NOTICE OF PROPOSED DEVELOPMENT

Notice is hereby given that an application has been made for planning approval for the following development:

SITE:
12 CLARK STREET, DUNALLEY

PROPOSED DEVELOPMENT:
THREE LOT SUBDIVISION

The relevant plans and documents can be inspected at the Council Offices at 47 Cole Street, Sorell during normal office hours, or the plans may be viewed on Council's website at www.sorell.tas.gov.au until **Tuesday 28th October 2025.**

Any person may make representation in relation to the proposal by letter or electronic mail (sorell.council@sorell.tas.gov.au) addressed to the General Manager. Representations must be received no later than **Tuesday 28th October 2025.**

APPLICATION NO: **5.2025-15.1**
DATE: **10/10/2025**

Part B: Please note that Part B of this form is publicly exhibited.

Full description of Proposal:	*Use:* *Development:* 3 lot Subdivision *Large or complex proposals should be described in a letter or planning report.*
Design and construction cost of proposal:	$ 30 000.00
Is all, or some the work already constructed:	No: ☑ Yes: ☐
Location of proposed works:	Street address: 12 Clark Street Suburb: Dunalley Postcode: ..... Certificate of Title(s) Volume: ..... Folio: .....
Current Use of Site	Vacant
Current Owner/s:	Name(s) Darren & Kathryn Carter

Is the Property on the Tasmanian Heritage Register?	No: ☑ Yes: ☐	*If yes, please provide written advice from Heritage Tasmania*
Is the proposal to be carried out in more than one stage?	No: ☑ Yes: ☐	*If yes, please clearly describe in plans*
Have any potentially contaminating uses been undertaken on the site?	No: ☑ Yes: ☐	*If yes, please complete the Additional Information for Non-Residential Use*
Is any vegetation proposed to be removed?	No: ☑ Yes: ☐	*If yes, please ensure plans clearly show area to be impacted*
Does the proposal involve land administered or owned by either the Crown or Council?	No: ☑ Yes: ☐	*If yes, please complete the Council or Crown land section on page 3*

If a new or upgraded vehicular crossing is required from Council to the front boundary please complete the Vehicular Crossing (and Associated Works) application form
https://www.sorell.tas.gov.au/services/engineering/

Part B continued: Please note that Part B of this form is publicly exhibited

Declarations and acknowledgements
• I/we confirm that the application does not contradict any easement, covenant or restriction specified in the Certificate of Title, Schedule of Easements or Part 5 Agreement for the land. • I/we consent to Council employees or consultants entering the site and have arranged permission and/or access for Council's representatives to enter the land at any time during normal business hours. • I/we authorise the provision of a copy of any documents relating to this application to any person for the purposes of assessment or public consultation and have permission of the copyright owner for such copies. • I/we declare that, in accordance with s52(1) of the *Land Use Planning and Approvals Act 1993*, that I have notified the owner(s) of the intention to make this application. • I/we declare that the information in this application is true and correct. *Details of how the Council manages personal information and how you can request access or corrections to it is outlined in Council's Privacy Policy available on the Council website.*
• I/we acknowledge that the documentation submitted in support of my application will become a public record held by Council and may be reproduced by Council in both electronic and hard copy format in order to facilitate the assessment process, for display purposes during public exhibition, and to fulfil its statutory obligations. I further acknowledge that following determination of my application, Council will store documentation relating to my application in electronic format only.
• Where the General Manager's consent is also required under s.14 of the *Urban Drainage Act 2013*, by making this application I/we also apply for that consent.

Applicant Signature:	Signature: ..... Date: 12·8·2025

Crown or General Manager Land Owner Consent
If the land that is the subject of this application is owned or administered by either the Crown or Sorell Council, the consent of the relevant Minister or the Council General Manager whichever is applicable, must be included here. This consent should be completed and signed by either the General Manager, the Minister, or a delegate (as specified in s52 (1D-1G) of the *Land Use Planning and Approvals Act 1993*). Please note: • If General Manager consent if required, please first complete the General Manager consent application form available on our website www.sorell.tas.gov.au • If the application involves Crown land you will also need a letter of consent. • Any consent is for the purposes of making this application only and is not consent to undertaken work or take any other action with respect to the proposed use or development.
I _____ being responsible for the administration of land at _____ declare that I have given permission for the making of this application for _____

Sorell Council
Development Application: 7.2025.15.1 - Subdivision Application - 12 Clark Street, Dunalley P1.pdf
Plans Reference:P1
Date Received:13/08/2025

Signature of General Manager, Minister or Delegate:	Signature: ..... Date: .....

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
184255	2
EDITION	DATE OF ISSUE
1	09-Jan-2023

SEARCH DATE : 12-Aug-2025
SEARCH TIME : 02.38 PM

DESCRIPTION OF LAND

Town of DUNALLEY
Lot 2 on Sealed Plan 184255
Derivation : Part of Lot 1, Sec. D, 5A-1R-16P and Part of Lot 2, Sec. D, 5A-0R-12P Gtd. to Thomas Fazeckerley
Prior CT 178612/1

SCHEDULE 1

M827963 TRANSFER to KATHRYN JANE CARTER and DARREN TODD CARTER as tenants in common in equal shares
Registered 15-Jul-2020 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
SP184255 EASEMENTS in Schedule of Easements
SP184255 FENCING COVENANT in Schedule of Easements
SP178612 FENCING PROVISION in Schedule of Easements
SP178612 SEWERAGE AND/OR DRAINAGE RESTRICTION
E227266 MORTGAGE to Westpac Banking Corporation Registered 15-Jul-2020 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

OWNER: DARREN T. CARTER & KATHRYN J. CARTER

FOLIO REFERENCE: C.T. 178612-1

GRANTEE:
Part of Lots 1 & 2, SEC.D, 5A-1R-16P & 5A-0R-12P
Gtd. to Thomas Fazeckerley.

PLAN OF SURVEY

BY SURVEYOR: TONY WOOLFORD
72 GRAHAMS RD, MT. RUMNEY
PH. 0418 248 569
e: tnwoolford@tassie.net.au

LOCATION: TOWN OF DUNALLEY

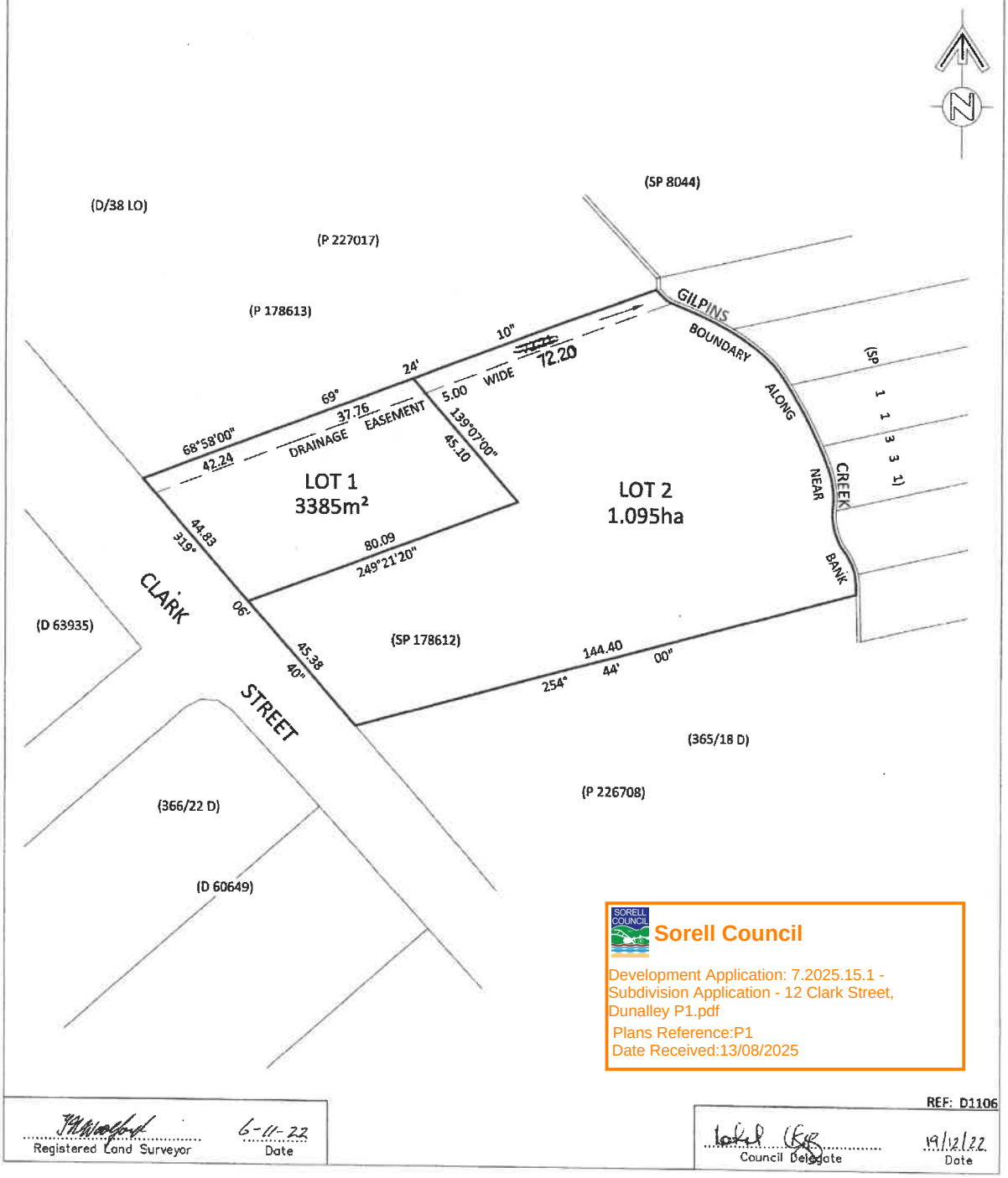
SCALE 1: 1000 LENGTHS IN METRES

REGISTERED NUMBER
SP184255

~~APPROVED~~ EFFECTIVE FROM -9 JAN 2023
Recorder of Titles

PRIORITY FINAL PLAN

ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN



Sorell Council

Development Application: 7.2025.15.1 - Subdivision Application - 12 Clark Street, Dunalley P1.pdf

Plans Reference:P1
Date Received:13/08/2025

REF: D1106

Registered Land Surveyor — 6-11-22 Date

Council Delegate — 19/12/22 Date

SCHEDULE OF EASEMENTS	Registered Number
NOTE: THE SCHEDULE MUST BE SIGNED BY THE OWNERS & MORTGAGEES OF THE LAND AFFECTED. SIGNATURES MUST BE ATTESTED.	SP184255

EASEMENTS AND PROFITS

Each lot on the plan is together with:-
(1) such rights of drainage over the drainage easements shown on the plan (if any) as may be necessary to drain the stormwater and other surplus water from such lot; and
(2) any easements or profits a prendre described hereunder.
Each lot on the plan is subject to:-
(1) such rights of drainage over the drainage easements shown on the plan (if any) as passing through such lot as may be necessary to drain the stormwater and other surplus water from any other lot on the plan; and
(2) any easements or profits a prendre described hereunder.
The direction of the flow of water through the drainage easements shown on the plan is indicated by arrows.

DRAINAGE EASEMENT

Lot 1 and Lot 2 on the Plan are subject to a Right of Drainage ~~(appurtenant to the land in folio of the Register Volume 178612 Folio 1)~~ over the land marked "DRAINAGE EASEMENT 5.00 WIDE" on the Plan (appurtenant to the balance of land contained in Lot 1 on Plan 227017 after excepting thereout Lot 1 on Sealed Plan 178612).

FENCING COVENANT

The owner of each lot on the plan covenants with the vendor, Darren Todd Carter & Kathryn Jane Carter that the vendor shall not be required to fence.

SIGNED by: Darren Todd Carter & Kathryn Jane Carter as the registered proprietors of the land contained in Folio of the Register Volume 178612 Folio 1:

signature ....

in the presence of *witness: signature* ..... *witness name* .....

witness address ..... Ingrid Mooy, Legal Assistant
Tierney Law
42 Main Road, Sorell, Tas 7172

(USE ANNEXURE PAGES FOR CONTINUATION)

SUBDIVIDER: Darren Todd Carter & Kathryn Jane Carter FOLIO REF: Volume 178612 Folio 1 SOLICITOR & REFERENCE: Isaac Williams, Tierney Law - 222497	PLAN SEALED BY: Sorell Council, DATE: 19.12.22 7.2021.20.1 REF NO. Council Delegate

NOTE: The Council Delegate must sign the Certificate for the purposes of identification.

From [redacted]
Sent: Monday, 6 October 2025 5:04 PM
To: [redacted]
Cc: Tony Woolford [redacted]
Subject: FW: 7.2025.15.1 - Request For Information - 12 Clark Street, Dunalley

[redacted]

Please let me know if you require any further information in relation to this.

The work required for the subdivision consists of a concrete crossover from the road to the property which is 150 metres from the water way and will have no impact on it.

Each proposed lot is approx. 3000 square meters which creates several building locations to prevent any impact on the water way.

For future works sediment traps will be placed strategically between any proposed building work and the waterway to catch seepage into the waterway generated from the works.

The bushfire management area can be maintained away from the water way posing no impact on it.

Kind Regards,

[redacted]

Site & soil evaluation report – onsite wastewater management

Proposed 3 Lot Subdivision at 12 Clark Street, Dunalley TAS 7177.

Richard Mason, Onsite Assessments Tas

20 Adelong Drive, Kingston

richardmason@iprimus.com.au

Mobile 0418 589309

Site & Soil Evaluation Report – Proposed Subdivision at 12 Clark Street, Dunalley

Scope
This report is provided to address the requirements of the Tasmanian Planning Scheme with regard to development in unsewered areas.

Clause 10.6.3.P2 requires that in the Low-Density Residential zone:

"Each lot, or a lot proposed in a plan of subdivision, excluding for public open space, a riparian or littoral reserve or Utilities, must be capable of accommodating an on-site wastewater treatment system adequate for the future use and development of the land."

The site is unaffected by any Planning Scheme overlays considered relevant to on-site wastewater management in this location.

Limitations
Please note that site investigations were limited in extent to the level required to provide an overview of minimum wastewater management capability for each site and to demonstrate compliance with the provisions of Director's Guidelines for On-site Wastewater Management Systems 2017, ("the Guidelines") with respect to separation to potentially vulnerable features, such as boundaries, surface water etc.

It is possible that more detailed investigations undertaken on behalf of developers of the future house lots may reveal areas of the site with more optimal soil profiles and higher absorption capability than observed in this investigation.

It is therefore strongly recommended that Council refrain from applying prescriptive requirements which may limit on-site wastewater management system selection for future residential etc developments on this site.

Executive Summary
This proposal is for a low-density subdivision of land, at 12 Clark Street, Dunalley, which will result in the creation of three titles; Lot areas will range between 2980m^2 and 4730m^2, with an average area of 3663m^2.

Details of the proposal are provided in drawing D4103-1 (October 2024) by T. N. Woolford & Associates, (see Appendix 8)

The site is vegetated with pasture grasses and associated groundcover vegetation; no indication has been provided of vegetation with significant natural or conservation value on the site

The development site is not serviced by TasWater reticulated supply.

There are no houses or other built structures on the site.

Soil profiles on this site are variable in composition but broadly qualify as medium clay (Category 6).

This report demonstrates that each of the three proposed lots, within the proposed subdivision development, can accommodate a wastewater land application area suitable for three-bedroom residence, which can be sized and located in accordance with Acceptable Solutions under Director's Guidelines for On-site Wastewater Management Systems. On-Site Wastewater Management Code.

All three lots meet, at a minimum, criteria for irrigation of secondary treated effluent from a 3-bedroom house.

Detailed assessment.
Assessment and advice on onsite wastewater management issues arising from the proposed Subdivision are provided in the body of the report (below); individual site assessments for each proposed lot are provided in the Appendices.

SITE INFORMATION

Location: 12 Clark Street, Dunalley TAS 7177

PID: 9056362

CT: 184255/2

Owner: Darren Carter

Project: Proposed 3-lot Subdivision development; assessment of site capability for on-site wastewater management system.

Tasmanian Planning Scheme Zoning – 10.0 Low Density Residential

Relevant TPS Code Overlays – 12. Flood Prone Areas.

Site area: 10.99Ha, three proposed new lots, comprising 2980m^2, 3280m^2 and 4730m^2.

Soil profile investigations
A Christie Post Driver Soil Sampling Kit, comprising CHPD78 Christie Post Driver with Soil Sampling Tube (50mm OD x 1.6m) was used to obtain undisturbed soil cores or soil depth information at various locations within the development site; these being considered sufficient to provide a representative picture of soil conditions.

Detailed soil profile information for each site is provided in the Appendices.

Typical Soil Profiles

Lot 2:

1. A Horizon: 0 - 100mm: sandy loam/sandy clay loam, Category 2/Category 4.

2. B Horizon 100 – 1400mm+: medium clay, Category 6.

Water table, not evident in test pit to 1400mm+.

Suitable for mound (5mm/day) or irrigation system (2mm/day)

Lot 3

1. A Horizon: 0 - 100mm: sandy loam/sandy clay loam, Category 2/Category 4.

2. B Horizon 100 – 1100mm: medium clay, Category 6.

Water table, not evident in test pit to refusal1100mm.

Suitable for mound (5mm/day) or irrigation system (2mm/day)

Lot 4

1. A Horizon: 0 - 50mm: sandy loam/sandy clay loam, Category 1/Category 4.

2. B Horizon 50-1400mm+: medium clay, Category 6.

Water table, not evident in test pit to 1400mm+.

Suitable for mound (5mm/day) or irrigation system (2mm/day)

Topography

Slopes in likely land application areas:

Lot 2: 4-5° to East.

Lots 3 & 4: 3° to East.

Geology: Shown on LISTmap geological layer as comprising Tertiary age alluvial, lacustrine and littoral deposits.

This is consistent with site observations of soil cores and creek-side exposures etc.

Drainage lines / water courses: Gilpins Creek forms the Eastern boundary of the subdivision site, along with a minor tributary (an excavated drainage channel) of the same, which runs along the northern boundary of Lot 3.

Horizontal separation distances from potential house sites and on-site wastewater management system land application areas, to Gilpin's Creek etc are consistent with Acceptable Solutions, provided by the "the Director's Guidelines", ("the Director's Guidelines".)

Drainage/Groundwater
The soil surface and deep profile were moderately well drained with no evidence of standing water, however weak soil mottling in one of the three soil core samples indicates some seasonal wetting and drying.

Evidence of proximate water table or free groundwater was not encountered to refusal or maximum investigation depth.

Land application areas on all lots will require effective upslope cut-off drainage.

The NRE Tas Groundwater Information Access Portal shows the closest listed functioning borehole to be approximately 350m cross-slope, to the West at of Murraville Golf Club.

Horizontal separation to this borehole is consistent with Acceptable Solutions under the Director's Guidelines.

Vegetation: Reference to LISTmap TASVEG 3.0 layer shows the site to comprise Agricultural, urban and exotic vegetation.

Flooding potential
Proposed Lots 3 and 4 are affected by a TPS/Sorell LPS, Flood Prone Areas Overlay, which provides guidance on areas potentially subject to inundation during or following 1% AEP storm events.

Sorell Council also provides more accurate flood modelling, which corresponds to the Flood Prone Areas Overlay, in more detail.

The Flood Prone Areas overlay affects approximately 60% or of the area of Lot 3, with predicted inundation depths at 1% AEP of 20-100mm over most of the flood prone area.

A far smaller proportion of Lot 4 is affected by the Flood Prone Overlay, approximately 35%, leaving 1375m2 of the site unaffected by a predicted 1% AEP and available for effluent application.

Lot 2 is unaffected by the Flood Prone Overlay.

Irrigation
This report demonstrates that at least 360m^2 of Lot 3 is unaffected by the flood prone overlay, whilst meeting Acceptable Solutions for separation from boundaries and surface water etc under the Guidelines; application of effluent at 2mm/day DIR would allow for a design hydraulic loading of 720L/day, equivalent to 6 EPs or a 4-bedroom house.

Mounds
Table K2 of AS/NZS 1547:2012 Domestic on-site waste-water management provides consideration for use of mound systems on sites potentially affected by periodic inundation/flooding, stating that:

" – *Mounds may be sufficiently rarely inundated to be acceptable*".

Mound systems would be feasible for effluent application in flood prone areas of the site, provided the soil surface was raised by at least 300m^2, and providing a minimum basal area of 120m^2 to service a 3-bedroom house, with a 5EP design hydraulic wastewater loading.

This approach, whilst feasible is not, however, considered in detail by this report, for either of Lots 3 and 4 due to the potential for causing overland flow displacement of floodwaters, as described and cautioned against in the report titled "Flood Prone Areas Assessment Proposed Subdivision 12 Clark Street – Dunalley", by Enviro-Tech Consultants (see page 16, paras 3-4).

Any proposal to construct mound systems or similar structures in the flood-prone areas of the site would require further, more detailed geotechnical/hydrological consideration.

Site History (land use)
The outer Dunalley area comprises rural fringe land, which has been progressively subdivided to medium and low-density residential use; this site is currently undeveloped, save a previous subdivision which formed Lot 1, immediately to the north of proposed Lot 2, upon which a house is currently under construction.

There are no known prior uses of the site which are considered likely to compromise the installation and operation of additional on-site wastewater management systems.

Site Exposure and Climate.
Aspect: No predominant aspect.

Pre-dominant wind directions:
North-west to south-westerly.

Climate: Annual rainfall averages 535mm/year, with highest daily average maximum temperature of 22.5°C and lowest average minimum of 12.5 °C (Dunalley – Stroud Point), resulting in an annual point potential evapotranspiration of approximately 800mm; annual ET deficit is approximately 250mm/annum.

Environmental Issues

Location of sensitive vegetation, high water table, swamps, waterways etc.
Potential land application areas are not significantly affected by high water tables or surface water; there is no high conservation value native flora apparent on the site.

Slope Stability
The site is not affected by Landslide Hazard Area overlay; this is consistent with site slopes and soil profile characteristics.

Planning Scheme

Zone requirements
Paraphrasing the Tasmanian Planning Scheme, the Performance Criteria (Clause 10.6.3.P2) for subdivision development in the Low-Density Residential zone requires that, where a sewer connection is unavailable, the applicant must demonstrate that each lot is capable of accommodating an on-site wastewater management system adequate for the future use and development of the land.

Former E23.0 On-Site Wastewater Management Code Clause E.23.9.1 P1 required that The area of a new lot must be adequate to accommodate a land application area of sufficient size to comply with the requirements of AS/NZS1547.2012 for a dwelling containing a minimum of 3 bedrooms; it is understood that Sorell Council informally retains this approach, notwithstanding that the TPS contains no technical requirements pertaining to on-site wastewater management.

Potential on-site wastewater management land application areas are designated which meet AS/NZS1547.2012 with respect to sizing and Acceptable Solutions provided by the Director's Guidelines with regard to separation from boundaries and other vulnerable features.

This report establishes compliance with these requirements.

Wastewater land application area selection – general comments.
Sizing of wastewater land application areas is dependent upon two factors, volumetric loading and the capability of the soils on the site to sustainably assimilate domestic effluent and ensure that wastewater derived contaminants are retained and treated on site in a nuisance free manner without unreasonable public health or environmental impact.

The predominant soil profiles on all three lots (2, 3 & 4) are classified as medium clay (Category 6) overlain by thin sandy clay loam (Category 4), with indicative permeability of less than 60mm/day; household effluent on these sites is best managed by irrigation; Table M, Appendix M of AS/NZS 1547:2012 Domestic on-site waste-water management designates a maximum DIR of 2mm/day for Category 6 soils, requiring a land application area of 300m^2 for a 3 bedroom, 5 EP household.

More detailed assessments for each of the proposed lots is provided in the Appendices below.

General Assessment/Conclusion –

That each lot in the proposed residential subdivision development is capable of accommodating a sustainable on-site wastewater management system to service a possible 3-bedroom (or larger) dwelling.

Date of Site Visit: 29/11/2024.

Weather Conditions:
Fine and warm, with showers on day of site visit; 58mm of rain fell at Dunalley since 01/10/2024.

For further detailed assessment information, please refer to the Appendices.

Statement.

I certify that this Site and Soil Evaluation for the purposes of on-site wastewater management system site capability for proposed stratum title development at 12 Clark Street, Dunalley has been undertaken in accordance with the relevant provisions of AS/NZS 1547:2012. Onsite Domestic Wastewater Management. This addresses the requirements of the Tasmanian Planning Scheme with regard to Development Applications for subdivision developments in unsewered areas of the Low-Density Residential Zone.

The general information used in this site & soil evaluation may be used exclusively by the author in the future, in support of design documentation for new onsite wastewater management systems, including Development Applications under LUPA 1993 and Plumbing Permits under the Building Act 2016, however in its current form the soil profile information is intended to provide guidance and general background information as to suitability for a proposed subdivision of the site only.

Other designers and developers etc **must** visit the site and satisfy themselves as to soil depths and conditions under and in the vicinity of any proposed onsite wastewater management system before selecting DLR/DIR and finalising a system design which must be accompanied by a Form 55 from an appropriately qualified person, certifying a valid Site and Soil Evaluation for the purposes of providing on-site wastewater management system design criteria.

Please Note:
It is generally understood that the successful operation of an on-site wastewater disposal system is dependent upon a number of complex, interacting factors and that the operating life of in-ground absorption systems in particular may be limited. This system may require future maintenance or modification to ensure its continued satisfactory operation. The client is advised that such works are the responsibility of the property owner.

CONDITIONS OF INVESTIGATION

time it cannot be used for Building, Plumbing or Development Application without further consent of OAT.

This report should not be used for submission for Building or Development Application until OAT has been paid in full for its production. OAT accepts no liability for the contents of this report until full payment has been received.

The results & interpretation of conditions presented in this report are current at the time of the investigation only. The investigation has been conducted in accordance with the specific client's requirements &/or with their servants or agent's instructions.

This report contains observations & interpretations based often on limited subsurface evaluation. Where interpretative information or evaluation has been reported, this information has been identified accordingly & is presented based on professional judgement. OAT does not accept responsibility for variations between interpreted conditions & those that may be subsequently revealed by whatever means.

Due to the possibility of variation in subsurface conditions & materials, the characteristics of materials can vary between sample & observation sites. OAT takes no responsibility for changed or unexpected variations in ground conditions that may affect any aspect of the project. The classifications in this report are based on samples taken from specific sites. The information is not transferable to different sites, no matter how close (ie if the development site is moved from the original assessment site an additional assessment will be required).

It is recommended to notify the author should it be revealed that the sub-surface conditions differ from those presented in this report, so additional assessment & advice may be provided.

Investigations are conducted to standards outlined in relevant Australian Standards, codes and guidelines, including:

- AS1547-2012: Onsite Domestic Wastewater Management
- AS3959.2009: Construction of Buildings in Bushfire Prone Areas
- Director's Guidelines for on-site wastewater management systems. (CBOS)
- Director's Determination – Requirements for Building in Bushfire-Prone Areas. (CBOS)

All new developments should subject to strict site maintenance. Attention is drawn to the relevant appendices of this report.

Any assessment that has included an onsite wastewater system design will require a further site visit once the system has been installed if certification of an installation/works is required (to verify that the system has been installed as per OAT's design). An additional fee may apply for the site visit & issuing the certificate.

OAT is not responsible for the correct installation of wastewater systems. Any wastewater installation is the sole responsibility of the owner/agent and certified plumber. Any variation to the wastewater design must be approved by OAT, and an amended Special Plumbing Permit obtained, if required from the relevant council. The

registered plumber must obtain a copy and carefully follow the details in the council issued Plumbing Permit. Certification of completion of works will be based on surface visual inspection only, to verify the location of the system. All underground plumbing works are the responsibility of the certified plumber.

SITE ASSESSOR

NAME: Richard Mason, Environmental Health Professional

NAME OF ORGANISATION: Onsite Assessments Tas

ADDRESS: 20 Adelong Street, Kingston, Tasmania, 7050

CONTACT DETAILS: 0418 589 309; richardmason@iprimus.com.au

SIGNED:  DATED: 20/01/2025

Appendices.

Appendix 1 – Assessment of Lot 2 for on-site wastewater management system capability.

(above) View of site in vicinity of proposed land application area, Lot 2.

(above) Soil core from Lot 2

Soil profile:

1. A Horizon: 0-100mm: sandy clay loam, dark greyish brown 10YR 4/2, damp, weak structure; Category 4.

2. B Horizon: 100mm-1400mm+ medium clay, light yellowish brown 10YR 6/4, damp, massive; forms 100mm+ ribbon. Category 6.

Slope – 5° to East.

Groundwater - Not struck to 1400mm

Refusal – not struck to 1400mm

Surface water – Gilpin Creek –70m+ to East.

Downslope boundary – 7m to East

Recommended application rates

Mound (secondary treated) – 5mm/day
Irrigation – 2mm/day

Recommended reserved land application area for 3-bedroom house – 300m^2

(above) Lot 2 showing potential land application area location.

Compliance Table	Directors Guidelines for OSWM	Lot 2
Acceptable Solutions	Performance Criteria	Compliance achieved by
5.1 To ensure sufficient land is available for sustainable onsite wastewater management for buildings.		
A1 A new dwelling must be provided with a land application area that complies with Table 3.	P1 A new dwelling must be provided with a land application area that meets all of the following: a) The land application area is sized in accordance with the requirements of AS/NZS 1547; and b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.	A1 390m^2 of suitable land is readily available on this lot. (3 bedrooms x 130m^2.)
5.2 To ensure sustainable onsite wastewater management for commercial and non-residential buildings (Class 3-9).		
A1 An onsite wastewater management system including the land application area for non-residential buildings must satisfy all of the following: (a) be sized based on the hydraulic and organic loadings contained in Table 4 and design loading or irrigation rates contained in AS/NZS 1547; (b) be located in accordance with clause 7.1	P1 An onsite wastewater management system including the land application area for non-residential building must satisfy all of the following: a) A site and soil evaluation and design report prepared by a suitably person determined by the Director demonstrating that the land application area is of sufficient size to treat and manage the wastewater generated from the proposed building within the property boundaries. b) The SSE report and system design demonstrates the design is consistent with AS/NZS 1547 and uses appropriate hydraulic and organic loading rates for the proposed activity. c) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable. d) The land application area is to be located in accordance with the acceptable solution or performance criteria specified in clause 7.1.	n/a
6 Area required for on-site wastewater management – building extensions, alterations or outbuildings (Building Class 1-10)		n/a

A2 An outbuilding, addition or alteration to an existing building, or change of use of that building, must not encroach onto or be within 2m (if upslope) or 6m (if downslope) of an existing land application area (including land reserved for a future land application area) or a wastewater treatment unit and comply with at least one of the following: a) not increase the number of bedrooms (or rooms reasonably capable of being used as a bedroom) or otherwise increase the potential volume of wastewater generated onsite; and b) not increase the number of bedrooms (or rooms reasonably capable of being used as a bedroom) or otherwise increase the potential volume of wastewater generated onsite to greater than that allowed for in the design of the existing OWMS.	P2 An outbuilding addition or alteration to an existing building or change of use of that building, must be provided with a land application area (including land reserved for a future land application area) that meets all of the following: a) The land application area is of sufficient size to comply with the either Appendix L, M or N and setback distances are consistent with Appendix R of AS/NZS 1547; and b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.	
7. Standards for Wastewater Land Application Areas		
A1 Horizontal separation distance from a building to a land application area must comply with one of the following: a) be no less than 6m; b) be no less than: (i) 3m from an upslope boundary or level building; (ii) If primary treated effluent to be no less than 4m plus 1m for every degree of average gradient from a downslope building; (iii) If secondary treated effluent and subsurface application, no less than 2m plus 0.25m for every degree of average gradient from a downslope building.	P1 The land application area is located so that the risk of wastewater reducing the bearing capacity of a building's foundations is acceptably low.	A1(a)(iii) Large remaining site area upslope. 2m separation is achievable.
A2 Horizontal separation distance from downslope surface water to a land application area must comply with (a) or (b) (a) be no less than 100m; or (b) be no less than the following: (i) if primary treated effluent 15m plus 7m for every degree of average gradient to downslope surface water; or	P2 Horizontal separation distance from downslope surface water to a land application area must comply with all of the following: a) Setbacks must be consistent with AS/NZS 1547 Appendix R; b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed	A2(b)(ii) 3° slope, secondary treatment, subsurface application. Min separation is 21m; 70m+ separation achievable

(ii) if secondary treated effluent and subsurface application, 15m plus 2m for every degree of average gradient to down slope surface water.	that demonstrates that the risk is acceptable.	
A3 Horizontal separation distance from a property boundary to a land application area must comply with either of the following: (a) be no less than 40m from a property boundary; or (b) be no less than: (i) 1.5m from an upslope or level property boundary; and (ii) If primary treated effluent 2m for every degree of average gradient from a downslope property boundary; or (iii) If secondary treated effluent and subsurface application, 1.5m plus 1m for every degree of average gradient from a downslope property boundary.	P3 Horizontal separation distance from a property boundary to a land application area must comply with all of the following: (a) Setback must be consistent with AS/NZS 1547 Appendix R; and (b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.	A3(b)(iii) 5° slope, secondary treatment, subsurface application. Min separation is 6.5m; 6.5m+ separation achievable.
A4 Horizontal separation distance from a downslope bore, well or similar water supply to a land application area must be no less than 50m and not be within the zone of influence of the bore whether up or down gradient.	P4 Horizontal separation distance from a downslope bore, well or similar water supply to a land application area must comply with all of the following: (a) Setback must be consistent with AS/NZS 1547 Appendix R; and (b) A risk assessment completed in accordance with Appendix A of AS/NZS 1547 demonstrates that the risk is acceptable.	A4 No known boreholes within 200m
A5 Vertical separation distance between groundwater and a land application area must be no less than: (a) 1.5m if primary treated effluent; or (b) 0.6m if secondary treated effluent	P5 Vertical separation distance between groundwater and a land application area must comply with the following: (a) Setback must be consistent with AS/NZS 1547 Appendix R; and (b) A risk assessment completed in accordance with Appendix A of AS/NZS 1547 that demonstrates that the risk is acceptable	A5(b) Subsurface irrigation or mound provides minimum of 1200mm separation.
A6 Vertical separation distance between a limiting layer and a land application area must be no less than: (a) 1.5m if primary treated effluent; or (b) 0.5m if secondary treated effluent	P6 (a) Vertical setback must be consistent with AS/NZS1547 Appendix R. (b) A risk assessment completed in accordance with Appendix A of AS/NZS 1547 that demonstrates that the risk is acceptable	Subsurface irrigation or mound provides minimum of 1200mm separation.

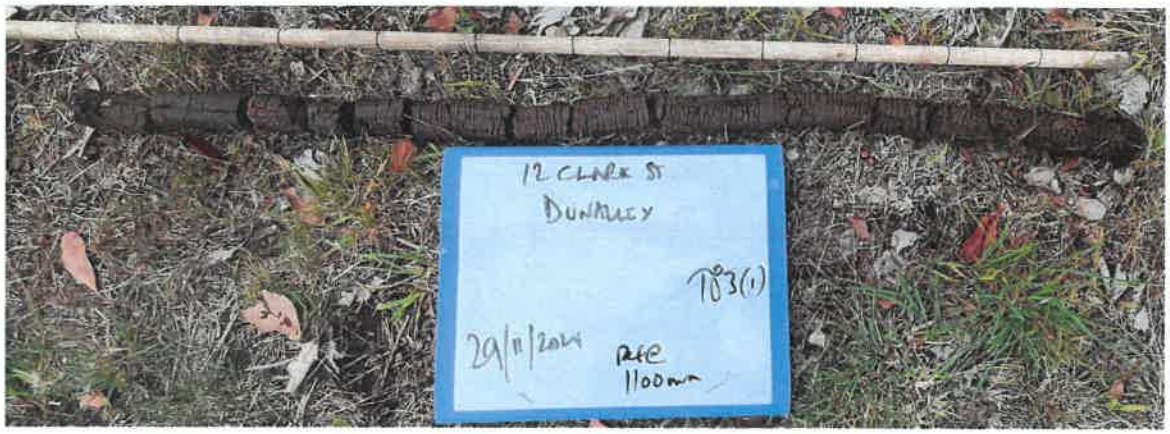
A7 Nil	P7 A wastewater treatment unit must be located a sufficient distance from buildings or neighbouring properties so that emissions (odour, noise or aerosols) from the unit do not create an environmental nuisance to the residents of those properties Note: Part 6 of the Building Act 2016 specifies	AWTS units normally operate nuisance free.

Risk assessment

This proposal meets all relevant Acceptable Solutions under the Guidelines, therefore, separate risk assessment is not required.

Appendix 2 – Assessment of Lot 3 for on-site wastewater management system capability.

(above) Views of site in vicinity of proposed land application area, Lot 3.



(above) Soil core from Lot 3

Soil profile:

1. A Horizon: 0-50mm: clay loam, very dark grey 10YR 3/1, moist, weak structure; Category 4.

2. B Horizon: 50mm-1100m medium clay, trace sand, very dark greyish brown 10YR 3/2, damp, weak platy structure; forms 100mm+ ribbon. Category 6.

Slope – 3-4° to East.

Groundwater - Not struck to refusal at 1100mm.

Refusal – struck at 1100mm

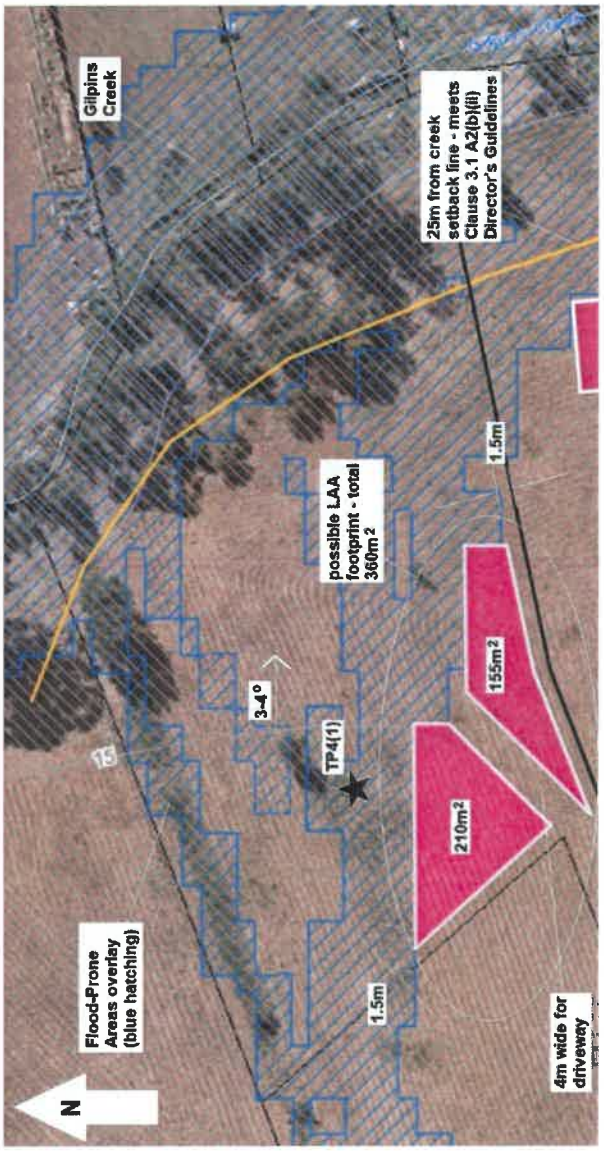
Surface water – Gilpins Creek (estuarine) – 50+m to East

Downslope boundary – 50+m to East

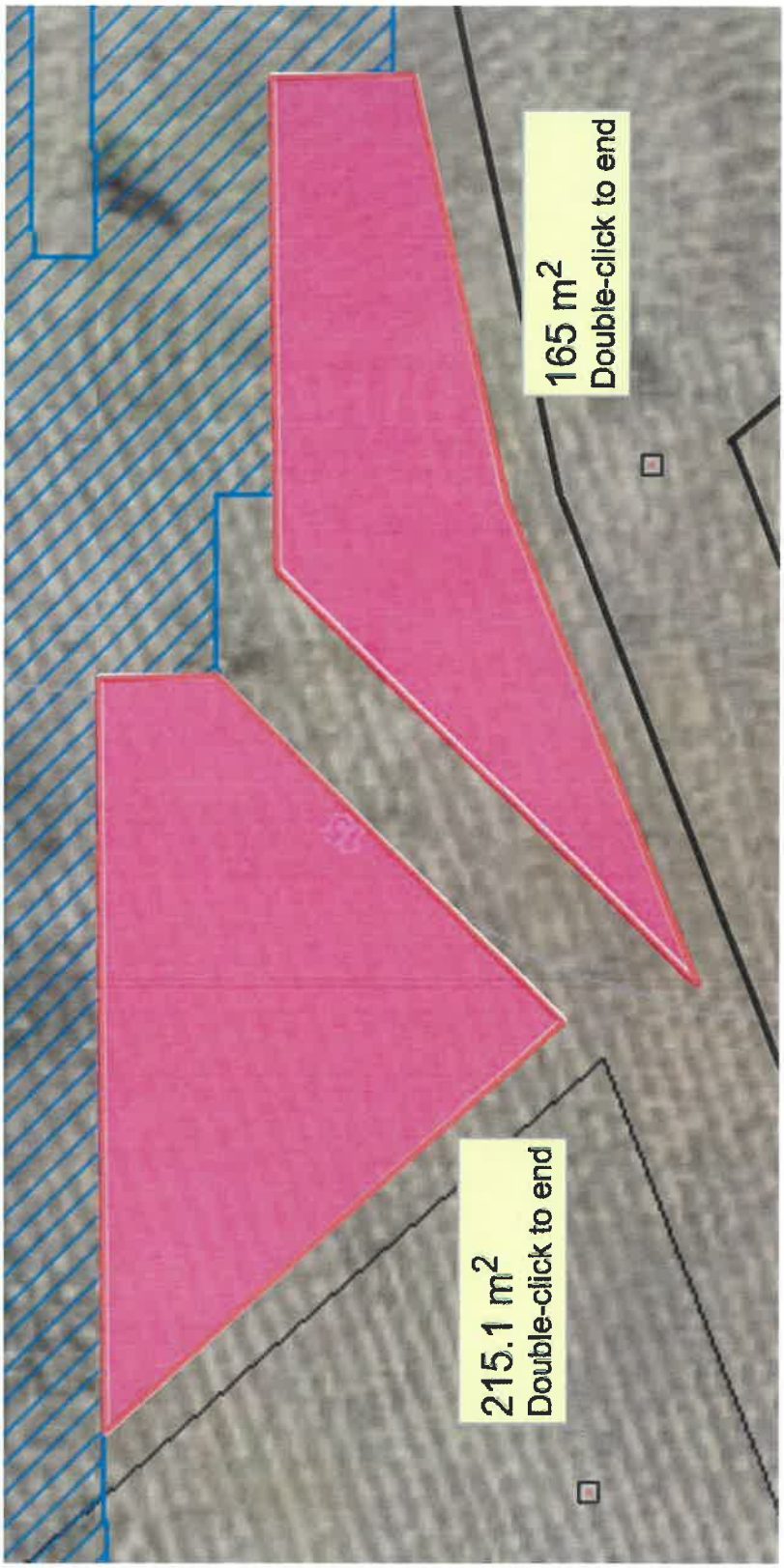
Recommended application rates

Mound (secondary treated) – 5mm/day
Irrigation – 2mm/day

Recommended reserved land application area for 3-bedroom house – 300m^2



(above) Lot 3 showing potential land application area location.



(above) Composite of screen-shot from LISTmap showing proposed land application area sizings outside of Flood Prone Area overlay, using area-measurement tool

Compliance Table	Directors Guidelines for OSWM	Lot 3
Acceptable Solutions	Performance Criteria	Compliance achieved by
5.1 To ensure sufficient land is available for sustainable onsite wastewater management for buildings.		
A1 A new dwelling must be provided with a land application area that complies with Table 3.	P1 A new dwelling must be provided with a land application area that meets all of the following: a) The land application area is sized in accordance with the requirements of AS/NZS 1547; and b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.	P1(a) Land application area can meet Appendix M DIR requirements. P(1)b Risk is acceptable.
5.2 To ensure sustainable onsite wastewater management for commercial and non-residential buildings (Class 3-9).		
A1 An onsite wastewater management system including the land application area for non-residential buildings must satisfy all of the following: (a) be sized based on the hydraulic and organic loadings contained in Table 4 and design loading or irrigation rates contained in AS/NZS 1547; (b) be located in accordance with clause 7.1	P1 An onsite wastewater management system including the land application area for non-residential building must satisfy all of the following: a) A site and soil evaluation and design report prepared by a suitably person determined by the Director demonstrating that the land application area is of sufficient size to treat and manage the wastewater generated from the proposed building within the property boundaries. b) The SSE report and system design demonstrates the design is consistent with AS/NZS 1547 and uses appropriate hydraulic and organic loading rates for the proposed activity. c) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable. d) The land application area is to be located in accordance with the acceptable solution or performance criteria specified in clause 7.1.	n/a
6 Area required for on-site wastewater management – building extensions, alterations or outbuildings (Building Class 1-10)		n/a

A2 An outbuilding, addition or alteration to an existing building, or change of use of that building, must not encroach onto or be within 2m (if upslope) or 6m (if downslope) of an existing land application area (including land reserved for a future land application area) or a wastewater treatment unit and comply with at least one of the following: a) not increase the number of bedrooms (or rooms reasonably capable of being used as a bedroom) or otherwise increase the potential volume of wastewater generated onsite; and b) not increase the number of bedrooms (or rooms reasonably capable of being used as a bedroom) or otherwise increase the potential volume of wastewater generated onsite to greater than that allowed for in the design of the existing OWMS.	P2 An outbuilding addition or alteration to an existing building or change of use of that building, must be provided with a land application area (including land reserved for a future land application area) that meets all of the following: a) The land application area is of sufficient size to comply with the either Appendix L, M or N and setback distances are consistent with Appendix R of AS/NZS 1547; and b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.	
7. Standards for Wastewater Land Application Areas		
A1 Horizontal separation distance from a building to a land application area must comply with one of the following: a) be no less than 6m; b) be no less than: (i) 3m from an upslope boundary or level building; (ii) If primary treated effluent to be no less than 4m plus 1m for every degree of average gradient from a downslope building; (iii) If secondary treated effluent and subsurface application, no less than 2m plus 0.25m for every degree of average gradient from a downslope building.	P1 The land application area is located so that the risk of wastewater reducing the bearing capacity of a building's foundations is acceptably low.	A1(a)(i) Large remaining site area upslope. 11m separation from recommended house site is achievable.
A2 Horizontal separation distance from downslope surface water to a land application area must comply with (a) or (b) (a) be no less than 100m; or (b) be no less than the following: (i) if primary treated effluent 15m plus 7m for every degree of average gradient to downslope surface water; or	P2 Horizontal separation distance from downslope surface water to a land application area must comply with all of the following: a) Setbacks must be consistent with AS/NZS 1547 Appendix R; b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed	A2(b)(ii) 3-4° slope, secondary treatment, subsurface application. Min separation is 23m; 50m+ separation achievable

(ii) if secondary treated effluent and subsurface application, 15m plus 2m for every degree of average gradient to down slope surface water.	that demonstrates that the risk is acceptable.	
A3 Horizontal separation distance from a property boundary to a land application area must comply with either of the following: (a) be no less than 40m from a property boundary; or (b) be no less than: (i) 1.5m from an upslope or level property boundary; and (ii) If primary treated effluent 2m for every degree of average gradient from a downslope property boundary; or (iii) If secondary treated effluent and subsurface application, 1.5m plus 1m for every degree of average gradient from a downslope property boundary.	P3 Horizontal separation distance from a property boundary to a land application area must comply with all of the following: (a) Setback must be consistent with AS/NZS 1547 Appendix R; and (b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.	A3(b)(iii) 5° slope, secondary treatment, subsurface application. Min separation is 6.5m; 6.5m+ separation achievable.
A4 Horizontal separation distance from a downslope bore, well or similar water supply to a land application area must be no less than 50m and not be within the zone of influence of the bore whether up or down gradient.	P4 Horizontal separation distance from a downslope bore, well or similar water supply to a land application area must comply with all of the following: (a) Setback must be consistent with AS/NZS 1547 Appendix R; and (b) A risk assessment completed in accordance with Appendix A of AS/NZS 1547 demonstrates that the risk is acceptable.	A4 No known boreholes within 200m
A5 Vertical separation distance between groundwater and a land application area must be no less than: (a) 1.5m if primary treated effluent; or (b) 0.6m if secondary treated effluent	P5 Vertical separation distance between groundwater and a land application area must comply with the following: (a) Setback must be consistent with AS/NZS 1547 Appendix R; and (b) A risk assessment completed in accordance with Appendix A of AS/NZS 1547 that demonstrates that the risk is acceptable	A5(b) Subsurface irrigation or mound provides minimum of 1200mm separation.
A6 Vertical separation distance between a limiting layer and a land application area must be no less than: (a) 1.5m if primary treated effluent; or (b) 0.5m if secondary treated effluent	P6 (c) Vertical setback must be consistent with AS/NZS1547 Appendix R. (d) A risk assessment completed in accordance with Appendix A of AS/NZS 1547 that demonstrates that the risk is acceptable	Subsurface irrigation or mound provides minimum of 1200mm separation.

A7 Nil	P7 A wastewater treatment unit must be located a sufficient distance from buildings or neighbouring properties so that emissions (odour, noise or aerosols) from the unit do not create an environmental nuisance to the residents of those properties Note: Part 6 of the Building Act 2016 specifies	AWTS units normally operate nuisance free.

Risk assessment

This proposal meets all relevant Acceptable Solutions under the Guidelines with the exception of Clause 1.1P1, risk assessment process below as per Clause 5.5.3.2 of AS/NZS1547.2012 is limited to consideration of this issue only.

Each identified environmental aspect is subject to a qualitative risk analysis based on likelihood and consequences of environmental impact. The risk analysis matrix is as follows:

LIKELIHOOD	***CONSEQUENCES***				
	Catastrophic 1	Major 2	Moderate 3	Minor 4	Insignificant 5
A (almost certain)	Extreme	Extreme	High	High	Medium
B (likely)	Extreme	Extreme	High	High	Medium
C (possible)	Extreme	Extreme	High	Medium	Low
D (unlikely)	Extreme	High	Medium	Low	Low
E (rare)	High	Medium	Low	Low	Low

Criteria for the five categories of likelihood:

Almost certain: An environmental health impact is expected to occur in most circumstances.

Likely: An environmental health impact will probably occur in most circumstances

Possible: An environmental health impact could occur.

Unlikely: An environmental health impact could occur but is not expected.

Rare: An environmental health impact would occur only in exceptional circumstances.

Criteria for determining consequence to environmental health from an on-site wastewater management issue:

Catastrophic: Widespread, irreparable environmental damage; loss of human life or long term human health effects; serious litigation; over $1 million to manage consequences.

Major: Widespread, medium to long term impact; moderate human health impacts requiring medical treatment; major breach of legal requirements (prosecution); $50,000 to $1 million to manage consequences.

Moderate: Localised medium to long term impact; minor and reversible human health impacts treatable with first aid; moderate breach of legal requirements with fine (EIN/prosecution); $5,000 to $50,000 to manage consequences.

Minor: Localised short to medium term impact; no injury to people; minor breach of legal requirements (eg legal notice, EIN); $1000 to $5,000 to manage consequences.

Insignificant: Limited impact to a local area but no long-term effects; concern or complaints from neighbours; no injury to people; minor technical nonconformity but no legal nonconformity; less than $1000 cost to manage consequences.

Conducting a risk analysis results in the allocating of a risk level of *extreme*, *high*, *moderate* or *low* for each environmental aspect. Environmental health aspects with an *extreme* or *high* risk are considered to be *significant*, that is, they have or can have a significant environmental impact.

Issue	Potential impacts	Likelihood	Consequence	Risk rating	Risk reduction measure (RRM) / factors	Rating after adoption of RRM
OSWMS component						
Size of land application area	Failure of land application area due to dripperline blockage or soil clogging.	D	4	L	Typical dripperline spacing of 1000mm provides opportunity to replace blocked dripperline at 500mm separation from existing. AS/NZS 1547:2012 Domestic on-site waste-water management C5.5.3.4 allows for elimination of reserve area in these circumstances. Soil clogging from application of secondary treated effluent at very low DIR is highly unlikely, however clogged soils can be excavated, removed and replaced.	(Very) low.

Appendix 3 – Assessment of Lot 4 for on-site wastewater management system capability.

(above) View of site in vicinity of proposed land application area, Lot 4

Soil profile:

3. A Horizon: 0-200mm: sandy clay loam, very dark greyish brown 10YR 3/2 dry, strongly structured; Category 4.

4. B Horizon: 200mm-1400mm+ medium gravelly clay, dark grey 10YR 4/1, 20% mottle yellowish brown 10YR 5/4, damp, massive; forms 100mm+ ribbon. Category 6.

Slope - 5° to NW-NNW.

Groundwater - Not struck to 1400mm

Refusal – not struck to 1400mm

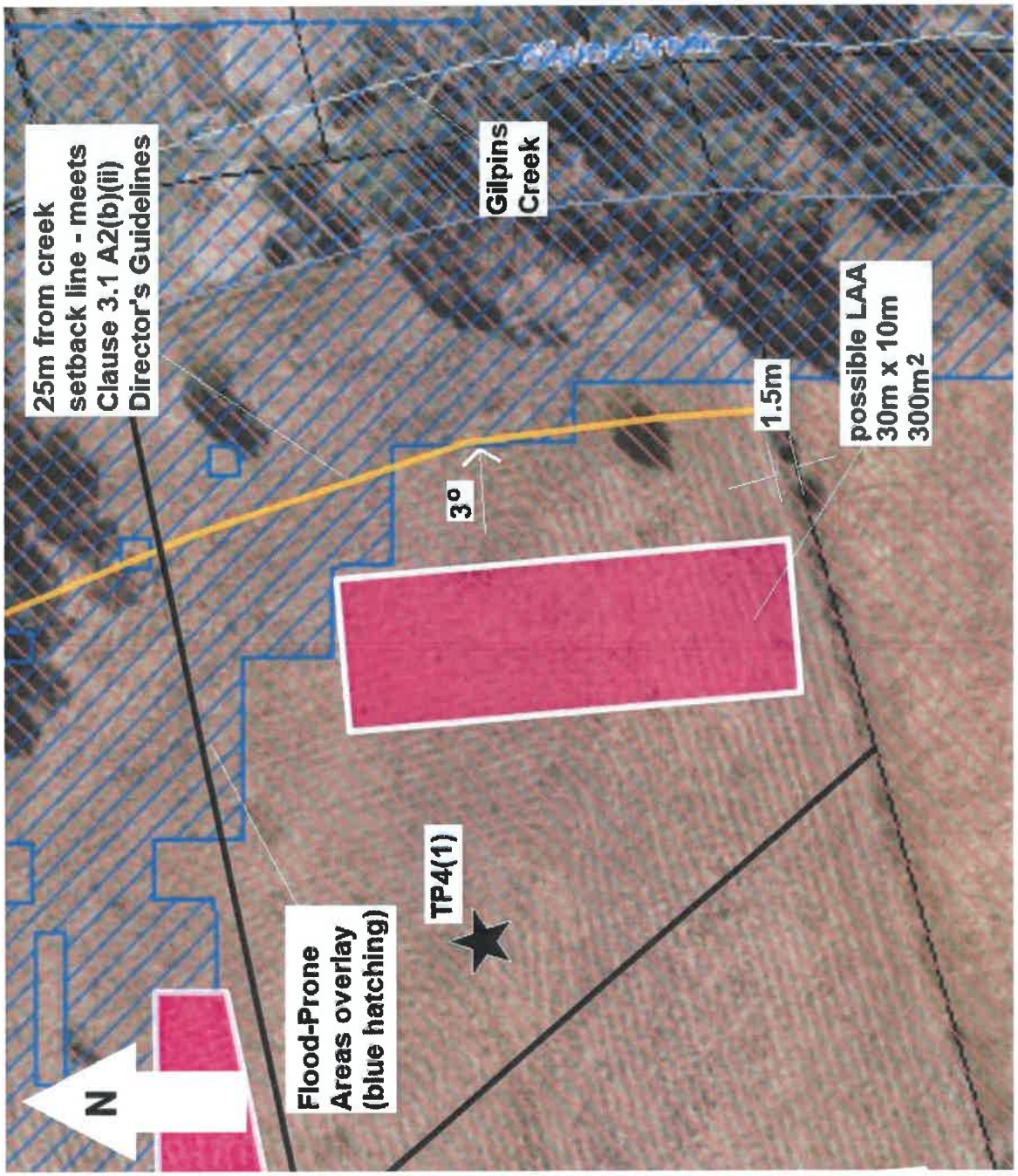
Surface water – Gilpins Creek – 50m+ to East.

Downslope boundary – 30m+ to East

Recommended application rates

Mound (primary treated) – 5mm/day
Irrigation – 2mm/day

Recommended reserved land application area for 3-bedroom house – 300m^2



(above) Lot 4 showing potential land application area location.

Compliance Table	Directors Guidelines for OSWM	Lot 4
Acceptable Solutions	Performance Criteria	Compliance achieved by
5.1 To ensure sufficient land is available for sustainable onsite wastewater management for buildings.		
A1 A new dwelling must be provided with a land application area that complies with Table 3.	P1 A new dwelling must be provided with a land application area that meets all of the following: a) The land application area is sized in accordance with the requirements of AS/NZS 1547; and b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.	A1 390m^2 of suitable land is readily available on this lot. (3 bedrooms x 130m^2.).
5.2 To ensure sustainable onsite wastewater management for commercial and non-residential buildings (Class 3-9).		
A1 An onsite wastewater management system including the land application area for non-residential buildings must satisfy all of the following: (a) be sized based on the hydraulic and organic loadings contained in Table 4 and design loading or irrigation rates contained in AS/NZS 1547; (b) be located in accordance with clause 7.1	P1 An onsite wastewater management system including the land application area for non-residential building must satisfy all of the following: a) A site and soil evaluation and design report prepared by a suitably person determined by the Director demonstrating that the land application area is of sufficient size to treat and manage the wastewater generated from the proposed building within the property boundaries. b) The SSE report and system design demonstrates the design is consistent with AS/NZS 1547 and uses appropriate hydraulic and organic loading rates for the proposed activity. c) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable. d) The land application area is to be located in accordance with the acceptable solution or performance criteria specified in clause 7.1.	n/a
6 Area required for on-site wastewater management – building extensions, alterations or outbuildings (Building Class 1-10)		n/a

A2 An outbuilding, addition or alteration to an existing building, or change of use of that building, must not encroach onto or be within 2m (if upslope) or 6m (if downslope) of an existing land application area (including land reserved for a future land application area) or a wastewater treatment unit and comply with at least one of the following: a) not increase the number of bedrooms (or rooms reasonably capable of being used as a bedroom) or otherwise increase the potential volume of wastewater generated onsite; and b) not increase the number of bedrooms (or rooms reasonably capable of being used as a bedroom) or otherwise increase the potential volume of wastewater generated onsite to greater than that allowed for in the design of the existing OWMS.	P2 An outbuilding addition or alteration to an existing building or change of use of that building, must be provided with a land application area (including land reserved for a future land application area) that meets all of the following: a) The land application area is of sufficient size to comply with the either Appendix L, M or N and setback distances are consistent with Appendix R of AS/NZS 1547; and b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.	
7. Standards for Wastewater Land Application Areas		
A1 Horizontal separation distance from a building to a land application area must comply with one of the following: a) be no less than 6m; b) be no less than: (i) 3m from an upslope boundary or level building; (ii) If primary treated effluent to be no less than 4m plus 1m for every degree of average gradient from a downslope building; (iii) If secondary treated effluent and subsurface application, no less than 2m plus 0.25m for every degree of average gradient from a downslope building.	P1 The land application area is located so that the risk of wastewater reducing the bearing capacity of a building's foundations is acceptably low.	A1(a)(iii) Large remaining site area upslope. 2m separation is achievable.
A2 Horizontal separation distance from downslope surface water to a land application area must comply with (a) or (b) (a) be no less than 100m; or (b) be no less than the following: (i) if primary treated effluent 15m plus 7m for every degree of average gradient to downslope surface water; or	P2 Horizontal separation distance from downslope surface water to a land application area must comply with all of the following: a) Setbacks must be consistent with AS/NZS 1547 Appendix R; b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed	A2(b)(ii) 3° slope, secondary treatment, subsurface application. Min separation is 21m; 30m+ separation achievable

(ii) if secondary treated effluent and subsurface application, 15m plus 2m for every degree of average gradient to down slope surface water.	that demonstrates that the risk is acceptable.	
A3 Horizontal separation distance from a property boundary to a land application area must comply with either of the following: (a) be no less than 40m from a property boundary; or (b) be no less than: (i) 1.5m from an upslope or level property boundary; and (ii) If primary treated effluent 2m for every degree of average gradient from a downslope property boundary; or (iii) If secondary treated effluent and subsurface application, 1.5m plus 1m for every degree of average gradient from a downslope property boundary.	P3 Horizontal separation distance from a property boundary to a land application area must comply with all of the following: (a) Setback must be consistent with AS/NZS 1547 Appendix R; and (b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.	A3(b)(iii) 3° slope, secondary treatment, subsurface application. Min separation is 4.5m; 26m+ separation achievable.
A4 Horizontal separation distance from a downslope bore, well or similar water supply to a land application area must be no less than 50m and not be within the zone of influence of the bore whether up or down gradient.	P4 Horizontal separation distance from a downslope bore, well or similar water supply to a land application area must comply with all of the following: (a) Setback must be consistent with AS/NZS 1547 Appendix R; and (b) A risk assessment completed in accordance with Appendix A of AS/NZS 1547 demonstrates that the risk is acceptable.	A4 No known boreholes within 200m
A5 Vertical separation distance between groundwater and a land application area must be no less than: (a) 1.5m if primary treated effluent; or (b) 0.6m if secondary treated effluent	P5 Vertical separation distance between groundwater and a land application area must comply with the following: (a) Setback must be consistent with AS/NZS 1547 Appendix R; and (b) A risk assessment completed in accordance with Appendix A of AS/NZS 1547 that demonstrates that the risk is acceptable	A5(b) Subsurface irrigation or mound provides minimum of 1200mm separation.
A6 Vertical separation distance between a limiting layer and a land application area must be no less than: (a) 1.5m if primary treated effluent; or (b) 0.5m if secondary treated effluent	P6 (e) Vertical setback must be consistent with AS/NZS1547 Appendix R. (f) A risk assessment completed in accordance with Appendix A of AS/NZS 1547 that demonstrates that the risk is acceptable	Subsurface irrigation or mound provides minimum of 1200mm separation.

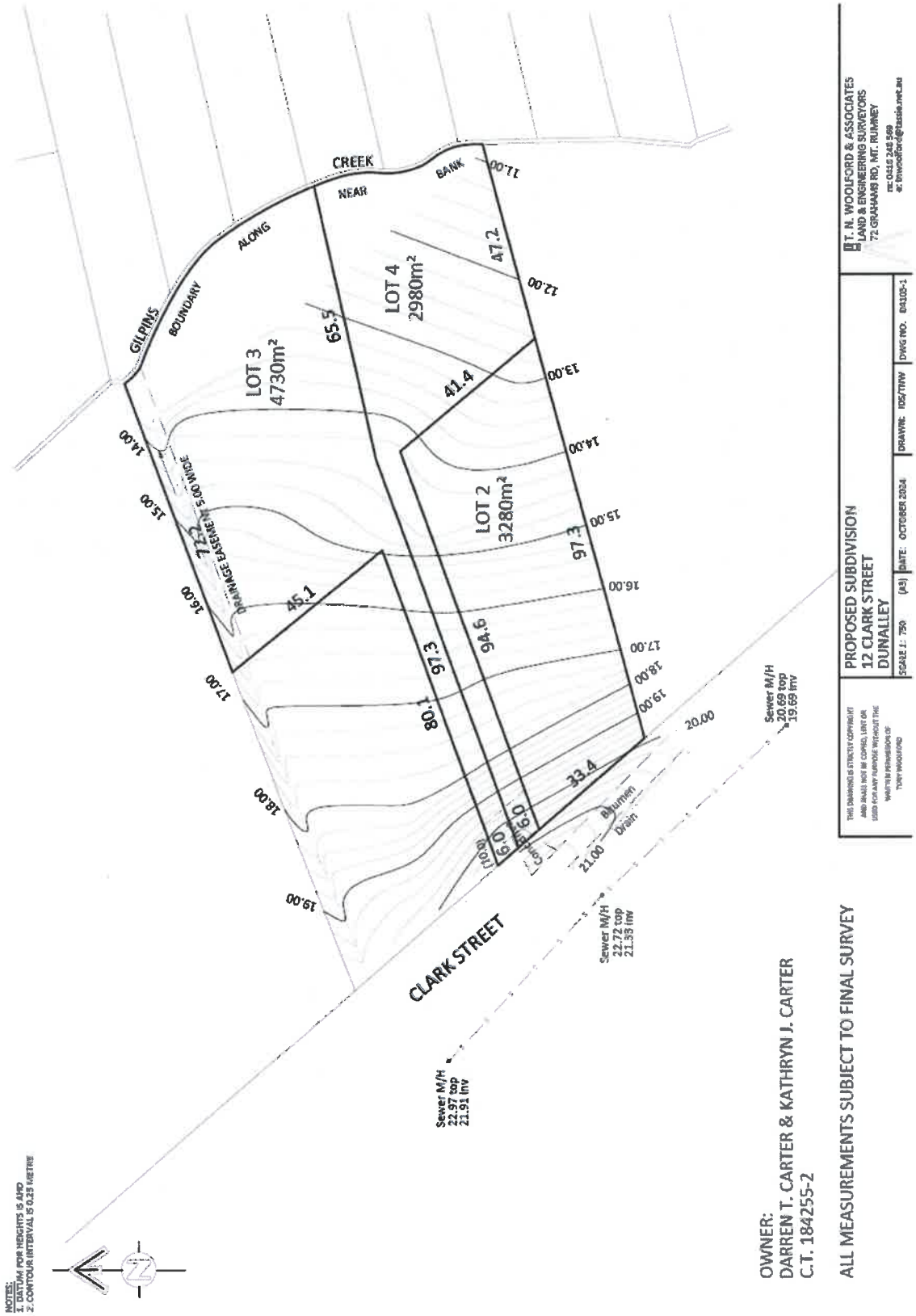
A7 Nil	P7 A wastewater treatment unit must be located a sufficient distance from buildings or neighbouring properties so that emissions (odour, noise or aerosols) from the unit do not create an environmental nuisance to the residents of those properties Note: Part 6 of the Building Act 2016 specifies	AWTS units normally operate nuisance free.

Risk assessment

This proposal meets all relevant Acceptable Solutions under the Guidelines, therefore, separate risk assessment is not required.

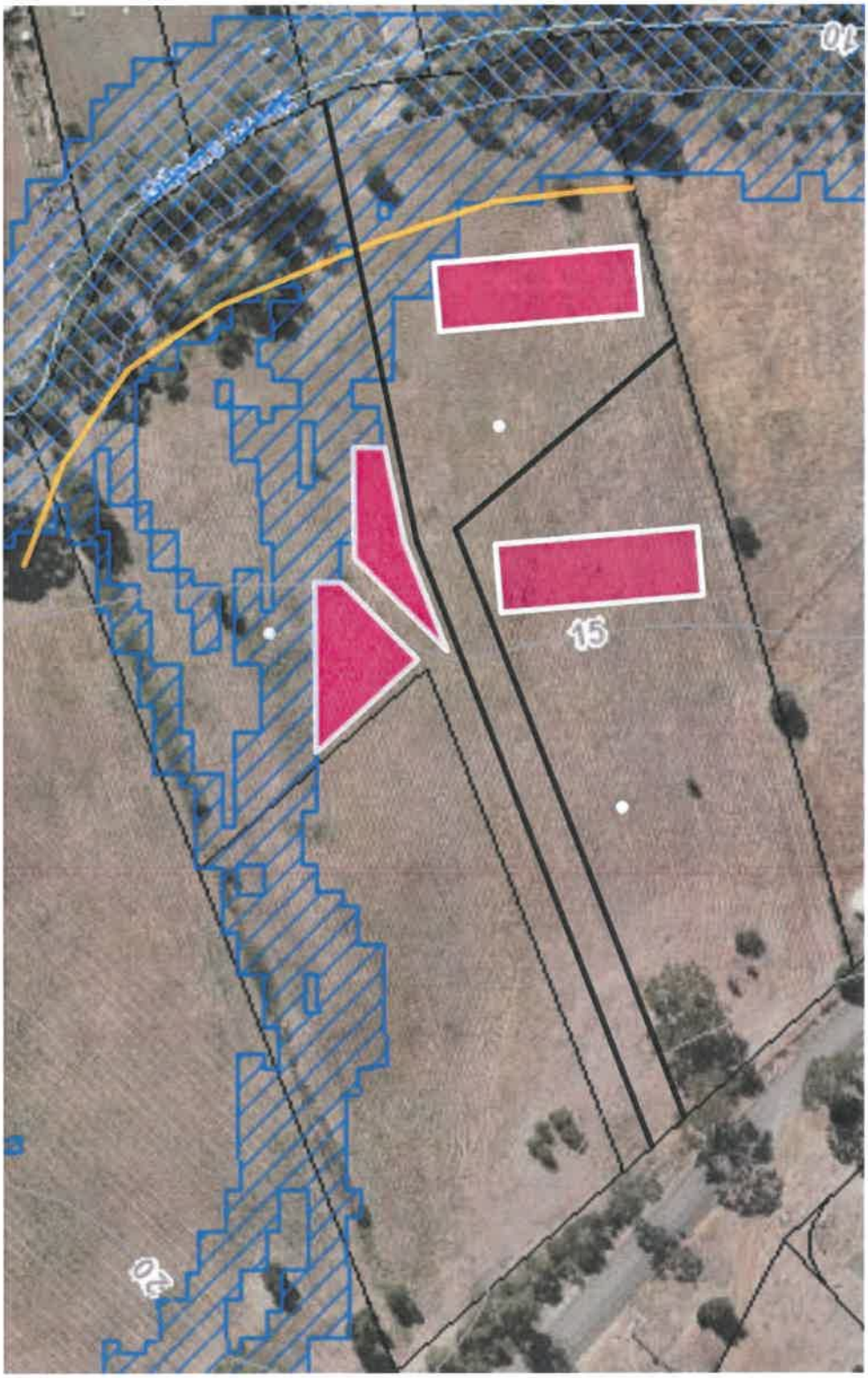
Appendix 4. Site location

Appendix 5 - Proposed subdivision plan and associated details



(above) Survey plan of proposed subdivision.

(above) Extract from Sorell Council Flood Modelling map showing predicted extent and depth of inundation from a 1% AEP.



(above) Extract from LISTmap showing proposed subdivision with Flood Prone Areas overlay and possible on-site wastewater management land application areas. Soil core test pits marked with white circles.

Map 4

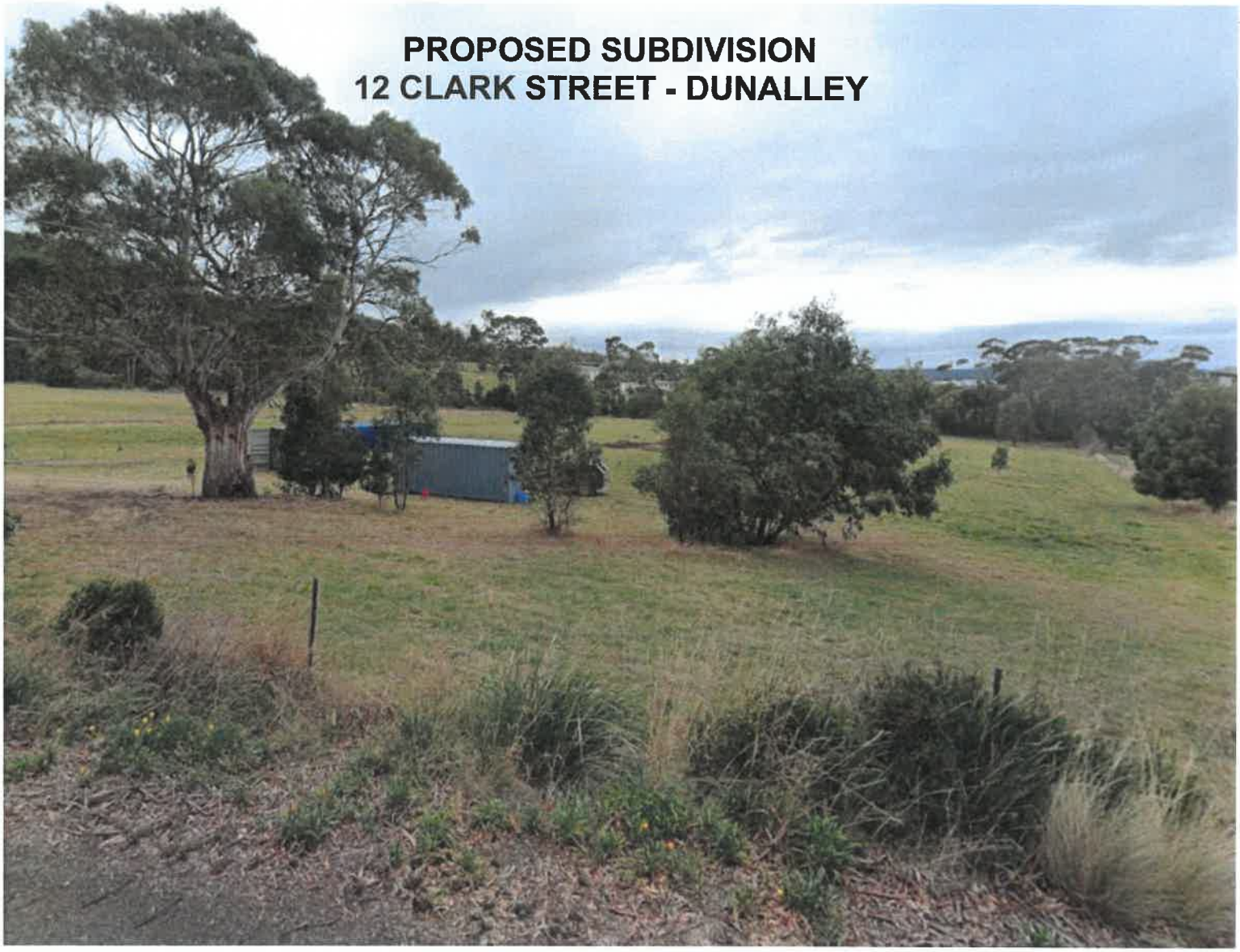
Map 4 Inferred access road/building envelope and hazard class

(above) Extract from "Flood Prone Areas Assessment Proposed Subdivision 12 Clark Street – Dunalley", by Enviro-Tech Consultants, showing recommended building envelopes

Appendix 6 - Ribbon testing of B-Horizon soils from test cores

enviro •tech
CONSULTANTS
Geotechnical & Environmental Services

FLOOD PRONE AREAS ASSESSMENT



Client:	**Darren Carter**
Certificate of Title:	**184255/2**
Investigation Date:	**Wednesday, 20 November 2024**

Refer to this Report As

Enviro-Tech Consultants Pty. Ltd. 2024. Flood Prone Areas Assessment Report for a Proposed Subdivision, 12 Clark Street - Dunalley. Unpublished report for Darren Carter by Enviro-Tech Consultants Pty. Ltd., 20/11/2024

Report Distribution:

This report has been prepared by Enviro-Tech Consultants Pty. Ltd. for the use by parties involved in the proposed residential development of the property named above. It is to be used only to assist in managing any existing or potential inundation hazards relating to the Site and its development.

Limitations of this report

The data displayed within this document has been prepared using open-source scientific documents and data. Envirotech have used this local and regional data to estimate present and future hazards at the Site. The data is by its nature approximate and may contain errors introduced by the data provider(s).

The inundation modelling conducted in this assessment assumes specific Site conditions detailed within this assessment report as per design plans. Modifications to the landscape, not indicated in this report, including construction of retaining walls, soil cut or fill, and water flow obstructions including but not limited to vegetation, fencing, and non-fixed items may result in varied inundation levels and varied water flow movement across the property which are not modelled in this assessment are outside of the scope of this investigation.

Executive Summary

Enviro-Tech Consultants Pty. Ltd. (Envirotech) were contracted by Darren Carter to prepare a flood prone areas hazard assessment for a proposed subdivision located at 12 Clark Street, Dunalley. It is proposed that 12 Clark Street, Dunalley is subdivided into 3 new Lots.

This report has been written to address planning scheme overlay codes in general accordance with the state-wide planning provisions for Sorell City Council.

The objective of the Site investigation is to:

- Use available geographic information system (GIS) data to make interpretations about present Site hydrology, and how the proposed development will be impacted by inundation and where relevant, assessing the development influence on floodwaters entering and existing the land.
- Conduct a risk assessment for the proposed development ensuring relevant performance criteria, building regulations are addressed.
- Assess if the proposed development can achieve and maintain a tolerable risk for the intended life of the use or development without requiring any flood protection measures.
- Determine if the building and works will cause or contribute to flood or inundation on the Site, on adjacent land or public infrastructure
- Provide recommendations for managing inundation risk.

The following are concluded:

- Based on a 1% AEP flooding event, parts of the Site (Lot 3 and Lot 4) are projected to be impacted by floodwaters.
- Buildings may not be constructed directly on ground within floodwater areas.
- Building envelopes have been allocated which will permit buildings to be constructed 'slab on ground" without concerns for building inundation. It is generally advised not to construct outside of these building envelopes.
- It must be ensured that building envelopes are serviced with an access road which will not cause floodwater displacement. Road alignments have been advised which will permit the construction of driveways, elevated not greater then 100mm above existing ground surface without causing floodwater displacement.

1 Introduction

1.1 *Background*

Enviro-Tech Consultants Pty. Ltd. (Envirotech) were contracted by Darren Carter to prepare a flood prone areas hazard assessment for a proposed subdivision located at 12 Clark Street, Dunalley. This report has been written to address planning scheme overlay codes in general accordance with the state-wide planning provisions for Sorell City Council.

This inundation modelling report has been prepared by an environmental and engineering geologist with hydrogeology and hydrology training and experience. Areas of competence include catchment and streamflow models for assessing site inundation.

The proposed development has triggered the following overlay codes which are addressed within this report:

- C 12.0 Flood Prone Areas Code

1.2 *Objectives*

The objective of the Site investigation is to:

- Use available geographic information system (GIS) data to make interpretations about present Site hydrology, and how the proposed development will be impacted by inundation and where relevant, assessing the development influence on floodwaters entering and existing the land.
- Conduct a risk assessment for the proposed development ensuring relevant performance criteria and building regulations are addressed.
- Assess if the proposed development can achieve and maintain a tolerable risk for the intended life of the use or development without requiring any flood protection measures.
- Determine if the building and works will cause or contribute to flood or inundation on the Site, on adjacent land or public infrastructure
- Provide recommendations for managing inundation risk.

1.3 *Cadastral Title*

The land studied in this report is defined by the title 184255/2

1.4 *Site Setting*

The Site watershed influence is presented in Map 1. Floodwater overlays are presented in Map 2. The Site location plans are presented in Attachment 2.

2 Assessment

2.1 *Proposed Development*

It is proposed that 12 Clark Street is subdivided into 3 new Lots and on the provided design documents from which this assessment is based (Attachment 2).

2.2 *Planning*

Planning code overlay mapping is presented in Attachment 1 and planning and building regulations are addressed in Attachment 3.

The Site is located within the Sorell Council mapped 1% Annual Exceedance Probability (AEP) inland flooding hazard area (Map 2). The mapping has triggered Flood Prone Areas Hazard Code, meaning that a more detailed investigation is required to further assess inundation risk associated with the proposed development. The defined floodwater level for the land is to be assessed based on proposed Site works.

2.3 *Building*

No building works are proposed for the Site as part of this application. According to the Tasmanian Building Regulations 2016, the floor level of each habitable room[1] of the building, being erected, re-erected, or added as part of the work, is to be constructed at least 300 millimetres above the defined flood level for the land. This has been taken into consideration in this assessment of potential building envelopes.

2.4 *Topography*

The Site ranges in elevation from approximately 10.1 m AHD to 20.0 m AHD and is sloping to the east (Map 2).

2.5 *Stormflow Analysis*

Details of the stormflow analysis assessment are presented in Attachment 6. The following are observed:

- 1% AEP floodwaters to be expected to enter the Site due to overflow from drainage of Gilpins Creek located on the eastern boundary of Lot 3 and Lot 4.
- An existing 5 m wide drainage channel is located on the northern side of the proposed Lot 3, with floodwaters draining northeast towards Gilphins Creek.
- Each lot will be serviced with an access road directly from Clark Street.
- Floodwaters exit the Site on the southeastern boundary of Lot 4 continuing its natural watercourse along Gilpins Creek.
- For the inferred building envelopes, allowance has been made for slab on ground with floodwaters no exceeding 0.05m (50mm) depth

[1] habitable room - means any room of a habitable building other than a room used, or intended to be used, for a bathroom, laundry, toilet, pantry, walk-in wardrobe, corridor, stair, hallway, lobby, clothes drying room, service or utility room, or other space of a specialised nature occupied neither frequently nor for extended periods.

3 Risk Assessment

Qualitative risk evaluation criteria have been created to determine fundamental risks that may occur due to development in areas that are vulnerable to inundation hazards.

This qualitative risk assessment technique is based on AS/NZS ISO 31000:2009 and relies on descriptive or comparative characterisation of consequence, likelihood, and the level of risk comparative (rather than using absolute numerical measures).

A risk consequence/likelihood matrix has been selected which is consistent with AS/NZS ISO 31000:2009 guidelines.

Consequence/likelihood criteria have assisted in determining if any risk management measures are required at the Site to mitigate any potential hazards. Adopted consequence/likelihood criteria are presented in Attachment 7. Performance criteria are presented in Attachment 8.

All future habitable rooms need to be raised 300 mm above the defined flood level for the Site, **this will allow for the risks associated with the proposed future building, works and use to be considered low.**

4 Site development recommendations

The following are recommended:

- All future habitable rooms within the proposed subdivision can be constructed "slab on ground" within building envelopes outside the 1% AEP floodwater modelled areas as indicated in Map 3 (green areas); alternatively constructed on raised piers provided the structure is located 0.3 m above the 1% AEP floodwater elevations in accordance with the Tasmanian Building Regulations 2016 and as indicated on Map 4.
- The existing drain on the northern boundary of Lot 2 will need to be regularly serviced after flood events to ensure uninterrupted overland flow of stormwater across the development Site
- The driveway to lot 3 is not to be elevated any greater than 100mm above existing ground level to ensure floodwater passage is maintained without causing floodwater displacement.
- Allocated driveway alignments will ensure an H1 flood hazard class is maintained, which will allow for passage of 2wd vehicles during 1% AEP stormflow events (Map 4 and Figure 1).

Marco Scalisi BSc Msc | Environmental & Engineering Geologist

Project manager

Enviro-Tech Consultants Pty. Ltd.

5 References

Ball, J. et al., 2019. Australian Rainfall and Runoff (AR&R): A guide to Flood Estimation. [Online] Available at: http://book.arr.org.au.s3-website-ap-southeast-2.amazonaws.com/ [Accessed 12 07 2022].

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CBOS 2021a. Director's Determination - Riverine Inundation Hazard Areas. Director of Building Control Consumer, Building and Occupational Services, Department of Justice. 8 April 2021

Chow, VT (1959) Open channel hydraulics, McGraw-Hill, New York

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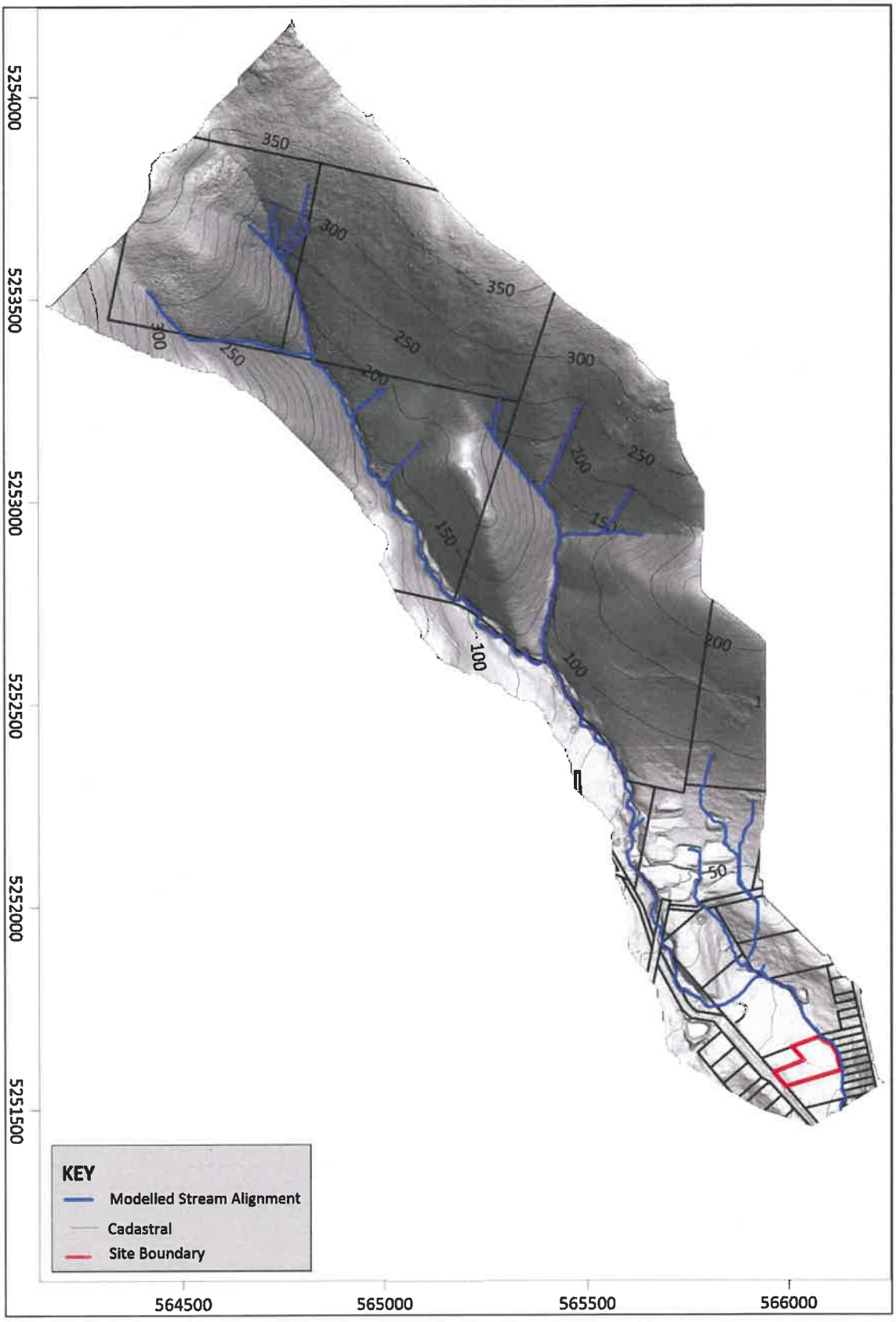
N. Maidment, D.R. 1993. Handbook of hydrology. McGraw-Hill. New York, NY.

Water and Rivers Commission 2000, Stream Channel Analysis Water and Rivers Commission River Restoration Report No. RR 9.

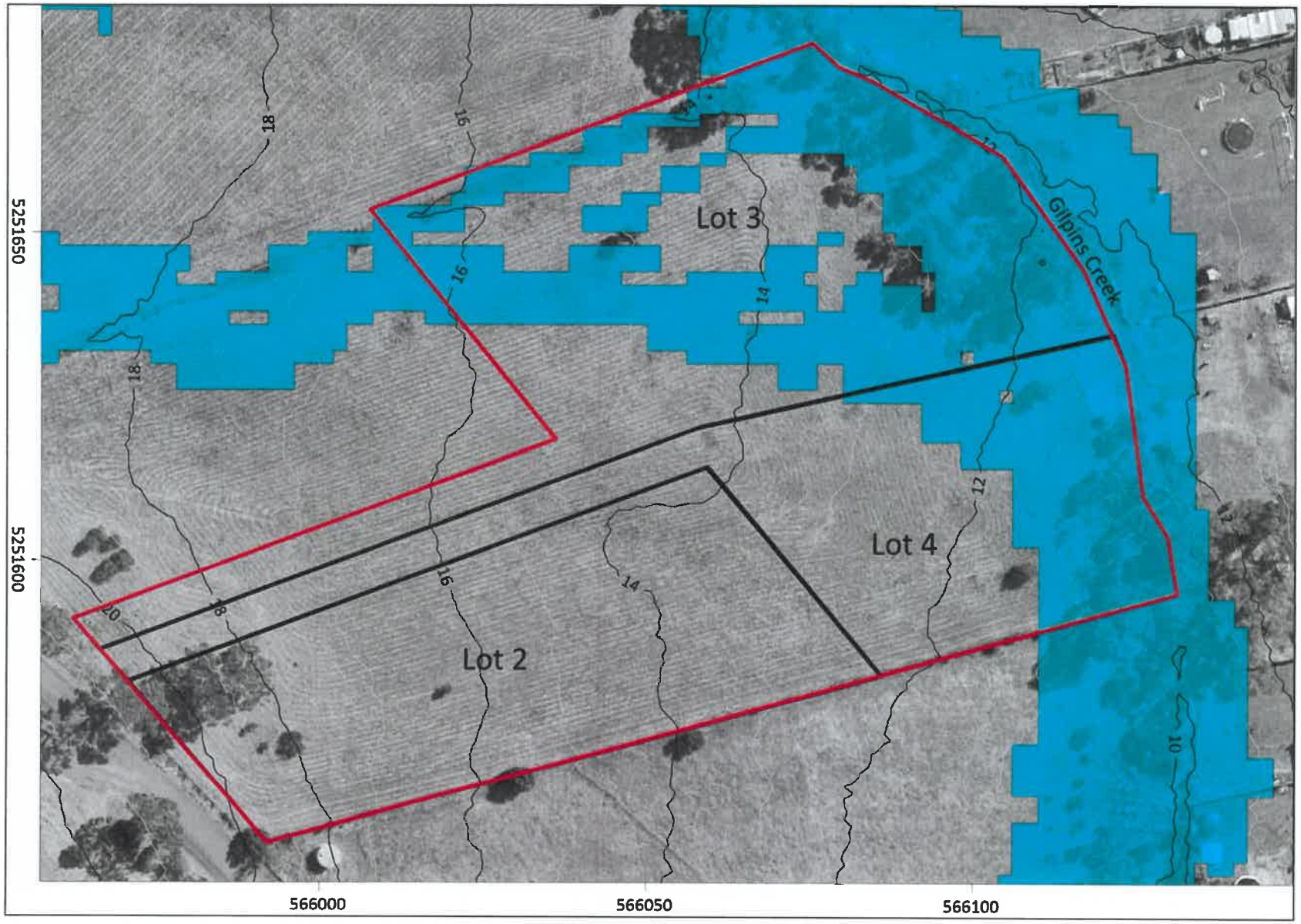
Attachment 1 Mapping

Map 1



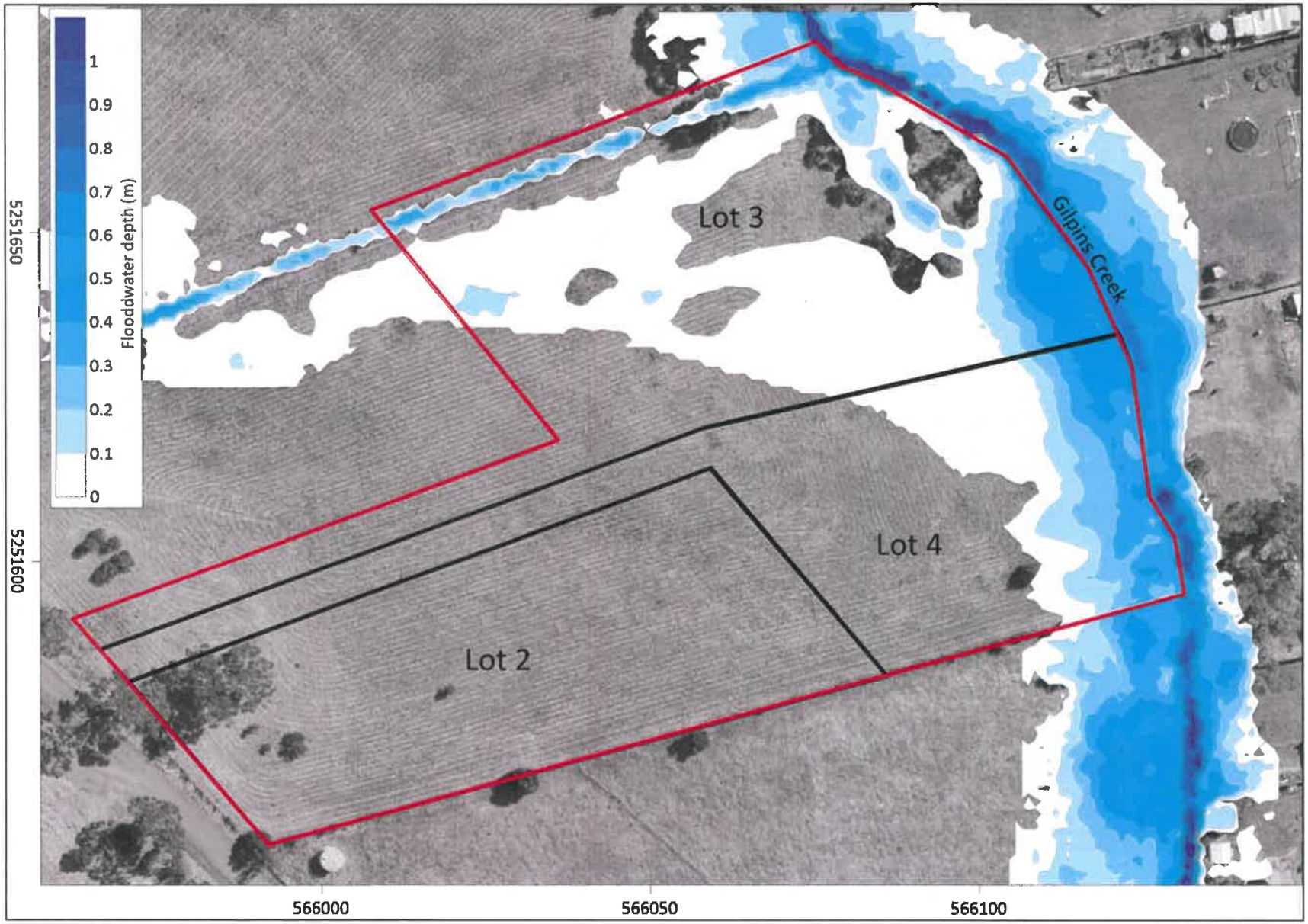
Map 1 Regional hillshade setting with Local Surfer watershed model and stream alignment

Map 2



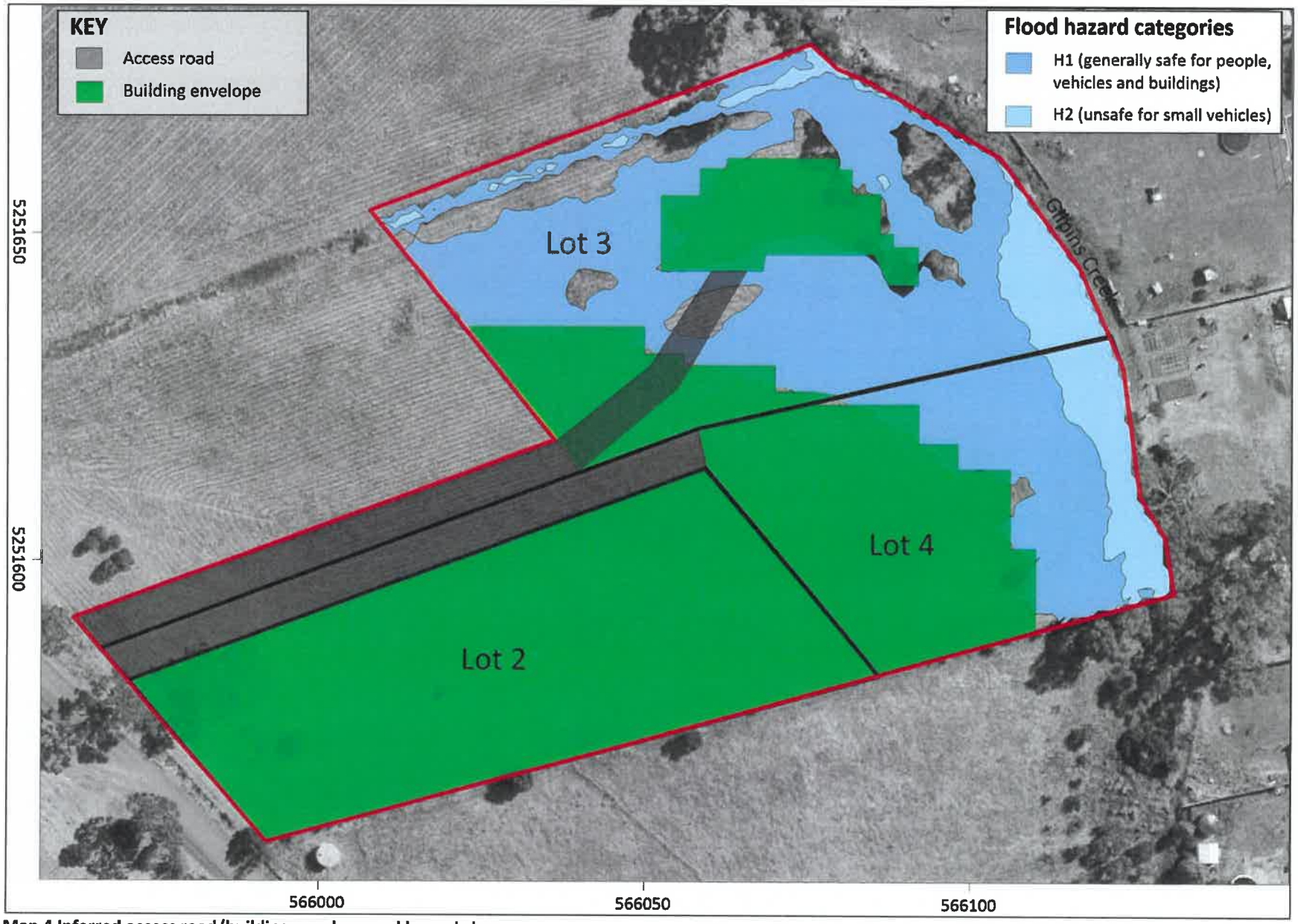
Map 2 - 1% AEP Floodwater depth modelling extent prepared by the local government authority

Map 3



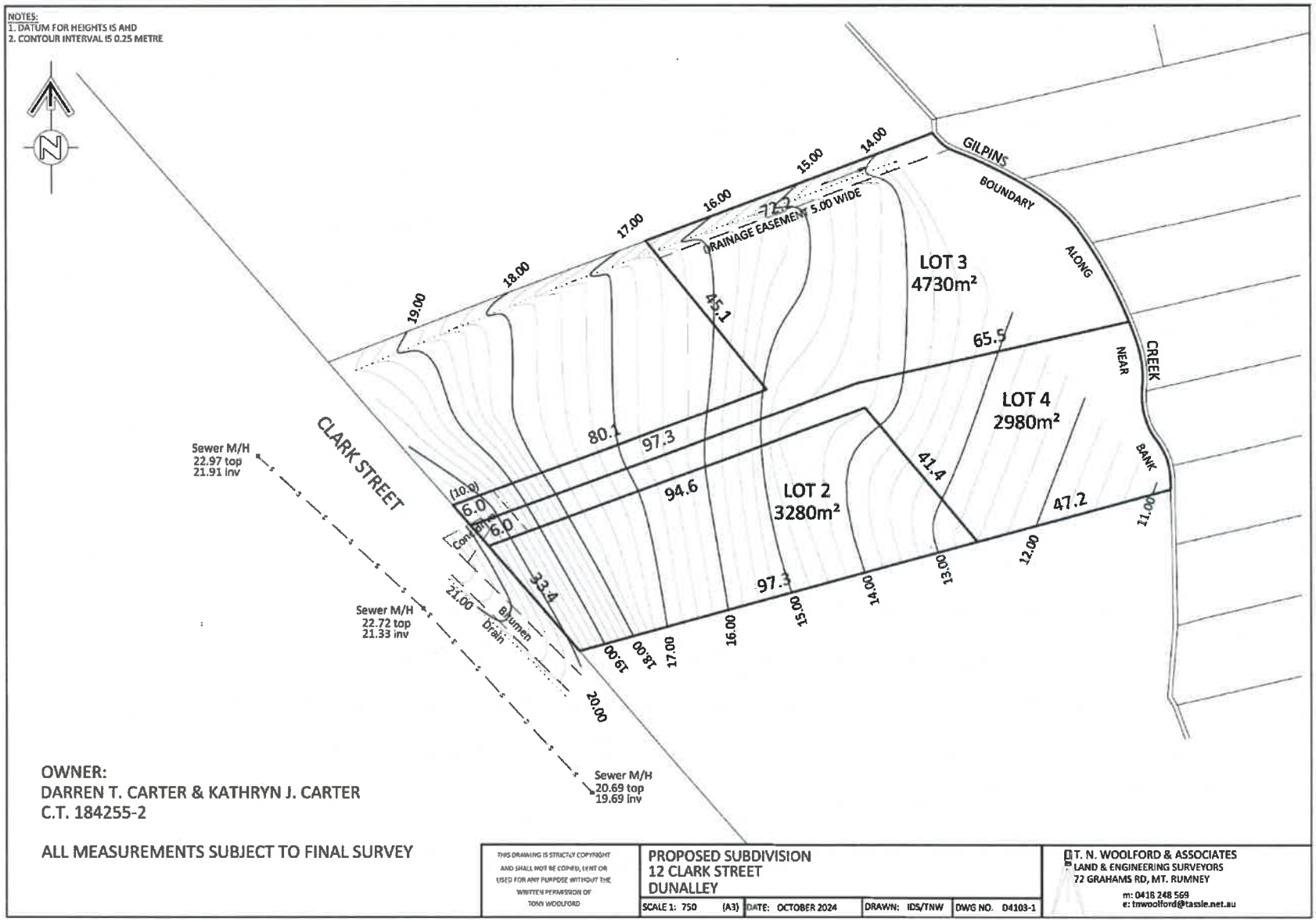
Map 3 Site Modelled 1% AEP Floodwater depth

Map 4



Map 4 Inferred access road/building envelope and hazard class

Attachment 2 Preliminary Design Concept Plans



Attachment 3 Planning and Building Regulations

C12.0 Flood-Prone Area Hazard Code

Code Overlay – The LIST Mapping

Part of the proposed subdivision (the Site) is located within the Sorell Council mapped 1% Annual Exceedance Probability (AEP) inland flooding hazard area (Map 2). The mapping has triggered Flood Prone Areas Hazard Code, meaning that a more detailed investigation is required to further assess risk associated with the proposed development. The specific floodwater depths have been recreated in a higher level of detail in Map 3.

C12.7 Use Standards

C12.7.1 Subdivision within a flood-prone hazard area

C12.7.1 Objective

That subdivision within a flood-prone hazard area does not create an opportunity for use or development that cannot achieve a tolerable risk from flood

C12.7.1 A1 Acceptable Solutions

Each lot, or a lot proposed in a plan of subdivision, within a flood-prone hazard area, must:

- be able to contain a building area, vehicle access, and services, that are wholly located outside a flood-prone hazard area;
- be for the creation of separate lots for existing buildings;
- be required for public use by the Crown, a council or a State authority; or
- be required for the provision of Utilities.

C12.7.1 P1 Performance Criteria

The proposed development needs to be assessed against the following performance criteria:

- C12.7.1 P1.1

Attachment 4 Building Regulations

The building regulations section provides preliminary information only and it to be used as guidance for any future inundation reporting within the subdivided area.

Directors Determination - Riverine Inundation Hazard Areas

According to the director's determination, a flood prone areas inundation hazard report must be prepared for building.

Riverine inundation

For the purposes of the Tasmanian Building Act 2016, land that has previously been flooded, or land that has been assessed by the council of the relevant municipal area as having a reasonable probability of flooding, is land that is – (a) subject to riverine inundation (b) a hazardous area for the purposes of the definition of hazardous area in section 4(1) of the Act.

A person must not perform building work on a building on land that is subject to riverine inundation unless the floor level of each habitable room of the building being erected, re-erected or added as part of the work, is at least 300 millimetres above the defined flood level for the land.

Defined Riverine Flood Level

For the Sorell municipality, and for the purposes of regulation 54(2) of the Building Regulations 2016, the defined flood levels for floodplains of any other watercourses, have a 1% probability of being exceeded in any year according to a report adopted by the relevant council for the municipal area in which the land is located. Map 2 presents the map adopted by the local council, and the specific floodwater depths are refined in Map 3.

Finished Floor Levels

The directors determination is to be addressed for each of the building lots to ensure the proposed finished floor levels are suitably raised above 1% AEP floodwater levels.

Mapping presented herein provides information which can assist in determining finished floor levels for the Site.

Finished floor levels are to be determined on the basis that the floor level of each habitable room[2] of the building, being erected, re-erected or added as part of the work, is at least 300 millimetres above the defined flood level for the land.

[2] habitable room - means any room of a habitable building other than a room used, or intended to be used, for a bathroom, laundry, toilet, pantry, walk-in wardrobe, corridor, stair, hallway, lobby, clothes drying room, service or utility room, or other space of a specialised nature occupied neither frequently nor for extended periods.

Attachment 5 Risk Assessment Qualitative Terminology

DESCRIPTOR	QUALITATIVE MEASURES OF LIKELIHOOD
ALMOST CERTAIN	The event is expected to occur over the design life
LIKELY	The event will probably occur under adverse conditions over the design life
POSSIBLE	The event could occur under adverse conditions over the design life
UNLIKELY	The event might occur under very adverse circumstances over the design life.
RARE	The event is conceivable but only under exceptional circumstances over the design life.
BARELY CREDIBLE	The event is inconceivable or fanciful over the design life.

DESCRIPTOR	QUALITATIVE MEASURES OF CONSEQUENCES TO PROPERTY
CATASTROPHIC	Structure(s) completely destroyed and/or large-scale damage requiring major engineering works for stabilisation. Could cause at least one adjacent property major consequence damage.
MAJOR	Extensive damage to most of structure, and/or extending beyond site boundaries requiring significant stabilisation works. Could cause at least one adjacent property medium consequence damage.
MEDIUM	Moderate damage to some of structure, and/or significant part of site requiring large stabilisation works. Could cause at least one adjacent property minor consequence damage.
MINOR	Limited damage to part of structure, and/or part of site requiring some reinstatement stabilisation works.
INSIGNIFICANT	Little damage. (Note for high probability event (Almost Certain), this category may be subdivided at a notional boundary of 0.1%. See Risk Matrix.)

LIKELIHOOD	CONSEQUENCES TO PROPERTY				
	CATASTROPHIC	MAJOR	MEDIUM	MINOR	INSIGNIFICANT
ALMOST CERTAIN	VH	VH	VH	H	L
LIKELY	VH	VH	H	M	L
POSSIBLE	VH	H	M	M	VL
UNLIKELY	H	M	L	L	VL
RARE	M	L	L	VL	VL
BARELY CREDIBLE	L	VL	VL	VL	VL

RISK LEVEL		EXAMPLE IMPLICATIONS
VH	VERY HIGH RISK	Unacceptable without treatment. Extensive detailed investigation and research, planning and implementation of treatment options essential to reduce risk to Low; may be too expensive and not practical. Work likely to cost more than value of the property.
H	HIGH RISK	Unacceptable without treatment. Detailed investigation, planning and implementation of treatment options required to reduce risk to Low.
M	MODERATE RISK	May be tolerated in certain circumstances (subject to regulator's approval) but requires investigation, planning and implementation of treatment options to reduce the risk to Low. Treatment options to reduce to Low risk should be implemented as soon as practicable.
L	LOW RISK	Usually acceptable to regulators. Where treatment has been required to reduce the risk to this level, ongoing management is required.
VL	VERY LOW RISK	Acceptable. Manage by management procedures.

Attachment 6 Site Overland Flow Analysis

Flood Modelling

A floodwater model has been generated for the Site based on information deriving from the watershed affecting the Site and local LIDAR (Map 3).

Proposed Development

Part of the proposed subdivision is projected to be impacted by floodwaters (Lot 3 and Lot 4). Gilpins Creek is located on the eastern boundary of Lot 3 and Lot 4 with 1% AEP floodwaters projected to displace over parts of the lower lying (flow pain) areas of the Site. An existing 5 m wide drainage channel is located on the northern side of proposed Lot 3, which has been designed/constructed to allow floodwaters to flow direct towards Gilpins Creek.

When designing the layouts of the lots, consideration must be given to ensuring that floodwaters are not displaced in any way by infrastructure including but not limited to roads, buildings, drainage channels, mounds etc. Consideration is given to the most suitable building envelope areas and access roads to these envelopes which are least likely to cause overland flow displacement.

Placing fill within floodwater areas is likely to displace floodwaters onto neighbouring lots, and therefore fill is to be limited to road construction purposes only within the mapped floodwater zones, ensuring that roads are not elevated greater than 100mm above existing ground surface levels within allocated road envelopes.

Building envelopes have been inferred in Map 4 which there form the basis behind any proposed slab on ground construction. Building outside of these building envelopes will require that the buildings are elevated to a nominated finished floor level in accordance with the directors determination.

Attachment 7 Qualitative Terminology

almost certain	Is expected to occur in most circumstances; and/or there is a high level of recorded incidents; and/or strong anecdotal evidence; and/or a strong likelihood the event will recur; and/ or great opportunity, reason, or means to occur; may occur once every year or more
Likely	Will probably occur in most circumstances; and/or regular recorded incidents and strong anecdotal evidence; and/or considerable opportunity, reason or means to occur; may occur once every five years
Possible	May occur at some time; and/or few, infrequent or randomly recorded incidents or little anecdotal evidence; and/or very few incidents in associated or comparable organisations, facilities or communities; and/or some opportunity, reason or means to occur; may occur once every 20 years
Unlikely	Is not expected to occur; and/or no recorded incidents or anecdotal evidence; and/or no recent incidents in associated organisations, facilities or communities; and/or little opportunity, reason or means to occur; may occur once every 100 years
Rare	May occur only in exceptional circumstances; may occur once every 500 or more years

Source: Commonwealth of Australia, 2004: Emergency Management Australia – Emergency Risk Management Applications Guide Manual 5

Consequence Rating	Public Safety	Local growth and economy	Community and Lifestyle	Environment & sustainability	Public administration
Catastrophic	Large numbers of serious injuries or loss of lives	Local decline leading to business failure, loss of employment, local hardship	Local area seen as very unattractive, significant decline, and unable to support community	Major widespread loss of environmental amenity and progressive irrecoverable environmental damage	Public Administration would fail and cease to be effective
Major	Isolated instances of serious injuries or loss of lives	Local stagnation such that businesses unable to thrive and imbalance between employment and local population growth	Severe and widespread decline in services and quality of life within community	Severe loss of environmental amenity and a danger of continuing environmental damage	Public administration would struggle to remain effective and would be perceived as being in danger of failing completely
Moderate	Small number of injuries	Significant general reduction in economic performance relative to current forecasts	General appreciable decline in services	Isolated significant instances of environmental damage that might be reversed with intensive efforts	Public administration would be under significant pressure on numerous fronts
Minor	Serious near misses or minor injuries	Individually significant but isolated areas of reduction in economic performance relative to current forecasts	Isolated but noticeable examples of decline in services	Minor instances of environmental damage that could be reversed	Isolated instances of Public administration being under significant pressure
Insignificant	Appearance of threat by no actual harm	Minor shortfall relative to current forecasts	There would be minor areas in which the region was unable to maintain is current services	No environmental damage	There would be some minor instances of public administration being under more than usual stress but it could be managed

Likelihood (L)	Consequences (C)				
	Insignificant	Minor	Moderate	Major	Catastrophic
Almost certain	MEDIUM	medium	high	extreme	extreme
Likely	low	medium	high	high	extreme
Possible	low	medium	medium	high	high
Unlikely	low	low	medium	medium	medium
Rare	low	low	low	low	medium

Adapted from DCC 2006, 40.

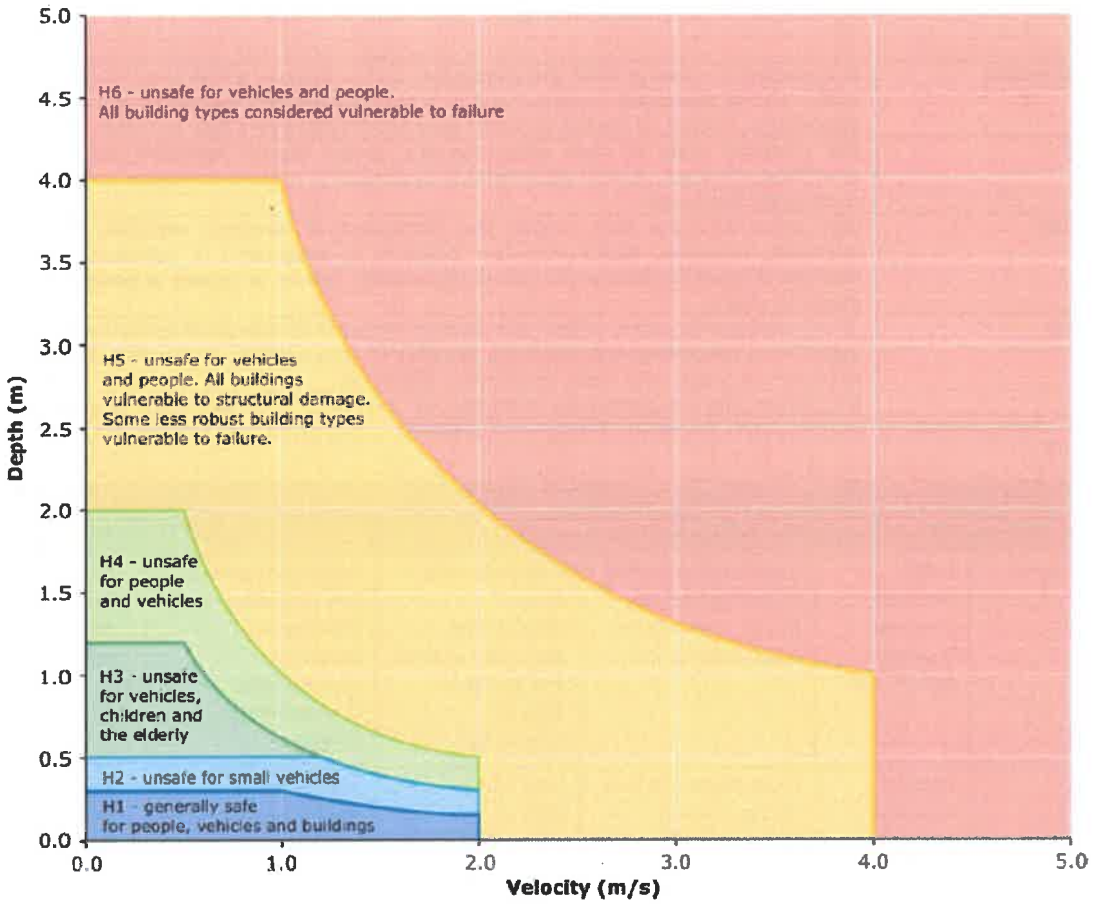


Figure 1 Flood Hazard Curve (Ball, et al., 2019)

Attachment 8 Tasmanian Planning Scheme – Flood Prone Hazard Areas

Development Standards for Subdivision

Objective:

That subdivision within a flood-prone hazard area does not create an opportunity for use or development that cannot achieve a tolerable risk from flood.

C12.7.1 Subdivision within a flood-prone hazard area – risk assessment

Performance Criteria C12.7.1 Each lot, or a lot proposed in a plan of subdivision, within a flood-prone hazard area, must not create an opportunity for use or development that cannot achieve a tolerable risk from flood, having regard to:	Relevance	Management Options	Likelihood	Consequence	Risk	Further Assessment Required
(a) any increase in risk from flood for adjacent land;	Given the modelling, the proposed subdivision will result in minor and not adverse modifications to storm flow.	Elevating structures above natural drainage course. Not restricting water movement.	Unlikely	Minor	Low	No
(b) the level of risk to use or development arising from an increased reliance on public infrastructure;	Any future proposed dwelling and access road within the proposed subdivision can achieve and maintain a tolerable risk from a 1% annual exceedance probability flood event for the intended life of the use with the recommended flood protection measures.	It is recommended that the ground floor of any future habitable rooms finished floor levels are constructed within allocated building envelopes. Tolerable risks are managed through adaptions to 1% AEP storm flow.	Unlikely	Minor	Low	No
(c) the need to minimise future remediation works						
(d) any loss or substantial compromise by flood of access to the lot, on or off site;						
(e) the need to locate building areas outside the flood-prone hazard area;						
(f) any advice from a State authority, regulated entity or a council; and						
(g) the advice contained in a flood hazard report						

CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

Form 55

To: Darren Carter *Owner /Agent*

12 Clark Stree, Dunalley, TAS, 7177 *Address*

Suburb/postcode

Qualified person details:

Qualified person: Kris Taylor

Address: 162 Macquarie Street

Hobart 7000

Phone No: 036224 9197

Fax No:

Licence No: NA

Email address: office@envirotechtas.com.au

Qualifications and Insurance details: Bachelor of Science with Honours in Geology with PI Insurance to $2,000,000 including hydrology and environmental coastal inundation hazard assessments

(description from Column 3 of the Director's Determination - Certificates by Qualified Persons for Assessable Items

Speciality area of expertise: Engineering Geology

(description from Column 4 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)

Details of work: Riverine Inundation Assessment

Address: 12 Clark Street

Dunalley 7177

Lot No: 2

Certificate of title No: 184255/2

The assessable item related to this certificate: Riverine (flood prone areas) inundation hazard assessment

(description of the assessable item being certified)
Assessable item includes –
- *a material;*
- *a design*
- *a form of construction*
- *a document*
- *testing of a component, building system or plumbing system*
- *an inspection, or assessment, performed*

Certificate details:

Certificate type: Geological

(description from Column 1 of Schedule 1 of the Director's Determination - Certificates by Qualified Persons for Assessable Items n)

This certificate is in relation to the above assessable items, at any stage, as part of – *(tick one)*

- (•) building work, plumbing work or plumbing installation or demolition work

OR

- ( ) a building, temporary structure or plumbing installation

In issuing this certificate the following matters are relevant –

Documents:	Enviro-Tech Consultants Pty. Ltd. 2024. Flood Prone Areas Assessment Report for a Proposed Subdivision, 12 Clark Street - Dunalley. Unpublished report for Darren Carter by Enviro-Tech Consultants Pty. Ltd., 20/11/2024
Relevant calculations:	
References:	- Director's Determination - Riverine Inundation Hazard Areas - Tasmanian Planning Scheme – State Planning Provisions - Flood-Prone Areas Hazard Code - Part 5 (Work in Hazardous Areas) of the Building Regulations 2016; Division 2 – Riverine Inundation

Substance of Certificate: *(what it is that is being certified)*

- An assessment of:
  - Defined Site floodwater levels or designated floodwater levels
  - 1% AEP floodwater hazards based on building design or 2100 scenarios

Scope and/or Limitations

Impact from changes to Site levels, structures or water flow obstructions on the Site (beyond what is detailed within Site proposal documents) or on neighboring properties are outside of the scope of this assessment.

I certify the matters described in this certificate.

	Signed:	*Certificate No:*	*Date:*
Qualified person:			20/11/2024

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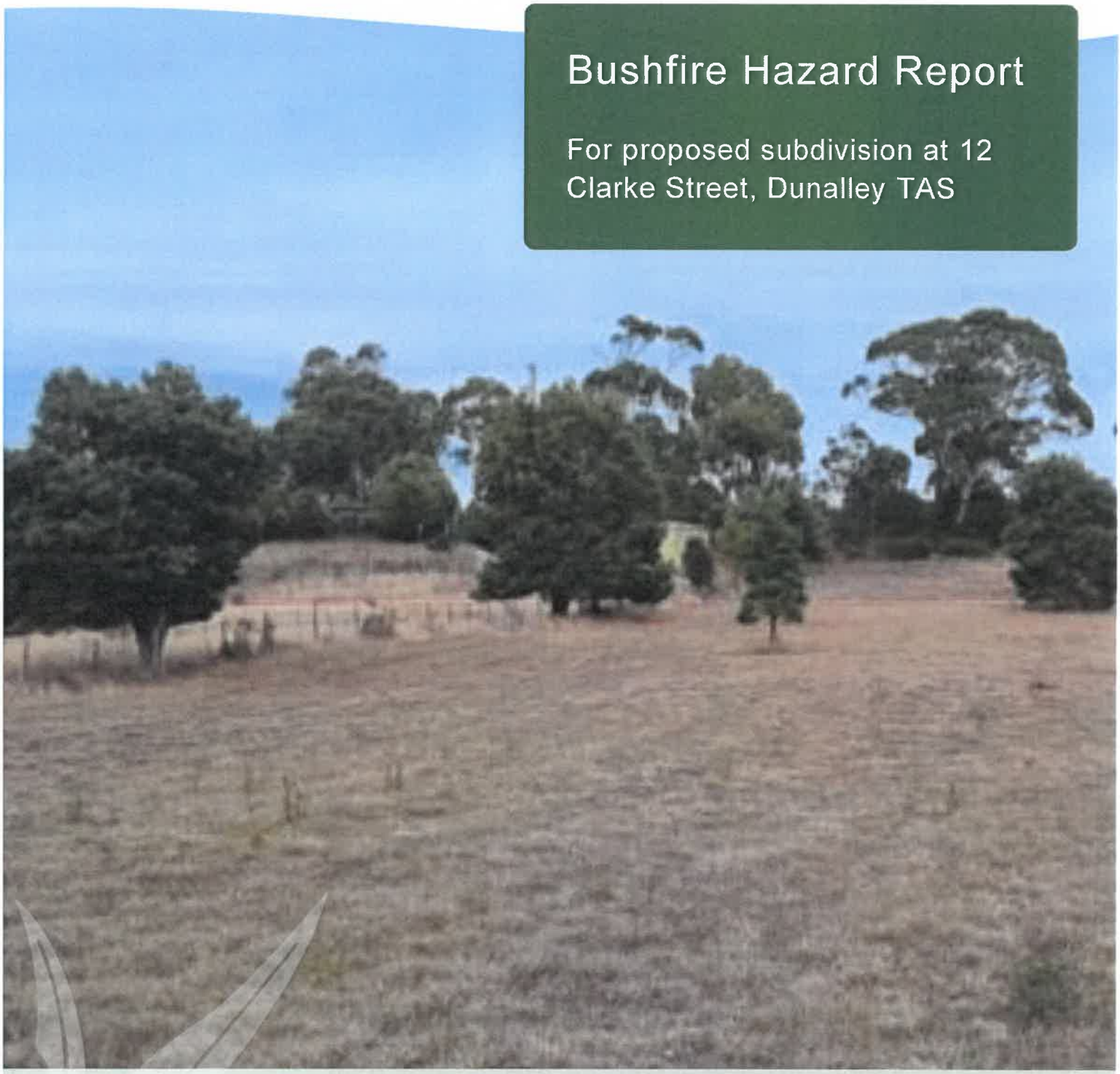
environmental solutions for a changing world

Bushfire Hazard Report

For proposed subdivision at 12 Clarke Street, Dunalley TAS



Client: D T. & K J. Carter
Prepared by: Stuart Rose (provisional)
Certified: Sarah Bunce BFP#151
July 2025

Contents

Executive Summary

This bushfire hazard report for a new three lot subdivision at 12 Clark Street, Dunalley (Title References: C.T. 184255/2) is a requirement of a subdivision application within a bushfire-prone area under the Tasmanian Planning Scheme, C13.0 Bushfire-Prone Areas Code (the Code).

The Code requires a new subdivision to achieve a minimum BAL 19 rating for all building areas on the newly formed lots. The Code also requires a Bushfire Hazard Management Plan (BHMP) to illustrate the bushfire hazard management and protection measures needed to achieve the rating.

Based on Drawing D4103-1 (T.N. Woolford & Ass. 2024), the neighbouring land uses and separation distances to classified vegetation, the assessment has determined new habitable buildings within the designated building areas on all three lots will be able to achieve **BAL 19** provided the following conditions are achieved:

- Building areas are observed for proposed Lots 2 to 4 as indicated on the BHMP. The building envelopes may be altered but remain within the building areas to ensure Hazard Management Areas can be established and maintained within each lot,
- Hazard Management Areas for Lots 2 to 4 are managed in a low fuel condition as per the BHMP (Attachment 1) and C13.6.1 of the Code,
- Future habitable buildings (Class 1a building) on Lot 2 to 4 will comply with minimum construction standards for BAL 19 as per AS 3959:2018 (Sections 3 and 6),
- The property access to Lot 2 to 4 is a shared access, greater than 30 m long and is required for a fire appliance to access firefighting water points on the three lots. As such the access must comply with C13.6.2 and Table C13.2 Elements B and D of the Code,
- Provision of fire-fighting water supply will meet the requirements E1.6.3 and Table C13.5 Elements A-E of the Code. Indicative static firefighting water supplies for future habitable buildings on Lots 2 to 4 are provided in the BHMP (Attachment 1).
- Implementation of the Bushfire Hazard Management Plan will be secured via a formal agreement on the land title, required by the council permit, ensuring landowners remove fuel loads on each lot twice a year (at the beginning and peak of summer) until the lot is developed.

Disclaimers

The assessor has taken all reasonable steps to ensure that the information provided in this assessment is accurate and reflects the conditions on and around the site and allotment on the date of this assessment.

Whilst measures outlined in this report are designed to reduce the bushfire risk to the habitable buildings, due to the unpredictable nature of wildfires and impacts of extreme weather conditions the survival of the structures during a fire event cannot be guaranteed.

Planning Scheme provisions

This report and the attached BHMP address the requirements of the Code. In so doing, they define 'building areas' and 'indicative building envelopes' which demonstrate the capacity of the proposed subdivision to support habitable buildings which can meet the requirements of BAL-19. It is the owners' responsibility to address any other planning requirements relating to the use and development of the subject land. Nothing in this report or the attached BHMP should be taken to suggest or imply that the indicative building areas will:

- satisfy all relevant provisions of the Scheme in respect of the current application for subdivision; or
- at the time of any future applications to build on lots arising from the subdivision, satisfy any relevant provisions of the planning scheme in force at that time

Australian Standards

AS 3959:2018 Construction of Buildings in Bushfire-Prone Areas has been referenced in writing this report.

In respect of Bushfire Attack Level (BAL) determinations based on vegetation type and slope, the content of Table 2.6 in AS 3959:2018 has been utilised and the attached BHMP is consistent with the provisions of AS 3959:2018.

Sarah Bunce – ENVIRO-DYNAMICS
ACCREDITED BUSHFIRE ASSESSOR (BFP-151)
CERTIFICATE No: ED1453 DATE: 23/07/2025
Signed

1 Introduction

The following Bushfire Hazard Assessment Report has been developed as part of the planning requirements of the Tasmanian Planning Scheme and C13.0 Bushfire-Prone Areas Code (the Code) for a three-lot subdivision located within a bushfire-prone area. The Code requires that a new subdivision is designed to achieve a minimum Bushfire Attack Level (BAL) rating of BAL 19 for all future habitable buildings on newly formed lots within a bushfire-prone area. Under the Code, development standards must be certified by the Tasmanian Fire Services (TFS) or an accredited person.

This report provides an assessment of the BAL and outlines protective features and controls that must be incorporated into the design and layout of the subdivision to ensure compliance with AS 3959:2018 Construction of Buildings in Bushfire-Prone Areas.

1.1 Site Details

Landowner:	D T. & K J. Carter
Location:	12 Clark Street, Dunalley
Title reference:	C.T. 184255/2 PID: 9056362
Municipality:	Sorell
Zoning:	Low Density Residential
Planning Scheme Overlays:	Flood-prone areas, Waterway and coastal protection areas (Gilpins Creek) and Bushfire-prone areas
Date of Assessment:	20th March 2025
Assessment Number:	ED1453

1.2 Subdivision Proposal

The proposed subdivision of a 1.089 ha title will create Lots 2, 3 and 4 as shown in the plan of subdivision supplied by the proponent (T. N. Woolford & Associates, DWG NO. D4103-1, October 2024) (Appendix 1) and will be accessed by a shared driveway from Clark Street. The subdivision is proposed to occur in a single stage.

1.3 Site Description

The 1.08 ha site (C.T. 184255/2) is located at 12 Clark Street, Dunalley approximately 31 km southeast of Sorell (Figure 1). The site is situated near the coastline in a semi-rural setting on relatively flat land (0 to 8 degrees), has a southeast facing aspect and is between 0 m and 100 m above sea level (ASL). The site is primarily covered with exotic pasture grasses and scattered individual trees, including *Acacia melanoxylon* (Blackwood) and *Eucalyptus ovata* (Swamp Gum). The site is surrounded to the north, northeast, east, south, and west by existing residential dwellings located on small managed lots, each less than 0.5 hectares in size. To the northwest, the adjoining property is a single, medium-sized lot of approximately 5 hectares.

The underlying geology is Quaternary sediments, dominantly Holocene alluvial, lacustrine and littoral deposits. Gilpins Creek, which is bordered by riparian vegetation of *Eucalyptus ovata* woodland, drains along the northeastern boundary of the site and into East Bay. The site is currently not serviced with power and there is no reticulated water.

Under the Tasmanian Planning Scheme, the land is zoned as Low Density Residential (Figure 2). The site has Waterway and Coastal Protection Areas along Gilpins Creek, Flood-prone Hazards Areas and Bushfire-prone Areas overlays (Figure 3). These overlays have been considered in the selection of the proposed habitable building sites and the BAL assessment.

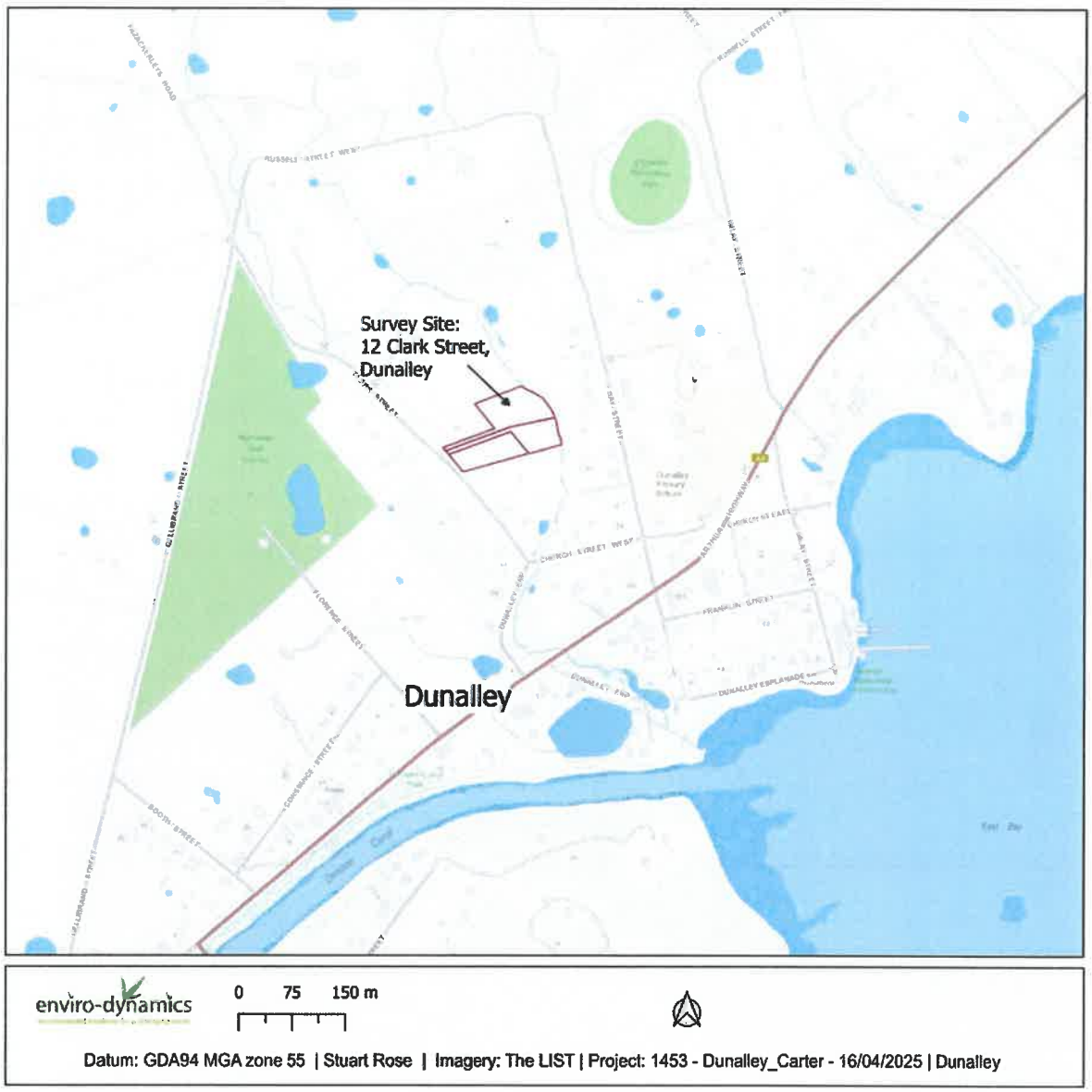


Figure 1 – Site location plan

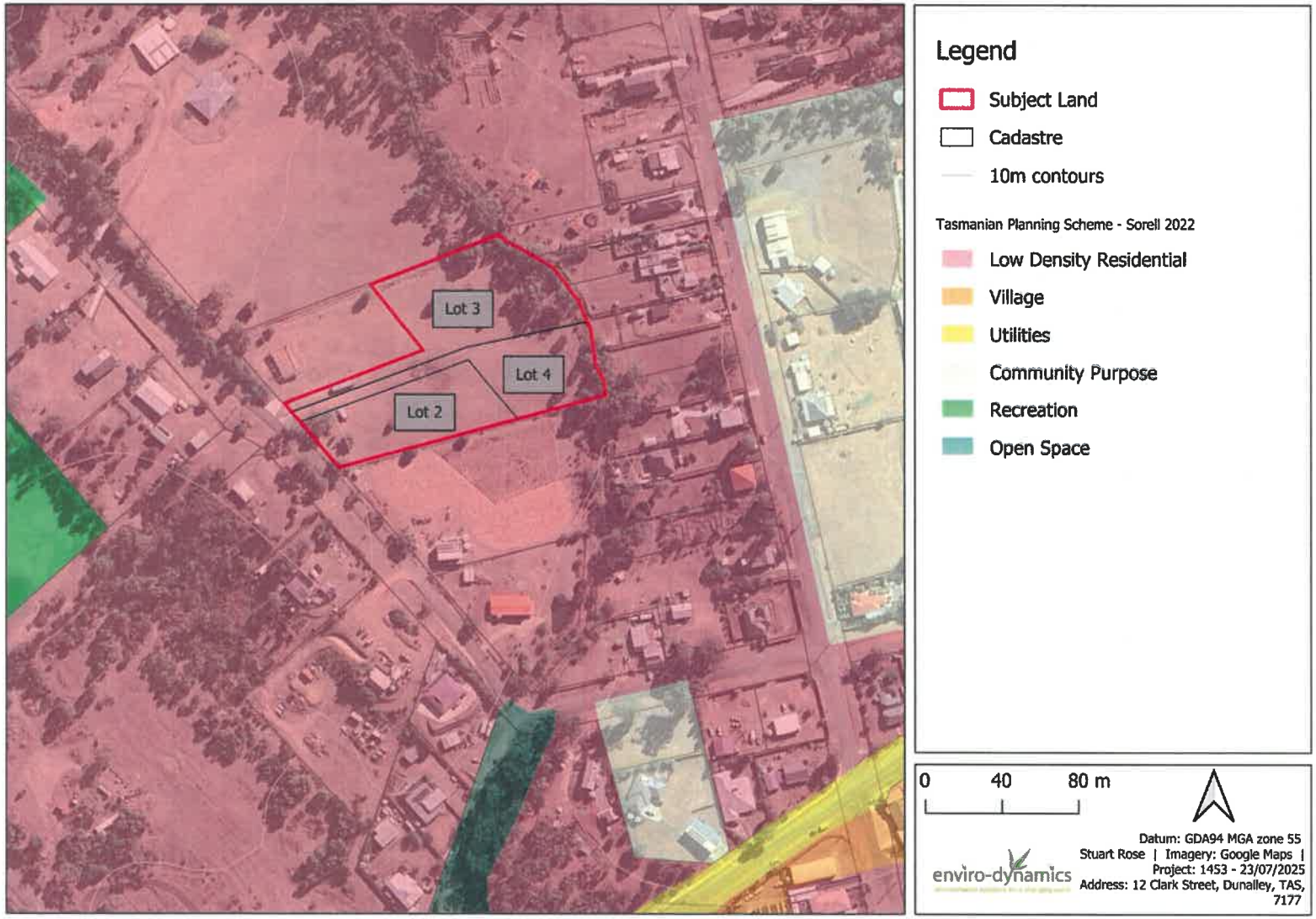


Figure 2 – Site context and zoning map Source: LISTmap 2025

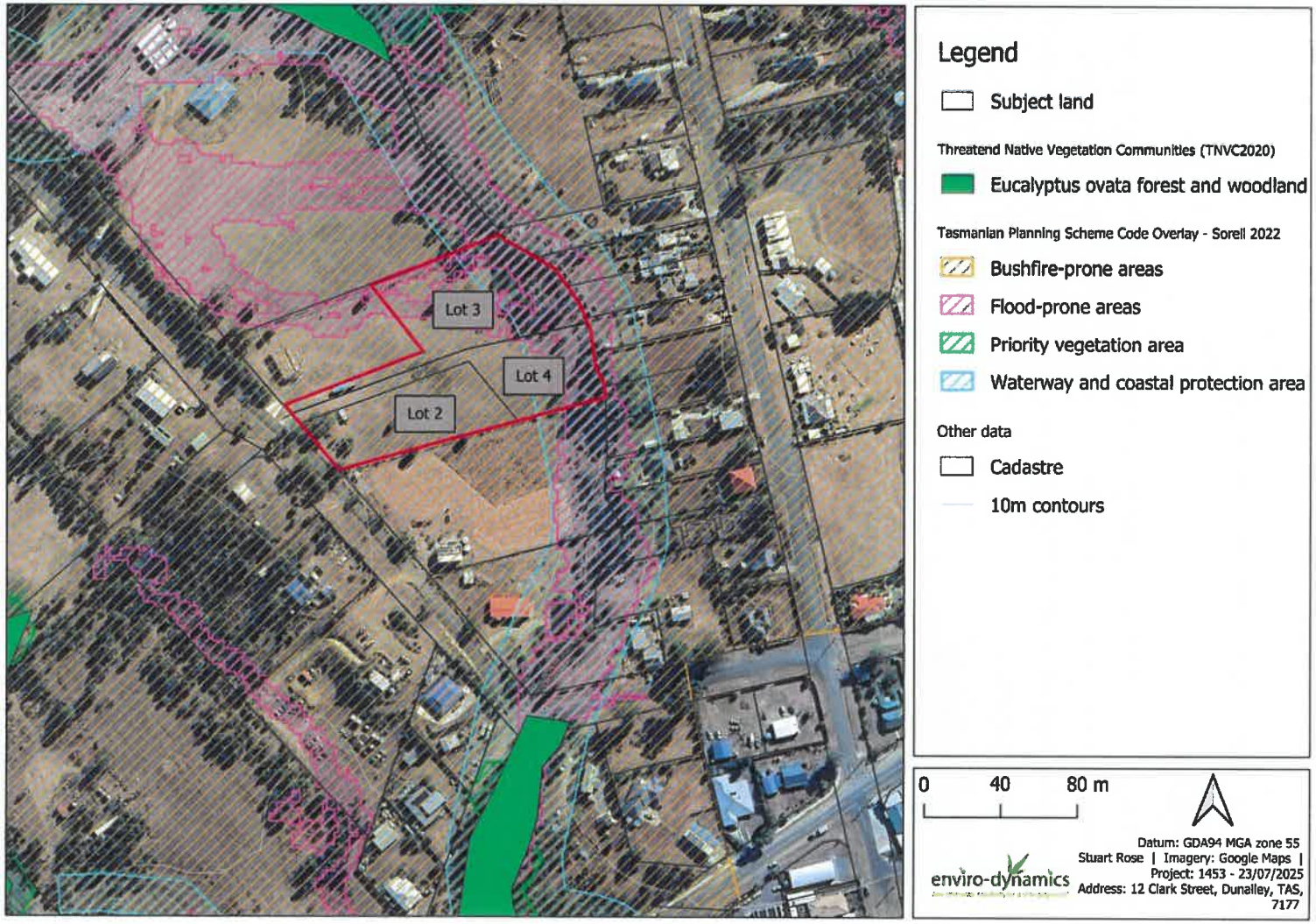


Figure 3 – Tasmanian Planning Scheme overlays – Sorell and Threatened Native Vegetation Communities layer (E. ovata forest and woodland)
Source: LISTmap 2025

2 Bushfire Attack Level Assessment

The following is a summary of the bushfire risk at the property.

2.1.1 Bushfire Hazard

Potential bushfire hazards on the site are the gentle sloping grassland, nearby forest vegetation along Gilpins Creek and fine fuel loads. Potential bushfire hazards within 140 m include the riparian vegetation downslope and to the north of the site which is contiguous with a 6-ha patch of woodland vegetation to the north.

2.1.2 Bushfire Attack Mechanisms

Relevant bushfire attack mechanisms are radiant heat and ember attack from Township Hill to the north; and wind, direct flame and smoke from Fazakerleys Sugarloaf to the north-west.

2.1.3 Bushfire Threat Direction

The highest bushfire threat to the proposed building areas is from the grassland vegetation downslope from the north-west, north and north-east which are the prevailing wind directions during bushfire season. The site was one of the few allotments that was not affected by the 2013 Dunalley bushfire. Fire reached the perimeter of the southwestern and northeastern boundaries of the property (TheLIST 2025).

2.1.4 Fire Danger Index (FDI)

FDI 50 (this index applies across Tasmania).

2.1.5 Vegetation & Slope

Grassland dominates the entire title of 12 Clark Street, with a gentle slope (0-5°) (Figure 4). The grassland is predominantly sown pasture, with some stand-alone paddock trees of regenerating *Acacia melanoxylon* and *Eucalyptus ovata*.

The Grassland vegetation contributes to the risk of grass fire from the northwest, north and northeast during bushfire season. A small band of *E. ovata* covers the north and northeastern boundary along Gilpins Creek which will contribute to the risk of ember attack during fire season when prevailing winds are from the north and north-east. However, strips of vegetation less than 20 m in width regardless of length and not within 20 m of the site or each other, or other areas of vegetation being classified vegetation are exempt from the bushfire assessment as per section

2.2.3.2 of AS 3959:2018. As such the band of trees is exempt from consideration in Tables 1, below.

2.1.6 Significant Natural Values

No threatened flora species were recorded on the site (LISTmap 2025). However, during the site visit individual *E. ovata* trees were noted near the riparian vegetation and within Lot 3. Although there is no *E. ovata* forest and woodland (DOV) on the site, the dominant species of this listed threatened vegetation community under Schedule 3A of the *Nature Conservation Act 2002* is present. This report prioritises protection of the individual *E. ovata* (black gums) by ensuring impacts resulting from the bushfire hazard management measures will be minimal.

Refer to Table 1 for the summary of the BAL Assessment and Figure 4 of the BAL Assessment Area for the proposed habitable buildings.

Table 1 – Summary of Bushfire Site Assessment for 12 Clark Street, Dunalley

Direction of slope	**North**	**Northeast**	**East**	**Southeast**	**South**	**Southwest**	**West**	**Northwest**
Lot 2								
Vegetation Classification [A]	G. Grassland	G. Grassland	G. Grassland	G. Grassland	G. Grassland	G. Grassland	G. Grassland	G. Grassland
Distance to classified vegetation	0 m	0 m	0 m	0 m	0 m	0 m	0 m	0 m
Effective slope under vegetation	Downslope 0-5°	Downslope 0-5°	Downslope 0-5°	Across slope	Upslope	Upslope	Upslope	Upslope
Current BAL value for each side of the site	FZ	FZ	FZ	FZ	FZ	FZ	FZ	FZ
Width of HMA to achieve BAL-19	11-<16 m	11-<16 m	11-<16 m	10-<14 m	10-<14 m	10-<14 m	10-<14 m	10-<14 m
Width of HMA to achieve BAL-12.5	16-<50 m	16-<50 m	16-<50 m	14-<50	14-<50 m	14-<50 m	14-<50 m	14-<50 m

Direction of slope	**North**	**Northeast**	**East**	**Southeast**	**South**	**Southwest**	**West**	**Northwest**
Lot 3								
Vegetation Classification [A]	G. Grassland	G. Grassland	G. Grassland	G. Grassland	G. Grassland	G. Grassland	G. Grassland	G. Grassland
Distance to classified vegetation	0 m	0 m	0 m	0 m	0 m	0 m	0 m	0 m
Effective slope under vegetation	Downslope 0-5°	Downslope 0-5°	Downslope >5-10°	Downslope 0-5°	Upslope	Upslope	Upslope	Across slope
Current BAL value for each side of the site	FZ	FZ	FZ	FZ	FZ	FZ	FZ	FZ
Width of HMA to achieve BAL-19	11-<16 m	11-<16 m	13-<19 m	11-<16 m	10-<14 m	10-<14 m	10-<14 m	10-<14 m
Width of HMA to achieve BAL-12.5	16-<50 m	16-<50 m	19-<50 m	16-<50 m	14-<50 m	14-<50 m	14-<50 m	14-<50 m

Direction of slope	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Lot 4								
Vegetation Classification [A]	G. Grassland	G. Grassland	G. Grassland	G. Grassland	G. Grassland	G. Grassland	G. Grassland	G. Grassland
Distance to classified vegetation	0 m	0 m	0 m	0 m	0 m	0 m	0 m	0 m
Effective slope under vegetation	Across slope	Downslope 0-5°	Downslope 0-5°	Downslope 0-5°	Across slope	Upslope	Upslope	Across slope
Current BAL value for each side of the site	FZ	FZ	FZ	FZ	FZ	FZ	FZ	FZ
Width of HMA to achieve BAL-19	10-<14 m	11-<16 m	11-<16 m	11-<16 m	10-<14 m	10-<14 m	10-<14 m	10-<14 m
Width of HMA to achieve BAL-12.5	14-<50 m	16-<50 m	16-<50 m	16-<50	14-<50 m	14-<50 m	14-<50 m	14-<50 m

[A] Vegetation within 140 m of the proposed subdivision is identified as Urban areas (FUR) (TASVEG 4.0) and is comprised of pasture grasses with the potential to become Grassland if not managed.

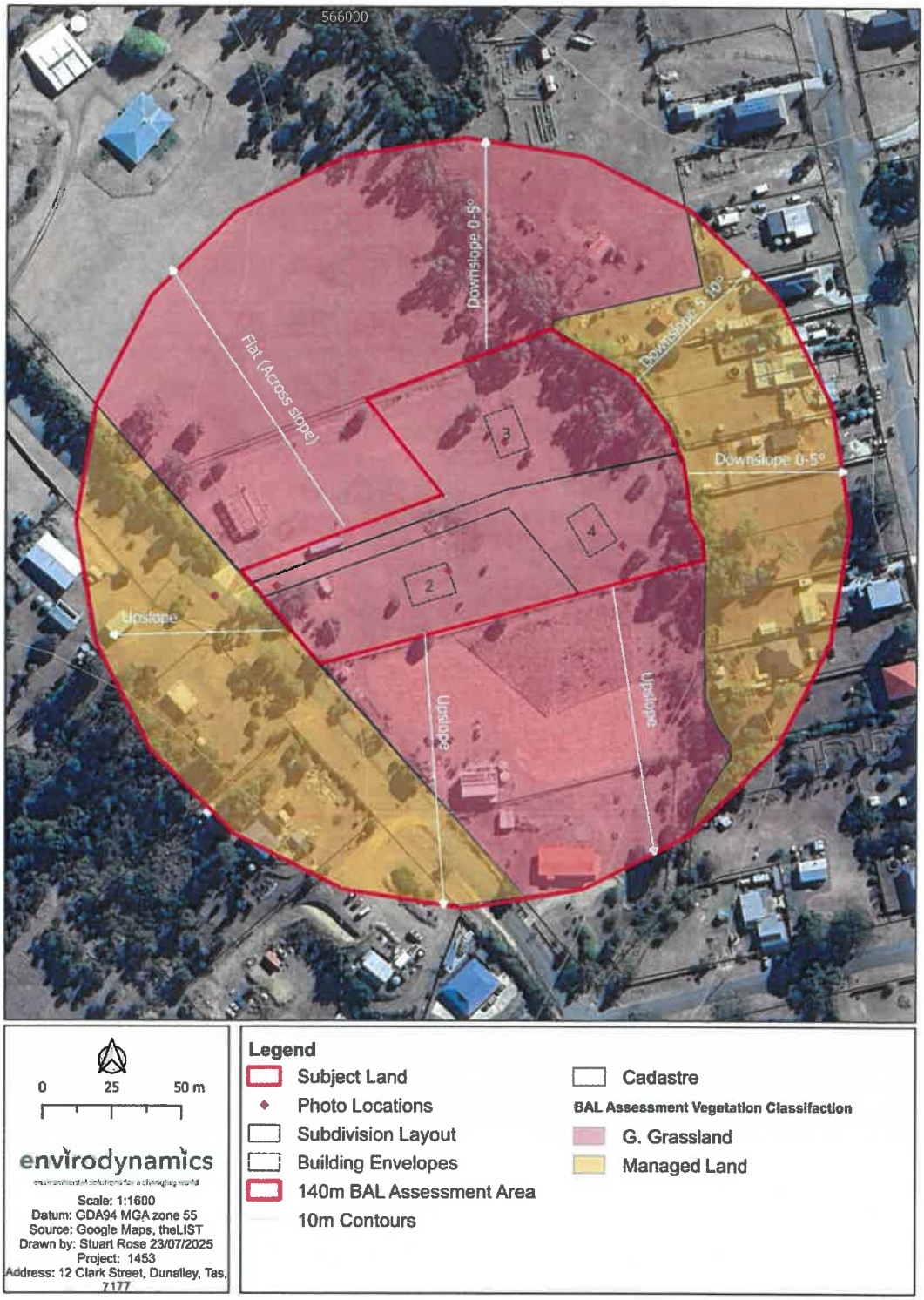


Figure 4 – Aerial photo of site showing vegetation types within 140 m radius of proposed subdivision. Refer to Appendix 2 for photos. Image source: LISTmap 2025

3 Bushfire Protection Measures

The site is within a defined Bushfire-Prone Area as defined by the Tasmanian Planning Scheme (Figure 3). The grassland vegetation requires ongoing management as it is recognised as having the potential to become an elevated bushfire risk.

The subdivision development must meet minimum development standards. These development standards are set out under clause C13.6 of the code and include Provision of HMA (C13.6.1), Public access (C13.6.2) and Provision of water supply for fire-fighting purposes (C13.6.3). The boundary adjustment development must comply with the following clauses of C13.0 – Bushfire-Prone Areas Code (shaded clauses in Table 2).

Table 2 – Compliance with E1.0

CLAUSE	ISSUE
C13.2	**Application of Code**
C13.3	**Definition of terms in this Code**
C13.4	**Use or development exempt from this Code**
C13.5	**Use Standards**
C13.5.1	**Vulnerable Uses**
C13.5.2	**Hazardous Uses**
C13.6	**Developments Standards**
C13.6.1	**Subdivision: Provision of hazard management areas (HMA) for habitable buildings**
C13.6.2	**Subdivision: Public and fire-fighting access**
C13.6.3	**Subdivision: Provision of water supply for fire-fighting purposes**

3.1 Compliance of habitable buildings

There are no existing habitable buildings on the site. Any new habitable buildings constructed on the new lots must be constructed to meet **BAL 19** construction requirements of AS 3959:2018 (Sections 3 and 6) as a minimum.

3.2 Hazard Management Areas

Bushfire hazard management areas (HMAs) provide a cleared space between buildings and the bushfire hazard. Any vegetation in this area needs to be strategically modified and then maintained in a low fuel state to protect buildings from direct flame contact and intense radiant heat thereby allowing them to be defended from lower intensity bushfires. Fine fuel loads must be minimal to reduce the quantity of windborne sparks and embers reaching buildings, to reduce the radiant heat at the building, and to halt or check direct flame attack.

Further information on the maintenance of the equivalent 'defendable space' are provided on the Tasmania Fire Service website e.g. 190341 TFS Building for Bushfire Hazard Management Area_5 July.pdf.

The Requirements for Building in Bushfire-Prone Areas require the HMA to be contained within the development site or a formal agreement entered with the owner of any adjoining land that needs to be managed as part of the HMA. None of the lots associated with the boundary adjustment will rely on management of adjoining lots to meet HMA requirements.

3.2.1 Requirements

To comply with Acceptable Solutions under C13.6.1 – A1 the plan of subdivision must:

- show building areas* for each lot;
- indicate HMAs which separate building areas from bushfire-prone vegetation with separation distances required for **BAL 19** as a minimum as per Table 2.4.4 of AS 3959:2018 Construction of Buildings in Bushfire-Prone Areas;
- provide protection for lots at any stage of a staged subdivision; and
- formal agreement with Council for ongoing management of vegetation in HMAs located on public land.

** Refer to disclaimer regarding setback requirements for planning.*

3.2.2 Current conditions

The current condition of the proposed subdivision is grassland with individual trees near the Giplin Creek and on Lot 3.

It is possible for Lots 2 to 4 to maintain the HMAs within the proposed subdivision boundaries and comply with HMA requirements without relying upon adjoining properties.

3.2.3 Compliance

The subdivision will comply with BAL 19 requirements as per Table 1 and the BHMP (Attachment 1) provided the following conditions are achieved:

- Where an existing habitable building occurs on a proposed subdivision, the subdivision will not result in an increase in the bushfire risk to the existing habitable buildings.
- All lots have a designated building area.
- The HMA around each building area will be established and maintained to achieve the **BAL 19** separation distances of **11 m** to the north and east and **10 m** to the south and west as a minimum.
- There is adequate space to build to **BAL 12.5** construction standards. To achieve BAL 12.5 separation distances, the minimum separation distances to be established and maintained must be **16 m** to the north and east, and **14 m** to the south and west.
- Given the relatively flat topography of the three proposed lots and the vegetation type (grassland), all habitable buildings can achieve **BAL 19** or **BAL 12.5** at this site.

3.2.4 Staging Requirements

The proposed subdivision will not be staged.

3.2.5 Maintenance of Hazard Management Areas

The HMAs around the building areas i.e., whole lots, must be maintained in a minimal fuel condition always to ensure bushfire protection mechanisms are effective. An annual inspection and maintenance of the HMA should be conducted prior to the bushfire season and any flammable material such as leaves, litter, wood piles removed.

The BHMP is reliant upon a formal agreement on the title to ensure the ongoing management of the lots until each lot is developed. The formal agreement will be a condition of the council permit. The formal agreement will require that the owner of the title maintains each lot by preventing fuels from accumulating and creating a fire hazard. This should be carried out twice per year, once at the start of the summer and once at the highest peak of summer until such a time as each lot is developed.

3.3 Construction Standards

All future habitable buildings (Class 1a buildings) on Lots 2 to 4 will comply with construction standards for **BAL 19** to be constructed to as per AS 3959:2018 (Sections 3 and 6) as a minimum but may attain a construction standard for **BAL 12.5** as per AS 3959:2018 (Sections 3 and 5) provided the required HMAs outlined in Table 1 are established and maintained.

3.4 Public and Fire-fighting Access

3.4.1 Requirements

Property access

Proposed Lots 2 to 4 will have a shared property access to the three lots that will be greater than 30 m long. As such the public and firefighting access must meet the following design and construction requirements as per Section 13.6.2, Table C13.2 Elements B and D:

- all- weather construction;
- load capacity of at least 20 t, including for bridges and culverts;
- minimum carriageway width of 4 m;
- minimum vertical clearance of 4 m;
- minimum horizontal clearance of 0.5 m from the edge of the carriageway;
- cross falls of less than 3 degrees (1:20 or 5%);
- dips less than 7 degrees (1:8 or 12.5%) entry and exit angle;
- curves with a minimum inner radius of 10 m;
- maximum gradient of 15 degrees (1:3.5 or 28%) for sealed roads, and 10 degrees (1:5.5 or 18%) for unsealed roads; and
- terminate with a turning area for fire appliances provided by one of the following:
  - a turning circle with a minimum outer radius of 10m; or
  - a property access encircling the building; or
  - a hammerhead "T" or "Y" turning head 4 m wide and 8 m long
- passing bays of 2 m additional carriageway width and 20 m length must be provided every 100 m.

If a new driveway is constructed to Lot 2 directly from Clark Street, and it is not more than 30 m long it will not have specified design and construction requirements as per C13.6.2 and Table C13.2 Element A of the Code. However, if it is greater than 30 m long then it will have to meet the preceding requirements as per Element B of Table C13.2. In addition, if Lot 2 is accessed directly

off Clark Street the shared driveway to Lots 3 and 4 will no longer access 3 lots. As such the passing bay illustrated on the BHMP will not be required.

3.4.2 Current conditions

New crossovers from Clark Street have been constructed to allow shared access to Lots 2, 3 and 4 Clark Street (Photo 25, Appendix 2). However, no driveway to access proposed Lots 2, 3 and 4 currently exists.

3.4.3 Compliance

Access to Lots 2 to 4 will comply with Section 13.6.2 and Table C13.2, Element B and D as described above.

3.5 Static Fire-fighting Water Supply

An adequate, accessible, and reliable water supply for fire-fighting purposes must be supplied to allow for the protection of life and property from the risks associated with bushfire. The subdivision is not serviced by a reticulated water supply. At this site, dedicated firefighting static water supplies must be installed on proposed Lots 2, 3 and 4 prior to building surveyor issuing certificate of occupancy.

3.5.1 Requirements

Proposed Lots 2 to 4 require firefighting water supplies that meet the following design and construction requirements as per Section C13.6.3 Table C13.5 Elements A to E.

A. Distance between building area to be protected and water supply:

- The building area to be protected must be located within 90 m of the firefighting water point of a static water supply, and
- The distance must be measured as a hose lay, between the firefighting water point and the furthest part of the building area.

B. Static Water Supplies

- May have a remotely located offtake connected to the static water supply,
- May be a supply for combined use (firefighting and other uses) but the specified minimum quantity of firefighting water must be always available,
- Must be a minimum of 10,000 L per building area to be protected. This volume of water must not be used for any other purpose including firefighting sprinkler or spray systems,
- Must be metal, concrete, or lagged by non-combustible materials if above ground, and

- If a tank can be located so it is shielded in all directions in compliance with Section 3.5 of AS 3959:2018, the tank may be constructed of any material provided that the lowest 400 mm of the tank exterior is protected by:
    - Metal,
    - non-combustible material, or
    - fibre-cement a minimum of 6 mm thickness.

C. Fittings, pipework, and accessories (including stands and tank supports)

Fittings and pipework associated with a firefighting water point for a static water supply must:

- Have a minimum nominal internal diameter of 50 mm,
- Be fitted with a valve with a minimum nominal internal diameter of 50 mm,
- Be metal or lagged by non-combustible materials if above ground,
- Where buried, have a minimum depth of 300 mm (compliant with AS/NZS 3500.1-2003 Clause 5.23),
- Provide a DIN or NEN standard forged Storz 65 mm coupling fitted with a suction washer for connection to firefighting equipment,
- Ensure the coupling is accessible and available for connection at all times,
- Ensure the coupling is fitted with a blank cap and securing chain (minimum 220 mm length),
- Ensure underground tanks have either an opening at the top of not less than 250 mm diameter or a coupling compliant with this Table, and
- Where a remote offtake is installed, ensure the offtake is in a position that is:
    - Visible,
    - Accessible to allow connection by firefighting equipment,
    - At a working height of 450 – 600 mm above ground level, and
    - Protected from possible damage, including damage by vehicles.

D. Signage for static water connections

The firefighting water point for a static water supply must be identified by a sign permanently fixed to the exterior of the assembly in a visible location. The sign must:

- comply with the water tank signage requirements within *Australian Standard AS2304-2011 Water storage tanks for fire protection systems*, or
- comply with the Tasmania Fire Service Water Supply Guideline published by the Tasmania Fire Service.

E. A hardstand area for fire appliances must be provided:

- no more than 3 m from the firefighting water point, measured as a hose lay (including the minimum water level in dams, swimming pools and the like),
- no closer than 6 m from the building area to be protected,
- a minimum width of three metres constructed to the same standard as the carriageway, and
- connected to the property access by a carriageway equivalent to the standard of the property access.

3.5.2 Current conditions

There are no existing firefighting water supplies within the proposed subdivision area.

3.5.3 Compliance

Proposed Lots 2 to 4 will each be fully serviced with static firefighting water supplies prior to building surveyor issuing the certificate of occupancy. The static firefighting water supplies must comply with preceding requirements and Table C13.5 Elements A to E of the Code.

4 Conclusions

The assessment of the bushfire risk of a proposed three lot subdivision at 12 Clark Street indicates that it can achieve the requirements of the Tasmanian Planning Scheme, C13.0 Bushfire-Prone Areas Code provided compliance with the following measures:

- Building areas are designed for all proposed Lots 2 to 4 as indicated on the BHMP (Attachment 1).
- Hazard Management Areas for proposed Lots 2 to 4 are managed in a low fuel condition as per the BHMP (Attachment 1).
- Future habitable buildings (Class 1a buildings) on Lots 2 to 4 can comply with minimum construction standards for **BAL 19** as per AS 3959:2018 (Sections 3 and 6), or for **BAL 12.5** as per AS 3959:2018 (Sections 3 and 5) provided the appropriate HMA separation distances are established and managed in a low fuel condition and is the HMA is maintained at all times as per Table 1 of this report.
- The shared property access to proposed Lots 2 to 4 is greater than 30 m long and is required for a fire appliance to access firefighting water points on each lot. As such the access must comply with Section 13.6.2 and Table C13.2 Element B and D of the Code.
- Provision of fire-fighting water supply will meet the requirements C13.6.3 and Table C13.5 of the Code. Indicative static firefighting water supplies for future habitable buildings on proposed Lots 2 to 4 are provided in the BHMP (Attachment 1).

5 Recommendations

- The recommendation is to adopt the BHMP as per Attachment 1.
- Retain and manage the single standing *E. ovata* trees and ensure they are greater than 10 m from any habitable buildings. *E. ovata* are the dominant flora species in the threatened vegetation community (DOV) which is protected under Schedule 3A of the *Nature Conservation Act 2002*. These trees provide important foraging habitat for the endangered swift parrot (*Lathamus discolor*).

5.1 Limitations of Plan

The bushfire protection measures outlined in the Bushfire Hazard Management Plan (Attachment 1) are based on a Fire Danger Index of 50 (FDI 50) which relates to a fire danger rating of 'very high'. Defending the property or sheltering within a structure constructed to AS 3959:2018 on days when the fire danger rating is greater than 50 (i.e. 'severe' or higher) is not recommended.

Due to the unpredictable nature of bushfire behaviour and the impacts of extreme weather, no structure built in a bushfire-prone area can be guaranteed to survive a bushfire. The safest option in the event of a bushfire is to leave the area early and seek shelter in a safe location.

7 Glossary and Abbreviations

AS – Australian Standard

BAL – Bushfire Attack Level – a means of measuring the severity of a building's potential exposure to ember attack, radiant heat and direct flame contact, using increments of radiant heat expressed in kilowatts per metre squared, and the basis for establishing the requirements for construction to improve protection of building elements from attack by bushfire (AS 3959:2018).

BFP – Bush Fire Practitioner – An accredited practitioner recognised by Tasmania Fire Service.

BHMP – Bushfire Hazard Management Plan – plan for individual habitable buildings or subdivision identifying separation distances required between a habitable building(s) and bushfire-prone vegetation based on the BAL for the site. The BHMP also indicates requirements for construction, property access and firefighting water.

Class 1a building – is a single habitable building being a detached house; or one of a group of attached habitable buildings being a town house, row house or the like (NCC 2016).

FDI – fire danger index – relates to the chance of a fire starting, its rate of spread, its intensity, and the difficulty of its suppression, according to various combinations of air temperature, relative humidity, wind speed and both the long- and short-term drought effects (AS 3959:2018).

HMA – Hazard Management Area – the area, between a habitable building or building area and the bushfire-prone vegetation, which provides access to a fire front for firefighting, which is maintained in a minimal fuel condition and in which there are no other hazards present which will significantly contribute to the spread of a bushfire.

m – meters

ha – hectares

NASH – National Association of Steel Framed Housing

9 References

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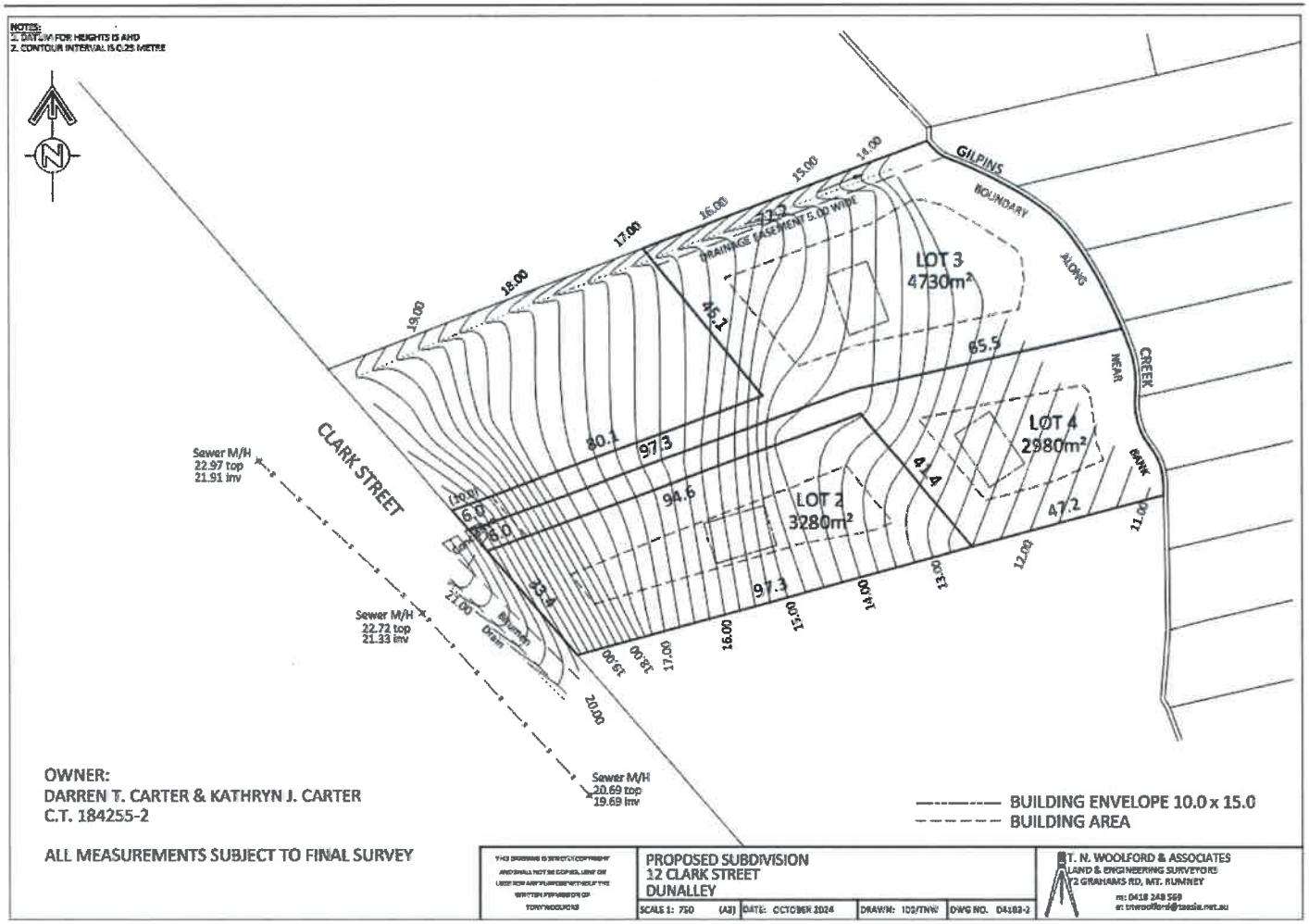
Tasmanian Planning Scheme https://tpso.planning.tas.gov.au/tpso/external/planningschemeviewer/30/section/587?effectiveForDate=2025-05-01

Tasmanian Planning Scheme – Sorell Tasmanian Planning Scheme - Sorell 2022 (tpso.planning.tas.gov.au)

APPENDIX 1 – Plan of Subdivision – T.N. Woolford & Ass. (Drawing D4103-2)



APPENDIX 2 – Photos of site, surrounds and vegetation

Photo 1 – North from proposed building area on proposed Lot 2 grassland – Downslope 0-5°

Photo 2 – Northeast from proposed building area on proposed Lot 2 grassland – Downslope 0-5°

Photo 3 – East from proposed building area on proposed Lot 2 Grassland - Downslope 0-5°

Photo 4 – Southeast from proposed building area on proposed Lot 2 Grassland – Across slope 0°

Photo 5 – South from proposed building area on proposed Lot 2 Grassland – Upslope

Photo 6 – Southwest from proposed building area on proposed Lot 2 Grassland – Upslope

Photo 7 – West from proposed building area on proposed Lot 2 towards existing dwelling on Lot 1 *Grassland - Upslope*

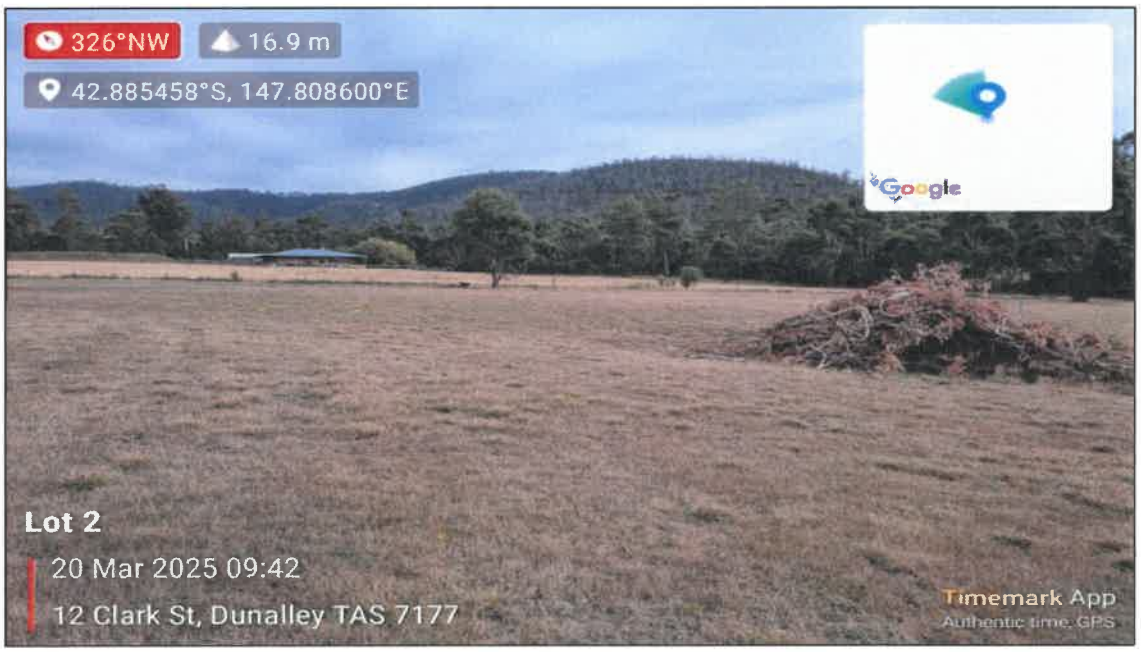


Photo 8 – Northwest from proposed building area on proposed Lot 2 Grassland - Upslope

Photo 9 – North from proposed building area on proposed Lot 3 Grassland - Downslope 0-5°

Photo 10 – Northeast from proposed building area on proposed Lot 3 Grassland - Downslope 0-5°

Photo 11 – East from proposed building area on proposed Lot 3 Grassland - Downslope 5-10°

Photo 12 – Southeast from proposed building area on proposed Lot 3 Grassland - Downslope 0-5°

Photo 13 – South from proposed building area on proposed Lot 3 Grassland - Upslope

Photo 14 – Southwest from proposed building area on proposed Lot 3 Grassland - Upslope

Photo 15 – West from proposed building area on proposed Lot 3 Grassland - Upslope

Photo 16 – Northwest from proposed building area on proposed Lot 3 Grassland – Across slope 0°

Photo 17 – North from proposed building area on proposed Lot 4 Grassland – Across slope 0°

Photo 18 – Northeast from proposed building area on proposed Lot 4 Grassland - Downslope 0-5°

Photo 19 – East from proposed building area on proposed Lot 4 Grassland - Downslope 0-5°

Photo 20 – Southeast from proposed building area on proposed Lot 4 Grassland - Downslope 0-5°

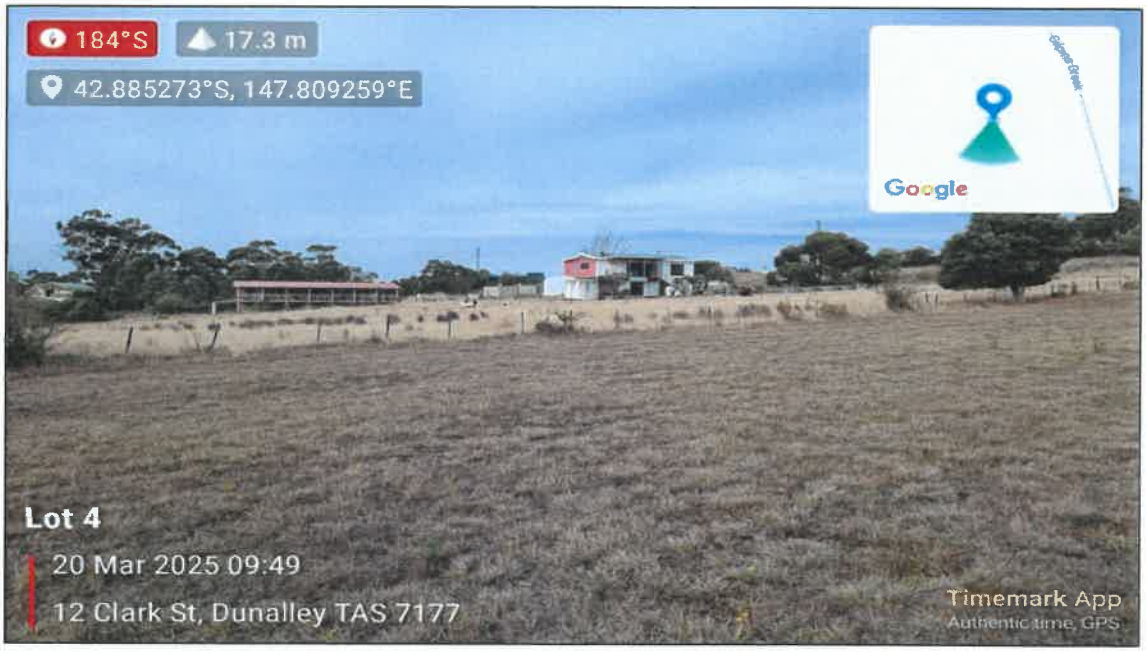


Photo 21 – South from proposed building area on proposed Lot 4 Grassland – Across slope 0°

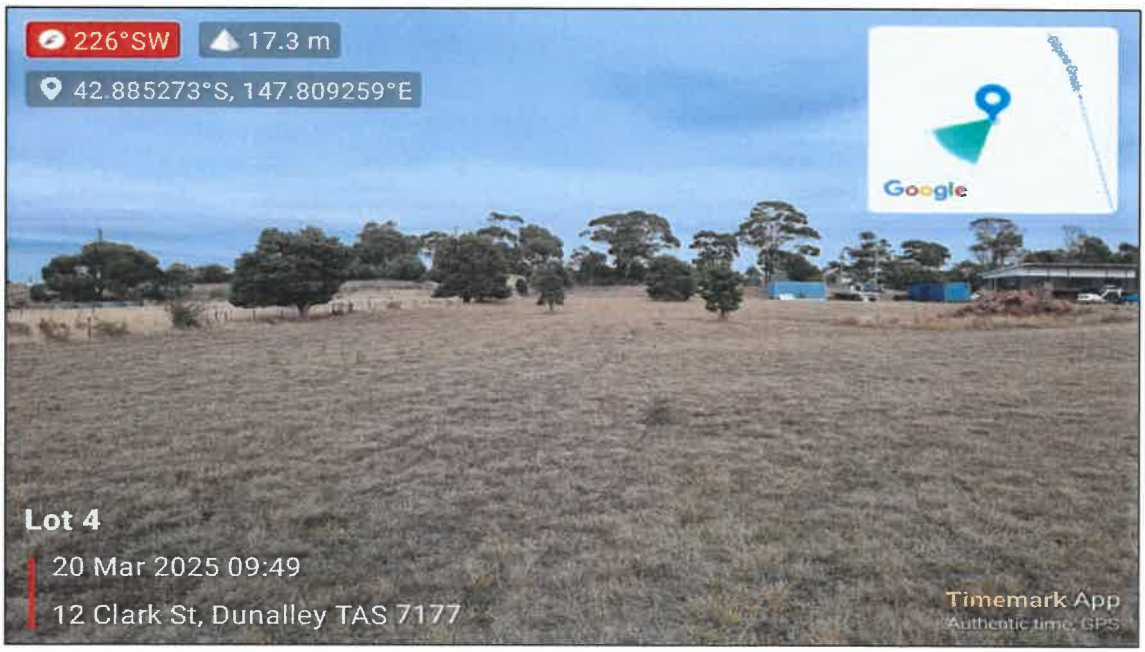


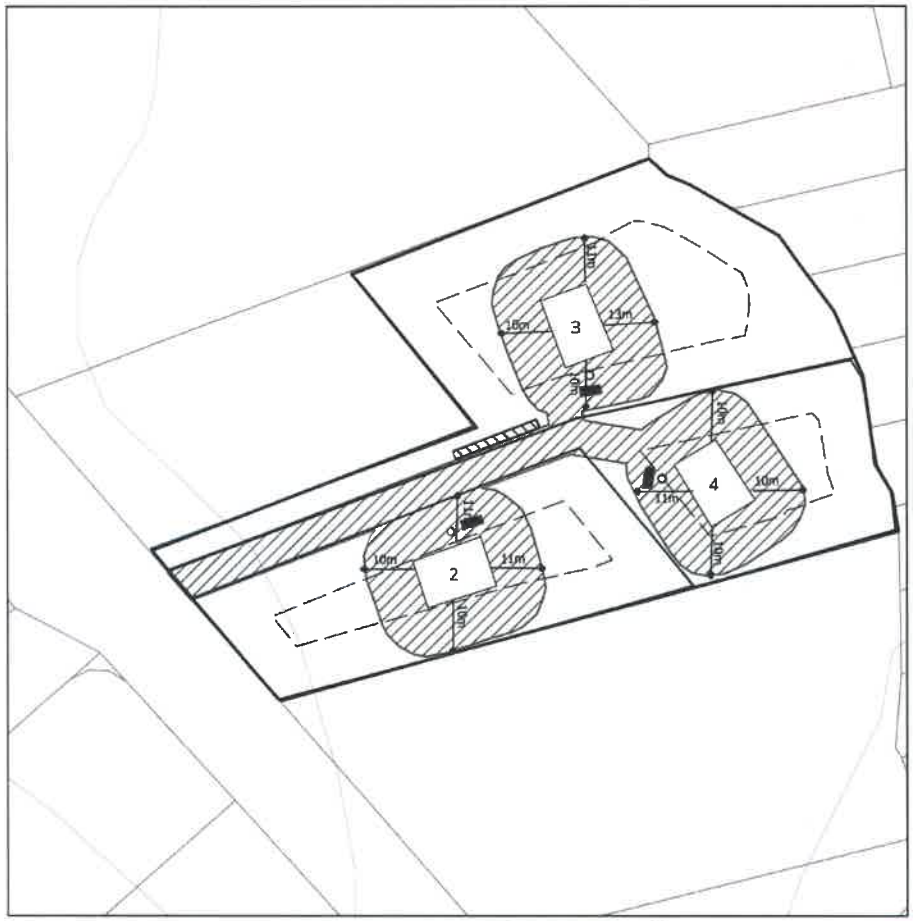
Photo 22 – Southwest from proposed building area on proposed Lot 4 Grassland - Upslope

Photo 23 – West from proposed building area on proposed Lot 4 Grassland - Upslope

Photo 24 – Northwest from proposed building area on proposed Lot 4 Grassland – Across slope 0°

Photo 25 – East along existing access from Clark Street showing cross over to Lots 2 to 4

ATTACHMENT 1 – Bushfire Hazard Management Plan – July 2025



Legend

- Subject Land
- Hazard Management Area & Access (BAL 19)
- Indicative Passing Bay (2m x 20m)
- Building Area
- Lot Boundaries
- Indicative Building Envelopes (10m x 15m)
- Indicative Hardstand and Turning Area
- Indicative Static Firefighting Water Supply
- 10m Contours
- Cadastre

BAL 19 for Lots 2 to 4

0 25 50 m

enviro-dynamics

Datum: GDA94 MGA zone 55
Stuart Rose | Imagery: Google Maps | Project: 1453
29/04/2025
Address: 12 Clark Street, Dunalley, TAS, 7150

For **D T. & K J. Carter** – 12 Clark Street, Dunalley

Title: C.T. 184255/2 PID: 9056362

Assessment #: ED1453

Sarah Bunce – ENVIRO-DYNAMICS
ACCREDITED BUSHFIRE ASSESSOR (BFP-151)
CERTIFICATE No: ED1453 DATE: 23/07/2025
Signed Sbunce

NOTES

Hazard Management Zone

- HMA to be established on proposed Lots 2, 3 and 4 as indicated in this plan and as set out in Table 1 of Bushfire Attack Level Assessment for BAL 19 as minimum.
- Vegetation in the HMA needs to be strategically modified and then maintained in a low fuel state to protect future habitable buildings from direct flame contact and intense radiant heat. An annual inspection and maintenance of the HMA should be conducted prior to the bushfire season. All grasses or pastures must be kept short (<100 mm) within the HMA. Fine fuel loads at ground level such as leaves, litter and wood piles must be minimal to reduce the quantity of windborne sparks and embers reaching buildings; and to halt or check direct flame attack.
- Some trees can be retained provided they are 10 m from habitable buildings and there is 6 m horizontal separation between the canopies; and low branches are removed to create vertical separation between the ground and the canopy. Small clumps of established trees and/or shrubs may act to trap embers and reduce wind speeds.
- No trees to overhang houses to prevent branches or leaves from falling on the building.
- Non-combustible elements including driveways, paths and short cropped lawns are recommended within the HMA.
- Fine fuels (leaves bark, twigs) should be removed from the ground periodically (pre-fire season) and all grasses or pastures must be kept short (<100 mm).

Construction Standards

- Any future habitable buildings on proposed Lots 2, 3 and 4 are to be constructed to comply with BAL 19 as a minimum and as per AS3959-2018 (Sections 3 and 6).

Public and Fire-fighting Access Requirements

- Access to Lots 2, 3 and 4 is greater than 30 m long and is required for a fire appliance to access firefighting water points on 3 lots. Access requirement will comply with section 3.4 of the Bushfire Hazard Report and as indicated on this plan.

Static Fire-fighting Water Supply

- 10,000 L static firefighting water supply must be provided for any new habitable buildings on proposed Lots 2, 3 and 4 as indicated on this plan and must meet requirements of Section 3.5 of the Bushfire Hazard Report.

This plan is to be printed at A3 and read in conjunction with the preceding Bushfire Hazard Assessment Report (Enviro-dynamics, July 2025).

ATTACHMENT 2 – Planning Certificate – July 2025

BUSHFIRE-PRONE AREAS CODE

CERTIFICATE[1] UNDER S51(2)(d) *LAND USE PLANNING AND APPROVALS ACT 1993*

1. Land to which certificate applies

The subject site includes property that is proposed for use and development and includes all properties upon which works are proposed for bushfire protection purposes.

Street address:	12 Clark Street, Dunalley, 7177
Certificate of Title / PID:	CT: 184255/2, PID: 9056362

2. Proposed Use or Development

Description of proposed Use and Development:	3 lot subdivision
Applicable Planning Scheme:	Tasmanian Planning Scheme – Sorell 2022

3. Documents relied upon

This certificate relates to the following documents:

[1] This document is the approved form of certification for this purpose and must not be altered from its original form.

Title	Author	Date	Version
Bushfire Hazard Report 415 Nelson Road, Mt Nelson. July 2025 ED 1457	Sarah Bunce	23/07/2025	1.0
Plan of Subdivision –Drawing D4103-2)	T.N. Woolford & Ass.	OCT 2024	2.0

4. Nature of Certificate

The following requirements are applicable to the proposed use and development:

☐	E1.4 / C13.4 – Use or development exempt from this Code	
	Compliance test	Compliance Requirement
☐	E1.4(a) / C13.4.1(a)	Insufficient increase in risk

☐	E1.5.1 / C13.5.1 – Vulnerable Uses	
	Acceptable Solution	Compliance Requirement
☐	E1.5.1 P1 / C13.5.1 P1	***Planning authority discretion required. A proposal cannot be certified as compliant with P1.***
☐	E1.5.1 A2 / C13.5.1 A2	Emergency management strategy
☐	E1.5.1 A3 / C13.5.1 A2	Bushfire hazard management plan

☐	E1.5.2 / C13.5.2 – Hazardous Uses	
	Acceptable Solution	Compliance Requirement
☐	E1.5.2 P1 / C13.5.2 P1	***Planning authority discretion required. A proposal cannot be certified as compliant with P1.***

☐	E1.5.2 A2 / C13.5.2 A2	Emergency management strategy
☐	E1.5.2 A3 / C13.5.2 A3	Bushfire hazard management plan

☒	**E1.6.1 / C13.6.1 Subdivision: Provision of hazard management areas**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.6.1 P1 / C13.6.1 P1	***Planning authority discretion required. A proposal cannot be certified as compliant with P1.***
☐	E1.6.1 A1 (a) / C13.6.1 A1(a)	Insufficient increase in risk
☒	E1.6.1 A1 (b) / C13.6.1 A1(b)	Provides BAL-19 for all lots (including any lot designated as 'balance')
☐	E1.6.1 A1(c) / C13.6.1 A1(c)	Consent for Part 5 Agreement

☒	**E1.6.2 / C13.6.2 Subdivision: Public and fire fighting access**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.6.2 P1 / C13.6.2 P1	***Planning authority discretion required. A proposal cannot be certified as compliant with P1.***
☐	E1.6.2 A1 (a) / C13.6.2 A1 (a)	Insufficient increase in risk
☒	E1.6.2 A1 (b) / C13.6.2 A1 (b)	Access complies with relevant Tables

☒	**E1.6.3 / C13.1.6.3 Subdivision: Provision of water supply for fire fighting purposes**	
	Acceptable Solution	**Compliance Requirement**

☐	E1.6.3 A1 (a) / C13.6.3 A1 (a)	Insufficient increase in risk
☐	E1.6.3 A1 (b) / C13.6.3 A1 (b)	Reticulated water supply complies with relevant Table
☐	E1.6.3 A1 (c) / C13.6.3 A1 (c)	Water supply consistent with the objective
☐	E1.6.3 A2 (a) / C13.6.3 A2 (a)	Insufficient increase in risk
☒	E1.6.3 A2 (b) / C13.6.3 A2 (b)	Static water supply complies with relevant Table
☐	E1.6.3 A2 (c) / C13.6.3 A2 (c)	Static water supply consistent with the objective

5. Bushfire Hazard Practitioner

Name:	Sarah Bunce	**Phone No:**	0437 782 592
Postal Address:	Enviro-dynamics Pty Ltd 56-58 Burnett Street, Hobart, TAS, 7000	**Email Address:**	Sarah.Bunce@enviro-dynamics.com.au
Accreditation No:	BFP 151	**Scope:**	1, 2, 3a, 3b

6. Certification

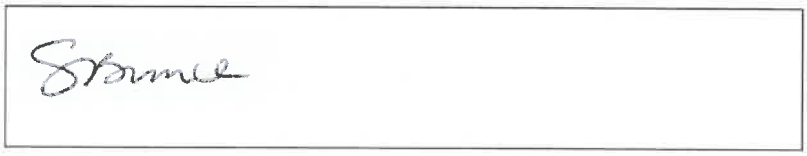
I certify that in accordance with the authority given under Part 4A of the *Fire Service Act 1979* that the proposed use and development:

☐ • Is exempt from the requirement Bushfire-Prone Areas Code because, having regard to the objective of all applicable standards in the Code, there is considered to be an insufficient increase in risk to the use or development from bushfire to warrant any specific bushfire protection measures, or

☒ • The Bushfire Hazard Management Plan/s identified in Section 3 of this certificate is/are in accordance with the Chief Officer's requirements and compliant with the relevant **Acceptable Solutions** identified in Section 4 of this Certificate.

Signed:

certifier

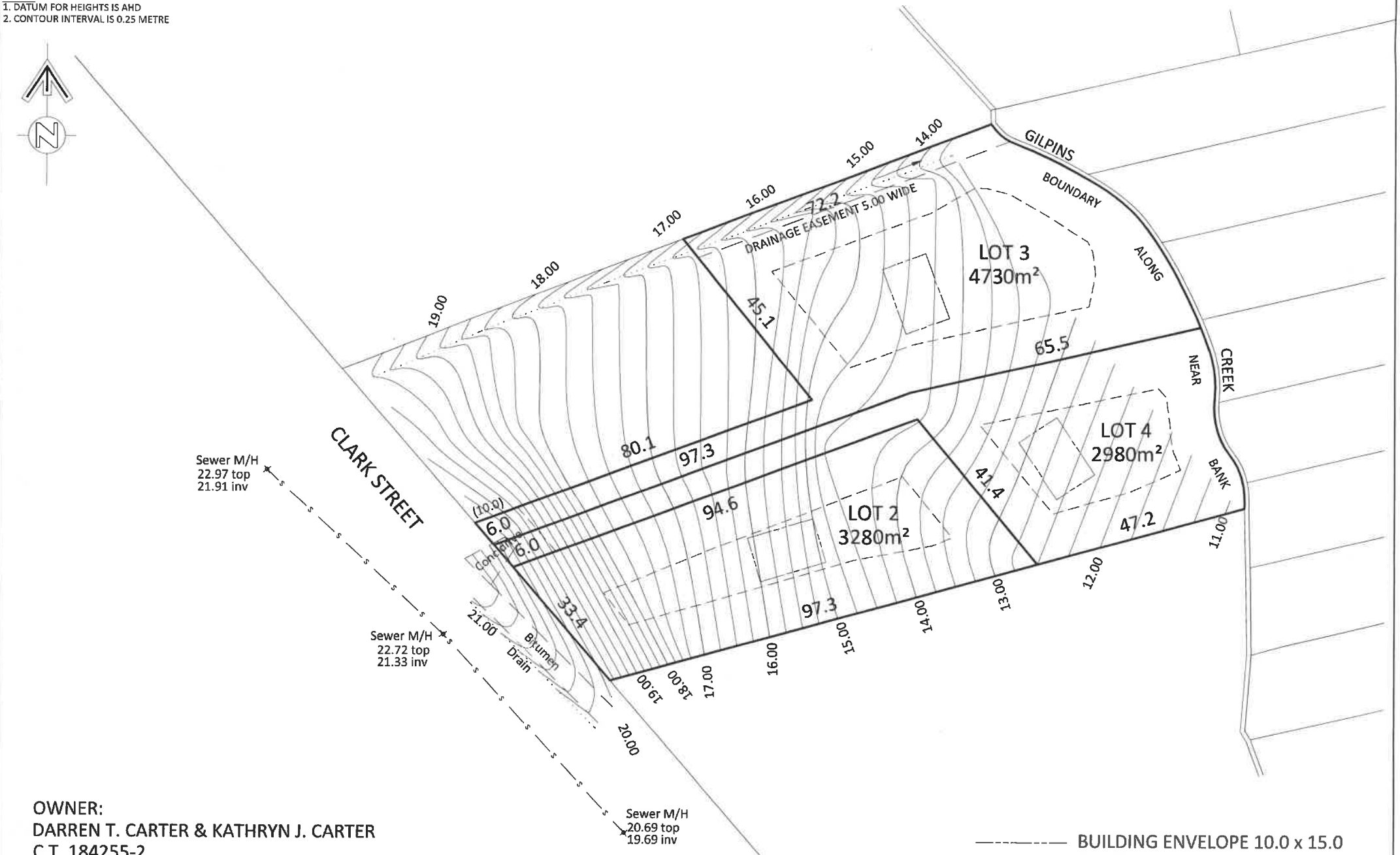


Name: Sarah Bunce **Date:** 23/07/2025

Certificate Number: ED1453

(for Practitioner Use only)

NOTES:
1. DATUM FOR HEIGHTS IS AHD
2. CONTOUR INTERVAL IS 0.25 METRE



OWNER:
DARREN T. CARTER & KATHRYN J. CARTER
C.T. 184255-2

ALL MEASUREMENTS SUBJECT TO FINAL SURVEY

——————— BUILDING ENVELOPE 10.0 x 15.0
– – – – – – BUILDING AREA

PROPOSED SUBDIVISION
12 CLARK STREET
DUNALLEY

SCALE 1: 750 (A3) | DATE: OCTOBER 2024 | DRAWN: IDS/TNW | DWG NO. D4103-2

T. N. WOOLFORD & ASSOCIATES
LAND & ENGINEERING SURVEYORS
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e: tnwoolford@tassie.net.au