levels between $2.1\text{--}9.4\ \mu\text{g}/\text{m}^3$.

All values fall within the “good” air quality range ($<25\ \mu\text{g}/\text{m}^3$). There were no days where concentrations exceeded guideline thresholds, indicating that the regional air quality is generally good to fair. **Figure 5-26** presents the 2024 daily average data for Bream Creek.

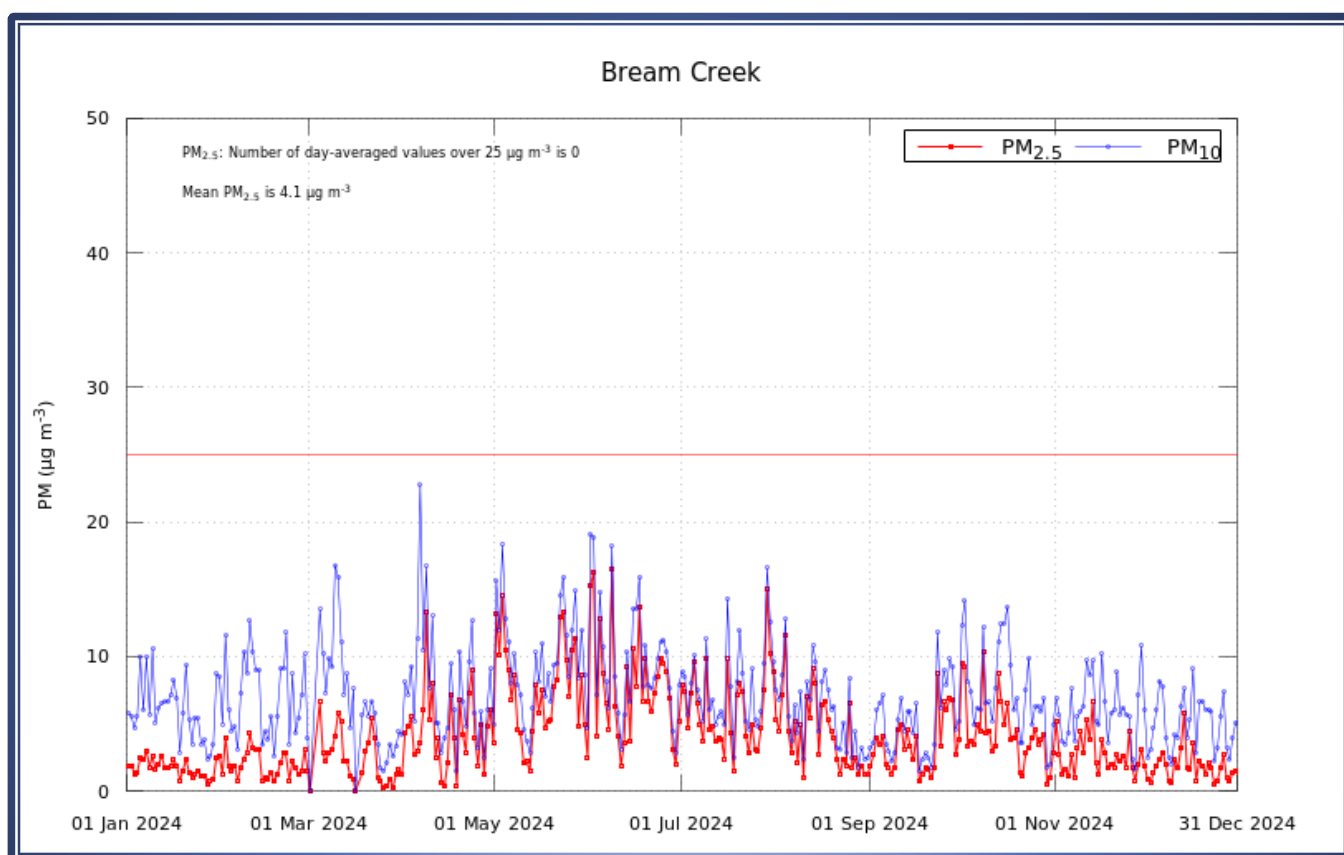


Figure 5-26 – Annual Day-averaged data 2025 Bream Creek (Source - EPA Tasmania)

ODOUR

Operational odour impacts were assessed using a Tier 1 - S-Factor method, a conservative screening approach widely applied for intensive animal industries. The assessment considered:

- Site characteristics, including local climate, topography and vegetation.
- Review of proposed site layout, housing design and effluent systems.
- Identification of nearby sensitive receptors using aerial imagery and applicant-supplied information.
- Potential odour sources (housing, manure handling, effluent ponds, silage).
- Buffer distance calculations using the S-Factor methodology.
- Comparison of calculated separation distances with receptor locations.
- Identification of additional management actions where buffers alone may not be sufficient.

This process provides a precautionary basis for determining whether the proposed design and management measures are likely to achieve acceptable separation distances, or whether further assessment (e.g. dispersion modelling) would be required.

A full copy of the odour assessment, including calculations and receptor mapping, is provided in **Appendix 9**.

5.7.2. EXISTING ENVIRONMENT

BACKGROUND AIR QUALITY

Bream Creek is situated within a predominantly rural landscape characterised by open farmland, rolling hills, and scattered patches of remnant vegetation. Agricultural practices including cropping, pasture management, and livestock grazing are the dominant influences on local air quality.

The climate is temperate with moderate rainfall, which reduces the likelihood of long-term dust mobilisation. Regional air quality data from the EPA Tasmania monitoring station at Bream Creek confirms that baseline conditions are generally good. Average concentrations of particulate matter (PM_{2.5} and PM₁₀) remain well below guideline thresholds, with no exceedances recorded during 2024. This demonstrates that the local environment is not currently affected by significant air quality issues.

The topography located between Copping and Marion Bay transitions from gently rolling uplands to coastal plains and dune systems. Eastward towards the coast, the terrain slopes steadily down through farmland and small valleys.

REGIONAL SOURCES

Potential background sources of airborne particulates in the wider region include:

- Tillage, cultivation, and harvesting on surrounding farms.
- Vehicle movements on unsealed rural roads and farm tracks.
- Stock movements, particularly during periods of drought or overgrazing.
- Occasional burning of crop residues or vegetation for land management.

These activities may contribute to short-term variations in air quality but are not a consistent or significant issue at the project site.

SENSITIVE RECEIVERS

As shown in **Figure 5-27** and the Odour Assessment (**Appendix 9**), the wider area surrounding the project includes rural homes. These include some dwellings that are part of the farming business and others that are privately owned and are unrelated to the business.

The closest homes are located to the north, northeast and southwest of the site, with distances from the proposed housing and effluent areas ranging from about 150 metres through to several kilometres. Details of these distances are provided in **Table 5-15** (Section 5.7.4).

Because the site is in a rural setting and most neighbours are well separated from the proposed works, the risk of odour or air quality impacts is considered low. With the use of established best-practice management measures, the development can operate without causing unreasonable impacts to the surrounding community.



Figure 5-27 – Map identifying project in relation to surrounding area and identified receptors (Source PRS QGIS)

Note: Green are dwellings owned by the applicant and yellow are owned by adjoining or other operations.

Table 5-14 – Receptors surrounding project area

ID	Owned	Type	Existing Distance	Existing Direction	Proposed Distance	Proposed Direction	Activity area	Change
-	No	Copping	2,010	SW	1,670	SW	Housing	-340
-	No	Marion Bay	2,360	SE	2,310	SE	Pond 1	-50
R1	No	Dwelling	110	NW	130	NW	Dairy	Nil
R2	Yes	Dwelling	146	N	55	NW	Pond 3	-91
R3	Yes	Dwelling	563	N	434	N	Pond 3	-129
R4A	No	Dwelling	505	NNE	415	NNE	Pond 3	-104
R4B	No	Dwelling	525	N	430	NE	Pond 3	-119
R4C	No	Dwelling	575	NE	480	NNE	Pond 3	-28
R4D	No	Dwelling	615	NE	525	NE	Pond 3	-324
R4E	No	Dwelling	620	NE	530	NE	Pond 3	-135
R4F	No	Dwelling	715	NE	625	NE	Pond 3	-142
R5A	No	Dwelling	790	N	700	NNE	Pond 3	-135
R5B	No	Dwelling	960	N	865	NNE	Pond 3	-136
R6A	No	Dwelling A	770	NNE	680	N	Pond 3	-136
R6B	No	Dwelling B	815	NE	720	NNE	Pond 3	-134
R6C	No	Dwelling C	890	NE	800	NE	Pond 3	-135
R6D	No	Dwelling	930	N	845	NE	Pond 3	-146
R6E	No	Dwelling	965	N	875	NE	Pond 3	-146
R6F	No	Dwelling	970	N	880	NE	Pond 3	-154
R7	No	Dwelling	500	NE	415	NE	Pond 3	-164
R8	Yes	Dwelling	946	NE	872	E-SE	Pond 3	-74
R9A	No	Dwelling	1470	ENE	1430	E	Pond 1/2/3	Nil
R9B	No	Dwelling	1600	ENE	1605	E	Pond 1/2/3	Nil
R9C	No	Dwelling	1695	E	1670	E	Pond 1/2/3	Nil
R10	No	Dwelling	1885	SE	1845	SE	Pond 1	-87

ID	Owned	Type	Existing		Proposed		Activity area	Change
			Distance	Direction	Distance	Direction		
R11A	No	Dwelling	1545	SE	1458	SE	Pond 1/ existing pit	-79
R11B	No	Dwelling	1340	SE	1,270	SE	Pond 1/ existing pit	-64
R11C	No	Dwelling	1220	SE	1160	SE	Pond 1/ existing pit	-41
R11D&E	No	Dwelling	1105	SE	1040	SE	Pond 1/ existing pit	-60
R11F	No	Dwelling	870	SE	831	SE	Pond 1/ existing pit	-27
R11G	No	Dwelling	1130	SE	1084	S-SE	Pond 1/ existing pit	-50
R11H	No	Dwelling	1190	W	1092	SSE	Pond 1/ existing pit	-40
R11I	No	Dwelling	995	S	955	S	Pond 1/ existing pit	-25
R12	No	Dwelling	455	SSE	455	S to E	Pond 1/ existing pit	Nil
R13	No	Dwelling	887	S-SE	840	SE	Silage (new)	-90
R14	No	Dwelling	995	S	770	SE	Silage (new)	-215
R15	No	Dwelling	1230	S	830	S	Silage (new)	-380
R16A	No	Dwelling	830	SW	465	S	Silage (new)	-380
R16B	No	Dwelling	850	SW	420	SSW	Silage (new)	-400
R16C	No	Dwelling	805	SSW	400	SSW	Silage (new)	-435
R17	No	Dwelling	160	SW	225	SSW	Silage (new)	-460
R18	Yes	Dwelling	585	SW	133	W	Silage (new)	-452
R19A	Yes	Dwelling	845	SW	605	SW	Silage (new)	-160
R19B	No	Dwelling	340	SW	520	SW	Silage (new)	-490
R20A	No	Dwelling	185	SW	390	SW	Silage (new)	-500
R20B	No	Dwelling	260	SW	465	SW	Silage (new)	-391
R21A	No	Dwelling	430	SW	635	WSW	Silage (new)	-465
R21B	No	Dwelling	460	SW	660	WSW	Silage (new)	-460
R21C	No	Dwelling	485	SW	655	WSW	Silage (new)	-450
R21D	No	Dwelling	440	WSW	645	WSW	Silage (new)	-465
R21E	No	Dwelling	500	WSW	695	W	Silage (new)	-438
R21F	No	Dwelling	550	SW	755	W	Silage (new)	-455
R22	No	Dwelling	1055	W	760	W	Housing	-320
R23	No	Dwelling	995	WNW	895	NW	Housing	-130

5.7.3. SURROUNDING LAND USE

The project site is located within a rural landscape dominated by agricultural production. Dairy farming, livestock grazing, and cropping are the principal land uses, supported by associated rural infrastructure such as farm tracks, irrigation systems, and shelterbelts.

The applicant's enterprise represents a farming operation that integrates a number of historic dairy farms. The broader landholding supports both intensive and extensive agricultural activities, with existing infrastructure such as dairies, feedpads, silage storage, young stock grazing and irrigation areas already embedded within the farming system.

Surrounding land uses include:

- Agriculture: The immediate surrounds are primarily large-scale dairy and grazing farms, along with some timber production areas.
- Small rural holdings: Several smaller farmlets (<1 ha to 5 ha) are interspersed within the area, typically used for lifestyle, vineyard or hobby farming purposes.
- Forestry: Plantation and native forestry areas are present in the broader Wielangta Range landscape, consistent with regional sustainable timber industry operations.
- Native vegetation: Patches of remnant dry sclerophyll forest occur on ridgelines and steeper areas, contributing to the mixed agricultural–natural landscape mosaic.

The surrounding terrain is varied, with fertile valleys and gentle slopes predominantly used for pasture and cropping, transitioning to bushland and plantation forestry on higher ridges. Elevations in the area are generally under 400 metres.

The site is buffered from neighbouring rural living dwellings by suitable separation distances, with the nearest receptors located several hundred metres from the proposed infrastructure. The location within a predominantly agricultural setting ensures that the proposed dairy housing system is compatible with the broader land use context.

5.7.4. ASSESSMENT

This section assesses the potential air quality impacts associated with the project. The construction phase is primarily associated with dust generation, while the operational phase relates to both dust and odour management. The assessment considers likely sources, potential impacts on amenity, vegetation, livestock, and sensitive receptors, and the adequacy of proposed management measures.

CONSTRUCTION

SOURCES OF DUST

Construction will involve bulk earthworks, excavation, movement of soils, formation of pads and embankments, and vehicle access along internal unsealed roads. These activities, particularly when conducted during dry, windy periods, have the potential to generate airborne particulates. The most likely dust sources are:

- Soil disturbance from excavation, grading, and compaction.
- Wind erosion from exposed construction areas and stockpiles.
- Vehicle movement on unsealed internal access tracks.
- Rehabilitation works where bare soils are temporarily exposed.

NATURE OF EMISSIONS

- **Total Suspended Particulates (TSP):** Larger dust particles ($>PM_{10}$), typically visible plumes, tend to settle quickly within ~ 300 m of the source. These primarily cause nuisance and amenity impacts.
- **Fine particulates (PM_{10} and $PM_{2.5}$):** Smaller particles that remain airborne longer and can travel further. Although concentrations from this type of agricultural-scale construction are expected to be very low, they are relevant for assessing potential health and welfare impacts on workers, livestock, and nearby residents.

POTENTIAL IMPACTS

Potential impacts on sensitive receptors are expected to be minor due to the distance between the works area and nearby dwellings. Native vegetation and pasture are also unlikely to be affected given their separation from the construction footprint. Any dust produced will be temporary, localised, and able to be managed through standard dust suppression measures such as water application and progressive stabilisation.

ASSESSMENT OUTCOME

Dust generation during construction is expected to be temporary, localised, and manageable. Based on the climate, separation distances, and limited duration of works, significant off-site impacts are unlikely provided standard mitigation measures are applied.

OPERATION - DUST

During operation, the risk of dust emissions is low and limited to a few predictable sources. Vehicle movements on internal unsealed roads and laneways may generate dust during dry periods, although the volume of traffic is modest and speeds can be managed to minimise emissions. Feed storage and handling, particularly dry grains and concentrates, may also create minor dust, though the housing system has been designed to minimise exposure to wind and to protect feed quality.

SOURCES OF DUST

Dust emissions during operation are expected to be minor and intermittent. Potential sources include vehicle movement along unsealed farm roads and handling and storage of dry feed materials (e.g., grain). Effects of movement of livestock will be much reduced based on the flood washed nature of the concrete alleys proposed in the project.

POTENTIAL IMPACTS

Dust generated during operation will primarily affect on-site activities. Potential impacts on animal welfare and productivity are recognised, as housed cows must not be exposed to persistent dust that could affect respiratory health or feed palatability. For this reason, dust management is integrated into daily farm operations, including road maintenance, stock management, facility, and infrastructure design. Given the separation distances to neighbouring dwellings and the local topography, off-site impacts are considered negligible.

ASSESSMENT OUTCOME

Operational dust will be minimal and readily managed through existing farm practices, including maintaining roads, enforcing speed limits, and ensuring feed handling areas are sheltered.

OPERATION – ODOUR

SOURCES OF ODOUR

Odour has been assessed as the most material air quality risk during the operational phase. Potential sources include:

- Contained housing and manure pack areas.

- Effluent ponds and storage systems.
- Manure pads and spent bedding storage.
- Feed storage, particularly silage and high-moisture feeds.

ASSESSMENT METHODOLOGY

Odour impacts were assessed using the Tier 1 “S-Factor” method, which is recognised nationally for intensive animal industries. As Tasmania does not have specific odour guidelines for housed dairies, the assessment referenced:

- The National Guidelines for Beef Cattle Feedlots.
- Agriculture Victoria’s draft Multi-Species Separation Distance Methodology.
- The National Guidelines for Dairy Feedpads and Contained Housing.

This approach accounts for site-specific management factors, terrain, vegetation, and climate, ensuring a conservative assessment of potential odour impacts.

SENSITIVE RECEPTORS & FINDINGS

Twenty-one receptor groups were identified within proximity to the project, excluding dwellings owned by the applicant. The receptors assessed included neighbouring rural living properties, and villages such as Copping and Marion Bay. Distances and directions were mapped and cross-checked against buffer distances required under the S-factor methodology.

The assessment found the following:

- All but two receptors (R1 and R17) meet or exceed the required odour buffer distances.
- R1: Located near existing operations; no change in impact expected. The landholder has been consulted as part of the project.
- R17: Is currently located within close vicinity to the existing silage storage area. The new design proposes the eventual relocation of the silage areas further from this receptor, increasing separation distance compared with existing conditions.
- Villages (Copping and Marion Bay) are located well beyond the modelled buffer distances and will not be affected.

Table 5-15 - Required odour buffer distance by receptor

ID	Type	From Operation			S1 Management	S2 Type	S3 Terrain	S4 Vegetation	S5 Wind	Result (m)	Complies Yes/No
		Housing	Effluent	Commodities							
R1	Dwelling	150	122	500	0.91	20	1.0	0.93	1.0	350	No
R4 A-F	Dwelling	700-900	440-630	1045 – 1140	0.91	20	1.0	1.0	1.0	350	Yes
R5 A-B	Dwelling	945, 1,130	685, 864	1,294 1,470	0.91	20	0.68	1.0	1.0	250 (238)	Yes
R6 A-F	Dwelling	926 – 1,195	652 - 905	1,278 – 1,540	0.91	20	1.0	1.0	1.0	350	Yes
R7	Dwelling	795	450	1,133	0.91	20	1.0	1.0	1.0	350	Yes
R9 A-C	Dwelling	1,730 – 1,956	1,468 – 1,695	1,990 – 2,205	0.91	20	0.68	2.0	1.0	476	Yes
R10	Dwelling	1,960	1,860	2,300	0.91	20	0.77	1.0	1.0	720	Yes
R11 A-I	Dwelling	1,000 – 1,536	836 – 1,492	1,007 – 1,778	0.91	20	0.68	1.0	1.0	250 (238)	Yes
R12	Dwelling	475	450	500	0.91	20	0.68	1.0	1.0	250 (238)	Yes
R13	Dwelling	825	855	765	0.91	20	0.68	1.0	1.0	250 (238)	Yes
R14	Dwelling	885	985	780	0.91	20	0.68	1.0	1.0	250 (238)	Yes
R15	Dwelling	980	1,235	835	0.91	20	0.68	1.0	1.0	250 (238)	Yes
R16 A-C	Dwelling	550 - 620	835 - 860	405-480	0.91	20	0.68	1.0	1.0	250 (238)	Yes
R17	Dwelling	377	687	230	0.91	20	0.68	1.0	1.0	250 (243)	No
R19 A-B	Dwelling	775, 660	1,100 985	605, 480	0.91	20	0.68	1.0	1.0	350	Yes

ID	Type	From Operation			S1 Management	S2 Type	S3 Terrain	S4 Vegetation	S5 Wind	Result (m)	Complies Yes/No
		Housing	Effluent	Commodities							
R20 A-B	Dwelling	535 595	894 958	400 470	0.91	20	0.68	1.0	1.0	250 (238)	Yes
R21 A-F	Dwelling	730 - 822	1,086 – 1,210	637 - 760	0.91	20	0.68	1.0	1.0	250 (238)	Yes
R22	Dwelling	1,483	2,156	1,480	0.91	20	0.68	1.0	1.0	250 (238)	Yes
R23	Dwelling	865	1,045	860	0.91	20	0.68	1.0	1.0	250 (238)	Yes
Copping	Village	1,660	2,006	1,580	0.91	40	0.68	1.0	1.0	500 (476)	Yes
Marion Bay	Village	2,425	2,322	2,719	0.91	40	0.68	1.0	1.0	500 (476)	Yes

ASSESSMENT OUTCOME

The assessment concludes that the proposed development presents a low risk of off-site odour impacts under normal operating conditions. The design incorporates appropriate separation distances, best-practice effluent management, and a structured monitoring framework to ensure compliance with both regulatory requirements and industry standards. Under the nominated operating conditions, the following outcomes are anticipated:

- Normal operations: The proposed design and management measures are expected to maintain odour levels at or below acceptable thresholds, with negligible risk of impacts to surrounding properties.
- Abnormal conditions: Short-term odour episodes may occur during atypical weather events (such as temperature inversions or periods of high humidity) or unforeseen operational issues (such as effluent pond turnover). These will be managed promptly in accordance with the site's Odour Management Plan.
- Community confidence: Implementation of a clear communication strategy, including engagement with neighbouring landholders and a formal complaints management procedure, will ensure transparency and support positive community relations.

5.7.5. MITIGATION, MANAGEMENT AND MONITORING MEASURES

Mitigation and monitoring measures have been developed to minimise potential impacts on air quality during both the construction and operational phases of the project. These measures focus on managing dust generation, vehicle emissions, and odour risks, with responsibilities clearly assigned to ensure effective implementation. The table below outlines the key safeguards that will be applied across the project lifecycle.

Table 5-16 – Air quality mitigation, management, and monitoring measures

Item No	Potential Impact	Timing		Safeguard
A1	General air quality impacts	Pre-construction	Site Supervisor	Induction of all employees to include: location of sensitive receptors, potential dust sources, monitoring requirements, dust management measures, and site speed limits.
A2	Dust emissions affecting surrounding properties	Construction	Site Supervisor	Monitor Bureau of Meteorology forecasts; cease non-essential earthworks (e.g., topsoil stripping) during excessively windy conditions.
A3	Dust lift from exposed soils and stockpiles	Construction	Contractor / Supervisor	Minimise open areas; stabilise exposed surfaces progressively.
A4	Dust emissions from high-traffic areas and roads	Construction	Contractor / Supervisor	Deploy water cart during dry or windy conditions to suppress dust on unsealed roads and work areas.
A5	Dust from topsoil stripping	Construction	Contractor	Conduct topsoil stripping only under suitable weather conditions; and wherever possible progressively rehabilitate.
A6	Dust lift from rehabilitated areas	Construction	Contractor / Land Manager	Establish vegetative cover on disturbed areas within 8 months as part of progressive rehabilitation.

Item No	Potential Impact	Timing		Safeguard
A7	Dust from vehicle movement	Construction	Site Supervisor	Enforce site speed limits; confine vehicles to designated access roads.
A8	Exhaust emissions from machinery	Construction	Contractor	Maintain construction plant and equipment in good condition and serviced regularly.
A9	Excessive emissions from undersized machinery	Construction	Contractor	Ensure machinery is adequately sized for intended tasks to avoid overloading and unnecessary emissions. ¹
A10	Dust impact on sensitive receptors and road safety	Construction	Site Supervisor	Monitor wind direction and speed; cease works if dust affects public roads or neighbouring dwellings.
A11	Odour from effluent, manure pads, or housed areas	Operation	Farm Manager	Implement and regularly review the Odour Management Plan; maintain buffers, effluent management systems, and complaint response protocols.

1. Shut down periods during excessively windy conditions will be determined following a risk assessment of impact to various sensitive receivers, including employees and animals on site and motorists on adjacent public roads.

Note: Table 7-1 of the odour assessment and management plan should also be referred to for ongoing management and mitigation measures for the site.

5.7.6. CONCLUSION

The assessment of air quality impacts has considered both the construction and operational phases of the project. Construction activities may generate dust and minor exhaust emissions; however, these risks are localised, short-term, and readily mitigated through established best-practice controls such as progressive stabilisation, water suppression, and strict vehicle management. Operation of the loose-housing system introduces potential odour sources; however, the design incorporates buffer distances, effluent management systems, and an Odour Management Plan to ensure compliance with industry standards and regulatory expectations.

Overall, the project is assessed as having a low risk of off-site dust or odour impacts under normal operating conditions. While occasional short-term odour events may occur under abnormal weather or operational circumstances, these will be managed through established procedures and monitoring frameworks. With the adoption of the proposed safeguards, the project is consistent with the objectives of the EIS Guidelines and the Tasmanian Planning Scheme and will maintain the amenity of surrounding land uses.

5.8. NOISE AND VIBRATION

5.8.1. METHODOLOGY

The assessment of noise impacts for the project was undertaken in line with EPA Tasmania's *Noise Limit Guidelines* (2016), the *Guidelines for Assessing Noise Nuisance* (2016), and supporting references such as the *NSW Interim Construction Noise Guidelines* (2009). The methodology included:

- Describing the existing acoustic environment and baseline noise sources;
- Identifying construction and operational noise-generating activities;
- Establishing relevant noise criteria for both phases of the project;
- Identifying sensitive receptors in proximity to the development footprint;
- Predicting noise impacts during construction and operation; and
- Proposing mitigation, management, and monitoring measures.

No vibration-causing plant or activities (e.g. drilling, piling, blasting) are proposed. Accordingly, vibration has not been assessed further. Noise is considered separately for construction and operation phases.

5.8.2. EXISTING ENVIRONMENT

The property is situated in a rural environment dominated by agricultural production and activities. Existing background noise is typical of farming areas and includes:

- Agricultural machinery (tractors, augers, pumps);
- Livestock noise from the existing dairy herd; and
- Local traffic on nearby rural roads.

Within the broader setting, small rural properties and the townships of Copping and Marion Bay also contribute to the ambient soundscape. Importantly, the current dairy operation has not generated any formal complaints regarding noise.

Operational noise from the existing dairy is associated with routine farm activities, including feed mixing and conveying, vehicle movements, water pumping, and cow activity. Key operational periods occur during milking (currently 5:00AM and 2:30PM) and general site activities (3:45AM to 9:00PM). These sources establish a rural baseline environment where intermittent noise from agricultural machinery is a common and accepted feature.

There are no recorded complaints relating to noise from the existing sites operations.

5.8.3. ASSESSMENT

The assessment of noise has considered both construction and operational phases of the project, with reference to EPA Tasmania's *Noise Limit Guidelines* (2016) and supporting national guidance. The focus has been on identifying potential sources of noise, predicting levels at sensitive receptors, and determining whether these are likely to exceed applicable management criteria. The assessment recognises that the project is located within an agricultural setting where background noise from farming activities is common and generally accepted as part of the local amenity. The following subsections outline predicted impacts for each project phase.

The project assessment considers noise from both construction and operational activities.

CONSTRUCTION

Noise emissions during construction will be generated primarily during the earthworks and building phases, including excavation, pond formation, shed construction and modifications, and installation of utilities. The most intensive phase is expected to be the eight-week earthworks period, followed by an approximately 4-6-week building and fit-out stage.

Guidance from EPA Tasmania and NSW EPA construction criteria indicates that for residential receivers, noise management levels are defined as:

Table 5-17 – Tasmanian referenced NSW EPA construction noise criteria for residential uses

Time of day	Management Level <i>L</i> _{Aeq} (15 min) *	How to apply
Recommended standard hours: Monday to Friday 7AM to 6PM Saturday 8AM to 6PM Sundays and public holidays 10AM to 6PM	Noise affected RBL + 10 dB	The noise affected level represents the point above which there may be some community reaction to noise. Where the predicted or measured <i>L</i> _{Aeq} (15 min) is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
	Highly noise affected 75 dB(A)	The highly noise affected level represents the point above which there may be strong community reaction to noise. - Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account: - times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid-morning or mid-afternoon for works near residences. - if the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
Outside recommended standard hours	Not permitted	
* Noise levels apply at the property boundary that is most exposed to construction noise, and at a height of 1.5 m above ground level. If the property boundary is more than 30m from the residence, the location for measuring or predicting noise levels is at the most noise-affected point within 30m of the residence. Noise levels may be higher at upper floors of the noise affected residence.		

Utilising the above noise criteria methodology, the following construction noise limits will apply to the project assuming that the RBL equals 40db(A):

- Standard Hours
 - Noise affected limit – 45 dB(A).
 - Highly noise affected limit – 75 dB(A).
- Non Standard Hours
 - Evening (6PM to 10PM) – 40 dB(A).
 - Night (10PM to 7AM) – 40 dB(A).

Construction activities for the proposed dairy complex will include earthworks (cut/fill for pads and ponds), concrete works, erection of sheds, and associated civil infrastructure. These activities will generate intermittent noise from heavy machinery and construction equipment, such as excavators, graders, compactors, water carts, cranes, and trucks.

The proposed equipment and their typical noise generating major noise emitting items during construction of the facility area will include:

Table 5-18 - Typical noise levels of construction plant and equipment

Item of Plant	Mobile Machinery Category ¹	Project stage use	Noise Limit (dB(A) @ 7.5m	Measurement Distance
Tractor	221-450 NEP	All	88	7.5
Dozer	221-450 NEP	Earthworks	88	7.5
Excavator	221-450 NEP	Earthworks	88	7.5
Grader	221-450 NEP	Earthworks	88	7.5
Roller	100-200 NEP	Earthworks	85	7.5
Truck – water cart	100-200 NEP	Building	85	7.5
Mobile Crane	100-200 NEP	Building	85	7.5
Franna Crane	100-200 NEP	Building	85	7.5
Trencher	100-200 NEP	Building/Fit out	85	7.5
Loader	100-200 NEP	Building/Fit out	85	7.5
Concrete Truck	Portable	Building/Fit out	92	7.5
Truck (>20 T)	Vehicle >3.5T	All	95	1.0
Vehicle – 4WD style	Vehicle - >3.5T	All	95	1.0

1 – Source Noise Limit Guidelines Table 1 Mobile Machinery

NEP = Net Engine Power

A review of the proposed machinery used for construction has been undertaken in accordance with the above criteria and noise impacts associated with the project works are calculated using the Sound Attenuation Equation as follows:

$$Lp(R2) = Lp(R1) - 20 \log_{10}(R2/R1)$$

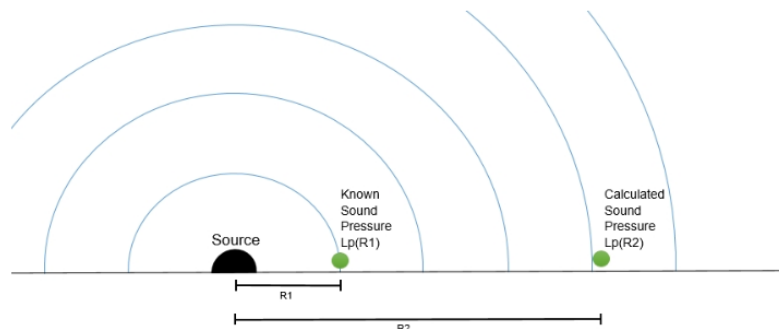
Where:

Lp(R1) = SPL at initial location

LP(R2) – SPL at the receiver

R1 = Distance from the noise source

R2 = Distance from the noise source to the receiver



The calculations using this method have determined that the maximum noise levels generated by high-powered machinery (e.g., tractor, dozer, excavator) at the nearest receptor (R1) during construction will be approximately 59

dB(A). This level reflects equipment that will only be used intermittently and primarily during the two-week pond construction phase of the activity near that receptor, which will occur strictly within standard working hours. For most of the construction program, equipment in use is expected to generate levels below 60 dB(A). While these levels exceed the “noise affected” threshold, they remain well below the “highly noise affected” threshold of 75 dB(A).

Noise from other construction activities across the site, taking into account the full range of proposed equipment and distances to receptors, is predicted to be no greater than 54 dB(A). This remains below the highly noise affected level and is considered acceptable, particularly as these works will also be limited to short timeframes and standard working hours.

The potential impacts of construction noise can be further summarised as follows:

- **Duration and intensity:** Noise impacts will be temporary and limited to the construction phase, expected to occur during standard working hours.
- **Receivers:** The project is located within a rural agricultural landscape with reasonable separation distances to the nearest sensitive receptors (residences). This separation provides effective attenuation for day periods.
- **Risk:** Given the setback distances and the rural context, construction noise impacts are assessed as low, with minimal potential to cause nuisance or exceed relevant EPA guideline levels.

Construction noise associated with the project is assessed as low impact, being temporary, localised, and below thresholds likely to generate strong community reaction. With adherence to standard working hours, application of feasible and reasonable noise controls, and ongoing communication with neighbours where appropriate, the project is not expected to result in significant noise impacts during construction.

OPERATION

Normal farm activities are generally protected under the *Primary Industry Activities Protection Act 1995*, which provides a defence against nuisance complaints where activities are lawful, not negligent, and conducted on appropriately zoned land. This protection recognises that some level of noise generation is inherent and acceptable within agricultural enterprises. Accordingly, operational noise from this project is expected to fall within the scope of protected farm activities, provided operations continue to comply with all relevant planning, environmental, and EPA requirements.

The operation of the proposed loose-housing system will largely maintain existing noise profiles associated with current farm activities, with only minor changes arising from adjustments to infrastructure and processes. These include:

- Altered silage storage and loading practices, as silage areas are progressively relocated over time.
- Expanded feed delivery operations, extending to service the new loose-housing system.
- Extended operating times of feed and water supply equipment to accommodate herd management within the contained housing environment.

Noise-generating equipment and activities will remain consistent with current operations and include:

- Tractors and mixer wagons.
- Loaders.
- Augers.
- Water and effluent pump systems.
- Solids separation units.
- Backup generator (occasional use).
- Heavy and light vehicles for feed and farm logistics.
- Periodic maintenance vehicles (e.g., excavators).
- General hand tools.
- Animal-related noise, primarily from cows and calves, consistent with existing farm operations.

Operational noise associated with the proposed system will be consistent with that of existing dairy operations. While some activities such as feed delivery and pump operation will expand in scope or duration, these remain typical of primary production and within the protections afforded under the *Primary Industry Activities Protection Act 1995*. The rural setting and separation distances to neighbouring residences further mitigate potential impacts. Overall, operational noise is assessed as low impact, predictable, and not expected to generate adverse impacts on surrounding land uses.

5.8.4. MITIGATION, MANAGEMENT AND MONITORING MEASURES

As identified above, the predicted noise emitting activities for both the construction and operation stages of the project will not exceed the highly affected noise generation limits. Nevertheless, a suite of mitigation and management measures will be implemented to ensure noise levels remain consistent with baseline assumptions and do not cause adverse impacts on surrounding receptors. These measures focus on proactive equipment management, adherence to operating hours, and ongoing monitoring to confirm compliance.

Table 5-19 – Noise mitigation, management and monitoring measures

ID No	Potential Impact	Timing	Responsible	Safeguard
N1	Noise impacts at receptor	Construction	Contractor	• Ensure all machinery is regularly serviced and fitted with effective noise abatement devices (e.g. mufflers). • Monitor equipment during use; stand down excessively noisy plant until rectified. • Avoid unnecessary idling; switch off machines when not in use for extended periods. • Select appropriately sized machinery for each task to avoid under- or over-capacity operation. • Confine noisy activities to standard construction hours (as per EPA guidance)
N2	Noise impacts at receptor	Operation	Farm Management	• Ensure that all machinery is regularly serviced and has appropriate noise abatement devices. All equipment selected for use on site will be regularly monitored to minimise noise emissions with any excessively noisy equipment stood down until issue rectified. • Machines, where practical, will not operate at full power and will be switched off when left for long periods of time. • Machines that are appropriate for undertaking the works are selected and not under or over sized for the works.

5.8.5. CONCLUSION

The assessment of construction and operational noise indicates that predicted noise levels will generally remain below the “highly noise-affected” thresholds set by relevant EPA guidance. While some construction activities may temporarily exceed the “noise-affected” management levels, these impacts will be short-term, confined to standard working hours, and mitigated through the adoption of feasible and reasonable work practices.

Operational noise will be consistent with existing farming activities and protected under the *Primary Industry Activities Protection Act 1995*, with no significant change in character or scale of noise expected. With the implementation of the identified mitigation and monitoring measures, the project is not anticipated to cause unacceptable noise impacts on surrounding receptors, and overall residual risk is considered low.

5.9. TRAFFIC AND ACCESS

5.9.1. METHODOLOGY

The traffic assessment has been undertaken to determine the potential impacts of vehicle movements associated with the construction and operation of the proposed dairy complex. Given that baseline traffic volumes on local rural roads are low and the project will generate only minor additional vehicle movements, the assessment focuses on confirming that these changes can be safely and effectively accommodated within the existing road network.

Key elements of the methodology include:

- **Construction Phase**
 - Estimated traffic movements are based on the type and number of plant, equipment, and delivery vehicles identified in the construction schedule (see **Table 5-21**).
 - Movements are expected to be temporary, short-term (limited to an eight-week earthworks and four-to-six-week building period), and occur during standard working hours.
- **Operational Phase**
 - Operational traffic movements are based on existing dairy activities, with only minor changes anticipated due to the shift of the herd to the loose housing system.
 - Additional trips will be limited to:
 - Relocation of some silage storage and loading activities,
 - Feed deliveries extended to the new housing facility, and
 - Minor increases in utility and service vehicle movements (e.g. maintenance or contractors).

- Overall volumes are expected to remain consistent with existing use, with negligible impact on the surrounding road network.
- **Assessment Parameters**
 - Review of access points.
 - Consideration of potential short-term impacts to rural road amenity (e.g. dust, noise) during construction.
 - Application of Tasmanian Planning Scheme Road and Railway Assets Code performance criteria to confirm compliance.

The methodology confirms that traffic impacts will be negligible during operation and minor, short-term, and manageable during construction.

5.9.2. EXISTING ENVIRONMENT

The project site is located within a rural agricultural setting, accessed via Bream Creek Road. This road is an un-sealed, two-lane rural road managed by Sorell Council, providing access to a small number of agricultural properties and rural residences. Traffic volumes are characteristically low, with movements dominated by local farming equipment, service vehicles, and light residential traffic.

Key features of the local road environment include:

- **Access Points.** The property currently has established entry and exit points designed to accommodate farm machinery, trucks, and light vehicles.
- **Road Condition.** Bream Creek Road is suitable for heavy vehicles, with adequate surface width and strength to accommodate supporting and farm traffic. Adjacent gravel farm tracks provide internal access between the dairy, feed storage areas, and paddocks.
- **Traffic Baseline.** Existing farm operations already generate routine traffic associated with milk collection, feed deliveries, machinery servicing, and staff access. These movements are consistent with surrounding agricultural land uses and are accommodated within the existing road network. Milk tanker pickups generally occur once daily or as required by the supplier and match surrounding producer pick-ups.
- **Sensitive Receivers.** The nearest rural residences are located at significant separation distances from the project entry point, reducing the potential for direct amenity impacts. No schools, childcare centres, or other sensitive land uses are located in the immediate vicinity of the project.

Overall, the local transport network is lightly trafficked, designed to accommodate agricultural vehicle types, and capable of managing the minor additional construction and operational vehicle movements associated with the proposed project.



Figure 5-28 – Overview of the site showing the existing access (Source PRS)

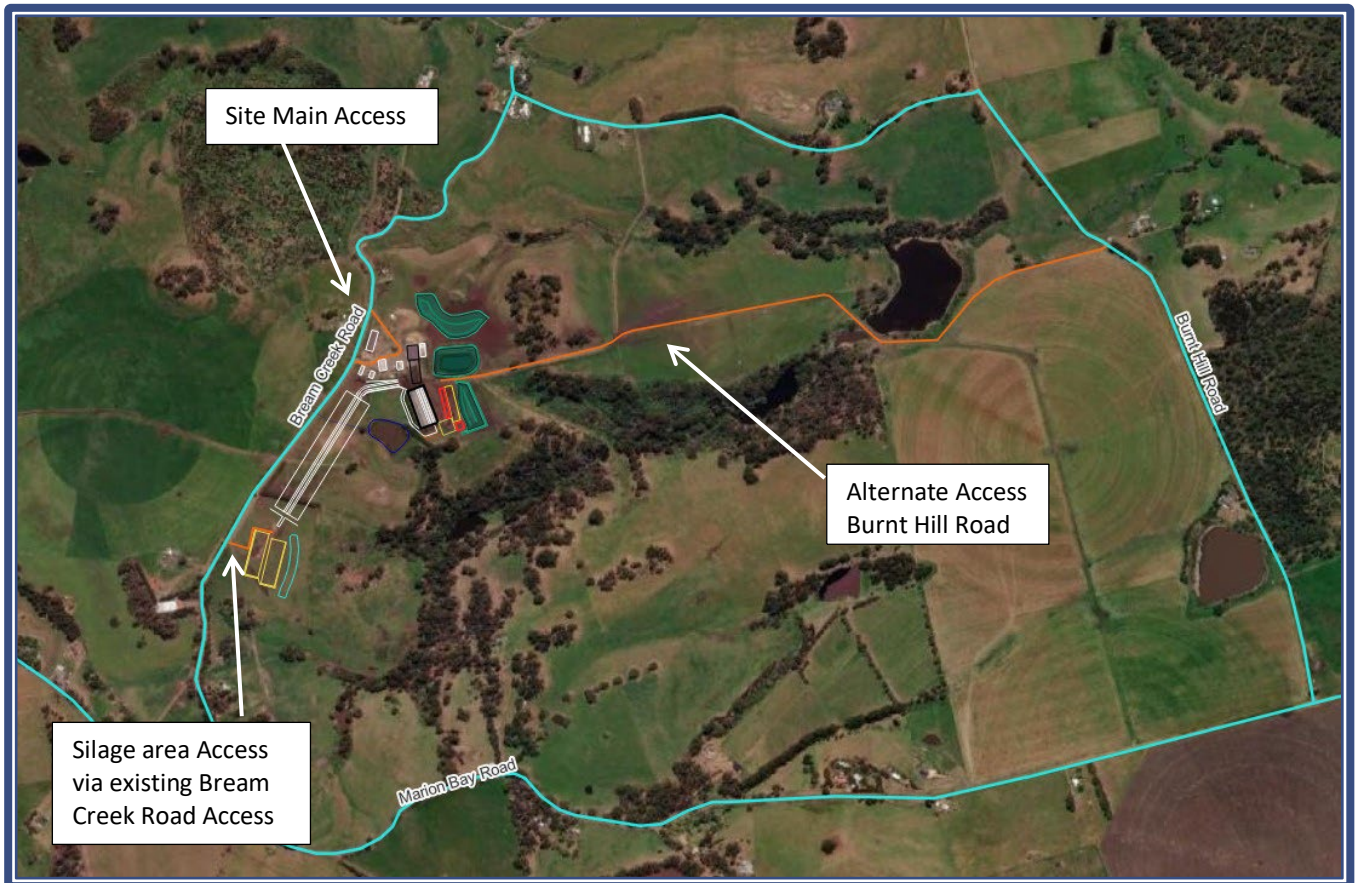


Figure 5-29 - Overview map identifying existing roads (blue) in relation to the site and internal access within the property (green) (Source: PRS QGIS)



Figure 5-30 – Photo looking south along Bream Creek Road past the existing property driveway (Source: PRS).

5.9.3. ASSESSMENT

A description and assessment of the traffic volume and behaviour have been further described below. Existing entrance points to the dairy complex (above) has been considered with relation to both the construction and operation activities.

CONSTRUCTION

Traffic movements during the construction phase will be temporary, short-term, and relatively minor compared with both existing farm traffic and regional road capacity. The most intensive period will occur during earthworks and shed construction, expected to last approximately 14–20 weeks. Vehicle types will include delivery trucks for materials, earthmoving plant transporters, and light vehicles for staff and contractors.

- Daily construction traffic volumes are expected to remain low, with fewer than 10 additional total vehicle movements per day.
- Movements will be dispersed across daylight hours and restricted to standard working hours.
- Construction access will use the existing farm entrances, which already accommodates heavy vehicles.
- Background traffic volumes on Bream Creek Road are low, and the road standard is adequate to safely accommodate the short-term increase.

Given these factors, the construction traffic is not expected to result in significant impacts on capacity, safety, or amenity.

OPERATION

Following construction, traffic associated with the dairy complex will largely mirror current operational patterns. The farm already generates routine heavy and light vehicle movements related to milk collection, feed deliveries, and staff transport. The introduction of the loose housing system will not increase the frequency of traffic but will slightly alter the location of certain feed storage and loading activities within the farm.

The operational traffic volumes are considered with regard to:

- **Staff** light vehicle movements. Minor change to staff vehicles which will increase light vehicles by up to two daily vehicles with timing unchanged to existing levels. As previously described, some staff reside on one of the multiple houses located on the property. The assessment considers that all staff travel to the site to adequately assess the potential impacts.
- **Milk tanker**, Milk collection movements will remain unchanged, as tankers already service the farm. Tanker pick up occurs daily, with the on-site storage of milk designed to match production and pick up schedules. No change to tanker traffic numbers are proposed.
- **Livestock transport** (sales, veterinary) being a medium weight vehicle, is likely to marginally increase annually however the average number of movements per week will remain unchanged.
- **Service and support technicians** – access from nearby towns for repairs, services to the operation for maintenance on dairy, equipment, vehicles, buildings pipes, roads etc.
- **Feed** – Internal feed deliveries will be updated to reflect feeding at the housing area for the productive herd. This continues at existing frequencies, with some relocation of loading to the new loose-housing area. External feed delivery heavy vehicle movements relating to feed and cropping activities generate the highest movements within typical dairy operations. A detailed consideration of these is provided in the following tables.
- **Bedding** supply for the housing system – budgeting for an annual allowance of deliveries for storage and use.
- **Effluent and manure** – are not considered within this assessment as all volumes associated with manure application and spent bedding can be undertaken on the property, crossing over and not along roads.

Table 5-20 - Traffic estimation of feed related movements

Feed type	Total annual (t) ¹		Current		Proposed		Change	
	Existing	Proposed	Trucks	Source	Trucks	Source	Tonne	Trucks
Grazed grass	1,830	600	114	On-farm	38	On-farm	-1,230	-77
Maize	1,400	1,830	58	On farm	76	On farm	430	18
Ryegrass	1,600	2,830	67	On-farm	118	On-farm	1,230	51
Grain	2,500	3,000	104	Off-farm	125	Off-farm	500	21
Canola Meal	600	1,095	25	Off-farm	46	Off-farm	495	21
Hay	450	610	19	On-farm	25	On-farm	160	7
Mineral Pallets	285	366	12	Off-farm	15	Off-farm	81	3
Internal			258		257			-1
External			141		186			45
Total			399		443			44

1- Based on volumes utilised in Table 2-17

2- Trucks to export off farm to other holdings.

Typical feed requirements for housed animal production systems have been utilised to consider feed requirements and their related traffic movements specific to this proposal. In completing this assessment, it is important to consider the existing farming enterprise which includes the properties production of fodder covering a significant production area. This property has the capacity to supply a significant proportion of the feed requirements for this system annually.

In consideration of this, the following table summarises the operations traffic movements against the current and proposed farming business traffic divided into light and heavy vehicle movements.

Table 5-21 - Estimated daily operation vehicle movements by stage

Class	Movement Type	Average estimated daily vehicle movements		
		Existing	Proposed	Change
Light	Staff - milking	4 vehicles x 2 shifts = 8	5 vehicles x 2 shifts =10	+2*
	Staff – farm	4 vehicles / day = 4	4 vehicles / day = 4	0
	Annual service /maintenance, etc	1 vehicle/week = 0.14	1 vehicle/week = 0.14	0
Heavy	Milk tankers	1 per day (Semi) = 1	1 per day (Semi) = 1	0
	Livestock movement (sales, etc)	2 per month avg = 0.03	2 per month avg = 0.09	+0.06
	Bedding	2 per month = 0.06	3 per month = 0.1	+0.04
	Effluent and Manure	Nil on roads	Nil on roads	0
	Feed & commodities by truck	141 trucks annually = 0.40 average	186 trucks annually = 0.5 average	+0.1
Total	All light vehicles	12*	14*	2*
	All heavy vehicles	1.52	1.64	0.12
	Total	13.55	15.67	2.12

* Note: allocation allowed for a change to light vehicles from staff considering travel to site (not living on farm)

The operational traffic assessment confirms that the proposed loose housing system will result in only a minor increase in daily vehicle movements, with no significant change to milk tanker collections or overall road use. These changes are well within the capacity of the local road network and do not trigger additional access or upgrade requirements.

Key findings are as follows:

- The development will result in a net increase of approximately 2 vehicle movements per day.
- Milk tanker collections remain unchanged at once daily, consistent with existing farm output.
- Feed deliveries will increase slightly, with an additional 44 truck trips annually (equivalent to +0.1 truck movements per day).
- Staff vehicle movements will increase by up to 2 additional light vehicle trips daily.
- Bedding and livestock transport will contribute only negligible additional traffic (<0.1 daily movements).
- Overall traffic increase equates to less than 15% of current daily volumes, a level not considered significant for traffic impact assessment.
- Existing farm access points and Bream Creek Road have sufficient capacity and safety to accommodate the proposed increase.

The Tasmanian Planning Scheme – Road and Railway Assets Code requires that new development demonstrates it will not unreasonably impact the safety and efficiency of the local road network. In this case, the proposal satisfies this requirement because:

- Low baseline traffic volumes on Bream Creek Road provide significant spare capacity.
- Existing access points are already designed to safely accommodate heavy vehicles.
- The incremental changes in operational traffic volumes are negligible and within the current network's capacity.

On this basis, the traffic associated with both the construction and operation of the proposed development is considered minor, manageable, and compliant with planning requirements

There is sufficient parking space within the complex for all staff and related services. As described above, the current entrances will continue to be utilised for semi-trailer and milk tanker access with no previous accidents in relation to the driveway or roads recorded. There is no proposed upgrade to the existing access arrangements or entrance.

5.9.4. MITIGATION, MANAGEMENT AND MONITORING MEASURES

The proposed development is expected to generate only a minor increase in traffic volumes, both during the short construction phase and over the longer-term operational life of the dairy complex. While the impacts are assessed as low, practical mitigation and management measures are proposed to ensure the project does not adversely affect the local

road network or road user safety. These measures focus on making efficient use of existing access points, minimising unnecessary traffic, and scheduling movements to avoid potential conflicts with other road users

Table 5-22 – Traffic mitigation, management and monitoring measures

ID No	Potential Impact	Timing	Responsible	Safeguard
T1	Impacts to road traffic network	Construction	Contractors	All construction traffic is to utilise the existing well-formed entrances to the properties. No additional unauthorised access is permitted as part of the project works.
T2	Increase to traffic volume	Construction	Contractors	All staff are to carpool wherever possible and it is safe to do so to avoid additional traffic volumes related to the project works.
T3	Road user safety	Construction	Contractors	Delivery of materials and machinery to site should avoid busy timeframes (8AM-5PM) and school bus scheduling.
T4	Increase in traffic volume	Operation	Farm management	Where possible, staff will carpool to site where it is practical and safe to do so. Shifts will be scheduled to minimise the requirement for additional traffic and road use.

5.9.5. CONCLUSION

The traffic assessment demonstrates that both construction and operational stages of the proposed dairy development will result in only a minor and manageable increase in vehicle movements. Construction traffic will be short-term and limited to standard working hours, with all heavy and light vehicles using existing well-formed property entrances. During operation, daily traffic volumes are projected to increase only marginally (by approximately 2 additional vehicle movements per day), with milk tanker collections, feed deliveries, and staff travel remaining consistent with existing patterns. Importantly, the proposal complies with the Tasmanian Planning Scheme – Road and Railway Assets Code, as the predicted traffic volumes will not unreasonably impact road safety, amenity, or the efficiency of the local network. With implementation of the identified mitigation and monitoring measures, traffic impacts are assessed as low and within acceptable thresholds.

5.10. WASTE

5.10.1. METHODOLOGY

The assessment of waste management has been undertaken with reference to the *Tasmanian Environmental Management and Pollution Control Act 1994* (EMPCA), the Waste Management Hierarchy, the Effluent Management Plan (SES&W 2025), and the *National Guidelines for Dairy Feedpads and Contained Housing Systems 2024*. The methodology considers:

- Anticipated waste streams during the construction phase (solid construction and packaging wastes, minor hazardous waste and soil).
- Ongoing operational waste streams (primarily manure and effluent from the complex, spent bedding, animal mortalities, and general dairy-related wastes such as plastics, chemical containers, and veterinary disposables).
- Current industry best practice in waste minimisation, reuse, and recycling, with consideration of regulatory requirements and site-specific management measures.

The strategy identifies a waste hierarchy (shown below) providing guidance on the order of preference of approaches to achieve efficient resource use.

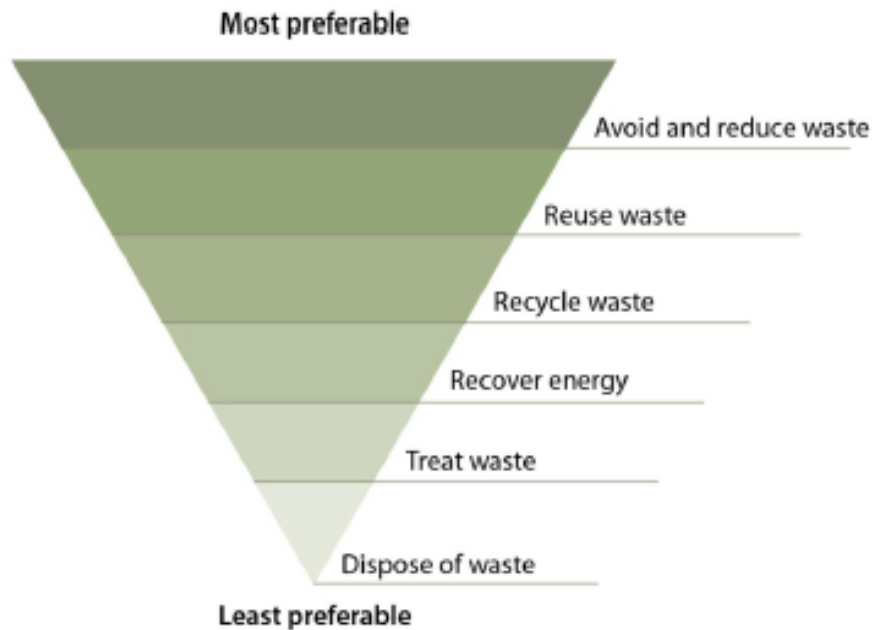


Figure 5-31 - Waste management hierarchy

This section proposes to identify potential waste production during both construction and operation together with the predicted volumes and management of waste produced.

5.10.2. EXISTING ENVIRONMENT

The site currently operates as a dairy enterprise with an established waste management framework. Existing waste streams include:

- Effluent collected from the dairy and feedpad, reused on cropping land.
- Manure and bedding residues, which are stockpiled and spread as soil conditioners.
- Mortalities, which are composted on site and spread with manure and bedding residue.
- Minor general farm wastes (e.g., silage wrap, chemical containers, machinery maintenance waste) managed through licensed contractors and farm recycling programs.

The proposed development does not introduce fundamentally new waste types, but it will increase the volume of effluent and manure generated due to the transition to a contained housing system.

Construction-related waste will be temporary and confined to the establishment phase.

5.10.3. ASSESSMENT

Waste management for the project follows the recognised waste hierarchy, which prioritises avoidance, minimisation, reuse, recycling, and disposal as a last resort. The philosophy applied to this development is that most waste streams—particularly effluent, manure, and bedding—are not “waste” but valuable resources to be recycled back into the farming system as fertiliser and soil ameliorants.

Non-organic wastes, such as construction materials, silage wrap, and chemical containers, will be minimised through procurement practices, segregated on-site, and either reused or directed into established recycling schemes. Disposal will only occur where reuse or recycling is not feasible, and then only to licensed facilities. This approach ensures compliance with Tasmanian legislation, aligns with dairy industry best practice, and supports both environmental protection and resource efficiency.

CONSTRUCTION

The construction phase of the project will generate relatively minor waste volumes compared with the operational phase, but effective management remains essential to minimise environmental impacts and align with Tasmanian waste guidelines. The waste management strategy for construction reflects the broader project approach and is guided by the following principles:

- **Minimise waste production** by careful planning and efficient material use.
- **Identify waste types and quantities** to ensure appropriate handling and management.
- **Maximise beneficial use** of excess soil and other materials within site construction and rehabilitation activities.

- **Identify re-use and recycling opportunities** and establish appropriate handling and collection procedures.
- **Implement measures to minimise waste generation**, including just-in-time delivery and pre-cut materials.
- **Ensure disposal conforms to applicable licences and guidelines**, with all non-recyclable materials directed to licensed facilities.
- **Bunding and containment** of any fuels, oils, or other potential contaminants used on site.

Temporary waste storage will be centralised in designated areas adjoining the site's parking area, providing safe containment and convenient access for removal by contractors.

Construction activities with waste generation potential include:

- Earthworks for effluent ponds, housing facility pad, cow lanes, and manure storage pad.
- Construction of buildings.
- Fit out and connection of effluent management systems within the housing facility.

Expected waste streams during construction include:

- General domestic waste (e.g., lunch wrappers, cans, small boxes) generated by on-site workers.
- Routine maintenance consumables (e.g., used grease tubes, rags, oil drums, filters, lubricants).
- General construction waste (e.g., timber off-cuts, packaging, pallets, plastic wrapping).

Additional considerations:

- No bulk earth materials are proposed to be removed from the site; all cut/fill will be reused for pads and embankments.
- No chemicals are proposed for construction other than fuels, lubricants, and oils associated with plant and machinery operation.
- Materials and equipment for the building and fit-out will be largely pre-fabricated, cut-to-size, or delivered to order, significantly reducing transport waste and off-cuts.

This approach ensures that construction waste is minimised at the source, beneficially reused where feasible, and appropriately contained and disposed of where reuse or recycling is not possible.

OPERATION

The operational phase of the dairy complex will generate ongoing waste streams typical of modern housed dairy farming. The management approach applies the waste hierarchy to prioritise waste minimisation, reuse, recycling, and safe disposal. The strategy for operational waste management is:

- **Minimise waste production** through efficient feed, bedding, and herd management practices.
- **Identify waste types and volumes** to ensure they are appropriately managed.
- **Maximise beneficial reuse** of effluent, manure, and spent bedding as nutrient resources within the farming system.
- **Segregate recyclable materials** such as silage wrap, mineral supplement bags, and chemical containers for recycling.
- **Ensure mortalities are managed** in accordance with industry and EPA and industry guidelines, either through on-site composting or burial in designated areas.
- **Avoid environmental risk** by confining stockpiling, storage, and effluent reuse to designated areas designed with appropriate drainage and containment.
- **Maintain compliance** with the Effluent Management Plan, TDIA licence requirements, and relevant codes of practice.

Key operational waste streams include:

- **Effluent and manure:**
 - Primary waste stream, generated daily.
 - Collected and directed to lined effluent ponds for storage, treatment, and later application to cropping areas at agronomic rates.
 - Sludge and manure solids are periodically removed and spread on-farm in accordance with nutrient budgets.
- **Spent bedding material:**
 - Removed from housing areas as required.
 - Stockpiled on compacted manure pads to prevent leaching.
 - Applied to cropping land as a soil ameliorant, providing organic matter and nutrients.
- **Animal mortalities:**
 - Occur infrequently but require strict management.

- Managed in accordance with Australian Veterinary Association and EPA Tasmania guidelines.
- Options include on-site burial in designated areas, or composting in dedicated mortality management zones.
- **General farm waste:**
 - Includes silage wrap, twine, plastic drums, chemical containers, and mineral supplement bags.
 - Managed through existing farm recycling programs or via licensed waste contractors.
- **Hazardous and chemical wastes:**
 - Small volumes generated from dairy sanitation chemicals (e.g., iodine teat spray, footbath solutions).
 - Stored in designated, bunded areas with spill containment.
 - Empty containers are triple-rinsed and recycled where programs exist.

Additional considerations:

- Effluent, manure, and bedding are considered resources rather than waste, as they are reintegrated into the farm's nutrient cycle under the Effluent Management Plan.
- Licensed waste contractors are engaged for any non-recyclable or hazardous wastes that cannot be reused or recycled on-site.
- Staff training is critical to ensure segregation, containment, and correct disposal of waste streams.

This integrated approach ensures that operational waste management is both environmentally responsible and consistent with industry best practice and Tasmanian regulatory requirements.

5.10.4. MITIGATION, MANAGEMENT AND MONITORING MEASURES

Mitigation and monitoring measures relating to the project construction and operation will be implemented to minimise potential impacts from waste. These are shown in the table below.

Table 5-23 – Waste mitigation, management and monitoring measures

ID No	Potential Impact	Timing	Responsible	Safeguard
W1	Contamination of waste and recycling.	Pre-construction	Contractor/owner	All construction staff will undergo site induction, including waste management procedures and segregation requirements.
W2	Ineffective use of waste systems and storage.	Pre-construction	Contractor	Designated waste areas will be established, clearly signed, and include instructions for correct separation, recycling, and disposal.
W3	Site contamination and poor waste management.	Construction	Contractor	All waste to be disposed of via approved off-site recycling or licensed disposal facilities; no burial of waste permitted.
W4	Site contamination and poor waste management	Operation	Farm management	Operational wastes (e.g., silage wrap, drums, chemical containers) to be disposed of via approved recycling (e.g., DrumMuster) or licensed disposal facilities. No burial permitted.
W5	Excess construction waste	Construction	Contractor	Waste minimisation strategies to be employed, including prefabrication, "cut-to-size" materials, and recycling wherever feasible.
W6	Disturbance of visual amenity	Construction	Contractor	All waste, plant, and equipment to be confined within the designated laydown area and removed from site upon project completion.
W7	Contamination of waterways, streams and land	Operation	Farm management	Effluent and manure to be directed through the lined effluent management system; solids/sludge stockpiled only on compacted and drained manure pads.
W8	Contamination of waterways, streams and land	Operation	Farm management	Effluent and manure to be applied only during suitable conditions (soil moisture, rainfall, wind) and in areas identified by the Effluent Management Plan; runoff must not leave the property.
W9	Nutrient overload of reuse area	Operation	Farm management	Ongoing soil testing and agronomic advice to guide application rates, crop rotations, and

ID No	Potential Impact	Timing	Responsible	Safeguard
				land use, in accordance with the Effluent Management Plan.
W10	Impacts on adjoining land from waste application	Operation	Farm management	Effluent and manure to be applied only in areas and under conditions specified in the Effluent Management Plan, ensuring setbacks and buffer zones are maintained.

Note: Please also refer to the Effluent Management Plan which details the Major Effluent System requirements for the intensive animal husbandry - dairy (loose housing) activity at the site.

5.10.5. CONCLUSION

The assessment confirms that waste streams generated during both construction and operation of the dairy complex can be effectively managed within existing regulatory frameworks and standard farm practices. Construction waste will be limited in volume, confined to the project footprint, and disposed of through approved recycling and licensed facilities.

Operational waste, including effluent, manure, and spent bedding, will be managed through the lined effluent system, compacted manure pads, and land application in accordance with the Effluent Management Plan. With the adoption of defined safeguards—including waste separation, bunding of storage areas, soil monitoring, and compliance with buffer/setback distances—waste management risks are considered low, and environmental impacts will be avoided or minimised.

5.11. VISUAL AMENITY

5.11.1. METHODOLOGY

The assessment of visual amenity is inherently subjective, as the value placed on visual impacts varies between individuals and locations. This assessment has therefore focused on providing a clear description of the existing visual environment and identifying measures proposed by the **Applicant** to minimise potential impacts on surrounding residents, road users, and other receptors.

The assessment of visual amenity has been undertaken in accordance with the Tasmanian EIS Guidelines, with consideration of:

- The current visual landscape and existing land uses.
- The visibility of proposed works from public roads, neighbouring properties, and other sensitive receptors.
- The scale, height, and form of proposed infrastructure.
- The degree of change compared to the existing agricultural landscape.
- Mitigation measures that can reduce visual impact, such as screening, siting, and building design.

The methodology included site inspections, a review of local topography and land use, and reference to planning overlays relevant to visual and landscape values. The application does not propose to significantly alter the general vista of the site, with the primary changes being the addition of the loose housing facility to the south-west of the existing complex buildings and the installation of additional effluent management ponds 1 and 3. Assessment of amenity has also considered the Scenic View Code, particularly SOR-C8.1.13 – Ragged Tier, which applies to the project site.

5.11.2. EXISTING ENVIRONMENT

The project site includes an existing approved dairy, feedpad, and associated infrastructure located adjacent to Bream Creek Road. This sits within a rural agricultural setting, surrounded by open fields, cultivated paddocks, and scattered patches of vegetation. The surrounding landscape is similar in character, featuring farmland, agricultural sheds, rural residences, and areas of remnant native vegetation. It is common in this locality to see farm buildings and support infrastructure as part of the working agricultural landscape.

Below image shows the existing infrastructure and its surrounds looking north, north-west.



Figure 5-32 - Site in relation to Bream Creek Road (Source: PRS)

The wider environment is defined by diverse topography and terrain, with undulating to hilly landforms generally under 400 metres in elevation. Fertile farmland dominates the lower slopes and valleys, interspersed with remnant dry sclerophyll forest and plantation forestry. The combination of grassy paddocks, wooded areas, and ridgelines forms part of the broader Wielangta Range, a coastal range extending through southeastern Tasmania.

Public vantage points to the site are primarily from Bream Creek Road and Marion Bay Road, both council-owned and maintained, where views are mostly experienced by passing vehicles. Several rural residences are located in the vicinity of the property; however, most are significantly separated from the proposed works and screened by existing plantations or vegetation. The result is that direct views into the project footprint are limited, and the project sits within a working rural backdrop where agricultural development is common.

5.11.3. ASSESSMENT

The project has been assessed in terms of its potential impact on the existing visual landscape. Given the established agricultural character of the site and surrounding area, the new works are considered to be consistent with existing land uses. Views of the site are primarily experienced from Bream Creek Road and Marion Bay Road by passing traffic, with more distant rural residences largely screened by vegetation and separation distances. Overall, visual impacts are expected to be low and manageable.

SITING AND DESIGN

Consideration particularly of the Scenic Protection Area of Ragged Tier has been undertaken as part of this assessment. The identified Management Objectives have been considered and comments included in **Table 5-24** below.

Table 5-24 – Ragged tier management objectives

Objective reference	Objective	Compliance	Comment
a	Maintain the rural character and significant views to the coast and Marion Bay.	Yes	The proposed is unlikely to have any significant impact on the view of the coast or Marion Bay.
b	Development must be compatible with surrounding rural character including scale, exterior building materials and colours.	Yes	The proposed housing will be constructed with materials which will blend in with its surrounds.

Objective reference	Objective	Compliance	Comment
c	Discourage development along significant skylines, ridge lines and visually prominent locations that are visible from main public roads, such as Marion Bay Road Bay Roads.	Yes	A review from Marion Bay Road showed one small 200 m clearing east of Bream Creek Road where the facility may be partially visible.
d	Development on the vegetated hills must be unobtrusive by its siting, design, exterior finish and landscaping, or be designed to have minimal visual impact consistent with the quality of the scenic and landscape values of the site and area.	Yes	Cross sections of the proposed housing facility demonstrate the building will be cut into the slope, reducing visual prominence.

The below images shows the site overview showing additional proposed elements:

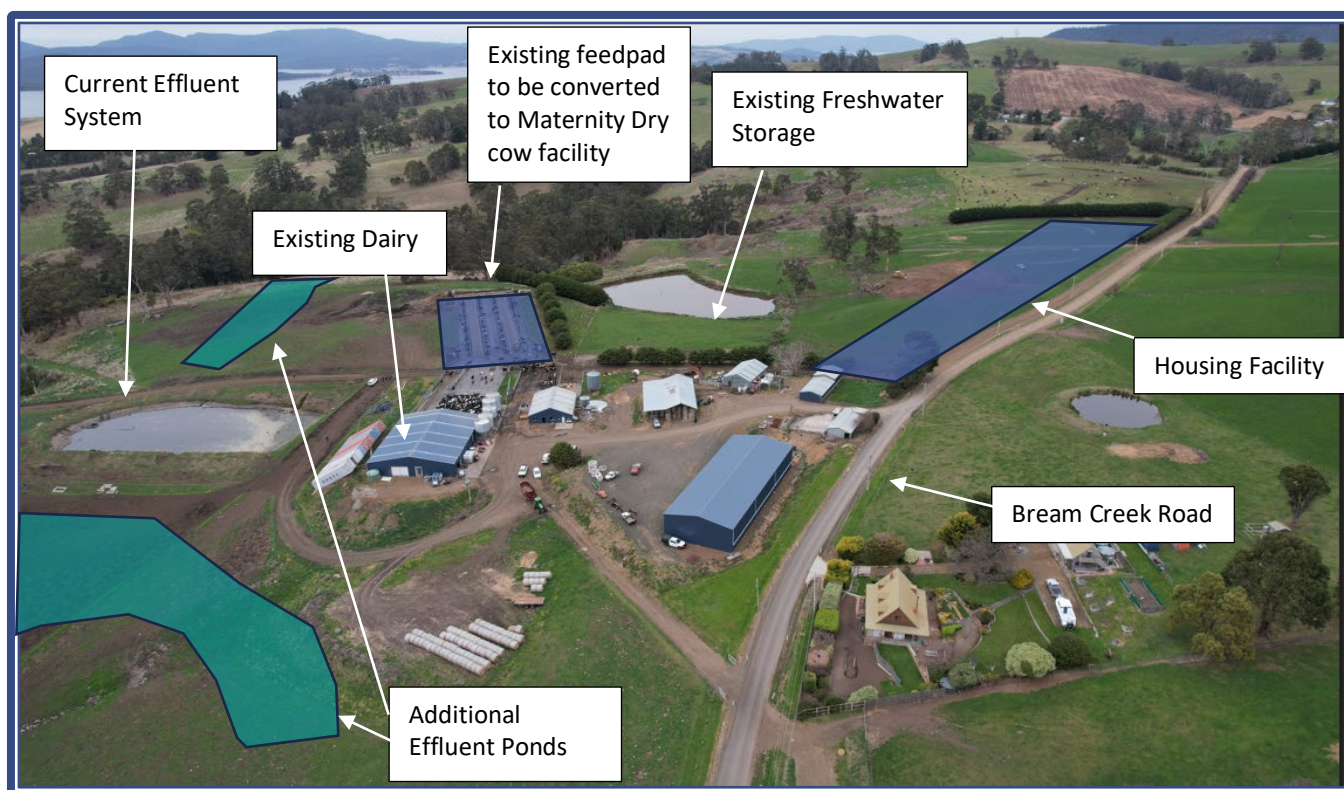


Figure 5-33 - Photo identifying existing site (Source: PRS)

BREAM CREEK ROAD

The main vantage point for the housing facility will be from Bream Creek Road. The design includes cutting the south-west end of the facility into the slope of the paddock to create a level pad. This reduces the apparent elevation of the structure when viewed from the road, minimising visual prominence.

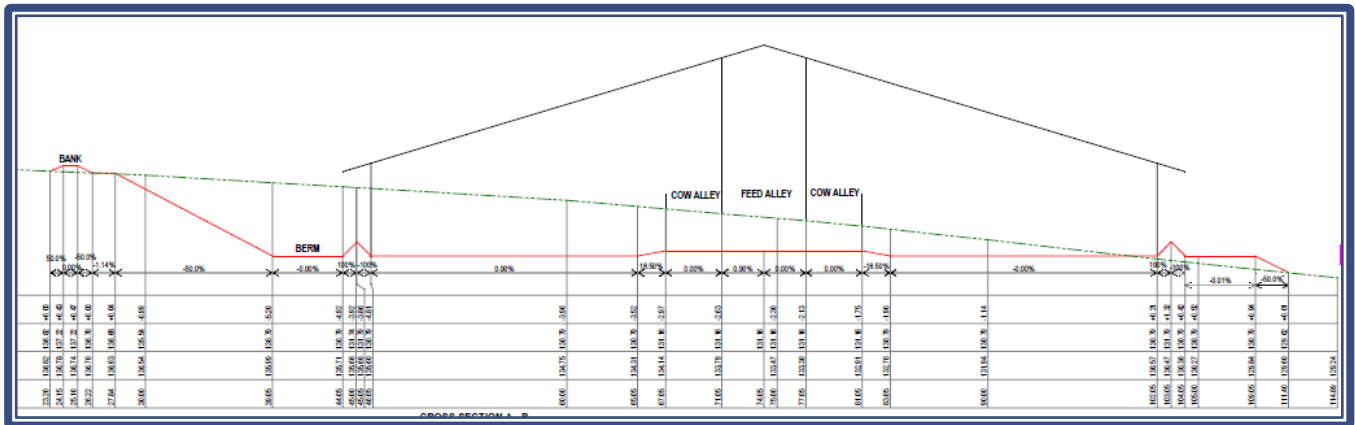


Figure 5-34 – Cross Section of South-west end of the proposed housing facility showing natural surface level (green) and design surface level (red)
(Source Excerpt of NJC Irrigation Plans)

MARION BAY ROAD & BAY ROAD

The potential impact on scenic values was also reviewed from Marion Bay Road and Bay Road.

- **Bay Road:** Due to orientation and distance, the proposed works will not be visible from Bay Road.
- **Marion Bay Road:** This road is lined with mature trees and vegetation along most of its extent, limiting views of the site. A short 200 m clearing was identified where the housing facility and silage area may be visible.

However:

- The proposed structures will use natural colours and finishes to blend into the landscape.
- The viewing location is along a 70 km/h road section, where visual exposure is brief.
- Screening from surrounding vegetation further reduces the likelihood of negative amenity impacts.



Figure 5-35 – Site in relation to Marion Bay & Bay Roads with the Scenic Protection Overlay (Source – QGIS with Code Overlays)

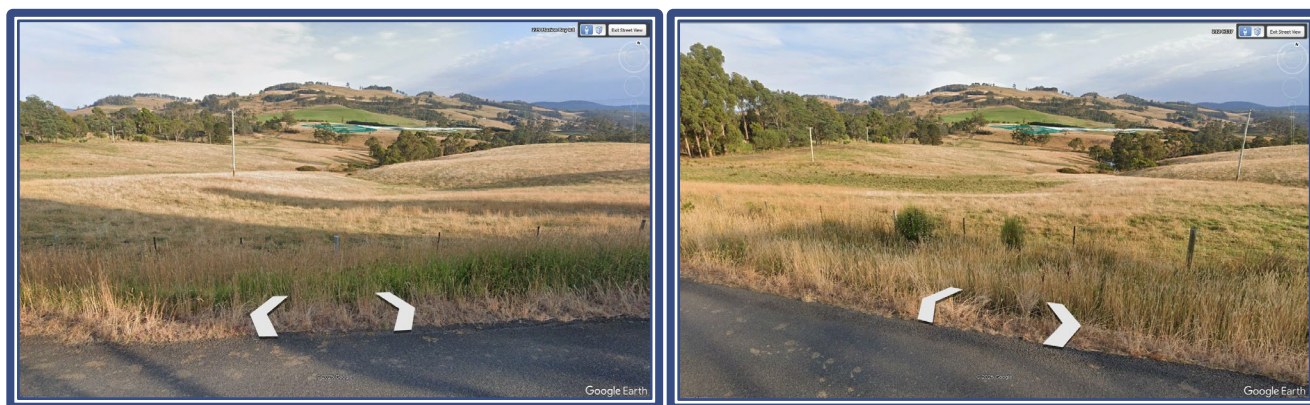


Figure 5-36 – Screenshots from Marion Bay Road (Source – Google Earth Street View)

CONSTRUCTION

During the construction phase, visual impacts will be minimal. Works are largely confined to the existing agricultural setting and will not significantly alter the site's appearance from either public or private vantage points. As a result, no detailed construction-phase visual assessment is required.

OPERATION

Once operational, the proposed housing facility and associated infrastructure will form part of the existing agricultural landscape. The siting of the new structures—adjacent to the current dairy and within an established farm complex—ensures that the development remains compatible with the prevailing rural character.

The design approach, including cutting the southwest end of the housing facility into the slope and using muted, natural colours, reduces the visual prominence of the buildings. From Bream Creek Road, the facility will present as a low-profile extension of existing farm infrastructure, while from Marion Bay Road only a short section (approximately 200 m) may allow limited visibility. At this location, intervening vegetation, distance, and the brief viewing time afforded by the 70 km/h speed zone further reduce potential impacts.

Surrounding rural residences are located at significant distances and are generally screened by topography, vegetation, or existing farm structures. As such, the proposed works are not expected to create any notable change in the broader viewshed or affect the visual amenity of sensitive receptors.

Overall, during operation the project will be consistent with the existing agricultural character of the district, with visual impacts assessed as low and manageable.

5.11.4. MITIGATION, MANAGEMENT AND MONITORING MEASURES

Mitigation and monitoring measures relating to the minimal project construction activities and ongoing operation will be implemented to minimise potential visual impacts. These measures are informed by the site's agricultural context, the Scenic Protection Area (Ragged Tier), and relevant planning requirements. The strategies outlined below ensure that visual impacts are effectively managed throughout the life of the project.

Table 5-25 – Visual impact mitigation, management and monitoring measures

ID No	Potential Impact	Timing	Responsible	Safeguard
V1	Visual amenity disturbed through construction.	Construction	Contractor/Site Manager	Construction works are minor. All works are to be confined within the project construction footprint. All waste, vehicles, plant and equipment are to be stored in identified laydown areas and will be removed from the site at project completion.
V2	Public vantage points impacted from construction activities	Construction	Contractor/Site Manager	Construction equipment will not be parked adjoining roads and will be parked within the proposed manure processing area when not in use.

ID No	Potential Impact	Timing	Responsible	Safeguard
V3	Operation of project is unsightly from public vantage point	Operation	Farm Manager	The project site must be maintained in a clean and tidy condition at all times.
V4	Project infrastructure disturbs the natural agricultural environment	Operation	Farm Manager	The shed and complex related infrastructure must be maintained in natural colours and not painted in colours uncomplimentary to the natural environment.

5.11.5. CONCLUSION

The visual impact assessment confirms that the proposed development will not result in any significant or unmanageable effects on the visual amenity of the surrounding landscape. The design integrates with the existing agricultural setting, avoids prominent skylines, and complies with the Scenic Protection Area (Ragged Tier) code. Vegetation screening, sympathetic building design, and appropriate siting ensure that potential visual impacts are low, localised, and consistent with the rural character of the region.

5.12. GREENHOUSE GAS EMISSIONS

5.12.1. METHODOLOGY

The assessment of Greenhouse Gas (GHG) emissions has been undertaken with reference to the *National Greenhouse and Energy Reporting* (NGER) Scheme and the *National Inventory Report* to identify likely sources of emissions from the proposed dairy development. The assessment considers both construction and operation phases of the project, with reference to similar dairy operations, published emission factors (Department of Climate Change, Energy, the Environment and Water), and project-specific data such as herd size, feed use, manure handling, and energy consumption.

The methodology has included:

- Identifying key emission sources associated with construction and operation.
- Estimating relative contribution from each source, with a focus on methane (CH₄), nitrous oxide (N₂O), and carbon dioxide (CO₂).
- Comparing current pasture-based operations with the proposed loose housing system to evaluate changes in emission intensity per litre of milk produced.
- Reviewing mitigation measures and best practice approaches to reduce the carbon footprint.

5.12.2. EXISTING ENVIRONMENT

The project is located within an established dairy enterprise that currently generates GHG emissions primarily through:

- Enteric fermentation from the milking herd.
- Manure and effluent decomposition (open feedpad and laneway collection).
- Fertiliser use and crop production.
- On-farm fuel use for vehicles and equipment.
- Electricity consumption in the dairy and irrigation systems.

As an operating dairy, the property already contributes to agricultural emissions consistent with its herd size and production levels. Current management practices include on-farm feed production, controlled effluent reuse, and the use of centre-pivot irrigation, all of which influence the farm's carbon profile.

The operation is in the process of adopting Dairy Australia's greenhouse gas (GHG) assessment framework to benchmark and monitor emissions. This system provides a structured approach for identifying key emission sources, such as enteric methane, manure management, feed production, and energy use, and allows businesses to model changes under different management systems. As part of the transition to a loose-housing system, the farm intends to use these tools to establish a baseline of current emissions and then assess potential improvements, ensuring future reporting and management are consistent with industry best practice.

5.12.3. ASSESSMENT

The proposed development has the potential to generate greenhouse gas emissions through both construction activities and long-term alteration to dairy operations. While dairying is inherently a source of methane and nitrous oxide, particularly through livestock digestion and manure management, the way these emissions are managed and balanced

against productivity improvements is critical. This assessment therefore considers the likely emissions from both the construction and operational stages of the project, the relative significance of each, and the capacity of the proposed management measures to minimise impacts and improve overall emission efficiency.

The operation is currently completing an emissions review

CONSTRUCTION

Greenhouse gas emissions during construction will be short-term and temporary, generated primarily from:

- Diesel combustion in heavy machinery (earthworks, shed construction, pond excavation).
- Transport of construction materials and equipment to site.
- Minor emissions from waste handling and disposal.

These emissions are limited in duration (several months) and scale compared to the long-term operational profile of the dairy.

OPERATION

Operational emissions will be consistent with those typical of large-scale dairy enterprises, with sources including:

- **Enteric fermentation:** Methane production from digestion in ruminants, the largest single contributor.
- **Manure and effluent management:** Methane and nitrous oxide generated from storage ponds, manure pads, and land application of effluent.
- **Energy use:** Electricity for dairy operation, water pumping, lighting, and feed delivery systems, with backup diesel generator use only during outages.
- **Cropping and fertiliser use:** Nitrous oxide from fertiliser application and CO₂ from fuel use in cropping operations.

Compared to the existing pasture-based system, the proposed loose housing system may increase effluent-related methane due to greater manure capture and storage, but this is offset by:

- Improved nutrient recycling through controlled effluent application.
- Higher productivity per cow (reduced emission intensity per litre of milk).
- Opportunities to reduce fertiliser-related emissions by substituting synthetic fertilisers with effluent nutrients.

Overall, the project is expected to improve emission efficiency per unit of production while maintaining compliance with best practice effluent and energy management.

5.12.4. MITIGATION, MANAGEMENT AND MONITORING

Mitigation and monitoring measures have been identified to ensure greenhouse gas emissions associated with both the construction and operational phases of the project are minimised. While some emissions are unavoidable, particularly those linked to livestock and agricultural production, the measures outlined below focus on practical actions to reduce fuel and energy use, enhance nutrient efficiency, and support industry-led monitoring and reporting frameworks. These actions are consistent with best practice guidance from Dairy Australia and relevant environmental management standards.

Table 5-26 – Emissions mitigation, management and monitoring measures

ID No	Potential Impact	Timing	Responsible	Safeguard
G1	Methane emissions from manure and effluent storage	Operation	Farm Manager	Implement effluent management system with solids separation, maintain pond capacity, and reuse effluent via controlled irrigation in accordance with the Effluent Management Plan.
G2	Nitrous oxide emissions from nutrient application	Operation	Farm Manager / Agronomist	Apply effluent and manure at agronomic rates based on regular soil testing, substitute synthetic fertiliser where possible, and avoid application in wet conditions.
G3	High emissions intensity per litre of milk	Operation	Farm Manager / Herd Manager	Maintain balanced feed rations, optimise herd health and welfare, and improve feed efficiency to lower emissions per unit of production.

ID No	Potential Impact	Timing	Responsible	Safeguard
G4	Fuel and energy use from plant, equipment and vehicles	Construction and Operation	Farm Manager	Use energy-efficient pumps, motors, and lighting; service machinery regularly; avoid unnecessary idling; source materials locally where feasible.
G5	Methane and CO ₂ emissions from construction activities	Construction	Business	Minimise construction vehicle movements, recycle and reuse construction materials where possible, and avoid unnecessary use of heavy machinery.
G6	Lack of monitoring and potential under-performance of GHG measures	Operation	Farm Manager Business	Undertake annual review of effluent and nutrient management practices, participate in industry benchmarking tools (e.g., Dairy Australia calculators), and adjust practices as required.

5.12.5. CONCLUSION

The assessment of greenhouse gas emissions indicates that the proposed development will not result in significant increases beyond those typically associated with dairy operations of this scale. Construction-related emissions will be temporary and confined to standard activities such as earthworks, transport, and building fit-out.

Operational emissions will remain consistent with established agricultural sources—principally livestock, feed production, and manure management—and will be managed through industry-recognised practices. The project aligns with the Dairy Australia frameworks for monitoring and continuous improvement in emissions management, and mitigation measures have been identified to reduce fuel use, optimise energy efficiency, and improve nutrient utilisation. On this basis, the project is considered to present a low risk of unacceptable greenhouse gas impacts and is consistent with regulatory and industry expectations.

6. MONITORING AND REVIEW

The monitoring and review framework ensures that the management measures outlined in Section 9 are effectively implemented and remain appropriate throughout the life of the project. While Section 9 sets out the safeguards for each environmental factor, this section describes how those safeguards will be verified, how performance will be tracked, and how adaptive management will be applied if monitoring identifies emerging risks or deficiencies.

Monitoring and review will be guided by the following principles:

- **Compliance:** ensuring the project remains consistent with planning permits, EPA requirements, and other regulatory approvals (including TDIA licensing).
- **Verification:** checking that management measures are operating as intended and delivering the desired environmental outcomes.
- **Transparency:** keeping clear records of monitoring activities, inspections, and corrective actions.
- **Responsiveness:** implementing adaptive management where monitoring identifies issues or risks.
- **Community accountability:** responding to any neighbour or community concerns through the separate Complaints Management Procedure.

This section summarises those measures as commitments, made by the Applicant that are in addition to those that are statutory requirements associated with legislative, licence or environmental authority compliance. In the following tables the commitments and relevant EIS section are detailed for both the construction phase and the ongoing operation and management.

6.1. CONSTRUCTION

During construction, the focus is on ensuring that short-term works (earthworks, drainage, shed construction, pond formation) do not create lasting or unmanaged impacts. Monitoring during construction will focus on short-term, high-intensity activities such as earthworks, pond construction and traffic movements, with the aim of ensuring impacts are controlled and do not extend beyond the site. The table below outlines the key monitoring actions.

Table 6-1 – Monitoring and Review - Construction

Potential Impact	Monitoring	Frequency	Responsibility	Reporting
Noise impacts	Spot checks during earthworks	As required during works	Contractor	Log results, investigate complaints
Traffic impacts	Confirm vehicles use designated access points	Daily	Contractor / Project Manager	Weekly internal review
Waste mismanagement	Inspect waste storage and segregation	Weekly	Contractor / Project Manager	Waste logs reviewed monthly
Surface water sedimentation	Inspect erosion/sediment controls	Daily during rain; weekly otherwise	Contractor	Incident report if exceedance
Groundwater interception	Check excavations for groundwater	During excavation	Contractor/ Geotech	Record findings
Visual amenity	Inspect construction footprint containment	Weekly	Project Manager	Monthly internal review
General compliance	Check induction and training records	Ongoing	Contractor / Project Manager	Maintain records

6.2. OPERATION

Once operational, the focus shifts to ongoing environmental performance, particularly effluent, odour, and manure management. Monitoring during operation will focus on long-term environmental performance of the effluent system, odour controls, traffic, and general farm management, ensuring that safeguards continue to be effective and compliant with licence conditions. The table below outlines the key monitoring actions.

Table 6-2 – Monitoring and Review - Operation

Potential Impact	Monitoring	Frequency	Responsibility	Reporting
Noise impacts	Spot checks of pumps, mixers; log complaints	Quarterly	Farm Manager	Annual review
Traffic impacts	Review tanker and feed delivery schedules	Ongoing	Farm Manager	Investigate complaints
Waste management	Review manure, effluent solids, farm waste records	Annual	Farm Manager	Application records for solids and bedding.
Surface water runoff	Inspect drains, diversion banks, culverts	Quarterly	Farm Manager	Inspection log
Effluent pond management	Monitor freeboard levels, integrity checks	Monthly	Farm Manager	Volume/level records
Odour/air quality	Inspect manure and silage areas	Monthly	Farm Manager	Complaints register
	Review weather conditions prior to applications	As applied	Farm Manager	Weather data and site conditions
GHG emissions	Review herd size and management against Dairy Australia tools	Annual	Farm Manager	Annual sustainability review
Visual amenity	Inspect building finishes and site tidiness	Annual	Farm Manager	Maintenance records

6.3. ADAPTIVE MANAGEMENT

Both phases adopt an adaptive management approach: monitoring results will be regularly reviewed, and corrective actions will be implemented immediately if performance criteria are not met. Management measures will be updated where necessary to reflect lessons learned or regulatory feedback.

6.3.1. EFFLUENT SYSTEM

The ongoing management of the effluent system is critical, as the system underpins environmental protection, occupational health and safety for staff and visitors, and the welfare of production animals. The system is described in detail in the Effluent Management Plan (**Appendix 5**). The following management and monitoring measures are required:

YARD AND HOUSING CLEANING:

- Manual wash all dairy yards at least twice daily, corresponding with each milking.
- Flood-wash housing areas at least twice daily to maintain hygiene and cow comfort.

EFFLUENT USE AND CONVEYANCE:

- Recycled effluent will be used within the floodwash system to reduce freshwater demand and minimise storage requirements, consistent with modelled volumes in the Effluent Management Plan and water balance.
- Recycled effluent must not be used in handheld hoses to prevent aerosol exposure to staff.
- Agitation and pumping capacity must be maintained at the upgraded sump to ensure efficient transfer to the separator and Pond 1.

MANURE AND BEDDING MANAGEMENT. Contingency plans for pack performance will need to include, but not be limited to the following:

- Additional tillage, aeration and stock density management.
- Importation of additional woodchips and incorporation to reduce moisture, increase C:N ratios, restore temperature to optimal levels or reduce pH levels.
- Immediate cleanout, with:
 - transport of bedding material to paddocks for spreading within periods where application is possible and the risk of run-off is managed.
 - stockpiling of bedding material on a purpose-built pad for spent bedding, alongside the concrete manure management area.

- A supply of organic material which is kept under cover and dry with a low moisture content, ideally below 20%. Woodchips or could be kept on hand.
- Temporary transfer of cows onto the feedpad/covered maternity barn area, or the dairy yard, while contingency plans are activated.
 - Maintain a stockpile of Ag Lime for incorporation into the pack, if the pack becomes too acidic for microbial breakdown.

EFFLUENT PONDS:

- Pond 1 must be de-sludge at least every six months.
- Pond 3 must be emptied prior to the winter storage period (no later than the end of March each year).

LAND APPLICATION OF EFFLUENT AND SLUDGE: Effluent irrigation must occur in an environmentally sound manner

- Irrigation must not be applied:
 - Within 30 metres of a watercourse or waterbody.
 - Within 10-metres of a property boundary.
 - When forecast wind speed of speed exceeds 5 m/s, or 18 km/h reflecting gentle breeze, to avoiding risks of spray drift over land boundaries.
 - Prior to forecast rainfall of >10mm within 24 hours.
 - Until a soil moisture deficit of 10mm occurs, allowing for an 8mm irrigation to be applied without runoff.
- Effluent application should be:
 - Absorbed by soil (liquid), to reduce the likelihood of loss to surface runoff or groundwater, and
 - Adsorbed by clay or soil particles (nutrients), minimising off-site loss of nutrient through runoff or leaching to groundwater.
- Effluent must only be applied to land via irrigators or slurry tankers.
- Sludge must only be applied to land via slurry tankers and restricted to designated effluent irrigation areas.
- Effluent and sludge should be tested prior to application, and nutrient loadings must not exceed crop removal.
- Land subject to effluent irrigation must be double cropped to align nutrient uptake with modelled values.
- Sludge and manure must not be applied during the winter storage period or outside approved effluent areas.

GENERAL OPERATION REQUIREMENTS:

- Milk must not enter the effluent system. If disposal is required, milk must be diluted with irrigation water at a ratio of at least 1:10 and applied only to suitable paddocks.
- All electrical components must be elevated and weather-protected.
- All motors, pumps, and moving parts must have safety guards and be serviced on regular intervals.
- All staff and contractors must comply with the health and safety requirements outlined in the Effluent Management Plan.

Further detail around all components of effluent management are included in the attached Effluent Management Plan attached to this report as **Appendix 5**.

SOILS MONITORING FOR EFFLUENT, SLUDGE AND MANURE APPLICATION AREAS

The modelled nutrient loadings for calculating effluent and sludge land area requirements are based on irrigated cropping, with double cropping practiced or at least 3 crops in a two-year period for intensive fodder production. This type of system is modelled using nutrient application rates as follows:

- Nitrogen: 360 kg/Ha/year (or 73% when limited by phosphorus = 264kg/ha).
- Phosphorus: 54 kg/Ha/year.
- Potassium: 300 kg/Ha/year (or 75% when limited by phosphorus = 226kg/ha).

At the minimum, soil tests on areas utilising effluent and manure should include:

- Soil pH (water and CaCl₂),
- Electrical conductivity (salinity),
- Chloride (mg/kg)
- Total Phosphorus (mg/kg),
- Available phosphorus (mg/kg) – Colwell or Olsen,
- Phosphorus sorption capacity (mg/kg),
- Nitrate nitrogen (mg/kg),
- Ammonium nitrogen (mg/kg),
- Organic Carbon (%),

- Exchangeable cations (cmol/kg), including calcium, magnesium, potassium, sodium (Exchangeable Sodium Percentage – ESP), and aluminium.
- Trace elements (DTPA, mg/kg), including zinc, copper, manganese, iron and boron.

All monitoring records must include the following records:

- The date and time of the sample,
- The point/location at which the sample was taken,
- The name of the person that took the sample.

The monitoring and review framework provides a robust mechanism to ensure that all environmental safeguards outlined in this EIS are implemented and remain effective throughout the project lifecycle. Monitoring will be integrated into routine farm management and linked to regulatory requirements, with results reviewed annually and reported where required. This adaptive management approach ensures the project can respond to any unforeseen issues while maintaining compliance with statutory obligations and minimising environmental impacts.

7. DECOMMISSIONING AND REHABILITATION

7.1. METHODOLOGY

If the site were to cease operation as an intensive animal husbandry - dairy (loose housing) system, a systematic and structured decommissioning and rehabilitation program would be required to safely remove effluent ponds and manure storage areas, stabilise disturbed land, and return the property to a sustainable agricultural use.

The objective of the decommissioning is to ensure that the site on finalisation of operation as a dairy does not pose an environmental risk.

The methodology focuses on the safe removal or in-situ rehabilitation of effluent ponds, manure storage pads, and associated drainage structures and the process also aims to stabilise disturbed land, re-establish pasture or other suitable vegetation, and demonstrate compliance with EPA Tasmania guidelines NRE and TIDA requirements and industry best practice. The methodology involves:

- Emptying, cleaning, and backfilling effluent ponds and manure pads.
- Removing residual organic material to approved reuse areas.
- Stabilising soils, embankments, and batters.
- Establishing permanent vegetative cover to reduce erosion and nutrient mobilisation.

Buildings have the ability for repurposing as agricultural buildings for machinery storage or other farming activities. They are not considered in this assessment other than for the decommissioning of the use of the buildings for housing purposes.

7.2. EXISTING ENVIRONMENT

The current operation includes three engineered effluent ponds with clay liners and embankments, a manure storage pad constructed of compacted clay, and associated drainage and laneway infrastructure. These facilities are critical during the operational phase but, if left unmanaged at closure, may create risks of nutrient leaching, odour, or erosion.

Rehabilitation must therefore prioritise safe removal of residual waste, stabilisation of earthworks, and restoration of the land for future agricultural use. The proposed infrastructure for decommissioning or re-purposing will be:

- Three effluent ponds with compacted clay liners and engineered embankments.
- A manure storage pad constructed of compacted clay with drainage controls.
- Concrete laneways and drainage systems connected to the effluent system.

7.3. DECOMMISSIONING ACTIONS

The decommissioning actions focus on ensuring that all effluent and manure handling infrastructure is safely dismantled or rehabilitated, with residual organic matter reused beneficially on agricultural land. The approach is designed to eliminate long-term risks of odour, nutrient leaching, or erosion while progressively returning the site to a condition compatible with standard rural farming practices.

7.3.1. EFFLUENT PONDS

Effluent ponds represent the most significant rehabilitation task. Each pond contains residual liquid and sludge that must be managed in accordance with the approved Effluent Management Plan. The decommissioning of these ponds involves emptying, cleaning, and structural deconstruction to eliminate ongoing environmental liabilities.

- Drain all remaining effluent liquid to reuse areas in line with the existing Effluent Management Plan at agronomic rates.
- Excavate residual sludge from pond bases and spread over cropping areas at recommended nutrient application rates.
- Break up and recompact pond floors and batters to prevent preferential flow paths.
- Backfill ponds with suitable clay or fill material and regrade to match surrounding contours.
- Apply topsoil and seed to establish vegetative cover.

7.3.2. MANURE STORAGE PADS

The manure storage areas will also require careful management during closure. These surfaces may contain concentrated organic residues that, if not removed, could leach nutrients or generate odours. The pad must be decommissioned in a way that returns the land to a safe and productive use.

- Remove all remaining manure, bedding, and feed residues.
- Spread material across designated reuse paddocks at agronomic loadings.
- Break up compacted clay surfaces and regrade for surface drainage.

- Apply topsoil, lime/gypsum (if required), and seed to promote pasture re-establishment.

7.3.3. BEDDING REMOVAL (LOOSE HOUSING, MATERNITY AND CALF SHED)

All bedding material used in the housed systems must be removed to prevent nutrient accumulation and odour:

- Strip and remove bedding material from the shed floors.
- Transport material to designated reuse paddocks for agronomic application.
- Inspect shed pads and concrete floors for cracks or ponding, undertaking remediation if required.
- Ensure drains and sumps are cleaned and decommissioned to remove residual effluent.

7.3.4. CONCRETE LANEWAYS AND DRAINAGE

Hardstand infrastructure such as laneways and drains will remain in place but must be disconnected from effluent management systems. This ensures the site transitions to a standard farm drainage system and avoids ongoing accumulation of contaminated runoff.

- Clean laneways, drains, and sumps to remove organic matter.
- Disconnect laneways from effluent drainage points.
- Retain hardstand infrastructure for possible reuse, ensuring that runoff drains to stormwater rather than effluent systems.

7.3.5. CUT BATTERS AND EMBANKMENTS

The embankments surrounding effluent ponds and shed pads must be stabilised to prevent erosion once they are decommissioned. Regrading and revegetation will provide long-term stability.

- Reshape any steep embankments to stable gradients (not steeper than 1V:3H).
- Cover with topsoil and establish grass cover to prevent erosion.
- Install temporary silt fences or diversion drains until vegetation is fully established.

7.4. REHABILITATION MONITORING

Ongoing monitoring is required to ensure that rehabilitation outcomes are achieved. The focus will be on soil stability, vegetation establishment, and nutrient management in reuse areas.

- Inspect rehabilitated areas quarterly for at least two years.
- Monitor vegetation cover and soil erosion.
- Undertake soil nutrient testing in reuse paddocks where effluent and sludge have been applied.
- Address any erosion, weed incursion, or nutrient imbalance promptly.
- Provide a closure and compliance report to Council, TDIA, NRE and if appropriate EPA Tasmania upon completion.

7.5. CONCLUSION

Decommissioning of the effluent ponds, manure pads, and drainage infrastructure can be safely achieved through staged removal of wastes, reuse of nutrients on farm, and backfilling and stabilisation of earthworks. Rehabilitation will restore the land to a condition suitable for continued agricultural use, consistent with the surrounding rural environment. The retention of farm sheds and laneways allows the property to continue functioning as a viable farming enterprise, while the removal of intensive effluent infrastructure ensures that long-term environmental risks are eliminated.

8. MITIGATION AND MANAGEMENT MEASURES

The Environmental Impact Statement (EIS) identifies a range of mitigation measures proposed to manage adverse environmental impacts and beneficial opportunities from the project.

This section summarises the mitigation and management measures that will be implemented to avoid, minimise, or manage potential environmental impacts of the project. The measures presented consolidate the commitments described throughout the EIS, covering both the construction and operational phases. They are in addition to any statutory requirements imposed by planning permits, licences, or other approvals. Each measure identifies the potential impact it addresses, the safeguard proposed, the timing of its application, and the party responsible for implementation.

8.1. PRE-CONSTRUCTION

Prior to commencement of works, measures will be implemented to ensure that the site is appropriately prepared, and risks are minimised. These include establishing clear boundaries, setting up erosion and sediment control, ensuring waste and spill management systems are in place, and confirming that machinery is clean and fit for purpose.

Table 8-1 - Statement of commitments – Pre Construction

Aspect	Potential Impact	Timing	Safeguard
Water	Mobilisation of sediments to streams and waterways	Contractor	Erosion and sediment control (ESC) measures to be implemented and maintained in accordance with the <i>Guidelines for Soil and Water Management on Construction Sites</i> (DPIPWE/NRE Tas, 2015) and EPA Tasmania best-practice requirements under the EMPCA.
	Contamination of surface/groundwater from machinery washdown	Contractor	Vehicles to be washed prior to site entry. Any on-site washdown must be contained and directed to controlled drainage.
	Ponding of surface water / inadequate drainage	Contractor	Inspect and prepare site drainage before works. Install ESC measures and maintain until stabilisation.
Soil	Use of unsuitable soils for liners or pads	Engineer / site supervisor	Verify clay source suitability; exclude sands, gravels, and organic soils from liner use.
	Loss of topsoil resource	Site supervisor	Plan for strip and stockpile topsoil separately for reuse on batters and rehabilitation areas.
Biodiversity	Native vegetation accidentally cleared	Contractor	No native vegetation to be removed; clearly mark exclusion zones around adjoining native vegetation; confine works to designated footprint.
	Vegetation outside site impacted by works	Contractor	Prepare and implement erosion and sediment controls before any soil disturbance to minimise off-site impacts.
	Weed and pathogen spread via machinery	Contractor	Apply 'come-clean, go-clean' machinery hygiene protocols; inspect vehicles entering/exiting site; source clean fill.
	Site and surrounding areas contaminated due to chemical spill	Contractor	Store fuels/chemicals in bunded areas; implement spill prevention and response plan; provide spill kits at work areas.
Air Quality	General air quality impacts	Site Supervisor	Induction of all employees to include: location of sensitive receptors, potential dust sources, monitoring requirements, dust management measures, and site speed limits.

Decommissioning and Rehabilitation

Aspect	Potential Impact	Timing	Safeguard
Waste	Contamination of waste and recycling.	Contractor/ owner	All construction staff will undergo site induction, including waste management procedures and segregation requirements.
	Ineffective use of waste systems and storage.	Contractor	Designated waste areas will be established, clearly signed, and include instructions for correct separation, recycling, and disposal.

8.2. CONSTRUCTION

During construction, the focus is on avoiding short-term environmental impacts such as noise, dust, sediment movement, waste, and traffic impacts. The works will remain confined to the defined footprint, and best-practice measures will be implemented to protect surface and groundwater, maintain neighbour amenity, and minimise disturbance

Table 8-2 - Statement of commitments –Construction

Aspect	Potential Impact	Responsibility	Safeguard
Water	Mobilisation of sediments to waterways	Contractor	Progressive rehabilitation to stabilise disturbed areas as soon as practicable.
	Contamination of surface/groundwater from fuels and lubricants	Contractor	Refuelling and maintenance to occur only on compacted, designated areas (e.g. manure storage pad) or prior to site entry.
	Contamination of surface/groundwater from leaks	Contractor	Daily plant maintenance checks to ensure no leaks of fuel, oil, or other liquids. Staff trained in spill prevention and management.
	Contamination from accidental spills	Contractor	Emergency spill kits to be maintained on site. Staff trained in location and use.
	Ponding of surface water / inadequate drainage	Contractor	Maintain ESC measures throughout construction and until permanent stabilisation is achieved.
	Groundwater contamination during excavation	Contractor / Geotechnical specialist	If groundwater is intercepted, works must cease and geotechnical advice sought. All effluent and manure storages to be constructed with impervious compacted clay liners.
Soil	Inadequate foundation preparation	Contractor	Remove topsoil and unsuitable materials; excavate cut-off trenches and key into clay/rock beneath embankments.
	Poor compaction of liners and fill	Contractor	Place soils in ≤250 mm lifts (150 mm compacted); compact to ≥98% MDD at +3%/–1% OMC; use pad foot rollers or scrapers.
	Liner damage or desiccation	Contractor	Cover clay liners with ≥100 mm topsoil/ sand/gravel; retain shallow effluent layer during operation to prevent drying.
	Embankment instability or erosion	Contractor Farm manager	Batter slopes no steeper than 1V:3H; exclude cattle and vehicles; keep free of trees; protect internal faces against wave action.
	Cut batter erosion beside shed pad	Contractor Farm manager	Topsoil and revegetate exposed batters; install diversion drains; inspect after rainfall and repair erosion promptly.

Decommissioning and Rehabilitation

Aspect	Potential Impact	Responsibility	Safeguard
	QA failures in construction process	Contractor	Undertake field density tests; record soil type, compaction effort, and moisture conditioning.
Biodiversity	Native vegetation accidentally cleared	Contractor	No native vegetation to be removed; clearly mark exclusion zones around adjoining native vegetation; confine works to designated footprint.
	Vegetation outside site impacted by works	Contractor	Prepare and implement erosion and sediment controls before any soil disturbance to minimise off-site impacts.
	Weed and pathogen spread via machinery	Contractor	Apply 'come-clean, go-clean' machinery hygiene protocols; inspect vehicles entering/exiting site; source clean fill.
	Site and surrounding areas contaminated due to chemical spill	Contractor	Store fuels/chemicals in bunded areas; implement spill prevention and response plan; provide spill kits at work areas.
	Disturbance to Priority Vegetation adjoining footprint	Contractor	Install temporary fencing or flagging; monitor during earthworks to ensure no encroachment.
	Removal of exotic shelterbelts (cypress)	Contractor	Undertake removal in staged, controlled manner; monitor for weed regrowth; replace shelter values where required with alternative plantings.
	Weed proliferation (construction traffic)	Contractor	Limit traffic to existing access and farm roads; enforce hygiene protocols; monitor and control outbreaks as part of BMP weed program.
	Vegetation or water impacted by chemical spill or contamination	Contractor / site supervisor	Cease works immediately if spill occurs; implement spill management procedure; notify regulators as required.
	Water quality risks (sediment or pollutants)	Contractor	Implement erosion/sediment controls (silt fencing, diversion drains, check dams); stabilise disturbed areas progressively; report any pollution events to EPA and SRW.
	Indirect impacts (dust, traffic, drainage)	Contractor / site supervisor	Confine construction to defined footprint; enforce speed limits; implement ESC measures; stabilise banks promptly.
	Weed colonisation of disturbed soils	Farm Manager	Progressively stabilise exposed areas with topsoil and seeding; monitor quarterly; apply spot spraying if outbreaks occur.
Aboriginal Cultural Heritage	Unexpected Discovery of Aboriginal Relics other than Skeletal Material	Site Supervisor / Contractor	Establish a temporary no-go or buffer zone of at least 10 m × 10 m around the suspected relics. Contact Aboriginal Heritage Tasmania on 1300 487 045 and email documentation to aboriginalheritage@dpac.tas.gov.au as soon as possible. Works will not recommence until further advice is received from AHT.
	Unexpected Discovery of Skeletal Material	Site Supervisor / Contractor	Cease all works immediately and protect the remains in situ. Notify Tasmanian Police without delay. If the remains are suspected to be Aboriginal, also notify Aboriginal Heritage Tasmania. All subsequent instructions from the relevant authorities must be strictly followed
Non-Indigenous Heritage	Damage to unknown heritage item.	Site Supervisor / Contractor	All site personnel will be instructed to stop work immediately if any suspected heritage artefact or structure is identified.
	Unexpected archaeological remains discovered	Site Supervisor / Contractor	Cease work in the vicinity of the find and establish a temporary no-go buffer zone. Seek specialist advice from a suitably qualified heritage consultant. Notify the relevant local

Decommissioning and Rehabilitation

Aspect	Potential Impact	Responsibility	Safeguard
			Council and the Tasmanian Heritage Council for further direction under the <i>Historic Cultural Heritage Act 1995</i> .
Air Quality	Dust emissions affecting surrounding properties	Site Supervisor	Monitor Bureau of Meteorology forecasts; cease non-essential earthworks (e.g., topsoil stripping) during excessively windy conditions.
	Dust lift from exposed soils and stockpiles	Site Supervisor / Contractor	Minimise open areas; stabilise exposed surfaces progressively.
	Dust emissions from high-traffic areas and roads	Site Supervisor / Contractor	Deploy water cart during dry or windy conditions to suppress dust on unsealed roads and work areas.
	Dust from topsoil stripping	Contractor / Land Manager	Conduct topsoil stripping only under suitable weather conditions; and wherever possible progressively rehabilitate.
	Dust lift from rehabilitated areas	Construction	Establish vegetative cover on disturbed areas within 8 months as part of progressive rehabilitation.
	Dust from vehicle movement	Site Supervisor	Enforce site speed limits; confine vehicles to designated access roads.
	Exhaust emissions from machinery	Contractor	Maintain construction plant and equipment in good condition and serviced regularly.
	Excessive emissions from undersized machinery	Contractor	Ensure machinery is adequately sized for intended tasks to avoid overloading and unnecessary emissions. ¹
	Dust impact on sensitive receptors and road safety	Site Supervisor	Monitor wind direction and speed; cease works if dust affects public roads or neighbouring dwellings.
Noise	Noise impacts at receptor	Contractor	• Ensure all machinery is regularly serviced and fitted with effective noise abatement devices (e.g. mufflers). • Monitor equipment during use; stand down excessively noisy plant until rectified. • Avoid unnecessary idling; switch off machines when not in use for extended periods. • Select appropriately sized machinery for each task to avoid under- or over-capacity operation. Confine noisy activities to standard construction hours (as per EPA guidance)
Traffic	Impacts to road traffic network	Contractor	All construction traffic is to utilise the existing well-formed entrances to the properties. No additional unauthorised access is permitted as part of the project works.
	Increase to traffic volume	Contractor	All staff are to carpool wherever possible and it is safe to do so to avoid additional traffic volumes related to the project works.
	Road user safety	Contractor	Delivery of materials and machinery to site should avoid busy timeframes (8AM-5PM) and school bus scheduling.
Waste	Site contamination and poor waste management.	Contractor	All waste to be disposed of via approved off-site recycling or licensed disposal facilities; no burial of waste permitted.
	Excess construction waste	Contractor	Waste minimisation strategies to be employed, including prefabrication, “cut-to-size” materials, and recycling wherever feasible.

Decommissioning and Rehabilitation

Aspect	Potential Impact	Responsibility	Safeguard
	Disturbance of visual amenity	Contactor	All waste, plant, and equipment to be confined within the designated laydown area and removed from site upon project completion.
Visual Amenity	Visual amenity disturbed through construction.	Contractor/Site Manager	Construction works are minor. All works are to be confined within the project construction footprint. All waste, vehicles, plant and equipment are to be stored in identified laydown areas and will be removed from the site at project completion.
	Public vantage points impacted from construction activities	Contractor/Site Manager	Construction equipment will not be parked adjoining roads and will be parked within the proposed manure processing area when not in use.
Green House Gas	Fuel and energy use from plant, equipment and vehicles	Farm Manager	Use energy-efficient pumps, motors, and lighting; service machinery regularly; avoid unnecessary idling; source materials locally where feasible.
	Methane and CO ₂ emissions from construction activities	Business	Minimise construction vehicle movements, recycle and reuse construction materials where possible, and avoid unnecessary use of heavy machinery.

8.3. OPERATION

Once operational, the emphasis shifts to the ongoing management of effluent, manure, odour, and water quality, together with maintaining neighbour amenity and regulatory compliance. Monitoring and adaptive management (see Section 7) will ensure that the system continues to operate effectively and in line with the Effluent Management Plan and farm environmental strategies.

Table 8-3 - Statement of commitments –Operation

Aspect	Potential Impact	Responsible	Safeguard
Water	Mobilisation of sediments to streams and waterways	Farm manager	Maintain vegetation cover on embankments to prevent erosion and drain failure.
	Inadequate site drainage	Farm manager	Maintain site drainage to ensure all water drains freely to designated areas and away from sensitive areas.
	Failure of pond or effluent storage	Farm Manager / Geotechnical specialist	Follow recommended filling and management measures. In case of failure, engage geotechnical engineer for rectification.
Soil	Embankment instability or erosion	Farm manager / contractor	Batter slopes no steeper than 1V:3H; exclude cattle and vehicles; keep free of trees; protect internal faces against wave action.
	Cut batter erosion beside shed pad	Farm manager / contractor	Topsoil and revegetate exposed batters; install diversion drains; inspect after rainfall and repair erosion promptly.
	Pond overtopping or liner failure	Farm manager	Maintain ≥0.6 m freeboard; retain shallow effluent layer; install pond level monitoring systems.
	Embankment damage (cracks, burrows, erosion)	Farm manager	Inspect regularly; exclude stock/vehicles; remediate cracks, rills, or burrows immediately.

Decommissioning and Rehabilitation

Aspect	Potential Impact	Responsible	Safeguard
	Manure pad seepage or instability	Farm staff	Maintain compacted clay base; manage stockpiles to avoid ponding/leaching; rotate cleaning schedules.
	Shed pad settlement or damage	Farm manager	Maintain compacted fill; check for settlement, cracking, ponding water; ensure stormwater drains away.
	Nutrient overloading of soils	Farm manager / agronomist	Apply effluent at agronomic rates (264N, 54P, 226K kg/ha); rotate reuse areas; exclude stock until withholding periods met.
	Off-site nutrient loss (runoff, drift)	Farm manager Contractor	Maintain setbacks (30 m waterways; 10 m boundaries; ≥100 m dwellings/roads); avoid irrigation during heavy rain or winds >18 km/h.
	Water quality impacts from reuse	Farm manager	Maintain vegetated buffers; monitor adjacent waterways where required.
Biodiversity	Weed colonisation of disturbed soils	Farm manager	Progressively stabilise exposed areas with topsoil and seeding; monitor quarterly; apply spot spraying if outbreaks occur.
	Weed proliferation (long-term)	Farm manager	Regularly monitor and maintain to suppress weeds; continue rotational cropping/pasture practices; integrate into ongoing farm maintenance.
Air Quality	Odour from effluent, manure pads, or housed areas	Farm manager	Implement and regularly review the Odour Management Plan; maintain buffers, effluent management systems, and complaint response protocols.
Noise	Noise impacts at receptor	Farm manager	- Ensure that all machinery is regularly serviced and has appropriate noise abatement devices. All equipment selected for use on site will be regularly monitored to minimise noise emissions with any excessively noisy equipment stood down until issue rectified. - Machines, where practical, will not operate at full power and will be switched off when left for long periods of time. - Machines that are appropriate for undertaking the works are selected and not under or over sized for the
Traffic	Increase in traffic volume	Farm manager	Where possible, staff will carpool to site where it is practical and safe to do so. Shifts will be scheduled to minimise the requirement for additional traffic and road use.
Waste	Site contamination and poor waste management	Farm manager	Operational wastes (e.g., silage wrap, drums, chemical containers) to be disposed of via approved recycling (e.g., DrumMuster) or licensed disposal facilities. No burial permitted.
	Contamination of waterways, streams and land	Farm manager	Effluent and manure to be directed through the lined effluent management system; solids/sludge stockpiled only on compacted and drained manure pads.
	Contamination of waterways, streams and land	Farm manager	Effluent and manure to be applied only during suitable conditions (soil moisture, rainfall, wind) and in areas identified by the Effluent Management Plan; runoff must not leave the property.
	Nutrient overload of reuse area	Farm manager	Ongoing soil testing and agronomic advice to guide application rates, crop rotations, and land use, in accordance with the Effluent Management Plan.

Aspect	Potential Impact	Responsible	Safeguard
	Impacts on adjoining land from waste application	Farm manager	Effluent and manure to be applied only in areas and under conditions specified in the Effluent Management Plan, ensuring setbacks and buffer zones are maintained.
Visual Amenity	Operation of project is unsightly from public vantage point	Farm Manager	The project site must be maintained in a clean and tidy condition at all times.
	Project infrastructure disturbs the natural agricultural environment	Farm Manager	The shed and complex related infrastructure must be maintained in natural colours and not painted in colours uncomplimentary to the natural environment.
Green House Gas	Methane emissions from manure and effluent storage	Farm Manager	Implement effluent management system with solids separation, maintain pond capacity, and reuse effluent via controlled irrigation in accordance with the Effluent Management Plan.
	Nitrous oxide emissions from nutrient application	Farm Manager / Agronomist	Apply effluent and manure at agronomic rates based on regular soil testing, substitute synthetic fertiliser where possible, and avoid application in wet conditions.
	High emissions intensity per litre of milk	Farm Manager / Herd Manager	Maintain balanced feed rations, optimise herd health and welfare, and improve feed efficiency to lower emissions per unit of production.
	Fuel and energy use from plant, equipment and vehicles	Farm Manager	Use energy-efficient pumps, motors, and lighting; service machinery regularly; avoid unnecessary idling; source materials locally where feasible.
	Lack of monitoring and potential under-performance of GHG measures	Farm Manager	Undertake annual review of effluent and nutrient management practices, participate in industry benchmarking tools (e.g., Dairy Australia calculators), and adjust practices as required.
	Methane emissions from manure and effluent storage	Farm Manager Business	Implement effluent management system with solids separation, maintain pond capacity, and reuse effluent via controlled irrigation in accordance with the Effluent Management Plan.

8.4. COMMITMENT TO IMPLEMENTATION

All mitigation and management measures outlined above will be incorporated into the Applicant's environmental management systems. They will be supported by staff induction, site inspections, monitoring (as outlined in **Section 6**), and review processes to ensure they remain effective.

9. EVALUATION AND CONCLUSION

9.1. PROJECT JUSTIFICATION AND PUBLIC INTEREST

The justification for the proposed development rests on demonstrating that it delivers environmental safeguards, economic resilience, and social benefits, consistent with both the objectives of the Tasmanian planning system and the wider public interest. While the project introduces new infrastructure, it does so within an existing agricultural setting, ensuring that land, water, and community values are maintained while supporting the long-term viability of a key regional enterprise.

9.1.1. BIOPHYSICAL

The proposed development represents a shift from a predominantly pasture-based dairy system including supplementary feeding to a modern, loose-housing system with upgraded effluent management and manure reuse infrastructure. The biophysical impacts of this transition have been assessed in relation to land, water, and ecological values.

The main potential biophysical impacts associated with the project include:

- Potential impacts on surface water during extreme rainfall and adverse climatic events.
- Ongoing licenced use of surface and groundwater for dairy and irrigation purposes.
- Application of effluent and manure to irrigation and farming areas, with potential to alter soil nutrient balances.
- Minor landform modifications associated with construction of effluent ponds, manure storage areas and feedpad upgrades.

CONSTRUCTION PHASE

Construction activities will primarily involve the formation of new effluent ponds, development of the manure storage and processing area, installation of site drainage infrastructure, construction of access laneways, and the establishment of the loose-housing facility. These works will occur within areas already modified by long-term agricultural use and located adjacent to existing dairy infrastructure. Given the contained footprint, modest scale, and short-term duration of works, potential impacts are expected to be minor and manageable. They will be effectively controlled through erosion and sediment control measures, early installation of drainage systems, progressive stabilisation of disturbed areas, and adherence to engineering recommendations for soil handling and pond lining.

OPERATIONAL PHASE

During operation, the primary interaction with the biophysical environment will be the management of effluent and manure as a nutrient resource. All effluent and solids will be captured and applied to designated reuse areas at agronomic rates in accordance with the Effluent Management Plan, ensuring nutrient balances are maintained and preventing leaching or runoff into surface waters. Vegetated buffers, setbacks, and monitoring protocols will provide additional safeguards for waterways and sensitive receptors.

The operation will continue to utilise the property's existing licensed water allocations for stock, dairy and irrigation purposes. These allocations are regulated under the *Water Management Act 1999* and will not change as a result of this project. Integration of effluent with irrigation water provides a beneficial use of nutrients and reduces reliance on synthetic fertilisers ensuring nutrient balances are maintained across the farm system, with monitoring and soil testing confirming compliance with agronomic advice and regulatory requirements.

ECOLOGICAL CONSIDERATIONS

The development footprint is entirely within an area of long-standing agricultural use and contains no remnant native vegetation requiring removal. The site is unlikely to provide significant habitat values for native flora or fauna, and no threatened ecological communities will be directly impacted. Surrounding remnant vegetation, including areas of priority vegetation, will be retained and protected through fencing and exclusion measures.

OVERALL ASSESSMENT

The proposed intensification of the dairy is not expected to result in significant adverse biophysical impacts. By consolidating herd management within a contained housing system, the project provides improved control over effluent, manure, and runoff, thereby reducing risks to land and water resources compared with open-lot systems. With the adoption of the mitigation and management measures outlined in the Effluent Management Plan and associated soil and water safeguards, the biophysical impacts of the proposal are considered low and manageable within the existing farming landscape.

Overall, the proposal delivers a net environmental benefit in the public interest by improving containment, monitoring, and reuse of nutrients compared with the existing open paddock-based system. This reduces risks to waterways and soils while aligning with State policy to support sustainable primary production.

9.1.2. ECONOMIC

Agricultural business needs to spread its risk exposure in as many ways as prudently possible. These may encompass but need not be exclusive to:

- Enterprise mix,
- Continuity of production through continued animal production,
- Employing and utilizing good management and field operation teams, and
- Applying sound marketing practices.

The proposed development at Bream Creek represents a substantial investment in Tasmania's dairy sector and in the resilience of a long-established local farming enterprise. The project will transition the property to an intensive, housed dairy system supported by modern infrastructure, including effluent management, feed systems, and dedicated animal housing. This change is intended to stabilise production, reduce exposure to adverse seasonal conditions, and increase overall herd efficiency.

During the construction phase, short-term employment will be created for contractors engaged in earthworks, shed fit-out, effluent pond construction, and service installation. Wherever possible, contractors, suppliers, and service providers will be sourced locally, ensuring that the benefits of the project extend to nearby communities such as Copping, Marion Bay, and Sorell.

On completion, the ongoing operation of the expanded dairy will require additional labour capacity. This will include new full-time equivalent positions for milking, feeding, animal husbandry, and farm maintenance, in addition to seasonal contracting roles. By supporting secure, year-round employment opportunities, the project contributes directly to the regional workforce and helps sustain local skills within the agricultural sector.

The proposal directly aligns with the Tasmanian Government's AgriFood Plan and Dairy Industry Strategy, which encourage intensification and value-adding within existing farm businesses while maintaining environmental safeguards. The project also has flow-on benefits for the wider economy. Increased herd productivity and milk yields will contribute to Tasmania's growing dairy output, supporting downstream processing, transport, and service industries. By stabilising production and reducing climate-related risks, the enterprise will strengthen its capacity to meet processor contracts consistently, which is essential for regional economic confidence.

Overall, the project provides a strong and compelling economic justification in the public interest. It enhances the long-term viability of the Bream Creek farming enterprise, supports local employment and contracting opportunities, and contributes to the regional economy through improved productivity and resilience. The proposal is therefore consistent with the public interest in supporting sustainable agricultural development in Tasmania.

At a broader scale, the project reinforces Tasmania's reputation as a producer of high-quality, sustainably managed dairy products, contributing to the State's strategic economic priorities for the agricultural sector.

9.1.3. SOCIAL

The social impacts of the project have been assessed in the context of surrounding land uses and community amenity. The transition from an extensive pasture-based and supplementary feed system to a modern housed operation is consistent with the site's long history of agricultural use and the broader rural character of the area. The project design incorporates buffer distances and odour/dust management measures to ensure that nearby sensitive receivers are not adversely affected.

The creation of new full-time and part-time employment opportunities has positive social implications for the local area. These positions will help sustain the vitality of nearby rural towns, where population decline can otherwise lead to reductions in essential services, including schools, childcare, and community facilities. By creating stable, ongoing work and supporting contracting businesses, the project will contribute to social stability and economic resilience in the region.

These social benefits, combined with protections for amenity and buffers to neighbouring properties, demonstrate that the project is both acceptable and beneficial to the local community.

9.1.4. OTHER FACTORS

The proposal represents the sustainable growth of a family-owned enterprise, supporting intergenerational farming and the retention of agricultural land for productive use. The design adopts a circular resource model, where manure and

effluent are captured, treated, and returned to land as a nutrient source, reducing reliance on synthetic fertilisers. By embedding sustainability into core operations, the project demonstrates environmental responsibility and resilience.

9.2. SUITABILITY OF SITE

The project site and property is considered suitable for the proposed intensive animal husbandry - dairy (loose housing) development due to the following factors:

- Existing agricultural use: The site has a long history of dairy farming and is already developed with supporting infrastructure, minimising the need for greenfield disturbance.
- Modified environment: The footprint is located within an area previously cleared and used for pasture, with no requirement for removal of remnant native vegetation.
- Soil and land capability: Land capability mapping identifies the area as Class 3 and 4, which is suitable for continued agricultural use and nutrient recycling.
- Effluent and manure management capacity: The site has sufficient land and irrigation areas to beneficially reuse effluent and manure in line with the Effluent Management Plan.
- Topography and drainage: The location provides stable ground conditions and natural separation from sensitive environmental receptors, reducing risks of erosion or runoff impacts.
- Buffer distances: The design incorporates setbacks from sensitive receptors and neighbouring properties, consistent with the Odour and Air Quality Assessments.
- Water supply: The farm has access to licensed water resources adequate to support both herd requirements and irrigation needs.
- Access and logistics: The property has established road access via Bream Creek Road, enabling safe transport of feed, milk, and supplies without major upgrades.
- Consistency with regional land use: The proposal aligns with the surrounding rural character, which is dominated by agricultural enterprises.
- Adaptability for future resilience: The design allows for improved management under climate variability, reducing production risk and safeguarding long-term viability.

The project is consistent with existing and surrounding land uses and management practices being an extension of the existing dairy operation with the change in use proposed from an existing covered feed pad, and pasture-based system to a compost bedded pack loose housing operation for the businesses entire productive herd. This change allows a modest increase in herd number and annual milk production to a sustainable operating scale with minimal environmental impact.

The site is therefore well-suited for the proposed development, as it consolidates agricultural activity within an existing enterprise, avoids unnecessary clearing of native vegetation, safeguards land and water resources, and is consistent with both regional planning objectives and the Tasmanian community's interest in sustainable primary production.

9.3. CONCLUSION

The Environmental Impact Statement (EIS) provides a comprehensive assessment of the proposed development, including detailed investigations of all relevant environmental, economic, and social issues. The assessment demonstrates that the project can be implemented in a manner that protects environmental values, supports sustainable agriculture, and delivers positive outcomes for the local community.

The objectives of this project are to:

- **Improve animal welfare and productivity** by providing cows with a cleaner, more comfortable environment that extends herd longevity and supports consistent milk output.
- **Be an employer of choice** through safer, more comfortable working conditions and opportunities for skill development and career growth.
- **Lower environmental impacts** by minimising feed and water waste, reducing reliance on synthetic fertilisers, and maximising the value of effluent as a nutrient resource.
- **Build resilience to seasonal variability** by protecting milk production and farm performance from adverse weather conditions such as storms, wet winters, and droughts.
- **Optimise resource use and efficiency** to increase the value of feed, fertiliser, and labour inputs while improving daily operational performance.
- **Deliver community benefits** by reducing traffic risks and disruptions from cows crossing roads, presenting a tidier farm frontage, reducing odour risk by reducing the current mud manure interface, and protecting local waterways through better land management.

The transition to a housed dairy system, supported by modern effluent and manure management infrastructure, will enable the enterprise to meet these objectives. While the EIS identifies potential impacts during construction and operation, these have been carefully assessed, and clear mitigation and monitoring measures have been committed to.

The design and management requirements have considered relevant overlays, codes, and the objectives of the Tasmanian Planning Provisions. Importantly, the project will:

- Deliver stable and sustainable milk production, supporting intergenerational farming.
- Improve resource efficiency while reducing pressures on the surrounding environment.
- Avoid long-term impacts on soil, water, biodiversity, or community amenity.
- Demonstrate alignment with sustainable development principles and the public interest.

On the basis of the investigations completed, and subject to the implementation of the safeguards detailed in the EIS and supporting management plans, the project is considered justified and suitable for approval.

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