

Planning Submission

Baudin Road (northern end), Carlton River CT 119311-1 and CT 169070-1 (Approx. 41ha)

To rezone from Rural Resource Zone to Rural Living Zone
and concurrently subdivide into 9 1ha lots

and

To rezone the balance land from Rural Resource Zone to Rural Living Zone – Area B
and concurrently subdivide into 3 10ha lots

December 2020

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Iplan
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I. Executive Summary

This report has been prepared to address the provisions of the *Land Use Planning and Approvals Act 1993* (the Act) as well as other strategies and policies to allow the Sorell Council to consider the proposal to:

- Rezone the subject property of two titles off the northern end Baudin Road, Carlton from Rural Resource Zone to Rural Living Zone and Rural Living Zone – Area B.
- Subdivide the Rural Living Zone land into 9 lots of 1.0ha (minimum area),
- Subdivide the Rural Living Zone – Area B land into 3 lots of 10ha (minimum area).

The subject property has frontage to Waterson Lane, McGinness Road and Baudin Road. The proposed new lots will have frontage to, and physical access off an extension of Baudin Road and a new subdivision road.

The proposed subdivision layout has been designed to achieve a number of objectives:

- Compliance with either the acceptable solutions or performance criteria of the subdivision standards contained within Clause 13.5 of Part D of the Sorell Interim Planning Scheme 2015 (SIPS 2015).
- Protect the environmental values of the site (native vegetation, waterways etc) and ensure maintenance of ecological processes or genetic diversity as required by the Objectives of the Act.
- Extend the rural living area by a small number of lots in a logical manner that does not open up further rezoning opportunities.
- Facilitate a small amount of economic development through the future development of the land for residential purposes consistent with the Objectives of the Act
- Provide a road network that serves the proposed lots and provides adequate width and turning (cul-de-sac heads) for emergency vehicles.

This report is supported by other assessments that address:

- Traffic Impact Assessment by GHD.
- Wastewater Land Assessment by SEAM Environmental
- Agricultural Assessment by Pinion Advisory
- Bushfire Assessment Report by SEAM Environmental
- Natural Values Assessment by North Barker

- Aboriginal Heritage Assessment Report by CHMA (Cultural Heritage Management Aus) and AHT (Aboriginal Heritage Tasmania)

The Traffic Impact Assessment considers the resultant traffic generation from the proposed subdivision and its impact on the local road network. The Natural Values Assessment along with the Bushfire Assessment Report also addresses a number of the codes in the SIPS 2015. (Bushfire Prone Areas, Stormwater Management and Waterway and Coastal Protection Codes).

The waste-water land assessment and agricultural assessment reports demonstrate the proposal's compliance with the following State Policies:

- State Policy on the Protection of Agricultural Land 2009
- State Policy on Water Quality Management 1997

This report considers the provisions of the Act and Strategies and identifies that the proposal is consistent with:

- Objectives in Schedule 1 of the Act
- The Southern Tasmania Land Use Strategy 2010 - 2035
- Sorell Land Supply Strategy - Stage 2 Assessment of Expansion Options 2019 update
- Relevant standards and codes in the Sorell Interim Planning Scheme 2015

2. Introduction

2.1 The Proposal

The proposal is to:

- Rezone the two titles that form the subject property from Rural Resource Zone to Rural Living Zone.
- Identify approximately 10ha as Rural Living Zone
- Subdivide the Rural Living Zone land into 9 lots of a minimum area of 1.0ha each
- Identify approximately 30ha, the balance land of the subject property, as Rural Living Zone – Area B

- Subdivide the Rural Living Zone - Area B land into three lots of a minimum of 10ha each.

The proposal plans are contained within Appendix B – Proposal Plan

2.2 Statutory Reference

The subject property is subject to the provisions of the Sorell Interim Planning Scheme 2015. The Planning Authority responsible for administering the SIPS 2015 is the Sorell Council.

In accordance with Schedule 6 – Savings and transitional provision of the *Land Use Planning and Approvals Amendment (Tasmanian Planning Scheme Act) 2015* Parts 2A and 3 of the former provisions of the *Land Use Planning and Approvals Act 1993* remain in force until the Local Planning Schedule comes into effect in relation to the municipal area. This allows the application to be made under S43A of the former provisions for the development (subdivision) and an amendment to the Sorell Interim Planning Scheme 2015.

3. Existing Planning Controls

3.1 Zoning

The subject property is currently zoned Rural Resource. The purpose of the zone under Clause 26.1 of the SIPS 2015 being:

- “To provide for the sustainable use or development of resources for agriculture, aquaculture forestry, mining and other primary industries, including opportunities for resource processing
- To provide for other use or development that does not constrain or conflict with resource development uses.
- To provide for non agricultural use or development such as recreation, conservation tourism and retailing, where it supports existing agriculture, aquaculture forestry, mining and other primary industries.
- To allow for residential and other uses not necessary to support agriculture, aquaculture and other primary industries provided that such uses do not:
 - (a) fetter existing or potential rural resource use and development on other land;
 - (b) add to the need to provide services or infrastructure or to upgrade existing infrastructure;
 - (c) contribute to the incremental loss of productive rural resources.

- To provide for protection of rural land so future resource development opportunities are not lost.”

The report will demonstrate that the zoning of the subject property as Rural Resource is not appropriate as it does not achieve the purpose of the zone as set out in the clauses above.

There are three Planning Scheme Code overlays that are applicable to the subject property. The Waterway and Coastal Protection overlay covers narrow strips along three ephemeral watercourses that are located on the two titles. There is a small area of overlay at the eastern extent of the smaller of the two titles. It relates to Chaseys Creek that flows through adjoining properties.

The Landslide Hazard Area overlay is identified also in the eastern extent of the smaller of the two titles. See figure 1 below.

The entire subject property is subject to the Bushfire Prone Areas overlay.

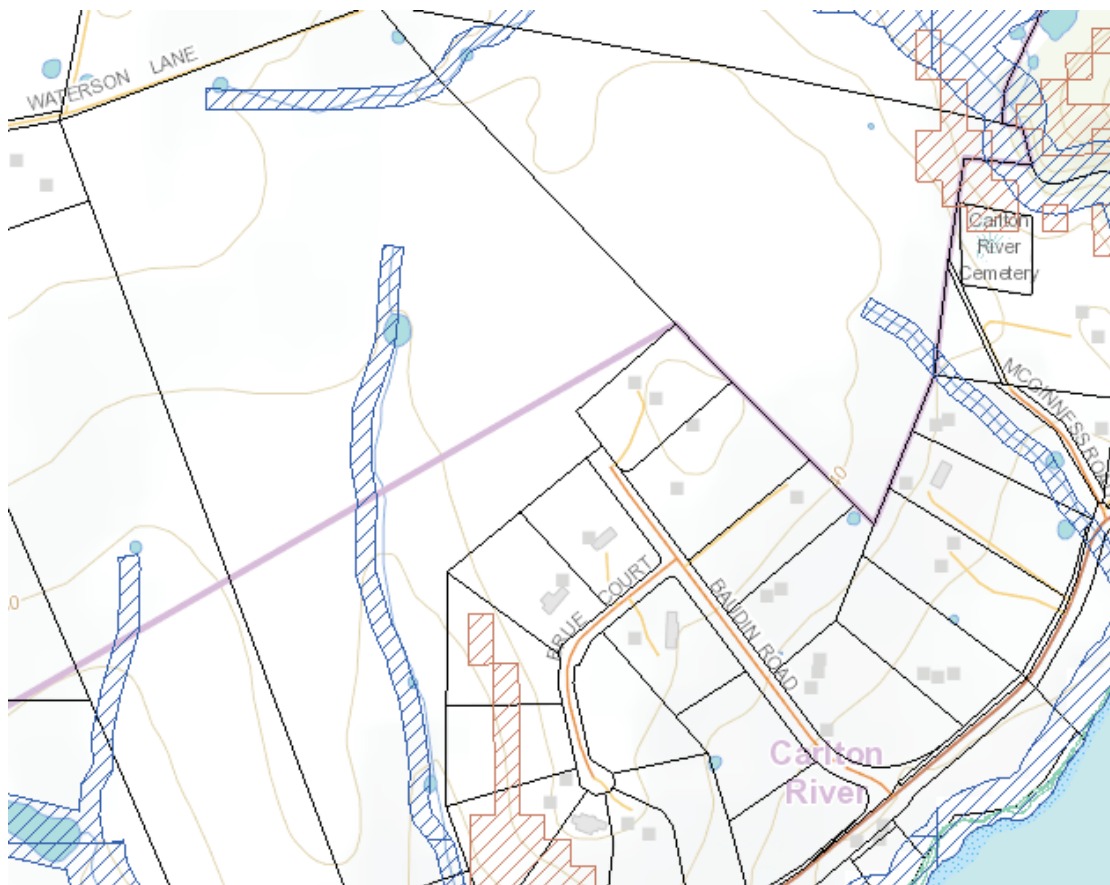


Figure 1 shows the extent of the Waterway and Coastal Protection and Landslide Hazard overlays (diagonal blue and brown stripes respectively) (Source: thelist.tas.gov.au)

4. Subject property and Locality

The subject property consists of two titles. The western of the two (CT169070/1) is 26.85ha and accessed via a Right of Way from Josephs Road, and also has access and frontage to Baudin Road. The eastern lot (CT119311/3) is 13.64ha and has a Right of Way access over the western lot. (see Appendix A - Titles). Also the eastern lot has frontage to the unformed northern end of McGinness Road.

4.1 Surrounding/Nearby Land Uses

The Pinion Advisory Report titled “Agricultural Assessment of Proposed Development of titles 169070/1 and 119311/1 Waterson Lane, Carlton” identifies the surrounding and nearby land uses as follows:

- “Fifteen residential use blocks on typically 1 hectare lots located along Brue Court, Baudin and Carlton Road are adjacent to the southern boundaries of the properties in question
- Six agricultural blocks adjacent to the north, east and west nominally used for low intensity pastoral land use activity ranging in size from 9 to 21 hectares
- Blocks of various size further to the west covered by native vegetation including Bracken fern land, heathland and scrub and woodland (*Eucalyptus tenuirami*, *E. amygdalina* and *E. globulous*) all of which are not used for agricultural land use activity
- Blocks of various size to the north and west that are nominally used for low intensity pastoral use” (Ref Pg 19 Dot pts 1-4)

In a broader context there are some 30 lots in the Brue Court, Baudin Road and Carlton River Road area to the south that are currently zoned Rural Living. Most containing a single dwelling with the remainder vacant.

In respect to the nearby Rural Resource Zone land (primarily accessed from Josephs Road) there are some 16 lots to the north and west that range in size from 10ha to 72ha. Most containing a single dwelling with a number vacant.

The Pinion Advisory report in Section 6 considers both the potential impact of neighbouring agricultural activity on the development and the potential impact from the development on the neighbouring agricultural activities.

The report states “After inspecting the site, I have concluded that the nature of the proposed development and associated separation and buffer distances are sufficient to prevent unreasonable impact of agricultural activities on the residential amenity and vice versa.” (Ref Pg 19 Para 1)

Currently there are 14 lots zoned Rural Living that are contiguous with the subject property. As such there are 14 properties with a direct interface with land zoned Rural Resource that have the potential to experience some impact on residential amenity from agricultural activity.

The proposal to rezone and concurrently subdivide the subject property, ensures that only 3 large 10ha Rural Living Zone – Area B lots interface with the surrounding Rural Resource Zone land. This translates into a greatly reduced risk of potential conflict between the zones.

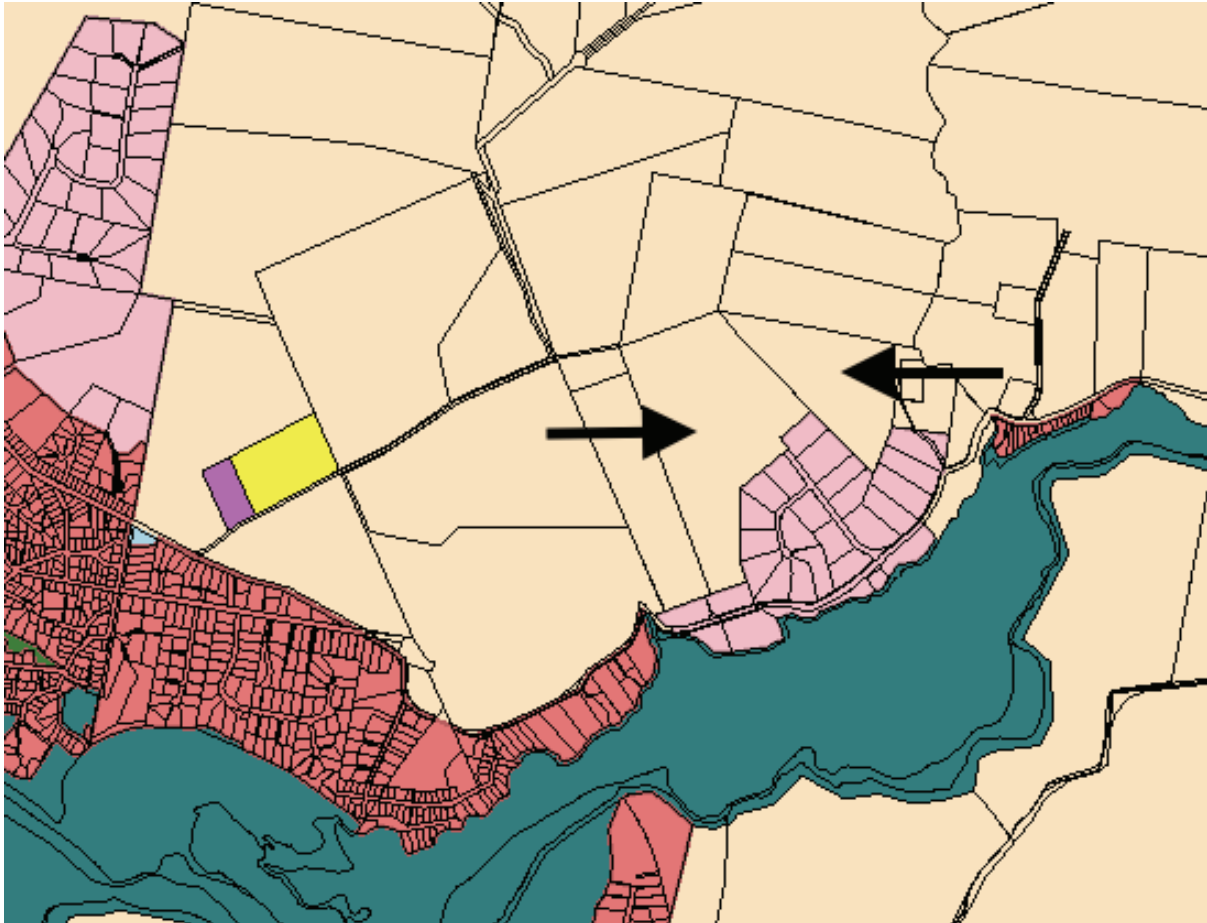


Figure 2 The subject property (shown by arrows) and surrounding zoning. The red zone is low density residential, the pink rural living and the beige rural resource. The remaining yellow, purple and green zones are utilities, light industrial and environmental management respectively. (Source thelist.tas.gov.au)

4.2 Natural Values

There is potential for a number of native species to use the subject property as a habitat. Marsupials such as Wallabies, Bandicoots and occasionally Wombats are seen foraging in the area.

Wedge-tailed eagles also forage the property at random. Under the proposal 75% of the property will remain almost unchanged. There will be 3 10ha lots instead of 2 subminimum balance land lots. The eagles will still forage randomly over 100,000 sq m lots. Also, according to the applicant, he has observed Wedge-tailed eagles land in trees and on the paddock within 50m of his home and remain for approximately 30 minutes.

The site is mostly pasture species established over 20 years ago. It is now degraded with evidence of weed infestation, aided by the usually long dry Summer and Autumn period. (2020 and January 2021 have been unusually wet). The North Barker report titled "Natural Values Assessment" that forms part of this submission identified seven weed species. Of these three, African Boxthorn, Chilean needle grass and Serrated Tussock have been treated by the owner and a specialist contractor in an attempt to eradicate them.

At the property owners request, Eco Works Pty Ltd revisited the property on 22nd January this year to assess the Chilean needle grass. The result of the first spraying in spring 2020 is apparently good. Arrangements have been made to spray again this autumn with a Group One residual herbicide that will also kill any seedlings.

It is relevant that the small area of Chilean needle grass is located well to the north east of proposed lot 9 and therefore will not be disturbed by subdivision earthworks if any plants still exist at that time.

The North Barker report identifies one threatened species Gentle rush *Juncus amabilis* however it is noted that the species has been delisted (effective 25th November 2020) from the Threatened Species Protection Act 1995 because it is more widespread than once thought. The report states that there are no other threatened species recorded within 500m of the site.

With reference to threatened fauna it is further stated that "any occurrences of threatened species would be incidental." (Ref pg 4, 3.3 Para 2 Threatened fauna and habitat)

The North Barker report also identifies a small area in the north eastern corner of the property as a Lowland Grass Complex however did not give it any significance.

The Natural Values Assessment provides, with clarity, that the proposal will have little impact with comments such as:

"No significant impact to threatened plants result from the subdivision proposal." (Ref, Pg 9, 4.2 Threatened plants)

"No threatened fauna habitat will be impacted by the subdivision." (Ref Pg. 9, 4.3 Threatened fauna habitat)

"The land subject to this proposed rezoning and subdivision is low capacity grazing land that supports no priority biodiversity values." (Ref: Pg 14, 6 Discussion)

4.3 Topography and Drainage

The subject property is mainly gently undulating land. There is a very small area of steep land in the far southeast corner and a larger steep gully in the south west corner of the property. The proposed 9 Iha Rural Living Zone lots have been

designed to avoid these two areas. The indicative building areas within the larger 10ha lots also avoids the steep land.

The land slopes generally to the north and west. There are number of ephemeral watercourses running through the titles. Several small dams have been constructed to provide for stock. At the time of a visit in January 2020 there was no evidence of water in any of the dams. A subsequent site visit in early April water was observed in all dams. The presence of the water resulted from an unusual rain event on the 2nd April when over 100mm of rain occurred in the locality over a 12hr period. An unseasonally wet winter and spring has retained water in the dams. The three watercourses have been observed on a number of occasions after rain events of greater than 25mm in 24 hrs. In each instance water was not observed flowing along the watercourse however the vegetation cover and underlying soil was saturated.

Figure 3 below is a Google map satellite image from early 2020 showing the impact of the dry period prior to April 2020 on the vegetation cover in the area of the subject property. The dry waterholes are evident in the image.



Figure 3 Satellite Image showing dry conditions in early 2020 (source Google maps 2020)

4.4 Road Network

The subject property is serviced by three roads. Waterson Lane is a gravel road that commences near the intersection with Josephs Road. Waterson Lane is not a public road along the northern boundary of the western lot of the subject property. It is a “service easement” that is owned by the property immediately to the north of the western of the lots in the subject property. It provides access to a number of properties to the north and north east of the subject property.

McGinness Road is a public road from Carlton River Road to the southern boundary of 24 McGinness Road. It then continues as a “reserved road” through the property to the southern boundary of the subject property adjacent to the Carlton River Cemetery. Access to the subject property via the reserved road is not formed at that end.

Baudin Road is a 6m wide sealed road with an 20m wide road reservation that forms part of the southern boundary of the subject property. The sealed pavement ends with no definition (i.e no cul-de-sac or Y head) approximately 40m from the boundary.

The Planning Authority at the time of approving the Baudin Road subdivision did not extinguish the possibility of continued development from where Baudin Road joins the subject property.

Baudin Road intersects with Carlton River Road. Carlton River Road is a sealed road that provides access to the Carlton/Dodges Ferry area to the west. It also provides access to the east that includes the Primrose Sands area and the Arthur Highway.

A Traffic Impact Assessment undertaken by GHD assessed the impact to the additional traffic from the future development of the lots proposed. The report looked at the Baudin Road/Carlton River Road intersection and the Carlton River Road/Old Forcett Road/Carlton Beach Road intersections. The report concluded that “The proposed development has insignificant impacts on the overall intersection performance” (Ref P13 para 2)

The GHD Traffic Impact Assessment also states:

“The sensitivity testing of the Old Forcett Road/Carlton River Road suggests that the intersection will perform under capacity up to 2030 and beyond with the proposed development in place.” (Ref: pg 15, 5 Conclusions, dot point 5) Sensitivity testing is a formula whereby the actual traffic volume during the peak periods is increased by 30% on a scenario basis only.

The report also looked at the subdivision proposal road layout and considered it “acceptable” and providing “good sight distance characteristics for designing driveway access”. (Ref: Pg 15, dot point 7)

Finally, GHD concludes that: “Based on the findings of this Traffic Impact Assessment, the development is supported on traffic grounds.” (Ref: pg 15, 5 Conclusions, last para)”

4.5 Existing Site Conditions

The subject property is vacant. The only improvements are fencing which is in poor condition and a number of water holes (see comments under 4.3 above). Water

containment in the water holes is cyclic with winter rain filling or partly filling them and then drying out in spring. According to advice provided, the water holes were only filled during the spring – autumn period by transporting water in by truck.

4.6 Contaminated Land

There is no evidence that the land is contaminated. There is no evidence of any previous developments on the site that would have produced toxins to contaminate land. The topography and ephemeral watercourses on the site are unlikely to have enabled contaminants to be transported on to the site.

4.7 Bushfire Prone Area

The subject property is subject to the Bushfire-Prone Areas Code in the SIPS 2015 being entirely covered by the overlay that identifies such areas. Clause 6.6 below addresses compliance with the Bushfire-Prone Areas Code.

4.8 Cultural Heritage

After completing a search of the Aboriginal Heritage Register regarding the subject property Aboriginal Heritage Tasmania (AHT) advised that a complete assessment needed to occur for the larger land title PID 2294356. An assessment was not however required for the smaller land title PID 2294292. Of course an Unanticipated Discovery Plan would apply particularly if development commenced.

Cultural Heritage Management Australia Pty Ltd (CHMA) conducted the Aboriginal Heritage assessment in conjunction with AHT. The conclusions of the assessment are as follows:

- 1) “No Aboriginal heritage sites, suspected features or specific areas of elevated archaeological potential were identified within the Waterson Lane study area.” (ref. CHMA 21.12.2020 Executive Summary pg. 2 Results of the Field Survey para 1, lines 1 and 2).
- 2) “The assessment has therefore confirmed that the subdivision proposal will have no impacts on any known Aboriginal heritage sites.” (ref. CHMA 21.12.2020 Executive Summary pg. 2 Results of the Field Survey para 1, lines 5, 6 and 7).
- 3) “On this basis, it is advised that there are no Aboriginal heritage constraints, or legal impediments to the subdivision proposal proceeding”. (ref. CHMA 21.12.2020, pg. 3, para 2).

- 4) “It is assessed that there is generally a low to very low potential for undetected Aboriginal heritage sites to occur within the study area footprint.” (ref. CHMA 21.12.2020, pg. 3 Recommendation 2, lines 1 and 2).

As stated previously the subject property is vacant with only fencing and a number of small dams. There is no evidence on site of any early European buildings or structures that may be considered to be of heritage significance. The site is not listed by the Tasmanian Heritage Council nor identified as a heritage place in the Historic Heritage Code of the SIPS 2015.

4.9 Sewer, Water and Stormwater Services

The subject property does not have reticulated water and sewer. The entire southern beaches area (Lewisham, Dodges Ferry and Carlton) do not have reticulated potable water nor sewer service. Given the proposed lot sizes on site stormwater disposal can be undertaken as it is in the remaining southern beaches area. Further comment regarding on site wastewater and stormwater disposal is addressed in Clause 6.6.

4.10 Other Services

The subject property is serviced with an electricity supply and this will be extended into the subdivision. Telecommunication services are also provided via both mobile service and underground. The Council provides a regular rubbish and recycling service.

5. Sorell Interim Planning Scheme 2015

The proposal relates to the Sorell Interim Planning Scheme 2015 in two ways. It requires an amendment to the zoning map as follows:

- Rezone the two titles that form the subject property from Rural Resource Zone to Rural Living Zone.
- Approximately 10 ha of the subject property will be designated as Rural Living Zone
- Approximately 30 ha of the subject property will be designated as Rural Living Zone – Area B

In addition to the above the proposal seeks approval for the following:

- Subdivision of the Rural Living Zone into 9 lots of a minimum of 1ha each
- Subdivision of the Rural Living Zone - Area B land into 3 lots of a minimum of 10ha each.

The above subdivision component of the proposal is dealt with as if the land is zoned as sought. The subdivision needs to be assessed against the provisions of the planning scheme particularly Clause 13.0 (Rural Living Zone) of Part D (Zones) and any relevant Codes (Part E)

5.1 Rezoning

The Scheme itself does not provide any guidance or statutory provisions that determine or need to be considered in respect to the rezoning. This is covered in the remainder of the report where it addresses the *Land Use Planning and Approvals Act 1993*, Southern Tasmania Regional Land Use Strategy 2010 – 2035 and other policies and strategies.

5.2 Proposed Subdivision

The proposed subdivision as stated above needs to be assessed against the SIPS 2015 and needs to demonstrate compliance with it to be approved. Assessment against the SIPS 2015 is addressed in the next section of the report.

6.0 Subdivision Assessment

As stated above compliance with the development standards of the zone needs to be achieved to approve a subdivision. To achieve compliance the proposed development needs to meet either the acceptable solution or the performance criteria of the relevant development standard. Meeting either the acceptable solution or performance criteria confirms compliance with the objective for the standard.

All twelve lots need to meet the same standards, with one exception, laid down in Clause 13.5 (Development Standards for Subdivision) of Part D (Zones) of the scheme. The only differentiation is that the lots in the area to be designated Rural Living Zone have a minimum lot size of 1ha. The lots in the area to be designated Rural Living Zone – Area B, have a minimum size of 10ha.

6.1 Clause 13.5.1 Lot Design

Clause 13.5.1 states:

Acceptable Solutions	Performance Criteria
AI The size of each lot must be no less than the following, except if for public open space a riparian or littoral reserve, or Utilities, Emergency services or Community meeting and entertainment use class, by or on behalf of the State Government, a	PI No Performance Criteria.

Council, a statutory authority, or a corporation all the shares of which are held by or on behalf of the State or by a statutory authority: as specified in Table 13.1.	
A2 The design of each lot must provide a minimum building area that is rectangular in shape and complies with all of the following, except if for public open space a riparian or littoral reserve or utilities; (a) clear of the frontage side and rear boundary setbacks; (b) not subject to any codes in this planning scheme; (c) clear of title restrictions such as easements and restrictive covenants; (d) has an average slope of no more than 1 in 5; (e) has a separation distance no less than: (i) 100 m from land zoned Rural Resource; (ii) 200 m from land zoned Significant Agriculture; (f) has a setback from land zoned Environmental Management no less than 100m (g) is a minimum of 30 m x 30 m in size.	P2 The design of each lot must contain a building area able to satisfy all of the following: (a) is reasonably capable of accommodating residential use and development; (b) meets any applicable standards in codes in this planning scheme; (c) enables future development to achieve reasonable solar access, given the slope and aspect of the land; (d) minimises the requirement for earth works, retaining walls, and cut & fill associated with future development; (e) is sufficiently separated from the land zoned Rural Resource and Significant Agriculture to prevent potential for land use conflict that would fetter non-sensitive use of that land, and the separation distance is no less than: (i) 40 m from land zoned Rural Resource; (ii) 80 m from land zoned Significant Agriculture; (f) is setback from land zoned Environmental Management to satisfy all of the following: (i) there is no significant impact from the development on environmental values; (ii) the potential for the spread of weeds or soil pathogens onto the land zoned Environmental Management is minimised; (iii) there is minimal potential for contaminated or sedimented water runoff impacting the land zoned

	Environmental Management; (iv) there are no reasonable and practical alternatives to developing close to land zoned Environmental Management.
A3 The frontage for each lot must be no less than the following, except if for public open space a riparian or littoral reserve or utilities and except if an internal lot: 40 m.	P3 The frontage of each lot must provide opportunity for reasonable vehicular and pedestrian access and must be no less than: 6m.
A4 No lot is an internal lot. [RI]	P4 An internal lot must satisfy all of the following: (a) access is from a road existing prior to the planning scheme coming into effect, unless site constraints make an internal lot configuration the only reasonable option to efficiently utilise land; (b) it is not reasonably possible to provide a new road to create a standard frontage lot; (c) the lot constitutes the only reasonable way to subdivide the rear of an existing lot; (d) the lot will contribute to the more efficient utilisation of rural living land; (e) the amenity of neighbouring land is unlikely to be unreasonably affected by subsequent development and use; (f) the lot has access to a road via an access strip, which is part of the lot, or a right-of-way, with a width of no less than 3.6m; (g) passing bays are provided at appropriate distances along the access strip to service the likely future use of the lot; (h) the access strip is adjacent to or combined with no more than three other internal lot

	access strips and it is not appropriate to provide access via a public road; (i) a sealed driveway is provided on the access strip prior to the sealing of the final plan. (j) the lot addresses and provides for passive surveillance of public open space and public rights of way if it fronts such public spaces.
A5 Setback from a new boundary for an existing building must comply with the relevant Acceptable Solution for setback.	P5 Setback from a new boundary for an existing building must satisfy the relevant Performance Criteria for setback.

Footnotes

[R1] Generally, new internal lots are not appropriate and any subdivisions in which new roads are constructed are not to include internal lots.

They should only be contemplated in existing developed areas (in order to make more efficient use of previously poorly subdivided land).

They may also be appropriate if fronting certain forms of public open space instead of a public road. Such arrangements may be designed into an area through the development of a Specific Area Plan.

The proposed subdivision meets all the above acceptable solutions as follows:

A1 – No lot is less than the size specified in Table 13.1 (See 6.5 below)

A2- Each lot shows a building envelope the meets the metrics required in subclause A2 (a) to A2 (g)

A3 – All lots have a frontage of greater than 40m

A4 – There are not internal lots

A5 – There are no existing buildings

6.2 Clause 13.5.2 Roads

Clause 13.5.2 states:

Acceptable Solutions	Performance Criteria
A1 The subdivision includes no new road.	P1 The arrangement and construction of roads within a subdivision must satisfy all of the following:

	(a) the appropriate and reasonable future subdivision of the entirety of any balance lot is not compromised; (b) the route and standard of roads accords with any relevant road network plan adopted by the Planning Authority; (c) the subdivision of any neighbouring or nearby land with subdivision potential is facilitated through the provision of connector roads and pedestrian paths, where appropriate, to common boundaries; (d) an acceptable level of access, safety, convenience and legibility is provided through a consistent road function hierarchy; (e) cul-de-sac and other terminated roads are not created, or their use in road layout design is kept to an absolute minimum; (f) internal lots are not created; (g) connectivity with the neighbourhood road network is maximised; (h) the travel distance between key destinations such as shops and services is minimised; (i) walking, cycling and the efficient movement of public transport is facilitated; (j) provision is made for bicycle infrastructure on new arterial and collector roads in accordance with Austroads Guide to Road Design Part 6A; (k) multiple escape routes are provided if in a bushfire prone area.
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The proposed subdivision includes a new road and therefore does not meet the acceptable solution however the performance criteria are met as follows:

- (a) There is no balance land created by the subdivision.
- (b) The road will be constructed to a standard approved by the Council
- (c) There is no requirement for connector roads to be provided to allow adjoining properties to be subdivided because they do not have access to existing public road
- (d) The proposed road is an extension of a local road (Baudin Road) that is connected to a collector road (Carlton River Road) and therefore reinforces the current road function hierarchy
- (e) The subdivision design is such that the site constraints (waterways, landslip, native vegetation etc) does not impact or is not impacted on. As such cul-de- sacs are required as part of the road design. Whilst there are two road terminations in the road design the proposal only results on one additional cul de sac in the existing

road network. The subdivision road proposed is an extension of a current road termination. The two cul-de-sacs are designed to allow for the turning of firefighting equipment which is difficult and hazardous at the current Baudin Road termination.

- (f) There are no internal lots created.
- (g) The extension to Baudin Road provides connectivity to the neighbourhood road network.
- (h) Travel distances to key destinations is not compromised
- (i) This clause is not relevant
- (j) This clause is not relevant
- (k) The subdivision design does not intend to provide physical access to Waterson Lane (two of the three 10ha lots will have frontage to Waterson Lane but will only have physical access to the new subdivision road). In an emergency situation the Waterson Lane could be used as a second escape route not only for the residents of the subdivision but existing residents in Baudin Road and Brue Court.

6.3 Clause 13.5.3 Ways and Public Open Space

Clause 13.5.3 states:

Acceptable Solutions	Performance Criteria
AI No Acceptable Solution.	PI The arrangement of ways and public open space within a subdivision must satisfy all of the following: (a) connections with any adjoining ways are provided through the provision of ways to the common boundary, as appropriate; (b) connections with any neighbouring land with subdivision potential is provided through the provision of ways to the common boundary, as appropriate; (c) connections with the neighbourhood road network are provided through the provision of ways to those roads, as appropriate; (d) topographical and other physical conditions of the site are appropriately accommodated in the design; (e) the route of new ways has regard to any pedestrian & cycle way or public open space plan adopted by the Planning Authority; (f) the route of new equestrian ways has regard to any equestrian trail plan adopted by the Planning Authority.
A2	P2

No Acceptable Solution.	Public Open Space must be provided as land or cash in lieu, in accordance with the relevant Council policy.
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There is no public open space provided as the proposed lots provide adequate space for the resident's recreational needs. There is no walking, horse trails or other public open space that can be linked to and or opened up by providing public open space.

To meet the above standard cash in lieu can be provided in accordance with any relevant Council policy.

6.4 Clause 13.5.4 Services

Clause 13.5.4 states:

Acceptable Solutions	Performance Criteria
A1 Each lot must be connected to a reticulated potable water supply where such a supply is available. ^{R1}	P1 No Performance Criteria.
A2 No Acceptable Solution.	P2 Each lot must be capable of accommodating an on-site wastewater treatment system adequate for the future use and development of the land.
A3 Each lot must be connected to a stormwater system able to service the building area by gravity. ^{R2}	P3 Each lot must be capable of accommodating an on-site stormwater management system adequate for the likely future use and development of the land.

A1 and P1 are not applicable as there is no reticulated water. The property has been determined as suitable for on-site waste-water disposal. Examination of specific test sites relative to the proposal plan that is part of the rezoning and concurrent subdivision application, confirms the suitability of the property for on-site waste-water disposal. The on-site waste-water assessment undertaken by SEAM Environmental and attached to this report concludes that P2 and P3 are met.

Given the above the objective for the standard that is to “ensure that the subdivision of land provides adequate services to meet the projected needs of future development” is considered met.

6.5 Table 13.1 Minimum Lot Sizes

Table 13.1 reads:

Rural Living Zone Area	Minimum Lot Size	Area defined by map overlay?
Rural Living Zone	1 ha	No
Rural Living Zone – Area B	10 ha	Yes

The proposed subdivision complies with the minimum lot sizes required. All lots in the land designated Rural Living Zone are 1ha or greater. All three lots in the area designated Rural Living Zone – Area B are in excess of 10ha.

In respect to the subdivision standards above the proposed subdivision has been designed to comply with them either by meeting the acceptable solution or the performance criteria.

6.6 Codes

In addition to the standards within Part D of the Scheme any subdivision needs to be considered against the Codes contained in Part E of the Scheme. There are some 23 Codes in the Scheme. Not all are applicable to the proposed subdivision. A number of Codes are applicable as they apply to zoning map overlays on the subject property, others apply by definition. The Codes that apply are considered below.

6.6.1 Bushfire-prone areas Code

The subject property is within a Bushfire Prone Area. The proposed subdivision has been designed to meet the acceptable solutions detailed in Clause E1.6.1 of the code. The report prepared by S.E.A.M. Environmental titled “Bushfire Assessment Report” recommends a bushfire management plan for each of the lots. Implementation of the management plan would ensure compliance with the Code.

The S.E.A.M. report comprehensively discusses and also calculates Bushfire Attack Level Assessment and Bushfire Hazard Management Areas and concludes: “The proposed new lots therefore meet the Acceptable Solutions A1 of Clause 1.6.1 provided the Hazard Management Areas listed above are adhered to.” (ref. S.E.A.M. Bushfire Assessment pg. 10, last 2 lines).

The S.E.A.M Environmental report states:

“The Bushfire Hazard Management Plan indicates access to each lot which can comply with Table E.1.”

“The proposal therefore meets the Acceptable Solutions A1(b) of Clause 1.6.2” (Bushfire Assessment, pg. 11, paras 3, 4).

6.6.2 Biodiversity Code

The subject land is not within a Biodiversity Protection Area. The Lowland Grassland Complex identified in the eastern corner of the subject property has not been identified in the North Barker report as requiring any protection.

6.6.3 Stormwater Management Code

The SEAM Environmental report titled Wastewater Land Assessment attached to this report states that:

“The storm water from any proposed dwelling will need to be directed away from the wastewater disposal area, into a dedicated absorption trench designed to handle storm water overflow for each lot. The use of water tanks will handle first flush impacts to any storm water disposal system.” (Ref Pg 15, 5.4 Stormwater disposal)

The lots that the proposed zoning will allow are all in excess of 10,000sq m so there is abundant area for overflow absorption. Road drainage will be undertaken in accordance with Council engineering requirements.

The above reinforces that the proposed subdivision is consistent with the Code and meets the development standards of the Code

6.6.4 Waterway and Coastal Protection Code

The design of the subdivision has taken into consideration the location of the three ephemeral watercourses on the subject property. Only four (Rural Living Zone – Area B lots 1, 2 and 3 and Rural Living Zone lot 9) of the proposed lots are subject to the overlay. Both building areas and Bushfire Hazard Management Areas (BHMA's) are located to be outside the Waterway and Coastal Protection Area and as such meet the performance criteria for subdivision in clause E11.8.

The Natural Values Assessment of the subject property by North Barker concluded “The performance criteria for subdivision within the Waterway and Coastal Protection can be met.” (Ref Pg 13, Lines 8 & 9).

The proposed subdivision meets the objectives of Clause E11.8.1 in that neither the works associated with the subdivision in proximity of the waterway nor future development will lead to an unnecessary or unacceptable impact on the limited natural values on the subject property.

6.6.6 Onsite Wastewater Code

The SEAM Environmental report titled “Wastewater Land Assessment” attached to this report states:

“As all lots meet the recommended lot sizes then it is considered that there is sufficient area on each lot for a dwelling, other outbuildings, access, storm water disposal and wastewater disposal.” (Ref Pg 16 Para 4 Conclusions and Recommendations)

The above reinforces that the proposed subdivision is consistent with the Code and meets the development standards of the Code

6.6.7 Landslide Code

A very small area of one of the proposed larger lots is identified as a landslide hazard. The area is a small tongue of land on the south eastern side of subject property. The area of approximately 500 square metres is well outside the proposed building envelope and BHMA, as such any future buildings on the site will meet the Code’s performance criteria contained in Clause E3.8.1.

7.0 Statutory Provisions

7.1 Land Use Planning and Approvals Act 1993- Schedule 1.

The rezoning and the development of 10 additional lots must further the objectives set out in Schedule 1 of the Act. The following identifies how that is achieved.

Objective of Schedule 1	Response to Objective
(a) to promote the sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity	The proposed amendment, in part, is for a minor expansion of Rural Living Zone land. The current zoning of the subject property is Rural Resource and adjoins an existing Rural Living Zone and a rural living community. The subject property is very limited in its use as a rural resource. The design of the proposed subdivision has been undertaken to ensure that it will not cause detrimental effects on the maintenance of ecological processes or genetic diversity.
(b) to provide for the fair, orderly and sustainable use and development of air, land and water	The land to be rezoned under the proposed amendment adjoins Rural Living Zone land to the south and is in the proximity to rural living community (albeit zoned Rural Resource) to the north and east.

	The proposed amendment represents a fair, orderly and sustainable use of land and is consistent with the policies under both the Sorell Land Supply Strategy and the Southern Tasmania Regional Land Use Strategy.
(c) to encourage public involvement in resource management and planning	The public exhibition process required to be undertaken will ensure public involvement is achieved. The Scheme amendment and subdivision will undergo public exhibition therefore allowing public involvement in both aspects of what is proposed.
(d) to facilitate economic development in accordance with the objectives set out in paragraphs (a), (b) and (c)	Economic development as a result of future development of the land for residential purposes is facilitated. As such consistency with the objectives set out in paragraphs (a), (b) and (c) is achieved.
(e) to promote the sharing of responsibility for resource management and planning between the different spheres of Government, the community and industry in the State	The responsibility for resource management is shared by the various agents of government, industry and the community through the amendment process.

Part 2

(a) to require sound strategic planning and co-ordinated action by State and local government	The subject land is located adjoining Rural Living Zone land. The rezoning to Rural Living represents a small increase in land for that purpose. Opportunity for further similar development is constrained by the subdivision layout. The planning scheme amendment process enable coordinated action by either State or local government.
(b) to establish a system of planning instruments to be the principal way of setting objectives, policies and controls for the use, development and protection of land	What is proposed in itself does not establish a system of planning instruments but is subject to existing objectives, policies and controls for the use development and protection of land.
(c) to ensure that the effects on the environment are considered and provide for explicit consideration of social and economic effects when decisions are made about the use and development of land	The effects on the environment arising from the future development of the proposed lots can be adequately considered under the existing and future planning scheme provisions. Consideration of the effects of the proposed development on the environment are considered in the SEAM and North Barker assessments

(d) to require land use and development planning and policy to be easily integrated with environmental, social, economic, conservation and resource management policies at State, regional and municipal levels	This report's assessment of the proposed amendment against the relevant State Policies, the Southern Tasmania Regional Land Use Strategy and Sorell Land Supply Strategy demonstrates the integration of land use and development planning with environmental, social, economic, conservation and resource management policies
(e) to provide for the consolidation of approvals for land use or development and related matters, and to co-ordinate planning approvals with related approvals	The proposed amendment aids this objective by providing details of the intended subdivision layout.
(f) to promote the health and wellbeing of all Tasmanians and visitors to Tasmania by ensuring a pleasant, efficient and safe working, living and recreational environment for all Tasmanians and visitors to Tasmania	Additional residential land proposed provides for a range of lifestyle opportunities.
(g) to conserve those buildings, areas or other places which are of scientific, aesthetic, architectural or historic interest, or otherwise of special cultural value.	There are no buildings or other places of historic cultural heritage significance affected by the proposed amendment.
(h) to protect public infrastructure and other assets and enable the orderly provision and co-ordination of public utilities and other facilities for the benefit of the community; and	The proposed amendment does not have any significant impact on public infrastructure.
(i) to provide a planning framework which fully considers land capability.	The proposed amendment has been considered in the context of the land capability of the subject property. Refer to Agricultural and Natural Values Assessments.

7.2 State Policies

The State Policies applicable to the proposed amendment and development are:

- State Policy on the Protection of Agricultural Land 2009
- State Policy on Water Quality Management 1997
- National Environmental Protection Measures (NEPMs)

7.2.1 State Policy on the Protection of Agricultural Land 2009

The overriding Objective of the State Policy on the Protection of Agricultural Land is to:

“enable the sustainable development of agriculture by minimising:

- (a) conflict with or interference from other land uses; and
- (b) non-agricultural use or development on agricultural land that precludes the return of that land to agricultural use. “

The above Objective along with a number of Principles are required to be considered to ensure the proposal is consistent with the Policy. The relevant Principles include:

- Agricultural land is a valuable resource and its use for the sustainable development of agriculture should not be unreasonably confined or restrained by non-agricultural use or development.
- The protection of non-prime agricultural land from conversion to non-agricultural use will be determined through consideration of the local and regional significance of that land for agricultural use.

As stated in this report the surrounding land uses are primarily residential. There is adjoining land zoned to allow and protect agricultural use. Such use is limited and primarily grazing with stock at a low density.

The proposed subdivision layout has been designed to ensure that any adjoining agricultural activities is not unreasonably confined or restrained by non-agricultural use or development. This is achieved by having the larger 10ha lots interfacing with the land zoned for agricultural use. These larger lots allow for residential use to be located suitable distances from the agricultural uses. The larger lots provide a ‘buffer’ between the smaller 1ha lots proposed and the low level agricultural use in the lots to the north and east.

The report titled “Agricultural Assessment of Proposed Development of titles 169070/1 and 119311/1 Waterson Lane, Carlton” that forms part of this submission prepared by Pinion Advisory assessed compliance with the policy and commented on all 11 of the Principles in the Policy. It concluded that “the proposed development is consistent with the applicable PAL policy principles” (Ref Pg. 28. 9.0 Pt 7 Conclusions)

7.2.2 Water Quality Management 1997

The Purpose of State Policy on the Water Quality Management 1997 is:

To achieve the sustainable management of Tasmania's surface water and groundwater resources by protecting or enhancing their qualities while allowing for sustainable

development in accordance with the objectives of Tasmania's Resource Management and Planning System. (Schedule 1 of the State Policies and Projects Act 1993)

The report prepared by SEAM Environmental and attached demonstrates that what is proposed will be consistent with the above Policy's purpose.

7.2.3 National Environmental Protection Measures (NEPMs)

National Environmental Protection Measures (NEPMs) are developed under the National Environment Protection Council (Tasmania) Act 1995 and outline objectives and protections for aspects of the environment. Section 12A of the State Policies and Projects Act 1993 provides NEPMs with the status of a State Policy.

Seven NEPMs have been made to date that deal with:

- Ambient air quality;
- Air Toxins;
- Assessment of Site Contamination;
- Diesel Vehicle Emissions;
- Movement of Controlled Waste Between States and Territories;
- National Pollutant Inventory; and
- Used Packaging Materials.

None of these NEPMs are considered relevant to this application.

8.0 Strategies

8.1 Southern Tasmania Regional Land Use Strategy 2010 – 2035

Section 30O of the Act requires that an amendment to an interim planning scheme is in as far as practicable, consistent with the regional land use strategy.

The Southern Tasmania Regional Land Use Strategy (the Strategy) was amended in May 2018 and came into effect on the 9th May 2018. Part C of the Strategy identifies the strategies for a number of criteria related to future land use. Clause 19.5.2 of Part C identifies the regional growth management strategy for settlement and residential development. The clause states:

The growth management strategies for the settlements across the region are divided into four categories as follows (the percentage growth is calculated as the percentage of the number of dwellings existing at the declaration date that can occur across the 25 year planning period):

- High Growth - 20% to 30% increase in no. of potential dwellings.
- Moderate Growth - 10% to 20% increase in no. of potential dwellings.
- Low Growth - less than 10% increase in no. of potential dwellings.

- Very Low Growth - no new potential dwellings except single dwellings on existing lots or where there is existing low density subdivision potential subject to demonstrating that:
 - there will be no off-site impacts from on-site waste water disposal;
 - there is adequate provision of potable water either through reticulation or tank water; and
 - hazard and natural values constraints are adequately addressed.

The subject property is covered by both the Carlton and Carlton River localities. Approximately 75% of the subject site is located in the Carlton locality the remainder in the Carlton River locality. Of the twelve lots proposed in the subdivision one 1ha lot and a larger part of one 10ha is within the Carlton River locality.

Table 3 of the Strategy identifies “Carlton Beach”. There is no Carlton Beach identified as a locality. Carlton is the identified locality on the LIST. It is concluded that the strategy is referring to Carlton.

Table 3 of the Strategy identifies the growth strategy for “Carlton Beach” as Very Low.

The Carlton locality contains a mixture of lot sizes that reflect historic and current zoning controls. In general terms the lots are 1000m² or less, 1000m² – 2000m² and 2000m² or greater. In total there are 725 titles with a zoning that would enable residential development to occur (obtained in April 2020 by interrogation of LIST cadastral data). Of the 725 titles 49 are vacant (obtained April 2020 by interrogation of LIST ESRI World Imagery satellite data and subsequent ground truthing).

There SIPS 2015 has the majority of the land in the locality covered with three zones, the Low Density Residential, Rural Living and Rural Resource zones. The Low Density Residential zoning sets a minimum lot size of 2000m². The Rural Living Zone is subject to an overlay defining it as Rural Living Zone Area B which sets a minimum lot size of 10ha. The Rural Resource zone has a minimum lot size of 40ha.

There are a number of lots within the Low Density Residential zone that are of a size that would numerically allow for lots to meet the minimum standard of 2000m². However given minimum frontage a number of these would render further subdivision void. Of the lots capable of development in the zone the potential yield would be 24 lots

The minimum lot size of 10ha in the Rural Living Zone Area B would not allow any existing titles to be further subdivided. A combination of lot size and frontage to a road would inhibit the existing titles in the Rural Resource Zone from further subdivision.

Mathematically the growth potential of the “Carlton Beach” locality based on existing and potential titles as at the declaration date of the Strategy (9/5/18) is 10%.

There are a number of factors related to whether the “mathematical” growth potential can be achieved. There are only 3 vacant lots that can be developed into multiple titles. Two of these will realise 6 lots each and the third and largest (not owned privately but by

a charitable organisation) another 12 lots. All these lots have existing developments that may defer further subdivision.

Other reasons the smaller sized existing vacant land may not be developed include:

- There are a number of multi title properties with a dwelling that are unlikely to be further developed and retained as a “larger holding” as a personal preference.
- There are titles that for a number of reasons (subject to inundation, unsuitable for on-site waste-water disposal) that may never be developed.
- There is evidence of lots remaining vacant for extended periods. e.g. several titles created in 1966 remain vacant (one having being owned by one owner for 30 years).
- Existing vacant rural resource zoned land that may not be utilised for residential use (residential use is discretionary in the zone)

A combination of the above factors would create a smaller pool of vacant lots that are likely to be developed over the remainder of the 25 year planning period. The proposal to rezone and create 10 additional lots is compliant with the growth management strategy in that approval of the proposed development will not result in any greater growth than the current calculated potential.

The Carlton River locality (stated as “all other settlements” in the Strategy) that covers part of the subject property is identified as very low growth. Clause 19.5.2 above however allows potential dwellings “where there is existing low density subdivision potential subject to demonstrating” three matters. Those matters are addressed as follows:

1. There will be no off-site impacts from on-site waste water disposal.

There has been an onsite waste water assessment undertaken and it demonstrates that there is no impact. See report from SEAM Environmental included with the submitted documents.

2. There is adequate provision of potable water either through reticulation or tanks water.

The entire Southern Beaches area relies on tank water through either rain water capture or potable water delivery. The proposal will not impact on the capacity of the area to be serviced with potable water deliveries.

3. Hazard and natural values constraints are adequately addressed

There has been a natural values assessment undertaken (refer to report from North Baker) that has identified any natural values. The proposed subdivision layout has been designed to avoid an area of low landslip risk and flooding (avoiding the ephemeral watercourses and the area nearer the Carlton River)

Married to the above are the regional policies to underpin the strategies. In respect to the proposal, regardless of part of the subject property being located in the Carlton locality and the balance being located in the Carlton River locality clauses SD 1.3(a) and (c) of the Strategy are applicable. SD 1.3 (a) and (c) reads:

SD 1.3 Support the consolidation of existing settlements by restricting the application of rural living and environmental living zones to existing rural living and environmental living communities. Land not currently zoned for such use may only be zoned for such use where one or more of the following applies:

a. Recognition of existing rural living or environmental living communities, regardless of current zoning. Where not currently explicitly zoned for such use, existing communities may be rezoned to rural living or environmental living provided:

(i) the area of the community is either substantial in size or adjoins a settlement and will not be required for any other settlement purpose; and

(ii) only limited subdivision potential is created by rezoning.

c. Rezoning areas that provide for the infill or consolidation of existing rural living communities, in accordance with the following:

(i) the land must predominantly share common boundaries with:

- existing Rural Living zoned land; or
- rural living communities which comply with SRD 1.3(a);

(ii) the amount of land rezoned to rural living must not constitute a significant increase in the immediate locality;

(iii) development and use of the land for rural living purposes will not increase the potential for land use conflict with other uses;

(iv) such areas are able to be integrated with the adjacent existing rural living area by connections for pedestrian and vehicular movement. If any new roads are possible, a structure plan will be required to show how the new area will integrate with the established Rural Living zoned area;

(v) the land rezoned to rural living use is not designated as Significant Agricultural Land;

(vi) the land rezoned to rural living use is not adjacent to the Urban Growth Boundary for Greater Hobart or identified for future urban growth; and

(vii) the management of risks and values on the land rezoned to rural living use is consistent with the policies in this Strategy.

The area to both the north and south of the subject property is an established rural living and “environmental” living community. As such SD 1.3 (a) can be applied. Subclauses (i) and (ii) are met as the area of the community is substantial in size and the area to be rezoned creates only limited subdivision potential.

SD3.1(c) above sets a number of criteria which the proposal needs to comply with. The following demonstrates that compliance

- (i) The adjoining land to the south is zoned Rural Living
- (ii) The area to be rezoned is approximately 40ha. Of the 40ha only 9.0ha will be divided into 1ha lots as provided for in Table 13.1 of the planning scheme. The proposal is to create 9 1ha lots in total. That is an increase of less than 30% on the lots which exist in the land zoned Rural Living adjoining the property’s southern boundary.

The three lots to be created under the Rural Living Zone – Area B zoning whilst being zoned Rural Living are more akin to the properties to the north. Those properties are zoned Rural Resource however are primarily utilised and appear as a rural living community.

Whilst three 10ha Rural Living Zone – Area B lots are proposed there is only one additional lot created. The subject property is currently two “subminimum lots” reflective of the lot sizes to the north. The one additional lot is also an insignificant increase.

- (iii) This report addresses this in section 7.2.1 and concludes there is no land use conflict. In addition, within the proposal, there is a reduction in the number of lots that have a direct interface between Rural Living zoned and Rural Resource zoned land from 14 (existing lots in Baudin Road, Brue Court and Carlton River Road) to 3. The 3 lots being approximately 10ha in area further reduces likelihood of land use conflict.
- (iv) The proposed development will be serviced by an extension of Baudin Road that currently services the rural living zone to the south.
- (v) The land is not designated as Significant Rural Land
- (vi) The proposed development is not adjacent to the Urban Growth Boundary for Greater Hobart
- (vii) The proposed development avoids all risks (landslip, inundation) and natural values (native vegetation)

The subject property provides an opportunity for both ‘infill’ and ‘consolidation’ that reflects the surrounding land use and subsequent development. The subject property is sandwiched between Rural Living Zone land that has been developed for that purpose (i.e. single dwellings on 1ha lots) to the south and Rural Resource Zone land to the north, east and west that is used for rural living however at a lower density (average of 1 dwelling per 30ha).

The spatial distribution of the lot sizes adjoining the site provides an opportunity for gradation of density from the current Baudin Road/ Brue Court subdivision (1ha): a

minor 9 1ha lot extension of that; to the proposed 10ha lots, then 12-20ha lots immediately to the north and east; through to 40ha lots; and then the larger of the lots (70ha) in Josephs Road.

Implementation of the proposal will achieve an obvious, but limited extension to the current 'higher density' rural living in Baudin Road/Brue Court through to the existing 'medium density' rural living north and east of Waterson Lane to the 'low density' rural living in Josephs Road.

This sensitive and strategic gradation will minimise any likelihood of conflict between the future utilisation of the various lots across the three different "rural living" densities outlined in the paragraph above.

What is proposed will be a limited nine lot expansion of the current Rural Living Zone at Baudin Road. This enclave will be effectively 'locked down' by the three 10.0ha Rural Living Zone – Area B lots that will utilise the balance of the subject property. These three lots provide the transition to the larger Rural Resource Zone lots to the north, east and west. Future subdivision of the 10ha lots into smaller lots (i.e. 1.0ha) lots would be difficult to justify from a strategic or environmental perspective.

Environmental constraints on the site have been addressed by the subdivision layout. The identified constraints (watercourses, native vegetation) are mainly contained within the proposed Rural Living Zone – Area B 10.0ha lots that utilise the balance of the subject property.

Lot 9, 1.0 ha Rural Living Zone lot is the exception to the extent of the WCPA overlay "affecting a minor portion of" the proposed lot. (Refer Plan pg 36, this report) However, the lot is large enough in area so that both the building envelope and the access can avoid the overlay.

"Amendments to Lot 9 have ensured the indicative building area is set back sufficiently from the WCPA and it is possible to site the access to ensure that the driveway avoids the overlay" (Refer North Barker report, pg 12, para 1.)

"The overlay on Lot 9 is part of a drainage line with a very small catchment and is not distinguishable from the land either side." (Ref North Barker report, pg 12 para 1)

The indicative building areas/envelopes are shown on the lots that are compliant with the zone setbacks. The indicative building areas/envelopes have no natural limiting factors within them. This allows the lot to be utilised for residential purposes and not be impacted by the constraints. It also limits the future subdivision of the titles given those constraints would hinder or prevent residential development.

The proposed expansion of the adjoining Rural Living Zone by 9 1.0ha and one additional larger (10ha) lot (three 10.0ha lots in total utilising two 'balance land titles') is sensitive to the amenity of the area and does not constitute a significant increase of what is already established.

The proposal is consistent with the above regional strategy and as such the requirement of S300 of the Act is met.

8.2 Sorell Land Supply Strategy – Stage 2 Assessment of Expansion Options 2019 update.

The above strategy identified 20 locations as “residential expansion options” within the Sorell Council area. The strategy ranked the 20 sites using a number of primary and secondary criteria. The scoring for each of the criteria were detailed in table 4 of the strategy.

The strategy did not identify the subject property. It is somewhat perplexing as to why the subject property or other nearby property were not considered an option. The regional policy for settlement and residential development within the Southern Tasmania Regional Land Use Strategy encourages the consolidation of rural living communities. It states that land rezoned to rural living “must predominately share common boundaries with existing rural living zoned land.” There is an existing rural living zone of approximately 31ha adjacent to southern boundary of the subject property.

All the existing rural living zoned land has been subdivided to its full potential and 30 lots exist. These lots are located both to the eastern and western side of Baudin Road and Brue Court. Baudin Road itself terminates with a 20.0m wide road reservation in the centre of the property’s southern boundary. The subject property is therefore a suitable candidate for a further “residential expansion option”

If the subject property had been identified in the strategy it would have been ranked high in the assessment of options (Table 5 of the Strategy). Utilising the fifteen primary criteria and eleven secondary criteria and scoring in accordance with Table 4 of the strategy a score of 48.5 is achieved. (see table below). That score is the third highest (the higher scores being 50 and 49.5) on the ranking of the 20 residential expansion options identified by the authors. The only criteria that the subject property does not score at all are public transport, water, sewerage and stormwater

Public transport is however available from nearby with Dodges Ferry/Carlton having 8 bus services a day on weekdays and 4 services on weekends. The subject property whilst not being identified in the strategy it should not be dismissed as a suitable residential expansion option.

Other options in the Strategy are clearly not suitable. Option R18 was considered by the Tasmanian Planning Commission in 2017. A proposal to rezone almost 200ha of land in the Dodges Ferry/Lewisham area was ranked 14th in Table 5 of the strategy. The rezoning did not provide any subdivision proposal and would have resulted in a significant increase in dwelling yield potential. The Commission in rejecting the proposed amendment commented that “the broader strategic implications for the region resulting from a significant increase in Rural Living have not been considered in the Land Supply Strategy”

The Commission also identified disadvantages of the site raising a total of 6 criteria that were of concern. The criteria included a requirement for an aboriginal cultural investigation, biodiversity protection overlay, slope and landslide hazard area and others.

The subject property at the northern end of Baudin Road does not have any key disadvantages. The lack of reticulated water and sewerage should not be considered a “disadvantage” (the Commission included them as a disadvantage in the decision referred to above). The entire southern beaches are without reticulated water or sewerage. Sorell is the nearest town with such services 15km from the subject property. As stated in 6.4 above assessment of the subject property for on-site waste-water disposal has been undertaken and found suitable.

In contrast to Option R18 the Commission has recently approved a rezoning to Rural Living in Old Forcett Road of land that was not identified in the strategy as a residential expansion option. The property is the subject of a Biodiversity Protection Area overlay which would have rated it lower (had it been identified as a residential expansion option) than the property that is the subject of this report.

The Land Supply Strategy has been adopted by the Council to provide options for residential expansion. It is the ideal tool to use to provide justification or not as to the suitability of the subject property, despite the property inadvertently or unintentionally not being identified in the Strategy for residential expansion.

Achieving a ranking of 3 for the subject property utilising the fifteen primary and eleven secondary criteria used in the Strategy would suggest that the subject property’s omission was not justified. The ranking places the subject property ahead of eighteen other options identified in the Strategy. The subject property should have been included as a high ranking expansion option that is consistent with both the Land Supply Strategy and the Southern Tasmania Regional Land Use Strategy

Table I – Ranking of subject property against criteria in the Sorell Land Use Strategy.

Primary Criteria	Score
Not significant agricultural land	2
Not in Irrigation Scheme	2
Avoids significant environmental constraints– Attenuation Area	2
Avoids significant environmental constraints– Biodiversity Protection Area	2
Avoids significant environmental constraints– Coastal Erosion Hazard Area	2
Avoids significant environmental constraints – Coastal Inundation Hazard Area	2
Avoids significant environmental constraints– Landslide Hazard Area (Med)	1
Road access	2
Sufficient road capacity Access to public transport	0
Can be easily serviced with reticulated water	0
Can be easily serviced with reticulated sewerage	0
Can be easily serviced with drainage infrastructure	0
Can be easily serviced with electricity	2
Can be easily serviced with telecommunications	2
Subtotal (un-weighted)	19
Weighting Subtotal (weighted)	1.5
Subtotal (weighted)	28.5

Secondary Criteria	Score
Avoids steep topography	2
Unconstrained by nearby industrial uses	2
Avoids likely environmental constraints–Landslide Hazard Area (Low)	1
Avoids likely environmental constraints – Electricity Transmission Infrastructure Protection	2
Avoids likely environmental constraints – Heritage Area	2
Avoids likely environmental constraints–Scenic Landscape Area	2
Avoids likely environmental constraints–Waterway and Coastal Protection Area	1
Avoids aboriginal heritage sites	2
Minimal number of landowners	2
Available for prompt use	2
Proximity to existing urban area	2
Subtotal	20
Total	48.5
Rank	3

8.3 Sorell Strategic Plan 2019- 2029

The Sorell Council Strategic Plan 2019-2029 outlines the following objectives for the next ten years:

1. To Facilitate Regional Growth.
2. Responsible Stewardship and a Sustainable Organisation.
3. To Ensure a Liveable and Inclusive Community.
4. Increased Community Confidence in Council.

The Council has adopted the Sorell Land Supply Strategy to facilitate regional growth. Part 8.2 of this submission identifies that what is proposed is consistent with the Sorell Land Supply Strategy.

What is proposed is also consistent with the objective to ensure a liveable and inclusive community. The resultant development will consolidate rural living land use adjacent to an existing rural living “community”.

9.0 Conclusion

The above report and the supporting documentation:

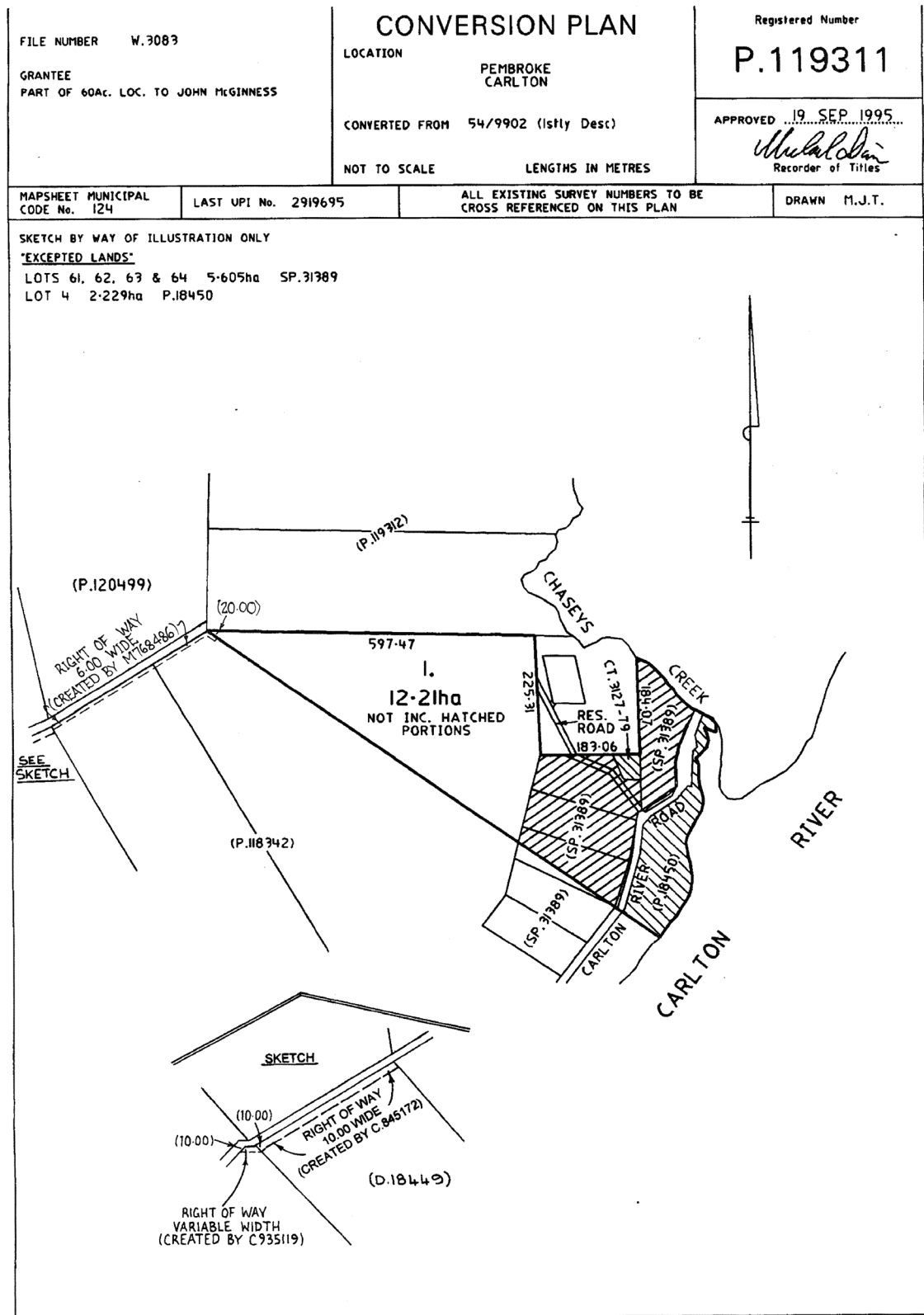
- Identifies that the current zoning of the subject property is not suitable.
- Demonstrates that the proposed rezoning is consistent with the Objectives of the Act.
- Confirms compliance with the various provisions of the applicable Strategies and Policies.
- Identifies how the subdivision complies with the development standards for the zoning sought.
- Addresses all the environmental constraints and opportunities
- Presents a subdivision layout that reflects the surrounding land use and density.

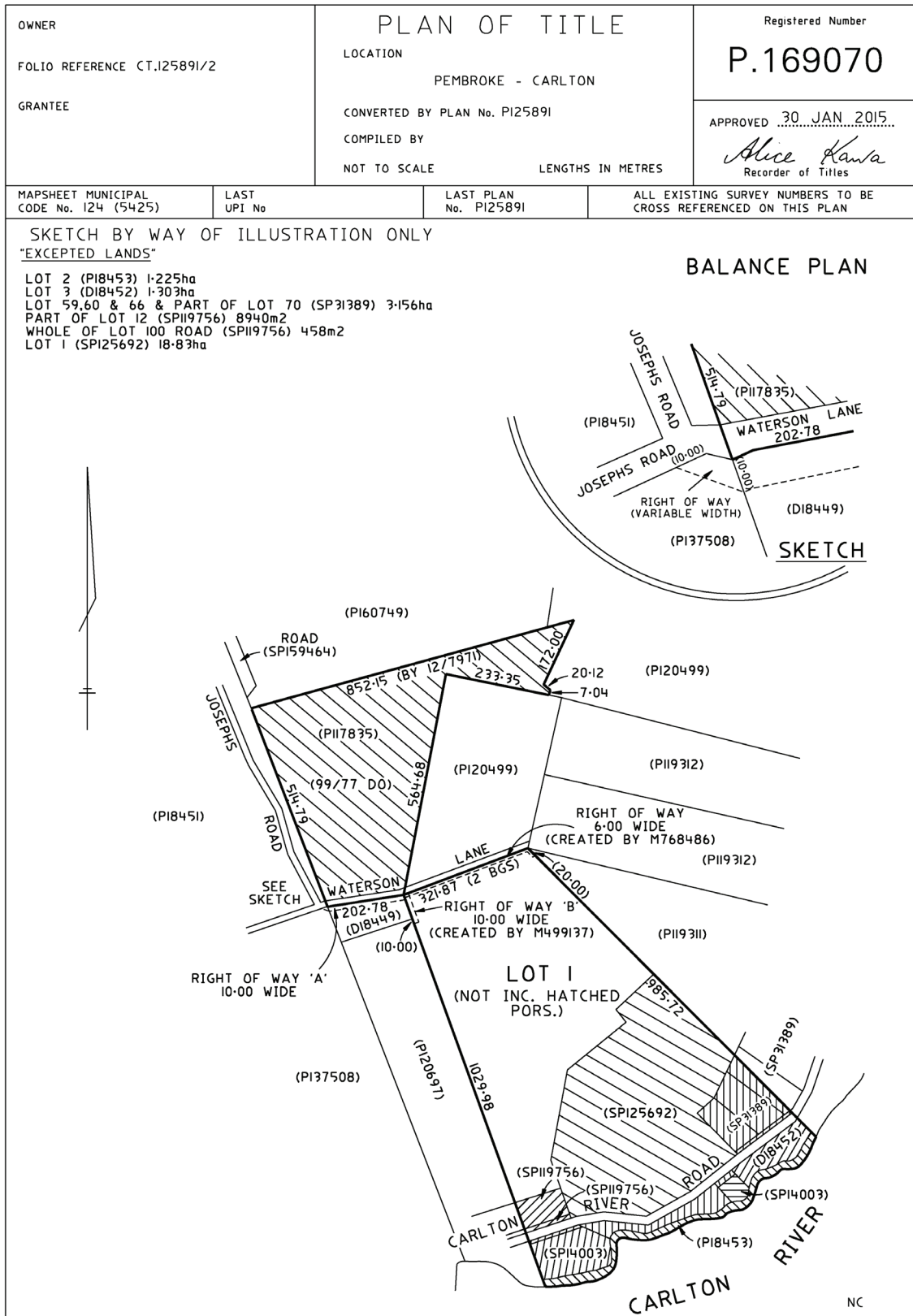
Overall the proposal is strategically sound and justifies the proposed amendment referred to in 2.1 (Proposal). It reflects and reinforces the strategies that are in place to guide the future development of the Sorell Municipal Area. The proposal provides for a development that is a logical, practicable and consistent with the spatial layout of development in the vicinity and the Southern Beaches generally.

The rezoning will be, in part, an extension of the adjoining Rural Living Zone by only nine 1.0ha lots that is sensitive to the existing residential amenity of the Baudin Road area. This will finalise residential development in Baudin Road.

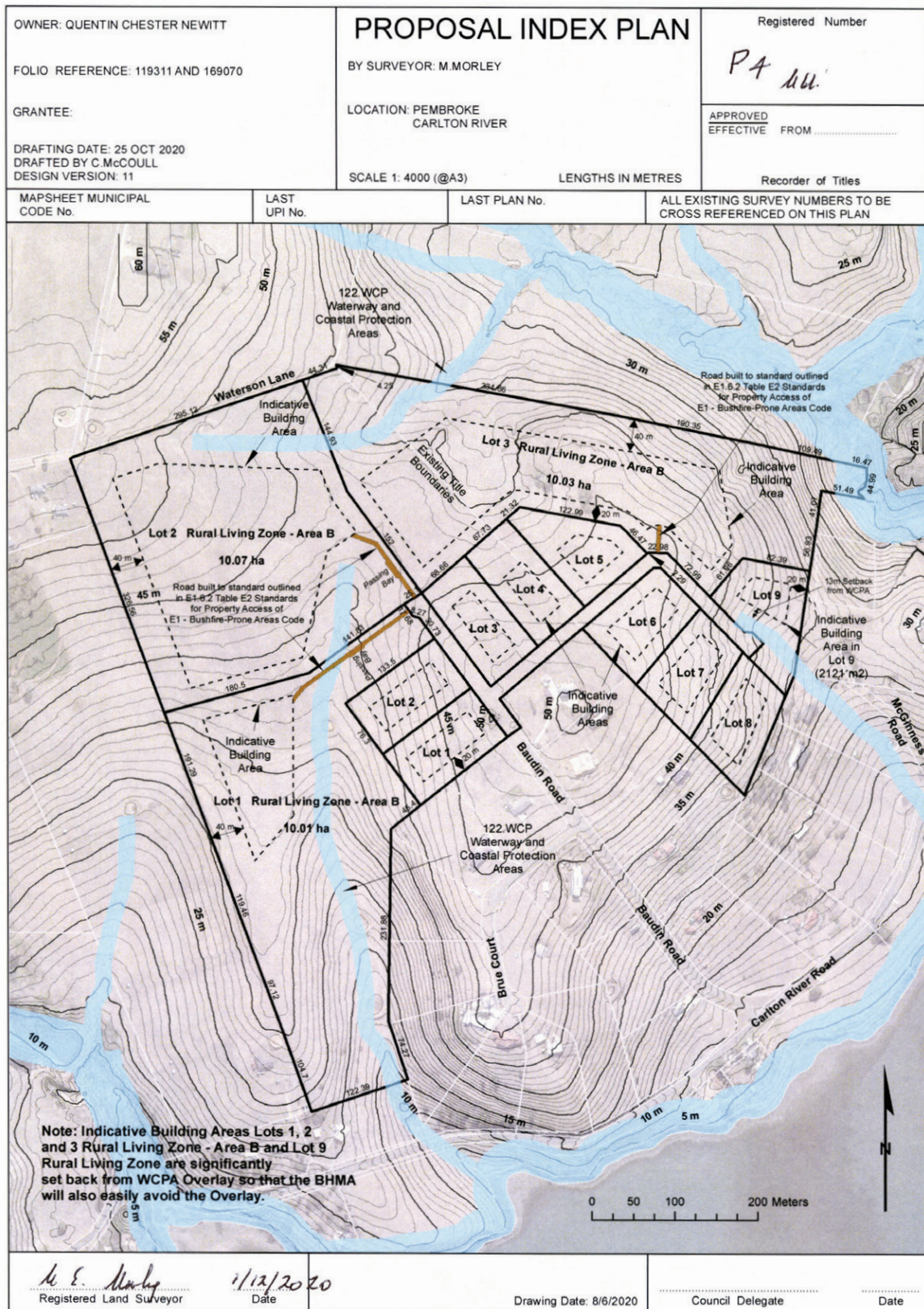
Rezoning of the balance land of the subject property to Rural Living Zone – Area B, to create only three 10ha lots, will result in an appropriate area of transition and buffer between the Rural Living Zone lots and the Rural Resource Zone land located mainly to the north and east.

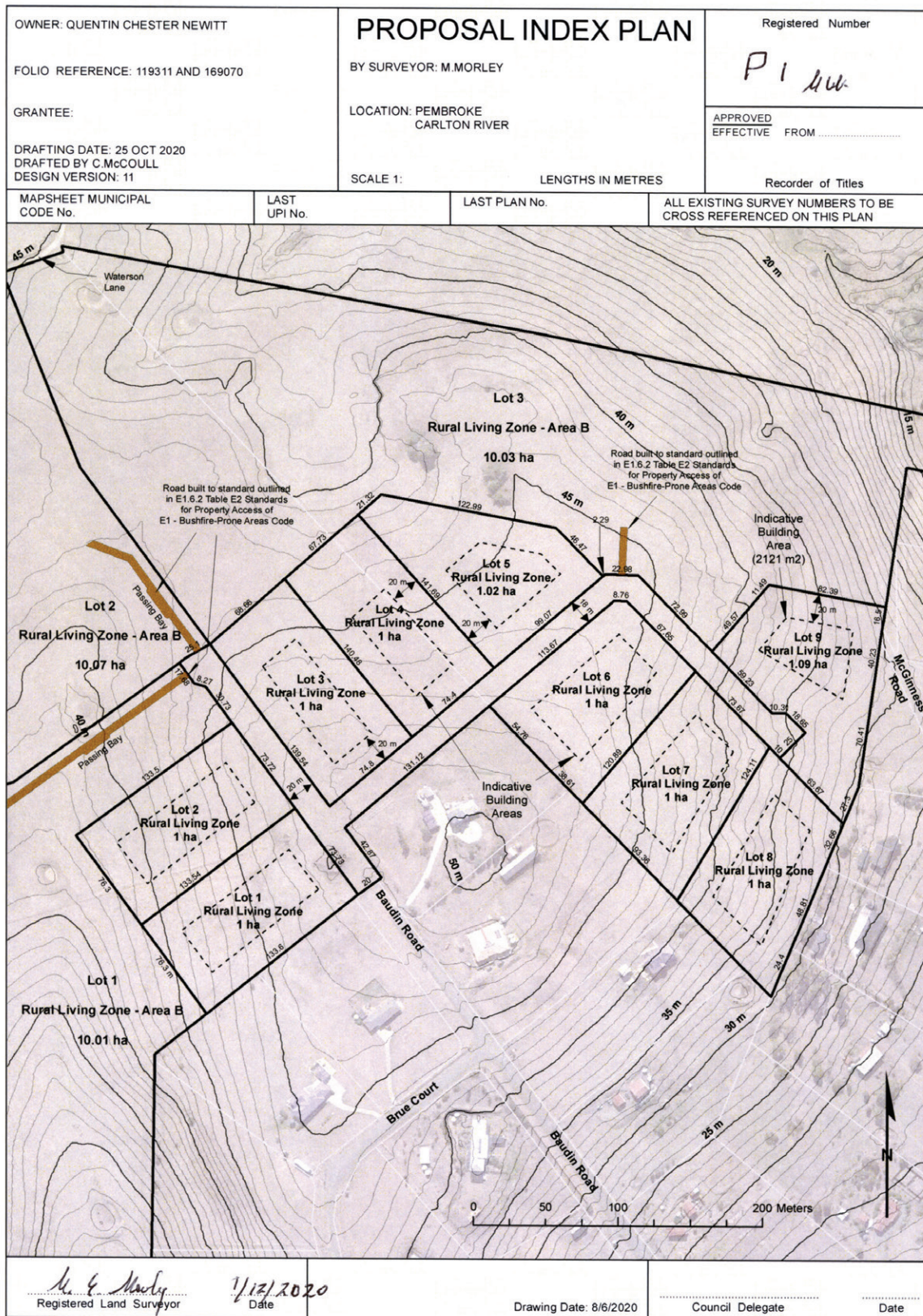
Appendix A – Title Documentation

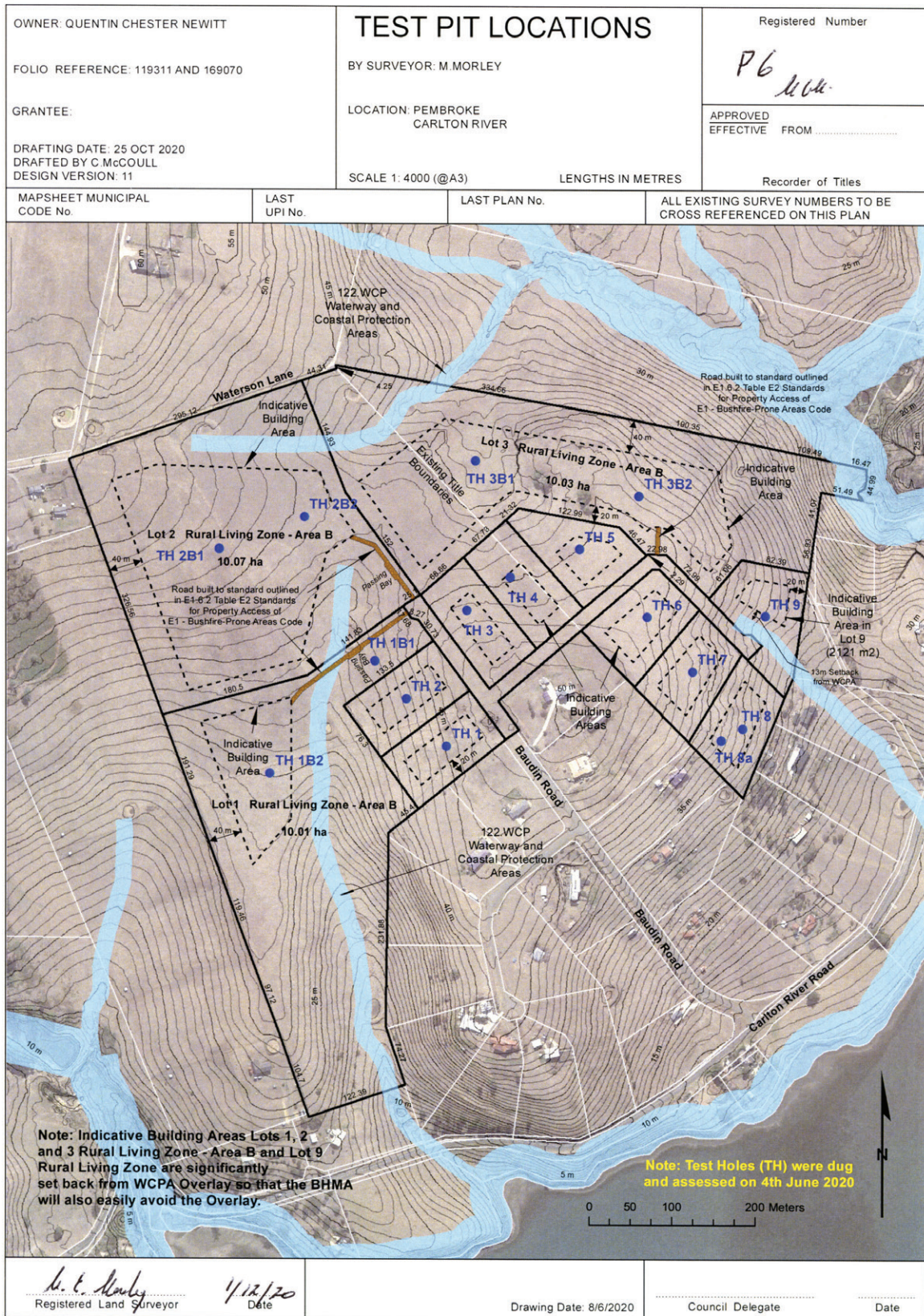


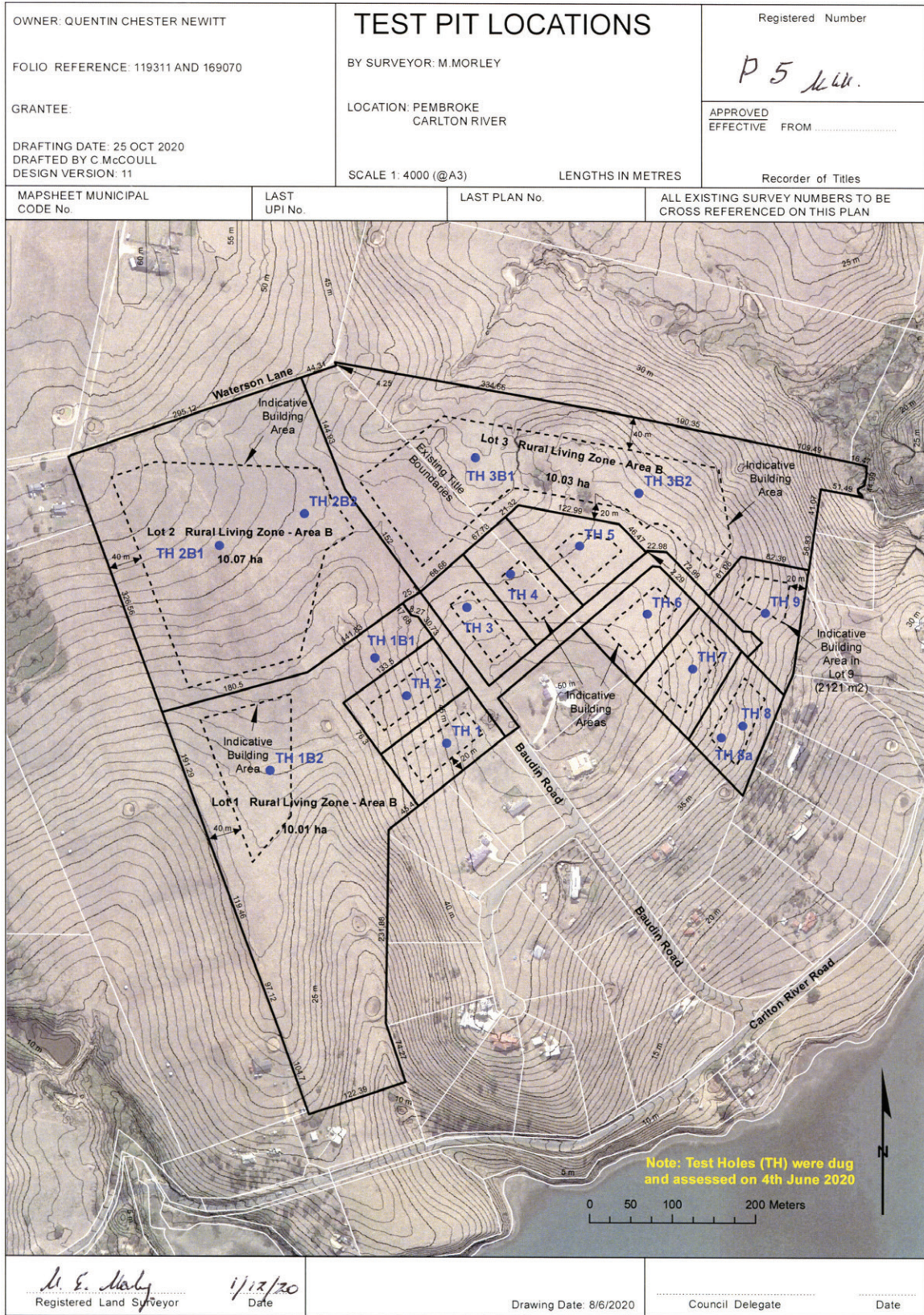


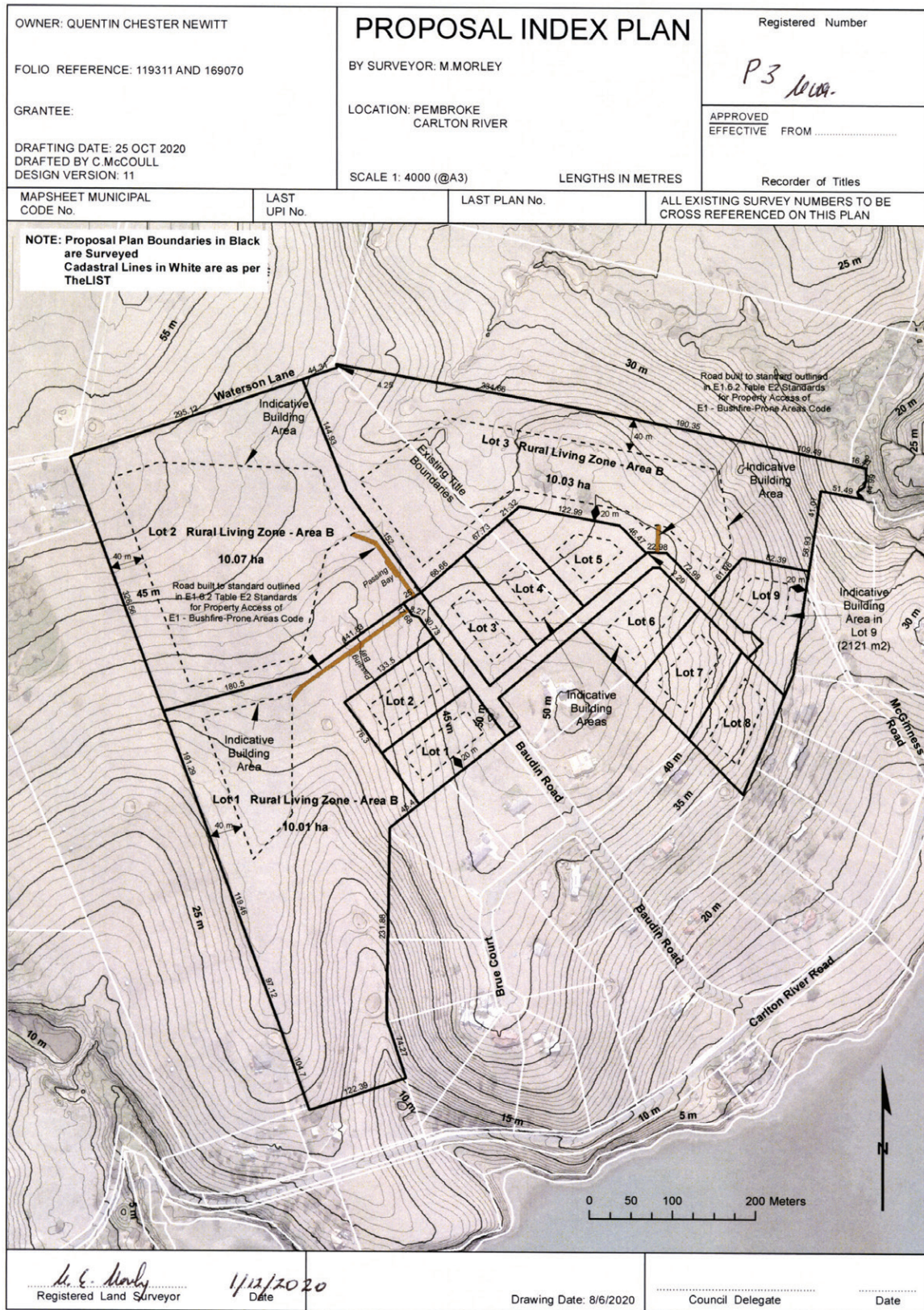
Appendix B – Proposal Plans











MICHAEL E. MORLEY

Land and Engineering Surveys, Land Development Planning

Phone: Mobile 0410 612 176

ADDRESS: 166 Faulkners Road, Glenlusk, TAS 7012

Email: morlevglobal@gmail.com

Registered Surveyor No 191

**Proposal Plans (P1 – P4)
and Status of Waterson Lane
for
Rezoning and Subdivision
of
Two Land Titles: CT 169070/1 & CT 119311/1
Area (approx.) 41 hectares
off
BAUDIN ROAD (northern end), CARLTON RIVER, 7173**

December 2020

Applicant & Property Owner: Q. C. Newitt.

CONTENTS

Order of Documents

1. Covering letter dated 3rd February 2021 to Mr J. Molnar, Senior Planner, Sorell Council.
2. Title information for the Applicant's adjoining properties, (CT169070/1 & CT119311/1).
3. Proposal Index **Plan P1**. Highlights the nine x 1.0 ha Rural Living Zone lots.

Proposal Index **Plan P2**. An overview of the entire property that also includes the three x 10 ha Rural Living Zone – Area B lots.

Proposal Index **Plan P3**. Shows the white Cadastral lines of the various lot boundaries that adjoin the property.

Proposal Index **Plan P4**. An overview of the entire property subdivided in accordance with the corresponding zones and the Waterway and Coastal Protection Area overlay as it applies to the Applicant's property.

Notes: Thicker orange lines represent position of indicative private accesses from the subdivision road to the respective building areas of the three larger 10.0 ha lots (part of compliance to Bushfire Prone Area Code).

4. Surveyor's Notes dated 10th December 2020, 1 – 16 are specific to the Proposal Plans.
5. Letter dated 29th September, 2020 to Quentin Newitt, regarding Road Widening and the Status of Waterson Lane; concluding that it is not a Public Road.
6. Five documents that form part of the evidence for the conclusions stated in the previous letter:

Document 1: Title detail (V.169070 F.1) of the main of two titles forming the subject property.

Document 2: Plan of Title 169070 (Shown as Lot 1). Note: The adjoining P119311 is also part of the Applicant's property.

Document 3: Annexure Page "B" showing private R.O.W. over CT 169070-1 to access CT 119311-1.

Document 4: Plan of Title P120499. Showing that on the northern side of the main title of the Applicant's property, exists Service Easement 'A' 10.00 Wide (which is Waterson Lane).

Document 5: Plan of Survey P152790 showing the same abovementioned Service Easement continuing in a north easterly direction, past the subject property.

MICHAEL E. MORLEY

Land and Engineering Surveys, Land Development Planning

Phone: Mobile 0410 612 176

ADDRESS: 166 Faulkners Road, Glenlusk, TAS 7012

Email: morleyglobal@gmail.com

**Mr J. Molnar,
Senior Planner,
Sorell Council
47 Cole St.,
Sorell. Tas. 7172**

3rd February 2021

Dear John,

RE: Proposal Plans (P1 – P4) and Copy of a letter regarding the Status of Waterson Lane, Carlton as part of an application, as per the Cover Page.

At my client's instruction, I have completed an in-field survey of both land titles that form the property. I have re-checked this work and am satisfied that the proposed subdivision layout can be fully contained within the property boundaries.

Numerous draft versions of the proposed subdivision were discussed with my client until he and his planning consultant were finally satisfied that the design/layout was not only strategically sound and compliant (as detailed in the Planning Submission by Ian Stanley); it was also 'well balanced and sensitive' to the adjoining properties. This is why the Proposal Plans as submitted are identified as 'Design Version 11'.

My client made it clear that all access for all lots within the proposed subdivision would be off a proposed extension of the northern end of Baudin Road, and an adjoining subdivision road to the east. Baudin Road has a 20.0m wide frontage to the southern boundary of the property. Any extension of the existing Rural Living Zone would have to be contiguous from that boundary to be compliant.

His instruction was also that the proposal was not to contain any internal lots nor subminimum balance lots, so in conjunction with his planner, the decision was made to utilise the whole property via a sub-category of zone, which is represented in the proposed three larger lots.

Finally, although it has been calculated that there was land available for road widening adjacent to Waterson Lane, my client issued instructions to investigate the status of Waterson Lane thoroughly; the results of which are included with evidence in this part of the submission (refer letter to Quentin Newitt, dated 29th September 2020, Road Widening and Status of Waterson Lane.)

If you, or your staff, have any enquiries specific only to the survey and design of the proposed subdivision, please contact me.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'M. Morley'.

Michael Morley
Registered Surveyor No 191

OWNER FOLIO REFERENCE CT.125891/2 GRANTEE	PLAN OF TITLE LOCATION PEMBROKE - CARLTON CONVERTED BY PLAN No. P125891 COMPILED BY NOT TO SCALE LENGTHS IN METRES	Registered Number P.169070 APPROVED 30 JAN 2015 <i>Alice Kawa</i> Recorder of Titles	
MAPSHEET MUNICIPAL CODE No. 124 (5425)	LAST UPI No	LAST PLAN No. P125891	ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN

SKETCH BY WAY OF ILLUSTRATION ONLY

"EXCEPTED LANDS"

LOT 2 (P18453) 1.225ha
 LOT 3 (D18452) 1.303ha
 LOT 59.60 & 66 & PART OF LOT 70 (SP31389) 3.156ha
 PART OF LOT 12 (SP119756) 8940m2
 WHOLE OF LOT 100 ROAD (SP119756) 458m2
 LOT 1 (SP125692) 18.83ha

BALANCE PLAN

SKETCH

The main map shows Lot 1 (NOT INC. HATCHED PORS.) in the center. To the north is Josephs Road (SP159464) and Waterson Lane (202.78). To the east is a Right of Way 6.00 wide (CREATED BY M768486). To the south is the Carlton River. Various survey numbers (P18451, P160749, P120499, P119312, P119313, P120497, P18453, P125692, SP31389, SP119756, SP14003, D18452) are labeled around the lot. A 'RIGHT OF WAY A' 10.00 WIDE is shown to the west. A 'RIGHT OF WAY B' 10.00 WIDE (CREATED BY M499137) is shown to the south. A 'RIGHT OF WAY' 10.00 WIDE (VARIABLE WIDTH) is shown to the east. A 'SEE SKETCH' label points to the Waterson Lane area. A 'CARLTON RIVER' label is at the bottom right. A 'NC' (Not to Scale) label is at the bottom right.

SEARCH OF TORRENS TITLE

VOLUME 169070	FOLIO 1
EDITION 3	DATE OF ISSUE 28-Jan-2020

SEARCH DATE : 11-Feb-2021

SEARCH TIME : 08.54 PM

DESCRIPTION OF LAND

Parish of CARLTON Land District of PEMBROKE
 Lot 1 on Plan 169070
 Being the land secondly described in Conveyance 57/4037
 Excepting thereout Lot 2 (Plan 18453) 1.255ha.; Lot 3 (Diagram
 18452) 1.303ha.; Lot 59, 60, 66 and part of Lot 70 (SP 31389)
 3.156ha.; part of Lot 12 (SP 119756) and whole of Lot 100
 (SP119756); Lot 1 (SP125692) 18.83ha
 Derivation : Part of 50 acres; Located to Hugh McGuinness
 (Senior) and Part of 60 acres; Located to Hugh McGuinness
 (Junior)
 Derived from SP125692
 Prior CT 125891/2

SCHEDULE 1

M797273 TRANSFER to QUENTIN CHESTER NEWITT Registered
 28-Jan-2020 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
 54/9903 CONVEYANCE Made Subject to Boundary Fences Condition
 C845172 BENEFITING EASEMENT: a right of carriageway over the
 Right of Way 10.00 wide on Plan 169070
 C935119 BENEFITING EASEMENT: Right of Carriageway over the
 Right of Way (variable width) on Plan 169070
 M499137 BURDENING EASEMENT: a right of carriageway
 (appurtenant to Lot 1 on Plan 120697) over the land
 marked Right of Way 'B' 10.00 Wide on Plan 169070
 M768486 BURDENING EASEMENT: a right of carriageway
 (appurtenant to Lot 1 on Plan 169070) over the land
 marked Right of Way 6.00 wide on Plan 169070
 Registered 29-Jul-2019 at 12.01 PM
 M798917 MORTGAGE to Bennetto Finance Pty Ltd Registered
 28-Jan-2020 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FILE NUMBER W.3083 GRANTEE PART OF 60ac. LOC. TO JOHN MCGINNESS		CONVERSION PLAN LOCATION PEMBROKE CARLTON CONVERTED FROM 54/9902 (lstly Desc) NOT TO SCALE LENGTHS IN METRES		Registered Number P.119311 APPROVED 19 SEP 1995 Recorder of Titles	
MAPSHEET MUNICIPAL CODE No. 124	LAST UP: No. 2919695	ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN		DRAWN M.J.T.	

SKETCH BY WAY OF ILLUSTRATION ONLY

"EXCEPTED LANDS"

LOTS 61, 62, 63 & 64 5-605ha SP.31389

LOT 4 2-229ha P.18450

SKETCH

SEARCH OF TORRENS TITLE

VOLUME 119311	FOLIO 1
EDITION 6	DATE OF ISSUE 28-Jan-2020

SEARCH DATE : 11-Feb-2021

SEARCH TIME : 08.51 PM

DESCRIPTION OF LAND

Parish of CARLTON, Land District of PEMBROKE
 Lot 1 on Plan 119311
 Being the land firstly described in Conveyance 54/9902
 Derivation : Part of 60 acres; Located to John McGinness
 Derived from W3083

SCHEDULE 1

M768486 TRANSFER to QUENTIN CHESTER NEWITT Registered
 29-Jul-2019 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
 54/9902 CONVEYANCE Made Subject to Boundary Fences Condition
 C845172 BENEFITING EASEMENT: a right of carriageway over the
 Right of Way 10.00 wide on P.119311
 C935119 BENEFITING EASEMENT: Right of Carriageway over the
 Right of Way (variable width) on P.119311
 M768486 BENEFITING EASEMENT: a right of carriageway over the
 land marked Right of Way 6.00 wide on Plan 119311
 Registered 29-Jul-2019 at 12.01 PM
 M798917 MORTGAGE to Bennetto Finance Pty Ltd Registered
 28-Jan-2020 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

OWNER: QUENTIN CHESTER NEWITT

FOLIO REFERENCE: 119311 AND 169070

GRANTEE:

DRAFTING DATE: 25 OCT 2020

DRAFTED BY: C. McCOULL

DESIGN VERSION: 11

PROPOSAL INDEX PLAN

BY SURVEYOR: M. MORLEY

LOCATION: PEMBROKE
CARLTON RIVER

SCALE 1:

LENGTHS IN METRES

Registered Number

P1 *luk.*

APPROVED
EFFECTIVE

FROM

Recorder of Titles

MAPSHEET MUNICIPAL
CODE No.

LAST
UPI No.

LAST PLAN No.

ALL EXISTING SURVEY NUMBERS TO BE
CROSS REFERENCED ON THIS PLAN



M. Morley
Registered Land Surveyor

1/12/2020
Date

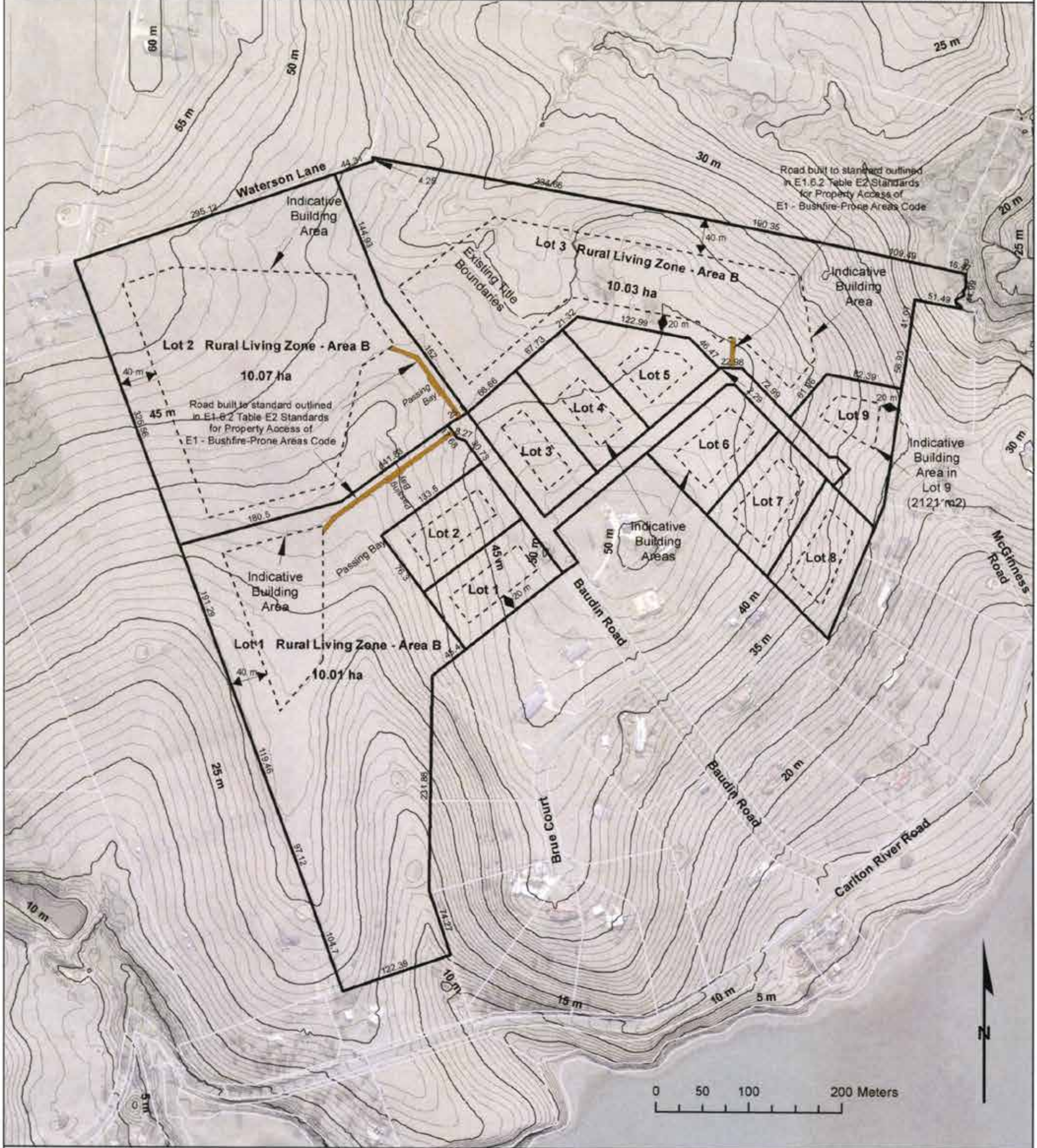
Drawing Date: 8/6/2020

Council Delegate

Date

OWNER: QUENTIN CHESTER NEWITT		PROPOSAL INDEX PLAN		Registered Number <i>P2 New</i>	
FOLIO REFERENCE: 119311 AND 169070				APPROVED EFFECTIVE FROM	
GRANTEE:		LOCATION: PEMBROKE CARLTON RIVER		Recorder of Titles	
DRAFTING DATE: 25 OCT 2020 DRAFTED BY C.McCOULL DESIGN VERSION: 11		SCALE 1: 4000 (@A3)		LENGTHS IN METRES	

MAPSHEET MUNICIPAL CODE No.	LAST UPI No.	LAST PLAN No.	ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN
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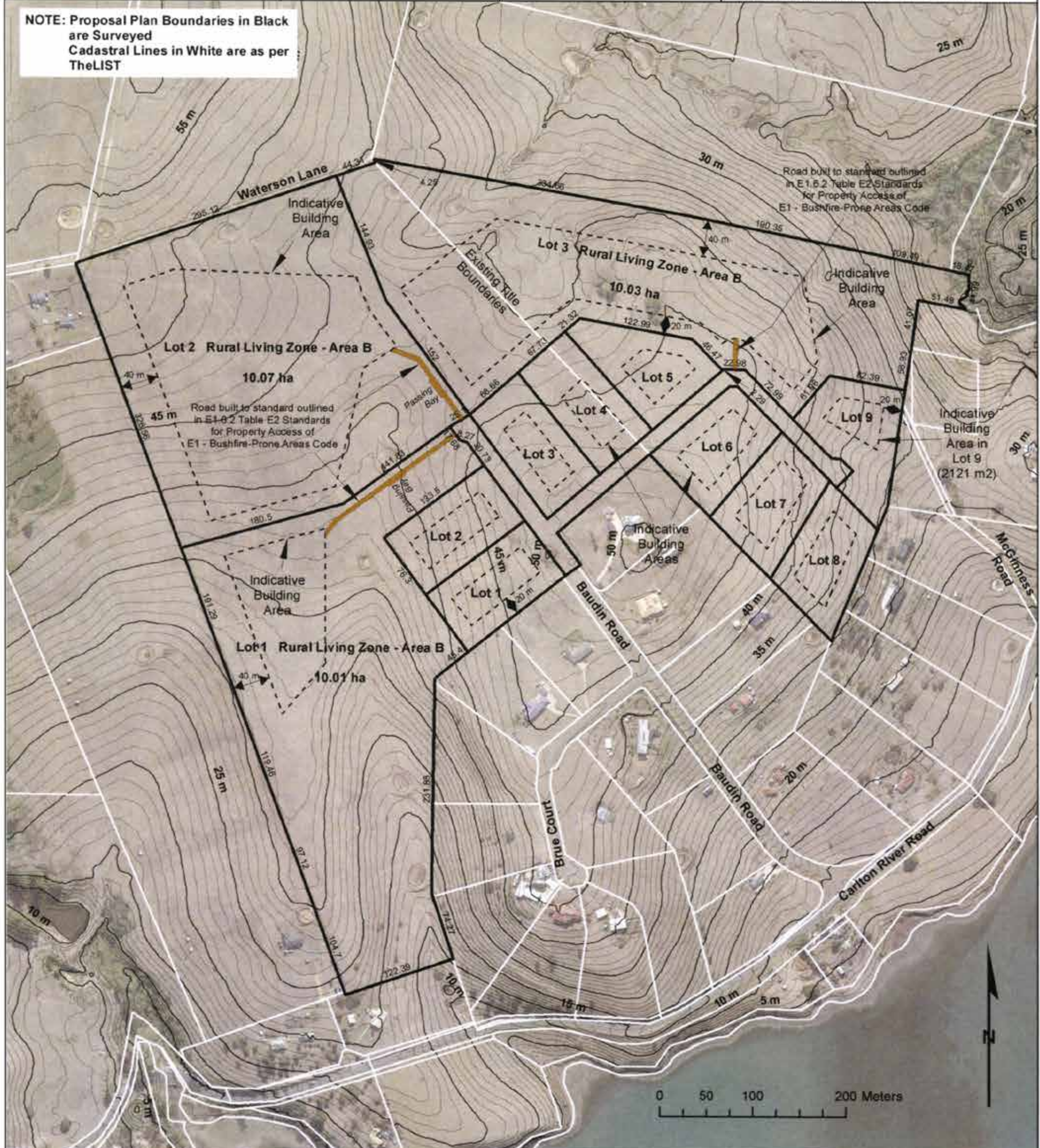


<i>M. E. Morley</i> Registered Land Surveyor	<i>1/12/2020</i> Date	Drawing Date: 8/6/2020	Council Delegate	Date
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OWNER: QUENTIN CHESTER NEWITT	PROPOSAL INDEX PLAN		Registered Number P 3 <i>mu.</i>
FOLIO REFERENCE: 119311 AND 169070	BY SURVEYOR: M.MORLEY		APPROVED EFFECTIVE FROM
GRANTEE:	LOCATION: PEMBROKE CARLTON RIVER		
DRAFTING DATE: 25 OCT 2020 DRAFTED BY C.McCOULL DESIGN VERSION: 11	SCALE 1: 4000 (@A3)	LENGTHS IN METRES	Recorder of Titles

MAPSHEET MUNICIPAL CODE No.	LAST UPI No.	LAST PLAN No.	ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN
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**NOTE: Proposal Plan Boundaries in Black are Surveyed
Cadastral Lines in White are as per TheLIST**



<i>M. E. Morley</i> Registered Land Surveyor	<i>1/13/2020</i> Date	Drawing Date: 8/6/2020	Council Delegate	Date
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OWNER: QUENTIN CHESTER NEWITT

FOLIO REFERENCE: 119311 AND 169070

GRANTEE:

DRAFTING DATE: 25 OCT 2020
DRAFTED BY: C.McCOULL
DESIGN VERSION: 11

PROPOSAL INDEX PLAN

BY SURVEYOR: M.MORLEY

LOCATION: PEMBROKE
CARLTON RIVER

SCALE 1: 4000 (@A3)

LENGTHS IN METRES

Registered Number

P 4 *McC*

APPROVED
EFFECTIVE FROM

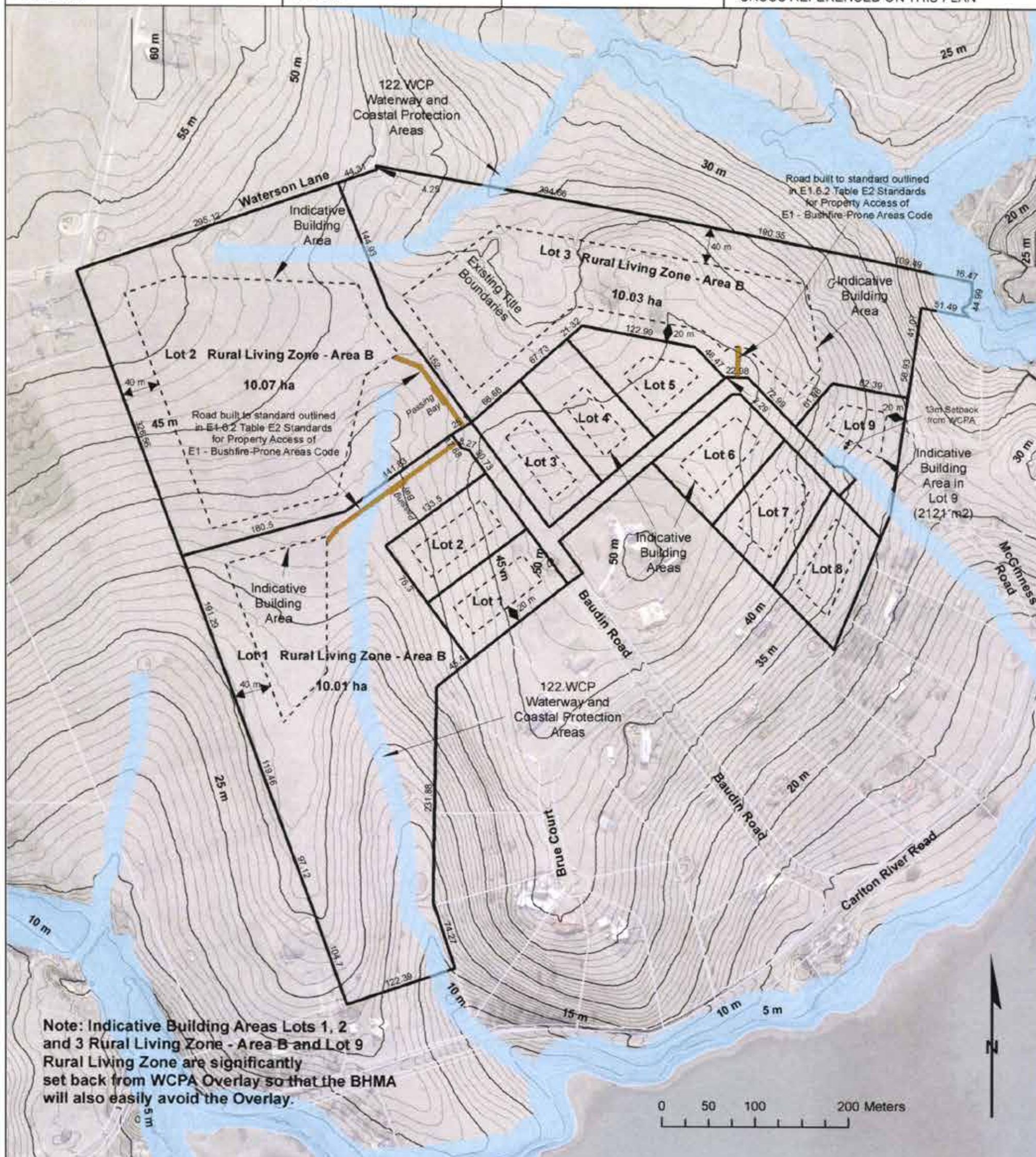
Recorder of Titles

MAPSHEET MUNICIPAL
CODE No.

LAST
UPI No.

LAST PLAN No.

ALL EXISTING SURVEY NUMBERS TO BE
CROSS REFERENCED ON THIS PLAN



Note: Indicative Building Areas Lots 1, 2 and 3 Rural Living Zone - Area B and Lot 9 Rural Living Zone are significantly set back from WCPA Overlay so that the BHMA will also easily avoid the Overlay.

0 50 100 200 Meters

M. E. Morley
Registered Land Surveyor

1/12/2020
Date

Drawing Date: 8/6/2020

Council Delegate

Date

Mr. M. Morley,
166 Faulkners Road,
Glenlusk. Tas 7012.

10th December, 2020

Mr Q C Newitt
P O Box 41
SORELL TAS 7172

**SURVEYOR'S NOTES AS PART OF PROPOSAL PLANS, DESIGN VERSION 11,
FOR BAUDIN ROAD LAND TITLES, CARLTON RIVER.**

1. Both land titles (CT 169070-1 & CT 119311-1) that comprise the property have been surveyed to ensure containment of the subdivision.
2. This application is made under Section 43A of the LUPAA 1993.
3. CT 169070-1 and CT 119311-1 are to be rezoned to Rural Living Zone, Lots 1-9 min 1.0 ha each: and Rural Living Zone – Area B, Lots 1, 2, and 3 min 10.0 ha each.
4. Each of the Rural Living Zone lots can contain a building area not less than 30m x 30m.
5. All lots have Indicative Building Areas that are compliant to required boundary setbacks.
6. The extension of Baudin Road maintains an existing 20.0m width and culminates in a cul-de-sac to provide turning for TFS rigid tankers and other commercial vehicles.
7. Lot 3 Rural Living Zone – Area B does not have a second access off the extension of Baudin Road.
8. The subdivision road is 18.0m wide in its entirety and culminates in a cul-de-sac to provide turning for TFS rigid tankers and other commercial vehicles (water trucks).
9. Access to all lots is off the extension to Baudin Road and the subdivision road; there is no proposed access off Waterson Lane.
10. Road Widening is not applicable to proposed Rural Living Zone – Area B lots 2 and 3 (adjacent to Waterson Lane) because Waterson Lane is not a Public Road.
11. No internal lots are created under this Plan.
12. The road design has been assessed as safe and workable in terms of sight distances with recommendations from GHD.
13. Private access roads to the Indicative Building Areas have been located for Rural Living Zone – Area B, lots 1, 2 and 3 for TFS compliance.

14. All Indicative Building Areas avoid the Waterway and Coastal Protection Area overlay and are set back so that the Bushfire Hazard Management Area for each lot will also avoid the overlay.

15. Development is to occur in three stages: -

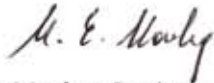
Stage 1 – Rural Living Zone Lots 1, 2, & 3 and Rural Living Zone Area B Lots 1 & 2

Stage 2 – Rural Living Zone Lots 4,5 & 6 and Rural Living Zone Area B Lot 3

Stage 3 – Rural Living Zone Lots 7, 8, & 9

16. Contour interval on the plans is 1 metre

NB: Right of Way 6.0m wide burdening CT 169070/1 and appurtenant to CT 119311/1, will be removed as the applicant owns both land titles.



M. Morley, Registered Surveyor No. 191.

CC Ian Stanley, Planner.

Quentin Newitt

MICHAEL E. MORLEY

Land and Engineering Surveys, Land Development Planning

Phone: Mobile 0410 612 176

ADDRESS: 166 Faulkners Road, Glenlusk, TAS 7012

Email: morleyglobal@gmail.com

29th September 2020

Mr Quentin Newitt
Pawleena Rd
Sorell

Dear Quentin,

Re: Road Widening and Status of Waterson Lane, Carlton – CT 120499/3

Please find enclosed a copy of your Certificate of Title 169070/1 at Baudin Rd Carlton River and a copy of CT120499/3 at Carlton but on the northern side of Waterson Lane, opposite your land.

You asked for clarification as to whether you should allow for road widening on the subdivision proposal plan on your land contained in CT's 169070/1 and 119311/1.

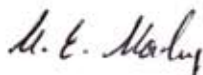
Your certificate of title indicates Waterson Lane on your northern boundary as a possible road, but this strip of land has never been proclaimed or dedicated as road, much less a Public Road. In fact, this strip is shown on CT 120499/3, the parent title, as a 'Service Easement 'A' 10.00 Wide' (Created by Instrument C700834). Further to this, I understand that Waterson Lane **is not maintained by Council as it is not a 'Public Road'**. I also believe that your CT 169070/1 does not presently have any legal right over this Service Easement 10.00 Wide as Annexure Page 'B' on your title has been added to provide legal access to the adjoining land to the east contained in CT 119311/1, which confirms that Waterson Lane is **not** road, hence the necessity to create the Right of Way 'A' 6.00 Wide over CT 169070/1.

It is noted, however, that CT 169070/1 **does** have a right of way over the Right of Way 'A' 10.00 Wide and Right of Way (Variable Width) from Josephs Road to the west as shown on Plan Number P 169070.

Also Waterson Lane, where it is adjacent to the northern boundary of the subject property, is **not a Public Road!** In view of this, I cannot see how Council could ever ask for road widening on a road that does not legally exist as a Public Road.

I trust that this now answers your queries in relation to the status of Waterson Lane.

Yours faithfully,



Michael Morley
Authorised Surveyor No 191

SEARCH OF TORRENS TITLE

VOLUME 169070	FOLIO 1
EDITION 1	DATE OF ISSUE 06-Feb-2015

SEARCH DATE : 07-Sep-2018

SEARCH TIME : 04:29 PM

DESCRIPTION OF LAND

Parish of CARLTON Land District of PEMBROKE

Lot 1 on Plan 169070

Being the land secondly described in Conveyance 57/4037

Excepting thereout Lot 2 (Plan 18453) 1.255ha.; Lot 3 (Diagram

18452) 1.303ha.; Lot 59, 60, 66 and part of Lot 70 (SP 31389)

(156ha.;part of Lot 12 (SP 119756) and whole of Lot 100

(SP119756);Lot 1 (SP125692) 18.83ha

Derivation : Part of 50 acres; Located to Hugh McGuinness

(Senior) and Part of 60 acres; Located to Hugh McGuinness

(Junior)

Derived from SP125692

Prior CT 125891/2

SCHEDULE 1

B903168 & C741467 TRANSFER to SOUTHBRIDGE INVESTMENTS PTY LTD

Registered 19-Jun-2007 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

(/9903 CONVEYANCE Made Subject to Boundary Fences Condition

C845172 BENEFITING EASEMENT: a right of carriageway over the

Right of Way 10.00 wide^A on Plan 169070

C935119 BENEFITING EASEMENT: Right of Carriageway over the

Right of Way (variable width) on Plan 169070

M499137 BURDENING EASEMENT: a right of carriageway

(appurtenant to Lot 1 on Plan 120697) over the land

marked Right of Way 'B' 10.00 Wide on Plan 169070

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

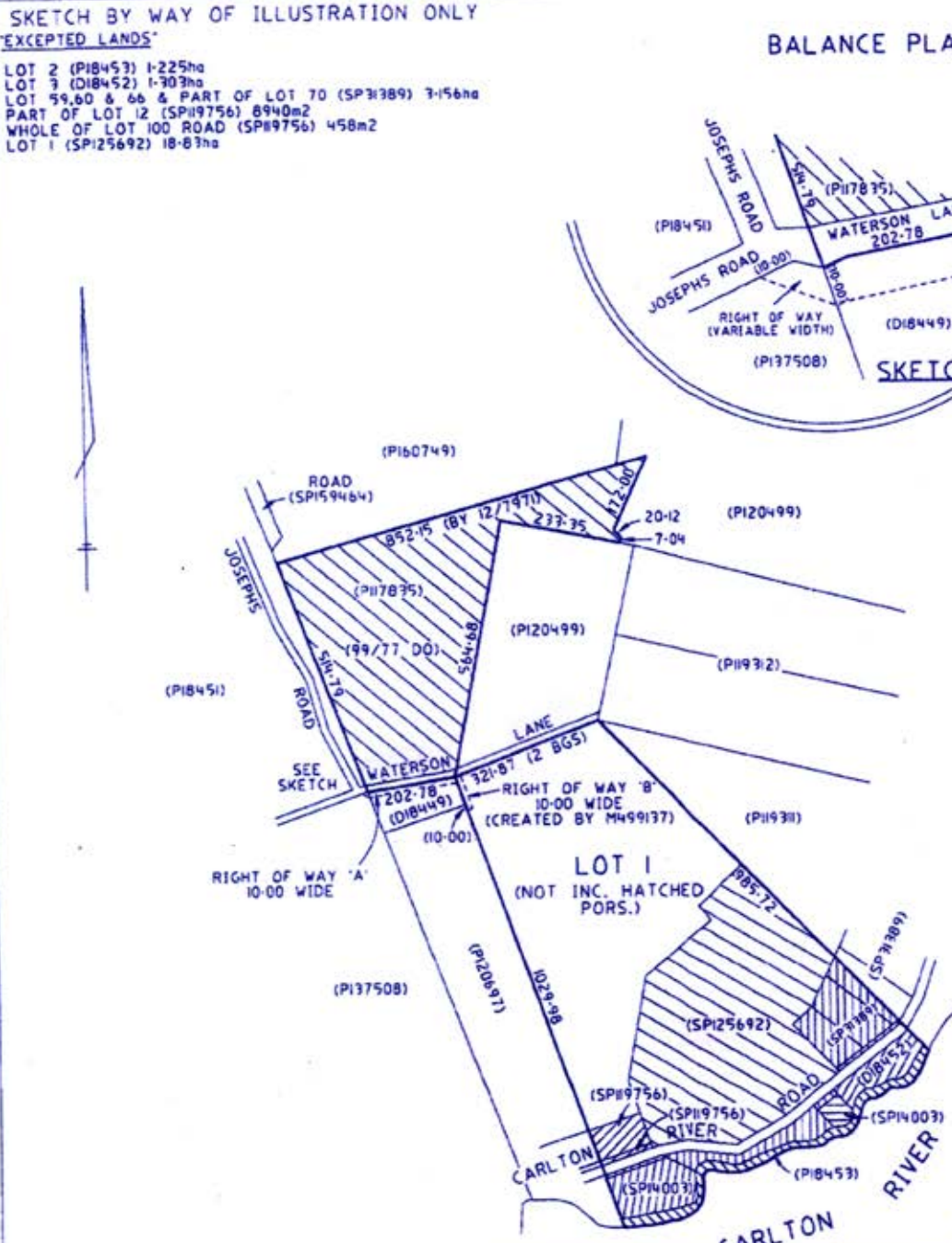
OWNER		PLAN OF TITLE		Registered Number
FOLIO REFERENCE CT.125891/2		LOCATION		P.169070
GRANTEE		PEMBROKE - CARLTON		
		CONVERTED BY PLAN No. P125891		APPROVED 30 JAN 2015
		COMPILED BY		<i>Allice Kawa</i> Recorder of Titles
		NOT TO SCALE		LENGTHS IN METRES

MAPSHEET MUNICIPAL CODE No. 124 (5425)	LAST UPI No	LAST PLAN No. P125891	ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN
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SKETCH BY WAY OF ILLUSTRATION ONLY
'EXCEPTED LANDS'

LOT 2 (P18453) 1-225ha
 LOT 3 (D18452) 1-303ha
 LOT 59, 60 & 66 & PART OF LOT 70 (SP31389) 3-156ha
 PART OF LOT 12 (SP119756) 8940m2
 WHOLE OF LOT 100 ROAD (SP119756) 458m2
 LOT 1 (SP125692) 18-83ha

BALANCE PLAN



SKETCH



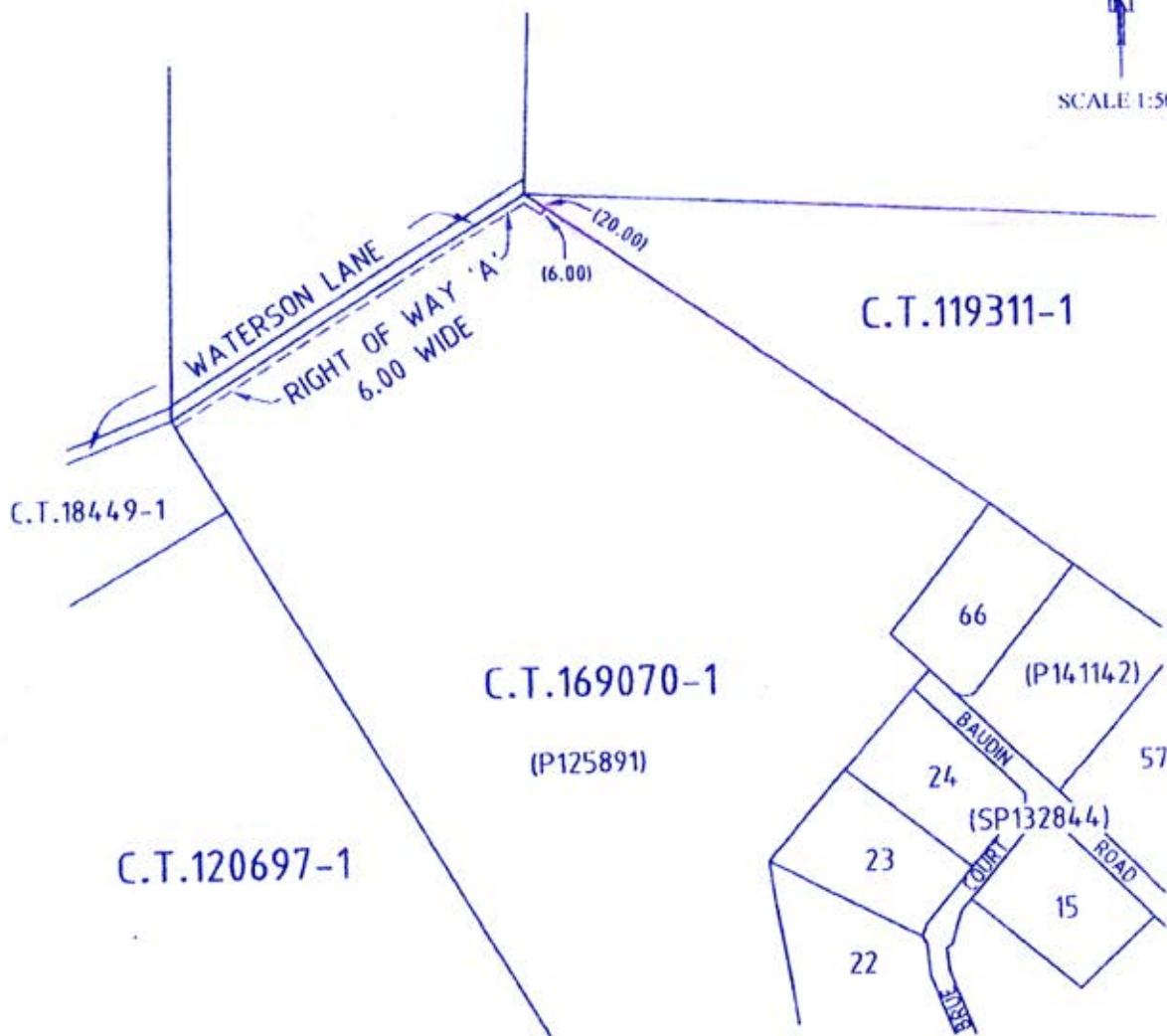
PIN OR STAPLE HERE
DO NOT GUM THIS
FORM TO THE INSTRUMENT
PDA Ref: 40093MP-3A

ANNEXURE PAGE

PAGE OF PAGES
Vol. Fol.



SCALE 1:5000

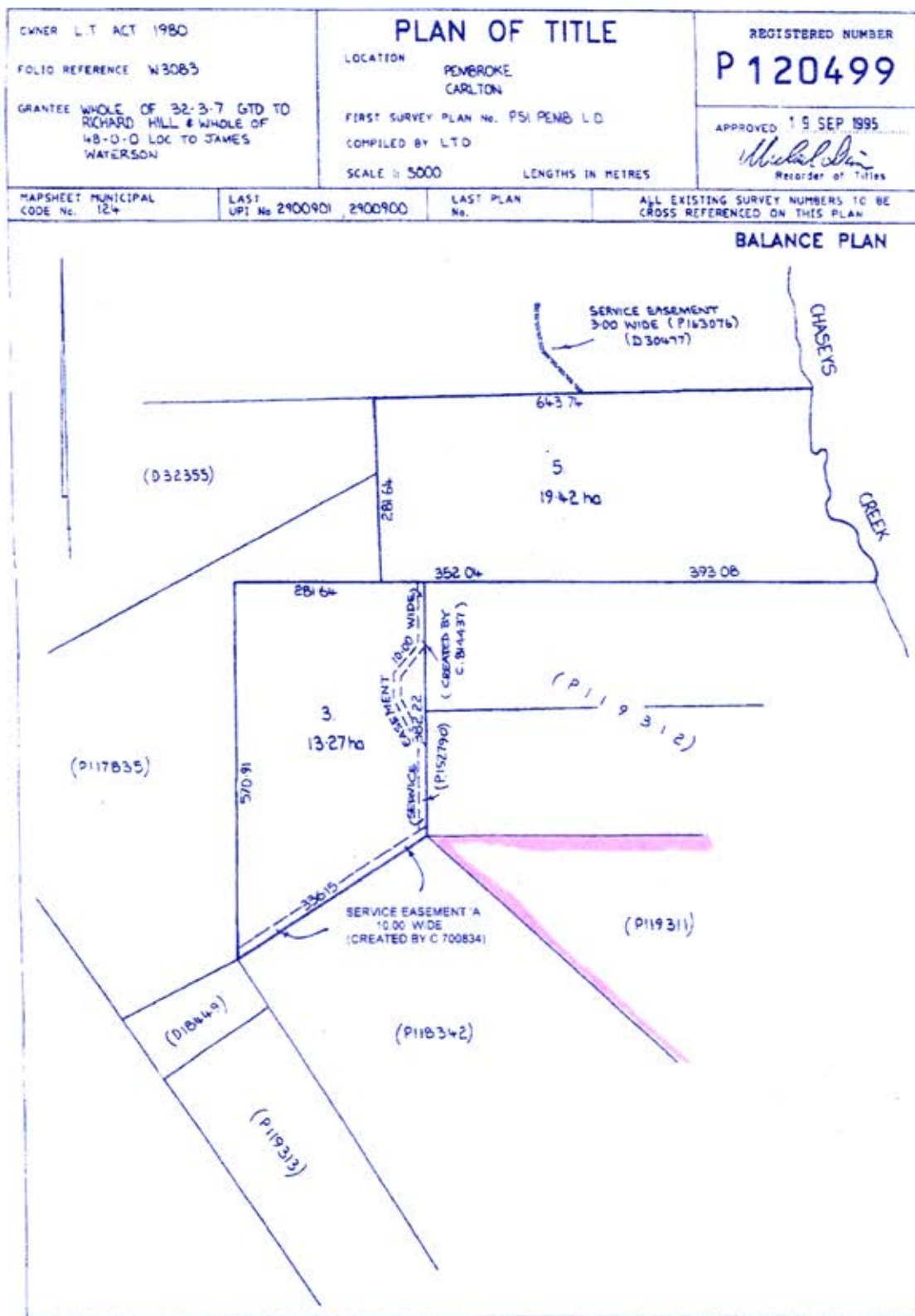


NOTE:- Every annexed page shall be signed by the parties to the dealing, or where the party is a corporate body, be signed by the persons who have attested the affixing of the seal of that body to the dealing.

Version 1

THE BACK OF THIS PAGE MUST NOT BE USED

120499



152790

OWNER: LESLIE JOHN DEVINE		PLAN OF SURVEY BY SURVEYOR: Anthony Owen Carrick Brooks Lark & Carrick, Surveyors 175 Collins Street Hobart PEMBROKE - CARLTON SCALE: 1:1500		REGISTERED NUMBER P152790
FOLIO REFERENCE: C.T. 120499/3		APPROVED EFFECTIVE FROM: 30 MAY 2008		Alice Kawa Recorder of Titles
GRANTEE: PART OF 32.37 GTD. TO RICHARD HILL				
MAPSHEET MUNICIPAL CODE No. 124 / 5425	LAST UPI No. 2900901	LAST PLAN P120499	ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN	

EASEMENT SURVEY

N/A
 COUNCIL DELEGATE DATE



Quentin Newitt
Baudin Road, Carlton
Rezoning and Concurrent Subdivision
Traffic Impact Assessment

July 2020

This report: has been prepared by GHD for Quentin Newitt and may only be used and relied on by Quentin Newitt for the purpose agreed between GHD and the Quentin Newitt as set out in this report.

GHD otherwise disclaims responsibility to any person other than Quentin Newitt arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

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Investigations undertaken in respect of this report are constrained by the particular site conditions, such as the location of buildings, services and vegetation. As a result, not all relevant site features and conditions may have been identified in this report.

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1. Introduction

1.1 Background

GHD was engaged by Quentin Newitt to prepare a Traffic Impact Assessment for a proposed rezoning and concurrent subdivision application for two co-jointed properties (property ID 2294356 & 2294292) at Baudin Road, Carlton. The proposal is to rezone approximately 41 hectares of Rural Resource land to Rural Living Zone and Rural Living – Area B Zone. The proposed rezoning would facilitate the creation of 12 lots, which all access the external road network via an extension of Baudin Road.

1.2 Purpose of this report

The purpose of this report is to assess the traffic and road safety implications of the proposed rezoning development, and address the relevant provisions of the *Sorell Interim Planning Scheme 2015*, to support a development application for the site.

1.3 Subject site

The subject site is located at Waterson Lane, Carlton and accessed from the end of Baudin Road. The following Figure 1 shows the subject site and its immediate surroundings.

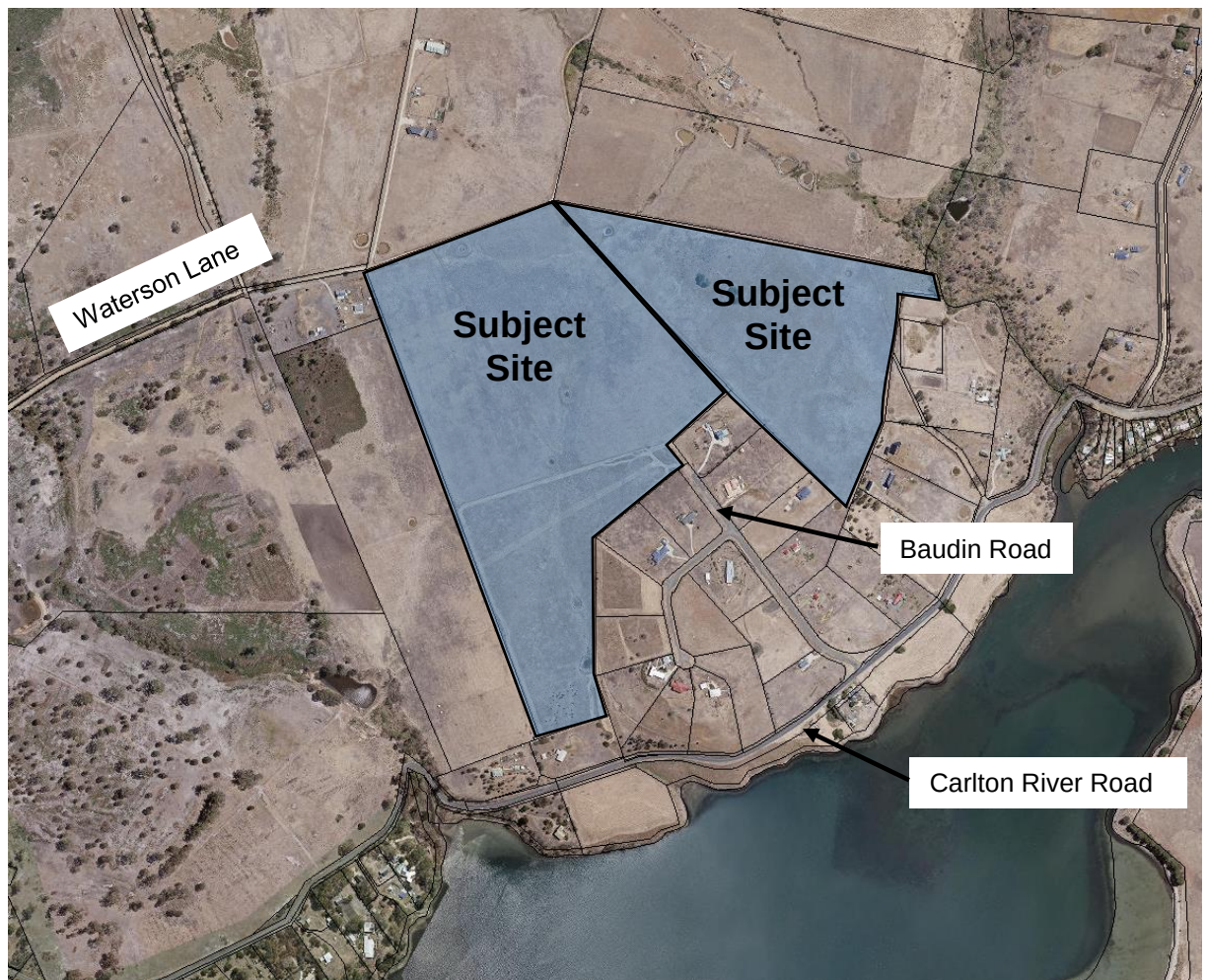


Figure 1 Site locality

Source: The LIST map, Department of State Growth

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1.4 Reference material

Several documents and reference materials have been used to inform the preparation of this report including the following:

- Sorell Interim Planning Scheme 2015 (the Planning Scheme)
- Crash data, Department of State Growth, 2014 – 2019
- Austroads Publication “*Guide to Road Design Part4A: Unsignalised and Signalised Intersections (2017)*”
- Roads and Traffic Authority, NSW “*Guide to Traffic Generating Developments (2002)*”
- Information gained from a site visit undertaken on Tuesday 24 March 2020 during the morning peak (7:30am to 9:30am) and the afternoon peak (3:00pm to 6:00pm).

2. Existing conditions

2.1 The site

The subject sites are located between Waterson Lane and Baudin Road, and are currently zoned as Rural Resource under the Planning Scheme. The subject sites are adjacent to the existing Rural Living zone on Baudin Road and the proposal is to extend this Rural Living zone across these two sites. Currently access to the sites is via Waterson Lane or Baudin Road.

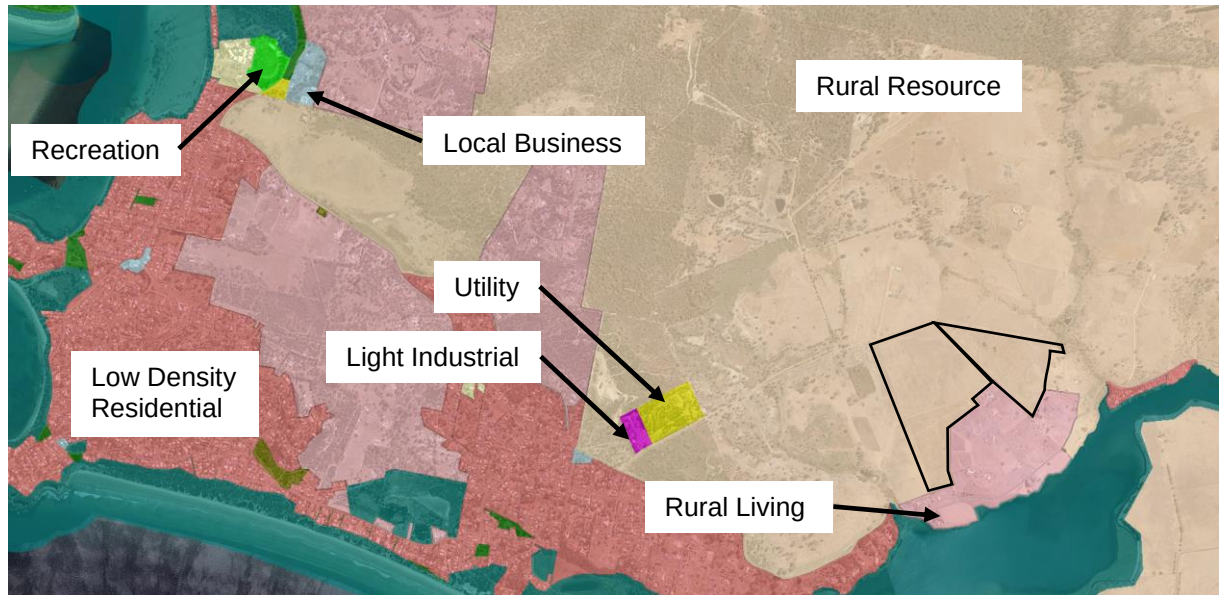


Figure 2 Zoning within the area

Source: The LIST map, Department of State Growth

2.2 Site observation

Site visits were undertaken on Tuesday 24 March 2020 during the morning (7:30am to 9.30am) and the afternoon (3:00pm to 6:00pm).

During the site visits the following information was collected:

- Traffic count data at the Carlton Beach Road / Old Forcett Road / Carlton River Road intersection
- Traffic observation at the Baudin Road / Carlton River Road intersection
- Road safety performance
- Intersection approach sight distance at Baudin Road intersection

The traffic count survey was performed during the specified time periods and the peak hour was determined (the period when traffic volumes were highest).

2.3 Road network

Features of the key roads in the vicinity of the proposed development, or likely to be impacted by it, are described below.

The subject sites are connected to the external local road network via Baudin Road and Carlton River Road and to the greater road network to Arthur Highway through Old Forcett Road past Dodges Ferry Community Centre to the west or Sugarloaf Road to the east (bypassing the Dodges Ferry Community Centre).

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Carlton River Road

Carlton River Road is a typical two-lane two-way road running east-west with a speed limit of 60 km/h on sections near Old Forcett Road intersection and 80 km/h for the section passing the Baudin Road intersection. It connects to Sugarloaf Road towards the east, which has potential to be an alternative route choice for the traffic from the surrounding area.

Carlton River Road has a pavement width of 6.2 metres, with no shoulder seal. No dedicated pedestrian or cyclist facilities are provided. Cyclists are expected to share the road with vehicles, and *Passing Cyclists Carefully* signs are located along Carlton River Road. Bus stops are present on Carlton River Road with a regular public transport service provided by *Tassie Link*. No bus stops are near the Baudin Road intersection. Traffic on Carlton River Road mainly originates and terminates within the residential area of Dodges Ferry and Carlton. Traffic flow passing east of the Gate Five Road / Carlton River Road intersection drops significantly, down to less than 80 vehicles per hour during the AM and PM peak hours.

Old Forcett Road

Old Forcett Road is a typical two-lane two-way road running north-south, with a speed limit of 80 km/h section between Arthur Highway and the Dodges Ferry Primary School and lowered to 50 km/h after the school into Dodges Ferry Community Centre with a 40 km/h school zone that operates during school drop-off and pick-up periods.

Old Forcett Road has a pavement width of approximately 7.3 metres with 1.0 metre sealed shoulders on both side of the road. Pedestrian islands are provided in proximity to the school and shopping area and some on-street car parking spaces are provided near the Dodges Ferry Community Centre.

The Old Forcett Road / Carlton River Road intersection is one of the major intersections within the local road network with a traffic volume of approximately 550 vehicles per hour during the morning peak and 750 vehicles per hour during the afternoon peak. The intersection has recently been upgraded to include a short right turn lane on the Carlton Beach Road leg and a pedestrian island on the Carlton River Road leg. The intersection layout is shown in Figure 3



Figure 3 Old Forcett Road / Carlton River Road intersection layout

Carlton Beach Road

Carlton Beach Road is a typical two-lane two-way road running north-south through Dodges Ferry, with a speed limit of 60 km/h. It connects the Dodges Ferry community, starting from the Old Forcett Road / Carlton River Road intersection and re-joining Carlton River Road east of the Olinka Court junction.

Carlton Beach Road has a hard surfaced width of 6.0 metres with unsealed shoulders on both sides. There are no dedicated on-street parking, pedestrian or cycling facilities along the road but the gravel shoulders provide the opportunity for pedestrian access and parking.

Baudin Road

Baudin Road is a local two-way no through access road running north-south connecting Carlton River Road and the proposed subject sites. It generally provides access to resident lots with a sealed width of 6.0 metres and no road shoulders. Natural stormwater runoff into spoon drains are provided on both sides of the road.

Baudin Road generally has traffic volumes lower than 30 vehicles per peak hour during the morning and afternoon which is considered low.

The intersection of Baudin Road and Carlton River Road has good intersection sight distance. The specific sight distance criteria used in the report has been derived from the Austroads Publication “*Guide to Road Design Part4A: Unsignalised and Signalised Intersections (2017)*”, which specifies the following:

Safe Intersection Sight Distance (SISD)

It provides sufficient sight distance for a driver of a vehicle on the major road to observe a vehicle from the minor road approach moving into a collision situation (e.g. in the worst case stalling across the traffic lanes), and to decelerate to stop before reaching the collision point. Safe Intersection Sight Distance is measured from the driver eye height (1.25 m) on the leg with priority to eye height of a driver in the side street (1.25 m).

The minimum SISD required in the Austroads guide for 80 km/h zone is 180 metres. The SISD in both directions is more than adequate at this intersection for a speed limit of 80 km/h with 260 metres looking to the west and 200 metres looking to the east.

Figure 4 and Figure 5 show the sight distance looking from the Baudin Road / Carlton River Road intersection.



Figure 4 Looking east from the Baudin Road intersection



Figure 5 Looking west from the Baudin Road intersection

2.4 Road safety performance

2.4.1 Crash history

The Department of State Growth (DSG) maintains a database of all road crashes in Tasmania that are reported to the police. Crash details are recorded for alignment, traffic control, weather, surface and light conditions, the type of crash, type of vehicle/s involved, the manoeuvre and severity of crash. Crash data can provide valuable information on the road safety performance of an area, as well as highlighting areas that may have road safety deficiencies. Crash data was requested from DSG for the most recent 5-year period available for Carlton River Road between the Baudin Road and Old Forcett Road junctions. The following Figure 6 and Figure 7 shows the crash locations for the 5-year period near intersections from 1 January 2015 to 23 March 2020.

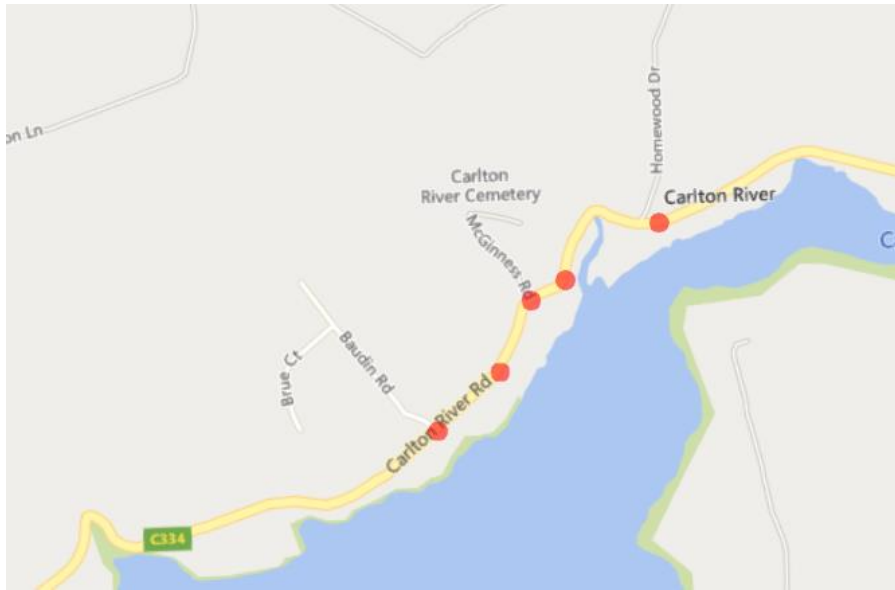


Figure 6 Crashes around Baudin Road junction

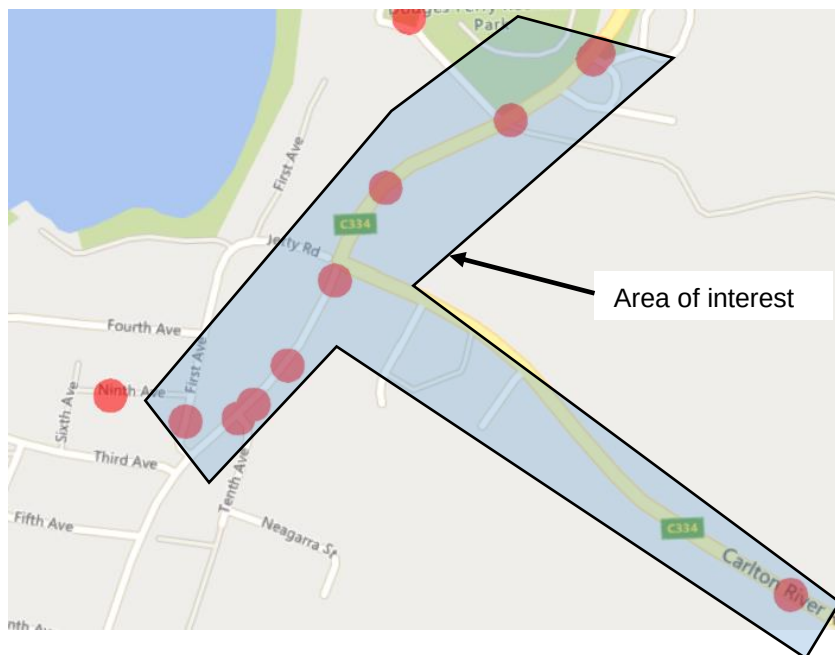


Figure 7 Crashes around Old Forcett Road

Table 1 summarises the crash data and provides an overview of the dominant crash type. It is clear that the predominate crash type is *cross traffic* at-intersections on Carlton River Road and *vehicle out of control / out of control into parked vehicles* on Carlton River Road.

Table 1 Crash data summary

Location	Number of crashes		Dominant type (number of crashes)
	Total	Casualty	
Baudin Road Junction			
Baudin Road	0	0	
Carlton River Road	5	1	Cross traffic (2) Out of control (3)
Old Forcett Road Junction			
Carlton River Road	1	1	Into parked vehicle (1)
Old Forcett Road	4	2	Vehicle in the same lane (3)
Carlton Beach Road	4	1	Into parked vehicle (3) Out of control (1)
Carlton River Road			
Carlton River Road	9	2	Into parked vehicle (4) Out of control (3)
Total	23	7	

There is a total of 23 crashes within the study area. The sight distance is limited on some locations on Carlton River Road due to horizontal geometry and road side vegetation. Together with site observation and crash history, it suggests that there are some sight distance deficiencies along the route. As shown in Figure 6, one cross-traffic non-casualty type crash was reported at the Baudin Road / Carlton River Road intersection involving a vehicle leaving Baudin Road due to inattentiveness and distraction.

2.4.2 Pedestrians and Cyclists

There are no dedicated facilities for pedestrians and cyclists in the vicinity of the proposed development. Sections of Carlton River Road between the Baudin Road and Old Forcett Road junction do not have footpaths provided until closer to the Dodges Ferry town centre, where footpaths are provided on most streets. Whilst no dedicated bicycle facilities are provided, the relatively low traffic volumes from the Arthur Highway and the Carlton River Road provide a relatively low risk cycling environment.

2.5 Parking

Dedicated road side parking is not provided on most parts of Old Forcett Road, Carlton River Road and Carlton Beach Road. However, wide unsealed shoulders are used for parking.

3.2 Traffic generation

The proposed development is for rural living which is typified by low density housing on large lots.

An indication of the traffic generation potential of the proposed development has been based on the NSW Roads and Traffic Authority's "Guide to Traffic Generating Developments" (2002), a reference widely used across Australia. The typical traffic generation rates applicable to the proposed development are summarised in Table 2.

Table 2 Traffic Generation

Component	Quantity	Daily Generation	Peak Generation
Proposed residential development	12	9 trips per dwelling	0.85 trips per dwelling
Total Trips		108 trips per day	11 trips per peak hour

3.3 Traffic distribution

All traffic associated with the development would access via Carlton River Road and Baudin Road. It is expected that the majority of traffic will use the Old Forcett Road / Carlton River Road intersection travelling to the greater external network. Therefore, it has been assumed that the majority of the traffic generated from the proposed development will turn right when exiting Baudin Road onto Carlton River Road during the morning peak period and will turn left from Carlton River Road onto Baudin Road during the afternoon peak period. The distribution of traffic from the proposed subdivision is assumed to match the current traffic behaviour that was observed from the site visit.

The distribution of the traffic at the Old Forcett Road / Carlton River Road intersection is based on the observed distribution of traffic at the intersection during the morning and afternoon peak periods. It is also assumed that the traffic generated from the proposed development will follow the observed distribution pattern. The morning and afternoon observed traffic distribution for the Old Forcett Road / Carlton River Road intersection are summarised in Figure 9 and Figure 10.

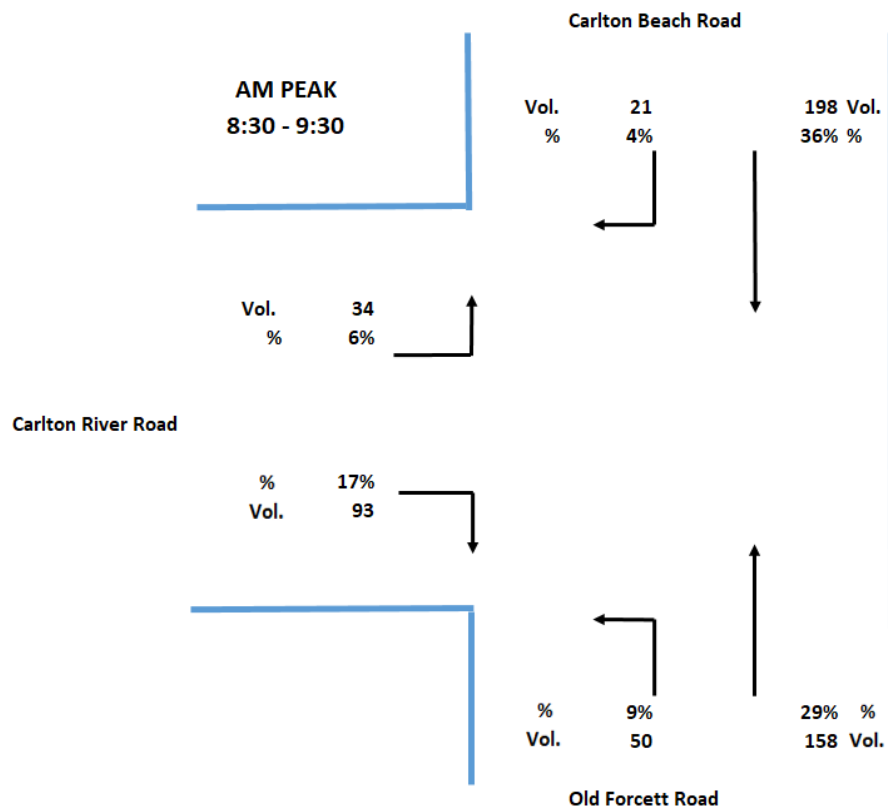


Figure 9 Observed morning peak traffic distribution

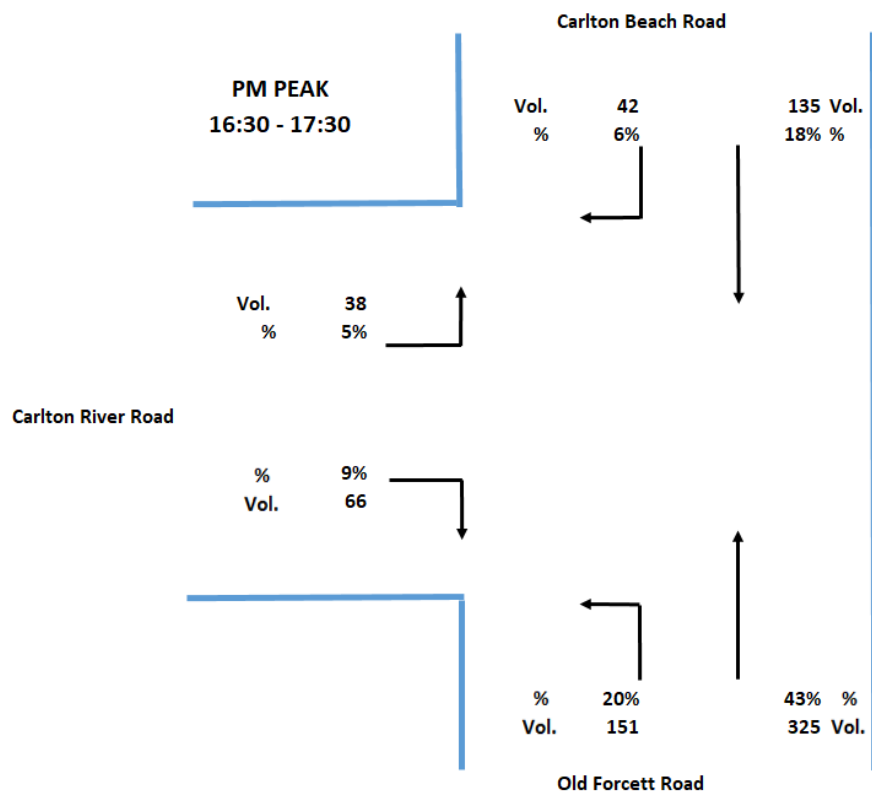


Figure 10 Observed afternoon peak traffic distribution

4. Traffic impact assessment

4.1 Traffic volume

As detailed in section 3.2, the proposed nine Rural Living Zone lots and three Rural Living Zone – Area B lots at Baudin Road would generate 108 two-way trips per day and 11 two-way trips per peak hour. Existing traffic volumes on Carlton River Road around Baudin Road is generally below 80 vehicles per hour and traffic volumes at the Old Forcett Road / Carlton River Road intersection on both roads are some 550 vehicles per AM peak hour and 750 vehicles per PM peak hour. The proposed development generates 11 trips per peak hour which accounts for only 2% of the existing peak traffic volume at the Old Forcett Road / Carlton River Road intersection.

Baudin Road currently operates with peak traffic flow of under 30 vehicles per hour. With the proposed development in place, the traffic volume will be increased to approximately 40 vehicles per hour on Baudin Road, which is considered reasonable for that type of road.

After assessing the traffic volume changes at both intersections, the peak traffic at both intersections and on Carlton River Road would remain within acceptable traffic volume levels during the peak periods.

4.2 Intersection analysis

SIDRA Intersection allows the estimation of delays to vehicles, and the extent of queuing, based on input volumes, lane configurations and control type. Intersection operation was assessed using criteria adopted by the NSW Roads and Traffic Authority, and widely used around Australia. A Level of Service (LOS) is nominated based on the average delay experienced by vehicles using the intersection. Austroads provides typical level of service criteria as summarised in Table 3.

Table 3 Level of service criteria for intersections

Level of Service	Average Control Delay (seconds)		
	Give-way	Roundabouts	Signals
LOS A	≤ 10	≤ 10	≤ 10
LOS B	10 – 15	10 – 20	10 – 20
LOS C	15 – 25	20 – 35	20 – 35
LOS D	25 – 35	35 – 50	35 – 55
LOS E	35 – 50	50 – 70	55 – 80
LOS F	> 50	> 70	> 80

The peak-hour operation of the Old Forcett Road / Carlton River Road intersection needed to be assessed using SIDRA Intersection modelling analysis software due to higher peak traffic volume. SIDRA intersection analysis software was used to assess the performance of the intersections that the proposed development may have an impact on. Having extremely low traffic volume and small changes to the existing traffic volume by the proposed development on Carlton River Road around Baudin Road, the Carlton River Road / Baudin Road intersection should not experience increased delays due to the proposed development. An AM and PM peak SIDRA modelling analysis demonstrates that all movements at Baudin Road intersection have a LOS A with delay of under 6 seconds for all movements with the proposed development in place.

Old Forcett Road / Carlton River Road has relatively high traffic volumes within the context of the local road network during the peak hours. Therefore, SIDRA Intersection traffic analysis was

used to assess the performance of the intersection. The following Table 4 summarises the performance of the intersection.

Table 4 Old Forcett Road / Carlton River Road intersection performance summary

	AM Peak 8:30 – 9:30		PM Peak 16:30 – 17:30	
Scenario	Average Delay	LOS	Average Delay	LOS
Existing	2.5 seconds	LOS A	2.8 seconds	LOS A
With Development in place	2.6 seconds	LOS A	2.8 seconds	LOS A

Generally, the PM peak intersection performance is slightly lower than the AM peak in relation to the average length of delay. However, the intersection is performing well under capacity with a highest average delay of 2.8 seconds during the afternoon peak hour, where the average delay is much lower than the 10 second delay listed as the criteria for LOS A. In the morning peak the proposed development has been predicted to result in a 0.1 second increase in the delay which is not considered to be significant. The proposed development has insignificant impacts on the overall intersection performance.

The worst performing movements at Old Forcett Road / Carlton River Road intersection are the right turning movements. The following Table 5 shows the performance of the right turning movements at this intersection:

Table 5 Old Forcett Road / Carlton River Road right turn performance summary

	AM Peak 8:30 – 9:30		PM Peak 16:30 – 17:30	
Scenario	Average Delay	LOS	Average Delay	LOS
Right turn out from Carlton River Road onto Old Forcett Road				
Existing	8.3 seconds	LOS A	10.3 seconds	LOS B
With Development in place	8.4 seconds	LOS A	10.4 seconds	LOS B
Right turn from Carlton Beach Road into Carlton River Road				
Existing	6.1 seconds	LOS A	7.4 seconds	LOS A
With Development in place	6.1 seconds	LOS A	7.5 seconds	LOS A

The result suggests that the traffic impact on the right turn movement from Carlton River Road as a result of the proposed development is minimal.

4.2.1 Sensitivity assessment

Sensitivity assessment has been used to test the robustness of the assumptions made regarding traffic generation from proposed developments affecting the analysis. It is also a chance to assess how the intersection is performing under certain traffic load.

The traffic volume is increased by 30% (scenario only) for all movements at Old Forcett Road / Carlton River Road intersection for both morning and afternoon peak periods.

Table 6 summaries the overall performance of the Old Forcett Road / Carlton River Road intersection with 30% (scenario only) increase in traffic generated from the proposed development.

Table 6 Old Forcett Road / Carlton River Road intersection performance summary (sensitivity test)

Scenario	AM Peak 8:30 – 9:30		PM Peak 16:30 – 17:30	
	Average Delay	LOS	Average Delay	LOS
30% (scenario only) increase with Development in place	3.0 seconds	LOS A	3.3 seconds	LOS A

For the right turn movements, the sensitivity testing results are shown in Table 7.

Table 7 Old Forcett Road / Carlton River Road right turn performance summary (sensitivity test)

Scenario	AM Peak 8:30 – 9:30		PM Peak 16:30 – 17:30	
	Average Delay	LOS	Average Delay	LOS
Right turn out form Carlton River Road onto Old Forcett Road				
30% (scenario only) increase with Development in place	10 seconds	LOS A	14.4 seconds	LOS B
Right turn from Old Carlton Beach Road onto Carlton River Road				
30% (scenario only) increase with Development in place	6.4 seconds	LOS A	8.7 seconds	LOS A

The results suggest that the intersection is currently performing well within capacity. The intersection performance remains at LOS A with the increase in traffic volume under the sensitivity testing. With 30% (scenario only) increase in traffic volume, the right turn movement experiences some deficiency but the level of service remains unchanged. A 30% increase in traffic volume is representative of a traffic growth of approximately 3% over a 10-year period.

4.2.2 Summary

It can be seen that in all scenarios discussed here, the intersection will continue to operate with spare capacity up to at least 2030 and beyond. The inclusion of traffic associated with the proposed 12 lot subdivision has only a minor impact on intersection operation. Sensitivity assessment indicates that there is capacity to cater for even greater than expected growth in traffic volumes at the intersection.

4.3 Safety

As discussed in Section 2.4.1, there is a minor deficiency in sight distance on Carlton River Road due to the horizontal geometry design of the road. However, the low volume of traffic generated by the proposed development is not expected to change the potential for crashes in the vicinity of the Baudin Road / Carlton River Road intersection.

The proposed access arrangements and internal road network of the proposed subdivision are also not expected to create any new road safety hazards.

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5. Conclusions

This report has examined the potential traffic impacts of a proposed rezoning and subdivision to create nine Rural Living Zone lots and three Rural Living Zone – Area B lots off Baudin Road, between Carlton River Road and Waterson Lane, Carlton. Key findings of the assessment include:

- The proposed development will generate approximately 12 trips in each of the peak hours;
- The Old Forcett Road / Carlton River Road intersection is currently operating with spare capacity in both the morning and afternoon peak hours;
- The Baudin Road / Carlton River Road intersection has extremely low traffic volume during peak hours, which is under 80 vehicles per peak hour for the whole intersection. The low generation of the peak hour traffic by the proposed development is unlikely to cause traffic deficiency.
- The operation of the Old Forcett Road / Carlton River Road intersection is expected to continue operating with an acceptable Level of Service in both the AM and PM peak hours after the proposed development is in place.
- The sensitivity testing of the Old Forcett Road / Carlton River Road suggests that the intersection will perform under capacity up to 2030 and beyond with the proposed development in place.
- The internal road layout is considered acceptable, subject to completion of the detailed design;
- The internal road layout provides good sight distance characteristics for designing driveway access to the proposed Lots.
- For Lot 6 and Lot 3 (Rural Living – Area B), it is recommended that driveways are located to ensure adequate sight distance is provided in the vicinity of the 90° bend in the road. Similarly, driveways for Lot 1, Lot 2 and Lot 3 should be located to avoid being too close to the junction of the extension of Baudin Road and the new subdivision road.
- The proposed development is unlikely to cause safety deficiency at Baudin Road / Carlton River road intersection, providing that there is sufficient intersection sight distance.

Based on the findings of this Traffic Impact Assessment, the development is supported on traffic grounds.

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12528099-51767-

1/https://projectsportal.ghd.com/sites/pp16_03/watersonlanetiacarl/ProjectDocs/12528099-REP-Waterson Lane TIA_Draft.docx

Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
A	Y. Han	D. Bekker		A. Moore		23/06/2020
0	Y.Han	D. Bekker		A. Moore		30/07/2020

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Quentin Newitt

**Agricultural Assessment of Proposed
Development of titles 169070/1 and
119311/1 Waterson Lane, Carlton.**

December 2020





Pinion Advisory was formed in July 2020 by the merger of three consulting firms – Macquarie Franklin, Rural Directions and Sunraysia Agriculture

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An appropriate citation for this report is: *Pinion Advisory, July 2020, Agricultural Assessment Report of the Proposed Development at titles 169070/1 and 119311/1 Waterson Lane, Carlton TAS.*

Date	Issue number	Document Status	Authorised by
3/4/2020	1	Draft	J Lynch
29/7/2020	2	Draft	J Lynch
1/9/2020	3	Final	J Lynch
15/12/2020	4	Final.v1	J Lynch

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Executive summary

This agricultural assessment report has been prepared on behalf of the proponent, Quentin Newitt, and covers various aspects of the proposed development at titles 169070/1 and 119311/1 Waterson Lane, Carlton.

The proposed development consists of a rezoning and concurrent subdivision of the properties in question.

The combined size of the properties involved (total of 40.49 hectares) in conjunction with the land capability of the ground present, low rainfall environment, lack of irrigation water resources and adjacent residential dwellings highly restricts the current and future potential agricultural land use activities that can and could be conducted, and effectively renders this property unsuitable for sustainable commercial scale agriculture.

The nature, design and layout of the proposed developments are sensitive to the adjacent land use activity, and it is anticipated to have minimal negative impact and not fetter the agricultural land use nor the existing residential dwelling and amenity use on the adjacent properties.

1 Purpose

This report has been undertaken on behalf of Quentin Newitt (the proponent) and will accompany an application to the Sorell Council seeking approval to develop land at titles 169070/1 and 119311/1 Waterson Lane, Carlton.

The document provides an agricultural assessment of the property in question and reports on how the proposal relates to the current and future agricultural land use activity on the properties in question as well as adjacent and nearby properties.

1.1 Land Capability

The currently recognised reference for identifying land capability is based on the class definitions and methodology described in the Land Classification Handbook, Second Edition, C.J Grose, 1999, Department of Primary Industries, Water and Environment, Tasmania.

Most agricultural land in Tasmania has been classified by the Department of Primary Industries and Water at a scale of 1:100,000, according to its ability to withstand degradation. A scale of 1 to 7 has been developed with Class 1 being the most resilient to degradation processes and Class 7 the least. Class 1, 2 and 3 is collectively termed "prime agricultural land". For planning purposes, a scale of 1:100,000 is often unsuitable and a re-assessment is required at a scale of 1:25,000 or 1:10,000. Factors influencing capability include elevation, slope, climate, soil type, rooting depth, salinity, rockiness and susceptibility to wind, water erosion and flooding.

In providing the opinion enclosed here, it is to be noted that Jason Lynch possess a BAppSc(hort), Certified Practising Agriculturalist, is a member of Australian Institute of Agriculture and has over 20 years experience in the agricultural industry in Tasmania. Jason is skilled to undertake agricultural and development assessments as well as land capability studies. He has previously been engaged by property owners, independent planners, surveyors and Councils to undertake assessments within the Brighton, Burnie, Central Coast, Circular Head, Clarence, Devonport, George Town, Huonville, Kentish, King Island, Kingston, Latrobe, Launceston, Meander Valley, Northern Midlands, Southern Midlands, Tasman and Waratah-Wynyard municipalities. Most of these studies have involved the assessment of land for development purposes for potential conflict with Council Planning Schemes.

1.2 Sorell Interim Planning Scheme 2015

The Scheme (operative since 2015) sets out the requirements for use and development of land in the Sorell municipality in accordance with the Land Use and Approvals Act 1993.

2 Properties location

The properties are owned by Quentin Newitt are located on Waterson Lane, Carlton. (Figure 1).

Table 1 Property detail summary

Title Address	Title Reference	Property ID	Hectares (Approx)
Waterson Lane, Carlton	1690701/1	2294356	26.85
	119311/1	2294292	13.64

The properties in question on Waterson Lane are predominantly south facing and covered by an open plain and gently sloping and undulating ground (Figure 2).

The vegetation present is entirely covered by heavily degraded pasture land, with a number of individual paddock trees, and no native and/or remanent forest and/or woodland vegetation communities are present.

No infrastructure is present on the properties except for a boundary fence and eight small stock water dams.

The properties in question are zoned rural resource according to the Sorell Interim Planning Scheme and are surrounded by similarly zoned rural resource land to the north, east and west, rural living zoned land adjacent to the south, with low density residential zoned land further to the south west and south east, and environmental management zone associated with the Carlton River estuarine area. (Figure 3).

The properties are held as private freehold land and are immediately surrounded by private freehold land, with nearby crown land associated with the Carlton River cemetery and the Carlton River foreshore area and a parcel of local government land further to the west. (Figure 4).

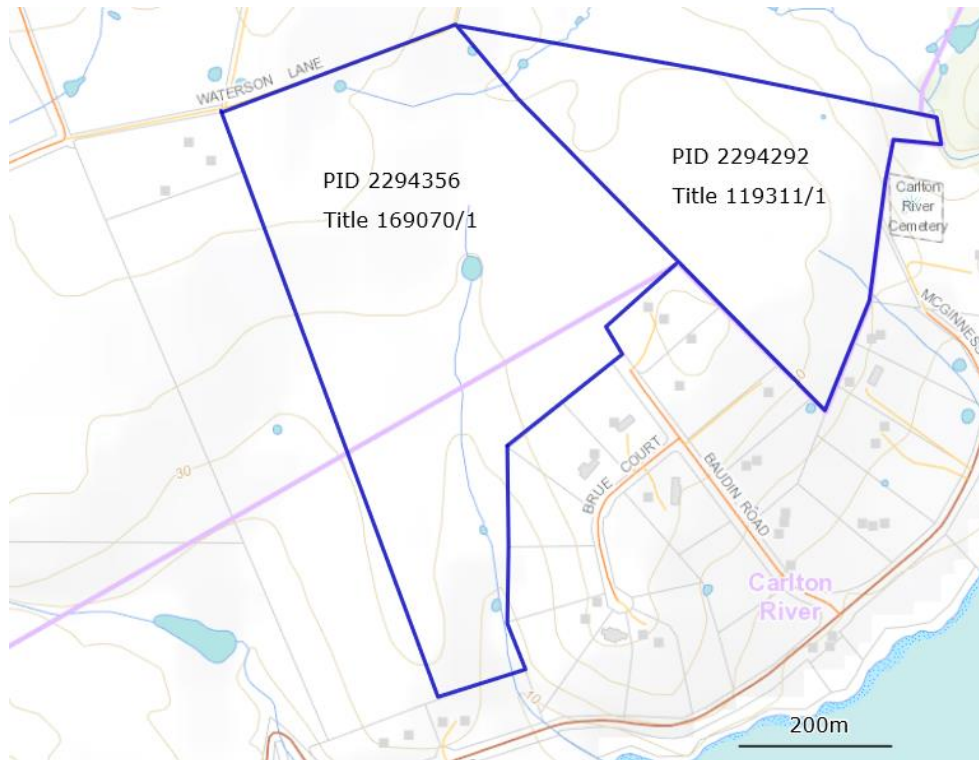


Figure 1 Property location (source the LIST)



Figure 2 Topography of the property (contours in meters) (source the LIST)

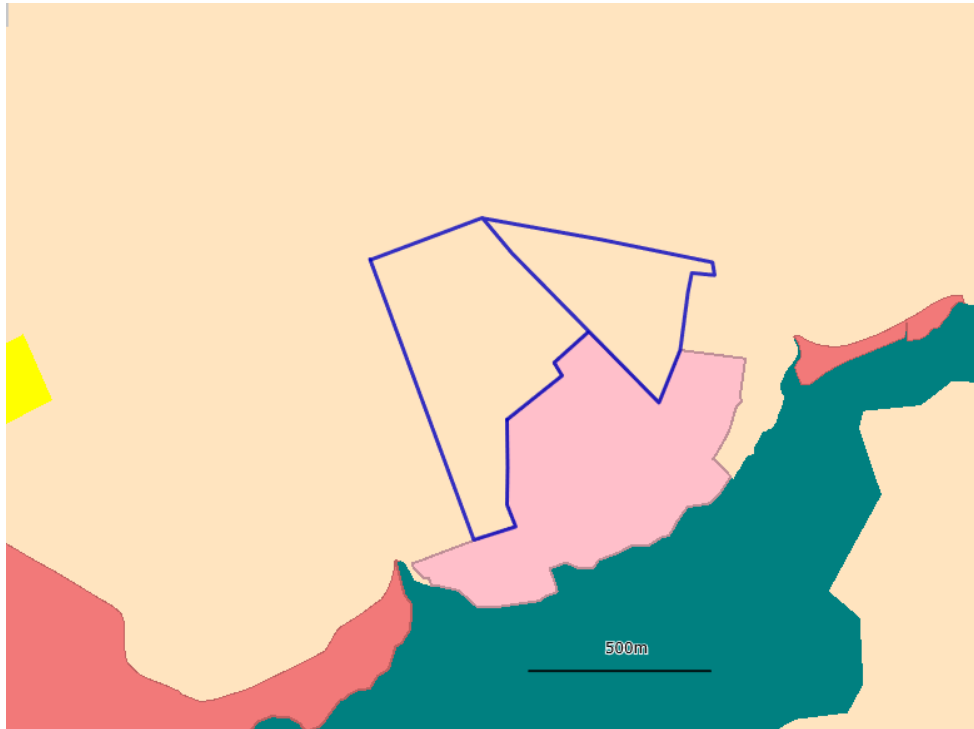


Figure 3 Rural resource (brown) land zoning on and surrounding the property in question, nearby is rural living (pink), utilities (yellow), low density residential (red) and environmental management (green) (source the LIST)



Figure 4 Private freehold land on the property in question and the surrounding property (light yellow shading), local government (blue) and crown land associated with the Carlton River cemetery and foreshore area (source the LIST)

3 Land capability

The official land capability map for the area was determined by DPIWE in 2002 at a scale of 1:100,000 and reported in their Nugent Report. On the subject lot, DPIWE identified the majority of the properties to be covered by class 4 land with a small area of class 5 land on the far eastern boundary area of title 119311/1.

A more detailed inspection of the property was undertaken by the author in March 2020, and determined the property is covered by class 4, 4+5, 5 and 6 and (Figure 6);

Class 4 land is described as follows:

Land primarily suitable for grazing but which may be used for occasional cropping. Severe limitations restrict the length of cropping phase and/or severely restrict the range of crops that could be grown.

Major conservation treatments and/or careful management is required to minimize degradation. Cropping rotations should be restricted to one to two years out of ten in a rotation with pasture or equivalent, during 'normal' years to avoid damage to the soil resource. In some areas longer cropping phases may be possible but the versatility of the land is very limited.

Class 5 land is described as follows:

This land is unsuitable for cropping, although some areas on easier slopes may be cultivated for pasture establishment or renewal and occasional fodder crops may be grown. The land may have slight to moderate limitations for pastoral use. The effects of limitations on the grazing potential may be reduced by applying appropriate soil conservation measures and land management practices.

Class 6 land is described as follows:

Land marginally suitable for grazing because of severe limitations. This land has low productivity, high risk of erosion, low natural fertility or other limitations that severely restrict agricultural use.



Figure 5 Land capability areas on the properties in question

The key land capability limitations associated with the property are;

- Erosion (e) associated with the risk of wind erosion on bare and exposed soils and where applicable on the more sloping land rill and sheet erosion on bare and exposed during heavy rainfall events albeit infrequent as they occur
- Rockiness (r) associated with the frequent presence of surface stone (50-300+mm) and occasional rocky outcrops
- Soils (s) associated with the presence of stone and gravels present on the surface and throughout the soil profile, relatively shallow topsoil depth, and imperfect soil drainage

Table 2 Land capability table

Land Capability Class	Land Characteristics							
	Geology & Soils	Slope %	Topography & Elevation	Erosion Type & Severity	Climatic Limitations	Soil Qualities	Main Land Management Requirements	Agricultural Versatility
4es (approx. 18.3 ha)	Brown dermosol, as per the Sorell soil association, derived from tertiary basalt geology. Gradational brown light clay loam over a brown heavy clay sub soil.	1-5	Gently sloping and undulating land. 30-50m ASL	Moderate erosion risk due to rill and sheet erosion caused by surface water movement and wind scouring on bare and exposed soils, and soil structure degradation due to inappropriate and/or excessive cultivation on wet soils.	Significant. The property receives on average 460mm of annual rainfall, prone to extended periods of low rainfall, is exposed the prevailing westerly winds, experiences cool winters, and typically dry warm summer conditions.	These dermosol soils are generally imperfectly drained, have a moderate soil moisture holding capacity, with stone and rock fragments present on the soil surface and in the soil profile, with occasional large boulders present.	Avoid situations that lead to the exposure of bare soil, therefore maintain sufficient ground cover and avoid over stocking the pasture throughout the year (especially in summer and autumn) Destock appropriately during periods of low rainfall to avoid pasture degradation.	Unsuitable for cropping, suitable for pastoral use with moderate/severe restrictions.

Land Capability Class	Geology & Soils	Slope %	Topography & Elevation	Erosion Type & Severity	Climatic Limitations	Soil Qualities	Main Land Management Requirements	Agricultural Versatility
4+5es (approx. 9 ha)	Brown dermosol, as per the Sorell soil association, derived from tertiary basalt geology, and smaller areas of grey/brown podosol soil types. Gradational brown light clay loam over a brown heavy clay sub soil, and deep sandy loam soil.	1-3	Gently sloping and undulating land. 40-50m ASL	High erosion risk due to rill and sheet erosion caused by surface water movement on bare and exposed soils, and soil structure degradation due to inappropriate and/or excessive cultivation on wet soils, and wind erosion on bare and exposed on the sandy loam soil.	Significant. The property receives on average 460mm of annual rainfall, is exposed the prevailing westerly winds, and experiences cool winters, and typically dry warm summer conditions.	These dermosol soils are moderate to well drained, have a moderate soil moisture holding capacity, with stone and rock fragments present on the soil surface and in the soil profile, with occasional large boulders present.	Avoid situations that lead to the exposure of bare soil, therefore maintain sufficient ground cover and avoid over stocking the pasture throughout the year (especially in summer and autumn) Destock appropriately during periods of low rainfall to avoid pasture degradation.	Unsuitable for cropping, suitable for pastoral use with moderate/severe restrictions. Due to the small size of land available, lack of irrigation resources and low rainfall the pastoral use in terms of scale and intensity is highly constrained, and likewise for these reasons the horticultural land use options are also highly constrained.

Land Capability Class	Geology & Soils	Slope %	Topography & Elevation	Erosion Type & Severity	Climatic Limitations	Soil Qualities	Main Land Management Requirements	Agricultural Versatility
5es (approx. 5 ha)	Brown dermosol, as per the Sorell soil association, derived from tertiary basalt geology. Gradational brown light clay loam brown heavy clay sub soil.	5-15	Gently sloping and undulating land. 10-30m ASL	Moderate/high erosion risk due to rill and sheet erosion caused by surface water movement and wind scouring on bare and exposed soils, and soil structure degradation due to inappropriate and/or excessive cultivation on wet soils.	Significant. The property receives on average 460mm of annual rainfall, is exposed the prevailing westerly winds, and experiences cool winters, and typically dry warm summer conditions.	These dermosol soils are moderate to well drained, have a moderate soil moisture holding capacity, with stone and rock fragments present on the soil surface and in the soil profile, with occasional large boulders present.	Avoid situations that lead to the exposure of bare soil, therefore maintain sufficient ground cover and avoid over stocking the pasture throughout the year (especially in summer and autumn) Destock appropriately during periods of low rainfall to avoid pasture degradation.	Unsuitable for cropping, suitable for pastoral use with moderate/severe restrictions.

Land Capability Class	Geology & Soils	Slope %	Topography & Elevation	Erosion Type & Severity	Climatic Limitations	Soil Qualities	Main Land Management Requirements	Agricultural Versatility
5re (approx. 6 ha)	Brown dermosol, as per the Sorell soil association, derived from tertiary basalt geology. Gradational brown light clay loam brown heavy clay sub soil.	15-25	Gently sloping and undulating land. 40-45m ASL	Moderate/high erosion risk due to rill and sheet erosion caused by surface water movement on bare and exposed soils, and soil structure degradation due to inappropriate and/or excessive cultivation on wet soils.	Significant. The property receives on average 460mm of annual rainfall, is exposed the prevailing westerly winds, and experiences cool winters, and typically dry warm summer conditions.	These dermosol soils are moderate to well drained, have a moderate soil moisture holding capacity, with frequent stone and rock fragments present on the soil surface and in the soil profile, with occasional large boulders present.	Avoid situations that lead to the exposure of bare soil, therefore maintain sufficient ground cover and avoid over stocking the pasture throughout the year (especially in summer and autumn) Destock appropriately during periods of low rainfall to avoid pasture degradation.	Unsuitable for cropping, suitable for pastoral use with moderate/severe restrictions.

Land Capability Class	Geology & Soils	Slope %	Topography & Elevation	Erosion Type & Severity	Climatic Limitations	Soil Qualities	Main Land Management Requirements	Agricultural Versatility
6re (approx. 0.3 ha)	Brown dermosol, as per the Sorell soil association, derived from tertiary basalt geology. Gradational brown light clay loam brown heavy clay sub soil.	15-20	Steep river bank and hillside foot slope. 10-15m ASL	High erosion risk due to rill and sheet erosion caused by surface water movement on bare and exposed soils, and soil structure degradation due to inappropriate and/or excessive cultivation on wet soils.	Significant. The property receives on average 460mm of annual rainfall, is exposed the prevailing westerly winds, and experiences cool winters, and typically dry warm summer conditions.	These dermosol soils are moderate to well drained, have a moderate soil moisture holding capacity, with frequent stone and rock fragments present on the soil surface and in the soil profile, with occasional large boulders present.	Avoid situations that lead to the exposure of bare soil, therefore maintain sufficient ground cover and avoid over stocking the pasture throughout the year (especially in summer and autumn) Destock appropriately during periods of low rainfall to avoid pasture degradation.	Unsuitable for cropping, suitable for pastoral use with severe restrictions



Figure 6 Top soil profile of the dominant dermosol soil present in the class 4es area of the properties



Figure 7 Sandy loam soils present on the northern areas of the class 5es land



Figure 8 Northerly westerly view from the southern end of the property title 169070/1



Figure 9 Northerly view over the southern end of property title 169070/1

4 Proposed Development

In summary the proposed development on the properties in question is to undertake rezoning and subsequent concurrent subdivision.

The subdivision would result in nine, 1 hectare lots.

Refer to Appendix A, Figure 12 and 13 for the overview and detailed development plan.

The proposed subdivision represents a sensitive and reasonably minor 30% increase in the existing increase in the existing developed Rural Living Zone which adheres to the southern boundary on the location of the site of the property in question.

The balance of the land on the property is to be fully utilised under a rezoning to Rural Living Zone, as per Area B (refer to Figure 12). This Area B provides a sufficiently large area of land to accommodate three 10 hectare (as per the minimum zone requirements) lots.

The indicative building areas on the three Rural Living Zone land lots allows for a 40m setback for the Rural Resource Zoned land and 20m for Rural Living Zoned land. The building envelopes associated each of the applicable subdivision lots have been chosen and sited to avoid waterways/bodies and steeper areas of land.

Access to all lots would be from the new subdivision road which joins the northern end of Baudin Road.

5 Land Use Activity

5.1 Current agricultural land use activity

The land on properties in question is not currently used for agricultural land use activities, however in the past has been used for low intensity pastoral use.

The agricultural land use activity is highly constrained due to;

1. The pastures are in a particularly degraded condition with an excessive amount of bare ground present, a large amount of annual broadleaf and grass weeds present
2. Low rainfall environment with average annual rainfall of 484mm
3. No access to reliable stock water and all livestock water requirements were trucked in to the property during its recent pastoral use
4. No access to irrigation water

5.2 Potential land use activity

Due to the various limitations associated with the properties the opportunity for agricultural land use activities is highly constrained in terms of both diversity and intensity of land use activity.

5.2.1 Cropping land use activity

Based on the land capability, low rainfall and lack of irrigation water the properties are considered marginally suitable for only low intensity dryland cropping land use activity.

Significant risks are associated with achieving crop yields and maintaining the sustainability of the land associated with the negative impacts to soil including erosion, loss of carbon and a degraded soil structure.

In reality this land would not be cropped.

5.2.2 Pastoral land use activity

Based on the land capability and low rainfall the properties are marginally suited to pastoral land use activity as per a low intensity grazing enterprise with a maximum annual carrying capacity of 12 DSE/ha for a total combined annual carrying capacity on both titles would be approximately 470 DSE.

In order to realise the maximum annual carrying capacity would require optimal soil fertility, significant pasture improvement, paddock subdivision and the adoption of appropriate grazing practices.

In order to realise the full carrying capacity of the properties it would be reasonable to consider that an investment of \$80,000 (\$2,000/ha) would definitely be required.

At present due to the degraded state of the land on the properties the current carrying capacity on the combined properties is closer to 235 DSE (6 DSE/ha).

A ewe/lamb sheep breeding enterprise example has been used in this report, and this represents the most appropriate pastoral land use activity that could be conducted on the property. This livestock enterprise would involve running ewes throughout the year and lambs being sold off at the point of weaning.

Assuming an average rating of 2.5 DSE/year for a 60 kg ewe/lamb unit (Meat and Livestock Australia and NSW Department of Primary Industry) it is reasonable to consider this property has the potential to be a 188 ewe/lamb livestock enterprise once the recommended property development and associated investment was made to improve the property (note this does not include any replacement breeding livestock raised). A 188 ewe/lamb livestock enterprise has the potential for a total annual gross margin return of approximately \$8,550 (2018 DPIWWE low rainfall livestock sheep breeding model). This level of financial return would not be enough to cover rates, interest and depreciation.

If \$80,000 was invested into the development of the properties in order to realise the full carrying capacity it would take roughly 9-10 years to achieve a breakeven point.

In reality it would not be appropriate to undertake significant land improvements on the properties due to the expected very low financial performance associated with the pastoral land use activities that could be undertaken.

There is also the reasonable likelihood that the normally long, dry summer and autumn conditions will gradually return newly improved pastures to a less productive and degraded state.

5.2.3 Other land use activities

In theory there is an opportunity to undertake other agricultural land use activities on the property in question, and this includes intensive horticultural enterprises such as viticulture (sparkling and table wine) and cherries.

However due to the lack of irrigation water resources and absence of the potential to develop a reliable water supply in conjunction with the economics associated with these type of agricultural land use activities on a small scale in practice no horticultural land use activities would be undertaken on this block that would be considered as a meaningful commercial scale enterprise.

6 Impact on agricultural activities and residential amenity

The proposed development has been planned to minimise the potential for creating any negative impacts and/or constraint on agricultural land use activity and the amenity of adjacent and nearby properties.

Neighbouring and nearby land use activity includes;

- Fifteen residential use blocks on typically 1 hectare lots located along Brue Court, Baudin and Carlton Road are adjacent to the southern boundaries of the properties in question
- Six agricultural blocks adjacent to the north, east and west nominally used for low intensity pastoral land use activity ranging in size from 9 to 21 hectares
- Blocks of various size further to the west covered by native vegetation including Bracken fern land, heathland and scrub and woodland (*Eucalyptus tenuirami*, *E. amygdalina* and *E. globulous*) all of which are not used for agricultural land use activity
- Blocks of various size to the north and west that are nominally used for low intensity pastoral use

After inspecting the site, I have concluded that the nature of the proposed development and associated separation and buffer distances are sufficient to prevent unreasonable impact of agricultural activities on the residential amenity and vice versa.

6.1.1 Potential impact from neighbouring agricultural activity on the proposed development

The key risk area is to the east and north where agricultural land use activity is closest, whilst the separation distances, nature and scale of the development provides a significant buffer to the nearby agricultural land.

However, normal agricultural activities are not expected to have any unreasonable impact on the proposed development.

An assessment of the key risks are summarised below in Table 3. This has been compiled on the basis that the neighbouring farm activities could possibly include irrigated and dryland crops as well as pasture for livestock grazing purposes.

Table 3 Potential risk from neighbouring agricultural activity on the proposed development and possible mitigation strategies

Potential Risk from Neighbouring Agricultural Land Activity	Extent of Risk & Possible Mitigation Strategy
1. Spray drift and dust	Risk = low. Existing vegetation and buffer distances will mitigate the impact of sprays and dust if applied under normal recommended conditions. Aerial spraying is not conducted on the adjacent land, although ground or spot spraying is a practical and mostly used alternative on the agricultural land to the north. Spraying events should be communicated in a timely manner to the inhabitants of the dwelling.
2. Noise from machinery and irrigation pump operation, livestock and dogs.	Risk = low. Some occasional machinery traffic will occur when working and undertaking general farming duties on adjacent land.
3. Irrigation water over boundary	Risk = low. No irrigation occurs on neighbouring agricultural properties. Theoretically irrigated land use activity would only occur on the land adjacent to the north, and the proposed buffer distances would be sufficient such that this is not expected to be an issue. Irrigation systems are not normally operated in high winds due to excessive evaporative losses and uneven application rates on the ground.
4. Stock escaping and causing damage.	Risk = low provided that boundary fences are maintained in sound condition.
5. Electric fences	Risk = low. Mitigated by the proponent attaching appropriate warning signs on boundary fencing.

6.1.2 Potential impact from the development on neighbouring agricultural activity

The potential impacts that could be imposed by the development on neighbouring agricultural activity are usually manifested as complaints made against development residents from owners/users of the neighbouring agricultural land could possibly including trespass, theft, damage to the property and associated infrastructure, weed management, outbreak of fire and dog menace. Table 4.

Some of these risks rely on an element of criminal intent.

Table 4 Potential impact to neighbouring agricultural activity from the proposed development and mitigation strategies

Potential Risk to Neighbouring Agricultural Activity	Extent of Risk & Possible Mitigation Strategy
1. Trespass	Risk = low. Mitigation measures include maintenance of sound boundary fencing, lockable gates and appropriate signage to warn inhabitants and visitors about entry onto private land; report unauthorised entry to police.
2. Theft	Risk = low. Ensure there is good quality boundary fencing on neighbouring properties and appropriate signage to deter inadvertent entry to property; limit vehicle movements, report thefts to police.
3. Damage to property	Risk = low. As for theft.
4. Weed infestation	Risk = low. Risks are expected to be negligible, with the proponents committed to managing the property for weeds and undertaking ongoing and routine weed control activities.
5. Fire outbreak	Risk = low. Fire risk can be mitigated by careful operation of outside barbeques and disposal of rubbish. Each new lot will be subject to a Bushfire Hazard Management Plan.
6. Dog menace to neighbouring livestock	Risk = low. Future lot owners will be subject to Council's by-laws regarding containment of dogs within the lot owners' property.

The proposed development would not be anticipated to fetter and/or constrain the neighbouring agricultural land use activity.

6.2 Potential impact of the development on the neighbouring residential amenity

A number of residential dwellings are located in this the area of Carlton. Figure 11.



Figure 10 Location of existing nearby residential dwellings (blue dots) relative to the properties in question (highlighted in blue) with the nearby low density residential zoned land (highlighted in red)

Apart from complaints relating to issues raised in Section 6.1.2, there are no other obvious impacts to neighbouring residential amenity by the proposed development.

The separation distances, nature and scale of the development provides a significant buffer and it is reasonable to consider it would be sufficient to mitigate the potential for negative impact to the residential amenity of neighbouring properties.

7 Water Availability

7.1 Water resources

The property has a number of minor ephemeral waterways which flow through the properties and property title 119311/1 borders Chaseys Creek on the far north eastern boundary.

All waterways present and/or bordering the properties are either direct and/or secondary tributaries of the Carlton River.

Table 5 Waterways present on the properties in question

Property Title	Waterway ID (as per Figure 11)	Location of the property	Hydro Line ID	CFEV
169070/1	1	SW corner	1578607	5
169070/1 & 119311/1	2*	North	1577455	5
119311/1	3	SE corner	27167	5
119311/1	4	Chasey Creek	1437951	4

*actually a tributary of Chaseys Creek



Figure 11 Waterways present on and bordering the properties in question

The Carlton River's allocatable irrigation water is already heavily allocated, and a very small amount of unallocated irrigation water is available, that being;

- High availability (S5 surety) of a total allocation of 1,858.49 ML only 0.61 ML is available
- Mid Availability (S6 surety) of a total allocation of 1,790.62 ML only 0.92 ML is available

The properties in question have eight small stock water dams present, with a combined approximate storage capacity of approximately 3 ML, which are filled via surface run-off from waterways 1, 2 and 3 (as identified in Table 11). The reliability of filling these stock water dams is highly uncertain due to the prevailing low rainfall and additionally the water quality of these dams would be likely be less than suitable due to the turbidity and inability to flush out faecal contaminants.

Limited dam sites are available on the properties in question due to topographic constraints and ultimately the almost complete lack of allocatable irrigation water and therefore it would be unreasonable future dam developments. Additionally it should be noted that the presence of nearby residential dwellings and Carlton River Road would require significant additional engineering works to ensure the appropriate level of ANCOL dam safety is satisfied. It should be noted that no formal dam site survey has been undertaken.

The properties are not located in a declared irrigation district. The Sorrell irrigation district is located 4.3km with the nearest Tasmanian Irrigation pipeline located 5.9 km respectively to the north west at the nearest point to the properties in question.

The property is not serviced by TasWater for the provision of drinking water and sewerage services.

No bores are present on the properties, and this area of the Carlton is not recognised as an area with abundant groundwater yields and/or are known to produce good quality water, rather the bores in the area often yield particularly poor quality water which is high salt and iron. No formal assessment has been undertaken into accessing ground water via a bore.

The lack of available water resources is a severe limiting factor to the current and potential agricultural land use activity and associated productivity.

7.2 Storm water disposal

The storm water generated on the properties in question, as would be produced from hard standing areas and the building roof surfaces units would be collected in tanks with any overflow disposed of by in-ground absorption which a sufficient means is to handle the quantity and flow rates of run-off generated.

No lot is less than 10,000 sq metres in area so there is an abundant area for overflow absorption. Council will impose conditions on design for road drainage.

8 PAL Policy compliance

An assessment is required to ensure that the proposed development does not conflict with the principles outlined in State Policy on the Protection of Agricultural Land 2009 (PAL Policy). The purpose of the PAL Policy is to conserve and protect agricultural land so that it remains available for the sustainable development of agriculture, recognising the particular importance of prime agricultural land.

Note that no one Principle should be read in isolation from the others to imply a particular action or cause and that generally the Principles are to be implemented through the planning scheme as it states in the PAL Policy.

8.1.1 Principle 1

Principle 1 states

“Agricultural land is a valuable resource and its use for the sustainable development of agriculture should not be unreasonably confined or restrained by non-agricultural use or development”.

The land present on the properties in question is considered to have relatively low agricultural land use values, has a very restricted range of current and potential land use activities which can/could be undertaken, is not located within in a irrigation district and has negligible opportunity to be developed for irrigated agricultural land use activities.

The nature, layout and setbacks associated with the proposed development is sensitive to the adjacent agricultural land and has been designed to ensure a negligible impact on the neighbouring properties.

8.1.2 Principle 2

Principle 2 states

“Use and development of prime agricultural land should not result in unnecessary conversion to non-agricultural use or agricultural use not dependent on the soil as the growth medium”

No prime agricultural land is present on the properties in question.

8.1.3 Principle 3

Principle 3 states

“Use and development, other than residential, of prime agricultural land that is directly associated with, and a subservient part of, an agricultural use of that land is consistent with this Policy.”

No prime agricultural land is present on the properties in question.

8.1.4 Principle 4

Principle 4 states

"The development of utilities, extractive industries and controlled environment agriculture on prime agricultural land may be allowed, having regard to criteria, including the following:

- (a) minimising the amount of land alienated;
- (b) minimising negative impacts on the surrounding environment; and
- (c) ensuring the particular location is reasonably required for operational efficiency.

No prime agricultural land, and no utilities, extractive industries and/or controlled environment agriculture are proposed on the properties in question.

8.1.5 Principle 5

Principle 5 states

"Residential use of agricultural land is consistent with the Policy where it is required as part of an agricultural use or where it does not unreasonably convert agricultural land and does not confine or restrain agricultural use on or in the vicinity of that land".

The land present on the properties in question is considered to have relatively low agricultural land use values, has a very restricted range of current and potential land use activities which can/could be undertaken, is not located within in a irrigation district and has negligible opportunity to be developed for irrigated agricultural land use activities.

The residential use of the land on the properties in question is not required as part of an agricultural use which is proposed for the property.

The nature, layout and setbacks associated with the proposed development is sensitive to the adjacent agricultural land and has been designed to ensure a negligible impact on the neighbouring properties.

8.1.6 Principle 6

Principle 6 states

"Proposals of significant benefit to a region that may cause prime agricultural land to be converted to non-agricultural use or agricultural use not dependent on the soil as a growth medium, and which are not covered by Principles 3, 4 or 5, will need to demonstrate significant benefits to the region based on an assessment of the social, environmental and economic costs and benefits".

No prime agricultural land is present on the properties in question.

8.1.7 Principle 7

Principle 7 states

"The protection of non-prime agricultural land from conversion to non-agricultural use will be determined through consideration of the local and regional significance of that land for agricultural use".

The properties themselves are covered by non-prime agricultural land has negligible local and regional significance.

The properties have a combined coverage of 40.49 hectares, and this represents 0.032% of the total non-prime agricultural land mapped in the Nugent land capability survey area (121,080 hectares).

The properties are not located in a declared irrigation district and are not considered that they would benefit from broad scale irrigation development.

None of the rural land adjacent to and/or in the near vicinity of the properties in question does not include any prime agricultural land, is not used for irrigated agriculture and consists of properties used low intensity small scale pastoral use.

8.1.8 Principles 8

"Provision must be made for the appropriate protection of agricultural land within irrigation districts proclaimed under Part 9 of the Water Management Act 1999 and may be made for the protection of other areas that may benefit from broad-scale irrigation development".

The properties are not located within a declared irrigation district.

The properties in question would not be considered to benefit from broadscale irrigation due to the proximity of nearby residential dwellings to the south, relative land capability (class 4, 4+5 and 5) and comparative small size of the block, and additionally there is a distinct lack of available irrigation water from nearby waterways.

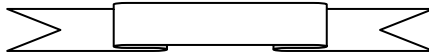
8.1.9 Principle 9 to 11

The remaining principles are not relevant to the subject area. These principles relate to the following:

- Planning schemes facilitating agricultural use on land zoned for rural purposes (Principle 9); and
- Plantation forestry (Principles 10 and 11).

9 Conclusions

1. The overall objective of the proposal is for a rezoning and concurrent subdivision of the properties in question on Waterson Lane.
2. The properties in question have a lower land capability in conjunction with the low rainfall environment, a normally severe, hot and dry summer and autumn period, lack of irrigation water resources (current and future) and adjacent residential dwellings highly restricts the current and future potential agricultural land use activities that can and could be conducted, and effectively renders this property unsuitable for sustainable commercial scale agriculture.
3. The proposed development would result in the formation of nine one hectare lots and three ten hectare lots.
4. The building envelopes on the proposed lots have been selected to avoid impact waterways and steeper land.
5. Many of the potential risks to and from neighbouring residential and agricultural activities have been identified. These can be mitigated and alleviated by the location, nature, scale and design of the planned residential dwelling, separation and buffer distances.
6. The land use on adjacent properties is minimal and limited to low intensity and small scale pastoral, with the very limited availability of irrigation water constraining both the current and future scale and intensity of potential agricultural land use activity.
7. The proposed development is consistent with the applicable PAL policy principles.
8. The various agricultural activities that are normally conducted on neighbouring farms such as the noise from machinery, plant and livestock, theoretical use of irrigation equipment etc... have been identified, These potential sources of conflict between neighbours can be mitigated and alleviated by the location, nature, scale and design of the planned residential dwelling, separation and buffer distances.



10 References

DeRose R. (2002) Land Capability Survey of Tasmania, Nugent, 1:100 000 map. Department of Primary Industries, Water and Environment, Tasmania.

DeRose R. (2001) Land Capability Survey of Tasmania. Nugent Report. Department of Primary Industries, Water and Environment, Tasmania.

Spanswick S., (1999) Revised Sorell Reconnaissance Soil Map of Tasmania. Department of Primary Industry Water& Environment.

Grose C.J. (1999) Land Capability Handbook: Guidelines for the Classification of Agricultural Land in Tasmania. 2nd Edition, DPIWE, Tasmania.

11 Declaration

I declare that I have made all the enquiries which I consider desirable or appropriate, and no matters of significance which I regard as relevant have, to my knowledge, been withheld.

Jason Lynch

Mr Jason Lynch B. App.Sci (Hort) CPAg
Senior Consultant
Pinion Advisory
December 2020

12 Appendix A

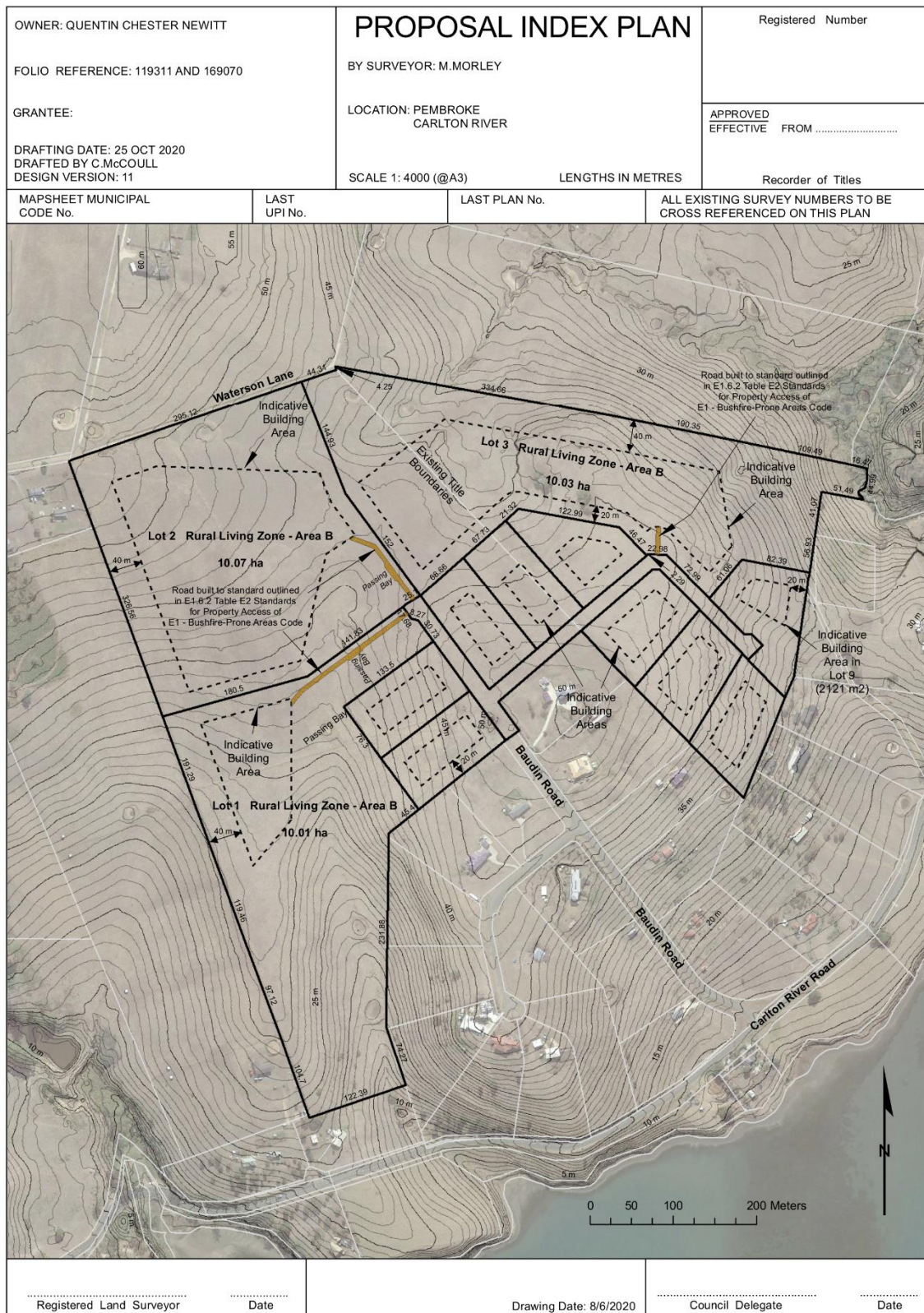


Figure 12 Proposed development plan overview (source M.Morley)

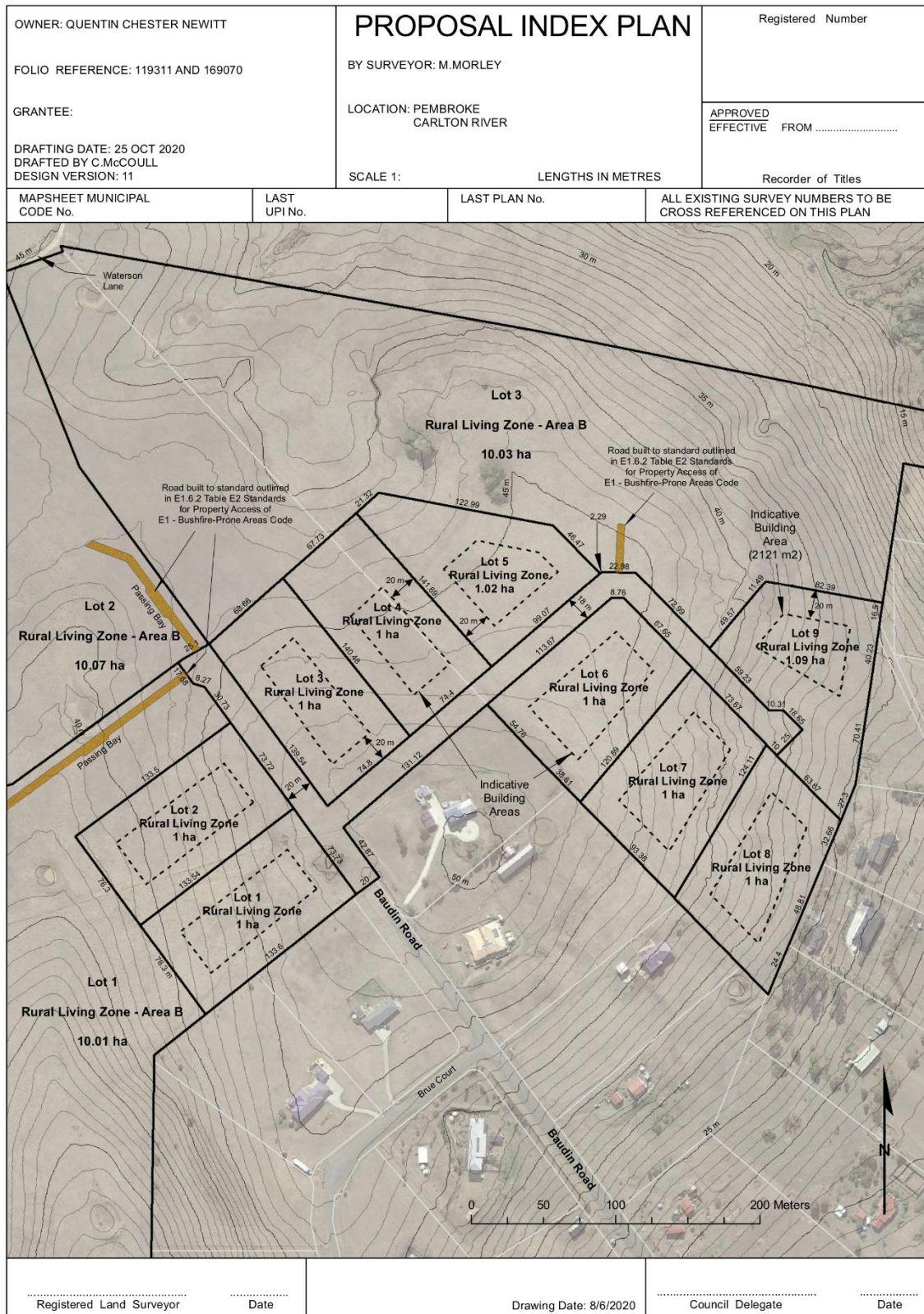


Figure 13 Proposal plan highlighting 9 Rural Living lots (source M. Morley)



**June
2020**

**Wastewater Land Assessment for proposed
rezoning and concurrent subdivision at
Baudin Road (north end),
Carlton River 7173
(for Quentin Newitt, PO Box 41, Sorell 7172
Email: suenewitt19@gmail.com)**

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Document History and Status

Issue	Rev.	Issued To	Qty	Date	Prepared	Reviewed
0	1	Quentin Newitt	1ecopy	20/07/20	TS / JMW	JMW
1	1	Quentin Newitt	1ecopy	12/10/20	TS	JMW
2	1	Sue Newitt	1 ecopy	9/12/20	JMW	JMW
3	1	Sue Newitt & Ian Stanley	E copy	21/12/20	JMW	JMW

Printed: 5 February 2021 8:52 AM
File Name: Baudin Road Subdivision - Report
Project Manager: Jamie Wood
Name of Project: Rezoning and Concurrent Subdivision Application to create 9 Rural Living Zone Lots and 3 Rural Loving Zone (Area B) Lots – Carlton River
Job Number: 20045

Sustainable Environmental Assessment and Management (SEAM) ¹
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¹SEAM is an environmental management consultancy with complementary environmental health services which commenced operation in 2002. SEAM provides a state wide service specialising in on site wastewater management, solid waste management, sustainability assessments and environmental and public health contracting. SEAM is a business founded on the premises of sustainability. In Tasmania, the principles of sustainable management (development) are enshrined in a suite of legislation known as the Resource Management and Planning System.

Executive Summary

This assessment follows a request from Quentin Newitt to ascertain if the land proposed for the subdivision is suitable for the installation of onsite wastewater disposal systems.

The proposed subdivision has similar geology throughout. The main item of note, is the weathered bedrock at varying depths within the proposed subdivision. The subdivision can be separated into two distinct Zones.

Zone 1 – “Rural Living Zone – Area B” - Lot 1, 2 and 3.

These lots are within the “Rural Living “(Area B Indicated on the main proposal plan). They are all over 10 hectares. There is weathered rock at varying depths within these lots. The depth of the rock ranges from 810mm deep to over 1500mm deep. The soils consist of clay loams/light clays (Category 4/5) and have plenty of available space for wastewater disposal.

Zone 2 - Lots 1, 2, 3, 4, 5, 6, 7, 8, & 9:

These lots are proposed as Rural Living Zone lots and are smaller than those of Zone 1. Each lot is 1.0 hectare. As in Zone 1, there is weathered rock within most of the lots at varying depths (850mm-1500mm). The soils consist of clay loams to light clays (Category 4/5) soils. Even with the rock within these lots, there is ample room for wastewater disposal.

1. Introduction

This assessment follows a request from Quentin Newitt to ascertain if the land proposed for the subdivision is suitable for the installation of onsite wastewater disposal systems.

The Site Location Plan is shown in Figure 1 and the Site Plan with proposed lots is presented in Figure 2. The assessment provides an appraisal of suitability of wastewater disposal for each of the proposed 12 lots.

2. Methodology

This wastewater assessment is based on the subdivision plan prepared by Michael Morley. A site visit was made on the 4th June 2020 by James Wood and test holes were taken (excavated) throughout the site by an excavator. Approximate locations of these test holes are shown on the Site Plan (Figure 2a and Fig 2b), and a soil profile of each test hole is attached in Appendix D. Soil Samples were also collected for analysis.

The assessment was carried out in accordance with AS 1547 – 2012 and using the AIEH recognised *Trench 3™* program. The methodology for the assessment is in Appendix A. The modeling results are representative of all lots and a detailed design for each lot will be required when Building approval is sought.

In preparing the assessment, the following documentation has been reviewed:

- ☐ Subdivision plan prepared M.Morley 8th June 2020
- ☐ Rainfall and temperature data from Dodges Ferry weather station
- ☐ Tasmania Department of Mines – Sorell 1:50,000 series
- ☐ Google Earth map
- ☐ “The List” Tasmanian government website

3. Site and Soil Evaluation Results – Existing Conditions

3.1 Topography & Aspect

The proposed subdivision consists of moderate slopes ranging from 5 to a maximum of 8 degrees. The site has a south easterly aspect with views to the Carlton River. The soils are category 4, 5 and 6 throughout, with varying amounts of rock.

The main limiting factors are the areas of surface water (dams and creeks) as well as the subsurface rock at varying depths throughout.



Figure 1: Site Location Plan

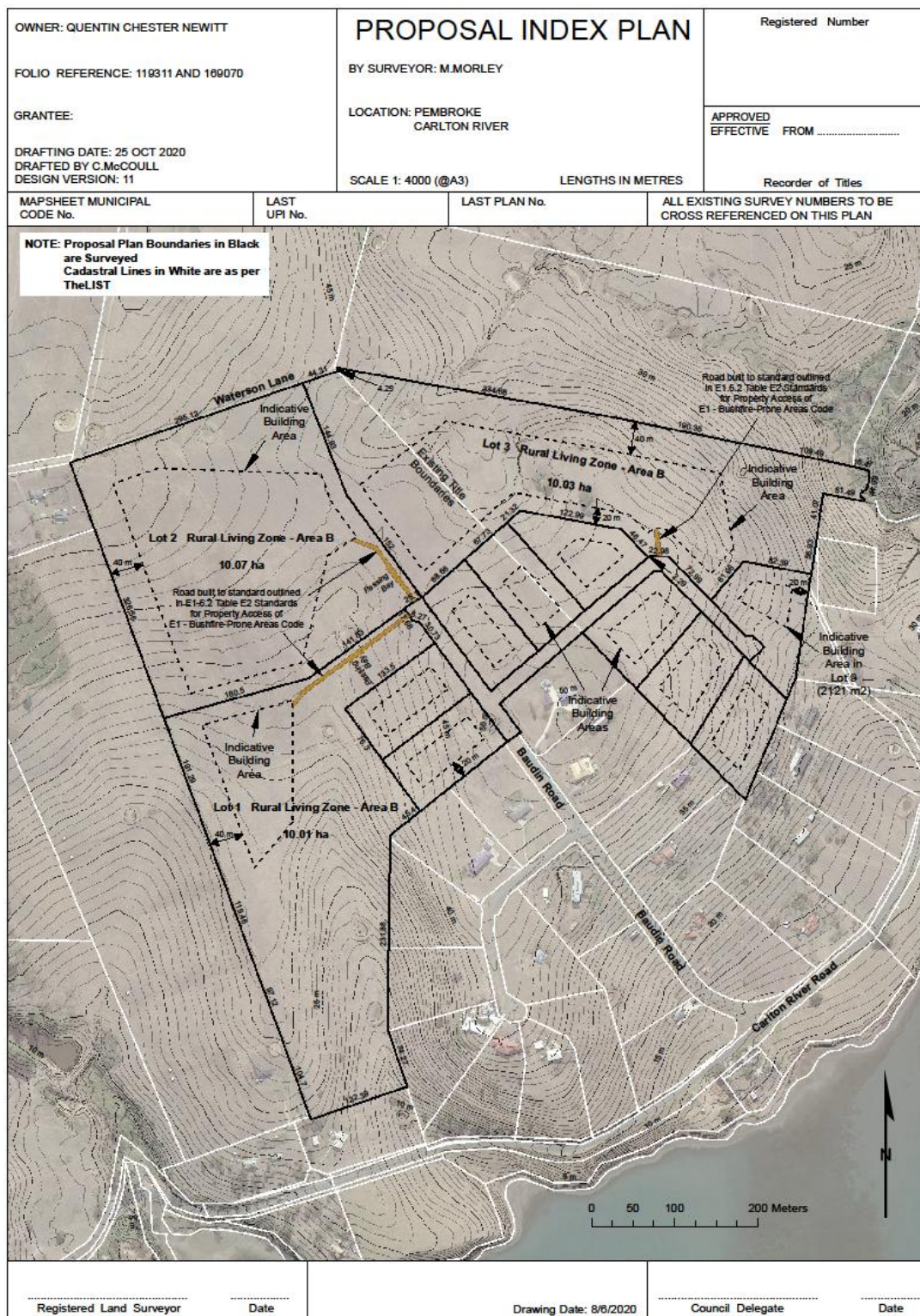


Figure 2a: Site Location Plan

Detailed plan over page

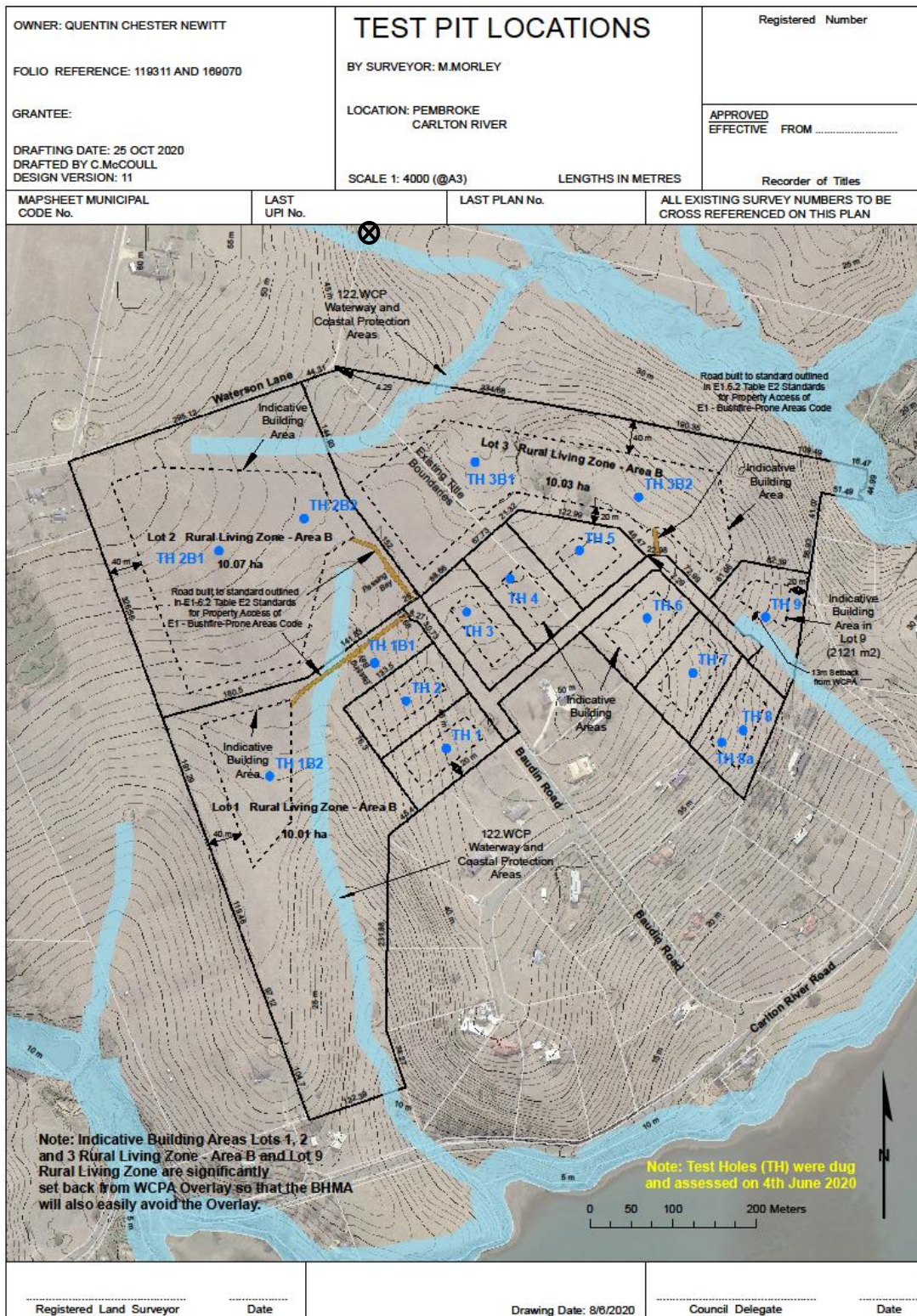


Figure 2b: Sub-division layout Illustrating proposed lots & test hole locations

3.2 Vegetation

The vegetation consists predominantly of:

- Grassland – throughout the subdivision
- Scrub – beyond the boundaries of the proposed development.

3.3 Geology

The Tasmania Department of Mines – Geological Atlas 1:50,000 - Sorell lists the soils in the area as:

- Tertiary Basalt

See geological map over page

3.4 Soils

As is reflected within the geological maps, the test holes revealed very similar soil profiles albeit with varying depths of each soil type and weathered bedrock.

Generally

- Dark Orange/Brown Clay Loam (Category 3 (Loam) to 4 (Clay Loam) soils)
- Brown Clay Loam/Light Clay (Cat 4/5)
- Weathered rock

See Appendix D for all Soil profiles and further soil information relating to soil conditions

Area of
investigation

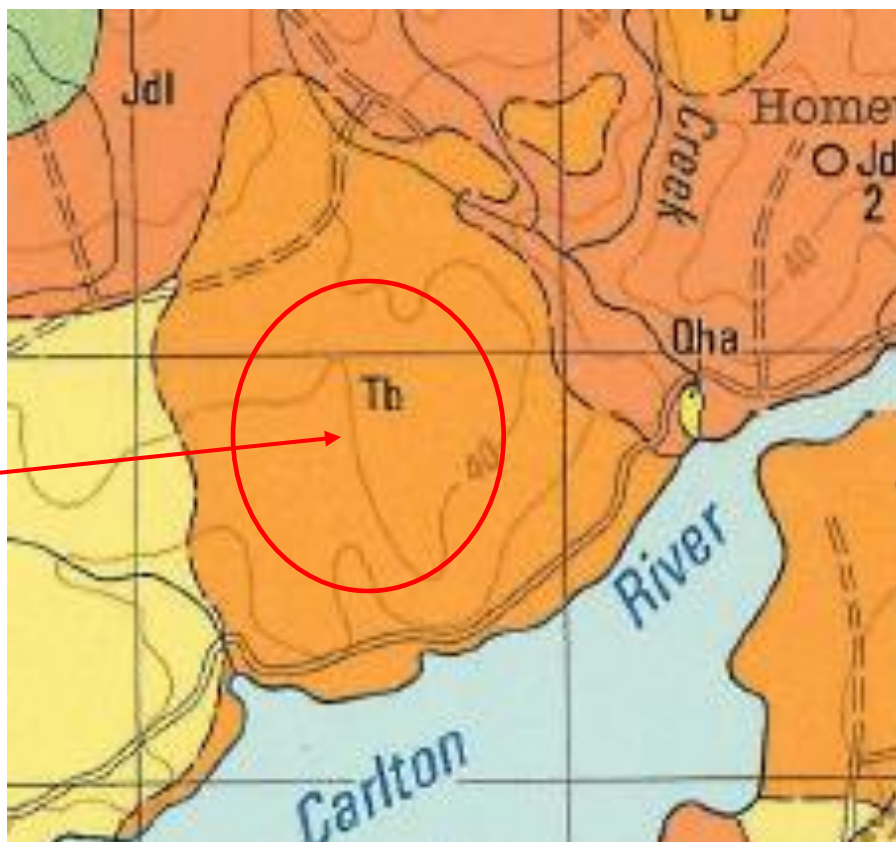


Figure 3 Area of investigation

IGNEOUS ROCKS		
TERTIARY	Th	Basalt flows and dykes
JURASSIC	Jdl	Dolerite with granophyre indicated  . Country rock metamorphosed by dolerite shown 
DEVONIAN	Dg	Deep Glen Bay Adamellite.

Table 1 -Tasmania Department of Mines–Geological Atlas 1:50,000 Series – Sorell

4. Site Features

4.1 Site Limitations and Constraints

We have conducted a site evaluation for all of the proposed 12 lots.

There were some site features that are limitations for wastewater disposal. The issues that were identified are:

- Weathered Rocky soils at depth
- Some water courses including dams & drainage lines (predominantly on the larger lots)
- Average South Easterly aspect

Positive aspects for the land overall include:

- ✓ Large lots – Minimum of 1 hectare
- ✓ Good Drainage on most sites
- ✓ Good evapo-transpiration with open gentle slopes

4.2 Existing Wastewater Systems

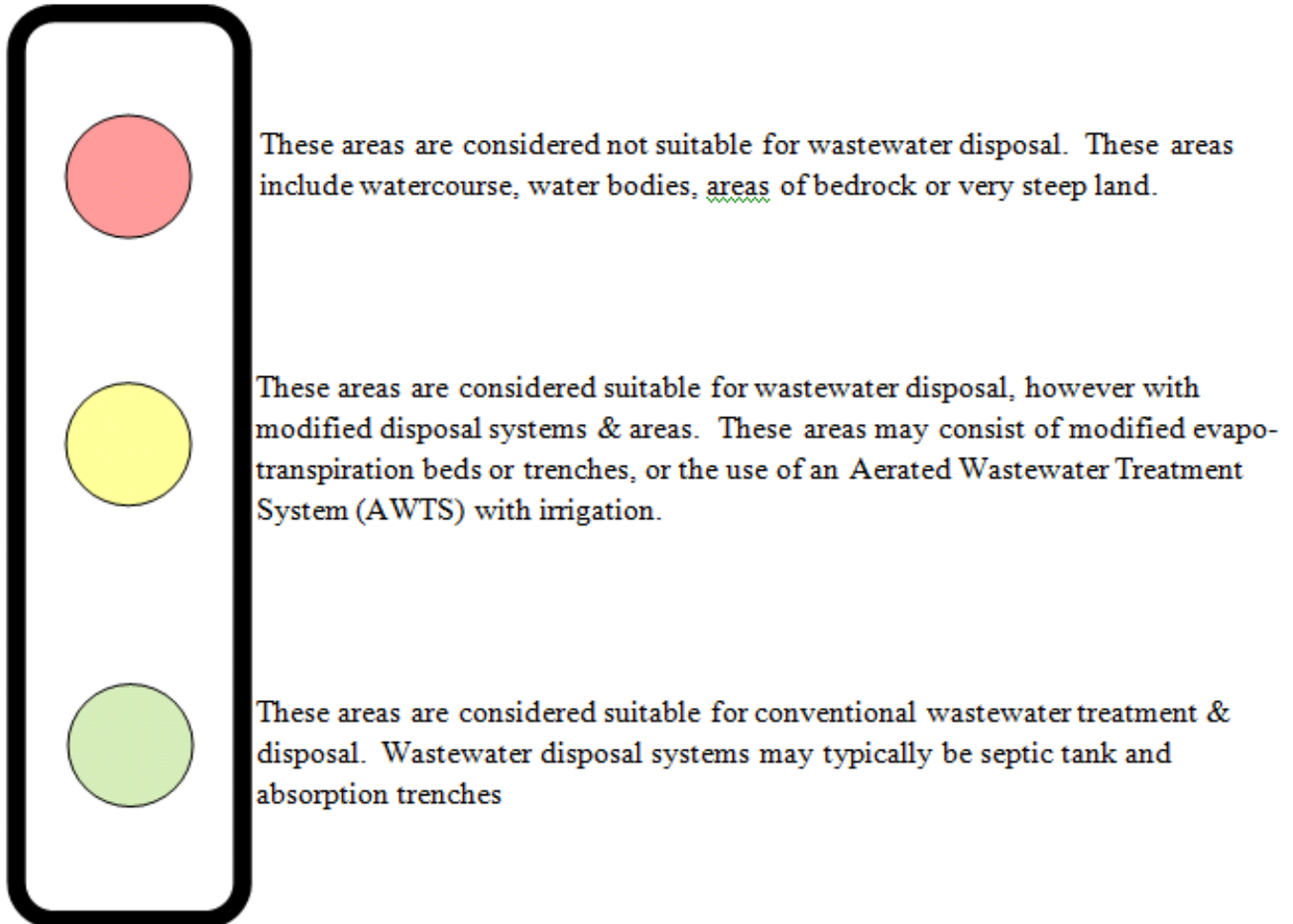
Currently there are no dwellings throughout the property.

4.3 Summary Assessment - Site Constrains Map

A site constraints map has been prepared to highlight the results of this assessment (Fig 4).

This plan aims to allow the reader a very quick overview of the suitability of the land for wastewater management.

LEGEND



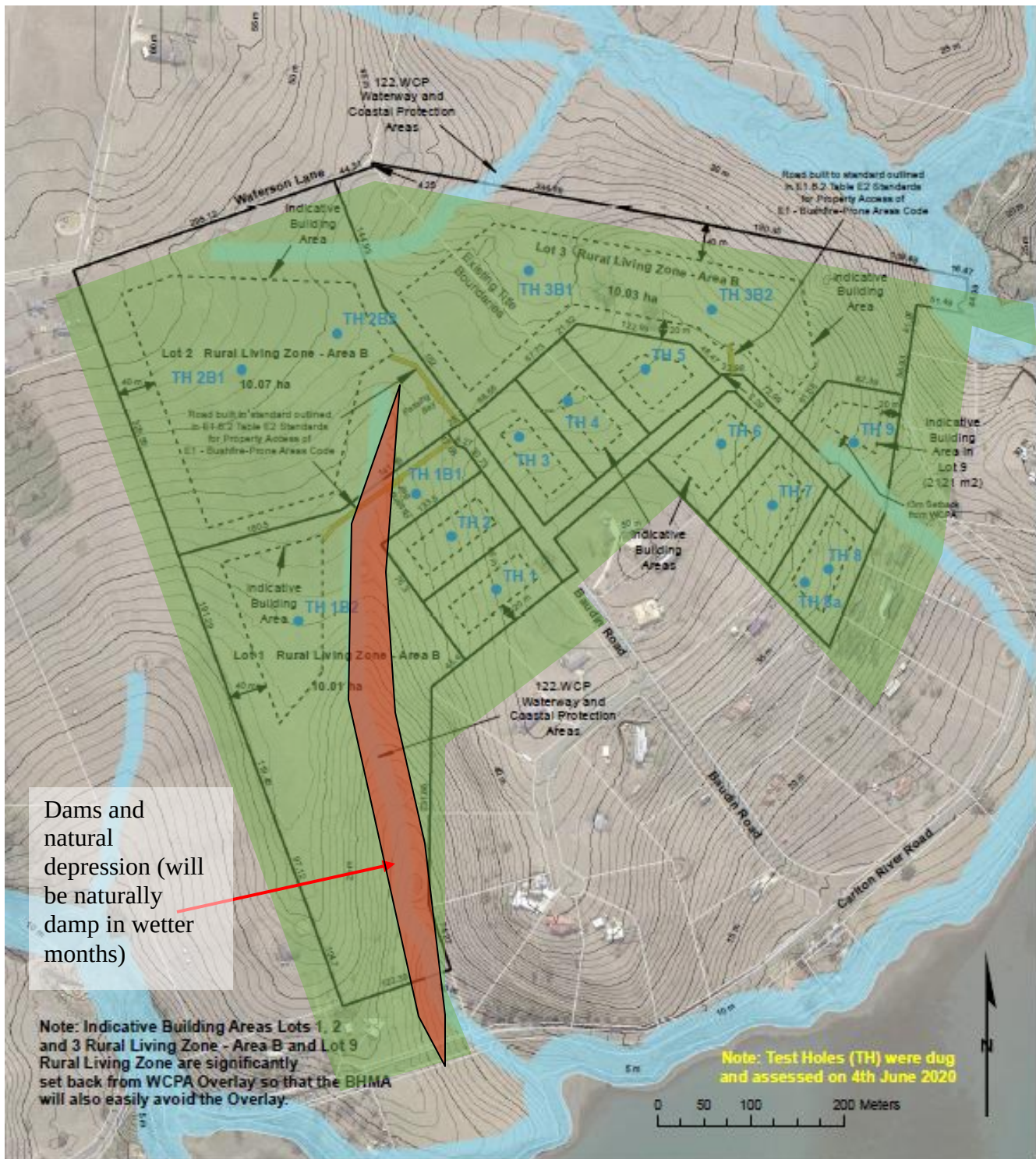


Figure 4: Site Constraints Map

5. Assessment Report

5.1 Background

The Assessment Report collates all the information from the Site Capability Report and the Environmental Sensitivity Report and provides a recommended preliminary design.

This assessment assumes a 4 bedroom dwelling on tank water. The preliminary designs assumes 2 people for the first 2 bedrooms and one person for every other bedroom. With each person generating 120L wastewater per day a total wastewater loading of: $6 \times 120 = 720\text{L/day}$. This is a large potential loading and has been used to provide a level of conservatism to the preliminary designs.

5.2 Assessment Determination

Zone 1 – “Rural Living Zone” Area B - Lot 1, 2 and 3.

As these lots are all very large (over 10 hectares) even with some areas that are drainage lines, there is plenty of available space for wastewater disposal. The main site factor is the weathered bedrock at varying depths. Based on site conditions it is deemed that these lots are suitable for wastewater management with the following options:

- Where bedrock below 1500mm - Septic tank & absorption trenches/ beds
- Where bedrock above 1500mm - Septic tank with raised trenches/beds OR
- An Aerated Wastewater Treatment System (AWTS) with irrigation

The specific disposal method will need to be determined at the time a house location is decided upon.

Zone 2 - Lots 1, 2, 3, 4, 5, 6, 7, 8, & 9:

These lots are smaller than in zone 1, but still have enough room for wastewater disposal (smallest lot is 1 hectare). All of these lots have good drainage with the weathered bedrock at varying depths. Based on site conditions it is deemed that these lots are suitable for wastewater management with the following options:

- Where bedrock below 1500mm - Septic tank & absorption trenches/evapo-transpiration beds
- Where bedrock above 1500mm - Septic tank with raised trenches/beds OR
- An Aerated Wastewater Treatment System (AWTS) with irrigation

Once a location for any future dwelling is determined for any particular lot, then a detailed individual site and soil evaluation will be required and this will determine the precise method of effluent treatment and disposal.

5.3 Recommended System Design(s)

For the purpose of determining lot sizes & disposal fields, we have assumed a dwelling of up to four (4) bedrooms will be constructed on each lot, using tank water supply. Once a total disposal area has been determined we have assumed this would occupy no more than 50% of the lot area (including a 100% reserve area) in order to determine the minimum lot sizes.

Disposal Area Required For Septic Tank & trenches

The wastewater would typically be treated in a dual purpose septic tank followed by absorption trenches or evapo-transpiration beds. Based on the Trench 3TM Modeling detailed in Appendix B the required disposal area for this would be 300m² (a total of 63m [3 x 21m] x 1.2m x 0.6m of ET bed) with a secondary or reserve disposal area of 300m² to be set aside for future use. The total disposal area required for this option is 600m² for onsite wastewater management.

The trenches/beds may need to be raised to compensate for the potential weathered bedrock.

Disposal Area Required For AWTS & Irrigation

The area required for irrigation is based on the following formula: $A = Q / \text{DIR}$, where A = Area in m², Q = Design Flow and DIR = Designed Irrigation Rate (mm / week). As the soils are classed as Category 5 the DIR is 3mm per day.

Therefore 720ltr / 3 = 240m² of primary irrigation area, an additional 240m² backup area must also be made available. The total disposal area required for this option is 480m².

As the weathered bedrock is below 500mm deep – it is unlikely the disposal area for secondary treatment will need to be raised in any of the lots.

5.4 Storm Water Disposal

The storm water from any proposed dwelling will need to be directed away from the wastewater disposal area, into a dedicated absorption trench designed to handle storm water overflow for each lot. The use of water tanks will handle first flush impacts to any storm water disposal system.

6. Conclusion & Recommendations

Zone 1 – “Rural Living Zone” Area B - Lot 1, 2 and 3.

As these lots are large it is deemed that these lots are suitable for either a septic tank with absorption trenches* OR an AWTS with irrigation.

Zone 2 - Lots 1, 2, 3, 4, 5, 6, 7, 8, & 9:

These lots are all 1 hectare in size. Given this fact, there is still ample room available for a dwelling, access, outbuildings and a wastewater disposal area. Therefore these lots are deemed suitable for either a septic tank with absorption trenches/beds* OR an AWTS with irrigation.

The site constraints of the proposed subdivision with respect to onsite wastewater management are illustrated on Figure 4.

As all lots meet the recommended lot sizes then it is considered that there is sufficient area on each lot for a dwelling, other outbuildings, access, storm water disposal and wastewater disposal.

The final onsite wastewater management system is to be determined for each of the new proposed lots when detailed house plans are prepared.

*** For primary treated effluent the disposal trenches/beds may need to be raised to achieve the required 1500mm between the bottom of the disposal area and any bedrock (limiting layer). This will be determined when a single site and soil assessment is completed for a dwelling.**

Appendix A Methodology & Trench 3 Results

The SSE is a report that identifies any significant issue that may inhibit or retard wastewater disposal. When an issue is identified then ways to ameliorate the impacts are considered. The outcomes of this process may result in the development being modified to try and resolve the issue. A SSE consists of 3 components: site capability, environmental sensitivity and assessment report

Site Capability

Site capability parameters include:

- ☐ Design area
- ☐ Density of disposal systems
- ☐ Slope angle
- ☐ Slope form
- ☐ Surface drainage
- ☐ Flood potential
- ☐ Heavy rain events
- ☐ Aspect
- ☐ Frequency of strong winds
- ☐ Wastewater volume
- ☐ Sodium Absorption Ratio (SAR) of septic tank effluent
- ☐ SAR of sullage
- ☐ Soil thickness
- ☐ Depth to bedrock
- ☐ Surface rock outcrop
- ☐ Cobbles in soil
- ☐ Soil pH
- ☐ Soil bulk density
- ☐ Soil dispersion
- ☐ Adopted permeability
- ☐ Long term acceptance rate and Design loading

Environmental Sensitivity

Environmental Sensitivity parameters include:

- ☐ Cation exchange capacity
- ☐ Phosphorus absorption capacity
- ☐ Annual rainfall
- ☐ Minimum depth to water table
- ☐ Annual nutrient load
- ☐ Groundwater environmental values
- ☐ Minimum separation distance required
- ☐ Risk to adjacent bores
- ☐ Surface water environmental values
- ☐ Distance to nearest surface waters
- ☐ Distance to nearest other features
- ☐ Risk of slope instability
- ☐ Distance to landslip

Assessment Report

The Assessment Report collates all the information from the Site Capability Report and the Environmental Sensitivity Report and provides a recommended design including the size of the disposal field. In this case the design is indicative only, and the design is not to be used for any particular dwelling or lot.

Appendix B: Site Modeling using Trench 3™

Sustainable Environmental Assessment and Management Land suitability and system sizing for on-site wastewater management Trench 3.0 (Australian Institute of Environmental Health)

Site Capability Report

Proposed Rezoning: 12 Lot Subdivision – Baudin Road

Assessment for	Quentin Newitt	Assess. Date	03-Jul-20
		Ref. No.	20045
Assessed site(s)	Baudin Road, Carlton River 7173	Site(s) inspected	04-Jun-20
Local authority	Sorell Council	Assessed by	Jamie Wood

This report summarises data relating to the physical capability of the assessed site(s) to accept waste water. Environmental suitability and system design issues are reported separately. The 'Alert' column tags factors with high (H) or very high (VH) site limitations which probably require special consideration in site acceptability or for system design(s). Blank spaces indicate data have not been entered into TRENCH.

Alert	Factor	Units	Value	Confid. level	Limitation		Remarks
					Trench	Amended	
	Expected design area	sq m	10,000	V. high	Very low		
	Density of disposal systems	/sq km	5	Mod.	Very low		
	Slope angle	degrees	5	V. high	Very low		
	Slope form	Straight simple		V. high	Low		
	Surface drainage	Mod. good		High	Low		
	Flood potential	Site floods < 1:100 yrs		Mod.	Very low		
	Heavy rain events	Rare		Mod.	Low		
	Aspect (Southern hemi.)	Faces E or W		V. high	Moderate		
	Frequency of strong winds	Common		High	Low		
	Wastewater volume	L/day	720	Mod.	Moderate		
	SAR of septic tank effluent		2.3	Mod.	Moderate		
	SAR of sullage		2.5	Mod.	Moderate		
	Soil thickness	m	1.3	High	Very low		
A	Depth to bedrock	m	1.3	Mod.	Moderate	High	Other factors increase impact
	Surface rock outcrop	%	0	V. high	Very low		
	Cobbles in soil	%	0	V. high	Very low		
	Soil pH		7.0	Guess	Very low		Other factors lessen impact
	Soil bulk density	gm/cub. cm	1.5	Guess	Low		
	Soil dispersion	Emerson No.	8	High	Very low		
	Adopted permeability	m/day	0.09	High	Very low		
	Long Term Accept. Rate	L/day/sq m	10	Mod.	Low	Moderate	Other factors increase impact

Comments

The potential weathered bedrock has been noted. Raised beds or secondary treatment will reduce this alert.

Sustainable Environmental Assessment and Management
Land suitability and system sizing for on-site wastewater management
Trench 3.0 (Australian Institute of Environmental Health)

Environmental Sensitivity Report

Proposed Rezoning: 12 Lot Subdivision – Baudin Road

Assessment for	Quentin Newitt	Assess. Date	03-Jul-20
Assessed site(s)	Baudin Road, Carlton River 7173	Ref. No.	20045
Local authority	Sorell Council	Site(s) inspected	04-Jun-20
		Assessed by	Jamie Wood

This report summarises data relating to the environmental sensitivity of the assessed site(s) in relation to applied wastewater. Physical capability and system design issues are reported separately. The 'Alert' column flags factors with high (H) or very high (VH) limitations which probably require special consideration in site acceptability or for system design(s). Blank spaces indicate data have not been entered into TRENCH.

Alert	Factor	Units	Value	Confid level	Limitation		Remarks
					Trench	Amended	
	Cation exchange capacity	mmol/100g	75	Mod.	Moderate		Factor not assessed
	Phos. adsorp. capacity	kg/cub m	0.8	Mod.	Moderate		
	Annual rainfall excess	mm	-242	High	Very low		
	Min. depth to water table	m	5	High	Very low		
	Annual nutrient load	kg	7.4	Guess	Low		
	G/water environ. value Agric sensit/dom irrig			High	Moderate		
	Min. separation dist. required	m	5	High	Very low		
	Risk to adjacent bores						
	Surf. water env. value Agric sensit/dom drink			High	Moderate		
A	Dist. to nearest surface water	m	120	High	High		
	Dist. to nearest other feature	m	50	High	Moderate		
	Risk of slope instability		Very low	High	Very low		
	Distance to landslide	m	200	High	Low		

Comments

The surface water (Dams) only affects two of the large lots. With ample room to achieve an acceptable setback distance between any future wastewater disposal system and any surface water.

Sustainable Environmental Assessment and Management
Land suitability and system sizing for on-site wastewater management
Trench 3.0 (Australian Institute of Environmental Health)

Assessment Report

Proposed Rezoning: 12 Lot Subdivision – Baudin Road

Assessment for	Quentin Newitt	Assess. Date	03-Jul-20
		Ref. No.	20045
Assessed site(s)	Baudin Road, Carlton River 7173	Site(s) inspected	04-Jun-20
Local authority	Sorell Council	Assessed by	Jamie Wood

This reports examines wastewater volumes, climatic inputs for the site, soil characteristics and system sizing and design issues. Site Capability and Environmental sensitivity issues are reported separately, where 'Alert' columns flag factors with high (H) or very high (VH) limitations which probably require special consideration for system design (S). Blank spaces on this page indicate data have not been entered into TRENCH.

Wastewater Characteristics

Wastewater volume (L/day) used for this assessment = 720 (using the 'No. of bedrooms in a dwelling' method)
 Septic tank wastewater volume (L/day) = 240
 Sullage volume (L/day) = 480
 Total nitrogen (kg/year) generated by wastewater = 5.2
 Total phosphorus (kg/year) generated by wastewater = 2.3

Climatic assumptions for site (Evapotranspiration estimated using mean max. daily temperatures)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean rainfall (mm)	33	33	43	35	33	48	36	46	43	33	42	42
Adopted rainfall (R, mm)	43	36	47	39	43	53	40	50	53	43	46	46
Retained rain (Rr, mm)	39	32	42	35	39	48	36	45	48	39	41	41
Max. daily temp. (deg. C)	23	22	21	18	15	13	13	14	15	17	19	21
Evapotrans (ET, mm)	86	69	66	53	43	47	48	52	54	63	68	78
Evapotr. less rain (mm)	47	36	23	18	5	-1	12	7	6	25	27	37
Annual evapotranspiration less retained rain (mm) =												242

Soil characteristics

Texture = Light Clay Category = 5 Thick. (m) = 1.3
 Adopted permeability (m/day) = 0.09 Adopted LTAR (L/sq m/day) = 10 Min depth (m) to water = 5

Proposed disposal and treatment methods

Proportion of wastewater to be retained on site: All wastewater will be disposed of on the site
 The preferred method of on-site primary treatment: In dual purpose septic tank(s)
 The preferred method of on-site secondary treatment: In-ground
 The preferred type of in-ground secondary treatment: Evapotranspiration bed(s)
 The preferred type of above-ground secondary treatment: None
 Site modifications or specific designs: Are needed

Suggested dimensions for on-site secondary treatment system

Total length (m) = 63
 Width (m) = 1.2
 Depth (m) = 0.6
 Total disposal area (sq m) required = 600
 comprising a Primary Area (sq m) of: 300
 and a Secondary (backup) Area (sq m) of: 300

Sufficient area is available on site

Comments
 See full report for details

Appendix C Photos

Plate 1 – Looking south over Zone 1 - Lot 1 & 2



Plate 2 – Looking over Lot 5



Plate 3 – Looking South from Lot 6



Plate 4 – Looking south from Lot 6/7



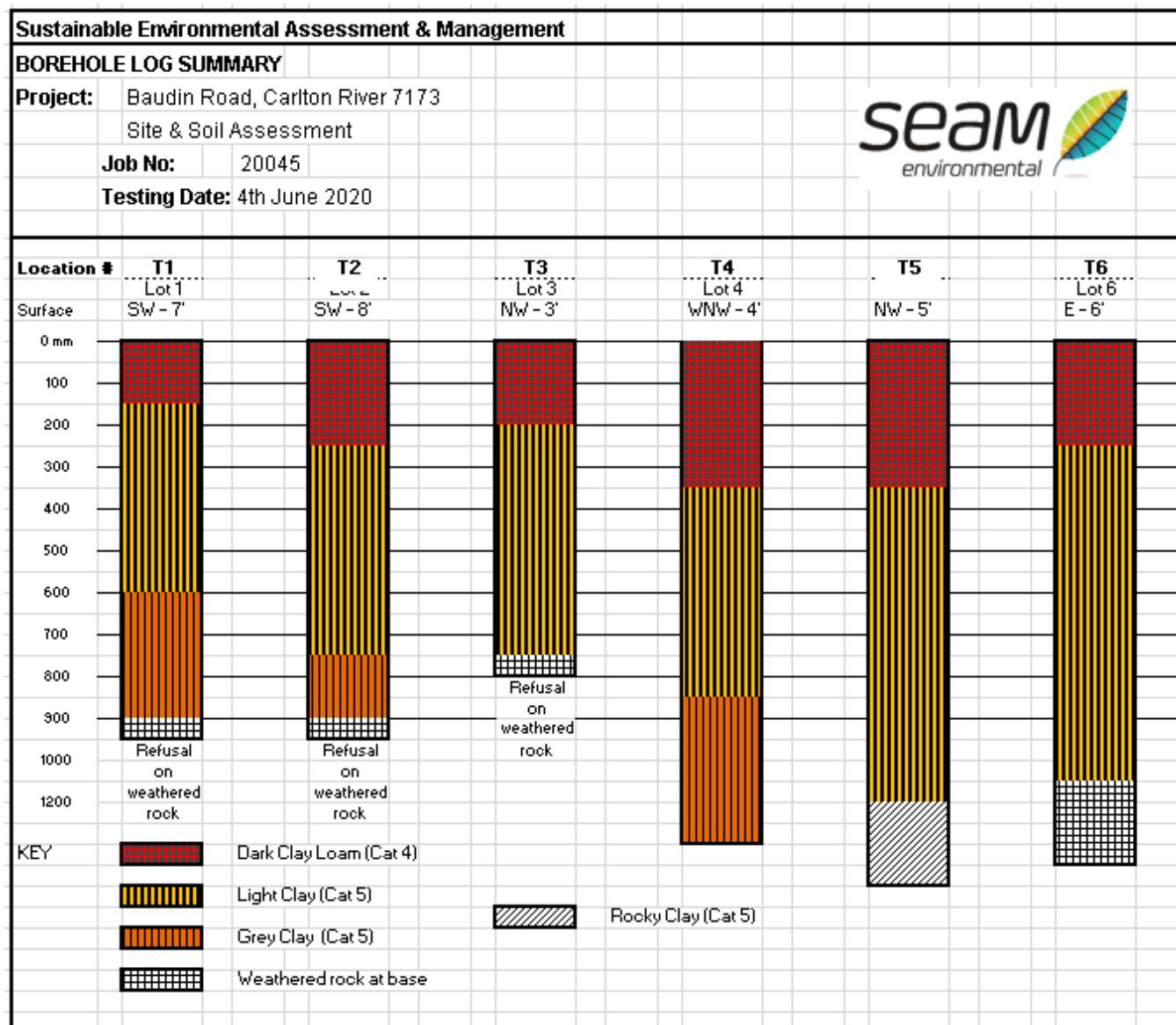
Plate 5 – Looking North West from Lot 7/8



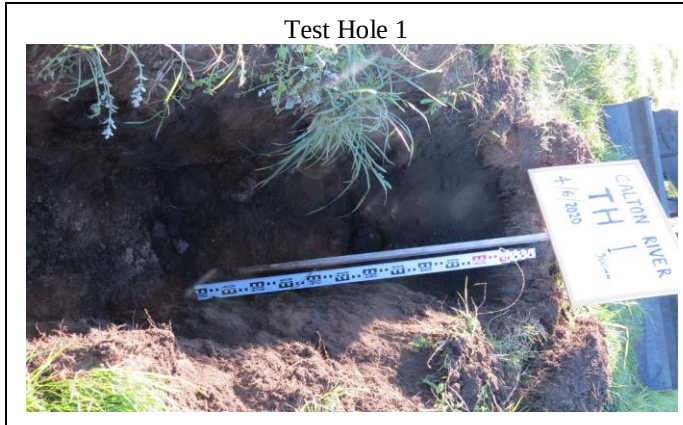
Plate 6 – Looking North East from Lot 3 (Area B)



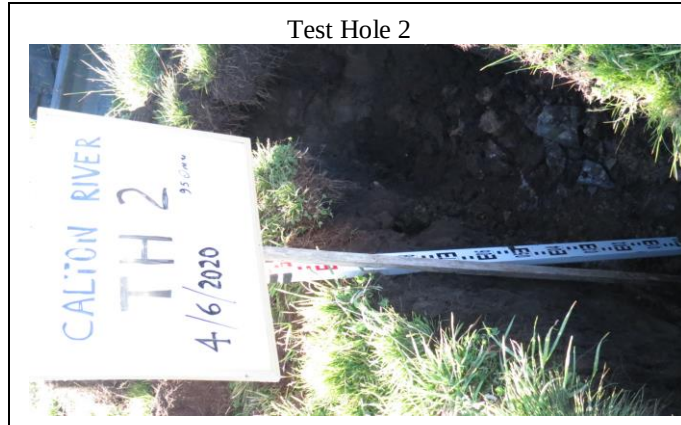
Appendix D – Soil Profiles & Test Pit Photos



Test Hole 1



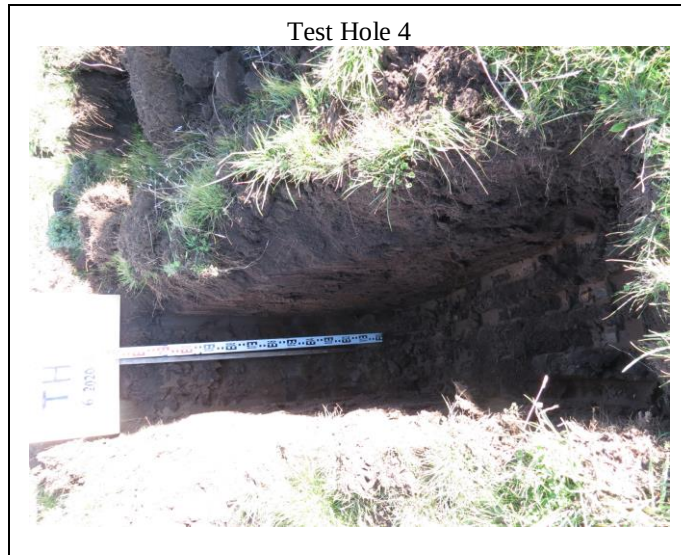
Test Hole 2



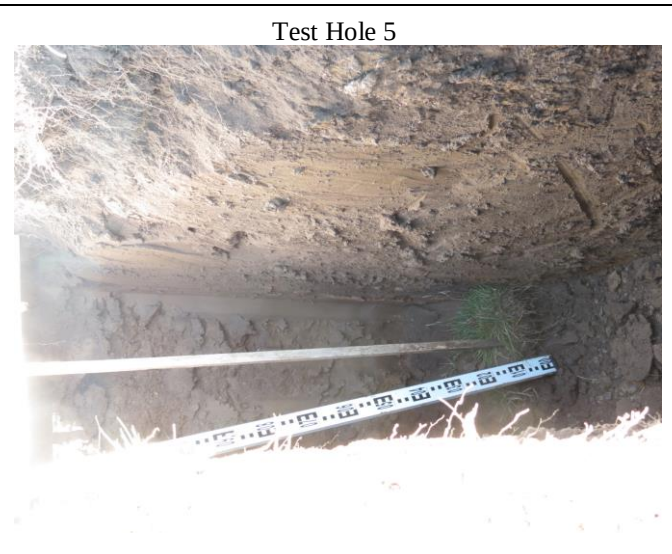
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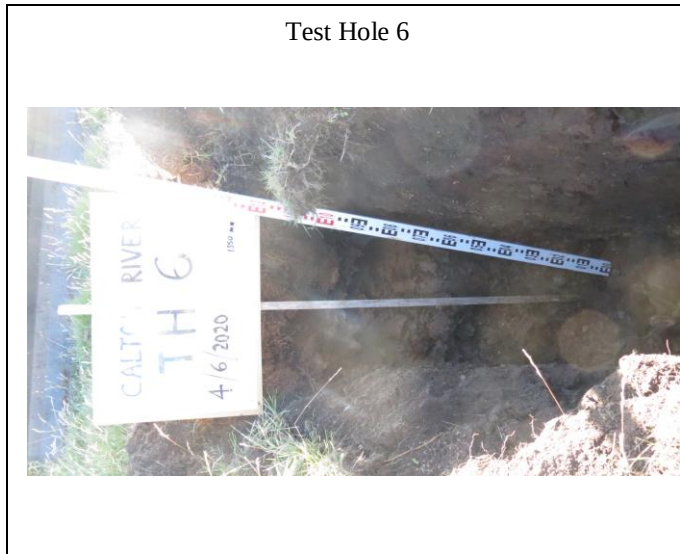
Test Hole 4

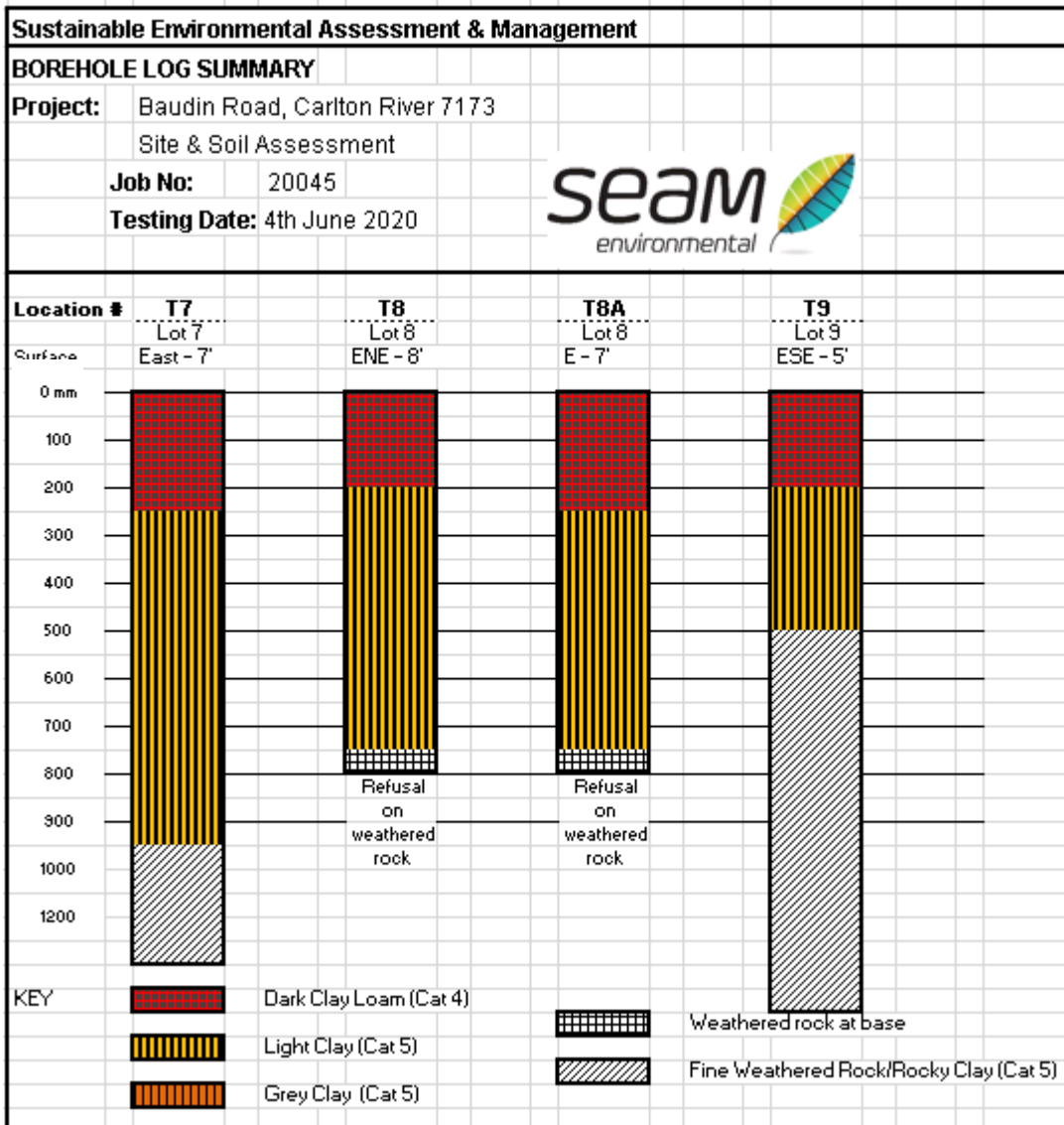


Test Hole 5



Test Hole 6





Test Hole 7



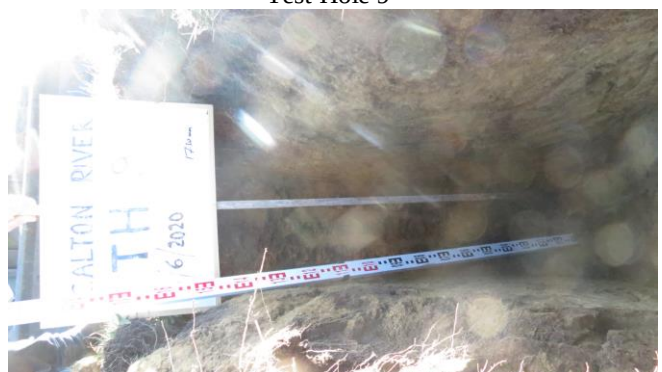
Test Hole 8



Test Hole 8A



Test Hole 9



Sustainable Environmental Assessment & Management

BOREHOLE LOG SUMMARY

Project: Baudin Road, Carlton River 7173

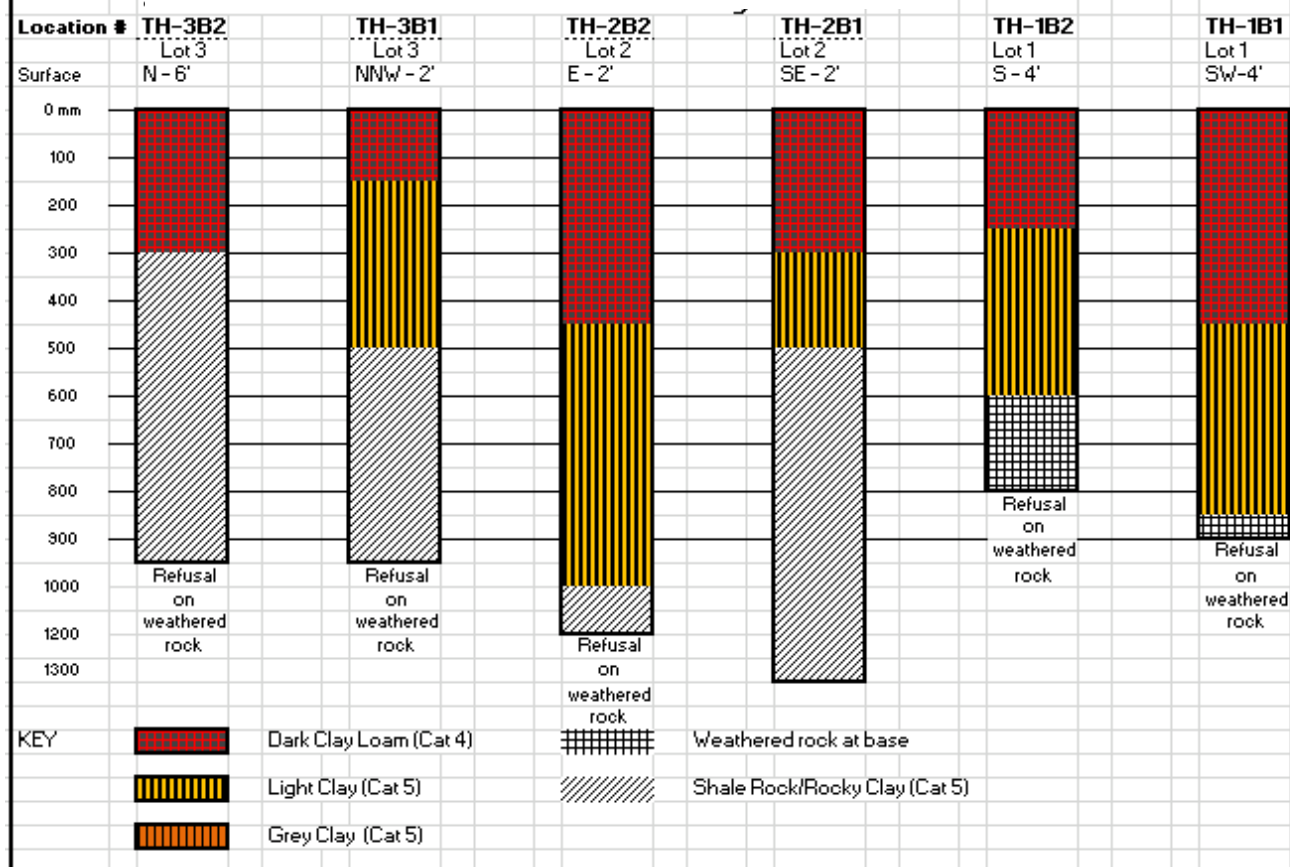
Site & Soil Assessment

Job No: 20045

Testing Date: 4th June 2020



Rural Living Zone – Area B



Test Hole 3B2



Test Hole 3B1



Test Hole 2B2



Test Hole 2B1



Test Hole 1B2



Test Hole 1B1



Wastewater Assessment – Baudin Road, Carlton River 7173

I/We authorise the Sorell Council to make copies of the report for internal office use. Attached with the report or included with the application are original copies of all required certifications from suitably qualified persons.

REPORT BY:

NAME OF ORGANISATION:

(SEAM) Sustainable Environmental Assessment and Management

ADDRESS:

Main Office: 160 New Town Road, New Town, Hobart 7008

North West: 41c Stewart Street, Devonport 7310

Postal: PO Box 2064, Lower Sandy Bay 7005

CONTACT DETAILS:

Phone: (03) 6228 1600

Mobile: 0419 330 686

Prepared By: J. M. Wood

Accredited Building Practitioner – Designer Hydraulic # CC1984K
Certified Environmental Practitioner (Impact Assessment Specialist)



A handwritten signature in black ink, appearing to read 'J. M. Wood'.

SIGNED: _____ DATE: 25th October 2020

Bushfire Assessment Report



Client: Quentin Newitt

Site Address: Baudin Road (northern end), Carlton River 7173

Postal Address: PO Box 41, Sorell, 7172 suenewitt19@gmail.com

Proposal: To rezone and concurrently subdivide the existing two land titles to create

- 9 Rural Living Zone lots (approx. 1 ha each)
- 3 Rural Living Zone-Area B lots (approx. 10 ha each)

December 2020

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Refer to this report as:

SEAM; 2020. Bushfire Assessment Report – Baudin Road, Carlton River 7173,

Sustainable Environmental Assessment and Management [SEAM] ¹

160 New Town Rd, NEW TOWN 7008

49c Stewart St DEVONPORT 7310

Mobile 0419 330 686

Phone (03) 6228 1600

Email james.wood@seam.com.au

¹ SEAM is an environmental consultancy service specialising in a range of environmental management services including environmental assessments and environmental management plans for new and existing developments. An aspect of the work is to strive for sustainable management of our resources.

1. Report Scope

1.1 Introduction

This Bushfire Assessment report follows the approved form of a Bushfire Hazard Management Plan as issued by the Chief Officer of the Tasmanian Fire Service on 7 February 2014 and as called into the Sorell Council Interim Planning Scheme. It is in 3 parts

1. Report Scope
2. Bushfire Report including a Bushfire Attack Level (BAL) Assessment for a proposed subdivision at Baudin Road, Carlton River 7173. The report is based on and in accordance with the AS 3959-2009 – Construction of Buildings in Bush Fire prone areas and the Guidelines for Development in Bushfire Prone Areas of Tasmania (Tasmania Fire Service 2005), and a
3. Bushfire Hazard Management Plan (BHMP) which includes as an attachment a Certificate of Compliance to the Bush-fire Area Code under Interim Planning Directive 5.1 – Bushfire-Prone Areas Code

In accordance with the Planning Directive, it is essential to establish if the use or development is exempt. To ascertain this, a Compliance Table has been prepared in section 3.

The Bushfire Assessment Report should be submitted your Building Surveyor and to the Sorell Council for approval, along with other relevant documents for a building permit.

1.2 Limitations

Field conditions observed may vary from those observed at the site therefore SEAM should be advised prior to construction if site conditions change. SEAM can modify this plan if necessary to meet such changed field conditions. **It should also be noted that the vegetation can grow back over time and for effective fire management, the site management should be maintained while the dwelling is habitable.**

This report has been prepared in accordance with any terms and Scope of Works described in an exchange of correspondence between SEAM and the client. This report has been prepared solely for the Client and SEAM accepts no responsibility for its use by other parties.

The conclusions and recommendations are those of SEAM, made professionally and subject to any qualifications made.

1.3 Background

The broad objectives for designing bushfire protection measures include:

- Minimize perimeters exposed to bush fire hazard
- Minimize bushland corridors
- Siting away from ridge tops, steep slopes, saddles and narrow ridge crests
- Defendable space that permits suitable building solutions
- Open space as refuges where possible
- Ensure maintenance of defendable space
- Access and egress from properties to public road system
- Provision of water for fire fighting
- Design of house and landscaping minimize attack from embers

1.4 Assessment Methodology

The site was visited on 4th June 2020 by Jamie Wood. Slope angles were measured with an inclinometer and averaged over a 100m distance from the proposed dwelling, or development, distance measured with a Yardage Pro or by actual measurement with a tape or similar and vegetation assessed against the various vegetation types.

Water supply information is derived from tank water.

NOTE: This bushfire subdivision report and its contents cannot guarantee that a building will survive a bushfire event on every occasion. This is due to the highly variable and unpredictable behavior of bushfires and weather conditions.

2. Bushfire Report

2.1 Site Description

The site for the proposed subdivision is located at the end of Baudin Road, Carlton River. The current site is two large lots consisting of a total area of 40 hectares. It is proposed to rezone and subdivide approximately 40 hectares into 12 lots. This will consist of:

- 9 Rural Living Zone lots of approximately 1 hectare each (Area A), AND
- 3 Rural Living Zone-Area B² lots of approximately 10 hectare each (Area B).

Currently the site is entirely covered with grassland vegetation, with a small area of scrub approximately 110m away to the east of Lot 3, Rural Living Zone-Area B. The slopes vary throughout the site, however they are generally between 5 to 10 degrees with an overall south easterly aspect.

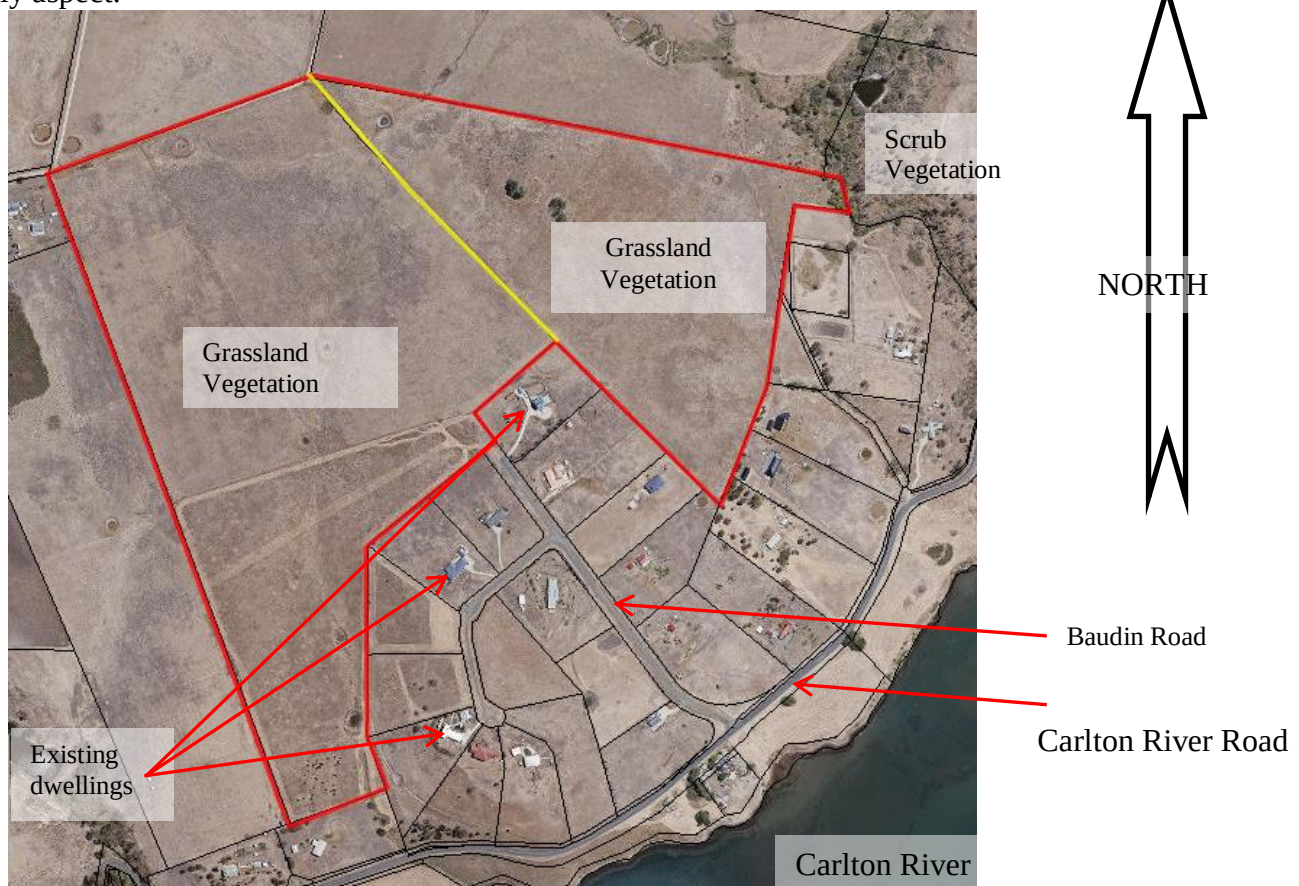


Figure 1 – Site Location

2.2 Description of Use or Development

It is proposed to rezone and subdivide the existing two land titles that comprise the property, into 9 x 1ha lots and 3 x 10ha lots; effectively two different subdivision areas. See proposed subdivision plan (Figure 3) on page 9 for details. The proposed rezoning and subdivision will have to meet minimum BAL 19 as per the TFS requirements.

² Rural Living Zone-Area B is a category of Zone in the Sorell Interim Planning Scheme 2015 that is different to Rural Living Zone.

2.3 Bush Fire Attack Level (BAL) Assessment

Vegetation classification (see Table 2.3)	North	North East	East	South East	South	South West	West	North West
Group A Forest								
Group B Woodland								
Group C Shrub-Land								
Group D Scrub								
Group E Mallee/Mulga								
Group F Rainforest								
Group G (FDI 50) Grassland	✓	✓	✓	✓	✓	✓	✓	✓
Exclusions (where applicable)* See clause 2.2.3.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Distance to classified vegetation (in meters)	40m	40m	40m	40m	20m	40m	40m	40m
Effective Slope Slope under the classified vegetation	5-10 degrees	Upslope	0-5 degree	0-5 degrees	Upslope	0-5 degrees	Upslope	Upslope
Current BAL rating for each aspect	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
Required distances to achieve BAL 19								
Notes								

Table 1 – Bushfire Attack Level Assessment table



Looking North



Looking North East



Looking East



Looking South East



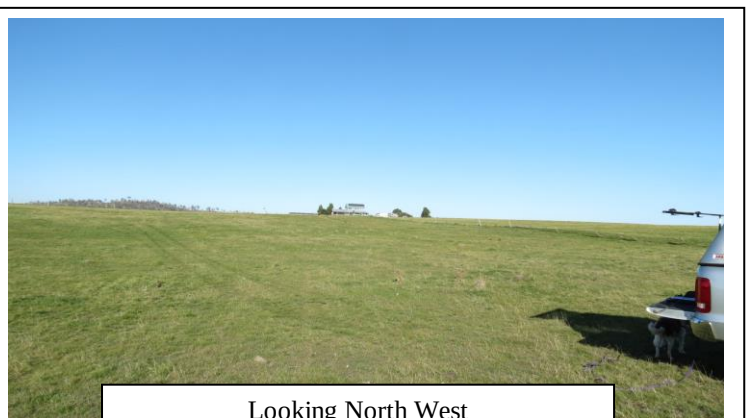
Looking South



Looking South West



Looking West



Looking North West

The site is currently vegetated with pasture (grassland) and the BAL ratings are 12.5 for all lots, as illustrated in Table 1. To meet the required BAL 19 for subdivision to be maintained “building envelopes” are illustrated on each of the lots to allow for “unmanaged grassland”. This will ensure any future dwelling can be sited in a location that will allow them to achieve a BAL 19 rating regardless of whether the grassland is actively managed on the neighbouring properties or not.

Recommendations:

Proposed Lots 1 & 2:

These lots share a boundary with the Lot 1 of the “Rural Living Zone - Area B Lots”. Therefore the Building envelopes will need to be **located no closer than 13m from the south western boundary**.

Proposed Lots 3, 4 & 5:

These lots share a boundary with a proposed 18.0m wide road between these lots and an existing dwelling to the south. It is recommended that any future dwelling be **located no closer than 12m from the southern boundary**.

Proposed Lots 6 & 7:

These lots share a boundary with an existing dwelling to the west. It is recommended that any future dwelling be **located no closer than 12m from the western boundary**.

Proposed Lot 8 & 9:

Lot 8 share a boundary with a steeper area covered with grassland vegetation. Lot 9 also has gently sloping grassland until 100m east of it and a dwelling adjacent. It is recommended that any future dwelling be **located no closer than 13m from the south eastern boundary**.

Lots 1, 2 and 3 – Rural Living Zone Area B:

These three large lots are large enough in size to incorporate the required setback distances in that any future dwelling is to be located greater than 13m from any boundary. Building envelopes are illustrated on the proposed plan of subdivision.

Figure 3 (over page) illustrates the Hazard Management Areas from the building envelopes for the required BAL 19.

3. Proposed Subdivision

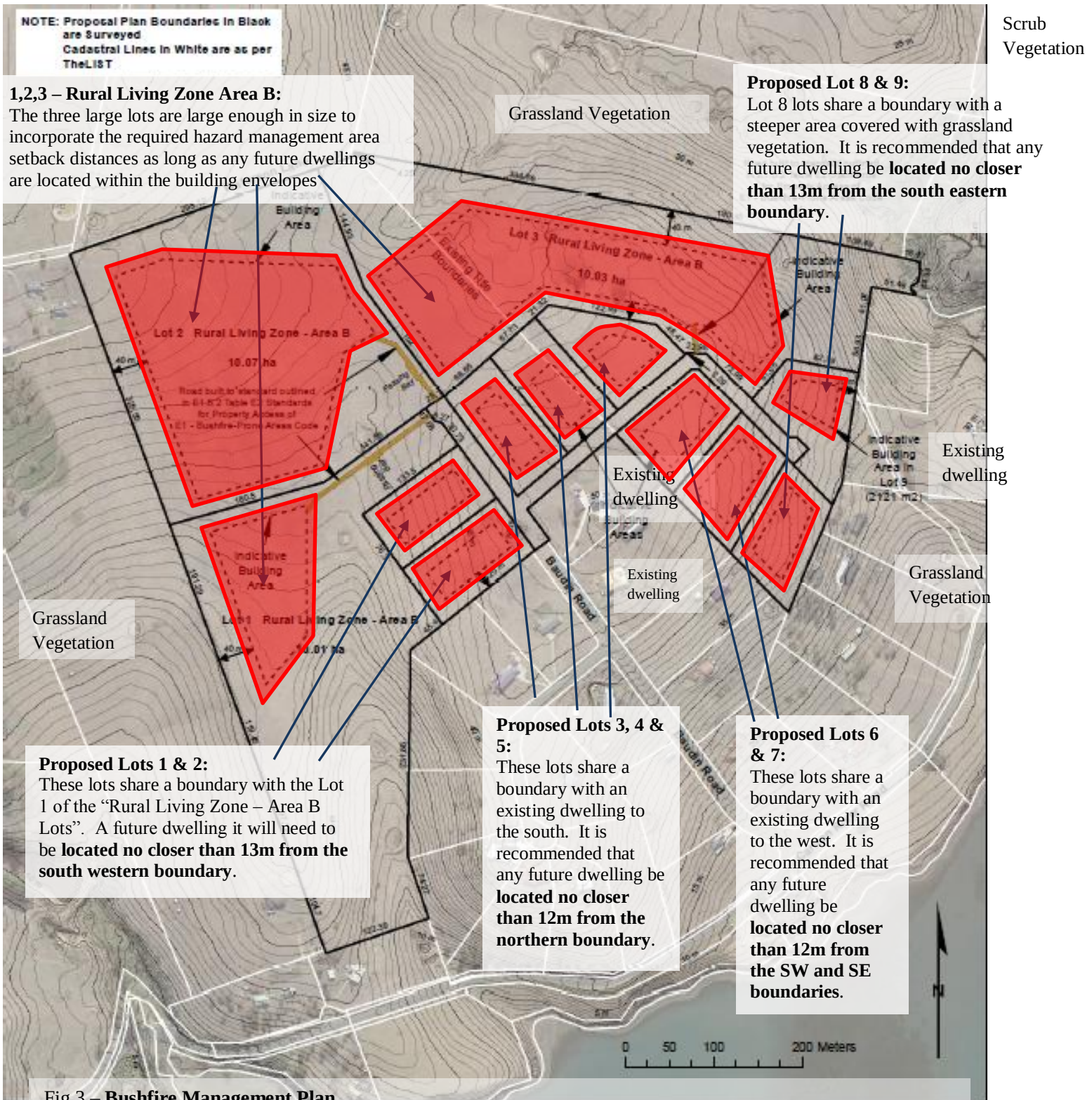


Fig 3 – Bushfire Management Plan

This plan refers to: PID:2294356 and Title Reference: 169070/1 & PID: 2294292 and Title Reference: 119311/1 for the property at Baudin Road, Carlton River 7173; **The proposal is effectively 2 different subdivision areas.** Hazard Management Areas are stated and shown in red shading and will be shown to survey accuracy prior to any plan sealing. All of the proposed lots will need to have a static supply of a minimum of 10,000L per building area not closer than 6m to any dwelling and not greater than 90m from dwelling and accessible by all weather roads; The accesses shall also be all weather access and have a load capacity of 20T and terminate with a turning circle of 10m radius, **or** a hammer head access 8m x 4m **or** have a road that circles the building. Access to Rural Living Zone Area B lots 1, 2 and 3 will need a passing lane 6m wide and 20m long every 100m. J. M. Wood # BFP 119

Hazard Management Areas around proposed new lots (Clause E 1.6.1 of Planning Directive # 5.1)

Table 1 indicates that the BAL ratings are BAL 12.5. This is due to the mixture of existing dwelling and maintained grassland on all aspects. The nearest vegetation other than grassland, is an area of scrub, approximately 110m to the east of Lot 3 (Rural living Zone Area B).

To allow the subdivision to comply with the required BAL 19, any future dwelling will need to be within the Building Envelopes and set backs shown on the Bushfire Hazard Management Plan (page above).

Proposed Lots 1 & 2:

These lots share a boundary with the Lot 1 of the Rural Living Zone-Area B lots. As such, it will need to be **located no closer than 13m from the south western boundary**.

Proposed Lots 3, 4 & 5:

These lots share a boundary with an existing dwelling to the south. It is recommended that any future dwelling be **located no closer than 12m from the northern boundary**.

Proposed Lots 6 & 7:

These lots share a boundary with an existing dwelling to the west. It is recommended that any future dwelling be **located no closer than 12m from the SW and SE boundaries**.

Proposed Lot 8 & 9:

These lots share a boundary with a steep area covered with grassland vegetation. It is recommended that any future dwelling be **located no closer than 13m from the south eastern boundary**.

Lots 1,2,3 – Rural Living Zone - Area B Lots:

The three large lots are large enough in size to incorporate the required hazard management area setback distances as long as any future dwellings are located within the building envelopes.

The proposal new lots therefore meet the Acceptable Solutions A1 of Clause 1.6.1 provided the Hazard Management Areas listed above are adhered to

Public and fire Fighting Access (Clause E 1.6.2 of Planning Directive # 5.1)

The plan of subdivision illustrates that all of the proposed lots will have access off the proposed extension from the end of Baudin Road and a new access road to the eastern part of the subdivision (see Fig 3).

The location of property access to building areas on the new proposed lots, apart from Rural Living Zone - Area B lots 1, 2 and 3, will be 30m or greater. As such the lot accesses shall be all weather, be a minimum of 4m wide and have a load capacity of 20T and terminate with a turning circle of 10m radius, **or** a hammer head access 8m x 4m **or** have a road that circles the buildings. In additions, for the 3 large 10ha Rural Living Zone-Area B lots, the accesses shall have passing lanes 6m wide and 20m long every 100m.. The full requirements for the driveways are outlined in **Appendix A**

The Bushfire Hazard Management Plan indicates access to each lot which can comply with Table E.1.

The proposal therefore meets the Acceptable Solutions A1 (b) of Clause 1.6.2

Provision of water supply for fire fighting purposes (Clause E 1.6.3 of Planning Directive # 5.1)

All of the proposed lots are not within 120m of a fire hydrant and will therefore rely on tank water for fire fighting purposes.

Therefore all of the proposed lots will need to have a static supply of a minimum of 10,000L per building area. The supply shall meet the provisions of Table E5 of clause E1.6.3 of PD 5.1. These requirements are detailed below. The tank to have signage and a hardstand area. Full specifications are provide in Appendix A.

The static supply shall meet the requirements listed below:

- (a) May have a remotely located offtake connected to a static water supply
- (b) May be a supply for combined use (fire fighting and other uses) but the specified minimum quantity of fire fighting water must be available at all times;
- (c) Must be a minimum of 10,000L per building area to be protected. This volume of water must not be used for any other purpose including spray systems;
- (d) Must be metal, concrete, or lagged by non-combustible material if above ground, and
- (e) If a tank can be located so it is shielded in all directions in compliance with section 3.5 of AS 3959-2009 Construction of buildings in bushfire-prone areas, the tank may be constructed of any material provided that the lowest 400mm of the tank exterior is protected by: metal, non-combustible material or fibrocement a minimum of 6mm thickness.

SCHEDULE OF BUSHFIRE MANAGEMENT AND MITIGATION MEASURES

Hazard Management Areas around future dwellings

Proposed Lots 1 & 2:

These lots share a boundary with the Lot 1 of the Rural Living Zone – Area B lots. A future dwelling will need to be **located no closer than 13m from the south western boundary**.

Proposed Lots 3, 4 & 5:

These lots share a boundary with an existing dwelling to the south. It is recommended that any future dwelling be **located no closer than 12m from the southern boundary**.

Proposed Lots 6 & 7:

These lots share a boundary with an existing dwelling to the west. It is recommended that any future dwelling be **located no closer than 12m from the western boundary**.

Proposed Lot 8 & 9:

These lots share a boundary with a steep area covered with grassland vegetation. It is recommended that any future dwelling be **located no closer than 13m from the south eastern boundary**.

Lots 1,2,3 Rural Living Zone – Area B:

The three large lots are large enough in size to incorporate the required hazard management area setback distances as long as any future dwellings are located within the building envelopes.

References

1. **Sorell Council 2015**; Sorell Council Interim Planning Scheme 2015
2. **Standards Australia, 2018**; AS 3959, Australian Standard for Construction of Buildings in Bushfire prone areas
3. **Tasmania Fire Service 2005**; Guidelines For Development In Bushfire Prone Areas Of Tasmania, Tasmania Fire Service
4. **Tasmanian Planning Commission, 2017**; Planning Directive # 5.1 – Bushfire Prone Areas Code
5. **Tasmania Fire Service 2005**; Guidelines For Development In Bushfire Prone Areas Of Tasmania, Tasmania Fire Service
6. **Tasmania Fire Service 2018**; Bushfire Hazard Advisory Note # 6, Tasmania Fire Service
7. **Tasmania Fire Service 2020**; Bushfire Hazard Advisory Note # 4, version 4; Tasmania Fire Service, issued 4 August 2020
8. **Tasmanian Planning Commission, 2017**; Planning Directive # 5.1 – Bushfire Prone Areas Code

Appendix A - Access and Water Supply Requirements

STANDARDS FOR PROPERTY ACCESS

The maximum distance from the roadside to the accommodation is approximately 180m. The requirements for the driveway are outlined below.

Property access length is 30m or greater; or access is required for a fire appliance to a fire fighting water point.	The following design and construction requirements apply to property access: (a) all-weather construction; (b) load capacity of at least 20t, including for bridges and culverts; (c) minimum carriageway width of 4m; (d) minimum vertical clearance of 4m; (e) minimum horizontal clearance of 0.5m from the edge of the carriageway; (f) cross falls of less than 3 degrees (1:20 or 5%); (g) dips less than 7 degrees (1:8 or 12.5%) entry and exit angle; (h) curves with a minimum inner radius of 10m; (i) 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 (j) terminate with a turning area for fire appliances provided by one of the following: (i) a turning circle with a minimum outer radius of 10m; or (ii) a property access encircling the building; or (iii) a hammerhead “T” or “Y” turning head 4m wide and 8m long.

ACCESS TO WATER SUPPLY

The property is serviced by tank water. Therefore the property will require a designated water tank for fire fighting. It is to meet the following requirements.

Requirement	
Distance between building area to be protected and water supply.	The following requirements apply: (a) the building area to be protected must be located within 90m of the fire fighting water point of a static water supply; and (b) the distance must be measured as a hose lay, between the fire fighting water point and the furthest part of the building area.
Static Water Supplies	A static water supply: (a) may have a remotely located offtake connected to the static water supply; (b) may be a supply for combined use (fire fighting and other uses) but the specified minimum quantity of fire fighting water must be available at all times; (c) must be a minimum of 10,000l per building area to be protected. This volume of water must not be used for any other purpose including fire fighting sprinkler or spray systems; (d) must be metal, concrete or lagged by non-combustible materials if above ground; and (e) if a tank can be located so it is shielded in all directions in compliance with section 3.5 of <i>Australian Standard AS 3959-2009 Construction of buildings in bushfire-prone areas</i>, the tank may be constructed of any material provided that the lowest 400mm of the tank exterior is protected by: (i) metal; (ii) non-combustible material; or (iii) fibre-cement a minimum of 6mm thickness.

Fittings, pipework and accessories (including stands and tank supports)	Fittings and pipework associated with a fire fighting water point for a static water supply must: (a) have a minimum nominal internal diameter of 50mm; (b) be fitted with a valve with a minimum nominal internal diameter of 50mm; (c) be metal or lagged by non-combustible materials if above ground; (d) if buried, have a minimum depth of 300mm³; (e) provide a DIN or NEN standard forged Storz 65mm coupling fitted with a suction washer for connection to fire fighting equipment; (f) ensure the coupling is accessible and available for connection at all times; (g) ensure the coupling is fitted with a blank cap and securing chain (minimum 220mm length); (h) ensure underground tanks have either an opening at the top of not less than 250mm diameter or a coupling compliant with this Table; and (i) if a remote offtake is installed, ensure the offtake is in a position that is: (i) visible; (ii) accessible to allow connection by fire fighting equipment; (iii) at a working height of 450 – 600mm above ground level; and (iv) protected from possible damage, including damage by vehicles.
Signage for static water connections.	The fire fighting 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: (a) comply with water tank signage requirements within <i>Australian Standard AS 2304-2011 Water storage tanks for fire protection systems</i>; or (b) comply with the Tasmania Fire Service Water Supply Guideline published by the Tasmania Fire Service.
Hardstand	A hardstand area for fire appliances must be: (a) no more than 3m from the fire fighting water point, measured as a hose lay (including the minimum water level in dams, swimming pools and the like); (b) no closer than 6m from the building area to be protected;

³ Compliant with *Australian/New Zealand Standard AS/NZS 3500.1-2003 Plumbing and drainage, Part 1: Water Services*, Clause 5.23

- | | |
|--|---|
| | <p>(c) a minimum width of 3m constructed to the same standard as the carriageway; and</p> <p>(d) connected to the property access by a carriageway equivalent to the standard of the property access.</p> |
|--|---|

Appendix B
Planning Directive No 5.1

CODE E1 – BUSHFIRE-PRONE AREAS CODE

**CERTIFICATE⁴ UNDER S51(2)(d) LAND USE PLANNING AND
APPROVALS ACT 1993**

1. Land to which certificate applies⁵

Land that is the Use or Development Site that is relied upon for bushfire hazard management or protection.

Name of planning scheme or instrument:

Sorell Council Interim Planning Scheme 2015

Street address:

Baudin Road, Carlton River 7173

Certificate of Title / PID:

PID:2294356 and Title Reference: 169070/1
PID: 2294292 and Title Reference: 119311/1

2. Proposed Use or Development

Description of Use or Development:

(Provide a brief description of the proposed use or development; including details of scale, siting and context.)

Rezone and subdivide approximately 40 hectares. This will consist of:
9 Rural Living Zone lots of approximately 1 hectare each (Area A), AND
3 Rural Living Zone-Area B⁶ lots of approximately 10 hectare each (Area B) - effectively two different subdivision areas.

Code Clauses⁷:

☐ E1.4 Exempt Development

☐ E1.5.1 Vulnerable Use

☐ E1.5.2 Hazardous Use

☒ E1.6.1 Subdivision

⁴ This document is the approved form of certification for this purpose, and must not be altered from its original form.

⁵ If the certificate relates to bushfire management or protection measures that rely on land that is not in the same lot as the site for the use or development described, the details of all of the applicable land must be provided.

⁶ Rural Living Zone-Area B is a category of Zone in the Sorell Interim Planning Scheme 2015 that is different to Rural Living Zone.

⁷ Indicate by placing X in the corresponding ☐ for the relevant clauses of E1.0 Bushfire-prone Areas Code.

3. Documents relied upon⁸

Documents, Plans and/or Specifications

Title:	Proposed Index Plan Detail for Pembroke Carlton River		
Author:	Surveyor M Morley		
Date:	8/6/20	Version:	11

Bushfire Hazard Report

Title:	Bushfire Hazard Report at Baudin Road, Carlton River 7173		
Author:	SEAM Environmental		
Date:	20/12/20	Version:	2

Bushfire Hazard Management Plan

Title:	Bushfire Hazard Report at Baudin Road, Carlton River 7173		
Author:	SEAM Environmental		
Date:	20/12/20	Version:	2

Other Documents

Title:			
Author:			
Date:		Version:	

⁸ List each document that is provided or relied upon to describe the use or development, or to assess and manage risk from bushfire. Each document must be identified by reference to title, author, date and version.

4. Nature of Certificate⁹

☒	E1.6 – Development standards for subdivision		
	E1.6.1 Subdivision: Provision of hazard management areas		
	Assessment Criteria	Compliance Requirement	Reference to Applicable Document(s)
X	E1.6.1 P1	Hazard Management Areas are sufficient to mitigate risk	Bushfire Hazard report by SEAM of 20/12/20
☐	E1.6.1 A1 (a)	Insufficient increase in risk	
X	E1.6.1 A1 (b)	Provides BAL 19 for all lots	Bushfire Hazard report by SEAM of 20/12/20
☐	E1.6.1 A1 (c)	Consent for Part 5 Agreement	

	E1.6.2 Subdivision: Public and fire fighting access		
	Assessment Criteria	Compliance Requirement	Reference to Applicable Document(s)
☐	E1.6.2 P1	Access is sufficient to mitigate risk	
☐	E1.6.2 A1 (a)	Insufficient increase in risk	
X	E1.6.2 A1 (b)	Access complies with Tables E1, E2 & E3	Bushfire Hazard report by SEAM of 20/12/20

	E1.6.3 Subdivision: Provision of water supply for fire fighting purposes		
	Assessment Criteria	Compliance Requirement	Reference to Applicable Document(s)
☐	E1.6.3 A1 (a)	Insufficient increase in risk	
☐	E1.6.3 A1 (b)	Reticulated water supply complies with Table E4	
☐	E1.6.3 A1 (c)	Water supply consistent with the objective	
☐	E1.6.3 A2 (a)	Insufficient increase in risk	

⁹ The certificate must indicate by placing X in the corresponding ☐ for each applicable standard and the corresponding compliance test within each standard that is relied upon to demonstrate compliance to Code E1

X	E1.6.3 A2 (b)	Static water supply complies with Table E5	Bushfire Hazard report by SEAM of 20/12/20
☐	E1.6.3 A2 (c)	Static water supply is consistent with the objective	

5. Bushfire Hazard Practitioner¹⁰

Name:	James Wood	Phone No:	0419330686
Address:	160 New Town Road	Fax No:	-
	New town	Email Address:	James.wood@seam.com.au
Accreditation No:	BFP – BFP-119	Scope:	1, 2, 3A, 3B

6. Certification¹¹

I, certify that in accordance with the authority given under Part 4A of the Fire Service Act 1979 –

The Bushfire Hazard Management Plan/s identified in Section 3 of this certificate is/are in accordance with the Chief Officer's requirements and can deliver an outcome for the use or development described that is consistent with the objective and the relevant compliance test for each of the applicable standards identified in Section 4 of this Certificate.	X
---	---

Signed:
certifier



Date:

20/12/20

Certificate No:

20045

¹⁰ A Bushfire Hazard Practitioner is a person accredited by the Chief Officer of the Tasmania Fire Service under Part IVA of Fire Service Act 1979. The list of practitioners and scope of work is found at www.fire.tas.gov.au.

¹¹ The relevant certification must be indicated by placing X in the corresponding ☐.

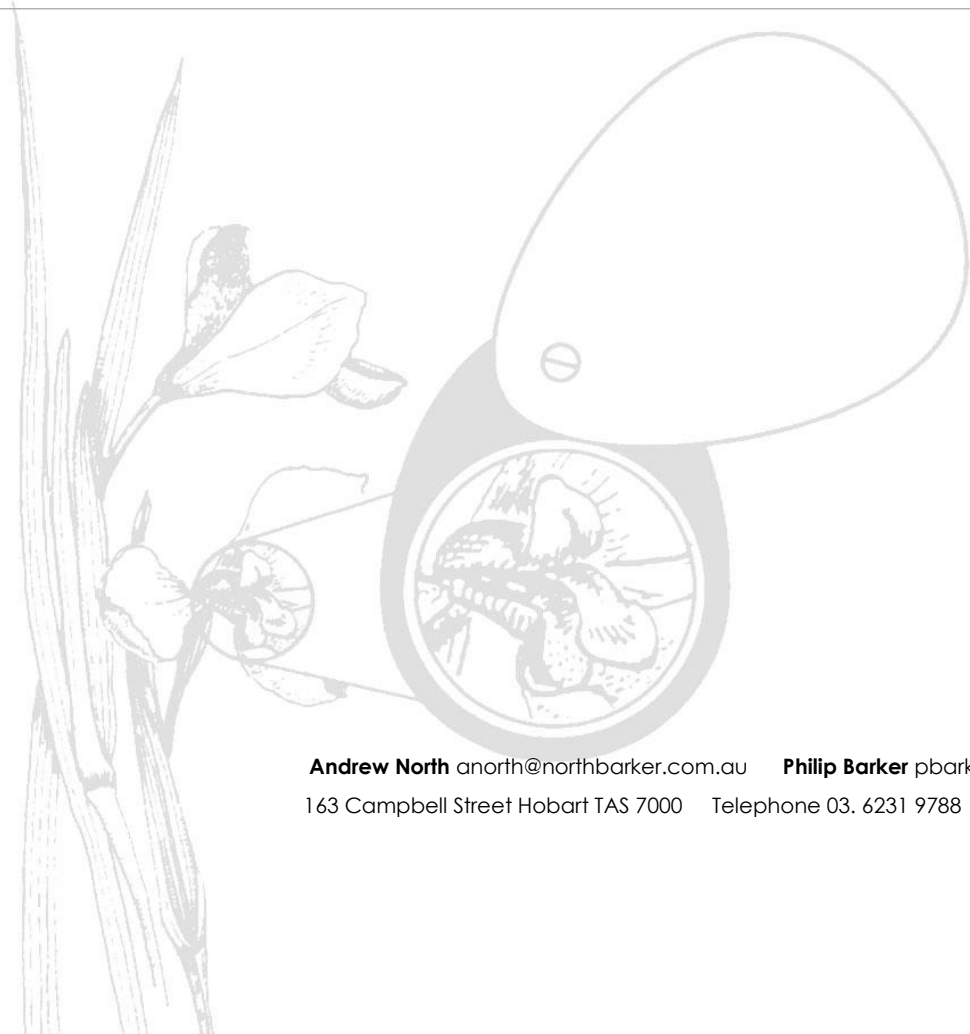


2 lots off Baudin Road, Carlton
Folio ref: 119311 & 169070

Natural Values Assessment

23 December 2020

For Quentin Newitt
STA003

A faint, light-colored illustration in the background of the lower half of the page. It depicts a plant with long, thin leaves and small flowers on the left. To the right of the plant is a magnifying glass. The lens of the magnifying glass is focused on a small, detailed illustration of a butterfly or insect. The entire illustration is rendered in a light grey or green tone.

Andrew North anorth@northbarker.com.au **Philip Barker** pbarker@northbarker.com.au
163 Campbell Street Hobart TAS 7000 Telephone 03. 6231 9788 Facsimile 03. 6231 9877



View of Carlton River from south western end of property (Feb 2020)

Contributors:

Client Contact: Quentin Newitt

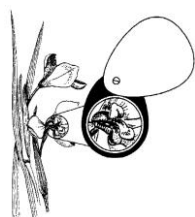
Field Assessment: Andrew North

Report and mapping: Andrew North

Mapping: Aleida Williams

File Control

Version	Date	Author / Comment
First Draft 0.1	25/08/2020	Andrew North
V1.0	02/12/2020	Andrew North
V1.1	23/12/2020	Andrew North



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Summary of Issues

Property:	Folio: 119311 and 169070
Sorell Interim Planning Scheme 2015: ZONES	Rural Resource Zone (D26)
Rezoning Application to:	Rural Living Zone and Rural Living Zone Area B (D13)
Subdivision:	9 x 1 ha & 3 x 10 ha lots
Sorell Interim Planning Scheme 2015: CODES	E11 Waterway and Coastal Protection Code
Implications	Require fulfilment of relevant Performance criteria: E11.8.P1 Subdivision standard
Threatened flora	Gentle rush <i>Juncus amabilis</i> – rare <i>Threatened Species Protection Act 1995</i>
Impacts	Potential impacts - though not significant
Threatened fauna and threatened fauna habitat	None
Impacts	n/a
Threatened vegetation	None
Impacts	n/a
EPBC Act	No significant Impact to MNES
TSP Act	<i>J. amabilis</i> has been approved for delisting from TSPA ¹
NCA Act	None
Weed Management Act	6 x Zone B 1 x Zone A – chilean needle grass

¹ *Threatened Species Protection Order 2020* was gazetted on 25 November 2020 to delist *Juncus amabilis* from the TSPA

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1 INTRODUCTION

1.1 Background

A rezoning and development application for Property ID 2294356 and 2294292 off Baudin Road Carlton River (Figure 1) is to be submitted to Sorell Council. The land is currently zoned Rural Resource and is proposed to be rezoned to Rural Living and Rural Living Area B.

The subdivision includes nine 1 ha lots, three 10 ha lots plus roads servicing each lot connecting off the end of Baudin Road which links to Carlton River Road (Figure 2 taken from subdivision plans - Appendix A).

This report documents the natural values of the site and considers implications under the Sorell Interim Planning Scheme 2015 to the proposal.

1.2 Study area

The study area is in the Tasmanian South East bioregion² in the Sorell Council and is approximately 40.15 ha in extent. The site is zoned as Rural Resource (26.0) and contains areas subject to the Waterway and Coastal Protection Code (E11) under the *Sorell Interim Planning Scheme 2015* (Figure 4).

The site is at 16-50 m asl and is sloping downhill to the south. The geology is largely of tertiary basalt and related sediments, with the far eastern corner of the study area extending into Jurassic dolerite.

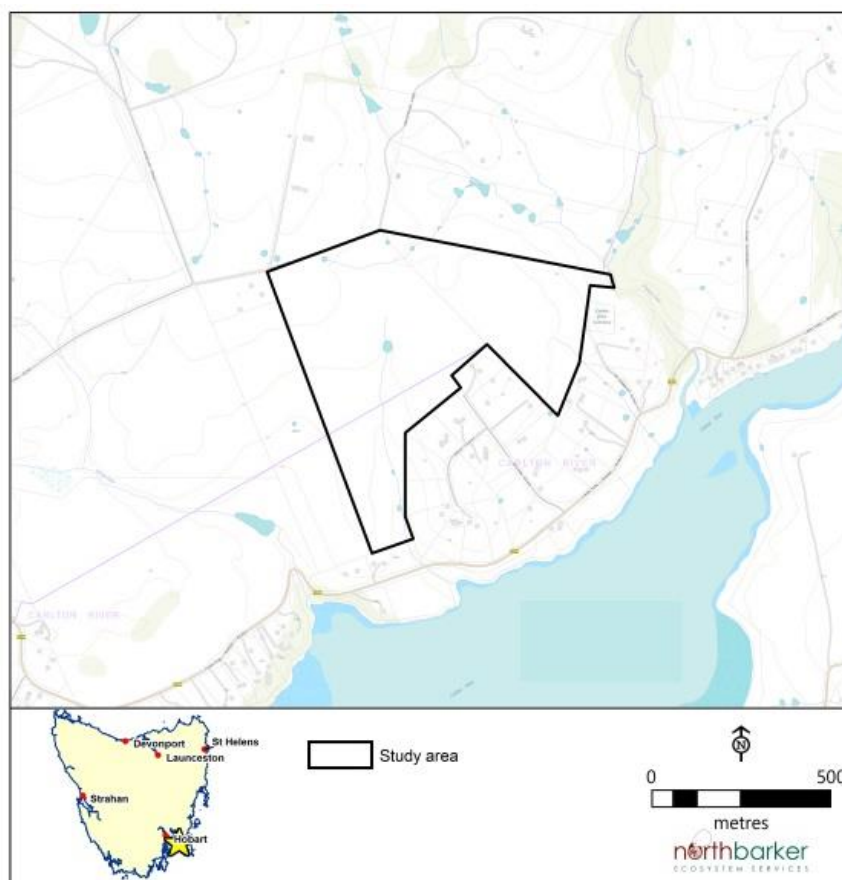


Figure 1: Location of the survey area.

² IBRA 7 (2012)

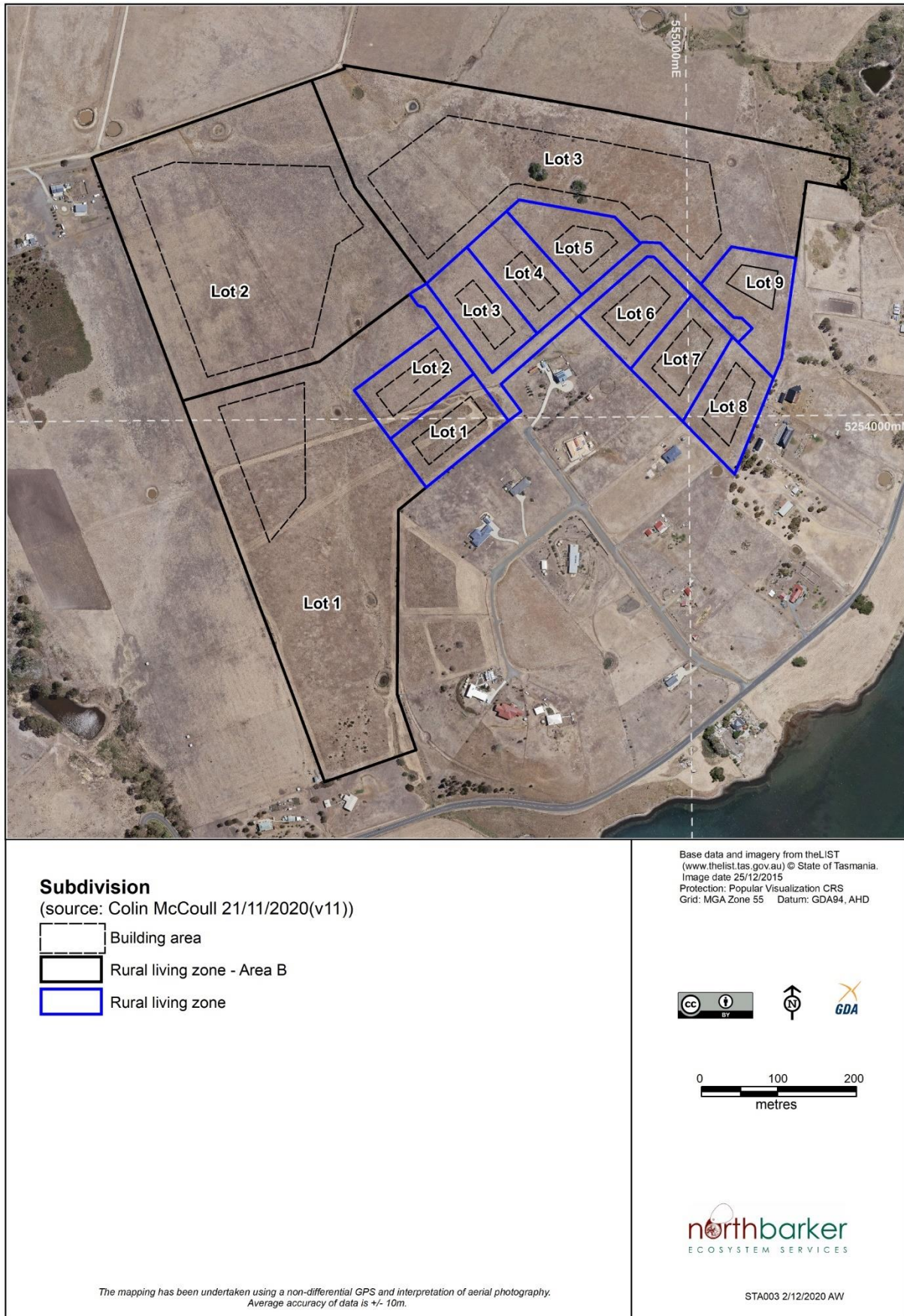


Figure 2: Proposed subdivision layout

2 METHODS

The following sources were used for biological records for the region:

- TASVEG version 3.0 digital layer³,
- Natural Values Atlas (NVA) - all threatened species records within 5 km of the study area and threatened fauna considered possible to occur in suitable habitat⁴,

2.1 Botanical Survey

This assessment was undertaken in accordance with the 'Guidelines for Natural Values Surveys – Terrestrial Development Proposals'⁵.

Native vegetation was mapped in accordance with units defined in TASVEG 3.1⁶. Vascular plants were recorded in accordance with the current census of Tasmanian plants⁷. The site was mapped using a meandering area search technique⁸. Particular attention was given to habitats suitable for threatened species under the Tasmanian *Threatened Species Protection Act 1995* (TSPA) and/or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA), and to 'declared' weeds under the Tasmanian *Weed Management Act 1999* (WMA)⁹.

2.2 Fauna survey

The survey was carried out in accordance with DPIPWE's 'Guidelines for Natural Values Surveys – Terrestrial Development Proposals'¹⁰.

The study area was searched for the potential presence, habitat, and sign (e.g. scats, tracks, nests) of threatened fauna undertaken concurrently with the botanical survey.

2.3 Limitations

Due to various limitations (e.g. variations in species presence and detectability), no biological survey can guarantee that all species will be recorded during a single visit. The field survey was undertaken in late summer, after a period of drought, so seasonal and ephemeral species/habitat may have been overlooked or are seasonally absent, including spring flowering species or winter ponds. However, we are confident the surveys sufficiently captured community level diversity. We compensate for survey limitations in part by considering all listed threatened species from data from the Tasmanian *Natural Values Atlas* (NVA) and Commonwealth's *EPBCA Protected Matters Search Tool* (MNES)¹¹. These data include records of all threatened species known to occur, or with the potential to occur, up to 5 km from the study area.

A follow up inspection was undertaken following autumn rains. In April targeting a small area in the north east corner that was overlooked in the original survey. The site was then revisited in June to plot the reported location of chilean needle grass.

³ Kitchener and Harris (2013)

⁴ DPIPWE Natural Values Atlas Report (2020) report #: nvr_4_30-Jan-2020

⁵ DPIPWE (2015)

⁶ Kitchener and Harris (2013)

⁷ de Salas and Baker (2019)

⁸ Goff *et al.* (1982)

⁹ Tasmanian State Government 1995; Commonwealth of Australia 1999; Tasmanian State Government 1999

¹⁰ DPIPWE (2015)

¹¹ DPIPWE Natural Values Atlas Report (2020) report #: nvr_4_30-Jan-2020

3 RESULTS - BIOLOGICAL VALUES

3.1 Vegetation communities

The site is typical grazing land with few native remnants and localised weedy terrain around fence lines, disturbed pockets and beneath a stand of macrocarpa. Stockpiles of fill close to the Baudin Road entrance are colonised by variegated thistle *Silybum marianum*.

- Agricultural land (FAG)

This dominates the property and is characterised by degraded pasture last sown approximately 25 years ago with rye, clover and cocksfoot¹². It has been colonised by typical pasture weeds such as african capeweed *Arctotheca calendula*, hoary mustard *Hirschfeldia incana* plus native wallaby grasses (*Austrodanthonia* spp.). There are a series of dams which were mostly empty at the time of survey. The base of these and nearby drainage swales provide localised habitat for moisture dependent species including several species of pinrush *Juncus* spp., pale goosefoot *Chenopodium glaucum*, grass poly *Lythrum hyssopifolium* and blown grass *Lachnagrostis filiformis*.

There are scattered heavily browsed coast wattles on one slope in the south west corner.

- Lowland grassland complex (GCL)

We have mapped this in one area in the far north east on slopes that descends to Chasseys Creek. There are other patches of ground where slope and topography has protected the land from ploughing which include elements of this community but were considered too small to be selected out for mapping.

3.2 Threatened Plants

A list of all vascular plant species recorded in this survey is provided in Appendix B. One threatened plant species is present.

- Gentle rush *Juncus amabilis*

Approximately 500 plants are dispersed along two drainage swales and around the edges of some of the dams. *Juncus amabilis* is much more widespread than once thought and often found to persist in low lying poorly drained pasture. Consequently, it has been approved for delisting from the *Threatened Species Protection Act 1995* which is awaiting the formality of gazettal before it can be officially delisted from the TSPA¹³.

No other threatened flora species have been previously recorded within 500 m of the site. All species known from within a 5 km radius (or considered likely to have potential habitat), as identified in the Natural Values Atlas are discussed in Appendix C. Only two species have a low likelihood of occurring.

3.3 Threatened Fauna and Habitat

All species known from within a 5 km radius (or considered likely to have potential habitat), as identified in the Natural Values Atlas are discussed in Appendix D¹⁴. Coastal, marine, cave-dwelling and wetland species (e.g. right whale, eastern curlew) included in these NVA reports are excluded from the table as they have no chance of occurring in the study area.

No threatened fauna species records are documented on the NVA within 500 m of the site, although there are anecdotal observation records of wedge-tailed eagle foraging. No significant habitat for threatened fauna is present. Any occurrences of threatened fauna would be incidental.

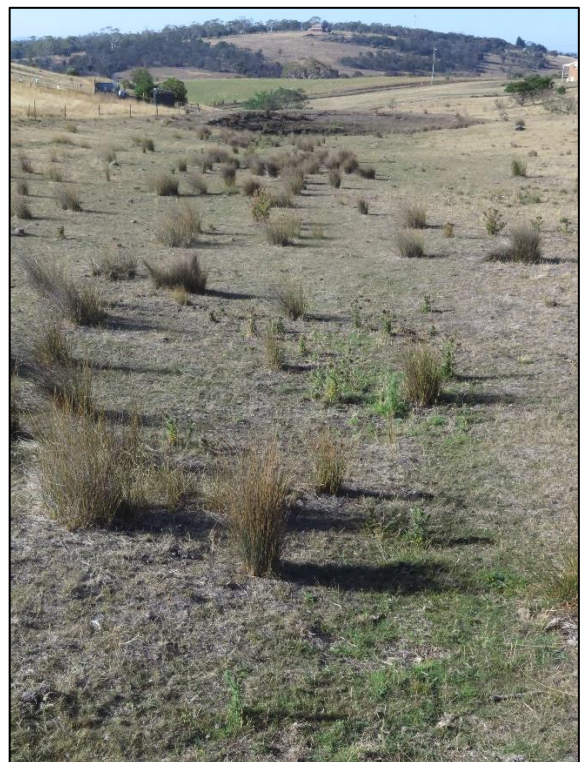
¹² Q. Newiitt pers com

¹³ *Threatened Species Protection Order 2020* was gazetted on 25 November 2020 to delist *Juncus amabilis* from the TSPA

¹⁴ DPIWE Natural Values Atlas Report (2020) report #: nvr_4_30-Jan-2020



Looking north from Baudin Road entrance



Gentle rush *Juncus amabilis*

3.4 Declared weeds

Seven declared weeds were recorded from site, these are indicated in Figure 3.

- Serrated tussock *Nassella trichotoma*

This is the most prominent weed on the property forming some extensive patches. At the time of the February survey over 800 mature flowering plants with several hundred seedlings were recorded. It is likely many more plants will have germinated following drought breaking rains that occurred through autumn and winter. On reporting the infestation to the landowner he has organised for weed management contractors to selectively treat this species on site¹⁵.

- Chilean needle grass *Nassella neesiana*

This is the most significant weed infestation on site being only the third occasion it has ever been recorded within the Sorell municipality with other occurrences being limited to small numbers. Here there is an estimated 3000 plants established along an old track formation. These were not picked up by the summer survey when the site was in drought but were very apparent after rains.

- African boxthorn *Lycium ferocissimum*

Some mature bushes present on site. This is a common weed in Sorell which has been allowed to spread throughout extensive areas of farmland in the Pitt Water and Southern Beaches areas.

- Fennel *Foeniculum vulgare*

Occasional observations.

- Californian thistle *Cirsium arvense*

This forms a moderate sized patch of 500 sqm in the far north east corner in lower slopes above Chasseys Creek.

- Hoary cress (white weed) *Lepidium draba*

Recorded at one site but potentially more widespread. This rhizomatous herb can form extensive patches which then die off above ground in summer.

- Blackberry *Rubus fruticosus* agg.

This occurs on a fenceline along the northern boundary and into a pit which has been used as a dump site.



Chilean needle grass June 2020

¹⁵ Q Newitt pers com



Serrated tussock Feb 2020



Blackberry Feb 2020



African boxthorn -Feb 2020



Californian thistle April 2020

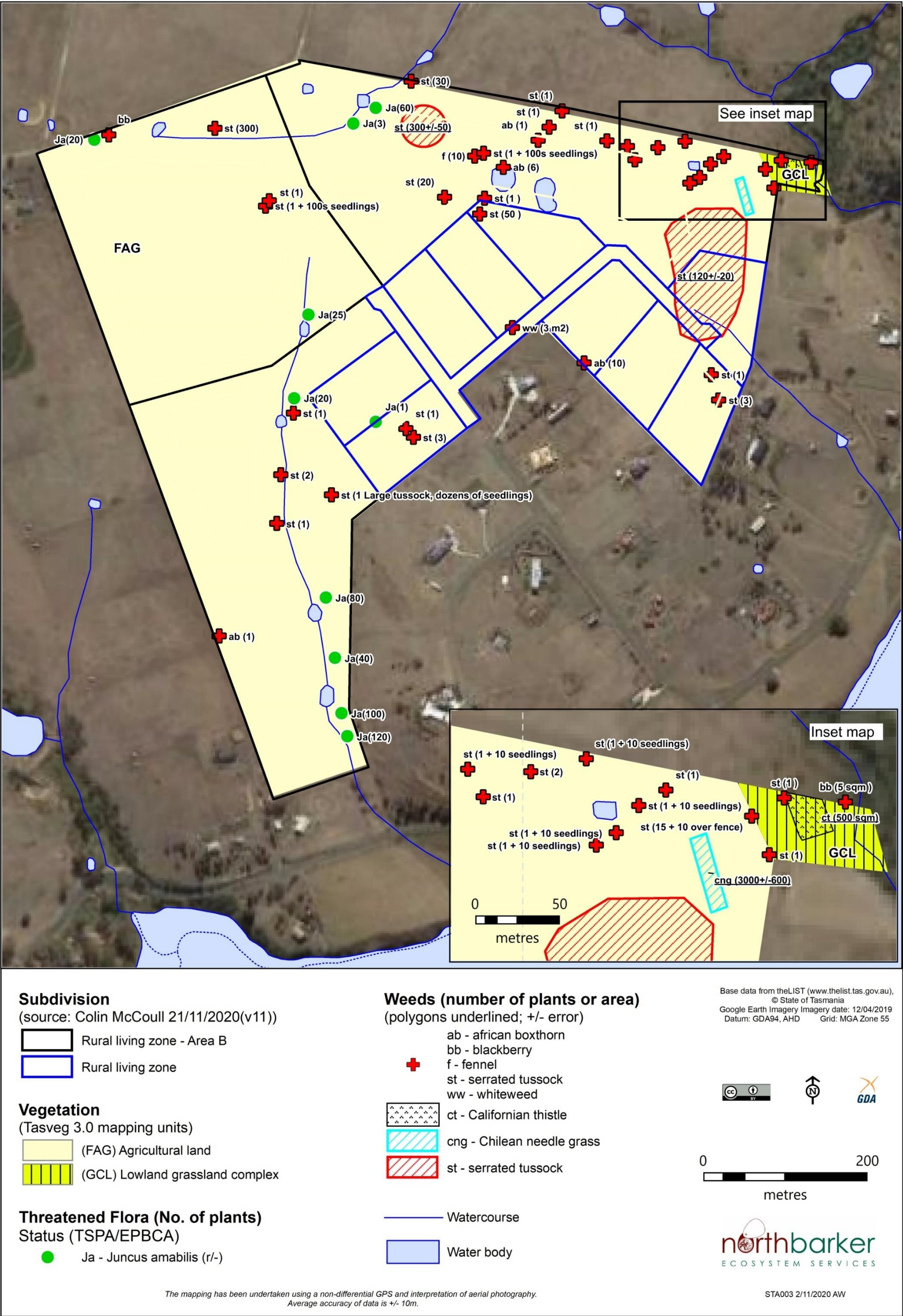


Figure 3: Vegetation, threatened flora and weeds

4 IMPACT ASSESSMENT and MITIGATION

Impacts resulting from subdivision and ultimate development include construction of new roads, services and accesses during the initial civil works. The subdivision will then facilitate future residential development which can be assumed to affect all of the smaller lots and a very small proportion of the areas bounded by the building area on the larger three lots. It is likely there will also be more intensive land use throughout with the occupancy of up to 12 families.

4.1 Vegetation communities

There is very little native vegetation on site, with the only mapped community located outside the building area of lot 3. No threatened vegetation occurs on site. No impacts to native vegetation communities are a likely consequence of the subdivision.

4.2 Threatened plants

One threatened plant species is present. Gentle rush *Juncus amabilis* occurs in the vicinity of two drainage swales.

Juncus amabilis has been found to be widespread and sometimes abundant in pasture where it is likely to have been overlooked in the past. In response to the numerous and frequent recordings of this species in recent times, the TSPA Scientific Advisory Committee approved the delisting of *J. amabilis* from the Schedules of the TSPA ¹⁶. This recommendation has received Ministerial approval allowing a draft Order for the amendment to the Schedules of the TSPA to be prepared for public comment prior to the Order being formally gazetted. This change is expected to occur sometime later in 2020.

It is very likely that *Juncus amabilis* will be delisted well before any subdivision is enacted. It is likely that plants will persist on the larger blocks.

No significant impact to threatened plants result from the subdivision proposal.

4.3 Threatened fauna habitat

No threatened fauna habitat will be impacted by the subdivision.

4.4 Weed Management

The landowner has undertaken targeted treatment of three declared weeds¹⁷. African boxthorn has been cut, stacked and the stems poisoned. Serrated tussock and Chilean needle grass were treated with selective herbicide in June 2020. Management of all weeds will require follow up to achieve eradication.

By far the most significant weed on site is Chilean needle grass. Any future land use resulting from subdivision could increase the risk of this weed being translocated off site. For example, if a future landowner introduced sheep the seed of the weed could hitch a lift in the wool. If the sheep were then moved off site it could transport seeds off the property.

In the absence of weed management with up to 12 new residences and associated uses on site there is an increased risk of many of the declared weeds being allowed to proliferate and spread off site.

Any development project would benefit from a weed management plan that:

¹⁶ Meeting 75 Minutes 12 Nov 2019

¹⁷ Q. Newitt pers com.

- Treats all occurrences of declared weeds prior to works.
- Ensures best practice construction hygiene is practiced to prevent the spread of weed propagules in contaminated soil. This should involve cleaning all machinery before leaving the works area, as well as not bringing dirty machinery into the site.
- Follows up weed control implemented 6-12 months after works to treat any individuals that have colonised/recolonised the area.

In this case there should be a weed management component in the Construction and Environment Management Plan (CEMP) linked to the civil works to be undertaken to establish the subdivision.

The release of Lot 3 (Area B) should be delayed until eradication of Chilean needle grass is confirmed by an ecologist or weed contractor. Alternatively, there should be a condition in the permit to require the current landowner and future landowner to eradicate the weed.

5 LEGISLATIVE REQUIREMENTS

5.1 Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The EPBCA is structured for self-assessment; the proponent must determine whether or not the project is likely to have a significant impact on a matter of national environmental significance (MNES) such as a listed threatened species or community. If this is likely then the Department of Environment and Energy may consider the proposed activity is a 'controlled action' which would require approval from the Commonwealth Minister.

There are no impacts to MNES so, no need to assess this matter any further.

5.2 Tasmanian Threatened Species Protection Act 1995

Any works undertaken before *Juncus amabilis* is delisted from the TSPA will require a permit under this legislation¹⁸.

5.3 Tasmanian Nature Conservation Act 2002

Schedule 3A of the NCA list threatened vegetation communities. No vegetation communities listed on the Schedule are present or will be impacted by the proposed development.

5.4 Tasmanian Weed Management Act 1999

There are six declared weeds for which Sorell is a Zone B municipality according to the statutory weed management plans of each species¹⁹. Management measures for declared weeds in municipalities classed as Zone B include:

"Containment within municipal boundaries, protection of specified areas within municipal boundaries, prevention of spread to Zone A municipalities. This applies to all Zone B municipalities."

Sorell is a Zone A municipality for Chilean needle grass. The Statutory Weed Management Plan for Chilean needle grass was last updated in 2011. At that time there were no known records from Sorell. Since 2018 there have been several sightings along the Tasman Highway between Sorell and Orierton but in much smaller numbers than occurs at this site. For Zone A municipalities, eradication is the primary management objective.

¹⁸ *Threatened Species Protection Order 2020* was gazetted on 25 November 2020 to delist *Juncus amabilis* from the TSPA

¹⁹ <https://dpiwwe.tas.gov.au/invasive-species/weeds/weeds-index/declared-weeds-index>

5.5 Sorell Interim Planning Scheme 2015

5.5.1 Waterway and Coastal Protection Code (E11)

The subject land falls within areas covered by the Waterway and Coastal Protection Area overlay (Figure 4) and as such triggers a requirement to address the Waterway and Coastal Protection Code (E11) of the Sorrell Interim Planning Scheme 2015.

The general purpose of the provision of the E11.1 is to:

- a) **minimise impact on water quality, natural values including native riparian vegetation, river condition and the natural ecological function of watercourses, wetlands and lakes;**
- b) **minimise impact on coastal and foreshore values, native littoral vegetation, natural coastal processes and the natural ecological function of the coast;**
- c) **protect vulnerable coastal areas to enable natural processes to continue to occur, including the landward transgression of sand dunes, wetlands, saltmarshes and other sensitive coastal habitats due to sea-level rise.**
- d) **minimise impact on water quality in potable water supply catchment areas.**

Specifically, the proposal must meet the standards relating to subdivision (E11.8.1), to ensure that:

- a) **works associated with subdivision in proximity to a waterway, the coast, identified climate change refugia and potable water supply areas will not have an unnecessary or unacceptable impact on natural values;**
- b) **future development likely to be facilitated by subdivision is unlikely to lead to an unnecessary or unacceptable impact on natural values.**

Acceptable Solutions
A1
<u>Subdivision of a lot, all or part of which is within a Waterway and Coastal Protection Area, Future Coastal Refugia Area or Potable Water Supply Area must comply with one or more of the following:</u>
(a) <u>be for the purpose of separation of existing dwellings;</u>
(b) <u>be for the creation of a lot for public open space, public reserve or utility;</u>
(c) <u>no works, other than boundary fencing works, are within a Waterway and Coastal Protection Area, Future Coastal Refugia Area or Potable Water Supply Area;</u>
(d) <u>the building area, bushfire hazard management area, services and vehicular access driveway are outside the Waterway and Coastal Protection Area, Future Coastal Refugia Area or Potable Water Supply Area.</u>

Lot 9 (Rural Living Zone) and Lots 1, 2 & 3 (Rural Living Zone - Area B) are within the WCPA overlay.

Clauses (a) or (b) of the Acceptable Solution are not applicable.

Clause (c) can be met if it is accepted that 'works' pertaining to clause (d) are not applicable to this clause. The only other works anticipated are boundary fencing which is accepted by this clause.

Clause (d) cannot be met. A vehicular access driveway for Lot 1 Rural Living Zone -Area B crosses the WCPA. On all other matters the clause applies. Indicative building areas for Lots 1, 2 & 3 (Area B) fall outside the WCPA. Amendments to Lot 9 has ensured indicative building area is set back sufficiently from the WCPA and it is possible to site the access to ensure that the driveway avoids the overlay. The overlay on Lot 9 is part of a drainage line with a very small catchment and is not distinguishable from land each side.

Bushfire hazard management extend for up to 13 m²⁰. The Indicative Building areas for Lots 1-3 (Rural Living Zone - Area B) and Lot 9 are set back sufficiently from the WCPA to ensure that the BHMA will not extend into the WCPA.

No services are required for Lots 1-3 (Rural Living Zone - Area B). Services to Lot 9 can avoid the WCPA.

Should A1 not be able to be met the Performance Criteria (P1) need to be addressed.

Performance Criteria
P1
Subdivision of a lot, all or part of which is within a Waterway and Coastal Protection Area, Future Coastal Refugia Area or Potable Water Supply Area, must satisfy all of the following:
(a) minimise impact on natural values;
(b) provide for any building area and any associated bushfire hazard management area to be either:
(i) outside the Waterway and Coastal Protection Area, Future Coastal Refugia Area or Potable Water Supply Area; or
(ii) able to accommodate development capable of satisfying this code.
(c) if within a Potable Water Supply Area, be in accordance with the requirements of the water and sewer authority.

(a) Subdivision for Lots 2 and 3 (Rural Living Zone - Area B) and Lot 9 affected by the WCPA overlay comply with the Acceptable solution (A1). The access driveway for Lot 1 (Rural Living Zone - Area B) crosses the WCPA high up in the catchment where there is little native vegetation. A culvert under the drive for Lot 1 will allow for water flow.

(b) (i) Building areas for Lots 1-3 (Area B) and Lot 9 are all outside the WCPA and are sufficiently buffered to ensure BHMA can be accommodated outside the WCPA.

(ii) This is best determined by considering the subdivision and consequential development against the Purpose statements of the Code.

E11.1.1 Purpose

(a) Natural values on site include some native flora along the drainage swales and around each dam. It also includes a concentration of native flora on the slopes above Chasseys Creek on Lot 3 (Area B). Specifically, the statement refers to riparian vegetation and river condition.

It is possible to accommodate residential development on each lot without causing any runoff of pollutants or sediment into the drainage lines identified in the overlay which could lead to downstream impacts to riparian vegetation or river condition. Livestock activity is currently

²⁰ Bushfire Assessment Report (SEAM 2020)

permitted under the current zoning and has been reflected through cattle grazing in recent years. Subdivision doesn't therefore result in additional livestock impacts. Management of grassland within the BHMA overlay will not cause adverse impacts to natural values, specifically relating to riparian and river matters.

(b) (c). No impacts to coastal and foreshore values nor to littoral vegetation will necessarily result from the likely development resulting from subdivision.

(d) n/a

Conclusion. The performance criteria for subdivision within the Waterway and Coastal Protection can be met.

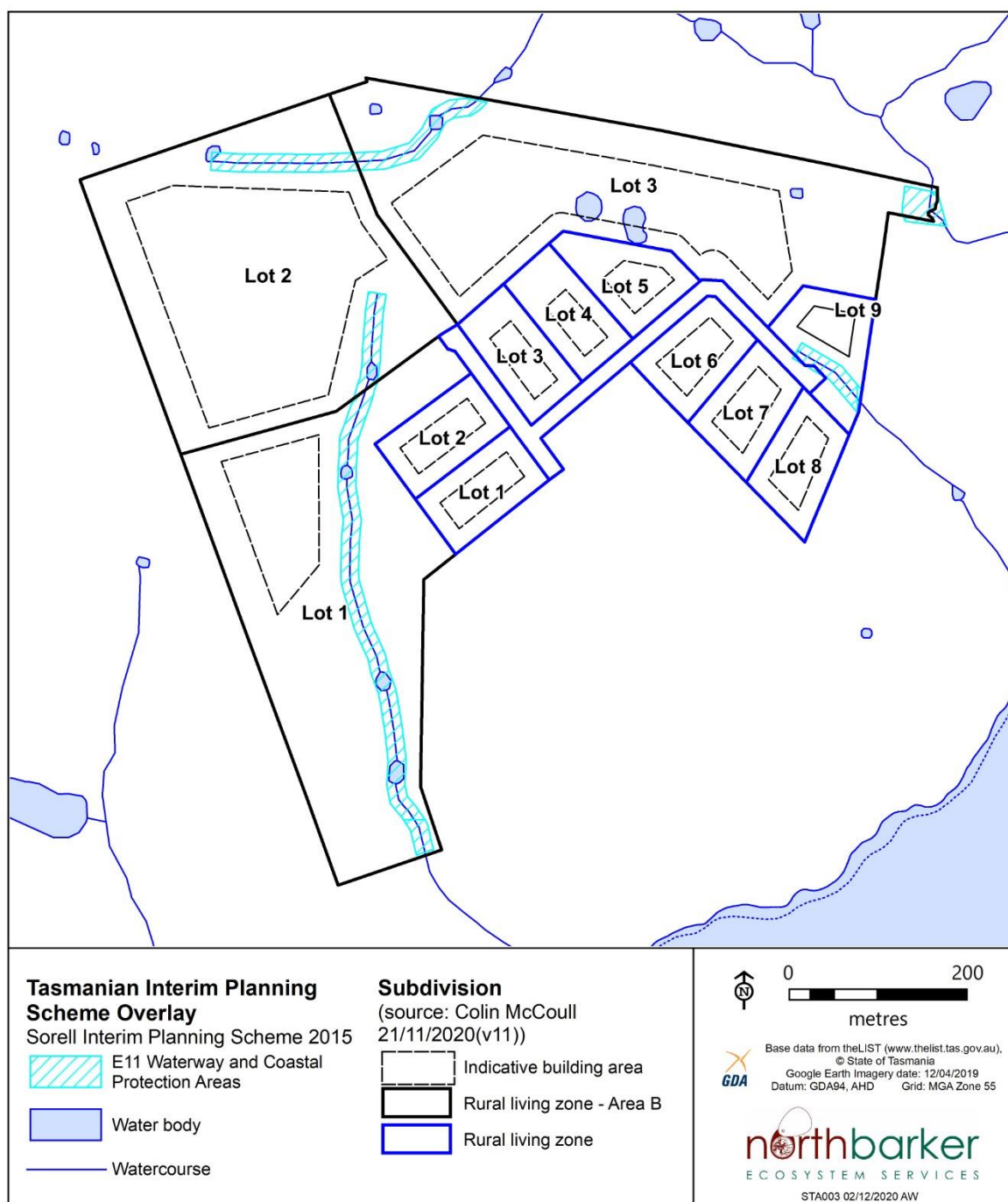


Figure 4: Sorell Interim Planning Scheme 2015 overlay, showing areas provided for under the Waterway and Coastal Protection Code (E11)

6 DISCUSSION

The land subject to this proposed rezoning and subdivision is low capacity grazing land that supports no priority biodiversity values. The original survey was conducted in mid-summer (February 2020) following three years of drought resulting in a barren landscape. The pasture has recovered somewhat following drought breaking rains and the cessation of grazing since December 2019.

The property includes infestations of several priority weeds of which two are notable and one is of particular importance. The current landowner has initiated primary management of Chilean needle grass, serrated tussock and African boxthorn.

This subdivision application provides an opportunity to condition management and eradication of the worst infestation of Chilean needle grass in Sorell. It also provides reason and opportunity to tackle the serrated tussock plus other declared weed infestations on site. This will be important once the land is divided between multiple landowners.

The land is currently dominated by pasture with only localised occurrences of shrubs and trees. It can be anticipated that subdivision for residential use will result in the establishment of gardens that will create much greater structural complexity in the vegetation and likely support a much wider diversity of habitats for native fauna than what currently exists on site.

The subdivision can meet the Performance criteria for subdivision under the Waterway and Coastal Protection Code E11.

The following recommendations should be incorporated into permit conditions.

1. Prior to any site works conduct a targeted survey of Chilean needle grass across the whole property. Incorporate the findings and recommendations into a Weed Management Plan that prescribes:
 - a. Hygiene measure to exclude the risk of spreading declared weeds on site and transporting them off site.
 - b. Secondary and follow up treatment for all weeds with specific consideration for Chilean needle grass (Lot 3 – Rural Living Zone - Area B).
2. Chilean needle grass management should be the responsibility of future lot owners.

As *Juncus amabilis* has recently been delisted from the Schedules of the TSPA, a permit will not be required from DPIPW²¹.

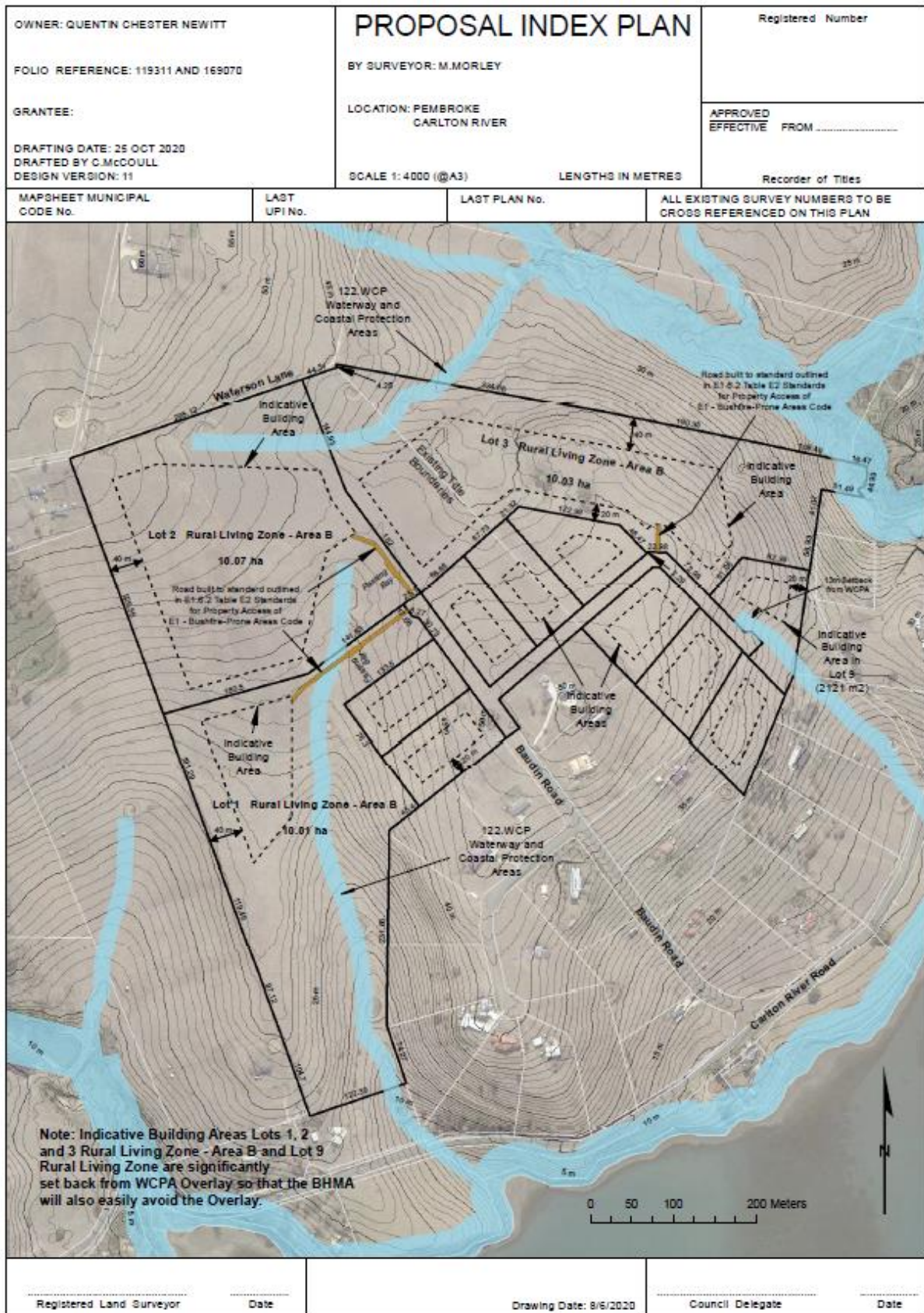
²¹ *Threatened Species Protection Order 2020* was gazetted on 25 November 2020 to delist *Juncus amabilis* from the TSPA

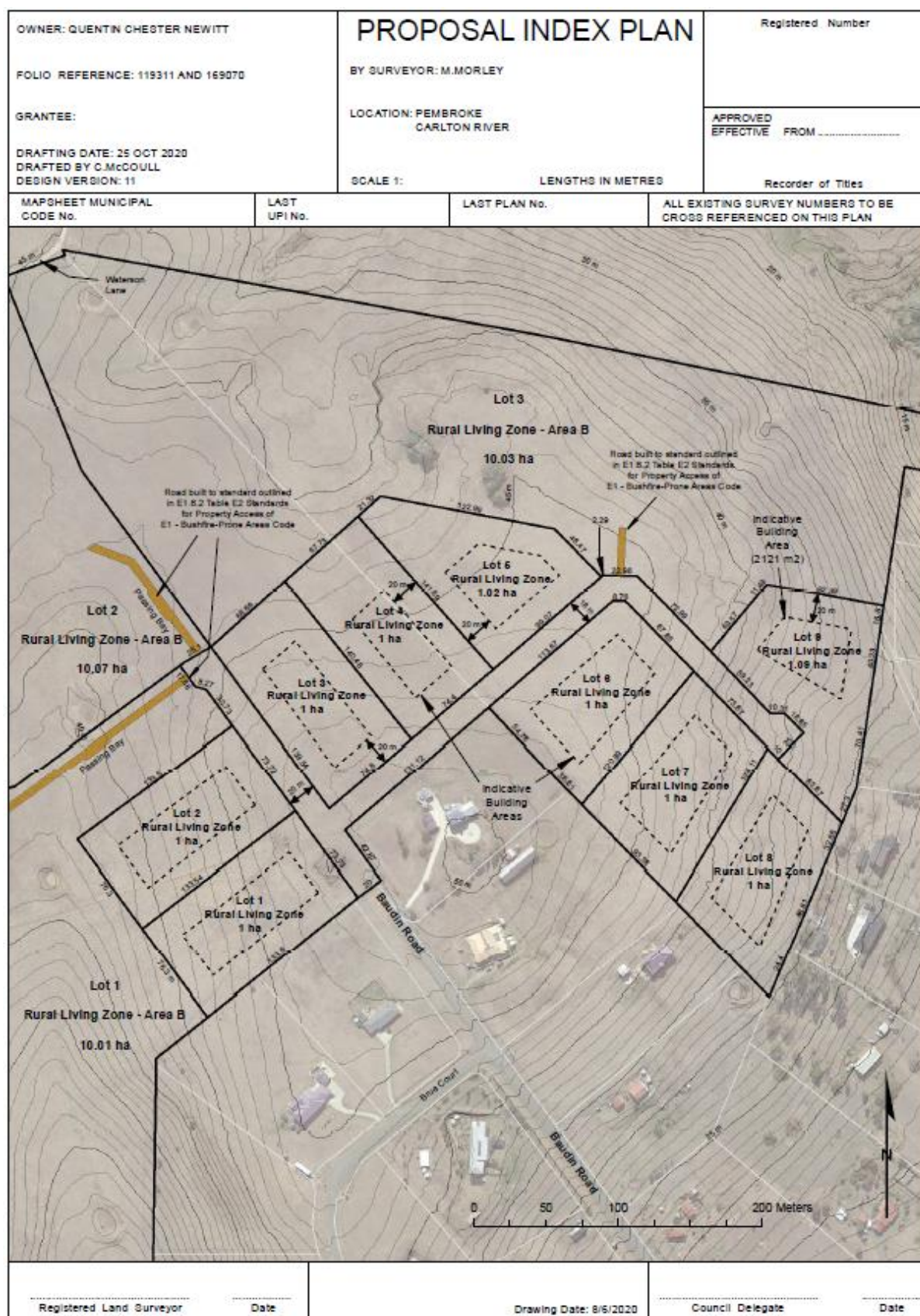
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APPENDIX A: Subdivision Plans

V11 Colin McCoull received 22/11/2020





APPENDIX B: Plant species recorded in the study area

Status codes:

ORIGIN

i - introduced
d - declared weed WM Act
en - endemic to Tasmania
t - within Australia, occurs only in Tas.

NATIONAL SCHEDULE

EPBC Act 1999
CR - critically endangered
EN - endangered
VU - vulnerable

STATE SCHEDULE

TSP Act 1995
e - endangered
v - vulnerable
r - rare

Sites:

1 FAG - E554600, N5254200
2 GCL - E555160, N5254300

25/02/2020 Andrew J. North
22/04/2020 Andrew J. North

Site	Name	Common name	Status
	DICOTYLEDONAE		
	AMARANTHACEAE		
1	<i>Amaranthus graecizans</i> subsp. <i>silvestris</i>	prostrate pigweed	i
	APIACEAE		
1	<i>Foeniculum vulgare</i>	fennel	d
	ASTERACEAE		
1	<i>Arctotheca calendula</i>	capeweed	i
2	<i>Cirsium arvense</i> var. <i>arvense</i>	Californian thistle	d
1 2	<i>Cirsium vulgare</i>	spear thistle	i
1	<i>Helminthotheca echinoides</i>	bristly ox-tongue	i
1	<i>Leontodon saxatilis</i>	hairy hawkbit	i
2	<i>Ozothamnus ferrugineus</i>	tree everlastingbush	
1	<i>Silybum marianum</i>	variegated thistle	i
2	<i>Solenogyne dominii</i>	smooth flat-herb	
1	<i>Sonchus asper</i>	prickly sowthistle	i
	BORAGINACEAE		
1	<i>Cynoglossum suaveolens</i>	sweet houndstongue	
	BRASSICACEAE		
1	<i>Hirschfeldia incana</i>	hoary mustard	i
1	<i>Lepidium didymum</i>	lesser swinecress	i
1	<i>Lepidium</i> sp.	peppercress	
	CHENOPODIACEAE		
1	<i>Atriplex prostrata</i>	creeping orache	i
1	<i>Chenopodium album</i>	fat hen	i
1	<i>Chenopodium glaucum</i>	pale goosefoot	i
	CONVOLVULACEAE		
2	<i>Convolvulus angustissimus</i> subsp. <i>angustissimus</i>	blushing bindweed	
	FABACEAE		
2	<i>Acacia dealbata</i> subsp. <i>dealbata</i>	silver wattle	
1	<i>Acacia longifolia</i> subsp. <i>sophorae</i>	coast wattle	
2	<i>Acacia verticillata</i> subsp. <i>verticillata</i>	prickly moses	
	GERANIACEAE		
2	<i>Geranium potentilloides</i> var.	mountain cranesbill	
	LINACEAE		
2	<i>Linum catharticum</i>	white flax	i
	LYTHRACEAE		
1	<i>Lythrum hyssopifolia</i>	small loosestrife	
	ONAGRACEAE		
1	<i>Epilobium hirtigerum</i>	hairy willowherb	

OXALIDACEAE			
2	<i>Oxalis perennans</i>	grassland woodsorrel	
PLANTAGINACEAE			
1	<i>Plantago coronopus</i>	buckshorn plantain	i
1 2	<i>Plantago lanceolata</i>	ribwort plantain	i
POLYGONACEAE			
1 2	<i>Acetosella vulgaris</i>	sheep sorrel	i
1	<i>Polygonum aviculare</i>	creeping wireweed	i
1 2	<i>Rumex dumosus</i>	wiry dock	
RESEDACEAE			
1	<i>Reseda luteola</i>	weld	i
RHAMNACEAE			
2	<i>Pomaderris apetala</i>	common dogwood	
ROSACEAE			
1 2	<i>Acaena novae-zelandiae</i>	common buzzy	
2	<i>Acaena ovina</i>	hairy sheepsburr	
1	<i>Aphanes arvensis</i>	parsley piert	i
2	<i>Crataegus monogyna</i>	hawthorn	i
1 2	<i>Rosa rubiginosa</i>	sweet briar	i
1 2	<i>Rubus fruticosus</i>	blackberry	d
RUBIACEAE			
2	<i>Asperula conferta</i>	common woodruff	
SOLANACEAE			
1	<i>Lycium ferocissimum</i>	african boxthorn	d
MONOCOTYLEDONAE			
ASPARAGACEAE			
2	<i>Lomandra longifolia</i>	sagg	
CYPERACEAE			
1 2	<i>Carex iynx</i>	tussock sedge	
JUNCACEAE			
1	<i>Juncus amabilis</i>	gentle rush	r
1	<i>Juncus pallidus</i>	pale rush	
1	<i>Juncus subsecundus</i>	finger rush	
POACEAE			
1	<i>Agrostis capillaris</i>	brown top bent grass	i
1 2	<i>Anthosachne scabra</i>	rough wheatgrass	
1	<i>Danthonia decumbens</i>	heath grass	i
1	<i>Holcus lanatus</i>	yorkshire fog	i
1	<i>Lachnagrostis filiformis</i>	common blowngrass	
1	<i>Lolium perenne</i>	perennial ryegrass	i
1	<i>Nassella neesiana</i>	chilean needle grass	d
1	<i>Nassella trichotoma</i>	serrated tussock	d
1	<i>Phalaris minor</i>	lesser canarygrass	i
1 2	<i>Poa labillardierei</i>	silver tussockgrass	
1	<i>Rytidosperma geniculatum</i>	kneed wallabygrass	
1	<i>Rytidosperma penicillatum</i>	slender wallabygrass	
2	<i>Rytidosperma racemosum</i> var. <i>racemosum</i>	stiped wallabygrass	
1	<i>Rytidosperma setaceum</i>	bristly wallabygrass	
1 2	<i>Rytidosperma</i> sp.	wallabygrass	
2	<i>Themeda triandra</i>	kangaroo grass	
PTERIDOPHYTA			
DENNSTAEDTIACEAE			
2	<i>Pteridium esculentum</i> subsp. <i>esculentum</i>	bracken	

APPENDIX C: Flora species of conservation significance

Known to occur, or which may potentially occur based on range boundaries, within a 5 km radius of the study area²².

Species	Status TSPA / EPBCA ²³	Potential to occur in study area	Observations and preferred habitat
Known from within 5 km			
<i>Caladenia caudata</i> tailed spider-orchid	vulnerable/ VULNERABLE	None	<i>Caladenia caudata</i> has highly variable habitat, which includes the central north: <i>Eucalyptus obliqua</i> heathy forest on low undulating hills; the north-east: <i>E. globulus</i> grassy/heathy coastal forest, <i>E. amygdalina</i> heathy woodland and forest, <i>Allocasuarina</i> woodland; and the south-east: <i>E. amygdalina</i> forest and woodland on sandstone, coastal <i>E. viminalis</i> forest on deep sands. Substrates vary from dolerite to sandstone to granite, with soils ranging from deep windblown sands, sands derived from sandstone and well-developed clay loams developed from dolerite. A high degree of insolation is typical of many sites
<i>Caladenia filamentosa</i> daddy longlegs	rare/ -	None	<i>Caladenia filamentosa</i> occurs in lowland heathy and sedgy eucalypt forest and woodland on sandy soils and finer grained sediments such as mudstones.
<i>Caladenia saggicola</i> sagg spider-orchid	endangered/ CRITICALLY ENDANGERED	None	<i>Caladenia saggicola</i> is known from two sites in south-east Tasmania. At Cambridge, the species grows amongst <i>Lomandra longifolia</i> (sagg) tussocks in <i>Eucalyptus viminalis</i> woodland on well-drained, grey sandy loam. At Dodges Ferry, plants were located in a remnant patch of native vegetation, dominated by <i>Allocasuarina verticillata</i> (drooping sheoak) and <i>E. viminalis</i> , on yellow to grey sandy loam over sandstone.
<i>Cotula vulgaris</i> var. <i>australasica</i> slender buttons	rare/ -	None	<i>Cotula vulgaris</i> var. <i>australasica</i> habitat includes saline herbfields, rocky coastal outcrops, and wet or brackish swamps.
<i>Cuscuta tasmanica</i> golden dodder	rare/ -	None	<i>Cuscuta tasmanica</i> is known from saline areas and brackish marshes often, but not exclusively, on plants of <i>Wilsonia backhousei</i> (narrowleaf wilsonia).
<i>Eryngium ovium</i> blue devil	vulnerable/ -	None	<i>Eryngium ovium</i> occurs in a range of lowland vegetation types most often on fertile heavy clay soils derived from dolerite. Vegetation types include open grasslands usually dominated by <i>Themeda triandra</i> (kangaroo grass), grassy forests and woodlands on slopes, ridges and broad flats, and also roadside verges (representing remnant populations),

²² DPIPW Natural Values Atlas Report (2020) report #: nvr_4_30-Jan-2020

²³ Tasmanian Threatened Species Protection Act 1995 and Commonwealth Environmental Protection and Biodiversity Conservation Act 1999

Species	Status TSPA / EPBCA ²³	Potential to occur in study area	Observations and preferred habitat
<i>Juncus amabilis</i> gentle rush	rare/ -	Present	<i>Juncus amabilis</i> occurs in a variety of habitats, usually poorly drained sites such as damp grasslands and grassy woodlands, wet pastures, roadside ditches and edges of still and slow-flowing waterbodies. As presently understood, the species is mainly confined to lowland areas in the eastern half of the State but there are potential higher elevation and more western records that require confirmation.
<i>Lepilaena preissii</i> slender watermat	rare/ -	None	<i>Lepilaena preissi</i> occurs in fresh and brackish lagoons, and estuaries.
<i>Limonium australe</i> var. <i>austral</i> yellow sea-lavender	rare/ -	None	<i>Limonium australe</i> var. <i>australe</i> occurs in succulent or graminoid saltmarsh close to the high-water mark, typically near small brackish streams.
<i>Pterostylis wapstrarum</i> fleshy greenhood	endangered/ CRITICALLY ENDANGERED	None	<i>Pterostylis wapstrarum</i> is restricted to the Midlands and south-east of Tasmania where it occurs in native grassland and possibly grassy woodland. It has been reported from basalt soils.
<i>Ruppia megacarpa</i> largefruit seatassel	rare/ -	None	<i>Ruppia megacarpa</i> occurs in estuaries and lagoons along the east and south-east coasts, and brackish lagoons in the Midlands; there is also an historic record from the Tamar estuary in the States' north.
<i>Ruppia tuberosa</i> tuberous seatassel	rare/ -	None	<i>Ruppia tuberosa</i> has been recorded from the State's south-east at Ralphs Bay and Blackman Bay, where it grows in holes and channels in saltmarshes.
<i>Rytidosperma indutum</i> tall wallabygrass	rare/ -	Very Low	<i>Rytidosperma indutum</i> is relatively widespread on mudstone and dolerite in dry sclerophyll woodlands and associated lowland grasslands in drier parts of the State. Potential habitat on native grassy slopes where may have been overlooked if in low numbers
<i>Vittadinia muelleri</i> narrowleaf new-holland-daisy	rare/ -	Very Low	<i>Vittadinia muelleri</i> occurs in dry native grasslands and grassy woodlands particularly in open areas with lighter grass cover and patches of bare ground such as rock plates. It freely colonises disturbed sites such as roadside cuttings. It is widely dispersed through the Midlands and South East. This can occur in disturbed grassy slopes and could have been overlooked from unploughed sites due to drought.

APPENDIX D: Fauna species of conservation significance

Previously recorded, or which may potentially occur, within 5 km of the study area²⁴

Species	Status ²⁵ TSPA/EPBCA	Significance of study area	Observations and preferred habitat ²⁶
Known from 5 km			
MAMMALS			
<i>Dasyurus viverrinus</i> Eastern quoll	-/ ENDANGERED	Nil	This species was previously widespread in mainland south-eastern Australia, but is now restricted to Tasmania. Records from the Tasmanian Natural Values Atlas indicate that the eastern quoll occurs in most parts of Tasmania, but is recorded infrequently in the wetter western third of the state. The species' distribution is positively associated with areas of low rainfall and cold winter minimum temperatures. Within this distribution, it is found in a range of vegetation types including open grassland (including farmland), tussock grassland, grassy woodland, dry eucalypt forest, coastal scrub and alpine heathland, but is typically absent from large tracts of wet eucalypt forest and rainforest. Individuals may include part of the site within home range, no denning habitat
<i>Perameles gunnii gunnii</i> Eastern-barred bandicoot	-/ VULNERABLE	Nil	Inhabits grassy woodlands, native grasslands, and mosaics of pasture and shrubby ground cover favouring open grassy areas for foraging with thick vegetation cover for shelter and nesting. It has a widely dispersed range with concentrations in SE, NE and NW Tasmania and some areas of the State from where it is absent or in very low densities. It extends into the urban fringe where it can survive in large gardens and bushland reserves. It favours a mosaic of open grassy areas for foraging and thick vegetation cover for shelter and nesting. May occur especially in north east corner where site adjoins more extensive habitat,
<i>Sarcophilus harissii</i> Tasmanian devil	Endangered/ ENDANGERED	Nil	The Tasmanian devil occupies a wide range of habitats across Tasmania and exploits landscapes with a mosaic of pasture and forest with elevated prey densities and is attracted to roadkill hotspots with concentrated scavenging resource. Populations have declined substantially since the first observations of the infectious cancer Devil Facial Tumour Disease (DFTD). DFTD has now spread across much of Tasmania. The reduced population is also likely to be more sensitive to additional

²⁴ DPIPWE Natural Values Atlas Report (2020) report #: nvr_4_30-Jan-2020

²⁵ Tasmanian *Threatened Species Protection Act 1995* and Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999*, which includes ROKAMBA, JAMBA, CAMBA and Migratory species.

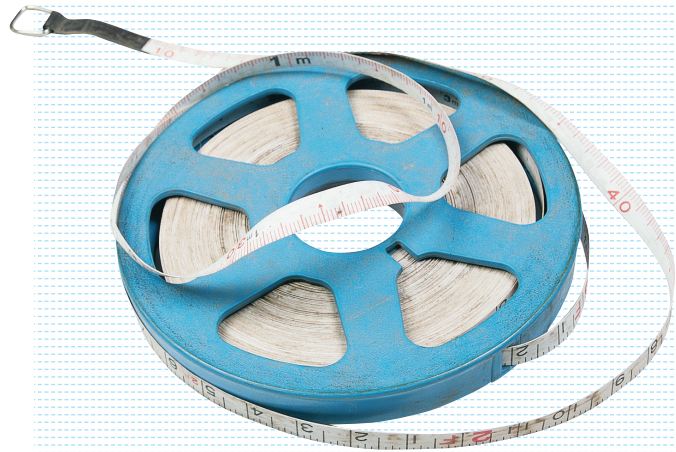
²⁶ Bryant & Jackson 1999

Species	Status ²⁵ TSPA/EPBCA	Significance of study area	Observations and preferred habitat ²⁶
			threats such as death by roadkill, competition with cats and foxes, and loss or disturbance of areas surrounding traditional dens where young are raised. The protection of breeding opportunities is particularly important for the species due to the mortalities from demographic pressures. Individuals may include part of the site within home range , no denning habitat
BIRDS			
<i>Aquila audax fleayi</i> Wedge-tailed eagle	Endangered/ ENDANGERED	Nil	Wedge-tailed eagles nest in a range of old growth native forests and the species is dependent on forest for nesting. Territories can contain up to five alternate nests usually close to each other but may be up to 1 km apart where habitat is locally restricted. Wedge-tailed eagles prey and scavenge on a wide variety of fauna including fish, reptiles, birds and mammals. May use site for foraging. No nesting habitat.
<i>Haliaeetus leucogaster</i> White-bellied Sea Eagle	Vulnerable/ -	Nil	Requires large trees for nesting and is sensitive to disturbance during the breeding season. Occurs in coastal habitats and large inland waterways. May use site for foraging. No nesting habitat.
<i>Lathamus discolor</i> Swift parrot	Endangered/ CRITICALLY ENDANGERED	Nil	The Swift Parrot spends its winter in south-eastern mainland Australian before migrating to Tasmania in late winter/early spring to breed. During the breeding season, nectar from Tasmanian blue gum (<i>Eucalyptus globulus</i>) and black gum (<i>Eucalyptus ovata</i>) flowers is the primary food source for the species. These eucalypts are patchily distributed and their flowering patterns are erratic and unpredictable, often leading to only a small proportion of Swift Parrot habitat being available for breeding in any one year. Swift Parrots breed in tree hollows in mature eucalypts within foraging range of a flower source. No foraging or nesting habitat.
<i>Tyto novaehollandiae castanops</i> Tasmanian masked owl	Endangered/ VULNERABLE	Nil	Found in a range of habitats which contain some mature hollow-bearing forest, usually below 600 m altitude. This includes native forests and woodlands as well as agricultural areas with a mosaic of native vegetation and pasture. Significant habitat is limited to large eucalypts within dry eucalypt forest in the core range. May use site for foraging. No nesting habitat.
AMPHIBIAN			
<i>Litoria raniformis</i> Green and gold frog	Vulnerable/ VULNERABLE	Nil	In Tasmania is found in lowland areas, primarily coastal. They require permanent or temporary water bodies for survival and tend to inhabit ones containing emergent plants such as <i>Triglochin</i>

Species	Status ²⁵ TSPA/EPBCA	Significance of study area	Observations and preferred habitat ²⁶
			<i>procera</i> or species of <i>Juncus</i> or sedge. They are rarely seen in open water and spend most of their time in vegetation at the water's edges. They depend upon permanent fresh water for breeding, which occurs in Spring and Summer. The green and gold frog is not known to occur in the very low fertility habitats to be found in wetlands associated with the western moorland of quartzite derivation. They generally prefer more fertile habitats Dams are too small to provide breeding habitat although in wet years individuals could occupy dams if present in nearby permanent habitats. Virtually extinct from southern Tasmania since millennial drought having only been recorded at Richmond this century.
Potential to occur based on habitat mapping only²⁷			
MAMMALS			
<i>Dasyurus maculatus maculatus</i> Spotted-tailed quoll	Rare/ VULNERABLE	Nil	This naturally rare forest-dweller most commonly inhabits rainforest, wet forest and blackwood swamp forest. It forages and hunts on farmland and pasture, travelling up to 20 km at night, and shelters in logs, rocks or thick vegetation. Important habitat includes large patches of forest containing adequate denning sites and high densities of mammalian prey. Individuals may include part of the site within home range, no denning habitat
BIRDS			
<i>Accipiter novaehollandiae</i> Grey goshawk	Endangered/ -	Nil	Inhabits large tracts of wet forest and swamp forest, particularly patches with closed canopies above an open understorey, but with dense stands of prey habitat nearby. Mature trees provide the best nesting sites. Most nests have been recorded from blackwoods and occasional myrtle beech. No suitable habitat for breeding. Wide ranging no breeding birds may visit to forage.
<i>Pardalotus quadragintus</i> Forty-spotted pardalote	Endangered/ ENDANGERED	Nil	Restricted to dry grassy forest and woodland along the east coast containing mature white gum (<i>Eucalyptus viminalis</i>). No suitable habitat or nearby colonies.
INVERTEBRATES			

²⁷ DPIWE Natural Values Atlas Report (2020) report #: nvr_4_30-Jan-2020

Species	Status ²⁵ TSPA/EPBCA	Significance of study area	Observations and preferred habitat ²⁶
<i>Antipodia chaostola</i> subsp. <i>leucophaea</i> Chaostola skipper	Endangered/ ENDANGERED	Nil	The Chaostola skipper is restricted to dry forest and woodland supporting sedges of the Gahnia genus, and occurs in isolated populations in south-eastern and eastern Tasmania. No suitable habitat.
<i>Theclines thes</i> <i>serpentata</i> Chequered blue	Rare/ -	Nil	A coastal species, adults feed in dry coastal environments and saltmarsh. The larval foodplant is coastal saltbush <i>Rhagodia candolleana</i> . No suitable habitat.
REPTILES			
<i>Pseudemonia</i> <i>pagenstecheri</i> Tussock skink	Vulnerable/ -	Nil	A ground-dwelling lizard, occurring in grassland and grassy woodland habitats at a range of elevations. Records in Tasmania a few disconnected patches of habitat from Midlands, inland Cradle Coast, and eastern Bass Strait islands. Habitat unsuitable.



Proposed Residential Subdivision Project at
Waterson Lane Carlton (PID 2294356)

Aboriginal Heritage Assessment Report
Final Draft Version 1

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21.12.2020

CULTURAL
HERITAGE
MANAGEMENT
AUSTRALIA

Report Version Control

Report version	Report distribution	Date of Distribution
Draft Report V1	Zoe Smith (CHMA) for editing	5/10/2020
Draft Report V1	Van Diemens Consulting for review	5/10/2020
Final Draft Report V1	Aboriginal Heritage Tasmania	5/11/2020
Final report V2	Aboriginal Heritage Tasmania	15/11/2020

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Executive Summary

Project Background

Van Diemen Consulting have been engaged by Quentin Newitt to undertake survey and drafting work for a proposed low density residential subdivision of a rural property at Waterson Lane, Carlton TAS 7173 (PID's (2294292 and 2294356). Figure 1 shows the general location of the subdivision proposal. The combined total area of the two properties is approximately 40ha. The current proposal is for three larger subdivision blocks, each encompassing approximately 10ha, and nine blocks, each encompassing approximately 1ha. Figure 2 shows the current proposed subdivision layout. Please note, that Quentin Newitt, has advised that he has no issue with the Waterson Lane address for the project used throughout this report, but that other reports may address the project as Baudin Road because any future development has to begin from that southern end of the property, to be contiguous with the established residential development. Also, Waterson Lane, where it is adjacent to the northern boundary of the subject property, is not a Public Road.

Aboriginal Heritage Tasmania (AHT) has completed a search of the Aboriginal Heritage Register (AHR) regarding the subdivision proposal and has advised that an Aboriginal heritage assessment is required to be undertaken for PID 2294356. AHT further advised that an assessment was not required for PID 2294292, but instead an Unanticipated Discovery Plan should be followed (advice provided on the 14/7/2020).

CHMA Pty Ltd has been engaged by Van Diemen Consulting (on behalf of Quentin Newitt) to undertake an Aboriginal heritage assessment for the proposed subdivision of PID 2294356 (the study area), in order to identify any potential Aboriginal heritage constraints. The study area encompasses approximately 25ha, as shown in Figures 2 and 3. This report presents the findings of the Aboriginal heritage assessment.

Registered Aboriginal Sites in the Vicinity of the Study Area

As part of Stage 1 of the present assessment a search was carried out of Aboriginal Heritage Register (AHR) to determine the extent of registered Aboriginal heritage sites within and in the general vicinity of the study area at Waterson Lane, Carlton. The search shows that there are 31 registered sites that are located within an approximate 3km radius of the study area (search results provided on the 8-9-2020 by Tony Brown from AHT).

Based on the information provided on the AHR, none of these registered sites appear to be situated within the bounds of the Waterson Lane study area. The closest sites are AH373 and AH375, which are both shell midden sites that are located on the northern margins of the Carlton River, around 100m to the south of the study area. Both sites were recorded by Stockton in 1978 and are classified as shell middens.

The detailed AHR search results are presented in section 4.3 of this report.

Results of the Field Survey

No Aboriginal heritage sites, suspected features or specific areas of elevated archaeological potential were identified within the Waterson Lane study area. A search of the AHR shows that there are no registered Aboriginal sites within or in the immediate vicinity of the study area. The closest sites being situated around 150m to the south, along the margins of the Carlton River. The assessment has therefore confirmed that the subdivision proposal will have no impacts on any known Aboriginal heritage sites.

The field survey was also able to confirm that there are no stone resources within the study area that would be suitable for stone artefact manufacturing. As detailed in section 2 of this report, the underlying geology across the study area comprises basalt. Whilst there are documented accounts of fine grained basalt material having been targeted for by Tasmanian Aboriginal people for artefact manufacturing, the basalt within the study area is coarse grained and highly weathered, and would generally not be suited for artefact manufacturing. There are no sizable rock outcrops occurring within the study area, and therefore there is no potential for Aboriginal rock shelters to be present.

Surface visibility across the study area averaged 15%, which is in the low range. Given these constraints, it can't be stated with absolute certainty that there are no undetected Aboriginal heritage sites present in the study area. With this acknowledged, the survey assessment still did achieve effective coverage of 5 175m². This level of effective coverage is deemed to be sufficient for the purposes of generating a reasonable impression as to the likely extent, nature and distribution of Aboriginal heritage sites across the study area. The negative survey results can therefore be taken as a reasonably accurate indication that site and artefact densities across the study area are likely to be low to very low, reflecting sporadic activity.

The detailed survey results and discussions are presented in section 7 of this report.

Management Recommendations

Heritage management options and recommendations provided in this report are made on the basis of the following criteria:

- Consultation with Rocky Sainty (Aboriginal Heritage Officer);
- The legal and procedural requirements as specified in the *Aboriginal Heritage Act 1975* (The Act);
- The results of the investigation as documented in this report; and
- Background research into the extant archaeological and ethno-historic record for the study area and the surrounding region.

Recommendation 1

No Aboriginal heritage sites, suspected features or specific areas of elevated archaeological potential were identified during the field survey inspection of the Waterson Lane study area at Carlton. A search of the AHR shows that there are no registered Aboriginal sites within or in the immediate vicinity of the study area. The

assessment has therefore confirmed that the proposed subdivision within the study area will have no impacts on any known Aboriginal heritage sites.

On this basis, it is advised that there are no Aboriginal heritage constraints, or legal impediments to the subdivision proposal proceeding.

Recommendation 2

It is assessed that there is generally a low to very low potential for undetected Aboriginal heritage sites to occur within the study area footprint. However, if, during the course of the proposed works, previously undetected archaeological sites or objects are located, the processes outlined in the Unanticipated Discovery Plan should be followed (see Appendix 1). A copy of the Unanticipated Discovery Plan should be kept on site during all ground disturbance and construction work. All construction personnel should be made aware of the Unanticipated Discovery Plan and their obligations under the *Aboriginal Heritage Act 1975* (the Act).

Recommendation 3

Copies of this report should be submitted to Aboriginal Heritage Tasmania (AHT) for review and comment.

1.0 Project Outline

1.1 Project Background

Van Diemen Consulting have been engaged by Quentin Newitt to undertake survey and drafting work for a proposed low density residential subdivision of a rural property at Waterson Lane, Carlton TAS 7173 (PID's (2294292 and 2294356). Figure 1 shows the general location of the subdivision proposal. The combined total area of the two properties is approximately 40ha. The current proposal is for three larger subdivision blocks, each encompassing approximately 10ha, and nine blocks, each encompassing approximately 1ha. Figure 2 shows the current proposed subdivision layout.

Aboriginal Heritage Tasmania (AHT) has completed a search of the Aboriginal Heritage Register (AHR) regarding the subdivision proposal and has advised that an Aboriginal heritage assessment is required to be undertaken for PID 2294356. AHT further advised that an assessment was not required for PID 2294292, but instead an Unanticipated Discovery Plan should be followed (advice provided on the 14/7/2020).

CHMA Pty Ltd has been engaged by Van Diemen Consulting (on behalf of Quentin Newitt) to undertake an Aboriginal heritage assessment for the proposed subdivision of PID 2294356 (the study area), in order to identify any potential Aboriginal heritage constraints. The study area encompasses approximately 25ha, as shown in Figures 2 and 3. This report presents the findings of the Aboriginal heritage assessment.

1.2 Aims of the Investigation

The principal aims of the current Aboriginal Heritage assessment are as follows.

- To undertake an Aboriginal cultural heritage assessment for the portion of the proposed subdivision encompassed within of PID 2294356 (the study area as shown in Figure 2 and 3). The assessment is to be compliant with the *Aboriginal Heritage Standards and Procedures (June 2018)*.
- Search the Aboriginal Heritage Register (AHR) to identify previously registered Aboriginal heritage sites within and in the general vicinity of the study area.
- Undertake relevant archaeological, environmental and ethno-historical background research to develop and understanding of site patterning within the study area.
- To locate, document and assess any Aboriginal heritage sites located within the study area.
- To assess the archaeological and cultural sensitivity of the study area.
- To assess the scientific and Aboriginal cultural values of any identified Aboriginal cultural heritage sites located within the study area.
- Consult with (or ensure the Aboriginal community representative consults with) Aboriginal organisation(s) and/or people(s) with an interest in the study area in order to obtain their views regarding the cultural heritage of the area.
- To develop a set of management recommendations aimed at minimising the impact of the proposed subdivision on any identified Aboriginal heritage values.

- Prepare a report which documents the findings of the Aboriginal heritage assessment and meets the standards and requirements of the *Aboriginal Heritage Standards and Procedures (June 2018)* prepared by AHT, Department of Primary industries, Parks, Water and Environment.

1.3 Limitations of the Investigation

All archaeological investigations are subject to limitations that may affect the reliability of the results.

The main constraint to the present investigation was restricted surface visibility due to vegetation cover. Surface visibility across the study area was estimated to range between 5%-50%, with the average visibility being 15%. Numerous erosion scalds and the occasional farm vehicle track throughout the study area provided locales of improved visibility.

The constraints in surface visibility limited the effectiveness of the survey assessment to some degree. The issue of surface visibility is further discussed in Section 6 of this report.

1.4 Project Methodology

A three stage project methodology was implemented for this assessment.

Stage 1 (Pre-Fieldwork Background Work)

Prior to field work being undertaken, the following tasks were completed by Stuart Huys (CHMA archaeologist).

Consultation with Aboriginal Heritage Tasmania (AHT)

Aboriginal Heritage Tasmania (AHT) was contacted and informed that a field survey was to be undertaken for the Waterson Lane subdivision project. As part of this initial contact a search request of the Aboriginal Heritage Register (AHR) was submitted to AHT in order to ascertain the presence of any previously registered sites in the vicinity of the study area (search submitted on the 21-8-2020).

The collation of relevant documentation for the project

As part of Stage 1 the following research was carried out and background information was collated for this project.

- A review of the relevant heritage registers (AHR register) and the collation of information pertaining to any registered heritage sites located within the general vicinity of the study area.
- Maps of the study area.
- Relevant reports documenting the outcomes of previous Aboriginal heritage studies in the vicinity of the study area.
- Ethno-historic literature for the region.
- References to the land use history of the study area.
- GIS Information relating to landscape units present in the study area.
- Geotechnical information for the study area, including soil and geology data.

Consultation with Rocky Sainty (Aboriginal Heritage Officer)

Rocky Sainty is the designated Aboriginal Heritage Officer for the present investigations. As part of Stage 1 works Stuart Huys (CHMA archaeologist) and Rocky Sainty were in regular contact. The main purpose of this contact was to discuss the scope of the present investigations, to ratify the proposed methodology for the investigations and to co-ordinate the timeframes for implementing field work.

Stage 2 (Field Work)

Stage 2 involved the field work component of the project. The field survey assessment was conducted over a period of 1 day (18-9-2020) by Stuart Huys (CHMA archaeologist) and Rocky Sainty (Aboriginal Heritage Officer). The field team walked a total of 6.9km of survey transects within the boundaries of the study area, with the average width of each transect being 5m. The transects were aligned so as to cover all parts of the study area boundaries. Section 6 provides further details as to the survey coverage achieved by the field assessment.

The results of the field investigation were discussed by Rocky Sainty and Stuart Huys. This included the potential cultural and archaeological sensitivity of the study area, and possible management options.

Stage 3 (Report Preparation)

Stage three of the project involved the production of a Draft and Final Report which includes an analysis of the data obtained from the field survey and the development of heritage management recommendations. The report was prepared by Stuart Huys (CHMA), in liaison with Rocky Sainty (Aboriginal Heritage Officer).

CHMA has provided AHT with all site spatial data files, and mapping associated with the project (in ESRI shape file format (GDA94)).

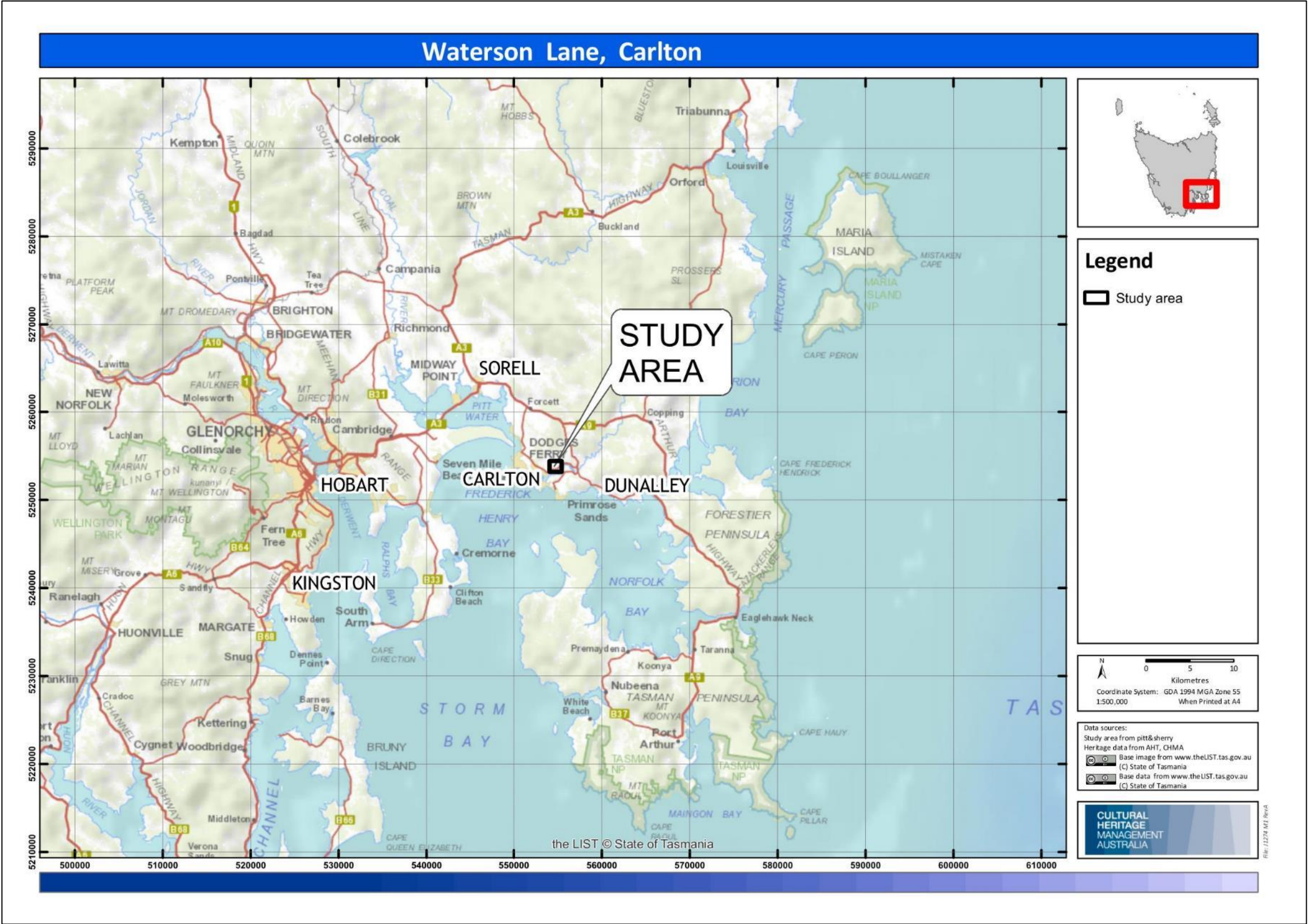


Figure 1: Topographic map showing the general location of the study area at Waterson Lane, Carlton in South East Tasmania

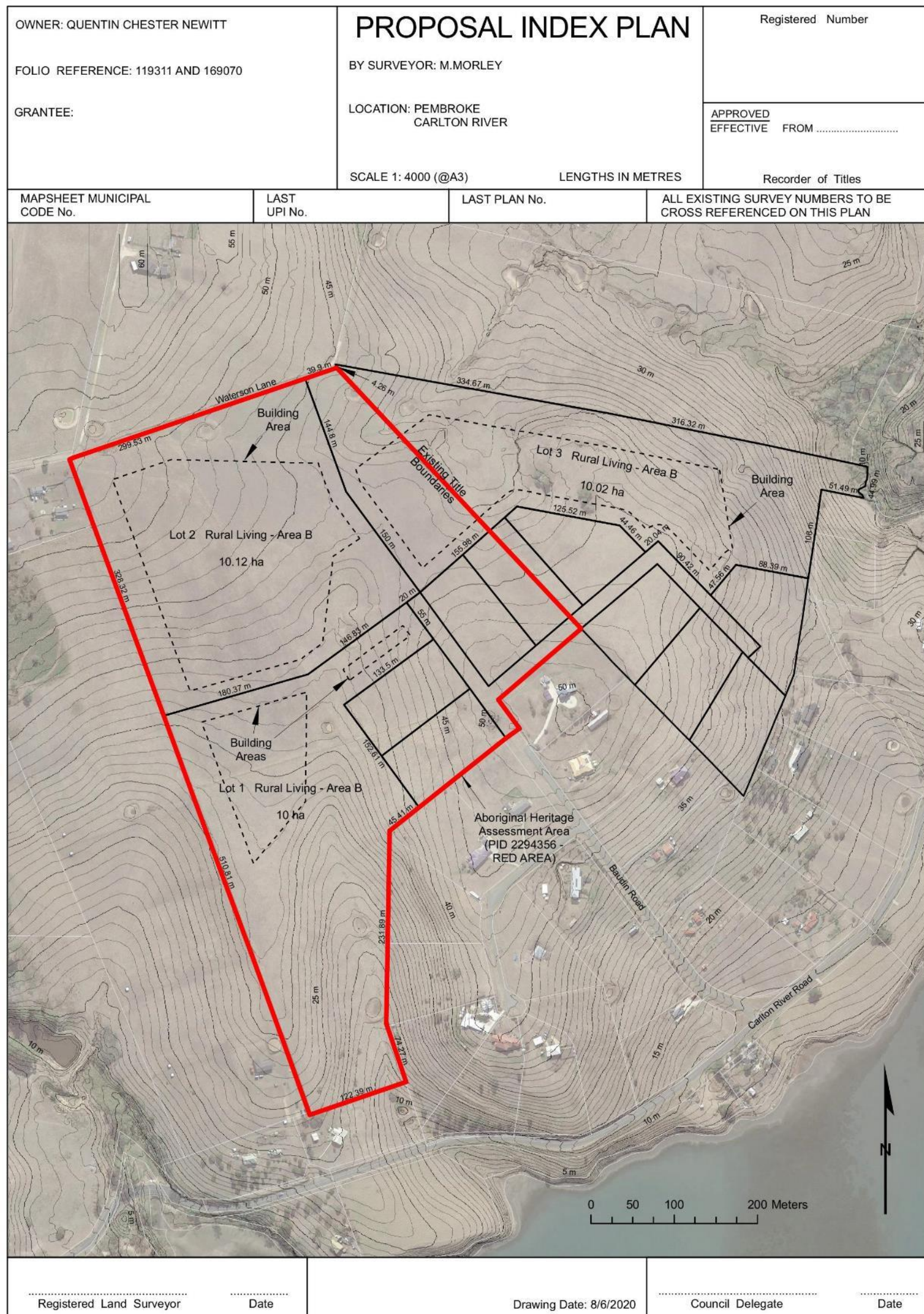


Figure 2: The current subdivision proposal for Waterson Lane Carlton (study area boundaries of PID 2294356 delineated in red)

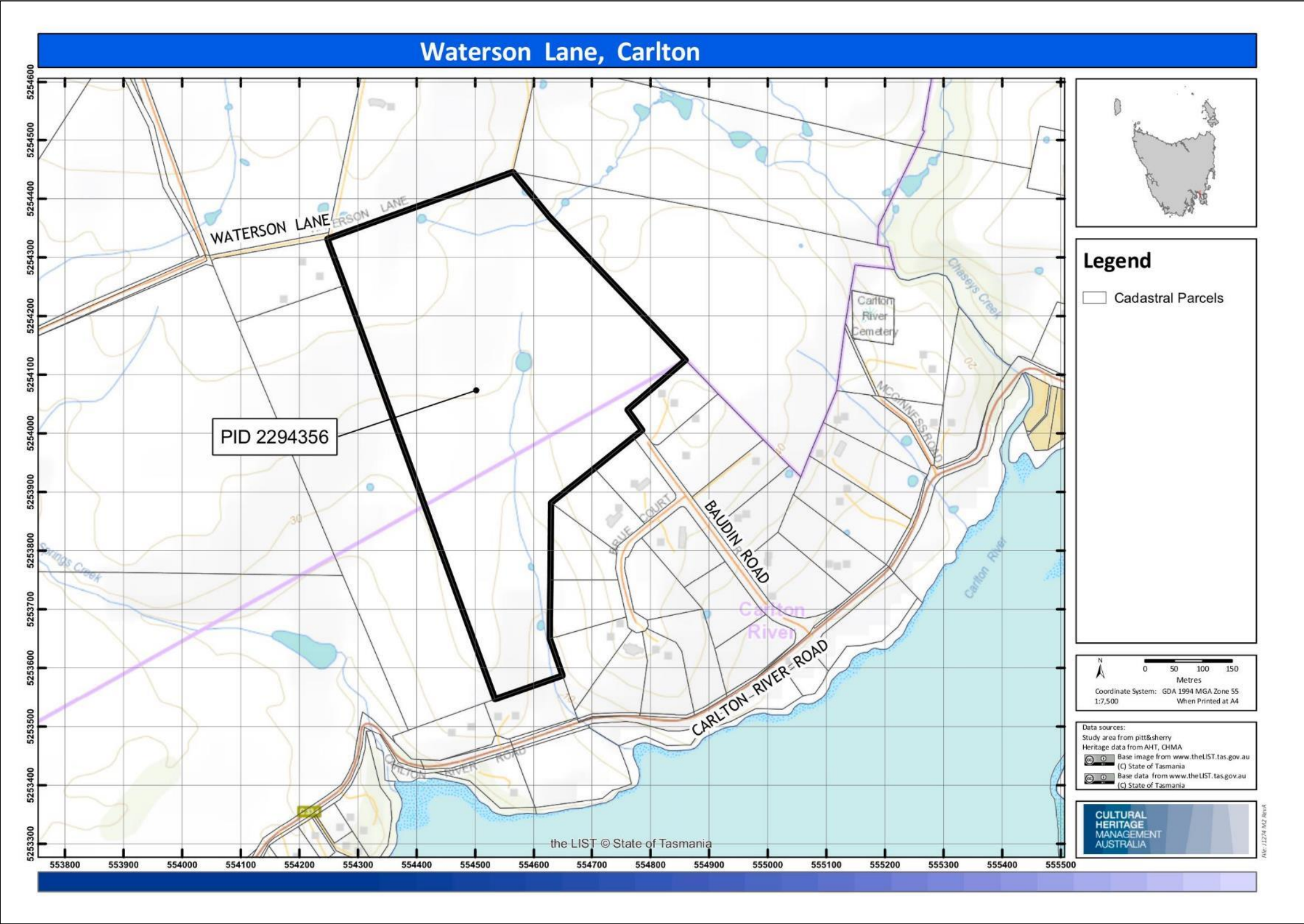


Figure 3: Topographic map showing the study area boundaries for PID 2294356

2.0 Environmental Context

2.1 Introduction

Prior to undertaking an archaeological survey of the study area, it is necessary to characterise the landscape. This includes considering environmental factors such as topography, geology, climate, vegetation and past and current landscape use. An assessment of the environmental setting helps to develop understanding of the nature of Aboriginal occupation and site patterning that might be expected to occur across the study area. In addition, it must be remembered that in Aboriginal society, the landscape extends beyond economic and technological behaviour to incorporate social geography and the embodiment of Ancestral Beings.

The archaeological context is generally only able to record the most basic aspects of Aboriginal behaviour as they relate to artefact manufacture and use and other subsistence related activities undertaken across the landscape such as raw material procurement and resource exploitation. The distribution of these natural resources occurs intermittently across the landscape and as such, Aboriginal occupation and associated archaeological manifestations occur intermittently across space. However, the dependence of Aboriginal populations on specific resources means that an understanding of the environmental resources of an area accordingly provides valuable information for predicting the type and nature of archaeological sites that might be expected to occur within an area.

The primary environmental factors known to affect archaeological patterning include the presence or absence of water, both permanent and ephemeral, animal and plant resources, stone artefact resources and terrain.

Additionally, the effects of post-depositional processes of both natural and human agencies must also be taken into consideration. These processes have a dramatic effect on archaeological site visibility and conservation. Geomorphological processes such as soil deposition and erosion can result in the movement of archaeological sites as well as their burial or exposure. Heavily vegetated areas can restrict or prevent the detection of sites, while areas subject to high levels of disturbance may no longer retain artefacts or stratified deposits.

The following sections provide information regarding the landscape context of the study area including topography, geology, soils and vegetation.

2.2 Landscape Setting of the Study Area

The study area is located at Carlton, in the South East Region of Tasmania. The area encompasses approximately 25ha, and is situated on the hill slopes just to the north of the lower reaches of the Carlton River. The terrain across the majority of the study area is characteristically gently undulating, with slope gradients generally between 1° and 7° (see Plate 1). The exception is towards the southern end of the study area, approaching the Carlton River, where the slope gradients increase to between 10°-15° (see Plate 2).

The underlying geology across the entire study area is basalt. The soils across the study area are regolith red brown clay loams that have primarily been derived from the decomposition of the parent basalt bedrock. Soil depth is typically quite shallow, with weathered basalt exposed just to the surface across much of the area.

The Carlton River is the major water course in this area. The river has its headwaters in the steep ranges around Nugent, to the north of the study area. For most of its length, the river flows in a southerly direction through a narrow, steeply incised valley. Towards the lower reaches, where the Sugarloaf Road bridge crossing is located (to the east of the study area), the river turns in a westerly direction, and the valley system begins to broaden out significantly. The river empties into Frederick Henry Bay at Carlton Bluff. The study area is located approximately 3km east of the river mouth. The river is estuarine in the vicinity of the study area and is subject to tidal influences (see Plate 3). The demarcation point between the estuarine and fresh water zone is around Carlton House, approximately 3km east of the study area.

Springs Creek is the other named water course in the vicinity of the study area. This ephemeral water course flows in a north-west to south-east direction, and is a tributary of the Carlton River. The creek is located to the west of the study area, and at its closest point approached to within 250m of the wester boundary. Within the study area itself, there is one un-named drainage gully that runs in a north to south direction and also joins with the Carlton River. The drainage gully is quite steeply incised towards the southern end (see Plate 4). This gully was dry at the time of the survey. There are several small dams that have excavated along the gully.

The native vegetation across the entire study area has been cleared as part of past farming practices and replanted with introduced grasses. It is currently used for stock grazing (see Plates 1-4). There are a series of internal fence lines around and through the property, and several small dams scattered throughout the property. There are also a few ungraded, worn vehicle tracks through the study area.

From an archaeological perspective, any Aboriginal sites that may be present within the study area will have been subject to moderate levels of disturbances from prior land clearing. Disturbances are likely to be highest in the upper soil horizon.



Plate 1: View north across the study area showing the typically gently undulating terrain across most of the study area, and the cleared farmland setting



Plate 2: View south at the more steeply sloping terrain in the southern portion of the study area



Plate 3: View south towards the Carlton River, which is located just to the south of the study area



Plate 4: View south at the unnamed ephemeral drainage line that runs through the study area, with a series of small dams constructed along its course

3.0 Ethno-historic Background

3.1 Aboriginal Social Organisation in Tasmania

According to Jones (1974), the social organisation of Tasmanian Aboriginal society appears to have consisted of three social units, these being the hearth group, the clan and the nation. The hearth group was the basic family unit and would generally have consisted of a man and woman, their children, aged relatives and sometimes friends and other relatives. The size of hearth groups would generally range from between 2-8 individuals (Jones 1974: Plomley 1983). Plomley (1983:168) provides a description made by Peron of a hearth group he encountered at Port Cygnet.

There were nine individuals in this family, and clearly they represented a hearth group, because Peron visited their campsite with its single hut. The group comprised an older man and wife, a younger man and wife, and five children, one a daughter (Oure-Oure) of the older man and wife, and the other four the children of the younger man and wife.

The clan (band) appears to have been the basic social unit and was comprised of a number of hearth groups (Jones 1974). Jones (1974:324-325) suggests that the band owned a territory and that the boundaries of this territory would coincide with well-marked geographic features such as rivers and lagoons. Whilst the band often resided within its territory, it also foraged widely within the territories of other bands. Brown (1986:21) states that the band was led by a man, usually older than the others and who had a reputation as a formidable hunter and fighter. Brown also suggests that the band (as well as the hearth group) was ideally exogamous, with the wife usually moving to her husband's band and hearth group.

Each band was associated with a wider political unit, the nation. Jones (1974:328-329) describes the nation (tribe) as being:

...that agglomeration of bands which lived in contiguous regions, spoke the same language or dialect, shared the same cultural traits, usually intermarried, had a similar pattern of seasonal movement, habitually met together for economic and other reasons, the pattern of whose peaceful relations were within the agglomeration and of whose enmities and military adventures were directed outside it. Such a tribe had a territory, consisting of the sum of the land owned by its constituent bands...The borders of a territory ranged from a sharp well defined line associated with a prominent geographic feature to a broad transition zone.

According to Ryan (2012:11), the Aboriginal population of Tasmania was aligned within a broad framework of nine nations, with each nation comprising between six to fifteen clans (Ryan 2012:14). The mean population of each nation is estimated to have been between 350 and 470 people, with overall population estimates being in the order of between seven to ten thousand people prior to European occupation (Ryan 2012:14).

Ryan (2012:13) presents a map showing the approximate boundaries for the nine Tasmanian Aboriginal Nations. This map shows that the study area falls within the

boundaries of land occupied by Oyster Bay Nation (see Figure 5). According to Ryan (2012:17) the Oyster Bay nation was the largest in Tasmania, 'if not in area then certainly in population' (2012:17). The territory of the Oyster Bay nation covered approximately 8500 square kilometers, 500 of which comprised 'usable coastline' extending along the east coast from 'St Patrick's Head to the Derwent Estuary. The boundary then followed the eastern bank of the River Derwent to the mouth of the Jordan River which it followed inland to St Peters Pass in the Midlands, east past Crown Lagoon, north to the watershed of the Macquarie and Elizabeth rivers at Tooms Lake and Lake Leake and then northeast along the South Esk River back to St Patrick's head' (Ryan 2012:17).

According to Jones (1974), the nation consisted of at least 10-15 clans, which comprised several family groups each. The total number of individuals within a clan ranged between 30 and 80, and it is estimated that the total population of the Oyster Bay Nation might have reached 800 people. Each clan had an allocated territory marked by prominent geographic features and covered, on average, between 300 and 500 square kilometers of land (Jones 1974). However, the clan members would often enter contiguous territories of other bands whilst searching for food (Brown 1991:14). In addition, all clans within the nation followed a similar pattern of seasonal movement (Jones 1974). Each clan had a chief; usually an older man respected for his impressive hunting and fighting skills. Women were often acquired from other bands and forced to stay in their husband's band (Brown 1991:14). All the clans within the nation spoke the same language and shared the same cultural traits (Jones 1974). However, Plomley (1966) indicates some linguistic and cultural differences between clans of the Oyster Bay nation.

The Oyster Bay Nation was comprised of at least ten clans (Ryan 2012:15). These clans are listed below:

1. Leetermairremener people were based in the north at St Patricks Head
2. Linetemairrener people at North Moulting Lagoon
3. Loontitetermairrelehoinner people at North Oyster Bay
4. Toorernomairremener people on Schouten Island
5. Poredareme people at Little Swanport
6. Laremairremener people at Grindstone Bay
7. Tyreddeme people on Maria Island
8. Portmairremener people around the Prosser River
9. Pydairrme people on the Forestier and Tasman Peninsulas and
10. Moomairremener people around Pitt Water and Risdon (Ryan 2012:15)

The present study area falls in an area controlled by the Moomairremener clan who occupied the areas around Pitt Water and Risdon (see Figure 4).

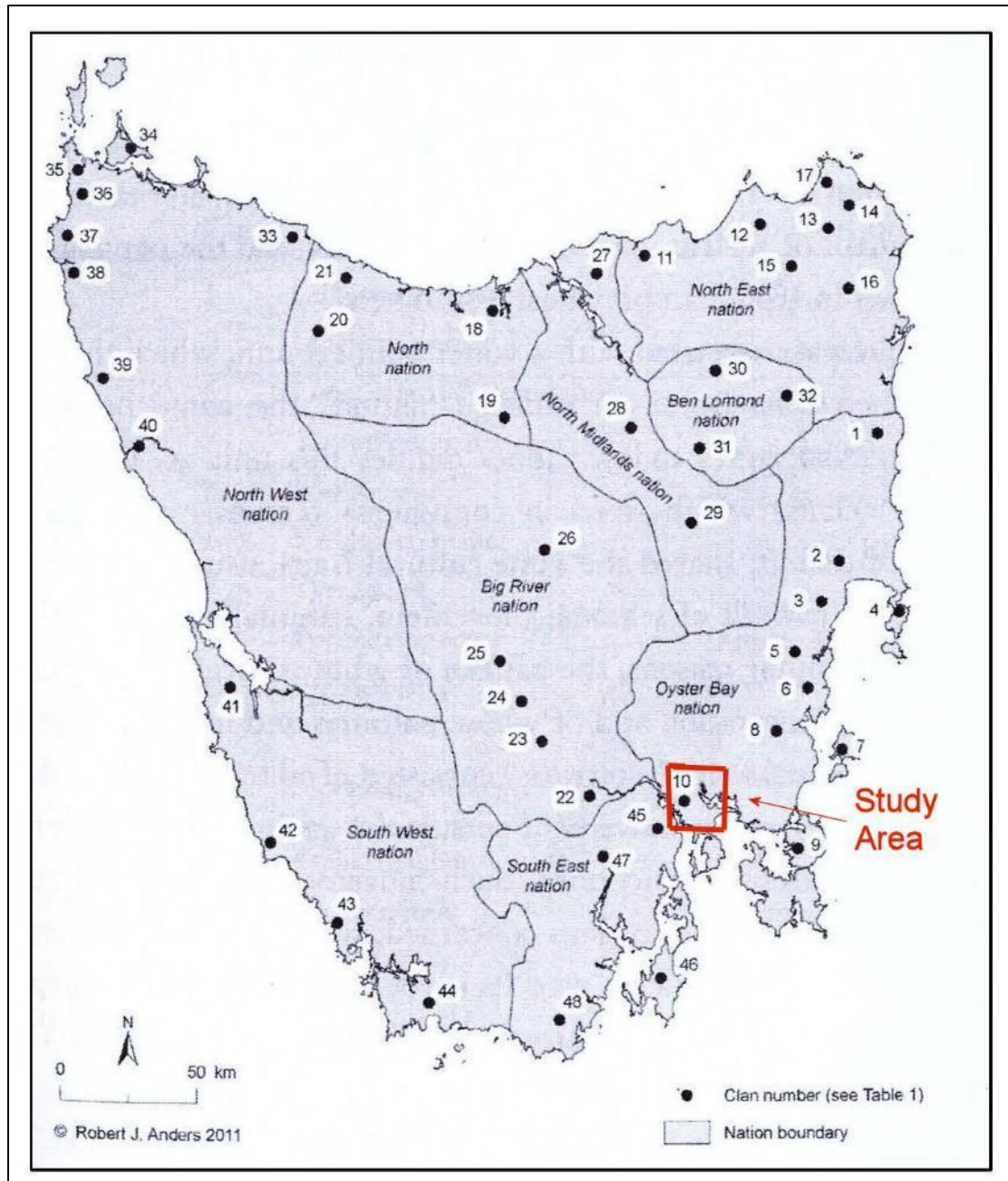


Figure 4: The location of the study area within the territory of Oyster Bay Nation (taken from Ryan 2012:13)

Seasonal Movements

The movement of the Oyster Bay Nation through the landscape is thought to have been largely based on the seasonal availability of food resources. Ryan (2012:17) argues that the clans of the Oyster Bay Nation were aligned within three groups defined on the basis of seasonal movement across the nation (see Figure 5).

The four clans from Little Swanport to the Tasman Peninsula, (the Pydairrme people on the Forestier and Tasman Peninsulas and the Tyreddeme people on Maria Island), comprise one of the four groups identified by Ryan (2012:18). At around the start of August the Little Swanport group of clans travelled inland through the Prosser and Little Swanport River valleys. The coastline provided the basis of the

subsistence economy of this group throughout the year. However, in the summer months some members of the southern Oyster Bay clans travelled into the high country, through St Peter's Pass, to hunt in the territory of the Big River Nation (Ryan 2012:18). In early spring, these groups would congregate at Moulting Lagoon and Schouten Island to take advantage of the large flocks of migrating sea birds that congregated on the lagoon and islands. During summer these clans travelled up the St Pauls and Break O'Day Rivers to the Ben Lomond plateau, or along the Meredith River, across the Midlands and into the highlands of the Great Western Tiers north of the Isis River (Ryan 2012:18). They would return to the coast in early January to hunt mutton bird and seals (Ryan 2012:20). In March, the clans would congregate around the kangaroo hunting grounds at Stockers Bottom (Ryan 2012:20).

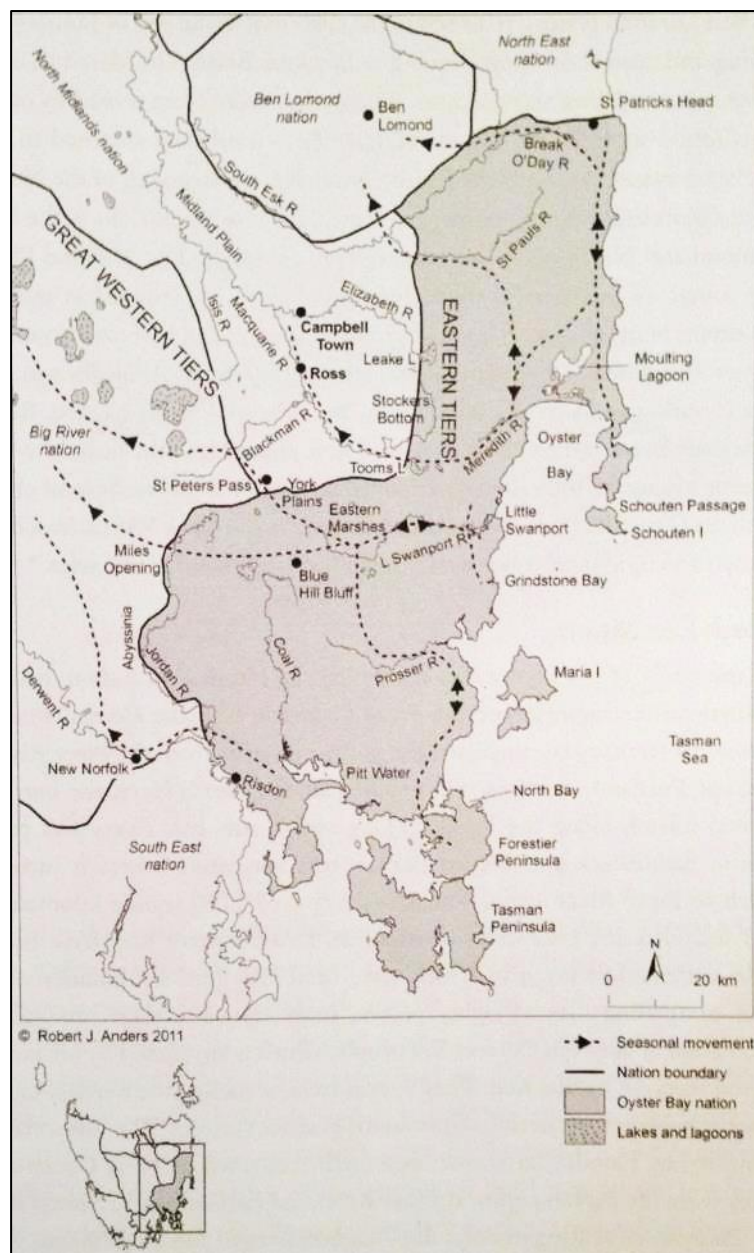


Figure 5: Seasonal migration routes of the Oyster Bay Nation (Ryan 2012:20)

The four clans from St Peters Head to Schouten Island and the two clans from Maria Island and Pitt Water/Risdon comprise the remaining groups identified by Ryan (2012:17-18). These clans are believed to have focused on the shorelines of their respective territories all year round (Ryan 2012:18). In summer, however, these clans made visits north into the Big River Nation to attend ceremonies (Ryan 2012:18). By early autumn, they would return to the Midlands and be settled back on the southern coastlines by June (Ryan 2012:18).

The early European records mention a network of paths and roads, which significantly varied in length, from local routes (Plomley 1983) to links connecting distant areas (Plomley 1966). Brown (1991:20) suggests a rather formalised manner of Aboriginal movement through the landscape; however, it is also possible that these routes might have been formed randomly. The patterns of movement, flexible enough to adjust to constantly changing natural conditions, were partially influenced by the seasonal availability of food resources, such as eggs, fruits or certain animal species (Brown 1991:20-21). There is only scattered historical evidence as to what time of the year the Aboriginal people congregated along the coast and it is merely based on the recorded presence or absence of coastal fires encountered by European observers (Brown 1991:21).

Relations between the Oyster Bay Nation and other adjoining Nations (the North East, Ben Lomond, North Midlands, Big River and South East Nations) varied considerably (Brown 1991:21). There is recorded animosity between some clans of the Oyster Bay Nation and those of the North Midlands, North East and South East Nations. On the other hand, the relationships between the Oyster Bay Nation and the Big River Nation seemed to be relatively harmonious, with some ethno-historical records of trading beads and red ochre, as well as cultural exchange between the two groups. Moreover, it is known that members of the Big River Nation foraged on the territory that belonged to the Oyster Bay Nation. In addition, at one point, these two nations are believed to have joined together to fight a group from the Midlands Nation (Plomley 1966).

Large gatherings of Aboriginal people assumed to be of the Oyster Bay Nation have been recorded in the ethnographic records. McGowan (1985:92) reports that in May 1804 a large group of Aborigines, variously estimated to be up to 500 individuals, including men women and children were observed hunting kangaroo near the first European settlement at Risdon Cove.

Robinson noted that a Mr. Earl related '*...that he had seen as many as 500 in one mob together, i.e. the Coal River mob.*' (Robinson in Plomley (1966:595).

One of the earliest and more comprehensive descriptions of the Oyster Bay people comes from Lieutenant Le Dez who was a member of the Marion du Fresne expedition of 1772. The following account was written after he encountered Aboriginal people from the Oyster Bay Nation at Forestier Peninsula at North Bay:

Their usual height is 5 ½ feet, their colour very much approaches rust, but they rub themselves with black and make patterns in the form of a crescent on their bodies with this colour: their hair is cottony; they have

very little beard, very white teeth, large, harsh features and a wild appearance. In general they are badly built with thin bodies and slender legs and thighs. They speak with a singular vivacity and we were unable to distinguish any sounds other than these: la-ga – la-ga.

I compared them with the inhabitants of New Holland of whom Dampier speaks. They appear to me widely dispersed or wandering like them in bands or in families and the fires we have often seen along the coast are probably the places where each band stops. They must naturally prefer places near the sea and in coves because of the ease with which they can find their sustenance there. I think they are seafood eaters because we found many places in the woods where they had stopped. One notices easily the place where they slept around a mound of ash and one sees, nearby, fish bones and many burnt shells.

It appears that they are always naked and among those that we saw there was one that had a skin belt with long hairs and another had a white feather in his hair: was that a mark of distinction or an ornament. The women we saw only from a distance; they always stayed on the edge of the woods ready to run away (and) seemed to have as their only clothing a piece of skin which covered their breasts and reached to their thighs. I think they must suffer very much during the winter, which must be long and hard, because I do not think they have other ways of fending off the cold than by lighting fires. Thus they appreciate fire very much and when I saw them come to meet our sailors and offer them fire it occurred to me this element was the one they held most useful; it was a sign of friendship to offer it to us. Perhaps they behave in this way among themselves when they meet. We noticed that most of them, besides their spears and a few stones, carry a firebrand as well and each time they stop, and it is often only for a moment, they make a fire and gather round it. It is astonishing how many places we have found where they have lit a fire and how much the woods are devastated by it. We have seen few trees that were not injured at the foot and it was the same throughout the whole bay. We have covered almost all of it without encountering inhabitants or any of their retreats.

It was only on the island in the NNE that we found a few pieces of bark, badly arranged with one end resting on a piece of wood set crosswise and the other on the ground; that formed, if you wish, a kind of hut. It seems that they had not long left it; one can conjecture from that that they make similar ones and we did not penetrate sufficiently into the woods to encounter them and that it is for that purpose or to make ropes (because we found a piece that was quite well twisted) that there are numerous trees that we saw stripped of their bark to a height of five or six feet...We have found nothing that could make us suspect that they have canoes or rafts...Their spears are nothing other than sticks about six feet long, pointed at the thick end. They are not poisoned at all..."(Le Dez in Cox 2010:18-19).

This account certainly provides some interesting insights not only as to the physical appearance of the Oyster Bay people, but also with respect to their diet and material culture. These topics are explored further in the sections below.

The Subsistence Economy of the Oyster Bay People

The account provided by Le Dez stresses the importance of seafood in the diet of the Oyster Bay people, and interestingly notes the presence of fish bones in campfires. There are a number of other ethno-historic accounts that comment on the prevalence of shellfish and crustaceans in the diet of the local inhabitants (see Plomley 1966 and 1983), and the archaeological evidence (in the form of midden sites) provides testimony to this. However, the ethnographic and archaeological evidence for the consumption of fish is comparatively very sparse. This has led to some suggestions that fish was not a component of the diet of the Tasmanian Aborigines (see Jones 1974).

Ethnographic accounts also indicate that terrestrial fauna was an important component of the Aboriginal diet. This is particularly the case with Kangaroos and wallabies, which appears to have been hunted en masse at certain times of the year. McGowan (1985:92), for example reports that in May 1804 a large group of Aborigines, variously estimated to be up to 500 individuals, including men women and children were observed hunting kangaroo near the first European settlement at Risdon Cove. Robinson provides an account of the 'chief' Mannalargennana of the Oyster Bay Nation cooking wallaby.

...The animal is first thrown on the fire whole as is their custom with all animals, and when the hair is singed they take the carcass off the fire and rub off the scorched hair with their hands. This practice is tenaciously observed with all animals except the possum; the fur of this animal is first pulled off previous to its being placed on the fire. After the chief has rubbed the hair off the wallaby, he broke the fore leg by twisting it with his hands...He then cut the hind legs, after which he made a hole in the belly with his fingers and pulled out the entrails and then thrust in some hot ashes, the animal being previously roasted outside... (Robinson in Plomley 1966:548-549)

Possum also seems to have been frequently hunted, and there are a number of accounts of the various utilised. Plomley (1966:533) describes possums being knocked down out of trees with waddies, or trees were climbed to reach possum holes.

Unfortunately, there are very few accounts available for the hunting of other terrestrial fauna, however, it is likely that a much wider range of species were targeted, including echidna and smaller marsupials.

Certainly within the midlands region, birds and eggs appear to have also formed a major component of the diet of the local inhabitants, with swans, ducks and red bills being some of the main species targeted (Plomley 1966:217). However, there are very few accounts available for the south-east Tasmanian region, for the hunting of birds and the gathering of eggs. Nonetheless, it would be reasonable to assume that this also was carried out at certain times of the year.

Only a few plant foods are documented in the ethnohistoric accounts as having been eaten. This includes a bulbous plant known as 'native bread' and a plant that has the appearance of asparagus which was found by the roots of peppermint trees (Plomley 1966). It is very likely that many more plant foods were eaten by the local Aboriginal population. Jones (1971:91-95) for example lists 70 edible plant species that are available in Tasmania, and are likely to have been consumed at times of seasonal availability. This would include pig face, tree ferns, fern roots and a variety of sea weeds.

Material Culture

The account described previously by Le Dez (in Cox 2010:18-19) of his encounters with Oyster Bay people provides some details of the material culture of the people. For example, he provides a description of a rudimentary shelter that he observed at a deserted camp location. Several other ethnographic accounts are available for the south-east region which also describes the shelters of the local inhabitants. These indicate that the dwellings ranged from simple windbreaks (such as that described by Le Dez) through to more elaborate half domed shaped huts. (see Labillardiere 1800 and Plomley 1966). There are also accounts that the hollowed bases of trees were occasionally utilised for shelter by people in the south-east region (Labillardiere 1800:99).

Plomley (1983:185-194) provides a comprehensive account of the weapons and implements used by the Tasmanian Aborigines, based on the ethnographic accounts. It appears that the two main weapons used by the local inhabitants were the spear and the club. The spear was a simple flexible rod with a point at one end, the length of which appears to have varied significantly from between 6-12 feet. The club is described as a piece of wood about 60cm long, 2.5cm in diameter and slightly tapered toward the gripping end. This item is reported to have been used as a throwing stick as well as a club.

Plomley (1983:22) also makes reference to the use of a wooden spatula that was used primarily for removing shellfish from rocks.

In many of the early ethnographic accounts for the South East Region, there is reference to the baskets carried by the Aboriginal people, however often there is very little detail regards their construction. One of the more detailed descriptions comes from Robinson (in Plomley 1966:58), while he was on Bruny Island:

The native basket is made of rushes of a species of grass called iris. In preparing them for use they place the same on a slow fire which gives them a tenacity that enables the manufacturer to twist them into threads. These are plaited together and then formed into a basket which in shape is somewhat semiglobular. (Robinson in Plomley 1966:58)

There also a number of reports of water vessels constructed from the fronds of giant kelp which could hold up to five to ten litres of water (see Labillardiere 1800:190).

In the earlier account provided by Le Dez he stated 'we have found nothing that could make us suspect that they have canoes or rafts...' However, there are numerous other ethnographic accounts for the South East Region describing the

watercraft used by the local inhabitants. One of the most detailed descriptions of these watercraft comes from Louis Freycinet, an officer on the *Naturalist* in 1802 (in Plomley 1983:119-120):

We have seen them and have measured several. They had the same dimensions and were constructed in exactly the same way. Three rolls of the bark of the eucalypt made up its whole structure... These bundles when taken separately, resemble in a way the yard of a vessel, were joined at their ends, and this caused them to stick up in a point and make up the whole of the canoe. The assemblage was made quite firm with a sort of grass or sedge. In this state, the craft had the following dimensions-

- Length inside 2.95m
- Breadth outside 0.89m
- Total height 0.65m
- Depth inside 0.22m
- Size at the ends 0.27m

The savages can put five or six peoples in these canoes; but more commonly only three or four are taken at a time. Their paddles are plain pieces of wood... Usually they sit down to manoeuvre their canoes; in that case they place bundles of grass to serve as seats. At other times they stand up. We have seen them cross the Channel only in fine weather. One can imagine that such a fragile and imperfect craft would never be able to make their way, let alone keep afloat, in a rough sea... It is to be noted that they always put a fire at one end of their canoes, and to prevent the fire from spreading they place under it a bed of earth or ashes of sufficient thickness.

In terms of clothing, it appears that Le Dez was correct when he observed that the local inhabitants wore very few garments. Most accounts indicate that the only protective clothing worn was a single animal skin wrapped around the body in various fashions. Most often the skins were worn by women, but also on occasions by men (Plomley 1983:141).

The only other type of protective clothing that appears to have been worn on occasion was a sandal type covering worn on the soles of the feet, which was made from kangaroo skin or possibly a piece of bull kelp (Plomley 1983:123)

Interestingly, although stone artefacts dominate the archaeological record for Tasmania (and Australia generally), there are few ethnographic accounts in Tasmania documenting their use. Those observations that are made, primarily relate to the finding of stone implements at camp sites. Frustratingly, there are virtually no accounts regarding the form of the implements, how they were made or used.

Robinson (in Plomley 1966:113) reports that he:

Obtained a stone from one of the Bruny natives with which they sharpen their waddies... It has the resemblance of flint and is found at the Isthmus of Brune.."

One of the very few descriptions of Aboriginal people carrying out quarrying activity comes from Raynor (in Roth 1899:151) who recounted that his father had come across about 20-30 Aborigines, men, women and children, at a quarry near Plenty on the southern side of the middle Derwent Valley who were:

Noisily chatting, they were breaking the stone into fragments, either by dashing them on the rocks or by striking them with other stones, and picking up the sharp edged ones for use...

This quarry was subsequently visited by Rhys Jones, who noted that the quarried material was an indurated chert/hornfels and that the quarry extended over an area of about 2 ½ hectares (Jones 1971:456).

Body Decoration

Aboriginal people of South East Tasmania are described as frequently bearing tattoos and cicatrices. The ethnographers generally describe these as decorative, although it is likely that they held a range of other meanings as well. Robinson described the process of cutting the skin with a sharp stone and rubbing the wound with charcoal or red ochre mixed with animal fat (Plomley 2008:137). The scarring was observed on both men and women and typically was either in the form of a series of short lines, or straight, concentric or circular lines across the chest (AT 2010:25). At Rocky Bay Labilliere noted that people rubbed their bodies with powdered charcoal and records one man whose cropped hair was 'plastered with ochre' (AT 2010:25).

Burial Practices

Burial customs were also observed by the ethnographers. Cremation was the usual form of disposing of a deceased person (Plomley 2008:17). The cremated remains were observed by Robinson to sometimes be wrapped in kangaroo skins and carried as an amulet by members of the deceased person's clan (AT 2010:21). Robinson reports on a funeral pyre built by both men and women of branches and twigs. The body was placed on the pyre with bound arms and legs. This was left to burn for a day, with the relatives returning the following day. The remains were collected and burnt a second time, after which the ash was scattered through the grass (Plomley 2008:17).

Other burial practices in the South East Region include internment and burial in hollow trees. Illustrations from the Baudin expedition show 'tombs' at Maria Island (Bonnemains *et al* 1988:131). These were bark tepee-like constructions built over remains that have been covered in fibres or leaves weighted down by rocks (Bonnemains *et al* 1988:131). The practice of placing remains in hollow trees in the South East Region is reported by Robinson (Plomley 2008; AT 2010:21). Hollow tree burials are perhaps associated with violent deaths, as occurred in the Central Highlands (AT 2010:20).

Land Management

Aboriginal people across South Eastern Tasmania appear to have actively managed their environment. Historical sources provide numerous references to burning vegetation. AT (2010:9) suggest that this had a range of applications, including

modifying the environment, attracting terrestrial game, encouraging edible plant regrowth and maintaining pathways used to travel across the country. Robinson recorded that Aboriginal people in the south east would travel along 'well beaten paths' and leave abalone shells at drinking places along rivers (Plomley 2008:59). Aboriginal pathways were also utilised by the first European settlers to the area.

The Aboriginal people of the South East greatly valued fire and there are several first-hand accounts of fire being transported by means of burning torches or 'fire brands'. In 1777 Bligh recorded seeing a basket of white 'flint like stones' at Adventure Bay (AT 2010:12). These are likely to have been fire brands.

Baudin in 1802 reported seeing a 'multiplicity of fires' burning in 'on all sides' from where his ship was anchored in North West Bay (AT 2010:12). Captain Hamlin reported to Baudin watching two Aboriginal men pull up their canoe at North West Bay and walk into the scrub, setting fire to the undergrowth as they walked (AT 2010:12).

Specific Reports of Contact

Marion Dufresne's 1772 landing illustrates the complex nature of contact on the D'Entrecasteaux Channel. Marion begins by describing a peaceful meeting between one of his longboats and a group of about forty Aboriginal men on the beach (Smith 2003:13-14). The French interpret the gestures of the Aboriginal party to be welcoming; two French sailors strip off their clothes and swim ashore. Upon reaching land, an Aboriginal man offered Marion a burning torch, which the French considered to be a gift of welcome. The parties exchanged items such as mirrors and buttons, and singing and dancing ensued.

However, at the approach of a second French boat the Aboriginal men took up their spears that had been lying on the beach. Marion and his party obviously felt threatened and retreated to their boat. Marion recorded that spears and stones rained down upon his men. They responded by firing a musket volley that wounded several men and was later found to have killed one of the Aboriginal men. Upon finding the body later upon the beach Marion described broken spears that had been placed around the body as an offering (Smith 2003:13-14).

Another significant moment in contact history occurred when D'Entrecasteaux's two ships the *Recherche* and the *Esperance* were anchored for five weeks in what is now Recherche Bay (Smith 2003:15). D'Entrecasteaux made detailed records of the bay, the Aboriginal people living there and Tasmanian flora and fauna. They established an observatory and were responsible for taking the first measurements of the earth's magnetic field in the southern hemisphere from this observatory (Smith 2003:16).

The scientist Labillardiere and gardener La Haye happened upon a group of about forty Aboriginal men, women and children in February 1793 while exploring the land around the Recherche Bay settlement (Dyer 2005:89). Labillardiere approached the eldest man and offered him some biscuit, demonstrating that it could be eaten by eating some himself. Labillardiere then held out his hand and the man:

...gave me his, inclining himself a little and raising at the same time his left foot...these motions were accompanied by a most pleasing smile. (Dyer 2005:89)

Labilliardiere and La Haye were guided back to their ship by some of the Aboriginal party, who assisted them through the scrub (Dyer 2005:90). This episode is remarkable in the social customs of greetings that it records, and also in the friendliness of the cultural encounter.

Another detailed account of early contact is recorded by Baudin, who anchored in North West Bay in the summer of 1802 – 1803 (Cornell 1974:311). Baudin spent some weeks exploring the south east coast and observing the Aboriginal people. His journals describe numerous meetings with Aboriginal people that were generally amicable on both sides. Baudin and his men investigated the North West Bay River as a possible source of fresh water (Cornell 1974:311). The astronomers of the expedition camped at site in the vicinity of the North West Bay River mouth in the hope of observing Jupiter pass across the sun on the night of the 22nd January 1803 (Cornell 1974:312). Baudin records numerous fires along the beaches of North West Bay, and observes Aboriginal people crossing from the D'Entrecasteaux Channel in what he describes as their 'miserable canoes' (Cornell 1974:312).

In his meetings with the Aboriginal people of D'Entrecasteaux Channel Baudin describes how 'mutual trust was immediately established' (Cornell 1974:302). This was achieved through the exchange of gifts such as mirrors, buttons and knives from the Europeans. However, he notes that the Aboriginal people generally declined to eat any of the biscuits or bread offered by the French.

Englishman Captain Walsh reported the friendly cultural relations that were established on Bruny Island when he visited in 1828 (Plomley 2008:49). By 1828 of course, the British settlement of Van Dieman's Land was well established. The chief at the time is recorded as an older woman called Nelson and up to fifty people were known to gather at Bruny Island and the southern channel to meet arriving government ships. The Europeans and Aboriginal people hunted and fished together, with the Europeans trading bread for shellfish and other fresh foods (Plomley 2008:49). However, Robinson was later told of a Mr. Taw who had found a severed Aboriginal hand on the beach at Bruny Island, and had also taken a skeleton from Bruny which he presented to Dr. Grant (Plomley 2008:750). It is clear from such varying accounts that contact in the D'Entrecasteaux Channel was complex and multi-faceted.

3.2 Cultural Contact and Frontier Violence

In the first years of the settlement at Hobart the surrounding areas became vital hunting grounds supplying kangaroo meat to the struggling colony on the brink of starvation (Alexander 2006:5). Hunting parties could be away from Hobart for months at a time, and would have needed to learn how to survive in the Tasmanian bush.

The economic importance of the kangaroo hunters to the success of the colony cannot be over emphasised. Without the supply of kangaroo meat, the government

would have been unable to meet the rations and maintain the settlement (Boyce 2009:52). However, the reliance of the colonisers on kangaroo brought them into direct conflict with the Aboriginal people. Access to seasonal kangaroo hunting grounds was central to the economies of both the Big River and Oyster Bay Nations.

At first, the Europeans were at an advantage as they had hunting dogs that greatly increased the numbers of kangaroo that a hunter could kill (Boyce 2009:52). The Aboriginal people quickly adapted to the use of dogs, an example of rapid cultural and economic adaptation. This brought the two groups onto a more even par (Boyce 2009:66). This period of parity only lasted while the European population was small; as early as 1806 the kangaroo populations around Hobart had been decimated and the hunters were being forced to move further north, towards the Brighton district (Boyce 2009:54). The settlement was literally starving, and there was a strong economic imperative for hunters to extend to the north in search of fresh sources of game. As the settlement continued to expand, both the colonists need for a meat supply, and their transformation of the hunting grounds into cleared, pastoral farms set the scene for an escalation in conflict (Boyce 2009).

Clashes with Aboriginal communities became more frequent and more violent as European settlement expanded. Lieutenant-Governor George Arthur proclaimed Martial Law in November 1828, leading to the active pursuit, capture and death of many Aboriginal people. A bounty was introduced in February 1830 of five pounds for every adult captured and two pounds for each child. In the two years between November 1828 and November 1830 some twenty Aboriginal people were captured and a further sixty lost their lives (Ryan 2012:102).

A series of six 'roving parties' were established for the purposes hunting and capturing the remaining Aboriginal occupants of the settled areas. This military action resulted in a general increase in the scale of violent conflict between Europeans and Aboriginal people, and by 1830 it was decided that a full-scale military offensive was required in order to quell the Aboriginal uprising. This operation, termed the 'Black Line,' involved the assembly of 2000 men in October 1830, who formed a human chain that swept through the settled districts over a period of three weeks, with the aim of driving the remnant Aboriginal populations from these areas. At the time the military campaign was widely believed to have achieved its objectives, with virtually the entire Aboriginal population having been either killed, or driven out of the settled areas. In 1832 the proclamation of Martial Law was revoked (Ryan 2012:112-113).

The Black Line was Governor Arthur's response to repeated insistence from settlers that Aboriginal people should be removed from the midlands (Alexander 2006:15). This reflects the level to which conflict had reached by 1830. Over three weeks two thousand settlers formed a line across the midlands, attempting to drive Aboriginal people south onto the Tasman peninsula (Alexander 2006:15). The line passed through Brighton in October 1830; no Aboriginal people were captured in the district (Alexander 2006:16).

Whilst the Black Line itself proved to be a dismal failure, with the total capture of two Aborigines and death of another three, it was sufficiently distressing to the general Aboriginal community that more than two hundred people subsequently allowed themselves to be persuaded by George Augustus Robinson (the 'Protector of Aborigines') to relocate to Flinders Island in exchange for food, shelter and safety (Lines 1991:47). They were further promised that they would be returned to their former homes on the Tasmanian mainland as soon as possible.

By 1835, the majority of the 220 Aborigines who arrived with Robinson at the Wybalenna Aboriginal establishment on Flinders Island had died from inadequate shelter, insufficient provisions and introduced disease. Birth rates were extremely low and few children survived infancy. In 1847 six Aborigines at Wybalenna made a petition to Queen Victoria asking that the promises made to them be honoured. In October 1847, the surviving 47 Aborigines were transferred to their final settlement at Oyster Cove (only 44 people survived the trip). Conditions at Oyster Cove were only marginally better than at Wybalenna and numbers continued to diminish.

4.0 Background Archaeology

4.1 Previous Archaeological Research in the Study Region

The current study area is located within the South East Region of Tasmania. This area has been subject to a number of Aboriginal archaeological studies over the past two decades. The majority of these have been in the form of survey assessments associated with proposed development activities, and have focused on discreet areas. However, there has also been some broader research based investigations undertaken in the region. Probably the most comprehensive of these and the one most pertinent to the present investigations is that of Brown (1986). The following provides a summary of this regional study.

In 1986 Steve Brown was engaged to carry out the South East Tasmanian Archaeology Project. This was one of nine regional overview studies, funded through National Estate grants, which were directed at examining the Aboriginal archaeological resources of Tasmania. The aims or duty statement for the South East Tasmanian Archaeology Project was to define the prehistory of the region and to define present and potential future impacts on the Aboriginal heritage resources in the region.

As part of his research design, Brown (1986:49-50) divided the landscape of the south-east region into landform unit types. Five major landform unit divisions were identified. These were;

- small offshore islands,
- Bruny Island,
- coastal and estuarine environments (consisting of coastal margins, coastal plains, river estuaries, lagoons and swamps),
- inland hills, plains and river valleys, and
- inland mountains (alpine plateau).

Brown (1986:49-50) then collated available archaeological data for these landscape units, including the range of site types present, the site components and the distribution and frequency of sites. The data was generated from previous archaeological investigations undertaken in the region, as well as the findings from the field work carried out by Brown.

The field survey investigations implemented by Brown (1986:50-52) involved a selective sampling procedure, where block surveys were undertaken at three designated areas, these being Bruny Island, the Coal River, and Bothwell. In addition, more general survey assessments were carried out at a variety of locations.

Of the five landscape units identified by Brown (1986), the most pertinent to the present investigations are the coastal and estuarine environments. The following provides an overview of the findings, as presented by Brown (1986) for these landform units.

Coastal and Estuarine Regions

The Coastal and Estuarine Regions consists of coastal margins, coastal plains, river estuaries, lagoons and swamps. It encompasses the Derwent River.

Brown (1986:79) notes that shell middens are by far the most common site type occurring within the coastal and estuarine environmental zone. A number of trends were observed in relation to the distribution of this site type within the coastal and estuarine environmental zone, and the composition of materials at these sites. These are summarised as follows.

- Middens are generally not present in areas with steep shore profiles.
- The greatest number of middens was identified on coast lines which contain a mixture of rocky headlands and short sandy beaches (mixed coast areas).
- On long sandy beaches the volume of midden material was found to decline with distance from a rocky coast.
- Middens are essentially comprised of two types; rocky coastal and bay estuarine, reflecting different landscape settings. However, middens with shell species common to both these types occur in intermediate zones such as estuary and lagoon mouths.
- The largest rocky coastal shell middens occur on rocky headlands and points, with associated rock platforms, where abalone, turbo, mussels and limpets occur.
- The bay estuarine type middens are generally composed predominantly of mussel and oyster shellfish species. The largest middens are found immediately adjacent to the shoreline, near to the shell fish resources. A few sizeable middens have been noted up to 500m inland, with smaller middens having been identified up to 1km inland.
- Shell middens in South-east Tasmania are comprised almost entirely of shell, and rarely contain large numbers of stone artefacts or faunal remains (Brown 1986:79-82).

Overview for the South-East Tasmanian Region

In summary, Brown (1986) has identified the following broad patterns of site type distribution in South-East Tasmania.

- Aboriginal archaeological sites occur in all parts of the landscape.
- The coastal margins (including off shore islands), coastal plains and river estuaries are very rich in archaeological resources and contain a high density of sites with large quantities of archaeological remains. The Derwent Estuary in particular was an area of rich archaeological resources.
- Inland sites are dominated by open artefact scatters and isolated artefacts. Artefact densities are highest along the river, rivulet and creek valley floors and adjacent to lower hill slopes, particularly where the hill slopes are gently inclined, with a north aspect, and have sandy well drained soils.
- Shell middens most frequently occur in close proximity to shellfish resources, particularly on cliff tops or headlands where there is easy access to these resources.
- Stone artefact quarries most frequently occur where there is a surface expression of geological contact zones, in particular between Jurassic dolerite and Triassic or Permian strata.

As a general statement, Brown (1986) summarises that site numbers and densities in South-east Tasmania are greatest within 300m of the present coastline and in the immediate vicinity of coastal lagoons.

Brown (1986) is of the opinion that topography is perhaps the most consistent and important environmental factor affecting site location. Sites in general, but particularly the larger ones (in terms of artefact numbers) are very seldom found on steep gradient slopes.

Brown (1986) believes that the South-eastern region has probably been occupied by Aboriginal people for the past 20 000 years. However, he acknowledges that there are no conclusive dates for sites beyond 6000 years old for the region. Pleistocene dates have however been obtained for sites in close proximity to the region (Beginners Luck Cave and a cave on the Weld River).

4.2 Additional Smaller Investigations in the Vicinity of the Study Area

There have been a number of smaller heritage investigations carried out within the general vicinity of the study area. The majority of these studies have been undertaken as part of impact assessments associated with proposed residential developments and small scale infrastructure projects. The following provides a review of those studies for which reports were available.

Graham (2005) Carlton River Sub-division

Vernon Graham (2005) was engaged by Bruce Appleby (developer) to conduct an Aboriginal heritage survey for the proposed Carlton River Sub-division at Carlton. The proposed sub-division site is located on the margins of the Carlton River, on the eastern shore of the Frederick Henry Bay. In the course of the assessment, Graham (2005) identified and recorded one Aboriginal site (AH 92320). The site is classified as a shell midden. The site is described as being large, and several exposures of midden deposits were identified across parts of the study area.

Sainty (2006a) Lot 7 Riviera Drive Study

Sainty (2006a) was engaged by Mr Gergel to undertake an Aboriginal heritage assessment within Lot 7, 29 Riviera Drive, Carlton. Sainty (2006a) reported that no Aboriginal sites were identified during the investigation. However, he did note the presence of shell material scattered across parts of the study area. This was not deemed to be a product of Aboriginal activity, but was rather accumulated through natural processes.

Sainty (2006b) Lot 8 Riviera Drive Study

Sainty (2006b) was engaged by Tanya Hawkes to undertake an Aboriginal heritage assessment within Lot 8, 29 Riviera Drive, Carlton. Sainty (2006b) reported that one Aboriginal heritage site was recorded during the investigation (site AH 10129). The site is described as a deflated shell midden with material scattered across an area measuring 14m x 1.5m, and extending into the adjacent Lot 9, Riviera Drive. Oyster and Black mussel were the shell species represented in the midden.

Sainty (2009) Lot 3, 3 Olinka Court, Carlton Study

Sainty (2009) was engaged by Pontville Homes Pty Ltd to undertake an Aboriginal heritage assessment within Lot 2, 3 Olinka Court, Carlton. Sainty (2009) reported that no Aboriginal sites were identified during the investigation.

CHMA (2011) Carlton House Rural Subdivision

CHMA and Vernon Graham (AHO) was engaged by Leigh Arnold to implement an Aboriginal heritage assessment for the proposed 'Carlton House' subdivision, at 553 Sugarloaf Road. The study area encompassed approximately 1008ha.

CHMA (2011) reports that no Aboriginal heritage sites were identified during the course of the field survey assessment. It was noted that there was one registered Aboriginal site that was reported to have been located within the study area (AH 0327 which was classified as an isolated artefact). CHMA (2011) could not relocate this site.

CHMA (2011) acknowledged that surface visibility throughout much of the surveyed areas was constrained due to grass cover, and that these constraints in surface visibility contributed to some extent to the negative survey findings. However, the fact that no sites were identified within the surveyed areas was considered as providing a good indication that site densities throughout much of the study area was likely to be low.

4.3 Registered Aboriginal Sites in the Vicinity of the Study Area

As part of Stage 1 of the present assessment a search was carried out of Aboriginal Heritage Register (AHR) to determine the extent of registered Aboriginal heritage sites within and in the general vicinity of the study area at Waterson Lane, Carlton.

The search shows that there are 31 registered sites that are located within an approximate 3km radius of the study area (search results provided on the 8-9-2020 by Tony Brown from AHT). The majority of these sites are classified as Aboriginal shell middens (21 sites), with six of the sites also having stone artefacts in association with the midden material. In addition, there are six recorded isolated artefacts, and two artefact scatters. A single Aboriginal stone quarry site (AH328) and a Hut depression with associated stone artefacts and midden material (AH131) have also been recorded in the area. Table 1 provides the summary details for these 31 registered Aboriginal sites, with Figure 6 showing the location of these sites in relation to the study area.

Based on the information provided on the AHR, none of these registered sites appear to be situated within the bounds of the Waterson Lane study area. The closest sites are AH373 and AH375, which are both shell midden sites that are located on the northern margins of the Carlton River, around 100m to the south of the study area. Both sites were recorded by Stockton in 1978 and are classified as shell middens. The AH site recording forms for these two sites provide little in the way of descriptive information. Site AH373 is described as a small shell midden located near the mouth of an unnamed creek, with the main shell fish species present being mud oyster. Site AH375 is described as a small shell midden

comprised of mud oyster. Figure 7 shows the location of these two sites in relation to the study area.

Table 1: Summary details for registered Aboriginal sites located within a 3km radius of the Waterson Lane, Carlton study area (Based on the results of the AHR search dated 8-9-2020)

AH Number	Site Type	Locality	Grid Reference Easting (GDA 94)	Grid Reference Northing (GDA 94)
131	Hut Depression, Stone Arrangement, Artefact Scatter, Shell Midden	Primrose Sands	552262	5252082
195	Shell Midden, Isolated Artefact	Primrose Sands	553109	5252331
327	Isolated Artefact	Carlton River	557312	5253482
328	Stone Quarry		555612	5253682
370	Isolated Artefact	Carlton River	555512	5254082
371	Artefact Scatter	Carlton River	556710	5253367
372	Shell Midden	Carlton	553112	5252582
373	Shell Midden	Carlton River	554712	5253482
374	Shell Midden	Carlton River	554212	5253182
375	Shell Midden		554412	5253382
376	Shell Midden	Carlton River	554112	5253082
377	Shell Midden	Carlton	553112	5252982
378	Shell Midden	Primrose Sands	553210	5252264
379	Shell Midden	Primrose Sands	552412	5252482
380	Shell Midden	Carlton	552612	5252682
381	Shell Midden	Primrose Sands	552867	5252495
382	Shell Midden, Artefact Scatter	Primrose Sands	552288	5252157
10129	Shell Midden	Carlton	553092	5253097
11455	Artefact Scatter	Dodges Ferry	551538	5255203
11456	Isolated Artefact	Dodges Ferry	552090	5254753
11457	Isolated Artefact	Dodges Ferry	552133	5255288
2223	Shell Midden, Isolated Artefact	Primrose Sands	552982	5252282
6816	Shell Midden		552412	5252582
6817	Shell Midden, Isolated Artefact	Primrose Sands	552562	5252582
6819	Shell Midden		553595	5251984
6820	Shell Midden		554135	5252544
6821	Shell Midden, Isolated Artefact	Carlton River	553448	5253412
6822	Shell Midden	Primrose Sands	553912	5252182
9232	Shell Midden, Artefact Scatter		553478	5253029
13141	Isolated Artefact	Carlton River	556554	5253460
13142	Isolated Artefact	Carlton River	556535	5253338

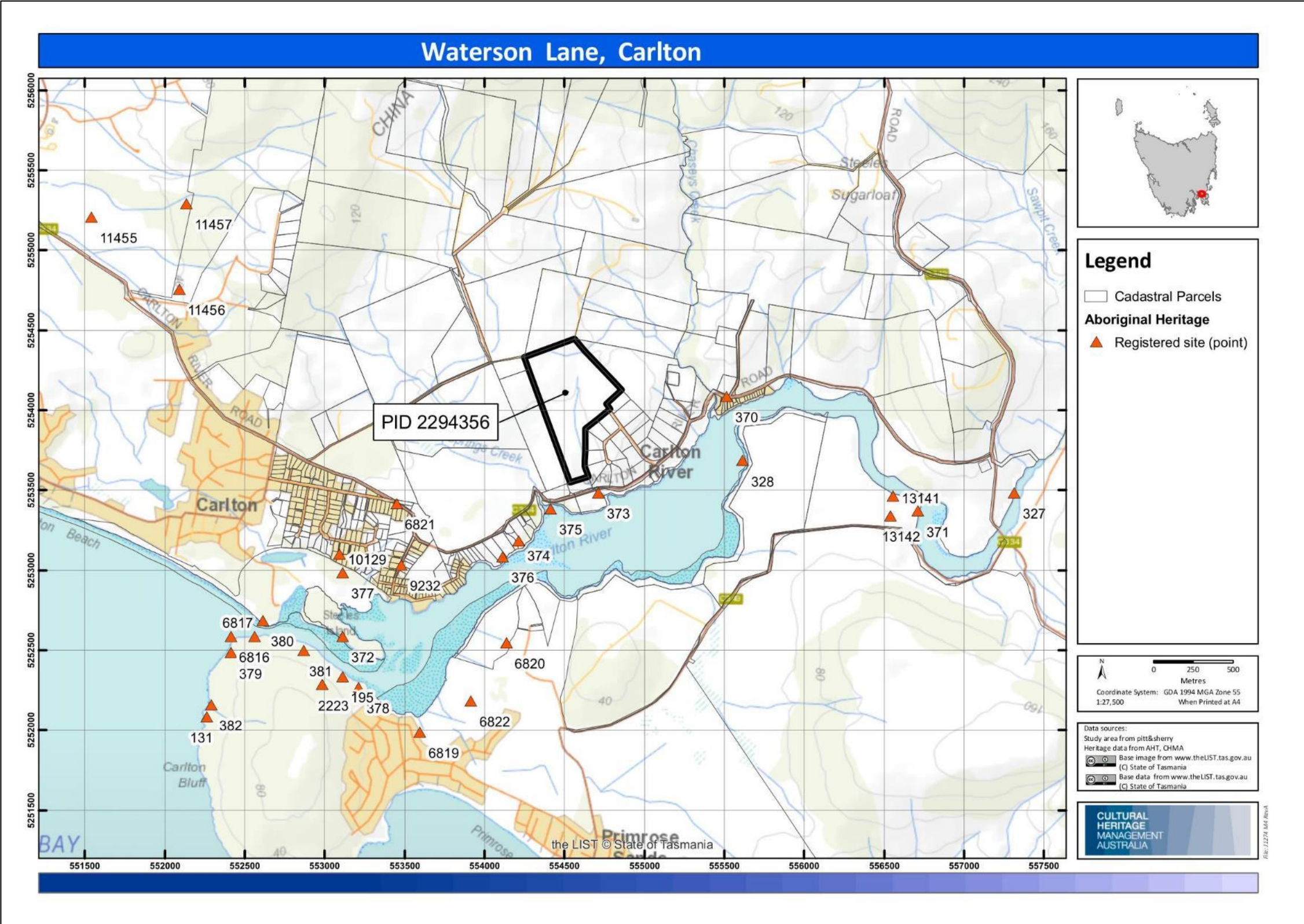


Figure 6: Topographic map showing the location of registered Aboriginal sites within a 3km radius of the Waterson Lane, Carlton study area (Based on the results of the AHR search dated 8-9-2020)

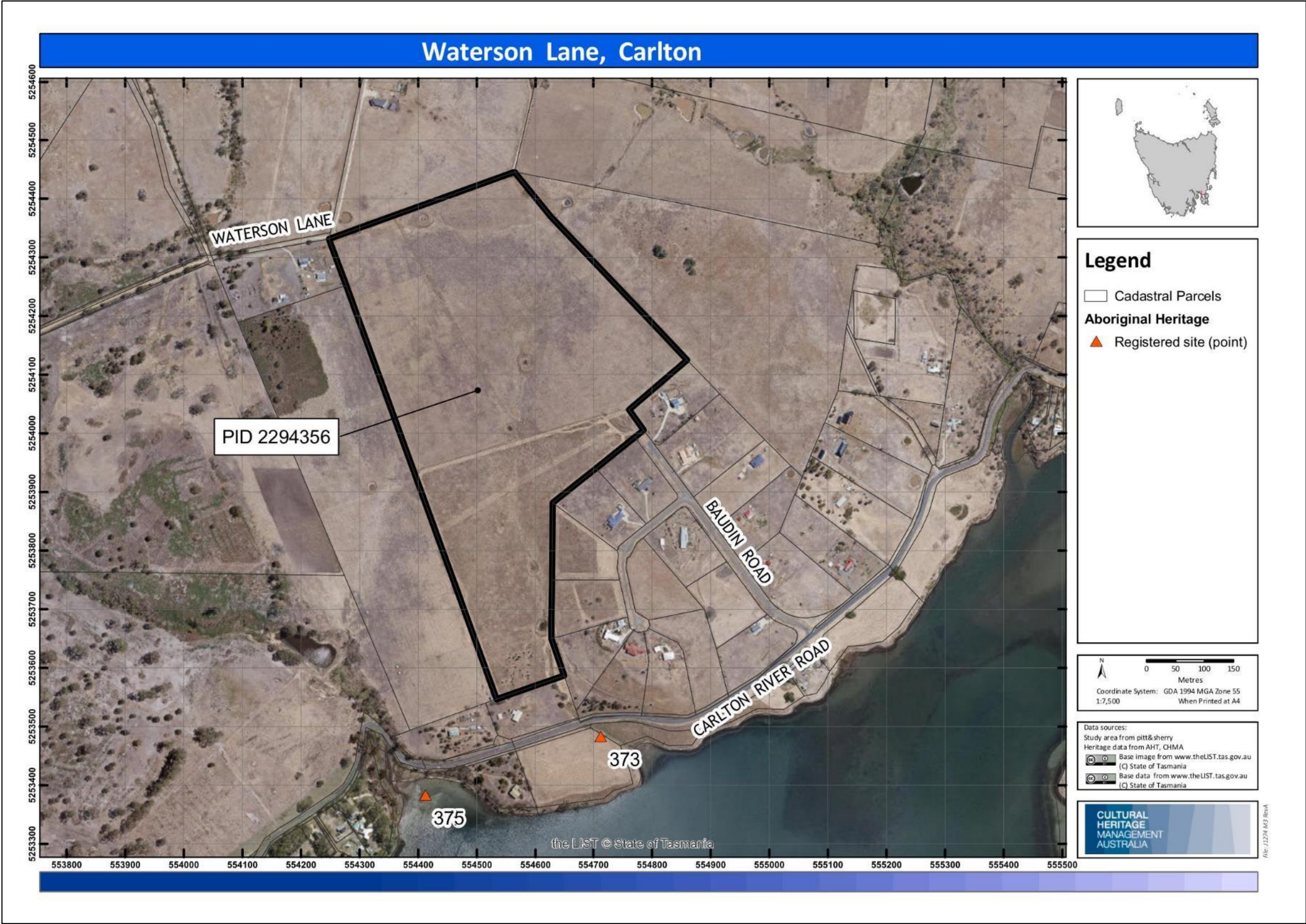


Figure 7: The location of registered Aboriginal sites AH373 and AH375 in relation to the study area boundaries

5.0 Predictive Modeling

5.1 Introduction to Predictive Modeling

Predictive modeling, in an archaeological context, is a fairly straightforward concept and has been utilised by archaeologists in Australia for a number of years as a tool for undertaking research into Aboriginal heritage sites. In summary, predictive modeling involves the collation of information generated from previous archaeological research in a given region, and using this information to establish patterns of Aboriginal site distributions within the landscape of that particular region. On the basis of perceived patterns of site distribution, archaeologists can then make predictive statements regarding the potential for various Aboriginal site types to occur within certain landscape settings, and can make preliminary assessments regarding the potential archaeological sensitivity of landscape types within a given region.

5.2 Predictive Models; Strengths and Weaknesses

It should be acknowledged that most, if not all predictive models have a number of potential inherent weaknesses, which may serve to limit their value. These include, but may not be limited to the following:

- 1) The accuracy of a predictive model is directly influenced by the quality and quantity of available site data and information for a given region. The more data available and the greater the quality of that data, the more likely it is that an accurate predictive model can be developed.
- 2) Predictive modeling works very well for certain types, most particularly isolated artefacts and artefact scatters, and to a lesser extent scarred trees. For other site types it is far more difficult to accurately establish distribution patterns and therefore make predictive modeling statements. Unfortunately, these site types are generally the rarer site types (in terms of frequency of occurrence) and are therefore generally the most significant sites.
- 3) Predictive modeling (unless it is very sophisticated and detailed) will generally not take into account micro-landscape features within a given area. These micro features may include (but is certainly not limited to) slight elevations in the landscape (such as small terraces) or small soaks or drainage depressions that may have held water. These micro features have been previously demonstrated to occasionally be focal points for Aboriginal activity.
- 4) Predictive modeling to a large extent is often predicated on the presence of watercourses. However, in some instances the alignment of these watercourses has changed considerably over time. As a consequence, the present alignment of a given watercourse may be substantially different to its alignment in the past. The consequence of this for predictive modeling (if these ancient water courses are not taken into account) is that predicted patterns of site distributions may be greatly skewed.

5.3 A Predictive Model of Site Type Distribution for the Study Area

The findings of the regional study of Brown (1986), together with the results of smaller investigations in the vicinity of the study area and the AHR search (as summarised in Sections 4. of this report) can be used in combination to develop a

broad predictive model for the study area. These investigations indicate that the most likely site types that will be encountered within the study area will be Artefact scatters, Isolated artefacts, and shell middens, or a combination thereof. The following provides a definition for these site types and a general predictive statement for their distribution within the study area.

Whilst other site types have been recorded in the broader study region, such as Aboriginal stone quarries and rock shelters, there is virtually zero potential for these site types to occur in the study area given the nature of the geology (basalt), and the absence of large rock outcrop features.

Artefact Scatters and Isolated Artefacts

Site type definition:

Isolated artefacts are defined as single stone artefacts. Where isolated finds are closer than 50 linear metres to each other they should generally be recorded as an Artefact Scatter. Artefact scatters are usually identified as a scatter of stone artefacts lying on the ground surface. For the purposes of this project, artefact scatters are defined as at least 2 artefacts within 50 linear metres of each other. Artefacts spread beyond this can be best defined as isolated finds. It is recognised that this definition, while useful in most instances, should not be strictly prescriptive. On some large landscape features for example, sites may be defined more broadly. In other instances, only a single artefact may be visible, but there is a strong indication that others may be present in the nearby sediments. In such cases it is best to define the site as an Isolated Find/Potential Archaeological Deposit (PAD).

Artefact scatters can vary in size from two artefacts to several thousand, and may be representative of a range of activities, from sporadic foraging through to intensive camping activity. In rare instances, campsites which were used over a long period of time may contain stratified deposits, where several layers of occupation are buried one on top of another.

Predictive Statement for artefact scatters and isolated finds

The results of previous archaeological studies within the South East Region have identified the following pattern of distribution.

- Site and artefact densities are comparatively high within the larger River Valley systems where there is an associated permanent water source (a river or rivulet). Site densities are significantly lower in the smaller valley systems.
- Site and artefact densities are highest within 200m of the watercourse, with densities tending to decrease significantly with distance away from water.
- The larger open artefact scatters (representing more intensive activity, such as regular camp areas); tend to be located on level, elevated landscape features, close to (within 100-200m) of major watercourses. The most common areas are the elevated basal slopes of hills, the level spines of spurs (around the termination point of the spur), the flat summits of low relief knolls or hills, or the elevated sand ridges that represent the banks of ancient river courses.
- There appears to be a strong correlation between the presence of elevated sand bodies and larger artefact scatters. It appears that these sand bodies

may have been favoured for camping.

- Site and artefact densities on the lower lying flood plains of watercourses tend to be comparatively lower. This may be reflective of the fact these low lying areas were less favoured as camp locations, due to such factors as rising damp and vulnerability to flooding; and
- Site and artefact densities also tend to be comparatively lower in areas away from watercourses, and on moderate to steeply sloping terrain.
- Isolated finds lack any visible archaeological patterning and tend to be randomly scattered across the landscape.

The study area is located just inland (north) of the Carlton River. An un-named ephemeral creek dissects the study area, however there are no permanent water courses within the study area. Using the model above as a basis, it is predicted that site and artefact densities within the study area will be generally low, with the most likely site types present being isolated artefacts or low density artefact scatters. If sites are present, they are most likely to be situated on any elevated and level landscape features on the margins of the creek, and along the spine of the ridge that runs through the study area.

Shell Midden Sites

Definition

Middens range in thickness from thin scatters to stratified deposits of shell and sediment up to 2m thick. In addition to shell which has accumulated as food refuse, shell middens usually contain other food remains such as bone from fish, birds and terrestrial animals and humus from the decay of plant and animal remains. They also commonly contain charcoal and artefacts made from stone, shell and bone.

Predictive Statement

In the South-East Tasmanian region, the bay estuarine type middens are generally composed predominantly of mussel and oyster shellfish species. The largest middens are found immediately adjacent to the shoreline, near to the shell fish resources, and are on elevated, generally gently sloping or level terrain. A few sizeable middens have been noted up to 500m inland, with smaller middens having been identified up to 1km inland. These shell middens are comprised almost entirely of shell, and rarely contain large numbers of stone artefacts or faunal remains. Shell middens most frequently occur in close proximity to shellfish resources, particularly on cliff tops or headlands where there is easy access to these resources.

The study area is situated just inland of the lower reaches of the Carlton River. Based on the distribution pattern described above for midden sites, it would be anticipated that there is a reasonable possibility for midden sites to be present in the study area, particularly in the southern portion, in closer proximity to the foreshore margins. If midden deposits are present, they are likely to be predominantly comprised of mud oyster and mussel species and may also have low densities of stone artefacts in association with the deposit.

6.0 Survey Coverage of the Study Area

Survey Coverage

Survey coverage refers to the estimated portion of a study area that has actually been visually inspected during a field survey.

The field survey assessment was conducted over a period of 1 day (18-9-2020) by Stuart Huys (CHMA archaeologist) and Rocky Sainty (Aboriginal Heritage Officer). The field team walked a total of 6.9km of survey, with the average width of each transect being 5m. This equates to a total coverage of 34 500m². The survey transects were aligned so as to cover all parts of the study area, with additional transects concentrated within those parts of the study area where the 1ha subdivision blocks are proposed. Figure 9 shows the alignment of the survey transects walked by the field team.

Surface Visibility

Surface Visibility refers to the extent to which the actual soils of the ground surface are available for inspection. There are a number of factors that can affect surface visibility, including vegetation cover, surface water and the presence introduced gravels or materials.

The study area encompasses farm paddocks and grass cover was the main impediment to surface visibility (see Plates 5 and 6). Surface visibility across the study area was estimated to range between 5%-50%, with the average visibility being 15%. This is in the low range (see Figure 8 for surface visibility guidelines). The occasional farm vehicle track and stock erosion scalds throughout the study area provided locales of improved visibility (see Plates 7-9). In an effort to increase the effective coverage of the field survey, all of these locales of improved visibility were targeted by the field team.

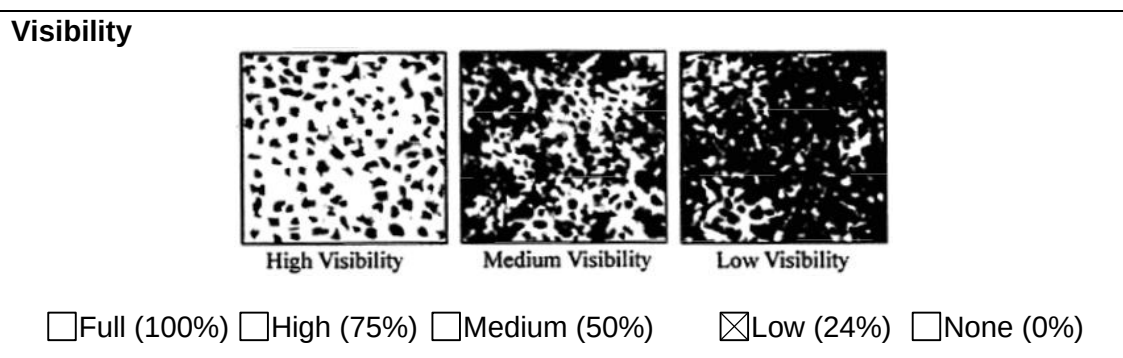


Figure 8: Guidelines for the estimation of surface visibility

Effective Coverage

Variations in both survey coverage and surface visibility have a direct bearing on the ability of a field team to detect Aboriginal heritage sites, particularly site types such as isolated artefacts, artefact scatters and shell middens, which are the most likely site types to be present in the study area. The combination of survey coverage and surface visibility is referred to as effective survey coverage.

Table 2 presents the estimated effective survey coverage achieved across the Waterson Lane study area. The overall effective coverage is estimated to have been 5 175m². This level of effective coverage is not ideal, but is still assessed as being adequate for the purposes of determining the likely extent and nature of Aboriginal heritage sites that may be located within the study area boundaries.

Table 2: Effective Survey Coverage achieved within the Waterson Lane Carlton study area

Total Area Surveyed	Estimated Surface Visibility	Effective Survey Coverage
6 900m x 5m = 34 500m ²	15%	5 175m ²



Plate 5: View north across the east portion of the study area, with thick grass cover reducing surface visibility to 5%



Plate 6: View north across the central portion of the study area with surface visibility restricted to 10% due to grass cover



Plate 7: View north-east along one of several vehicle tracks providing improved visibility in the study area



Plate 8: View north at a stock track providing a transect of improved visibility through the study area



Plate 9: View west at erosion scalds around a farm dam within the study area



Figure 9: Survey transects walked by the field team within the study area at Waterson Lane, Carlton River

7.0 Survey Results and Discussion

No Aboriginal heritage sites, suspected features or specific areas of elevated archaeological potential were identified within the Waterson Lane study area. As described in section 4.3 of this report, a search of the AHR shows that there are no registered Aboriginal sites within or in the immediate vicinity of the study area. The closest sites being situated around 150m to the south, along the margins of the Carlton River. The assessment has therefore confirmed that the subdivision proposal will have no impacts on any known Aboriginal heritage sites.

The field survey was also able to confirm that there are no stone resources within the study area that would be suitable for stone artefact manufacturing. As detailed in section 2 of this report, the underlying geology across the study area comprises basalt. Whilst there are documented accounts of fine grained basalt material having been targeted for by Tasmanian Aboriginal people for artefact manufacturing, the basalt within the study area is coarse grained and highly weathered, and would generally not be suited for artefact manufacturing.

There are no sizable rock outcrops occurring within the study area, and therefore there is no potential for Aboriginal rock shelters to be present.

As described in section 6 of this report, surface visibility across the study area averaged 15%, which is in the low range. Given these constraints, it can't be stated with absolute certainty that there are no undetected Aboriginal heritage sites present in the study area. With this acknowledged, the survey assessment still did achieve effective coverage of 5 175m². This level of effective coverage is deemed to be sufficient for the purposes of generating a reasonable impression as to the likely extent, nature and distribution of Aboriginal heritage sites across the study area. The negative survey results can therefore be taken as a reasonably accurate indication that site and artefact densities across the study area are likely to be low to very low, reflecting sporadic activity.

As noted in section 2.2 of this report, the native vegetation across the entire study area has been cleared as part of past farming practices. Any sites located within cleared agricultural areas will necessarily have been adversely impacted by agricultural and development activities, unavoidably compromising the integrity of any cultural sites retained within these areas. There is very little potential for in situ sites to occur within the study area.

The explanation as to why Aboriginal activity within the study area was likely to be sporadic is most probably linked directly to resource availability and topography. Previous archaeological research in this area has demonstrated a strong pattern of Aboriginal site distribution, with the vast majority of sites clustered along the immediate margins of Carlton River, along the fringes of the resource rich littoral zone. Site densities decrease significantly away from the river margins. There are a few sizable sites located inland from the littoral zone, however, these appear to be

situated within areas where the terrain is flat to gently undulating, the soils are well drained and in close proximity to reliable fresh water.

The study area is situated on the hill slopes fringing the northern margins of the Carlton River. The southern boundary of the study area approaches to within 250m of the river margins. Based on the patterning of site distribution observed in the general surrounds of the study area, it would be anticipated that there may be an increased potential for Aboriginal sites to be present within this southern portion of the study area. However, the terrain in this southern portion of the study area is quite steeply sloping, with gradients in the range of between 10°-15°. There are no benched slope areas present, where Aboriginal activity is likely to have been concentrated. Within the central and northern portions of the study area, the terrain is more gently undulating, however, given the increasing distance away from the Carlton River, site densities would be expected to decrease significantly. Particularly given the absence of any permanent fresh water source in this area. These hill slope areas may have been visited periodically as part of hunting forays, but the visits were probably short and intermittent so that large scale cultural deposits do not accumulate.

8.0 Consultation with Aboriginal Communities and Statement of Aboriginal Significance

The designated Aboriginal Heritage Officer (AHO) for this project is Rocky Sainty. One of the primary roles of the Aboriginal Heritage Officer is to consult with Aboriginal community groups. The main purpose of this consultation process is:

- to advise Aboriginal community groups of the details of the project,
- to convey the findings of the Aboriginal heritage assessment,
- to document the Aboriginal social values attributed to Aboriginal heritage resources in the study area,
- to discuss potential management strategies for Aboriginal heritage sites, and
- to document the views and concerns expressed by the Aboriginal community representatives.

Aboriginal Heritage Tasmania (AHT) has advised that there have been some changes to the accepted approach to Aboriginal community consultation, based on recommendations made by the AHC on 28 April 2017. These changes relate to cases where the AHC consider it may be sufficient for a Consulting Archaeologist (CA) or Aboriginal Heritage Officer (AHO) to consult only with the Aboriginal Heritage Council.

The Council recommended that consultation with an Aboriginal community organisation is not required for a proposed project when:

There are less than 10 isolated artefacts that are not associated with any other nearby heritage; or

The impact of the project on Aboriginal heritage:

- is not significant; or
- will not destroy the heritage; or
- affects only part of the outer approximately 20% of a buffer around a registered site

The CA and AHO will need to demonstrate in Aboriginal heritage reports including map outputs:

- that the proposed impact on the Aboriginal heritage within the project area is not significant and why;
- that the project activity will not destroy the heritage;
- that the proposed impact to the site buffer is not adjacent to a significant component of the registered site polygon.

No Aboriginal sites were identified during the field survey of the Waterson Lane study area. A search of the AHR shows that there are no registered Aboriginal sites that are located within or in the immediate vicinity of the study area, and it is assessed that there is a low potential for undetected Aboriginal heritage sites to be present.

On the basis of the above, it is clear that the proposed subdivision within the Waterson Lane study area will not impact on any known Aboriginal heritage sites,

and there is a very low potential to impact undetected Aboriginal heritage. For this reason, the decision has been made not to distribute this report for Aboriginal community consultation. The report has been provided to AHT for review.

Rocky Sainty has provided a statement of the Aboriginal cultural values attributed to the study area as a whole. This statement is presented below.

Statement of Cultural/Social Significance by Rocky Sainty

Aboriginal heritage/relics are not renewable. Hence any cultural heritage values provide a direct link to past occupation undertaken by traditional indigenous ancestors to the region of the project proposal. This provides a story or link for the Aboriginal community today, and facilitates the connection to social cultural heritage values, ethno history /story and the relationship pertaining to country. This is an integral part of regaining knowledge so it can be encapsulated and retained by the both individual Aboriginal people and for the Aboriginal community collectively.

We did not identify any Aboriginal heritage sites during the survey assessment. Despite the fact that surface visibility across the study area was quite low, I am generally satisfied that there is a low risk of undetected Aboriginal sites being present, given the distance inland from the Carlton River. In my experience, sites tend to be situated along the flatter margins of the Carlton River, as opposed to the hills fringing the river.

Even if the site of the project proposal contains no evidence of Aboriginal heritage there is always the cultural resources (flora, fauna, aquaculture or any other resource values that the earth may offer) and the living landscape, which highlight the high significance to the Aboriginal cultural heritage values to the country.

The study area incorporates land that has been subject to moderate to high levels of modification from land clearing and farming. Through this, much of the traditional resources of the area are now gone..

9.0 Statutory Controls and Legislative Requirements

The following provides an overview of the relevant State and Federal legislation that applies for Aboriginal heritage within the state of Tasmania.

9.1 State Legislation

In Tasmania, the *Aboriginal Heritage Act 1975* (the Act) is the primary Act for the treatment of Aboriginal cultural heritage. The Act is administered by the Minister for Aboriginal Affairs through Aboriginal Heritage Tasmania (AHT) in the Department of Primary Industries, Parks, Water and the Environment (DPIPWE). AHT is the regulating body for Aboriginal heritage in Tasmania and '[n]o fees apply for any application to AHT for advice, guidance, lodgement or permit application'.

The Act applies to 'relics' which are any object, place and/or site that is of significance to the Aboriginal people of Tasmania (as defined in section 2(3) of the Act). The Act defines what legally constitutes unacceptable impacts on relics and a process to approve impacts when there is no better option. Aboriginal relics are protected under the Act and it is illegal to destroy, damage, deface, conceal or otherwise interfere with a relic, unless in accordance with the terms of a permit granted by the Minister. It is illegal to sell or offer for sale a relic, or to cause or permit a relic to be taken out of Tasmania without a permit (section 2(4) qualifies and excludes 'objects made, or likely to have been made, for purposes of sale').

Section 10 of the Act sets out the duties and obligations for persons owning or finding an Aboriginal relic. Under section 10(3) of the Act, a person shall, as soon as practicable after finding a relic, inform the Director or an authorised officer of the find.

It should be noted that with regard to the discovery of suspected human skeletal remains, the *Coroners Act 1995* takes precedence. The *Coroners Act 1995* comes into effect initially upon the discovery of human remains, however once determined to be Aboriginal the *Aboriginal Heritage Act* overrides the *Coroners Act*.

In August 2017, the Act was substantively amended and the title changed from the *Aboriginal Relics Act 1975*. As a result, the *AHT Guidelines to the Aboriginal Heritage Assessment Process* were replaced by the *Aboriginal Heritage Standards and Procedures*. The Standards and Procedures are named in the statutory *Guidelines* of the Act issued by the Minister under section 21A of the Act. Other amendments include:

- An obligation to fully review the Act within three years.
- Increases in maximum penalties for unlawful interference or damage to an Aboriginal relic. For example, maximum penalties (for deliberate acts) are 10,000 penalty units (currently \$1.57 million) for bodies corporate other than small business entities and 5,000 penalty units (currently \$785,000) for individuals or small business entities; for reckless or negligent offences, the maximum penalties are 2,000 and 1,000 penalty units respectively (currently \$314,000 and \$157,000). Lesser offences are also defined in sections 10, 12, 17 and 18.

- Prosecution timeframes have been extended from six months to two years.
- The establishment of a statutory Aboriginal Heritage Council to advise the Minister.

Section 21(1) specifies the relevant defence as follows: “It is a defence to a prosecution for an offence under section 9 or 14 if, in relation to the section of the Act which the defendant is alleged to have contravened, it is proved ... that, in so far as is practicable ... the defendant complied with the guidelines”.

9.2 Commonwealth Legislation

There are also a number of Federal Legislative Acts that pertain to cultural heritage. The main Acts being; *The Australian Heritage Council Act 2003*, *The Aboriginal and Torres Strait Islander Heritage Protection Act 1987* and the *Environment Protection and Biodiversity Conservation Act 1999*

Australian Heritage Council Act 2003 (Comm)

The *Australian Heritage Council Act 2003* defines the heritage advisory boards and relevant lists, with the Act's Consequential and Transitional Provisions repealing the Australian Heritage Commission Act 1975. The Australian Heritage Council Act, like the Australian Heritage Commission Act, does not provide legislative protection regarding the conservation of heritage items in Australia, but has compiled a list of items recognised as possessing heritage significance to the Australian community. The Register of the National Estate, managed by the Australian Heritage Council, applies no legal constraints on heritage items included on this list.

The Aboriginal and Torres Strait Islander Heritage Protection Act 1987.

This Federal Act is administered by the Department of Sustainability, Environment, Water, Populations and Communities (SEWPaC) with the Commonwealth having jurisdiction. The Act was passed to provide protection for the Aboriginal heritage, in circumstances where it could be demonstrated that such protection was not available at a state level. In certain instances, the Act overrides relevant state and territory provisions.

The major purpose of the Act is to preserve and protect from injury and desecration, areas and objects of significance to Aborigines and Islanders. The Act enables immediate and direct action for protection of threatened areas and objects by a declaration from the Commonwealth minister or authorised officers. The Act must be invoked by, or on behalf of an Aboriginal or Torres Strait Islander or organisation.

Any Aboriginal or Torres Strait Islander person or organization may apply to the Commonwealth Minister for a temporary or permanent 'Stop Order' for protection of threatened areas or objects of significant indigenous cultural heritage.

The Commonwealth Act 'overrides' State legislation if the Commonwealth Minister is of the opinion that the State legislation (or undertaken process) is insufficient to protect the threatened areas or objects. Thus, in the event that an application is made to the Commonwealth Minister for a Stop Order, the Commonwealth Minister will, as a matter of course, contact the relevant State Agency to ascertain what

protection is being imposed by the State and/or what mitigation procedures have been proposed by the landuser/developer.

In addition to the threat of a 'Stop Order' being imposed, the Act also provides for the following:

- If the Federal Court, on application from the Commonwealth Minister, is satisfied that a person has engaged or is proposing to engage in conduct that breaches the 'Stop Order', it may grant an injunction preventing or stopping such a breach (s.26). Penalties for breach of a Court Order can be substantial and may include a term of imprisonment;
- If a person contravenes a declaration in relation to a significant Aboriginal area, penalties for an individual are a fine up to \$10,000.00 and/or 5 years gaol and for a Corporation a fine up to \$50,000.00 (s.22);
- If the contravention is in relation to a significant Aboriginal object, the penalties are \$5,000.00 and/or 2 years gaol and \$25,000.00 respectively (s.22);
- In addition, offences under s.22 are considered 'indictable' offences that also attract an individual fine of \$2,000 and/or 12 months gaol or, for a Corporation, a fine of \$10,000.00 (s.23). Section 23 also includes attempts, inciting, urging and/or being an accessory after the fact within the definition of 'indictable' offences in this regard.

The Commonwealth Act is presently under review by Parliament and it is generally accepted that any new Commonwealth Act will be even more restrictive than the current legislation.

Environment Protection and Biodiversity Conservation Act 1999 (Comm)

This Act was amended, through the Environment and Heritage Legislation Amendment Act (No1) 2003 to provide protection for cultural heritage sites, in addition to the existing aim of protecting environmental areas and sites of national significance. The Act also promotes the ecologically sustainable use of natural resources, biodiversity and the incorporation of community consultation and knowledge.

The 2003 amendments to the *Environment Protection and Biodiversity Conservation Act 1999* have resulted in the inclusion of indigenous and non-Indigenous heritage sites and areas. These heritage items are defined as:

'indigenous heritage value of a place means a heritage value of the place that is of significance to indigenous persons in accordance with their practices, observances, customs, traditions, beliefs or history;

Items identified under this legislation are given the same penalty as actions taken against environmentally sensitive sites. Specific to cultural heritage sites are §324A-324ZB.

Environment and Heritage Legislation Amendment Act (No1) 2003 (Comm)

In addition to the above amendments to the *Environment Protection and Biodiversity Conservation Act 1999* to include provisions for the protection and conservation of heritage, the Act also enables the identification and subsequent listing of items for

the Commonwealth and National Heritage Lists. The Act establishes the *National Heritage List*, which enables the inclusion of all heritage, natural, Indigenous and non-Indigenous, and the *Commonwealth Heritage List*, which enables listing of sites nationally and internationally that are significant and governed by Australia.

In addition to the *Aboriginal and Torres Strait Islander Heritage Protection Act 1987*, amendments made to the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)* enables the identification and subsequent listing of indigenous heritage values on the Commonwealth and/or National Heritage Lists (ss. 341D & 324D respectively). Substantial penalties (and, in some instances, gaol sentences) can be imposed on any person who damages items on the National or Commonwealth Heritage Lists (ss. 495 & 497) or provides false or misleading information in relation to certain matters under the Act (ss.488-490). In addition, the wrongdoer may be required to make good any loss or damage suffered due to their actions or omissions (s.500).

10.0 Aboriginal Cultural Heritage Management Plan

Heritage management options and recommendations provided in this report are made on the basis of the following criteria:

- Consultation with Rocky Sainty (Aboriginal Heritage Officer);
- The legal and procedural requirements as specified in the *Aboriginal Heritage Act 1975* (The Act);
- The results of the investigation as documented in this report; and
- Background research into the extant archaeological and ethno-historic record for the study area and the surrounding region.

Recommendation 1

No Aboriginal heritage sites, suspected features or specific areas of elevated archaeological potential were identified during the field survey inspection of the Waterson Lane study area at Carlton. A search of the AHR shows that there no registered Aboriginal sites within or in the immediate vicinity of the study area. The assessment has therefore confirmed that the proposed subdivision within the study area will have no impacts on any known Aboriginal heritage sites.

On this basis, it is advised that there are no Aboriginal heritage constraints, or legal impediments to the subdivision proposal proceeding.

Recommendation 2

It is assessed that there is generally a low to very low potential for undetected Aboriginal heritage sites to occur within the study area footprint. However, if, during the course of the proposed works, previously undetected archaeological sites or objects are located, the processes outlined in the Unanticipated Discovery Plan should be followed (see Appendix 1). A copy of the Unanticipated Discovery Plan should be kept on site during all ground disturbance and construction work. All construction personnel should be made aware of the Unanticipated Discovery Plan and their obligations under the *Aboriginal Heritage Act 1975* (the Act).

Recommendation 3

Copies of this report should be submitted to Aboriginal Heritage Tasmania (AHT) for review and comment.

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Glossary of Terms

Aboriginal Archaeological Site

A site is defined as any evidence (archaeological features and/or artefacts) indicating past Aboriginal activity, and occurring within a context or place relating to that activity. The criteria for formally identifying a site in Australia vary between States and Territories.

Artefact

A portable object that has been humanly made or modified (see also stone artefact).

Assemblage (lithic)

A collection of complete and fragmentary stone artefacts and manuports obtained from an archaeological site, either by collecting artefacts scattered on the ground surface, or by controlled excavation.

Broken Flake

A flake with two or more breakages, but retaining its area of break initiation.

Chert

A highly siliceous rock type that is formed biogenically from the compaction and precipitation of the silica skeletons of diatoms. Normally there is a high percentage of cryptocrystalline quartz. Like chalcedony, chert was valued by Aboriginal people as a stone material for manufacturing stone tools. The rock type often breaks by conchoidal (shell like) fracture, providing flakes that have hard, durable edges.

Cobble

Water worn stones that have a diameter greater than 64mm (about the size of a tennis ball) and less than 256mm (size of a basketball).

Core

A piece of stone, often a pebble or cobble, but also quarried stone, from which flakes have been struck for the purpose of making stone tools.

Core Fragments

A piece of core, without obvious evidence of being a chunky primary flake.

Cortex

The surface of a piece of stone that has been weathered by chemical and/or physical means.

Debitage

The commonly used term referring to the stone refuse discarded from knapping. The manufacturing of a single implement may result in the generation of a large number of pieces ofdebitage in an archaeological deposit.

Flake (general definition)

A piece of stone detached from a nucleus such as a core. A complete or substantially complete flake of lithic material usually shows evidence of hard indenter initiation, or occasional bending initiation. The most common type of flake is the 'conchoidal flake'. The flake's primary fracture surface (the ventral or inside surface) exhibits features such as fracture initiation, bulb of force, and undulations and lances that indicate the direction of the fracture front.

Flake fragment

An artefact that does not have areas of fracture initiation, but which displays sufficient fracture surface attributes to allow identification as a stone artefact fragment.

Flake portion (broken flake)

The proximal portion of a flake retaining the area of flake initiation, or a distal portion of a flake that retains the flake termination point.

Flake scraper

A flake with retouch along at least one margin. The character of the retouch strongly suggests shaping or rejuvenation of a cutting edge.

Nodules

Regular or irregular cemented masses or nodules within the soil. Also referred to as concretions and buckshot gravel. Cementing agents may be iron and/or manganese oxides, calcium carbonate, gypsum etc. Normally formed in situ and commonly indicative of seasonal waterlogging or a fluctuating chemical environment in the soil such as; oxidation and reduction, or saturation and evaporation. Nodules can be redistributed by erosion. (See also 'concretion').

Pebble

By geological definition, a waterworn stone less than 64 mm in diameter (about the size of a tennis ball). Archaeologists often refer to waterworn stones larger than this as pebbles though technically they are cobbles.

Quartz

A mineral composed of crystalline silica. Quartz is a very stable mineral that does not alter chemically during weathering or metamorphism. Quartz is abundantly common and was used by Aboriginal people throughout Australia to make light-duty cutting tools. Despite the often unpredictable nature of fracture in quartz, the flakes often have sharp cutting edges.

Quartzite

A hard silica rich stone formed in sandstone that has been recrystallised by heat (metaquartzite) or strengthened by slow infilling of silica in the voids between the sand grains (Orthoquartzite).

Retouch (on stone tools)

An area of flake scars on an artefact resulting from intentional shaping, resharpening, or rejuvenation after breakage or blunting of a cutting edge. In resharpening a cutting edge the retouch is invariably found only on one side (see also 'indeterminate retouched piece', retouch flake' etc).

Scraper

A general group of stone artefacts, usually flakes but also cores, with one or more retouched edges thought to have been used in a range of different cutting and scraping activities. A flake scraper is a flake with retouch along at least one margin, but not qualifying for attribution to a more specific implement category. Flake scrapers sometimes also exhibit use-wear on the retouched or another edge.

Silcrete

A hard, fine grained siliceous stone with flaking properties similar to quartzite and chert. It is formed by the cementing and/or replacement of bedrock, weathering deposits, unconsolidated sediments, soil or other material, by a low temperature physico-chemical process. Silcrete is essentially composed of quartz grains cemented by microcrystalline silica. The clasts in silcrete are most often quartz grains but may be chert or chalcedony or some other hard mineral particle. The mechanical properties and texture of silcrete are equivalent to the range exhibited by chert at the fine-grained end of the scale and with quartzite at the coarse-grained end of the scale. Silcrete was used by Aboriginal people throughout Australia for making stone tools.

Site Integrity

The degree to which post-depositional disturbance of cultural material has occurred at a site.

Stone Artefact

A piece (or fragment) of stone showing evidence of intentional human modification.

Stone procurement site

A place where stone materials is obtained by Aboriginal people for the purpose of manufacturing stone artefacts. In Australia, stone procurement sites range on a continuum from pebble beds in water courses (where there may be little or no evidence of human activity) to extensively quarried stone outcrops, with evidence of pits and concentrations of hammerstones and a thick layer of knapping debris.

Stone tool

A piece of flaked or ground stone used in an activity, or fashioned for use as a tool. A synonym of stone tool is 'implement'. This term is often used by archaeologists to describe a flake tool fashioned by delicate flaking (retouch).

Use wear

Macroscopic and microscopic damage to the surfaces of stone tools, resulting from its use. Major use-wear forms are edge fractures, use-polish and smoothing, abrasion, and edge rounding bevelling.

Appendix 1

Unanticipated Discovery Plan

Unanticipated Discovery Plan

Procedure for the management of unanticipated discoveries of Aboriginal relics in Tasmania

For the management of unanticipated discoveries of Aboriginal relics in accordance with the *Aboriginal Heritage Act 1975* and the *Coroners Act 1995*. The Unanticipated Discovery Plan is in two sections.

Discovery of Aboriginal Relics other than Skeletal Material

Step 1:

Any person who believes they have uncovered Aboriginal relics should notify all employees or contractors working in the immediate area that all earth disturbance works must cease immediately.

Step 2:

A temporary 'no-go' or buffer zone of at least 10m x 10m should be implemented to protect the suspected Aboriginal relics, where practicable. No unauthorised entry or works will be allowed within this 'no-go' zone until the suspected Aboriginal relics have been assessed by a consulting archaeologist, Aboriginal Heritage Officer or Aboriginal Heritage Tasmania staff member.

Step 3:

Contact Aboriginal Heritage Tasmania on **1300 487 045** as soon as possible and inform them of the discovery. Documentation of the find should be emailed to **aboriginal@heritage.tas.gov.au** as soon as possible. Aboriginal Heritage Tasmania will then provide further advice in accordance with the *Aboriginal Heritage Act 1975*.

Discovery of Skeletal Material

Step 1:

Call the Police immediately. Under no circumstances should the suspected skeletal material be touched or disturbed. The area should be managed as a crime scene. It is a criminal offence to interfere with a crime scene.

Step 2:

Any person who believes they have uncovered skeletal material should notify all employees or contractors working in the immediate area that all earth disturbance works cease immediately.

Step 3:

A temporary 'no-go' or buffer zone of at least 50m x 50m should be implemented to protect the suspected skeletal material, where practicable. No unauthorised entry or works will be allowed within this 'no-go' zone until the suspected skeletal remains have been assessed by the Police and/or Coroner.

Step 4:

If it is suspected that the skeletal material is Aboriginal, Aboriginal Heritage Tasmania should be notified.

Step 5:

Should the skeletal material be determined to be Aboriginal, the Coroner will contact the Aboriginal organisation approved by the Attorney-General, as per the *Coroners Act 1995*.

Guide to Aboriginal site types

Stone Artefact Scatters

A stone artefact is any stone or rock fractured or modified by Aboriginal people to produce cutting, scraping or grinding implements. Stone artefacts are indicative of past Aboriginal living spaces, trade and movement throughout Tasmania. Aboriginal people used hornfels, chalcedony, spongelite, quartzite, chert and silcrete depending on stone quality and availability. Stone artefacts are typically recorded as being 'isolated' (single stone artefact) or as an 'artefact scatter' (multiple stone artefacts).

Shell Middens

Middens are distinct concentrations of discarded shell that have accumulated as a result of past Aboriginal camping and food processing activities. These sites are usually found near waterways and coastal areas, and range in size from large mounds to small scatters. Tasmanian Aboriginal middens commonly contain fragments of mature edible shellfish such as abalone, oyster, mussel, warrener and limpet, however they can also contain stone tools, animal bone and charcoal.

Rockshelters

An occupied rockshelter is a cave or overhang that contains evidence of past Aboriginal use and occupation, such as stone tools, middens and hearths, and in some cases, rock markings. Rockshelters are usually found in geological formations that are naturally prone to weathering, such as limestone, dolerite and sandstone.

Quarries

An Aboriginal quarry is a place where stone or ochre has been extracted from a natural source by Aboriginal people. Quarries can be recognised by evidence of human manipulation such as battering of an outcrop, stone fracturing debris or ochre pits left behind from processing the raw material. Stone and ochre quarries can vary in terms of size, quality and the frequency of use.

Rock Marking

Rock marking is the term used in Tasmania to define markings on rocks which are the result of Aboriginal practices. Rock markings come in two forms; engraving and painting. Engravings are made by removing the surface of a rock through pecking, abrading or grinding, whilst paintings are made by adding pigment or ochre to the surface of a rock.

Burials

Aboriginal burial sites are highly sensitive and may be found in a variety of places, including sand dunes, shell middens and rock shelters. Despite few records of pre-contact practices, cremation appears to have been more common than burial. Family members carried bones or ashes of recently deceased relatives. The Aboriginal community has fought long campaigns for the return of the remains of ancestral Aboriginal people.

Further information on Aboriginal Heritage is available from:

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