



**Brighton  
Council**

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## **ATTACHMENTS (E-H)**

PLANNING AUTHORITY MEETING

1 JULY 2025





## Boyer Road Precinct Structure Plan **NATURAL VALUES CONSTRAINTS**

21<sup>st</sup> November 2024

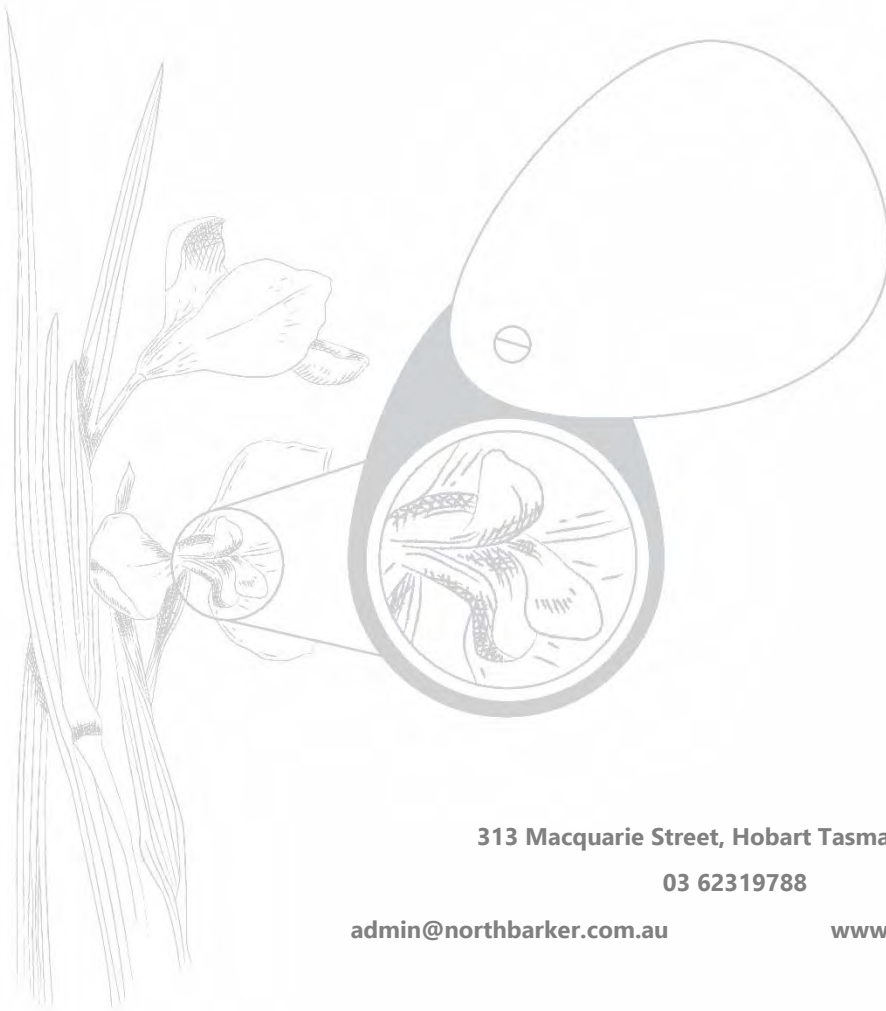
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on behalf of Brighton Council  
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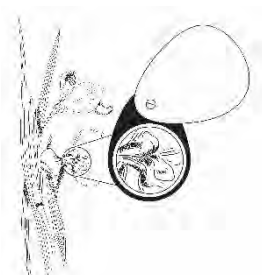
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## ACKNOWLEDGEMENTS

<b>Project</b>	Boyer Road Precinct Structure Plan
<b>Location</b>	Boyer Road, Bridgewater
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Version	Date	Author & Comment	Position
V0.1	1/11/2024	Drafted by Aleida Williams & Cameron Geeves	Senior Ecologist
V1.0	8/11/2024	Reviewed and delivered to client by Jared Parry	Senior Ecologist
V1.1	21/11/2024	Minor edits. Delivered to client by Jared Parry	Senior Ecologist



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## EXECUTIVE SUMMARY

In order to maintain a sustainable housing supply for population growth and housing requirements into the future, Brighton Council has commissioned a Holmes Dyer Pty Ltd (herein referred to as Holmes Dyer) to prepare a precinct structure plan, infrastructure funding framework, and planning scheme amendment for an area approximately 103 ha in size between Boyer Road and Cobbs Hill Road, 1 km west of Bridgewater. Within the study area, the land zoned 'Future Urban' under the Brighton Local Provision Schedule has always been intended for residential development once the time arrived that it was required to help accommodate Hobart's growth.

North Barker Ecosystem Services (NBES) has been commissioned by Holmes Dyer to undertake a high level, strategic assessment of the flora, fauna and environment aspects of this project. The precinct structure plan is primarily focussed on the planning for the 'Future Urban' zoned part of the study area, however constraints and recommendations associated with existing natural values are considered for the entirety of the study area.

Five native vegetation communities and three non-native or modified land units were identified in the study area. Native vegetation accounts for 40.87 % of the study area and is restricted to the northern (balance) half of the study area where the land is zoned 'Landscape Conservation', and partly under conservation covenant (reserved under the Tasmanian *Nature Conservation Act 2002* [NC Act]). The proposed precinct area of the study area (southern extent) is generally agricultural land, while the interface between the native and modified land units has been largely mapped improved pasture with native tree canopy.

Three native vegetation communities are Tasmanian NC Act listed threatened ecological community: *Eucalyptus amygdalina* forest and woodland on sandstone (DAS), *Eucalyptus globulus* dry forest and woodland (DGL), and *Eucalyptus risdonii* forest and woodland (DRI). The areas of DAS and DRI vegetation occur entirely within the conservation covenant and are likely to extend beyond the study area boundary to the west. The DGL community occurs mostly (2.36 ha, 69.66 %) within the conservation covenant at the southern interface with agricultural land. The balance of this community is outside the conservation covenant and within the proposed precinct area. No Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) listed communities are present in the study area.

One threatened flora species listed under the Tasmanian *Threatened Species Protection Act 1995* (TSP Act), *Eucalyptus risdonii* (TSP Act rare), and was observed in abundance within the forested part of the study area outside the proposed precinct area. An additional threatened flora species, *Asperula scoparia* subsp. *scoparia* (TSP Act rare) has been recorded previously within the study area. The lower grassy slopes of the *Eucalyptus amygdalina* forest on mudstone (DAM) and DGL vegetation provide excellent habitat for orchids and though no threatened orchid species have been recorded within the study area. Furthermore, the *Bursaria-Acacia* woodland and scrub (NBA) mapped vegetation may also support grassland and grassy woodland threatened species. It is highly unlikely that any threatened species occur within the FAG and FUR areas within the proposed precinct area.

At least four species listed as declared under the Tasmanian *Biosecurity Act 2019* (African boxthorn, blackberry, gorse, and white weed) were detected within the agriculture (FAG) vegetation. These species are classified as Class B weeds in the Brighton Council region, where the management objective is containment of infestations.

Numerous additional declared weeds are known from the broader area, most notably, espartillo which is highly invasive. Other weeds known from the area include boneseed, bridal creeper, and fennel.

At minimum, the PSP must include provisions for weed and hygiene management through the implementation of a weed and hygiene management plan throughout any staged developments, with particular focus on the management and prevention of introducing espartillo within the study area.



Suitable habitat for the threatened Tasmanian devil, spotted-tailed quoll, eastern quoll, blue-winged parrot, swift parrot, and eastern barred bandicoot is available within the study area predominantly within the balance area outside the proposed precinct area. Only the eastern barred bandicoot, if present, are likely to utilise the ungrazed paddock areas within the agricultural areas.

While 25 ha of native vegetation is protected by a conservation covenant, the adjacent land, including the threatened DGL community, represents good quality habitat for a range of threatened fauna species including Tasmanian devils, quolls, blue-winged and swift parrots and potentially eastern barred bandicoots. Therefore, it is recommended that the balance of the native vegetation outside the conservation covenant is appended to the covenant to afford this vegetation and threatened fauna habitat the same protection. Furthermore, it is recommended that the modified area in the northeast of the Project Area (NBA and FAG) is also protected, as rehabilitation of this area will provide a mosaic of vegetation types for fauna and extend the connectivity of native vegetation. In addition, the areas of FAC (native trees over pasture) should be retained and protected to provide a buffer to the high-quality vegetation and threatened fauna habitat and in particular, any blue gum (*E. globulus*) or hollow bearing trees should be protected as they represent critical habitat for swift parrots.

Although facilitating wildlife corridors within the precinct area may not be warranted based on the likelihood of threatened fauna species utilising a corridor, and the added risk to threatened species it may present, the retention of vegetation and fauna habitat has ecological value. Considered rehabilitation and revegetation of green space areas will provide shelter and protection to wildlife, and use of plants that increase the availability of critical resources for threatened fauna will result in positive ecological and conservation outcomes. The existing drainage lines within the proposed precinct area provide opportunities to rehabilitate and revegetate the waterbodies, drainage lines and adjacent land to reintroduce native flora and habitat for fauna. The scale of the green spaces retained should depend on the achievable management expectations as positive ecological outcomes in such a modified landscape will depend on ongoing management. Weed management during restoration and rehabilitation of all green space, should aim to eradicate declared weeds.

Opportunities to enhance and provide refuge and critical resources and reduce potential impacts for/to wildlife within the planning design of the precinct area are provided. These include but are not limited to:

- Lower housing density and larger lot sizes along the northern precinct boundary adjacent to core habitat areas;
- Ensure water sources outside the precinct area are retained;
- Reduction of roadkill by provision of wildlife road-crossing points;
- Retain and improve waterway corridors, road verges, and other greenspace;
- Consider fencing to minimise impact of domestic predators on wildlife; and
- Consider internal road layout and design with respect to decreasing likelihood of wildlife entering roadways.

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# 1. PROJECT DETAILS

## 1.1. STUDY AREA

In order to maintain a sustainable housing supply for population growth and housing requirements into the future, Brighton Council has commissioned a Holmes Dyer Pty Ltd (herein referred to as Holmes Dyer) to prepare a precinct structure plan, infrastructure funding framework, and planning scheme amendment for an area approximately 103 ha in size between Boyer Road and Cobbs Hill Road, 1 km west of Bridgewater (Figure 1). The precinct structure plan will contribute to the *Bridgewater Bridge Waterfront Masterplan* which integrates considerations of heritage, culture, ecology and economy, and aims to create a mixed-use development area, new open spaces, and enhance water access. North Barker Ecosystem Services (NBES) has been commissioned by Holmes Dyer to undertake an assessment of the flora, fauna and environment aspects of this project.

The study area, as defined by Brighton Council, is made up of six titles with three fronting onto Boyer Road and three onto Cobbs Hill Road (Figure 1).

Current land use within the study area is agricultural with the exception of one title (31 Cobbs Road, . CT 152364/2) which is best described as natural and cultural values management, as it lacks residential use and protected through the mechanism of a conservation covenant (Figure 2). The remaining titles contain single dwellings and are presently used for livestock grazing.

The study area is currently zoned 'Future Urban' (58 ha or ~60 % study area) and 'Landscape Conservation' (being the balance - the 45 ha northern portion of the study area fronting Cobbs Hill Road) (Figure 2). Three of the subject titles (with frontages to Cobbs Hill Road) have split zoning between 'Future Urban' and 'Landscape Conservation'.

Much of the 'Landscape Conservation' zone of these titles is also under a 'Priority Vegetation' overlay under the Natural Assets code (Figure 2). There are several small dams and natural drainage lines within the study area which are subject to the 'Waterways and Coastal Protection Area' overlay under the Natural Assets code (Figure 2).

The land zoned 'Future Urban' has always been intended for residential development once the time arrived that it was needed to help accommodate Hobart's growth. With the current crisis in housing supply and costs, it has been determined that the time is right to commence investigation of this land for its suitability for urban development. The Precinct Structure Plan (PSP) is primarily focussed on the planning of the Future Urban zoned part of the study area and a proposed precinct plan has been provided for consideration during assessments (with 2 options provided to NBES by Holmes Dyer, October 2024 – Appendix A). However, NBES has been engaged as part of the planning process to provide information on any constraints and recommendations associated with existing natural values for the entirety of the study area. Particular consideration of constraints and recommendations with regard to the following has been requested:

- Natural values; vegetation and fauna habitat;
- Wildlife corridors; and
- Vegetation and fauna habitat protection zones.

## 1.2. METHODS

A site visit was undertaken by two ecologists on October 21<sup>st</sup> 2024. The purpose of this visit to field verify vegetation mapping, assess potential presence of threatened flora and fauna habitat, and assess likelihood of limitations to the design of the PSP.

The study area was surveyed using a meandering area search technique<sup>1</sup>. Vegetation was mapped in accordance with units defined in TASVEG 4.0<sup>2</sup>. Suitability of habitats for threatened flora and fauna species was noted, and evidence of threatened flora, threatened fauna (e.g., scats and tracks), and presence of potential threatened fauna habitat elements was opportunistically recorded during the field visit. Presence of 'declared' weeds listed under the Tasmanian *Biosecurity Act 2019* was noted.

Any location data were recorded with a handheld GPS and/or GPS mobile app ( $\pm 5$  m accuracy). Botanical nomenclature follows the current census of Tasmanian plants<sup>3</sup>.

The Natural Values Atlas (NVA) database was consulted for records of threatened species and vegetation types within a 5 km radius. The possibility of the study area supporting threatened natural values known from within this radius has been considered in the interpretation of results and discussion.

### 1.3. LIMITATIONS

The field survey was undertaken in late spring. Values that are seasonal or require specific germination triggers may have been absent or undetectable. Fauna habitat, including the presence of hollows and nests, was assessed from ground level only.

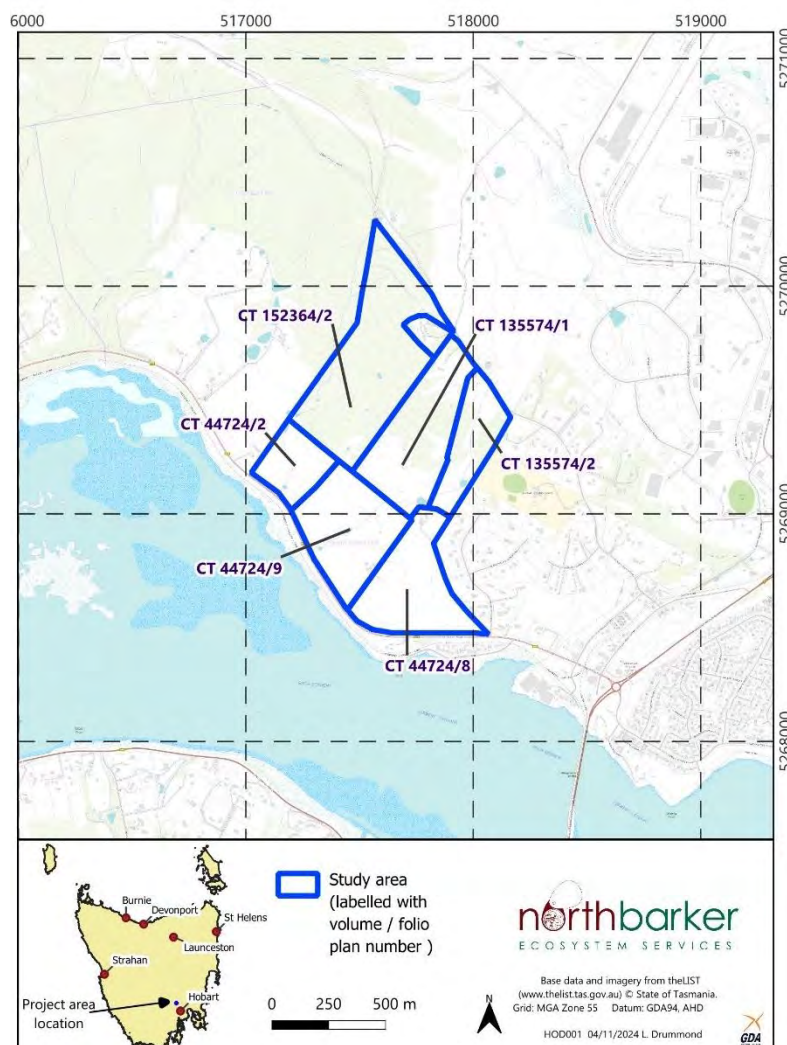


Figure 1: Locality of the Project Area

<sup>1</sup> Goff *et al.* (1982)

<sup>2</sup> Kitchener and Harris (2013)

<sup>3</sup> de Salas & Baker (2024)

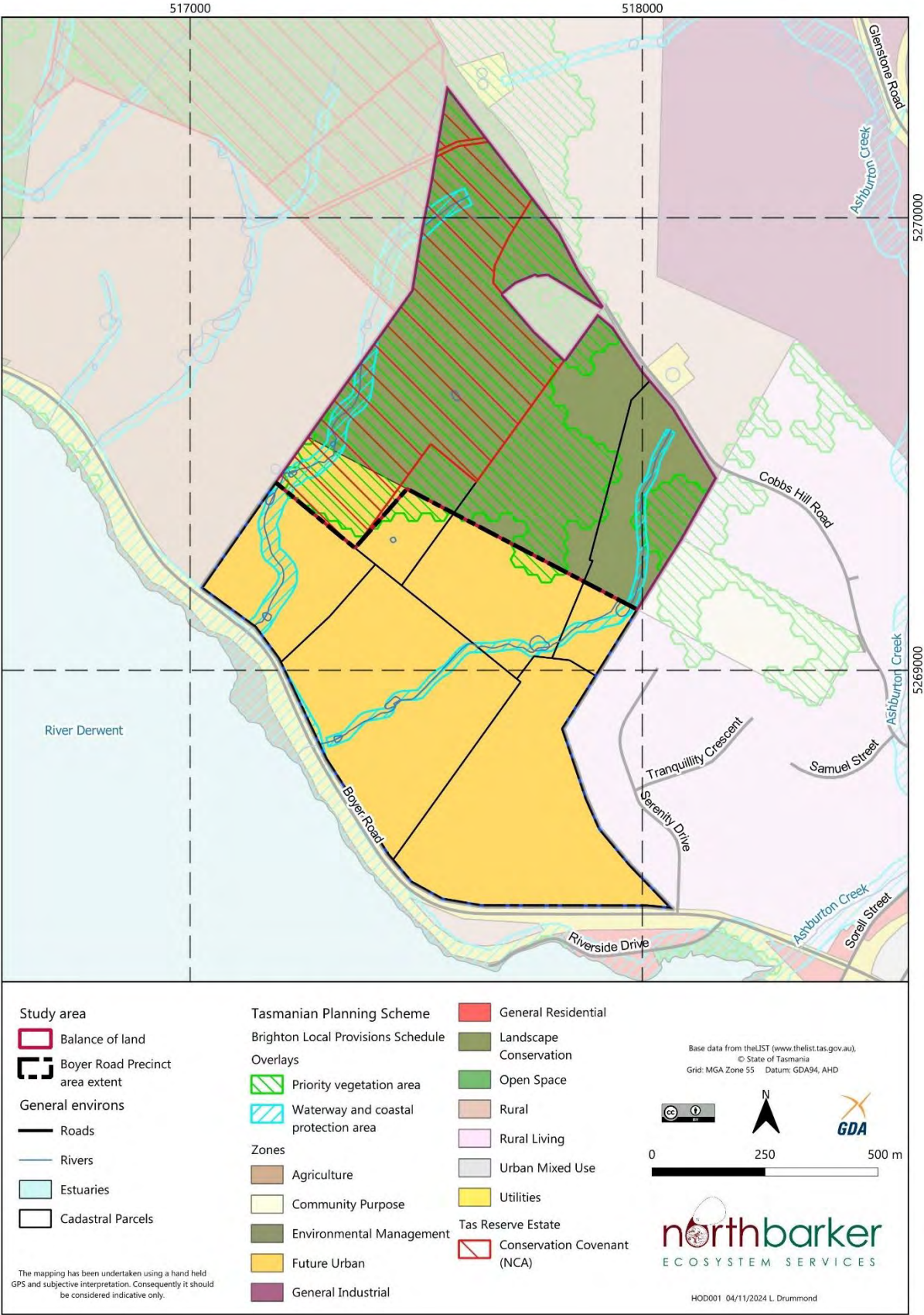


Figure 2: Zoning and code overlays within the Study Area

## 2. NATURAL VALUES

### 2.1. VEGETATION COMMUNITIES

Five native vegetation communities and three non-native or modified land units were identified in the study area (Figure 3). Native vegetation accounts for 40.87 % of the study area, 58.85 % is modified land, and 0.28 % is water. Native vegetation is restricted to the northern extent of the study area where the land is zoned 'Landscape Conservation', and within a conservation covenant. The proposed precinct area (southern extent) is generally agricultural land, while the interface between the native and modified land units has been largely mapped as improved pasture with native tree canopy (FAC).

Three native vegetation communities are NC Act listed threatened vegetation communities: *Eucalyptus amygdalina* forest and woodland on sandstone (DAS), *Eucalyptus globulus* dry forest and woodland (DGL), and *Eucalyptus risdonii* forest and woodland (DRI). No EPBC Act listed communities are present in the study area.

#### 2.1.1. *Eucalyptus amygdalina* forest on mudstone (DAM)

This vegetation is the dominant native vegetation type, covering 27.53 ha (65.04 % of native vegetation, 26.58 % of total study area vegetation). It occurs as two mappable facies: DAM dominated by *E. amygdalina* (Plate 1) and patches of DAM dominated by *E. viminalis* (Plate 2). TASVEG 4.0<sup>4</sup> allows for DAM to include areas where *E. viminalis* is locally dominant and within the study area, 6.04 ha of this vegetation community facies exists. *Eucalyptus globulus* trees also occur scattered through this community and are locally dominant in small patches. These patches are too small to be mapped as a separate facies of DAM, or as DGL community, but nevertheless represent threatened fauna habitat (Section 2.3).

*Eucalyptus amygdalina* trees are typically small throughout the community, however, through the *Eucalyptus viminalis* dominant patches there are scattered trees (*E. viminalis*) that are large enough to have hollows that potentially provide nesting habitat for threatened bird species.

Across its mapped extent, this community has an almost completely open understorey dominated by native grasses. The upper, drier slopes tend to have more bare ground (Plate 1) but also ground cover shrubs such as *Pultenaea pedunculata*, while the lower slopes had a higher grass cover. Community structure and understorey composition did not vary markedly between areas under covenant and the adjacent properties grazed by livestock.

This community is not listed as threatened under the Tasmanian NC Act or the Commonwealth EPBC Act.

This community occurs mostly within the conservation covenant area (16.86 ha, 61.20 %), however 5.18 ha of the *E. viminalis* facies of this community occurs outside the conservation covenant and 0.43 ha of this facies is currently within the precinct area (Figure 3).

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<sup>4</sup> Kitchener and Harris (2013)





**Plate 1: Typical composition of DAM dominated by *E. amygdalina* on upper slopes**



**Plate 2: Typical composition of DAM dominated by *E. viminalis***



### 2.1.2. *Eucalyptus amygdalina* forest and woodland on sandstone (DAS)

This vegetation community occurs as one small patch (0.33 ha) within the conservation covenant area at the western boundary of the study area. It is most likely the eastern extent of a larger patch of DAS that occurs outside the study area. A sharp transition from the adjacent DAM vegetation is evident at a creek line by the presence of *Pteridium esculentum* (Plate 3) and likely due to a change in geology.

This community is listed as threatened under Schedule 3A of the Tasmanian NC Act.



Plate 3: Typical composition of DAS, interface with DAM on right hand side of image

### 2.1.3. *Eucalyptus globulus* dry forest and woodland (DGL)

This vegetation community has been previously mapped within the conservation covenant area. The southern patch has been extended but the patch previously mapped upslope within the DRI/DAM complex, has been remapped as DAM. While *E. globulus* trees in this area were locally dominant in a small patch (0.07 ha), this does not constitute a patch of DGL. The re-mapped DGL (Figure 3) represents 3.27 % (3.39 ha) of total vegetation and 8.01 % of the total native vegetation.

The vegetation in this community is relatively open, with a canopy of *E. globulus*, and occasional *E. amygdalina* and *E. viminalis*. The understorey is open with almost no shrubby layer by rather dominated by grasses (Plate 4).

This community is listed as threatened under Schedule 3A of the Tasmanian NC Act; however, it is not listed as threatened under the Commonwealth EPBC Act.

This community occurs almost entirely within the conservation covenant area (2.36 ha, 69.66 % within the conservation covenant), however the 0.95 ha previously mapped as GCL has been re-mapped as DGL. This area is currently outside of the conservation covenant. The floristic composition of this area matches that of DGL despite the canopy cover being lower, and there is evidence of *E. globulus* seedling recruitment (Plate 5). This area (0.95 ha) is not only outside the conservation covenant but is currently within the proposed precinct area (Figure 3). A further 0.07 ha of DGL is outside the conservation covenant but also outside the proposed precinct area.





**Plate 4: Southern edge of DGL within the conservation covenant area**



**Plate 5 :DGL previously mapped as GCL, young *E. globulus* evident**



#### 2.1.4. *Eucalyptus risdonii* forest and woodland (DRI)

This vegetation community has been previously mapped in the northwestern corner of the study area within the conservation covenant. This was confirmed during the field surveys, although the extent of the community has been refined and extended to accurately reflect the on-ground observations. The DRI community covers 6.65 ha, which equates to 6.42 % of the study area and 15.71 % of the total native vegetation in the study area.

This community occurs on the higher, drier slopes of the study area. The canopy of this community is a dense cover of *Eucalyptus risdonii* only, and the understorey is extremely sparse with no shrub layer and only occasional ground species. The ground under this community is predominantly bare or covered by leaf litter (Plate 6).

This community is listed as threatened under Schedule 3A of the Tasmanian NC Act; however, it is not listed as threatened under the Commonwealth EPBC Act. It occurs entirely within the conservation covenant and likely extends beyond the study area boundary to the west (Figure 3).



Plate 6: Typical composition of DRI



### 2.1.5. Bursaria–Acacia woodland and scrub (NBA)

This community has been mapped in the northeastern corner of the study area and covers 4.43 ha (4.28 % of the total native vegetation cover, 10.47 % of total study area).

The community is dominated by *Acacia dealbata*, *A. mearnsii*, and *Dodonaea viscosa* species in the shrub and tree layer, with a mixture of heavily grazed native and exotic grasses and herbs in the understorey (Plate 7).

The NBA mapped within the study area is a transitional community and is the product of past clearance and disturbance. Patches of this community were previously mapped regenerating cleared land (patch on the west facing slope) and agricultural land (east facing slope). These patches are likely to have been DVG (*Eucalyptus viminalis* grassy forest and woodland) prior to disturbance and would likely return to this community if allowed to regenerate, as evidenced by recruitment of *E. viminalis* seedlings (Plate 8).

This community is not listed as threatened under the Tasmanian NC Act or the Commonwealth EPBC Act.

This community occurs entirely outside the proposed precinct area and conservation covenant and represents a buffer and link to adjacent native vegetation communities.



**Plate 7: NBA on west facing slope in the northeast corner of the Project Area**



**Plate 8: NBA transitional community between agricultural land unmodified vegetation communities, *E. viminalis* recruitment in foreground**

#### 2.1.6. Grassland communities

The lowland grassland complex (GCL) grassland community has been previously mapped within the study area. This community can form part of an EPBC Act listed critically endangered ecological community "Lowland Native Grasslands of Tasmania" (LNGT) if condition criteria are met<sup>5</sup>. However, no native grassland communities were mapped within the study area. Previously mapped patches were reassigned as non-native pasture (FAG), or other native communities where it was determined that the key floristic elements of those communities were present.

The NBA community can also form part of the LNGT ecological community if condition criteria are met<sup>6</sup>. However, the NBA within the study area does not contain sufficient cover of the key grass species *Themeda triandra* or *Poa labillardierei* and does not meet condition criteria. Therefore, this threatened grassland community is not considered to occur in the study area.

#### 2.1.7. Modified land (FUR, FAG & FAC)

Approximately 60.94 ha (58.85 %) of the study area is modified land and has been mapped as urban areas (FUR), agricultural land (FAG) and improved pasture with native tree canopy (FAC) (Figure 3). These mapping units are described below.

##### **Urban areas (FUR)**

Each property within the study area has a single dwelling on development on it, with the exception of 31 Cobbs Hill Road.(CT 152364/2) which has had the dwelling excised from the study area. As such only 3.51 ha is mapped as FUR. These areas are currently occupied by private residences and contain a mixture of built infrastructure, such as sheds and houses, and planted gardens/lawns.

##### **Agricultural Land (FAG)**

The southern half of the study area is largely agricultural land and consists of cleared paddocks. The area is heavily modified with vegetation intensively grazed (Plate 9) or left unmanaged after historical

<sup>5</sup> Department of the Environment, Water, Heritage and the Arts (2010)

<sup>6</sup> Department of the Environment, Water, Heritage and the Arts (2010)



agriculture use (Plate 10). Small areas of FAG exist in the 'Landscape Conservation' zone where the land is used for stock grazing.

The composition of the vegetation is dominated by introduced pasture grasses, such as *Avena* sp., *Hordeum* sp., *Dactylis glomerata* and *Cynosurus* spp., and agricultural weeds such as capeweed and large patches of sweet briar. Scattered blackberry and gorse are present as well as large thickets of African boxthorn particularly within drainage lines.



**Plate 9: Typical composition of the FAG used for livestock grazing**



**Plate 10: Ungrazed FAG area north of Boyer Road with infestation of woody weeds**



### **Improved pasture with native tree canopy (FAC)**

The interface between the native and modified land units has been largely mapped FAC. This modified land unit is comprised of a native tree canopy, mostly *E. amygdalina*, over open pasture grass, and is missing the structure and floristic composition of the native community. It is distinguished from the native communities within the study area that have been grazed by the lack of native floristic elements (Plate 11).

While FAC is a modified community, it still holds ecological value as a buffer to the native communities from agricultural land. In addition, retained trees may provide habitat for threatened fauna.



**Plate 11: Typical FAC native trees over pasture at the interface between native forest and pasture**



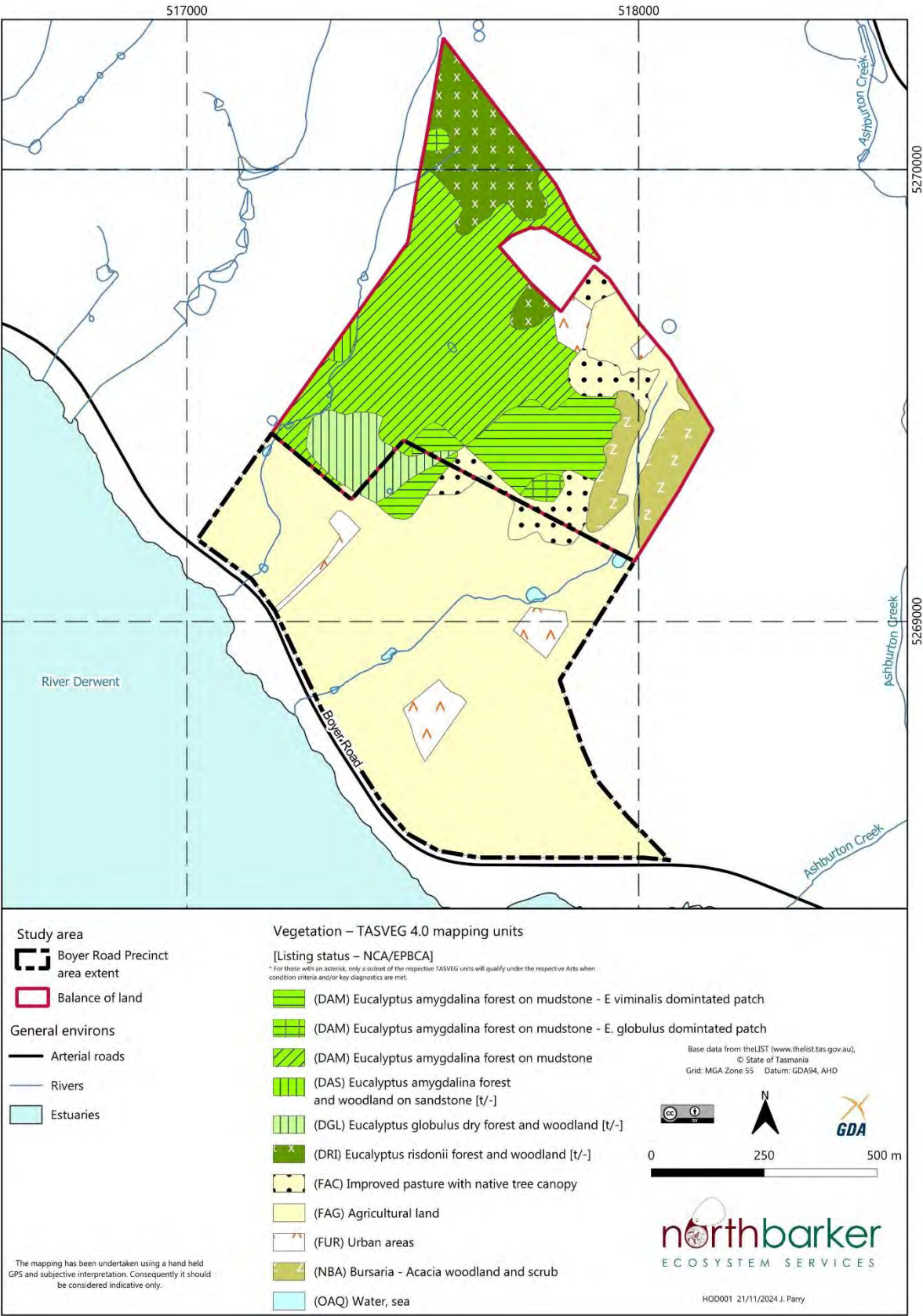


Figure 3: Vegetation mapped by NBES and classified using TASVEG 4.0 units within the Project Area

## 2.2. CONSERVATION SIGNIFICANT FLORA

The Natural Values Atlas database<sup>7</sup> shows records of four threatened flora species within 500 m of the study area (Table 1). *Eucalyptus risdonii* is listed as rare under the TSP Act and was observed in abundance within the forested part of the study area outside the proposed precinct area. This species is the dominant tree species of the threatened DRI vegetation community and was also noted as scattered individuals within other forest communities surrounding the mapped DRI.

*Asperula scoparia* subsp. *scoparia* is a TSP Act rare listed species that has also been recorded within the study area within the NBA vegetation community. It is a widespread species in a diverse range of habitats from grassy woodland to tall eucalypt forest but only occasionally found. It was recorded in 2000 and may still to occur within the study area, although wasn't observed during the site visit.

The other two species recorded within 500 m (*Stuckenia pectinata* and *Thesium australe*) are unlikely to occur in the study area.

**Table 1: Verified threatened flora records from within 500 m of the Project Area. Sourced from the Natural Values Atlas (Department of Natural Resources and Environment, 2023)**

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
<i>Asperula scoparia</i> subsp. <i>scoparia</i>	prickly woodruff	r		n	1	30-Nov-2000
<i>Eucalyptus risdonii</i>	risdon peppermint	r		e	53	12-Dec-2012
<i>Stuckenia pectinata</i>	fennel pondweed	r		n	1	06-Feb-1869
<i>Thesium australe</i>	southern toadflax	x	VU	n	1	01-Jan-1804

Forty-nine threatened flora species listed under the TSP Act (with nine also listed under the EPBC Act) have previously been recorded within 5 km of the study area<sup>8</sup> (Attachment A, Natural Values Atlas search report). The lower grassy slopes of the DAM and DGL vegetation provide excellent habitat for orchids and though no threatened orchid species have been recorded within the study area, a number of common species were noted during the reconnaissance visit. The NBA vegetation may also support the grassland and grassy woodland threatened species, however at the time of field visit, these areas were so heavily grazed no assessment on the likelihood of presence could be made.

Threatened flora species known from within 5 km of the study area have been considered, however due to the highly modified nature of the FAG and FUR vegetation units, it is highly unlikely that any of these species occur within the proposed precinct area.

## 2.3. CONSERVATION SIGNIFICANT FAUNA

The Natural Values Atlas database<sup>9</sup> shows records of six threatened fauna species within 500 m of the study area. A further 26 threatened fauna species are known from within 5 km of the study area (Attachment A). Of the species recorded within 500 m, there is no habitat in the study area for the Australasian bittern or shy albatross. The grey goshawk, wedge-tailed eagle, white-bellied sea-eagle, and masked owl (recorded within 5 km) are likely to be transient visitors, and may use the forest areas to perch, but there is no suitable nesting habitat for these species within the study area.

The Tasmanian devil, spotted-tailed quoll, eastern quoll, eastern barred bandicoot, blue-winged parrot, and swift parrot considered to have suitable habitat available in the study area and are discussed below.

<sup>7</sup> Department of Natural Resources & Environment (2024)

<sup>8</sup> Department of Natural Resources & Environment (2024)

<sup>9</sup> Department of Natural Resources & Environment (2024)

**Table 2: Verified threatened fauna records from within 500 m of the Project Area. Sourced from the Natural Values Atlas (Department of Natural Resources and Environment, 2023)**

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
<i>Accipiter novaehollandiae</i>	grey goshawk	e		n	1	01-May-1911
<i>Aquila audax</i>	wedge-tailed eagle	pe	PEN	n	2	14-Oct-2022
<i>Botaurus poiciloptilus</i>	australasian bittern		EN	n	1	11-Jun-1981
<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle	v		n	7	16-Jan-2023
<i>Sarcophilus harrisii</i>	tasmanian devil	e	EN	e	4	12-Mar-2024
<i>Thalassarche cauta</i>	shy albatross	v	EN	ae	1	23-Nov-1884

### 2.3.1. Tasmanian devil, eastern quoll & spotted-tail quoll

Tasmanian devils (*Sarcophilus harrisii*) have been recorded within 500 m of the study area and eastern quoll (*Dasyurus viverrinus*) and spotted-tail quolls (*Dasyurus maculatus* subsp. *maculatus*) within 5 km. The forest vegetation types within the study area are dry and open and are not highly suitable denning habitat. Irrespective of denning opportunity these species may use the study area, particularly the forest areas, as foraging habitat as the study area is contiguous with extensive areas of native vegetation outside of the site boundaries. The modified land within the proposed precinct area may be visited by foraging animals but is not considered to be core or optimal habitat.

### 2.3.2. Eastern barred bandicoot

Foraging habitat exists for the eastern barred bandicoot (*Perameles gunnii*) within the paddock areas and grassy understorey of the native vegetation with the study area<sup>10</sup>. The open nature of the native vegetation communities and grazed areas do not provide sufficient vegetation cover of tussocks and sedges to provide suitable nesting habitat for this species<sup>11</sup>. However, the ungrazed agricultural land (Plate 10) within the proposed precinct area, may provide nesting habitat for this species if it is present in the area.

### 2.3.3. Swift parrot

Potential nesting habitat for the swift parrot (*Lathamus discolor*) occurs within the *E. amygdalina*, *E. globulus*, and *E. viminalis* dominated vegetation types, including the FAC vegetation where trees have been retained. While not numerous, there are scattered trees that either contain hollows, or have potential to contain hollows (Plate 11) within the study area, particularly *E. globulus* and *E. viminalis* individual trees. *Eucalyptus globulus* trees also represent foraging habitat for swift parrot and are present scattered through the DAM vegetation as well as the DGL.

This habitat is largely outside the proposed precinct area, however some DGL and potential nesting habitat trees fall within the proposed precinct area (Figure 4). Efforts should be made to retain hollow-bearing trees that may provide nesting habitat in the PSP design.

### 2.3.4. Blue-winged parrot

This species was listed as a vulnerable species under the EPBC Act in March 2023<sup>12</sup>. Suitable foraging habitat for this species is present, as it is known to forage in paddocks to feed on seeds of native and introduced grasses, herbs, and shrubs<sup>12</sup>. Suitable nesting habitat for this species is equivalent to that of the swift parrot and exists within study area. Efforts should be made to retain hollow-bearing trees that may provide nesting habitat in the PSP design.

<sup>10</sup>Department of the Environment, Water, Heritage and the Arts (2008)

<sup>11</sup> Department of the Environment, Water, Heritage and the Arts (2008)

<sup>12</sup> Department of Climate Change, Energy, the Environment and Water (2023)



**Plate 12: Hollow bearing tree within the FAC vegetation. This tree is within the proposed precinct area**

## 2.4. INTRODUCED PLANTS AND PATHOGENS

Four species listed as declared under the Tasmanian *Biosecurity Regulations 2022* (which is in effect under the Tasmanian *Biosecurity Act 2019*) were detected during the site visit. All declared weed species were noted within the agriculture vegetation.

- African boxthorn (*Lycium ferocissimum*). Abundant and forms thick patches in the agricultural paddocks, along fence lines and in drainage lines;
- Blackberry (*Rubus fruticosus* aggregate). Scattered patches;
- Gorse (*Ulex europaeus*). Scattered occasional bushes; and
- White weed (*Lepidium draba*). Large patches along road edges, drive edges, and in ungrazed paddocks.

These species are classified as Class B weeds in the Brighton Council area. According to the provisions of the Tasmanian *Biosecurity Regulations 2022*, administered under the Tasmanian *Biosecurity Act 2019*, Class B municipalities are those which host moderate or large infestations of the declared weed that are not deemed eradicable because the feasibility of effective management is low at this time. Therefore, the objective is containment of infestations. This includes preventing spread of the declared weed from the municipality or into properties currently free of the weed, or for which a locally integrated weed management plan for that species has been developed or is being implemented. There is also a requirement to prevent spread of the weeds to properties containing sites for significant flora, fauna, and vegetation communities.

Numerous additional declared weeds are known from the broader area, most notably, espartillo (*Amelichloa caudata*) which is highly invasive. Other weeds known from the area include boneseed (*Chrysanthemoides monilifera* subsp. *monilifera*), bridal creeper (*Asparagus asparagoides*), and fennel (*Foeniculum vulgare*).

In addition to the declared weeds above, the environmental weed sweet briar (*Rosa rubiginosa*) was locally abundant within ungrazed paddocks.



Any future planning permits should ensure best-practice guidelines for weed and hygiene management are undertaken to manage existing weed infestations and to prevent the establishment of any new infestations in the project area. At minimum, the PSP must include provisions for weed and hygiene management through the implementation of a weed and hygiene management plan throughout any staged developments, with particular focus on the management and prevention of introducing espartillo within the study area.

The weed and hygiene management plan must include provisions from the following best-practice guidelines:

- *Keeping it clean - A Tasmanian field hygiene manual to prevent the spread of freshwater pests and pathogens* (Allen and Gartenstein, 2010); and
- *Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania* (DPIPWE, Stewart and Askey-Doran, 2015).

### 3. CONSTRAINTS SUMMARY AND OPPORTUNITIES

This section provides recommendations regarding potential impacts and opportunities that the PSP may present. A summary of constraints to natural values is provided in Table 3.

#### 3.1. VEGETATION AND FAUNA HABITAT PROTECTION ZONES

The vegetation of the study area has been verified and adjusted to reflect the current distribution. The majority of native vegetation is within the balance to the study area, outside the precinct area. The native vegetation also represents habitat for native fauna including mammal and avian threatened fauna. However, adjusted vegetation falls in the proposed precinct area, namely DGL vegetation which is listed as threatened under the NC Act (Figure 4).

While 25 ha of native vegetation is protected by a conservation covenant, the adjacent land, including the threatened DGL community, represents good quality habitat for a range of threatened fauna species including Tasmanian devils, quolls, blue-winged and swift parrots and potentially eastern barred bandicoots. On a landscape scale, this vegetation not only supports potential nesting/denning and foraging habitat but also provides connectivity between habitat areas and a refuge buffer around cleared land. Therefore, it is recommended that the balance of the native vegetation outside the conservation covenant (Figure 4) is appended to the covenant in order to afford this vegetation and threatened fauna habitat the same protection. It is recommended that the modified area in the northeast of the study area (NBA and FAG) is also protected as rehabilitation of this area will provide a mosaic of vegetation types for fauna and extend the connectivity of native vegetation.

The Boyer Road Concept Plan option 2 (Appendix A) layout will assist in reducing impacts to threatened vegetation and threatened fauna habitat.

Retaining intact and connected existing habitat has significant conservation value, therefore retaining, and in some areas improving, the vegetated areas outside the precinct area will maintain ecological value and facilitate wildlife movement to the rural living zoned area to the east and forested areas to the west of the study area.

Furthermore, it is recommended that the areas FAC (native trees over pasture) are retained and protected to provide a buffer to the high-quality vegetation and threatened fauna habitat to the north. In particular, any blue gum (*E. globulus*) or hollow bearing trees should be protected as they represent critical habitat for swift parrots.

### **3.2. WILDLIFE CORRIDORS**

Wildlife corridors are connections across the landscape that link up areas of habitat. They support natural processes that occur in a healthy environment, including the movement of species to find resources, such as food and water<sup>13</sup>.

The proposed PSP is situated within largely modified agricultural land between native forest vegetation to the north and the Derwent estuary to the south. While native wildlife may venture into this area to feed or use water sources, or occasionally pass through to the estuary, the forest vegetation represents primary core habitat and restricted movement opportunity into or through the PSP does not represent a key threat to fauna. Indeed, encouraging wildlife into the proposed precinct area once developed as a residential area may increase potential impacts to fauna species by, for example, increasing interaction of fauna with domestic predators, suburban roads and traffic, and poisons. Providing movement corridors from the forested areas through the Precinct Area towards the Derwent Estuary will also increase the wildlife around the Boyer Road, which will also undergo a significant increase in traffic volumes due to the construction of the proposed PSP. Therefore, providing corridors for wildlife movement through the precinct area is not warranted and will provide little ecological or conservation value.

### **3.3. RESTORATION, REHABILITATION AND WEED MANAGEMENT**

Although facilitating wildlife corridors within the precinct area may not be warranted based on the likelihood of threatened fauna species utilising a corridor, and the added risk to threatened species it may present, the retention of vegetation and fauna habitat has ecological value, particularly within natural the drainage lines. While the drainage lines within the proposed precinct area are currently dominated by introduced agricultural species and herbaceous and woody weeds, there are opportunities to rehabilitate and revegetate the waterbodies and drainage lines to reintroduce native flora and create habitat for aquatic and semi aquatic fauna including aquatic birds. The scale of the green spaces retained should depend on the achievable management expectations as positive ecological outcomes in such a modified landscape will depend on ongoing management. However, it is recommended that the waterway protection area be taken as a minimum, that is 10 m either side of the stream bank.

Weed management should be a focus of restoration and rehabilitation of all green space, with the aim to eradicate declared weeds within the proposed precinct area to prevent the spread, particularly to the largely weed-free balance of the study area. Buffer areas between the precinct area and native forest areas will help reduce the spread of weeds and exotic garden plants into these areas.

The PSP must also include provisions for weed and hygiene management through the implementation of a weed and hygiene management plan throughout any staged developments, with particular focus on the management and prevention of introducing espartillo within the study area.

Considered rehabilitation and revegetation of green space areas will provide shelter and protection to wildlife. Furthermore, use of plants that increase the availability of critical resources for threatened fauna will result in positive ecological and conservation outcomes. For example, blue gum trees will provide additional food sources for swift parrots.

### **3.4. IMPACTS TO WILDLIFE**

Opportunities are available to enhance and provide refuge and critical resources and reduce potential impacts for / to wildlife within the planning design of the precinct area. These include but are not limited to:

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<sup>13</sup> Department of Climate Change, Energy, the Environment and Water (2024)

- Lower housing density and larger lot sizes along the northern precinct boundary adjacent to core habitat areas. This will provide opportunities for animals such as bandicoots to utilise these areas.
- Ensure water sources outside the precinct area are retained. Maintaining or increasing available water, especially during the drier months provide a valuable resource to wildlife and may decrease the number of animals moving into urban areas.
- Reduction of roadkill by provision of wildlife road-crossing points. In particular, wildlife underpasses should be considered under Boyer Road to facilitate movement of water birds, amphibians and reptiles between water bodies that may be retained within the precinct area, and the Derwent estuary.
- Retain and improve waterway corridors, road verges, and other greenspace with diverse native vegetation as above to provide cover, refuge and protection to animals in order to reduce potential impacts from traffic strike and domestic predators.
- Consider fencing to minimise impact of domestic predators (namely cats and dogs) on wildlife.
- Consider internal road layout and design with respect to decreasing likelihood of wildlife entering roadways.

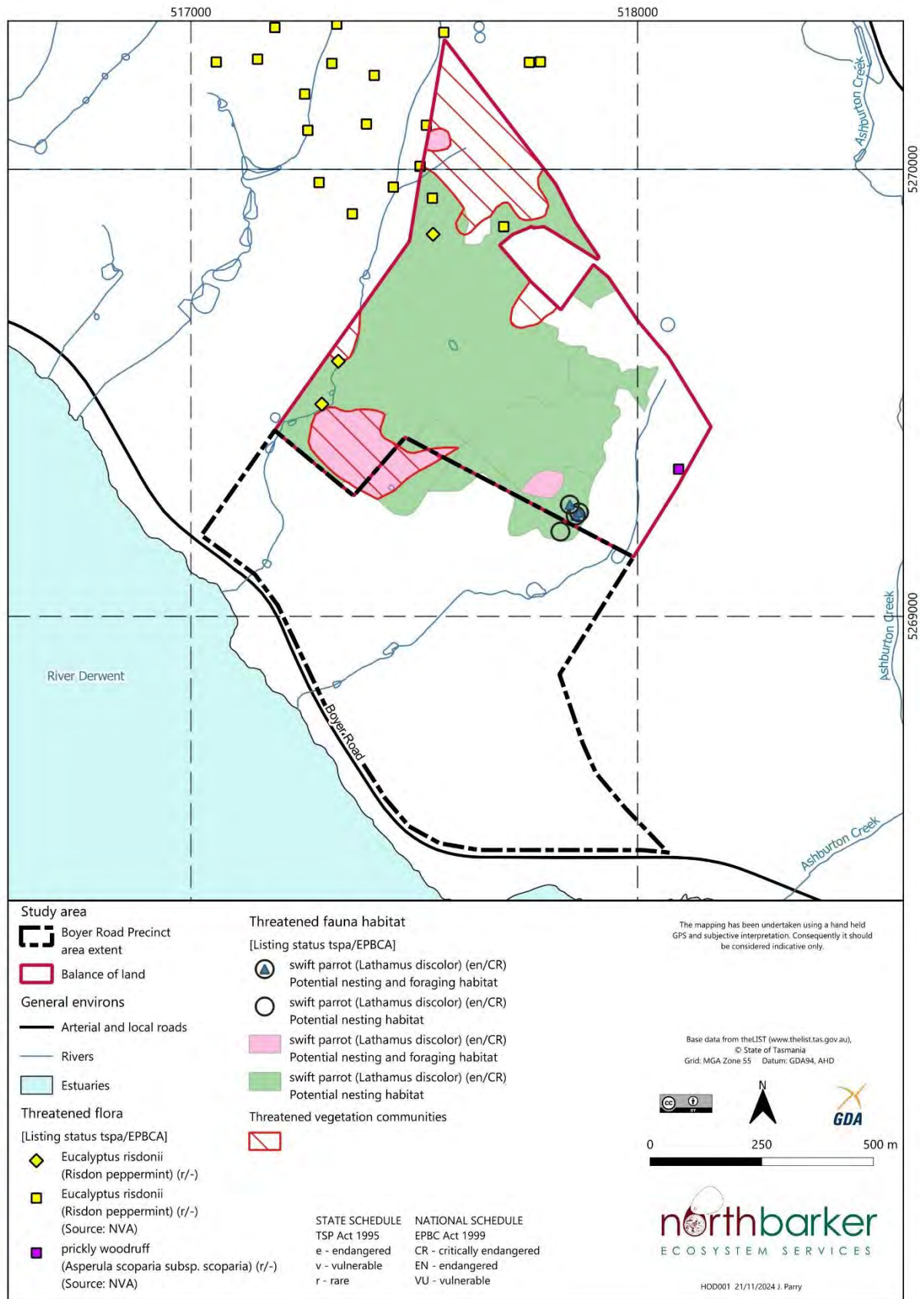
### **3.5. REZONING**

Brighton Council intends to apply to have the 'Future Urban' zone rezoned to 'General Residential' under the Tasmanina Planning Scheme and in doing so implement the PSP into the Brighton Local Provisions Schedule. It is recommended that as part of the rezoning application, the area currently under conservation covenant is rezoned as 'Landscape Conservation' or 'Environmental Management'. In addition, any natural values constraint areas currently zoned 'Future Urban' (Figure 4) that will not be included in the Boyer precinct area should also be rezoned as 'Landscape Conservation' or 'Environmental Management' to provide for adequate protection of the natural values that are present.

The rezoning of the balance of the 'Future Urban' zone to any of the residential zone classes will not have any impact on natural values provided the following are undertaken:

- Recommendations for avoidance of vegetation and threatened fauna habitat adhered to;
- Provisions for weed and hygiene management through the implementation of a weed and hygiene management plan included within the PSP, with particular focus on the management and prevention of introducing *espartillo* within the study area; and
- Maintain legislative overlays including the natural assets code overlays and conservation covenants.





**Figure 4: Natural values constraints to the Project: Threatened vegetation, threatened flora, and threatened fauna habitat of the study area**

**Table 3: Summary of potential implications on natural values**

Natural Value	Potential Constraint	Context & Potential Implications to Natural Values <sup>14</sup>
<b>EPBCA threatened ecological communities</b>		
<b>None present</b>	No constraints anticipated	<p>The community NBA can form part of an EPBC Act critically endangered ecological community if certain criteria are satisfied<sup>15</sup>. The patch of NBA present in the study area does not satisfy these criteria<sup>16</sup> because:</p> <ul style="list-style-type: none"> <li>it does not have sufficient cover of the indicator tussock grass species,</li> <li>it has more than 30% solid crown cover of <i>Bursaria spinosa</i></li> </ul>
<b>NCA threatened vegetation communities</b>		
<b>DAS</b> – <i>Eucalyptus amygdalina</i> forest and woodland on sandstone	<p>No constraints anticipated</p> <p>0.33 ha present</p>	<p>This vegetation community occurs as one small patch (0.33 ha) within the conservation covenant area at the western boundary of the study area.</p> <p>There is no likelihood of impacts to this community through the future developments within the PSP.</p>
<b>DGL</b> – <i>Eucalyptus globulus</i> dry forest and woodland	<p>Minimal constraints anticipated</p> <p>3.39 ha present</p>	<p>This vegetation community has been previously mapped within the conservation covenant area. The southern patch has been extended but the patch previously mapped upslope within the DRI/DAM complex, has been remapped as DAM.</p> <p>This community occurs almost entirely within the conservation covenant (2.36 ha, 69.66 % within the conservation covenant). A small area is located with the precinct area, however if the concept plan option 2 (Appendix A) was selected, impacts to this vegetation community would be negligible.</p>

<sup>14</sup> Includes statements from Department of Natural Resources and Environment's Threatened Species Link summaries and note sheets.

<sup>15</sup> NBA can form part of the EPBCA-listed community "Lowland Grasslands of Tasmania" if specific criteria are met; Department of the Environment, Water, Heritage and the Arts (2010)

<sup>16</sup> Department of the Environment, Water, Heritage and the Arts (2010)

Natural Value	Potential Constraint	Context & Potential Implications to Natural Values <sup>14</sup>
<b>DRI</b> – <i>Eucalyptus risdonii</i> forest and woodland	No constraints anticipated 6.65 ha present	This community occurs on the higher, drier slopes of the study area. It occurs entirely within the conservation covenant and likely extends beyond the study area boundary to the west.  There is no likelihood of impacts to this community through the future developments within the PSP.
<b>Native vegetation communities (TASVEG 4.0 units)</b>		
<b>DAM</b> – <i>Eucalyptus amygdalina</i> forest and woodland on mudstone	No constraints anticipated 27.54 ha present	This vegetation is the dominant native vegetation type across the study area. It occurs as two mappable facies: DAM dominated by <i>E. amygdalina</i> (Plate 1) and patches of DAM dominated by <i>E. viminalis</i> . <i>Eucalyptus globulus</i> trees also occur scattered through this community and are locally dominant in small patches. These patches are too small to be mapped as a separate facies of DAM, or as DGL community, but nevertheless represent threatened fauna habitat.  A small area is located with the precinct area, however if the concept plan option 2 (Appendix A) was selected, impacts to this vegetation community would be negligible.
<b>NBA</b> – <i>Bursaria-Acacia</i> woodland and scrub	No constraints anticipated 4.43 ha present	This community occurs northeastern corner of the study area and is outside of the proposed precinct area and is not at risk of impacts.  This community does not qualify as LNGT under the EPBC Act, as detailed above.  This community represents a buffer and link to adjacent native vegetation communities and should be retained to maintain this connectivity across the landscape.
<b>Modified vegetation communities (TASVEG 4.0 units)</b>		
<b>FAC</b> – Improved pasture over native tree canopy <b>FAG</b> – Agricultural land <b>FUR</b> – Urban areas	No constraints anticipated 60.92 ha present	These modified land areas cover most of the study area (Figure 3) and have a very low number of natural values present. As such, future development will not lead to direct impacts on observed natural values.

Natural Value	Potential Constraint	Context & Potential Implications to Natural Values <sup>14</sup>
		It is recommended that areas of FAC are retained to provide an ecotonal buffer between existing agricultural and native forest vegetation.
<b>EPBCA and/or TSPA listed threatened flora</b>		
<b><i>Eucalyptus risdonii</i></b> Risdon peppermint EPBCA: not listed TSPA: rare	No constraints anticipated	This species occurs within DRI forest vegetation and occurrences of this species within the study area are contained entirely within the conservation covenant. There is no likelihood of impacts to this species through the future developments within the PSP.
<b>Threatened fauna and threatened fauna habitat</b>		
<b><i>Perameles gunnii</i></b> Eastern barred bandicoot EPBCA: VULNERABLE TSPA: not listed	No constraints anticipated Minimal impact to foraging and nesting habitat	<p>This species is widespread in Tasmania and resilient to disturbance<sup>17</sup>. Suitable habitat for this species was observed within the study area. Further investigations would be needed to reliably determine the presence of the species in the study area.</p> <p>It is considered unlikely that any future development options would reduce the carrying capacity of the habitat at all given that this species is known to be successful in peri urban environments and the extent of suitable habitat in the broader area.</p> <p>There is some potential for indirect impacts associated with future occupation of the residential homes and the introduction of cats and dogs. Given the presence of rural residences these threats are likely already present in the study area. As stated above the species is also known to be successful in peri urban environments. Also, the creation of green space along the creek lines may provide protection and cover for this species.</p> <p>Regardless of which PSP option is selected, it is unlikely that any future development would warrant referral under the EPBC Act based on potential impacts to this species.</p>

<sup>17</sup> Department of the Environment, Water, Heritage and the Arts (2008)

Natural Value	Potential Constraint	Context & Potential Implications to Natural Values <sup>14</sup>
<p><b><i>Dasyurus maculatus</i> subsp. <i>maculatus</i></b></p> <p>Spotted-tail quoll</p> <p>EPBCA: VULNERABLE</p> <p>TSPA: Rare</p> <p><b><i>Dasyurus viverrinus</i></b></p> <p>Eastern quoll</p> <p>EPBCA: ENDANGERED</p> <p>TSPA: not listed</p> <p><b>AND</b></p> <p><b><i>Sarcophilus harrisii</i></b></p> <p>Tasmanian devil</p> <p>EPBCA: ENDANGERED</p> <p>TSPA: endangered</p>	<p>Minimal constraints anticipated</p> <p>Minimal impact to denning and foraging habitat</p>	<p>The forest vegetation types within the study area are dry and open and are not highly suitable denning habitat. Irrespective of denning opportunity these species may use the study area, particularly the forest areas, as foraging habitat as the study area is contiguous with extensive areas of native vegetation outside of the site boundaries. The modified land within the proposed precinct area may be visited by foraging animals but is not considered to be core or optimal habitat.</p> <p>Regardless of which PSP option is selected, it is unlikely that any future development would warrant referral under the EPBC Act based on potential impacts to this species.</p>
<p><b><i>Lathamus discolor</i></b></p> <p>Swift parrot</p> <p>EPBCA: CRITICALLY ENDANGERED</p> <p>TSPA: Endangered</p> <p><b>AND</b></p> <p><b><i>Neophema chrysostoma</i></b></p> <p>Blue-winged parrot</p> <p>EPBCA: VULNERABLE</p>	<p>Minimal constraints anticipated</p> <p>Potential impact to nesting and foraging habitat</p>	<p>Suitable foraging habitat for both species is present. The swift parrot forages on blue gums, and the blue-winged parrot is known to forage in paddocks to feed on seeds of native and introduced grasses, herbs and shrubs<sup>18</sup>.</p> <p>Any future developments that could potentially arise from the PSP are unlikely to have the potential to lead to a decline in the species population, as there is abundant alternative foraging habitat in the immediate surrounds for these highly mobile species.</p> <p>Efforts should be made to retain any hollow-bearing trees that may provide nesting habitat for these species.</p>

<sup>18</sup> Department of Climate Change, Energy, the Environment and Water (2023)

Natural Value	Potential Constraint	Context & Potential Implications to Natural Values <sup>14</sup>
TSPA: not listed		Regardless of which PSP option is selected, it is unlikely that any future development would warrant referral under the EPBC Act based on potential impacts to this species.
<b>Introduced flora</b>		
<b>Declared, WoNS and Environmental weed species</b> <i>See Section 2.4 for details of weed species present and/or likely to be present</i>	Spread of weed species and contamination of nearby private land and other areas through the spreading of propagules.	<p>Four Class B declared weeds<sup>19</sup> were observed in the study area.</p> <p>The PSP concept plan options will not change the legislative requirement to manage declared weed species.</p> <p>Any future developments associated with changes to the zoning are likely to increase the risk of spreading weeds locally (or further) through creating new disturbance niches in the project area or spreading propagules through contaminated soil, equipment and/or machinery.</p> <p>Any future planning permits should ensure best-practice guidelines for weed and hygiene management are undertaken to manage existing weed infestations and to prevent the establishment of any new infestations in the project area. At minimum, the PSP must include provisions for weed and hygiene management through the implementation of a weed and hygiene management plan throughout any staged developments, with particular focus on the management and prevention of introducing espartillo within the study area.</p> <p>The weed and hygiene management plan must include provisions from the following best-practice guidelines:</p> <ul style="list-style-type: none"> <li>• <i>Keeping it clean - A Tasmanian field hygiene manual to prevent the spread of freshwater pests and pathogens</i> (Allen and Gartenstein, 2010)</li> <li>• <i>Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania</i> (DPIPWE, Stewart and Askey-Doran, 2015)</li> </ul>

<sup>19</sup> In Brighton Council, according to the relevant Statutory Weed Management Strategies accessed via the Department of Natural Resources and Environment website.

## REFERENCES

- de Salas M. F. & Baker M. J. (2024). A Census of the Vascular Plants of Tasmania, including Macquarie Island. (Tasmanian Herbarium, Tasmanian Museum and Art Gallery, Hobart)  
<https://flora.tmag.tas.gov.au/resources/census/>
- Department of Climate Change, Energy, the Environment and Water (2023). Conservation Advice for *Neophema chrysostoma* (blue-winged parrot). Canberra: Department of Climate Change, Energy, the Environment and Water. Available from:  
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/726-conservation-advice-31032023.pdf>. In effect under the EPBC Act from 31-Mar-2023.
- Department of Climate Change, Energy, the Environment and Water (2024)  
<https://www.dcceew.gov.au/environment/biodiversity/conservation/wildlife-corridors>,  
accessed 29/10/2024
- Department of the Environment, Water, Heritage and the Arts (2008). Approved Conservation Advice for *Perameles gunnii gunnii* (Eastern Barred Bandicoot (Tasmania)). Canberra: Department of the Environment, Water, Heritage and the Arts. Available from:  
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/66651-conservation-advice.pdf>. In effect under the EPBC Act from 26-Mar-2008.
- Department of the Environment, Water, Heritage and the Arts (2010). Lowland Native Grasslands of Tasmania — a nationally threatened ecological community. Environment Protection and Biodiversity Conservation Act 1999 Policy Statement 3.18. Australian Government, Canberra.
- Department of Natural Resources and Environment (2024). Natural Values Report\_1\_29-Oct-2024, Natural Values Atlas, Threatened Species Section, Department of Natural Resources and Environment Tasmania, Hobart, Tasmania.
- Goff, F. G, Dawson, G. A. & Rochow, J. J. (1982). Site examination for threatened and endangered plant species. *Environmental Management*, 6(4), pp. 307-316.
- Kitchener, A. and Harris, S. (2013). *From Forest to Fjaeldmark: Descriptions of Tasmania's Vegetation*. Edition 2. Department of Primary Industries, Parks, Water and Environment, Tasmania.



## APPENDIX A – BOYER ROAD PRECINCT CONCEPT PLAN



Figure A1: Boyer Road Precinct Concept Plan Option 1





Figure A2: Boyer Road Precinct Concept Plan Option 2



## Boyer Road Precinct Structure Plan **NATURAL VALUES CONSTRAINTS**

21<sup>st</sup> November 2024

For Holmes Dyer Pty Ltd  
on behalf of Brighton Council

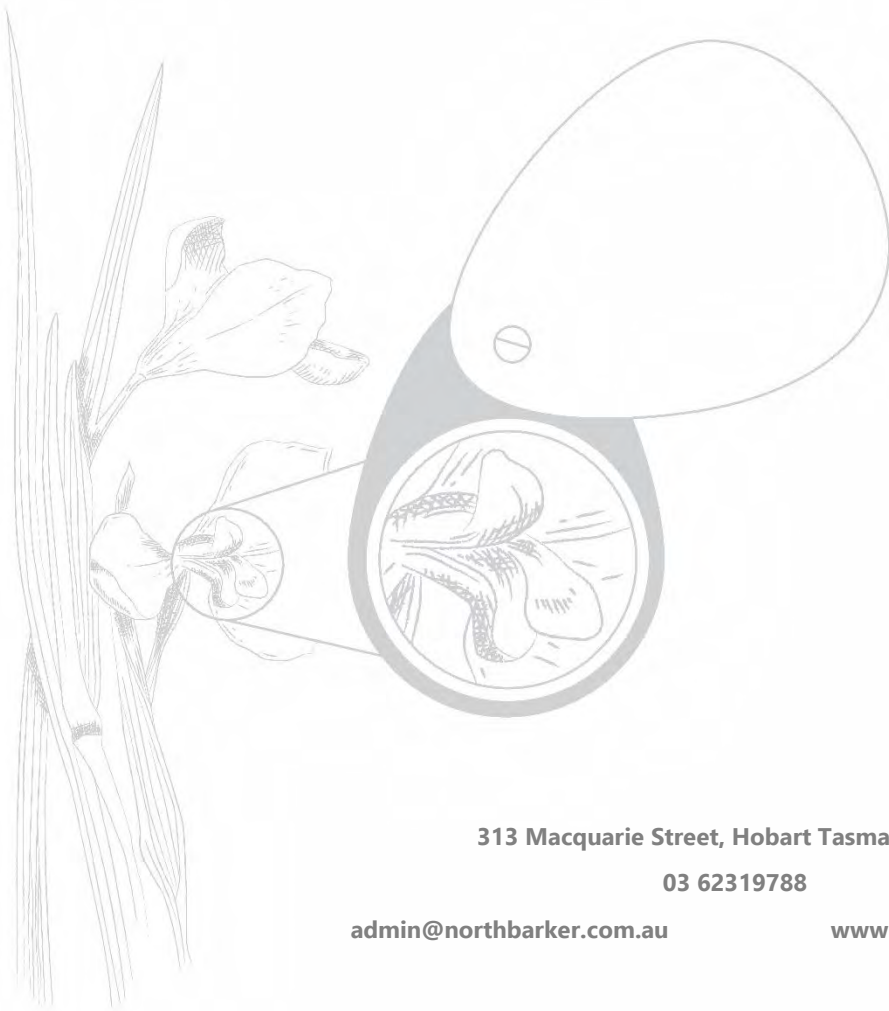
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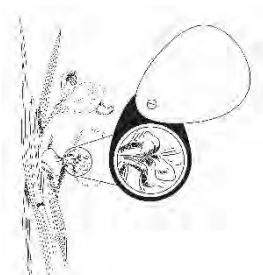
[www.northbarker.com.au](http://www.northbarker.com.au)



## ACKNOWLEDGEMENTS

<b>Project</b>	Boyer Road Precinct Structure Plan
<b>Location</b>	Boyer Road, Bridgewater
<b>Proponent</b>	Holmes Dyer Pty Ltd obo Brighton Council
<b>Client Contact</b>	Stephen Holmes (stephen@holmesdyer.com.au)
<b>NBES Job Code</b>	HOD001
<b>NBES Project Manager</b>	Grant Daniels (BSc Hons, PhD)
<b>NBES Project Summary</b>	Natural Values Constraints
<b>Reporting</b>	Cameron Geeves (BSc Hons) & Aleida Williams (BSc Hons, PhD)
<b>Review</b>	Jared Parry (BBus, MEM)
<b>Field Surveys</b>	Grant Daniels (12/09/2024) Cameron Geeves & Aleida Williams (21/10/2024)
<b>Mapping</b>	Linda Drummond (Bsc, MSc)

Version	Date	Author & Comment	Position
V0.1	1/11/2024	Drafted by Aleida Williams & Cameron Geeves	Senior Ecologist
V1.0	8/11/2024	Reviewed and delivered to client by Jared Parry	Senior Ecologist
V1.1	21/11/2024	Minor edits. Delivered to client by Jared Parry	Senior Ecologist



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## EXECUTIVE SUMMARY

In order to maintain a sustainable housing supply for population growth and housing requirements into the future, Brighton Council has commissioned a Holmes Dyer Pty Ltd (herein referred to as Holmes Dyer) to prepare a precinct structure plan, infrastructure funding framework, and planning scheme amendment for an area approximately 103 ha in size between Boyer Road and Cobbs Hill Road, 1 km west of Bridgewater. Within the study area, the land zoned 'Future Urban' under the Brighton Local Provision Schedule has always been intended for residential development once the time arrived that it was required to help accommodate Hobart's growth.

North Barker Ecosystem Services (NBES) has been commissioned by Holmes Dyer to undertake a high level, strategic assessment of the flora, fauna and environment aspects of this project. The precinct structure plan is primarily focussed on the planning for the 'Future Urban' zoned part of the study area, however constraints and recommendations associated with existing natural values are considered for the entirety of the study area.

Five native vegetation communities and three non-native or modified land units were identified in the study area. Native vegetation accounts for 40.87 % of the study area and is restricted to the northern (balance) half of the study area where the land is zoned 'Landscape Conservation', and partly under conservation covenant (reserved under the Tasmanian *Nature Conservation Act 2002* [NC Act]). The proposed precinct area of the study area (southern extent) is generally agricultural land, while the interface between the native and modified land units has been largely mapped improved pasture with native tree canopy.

Three native vegetation communities are Tasmanian NC Act listed threatened ecological community: *Eucalyptus amygdalina* forest and woodland on sandstone (DAS), *Eucalyptus globulus* dry forest and woodland (DGL), and *Eucalyptus risdonii* forest and woodland (DRI). The areas of DAS and DRI vegetation occur entirely within the conservation covenant and are likely to extend beyond the study area boundary to the west. The DGL community occurs mostly (2.36 ha, 69.66 %) within the conservation covenant at the southern interface with agricultural land. The balance of this community is outside the conservation covenant and within the proposed precinct area. No Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) listed communities are present in the study area.

One threatened flora species listed under the Tasmanian *Threatened Species Protection Act 1995* (TSP Act), *Eucalyptus risdonii* (TSP Act rare), and was observed in abundance within the forested part of the study area outside the proposed precinct area. An additional threatened flora species, *Asperula scoparia* subsp. *scoparia* (TSP Act rare) has been recorded previously within the study area. The lower grassy slopes of the *Eucalyptus amygdalina* forest on mudstone (DAM) and DGL vegetation provide excellent habitat for orchids and though no threatened orchid species have been recorded within the study area. Furthermore, the *Bursaria-Acacia* woodland and scrub (NBA) mapped vegetation may also support grassland and grassy woodland threatened species. It is highly unlikely that any threatened species occur within the FAG and FUR areas within the proposed precinct area.

At least four species listed as declared under the Tasmanian *Biosecurity Act 2019* (African boxthorn, blackberry, gorse, and white weed) were detected within the agriculture (FAG) vegetation. These species are classified as Class B weeds in the Brighton Council region, where the management objective is containment of infestations.

Numerous additional declared weeds are known from the broader area, most notably, espartillo which is highly invasive. Other weeds known from the area include boneseed, bridal creeper, and fennel.

At minimum, the PSP must include provisions for weed and hygiene management through the implementation of a weed and hygiene management plan throughout any staged developments, with particular focus on the management and prevention of introducing espartillo within the study area.

Suitable habitat for the threatened Tasmanian devil, spotted-tailed quoll, eastern quoll, blue-winged parrot, swift parrot, and eastern barred bandicoot is available within the study area predominantly within the balance area outside the proposed precinct area. Only the eastern barred bandicoot, if present, are likely to utilise the ungrazed paddock areas within the agricultural areas.

While 25 ha of native vegetation is protected by a conservation covenant, the adjacent land, including the threatened DGL community, represents good quality habitat for a range of threatened fauna species including Tasmanian devils, quolls, blue-winged and swift parrots and potentially eastern barred bandicoots. Therefore, it is recommended that the balance of the native vegetation outside the conservation covenant is appended to the covenant to afford this vegetation and threatened fauna habitat the same protection. Furthermore, it is recommended that the modified area in the northeast of the Project Area (NBA and FAG) is also protected, as rehabilitation of this area will provide a mosaic of vegetation types for fauna and extend the connectivity of native vegetation. In addition, the areas of FAC (native trees over pasture) should be retained and protected to provide a buffer to the high-quality vegetation and threatened fauna habitat and in particular, any blue gum (*E. globulus*) or hollow bearing trees should be protected as they represent critical habitat for swift parrots.

Although facilitating wildlife corridors within the precinct area may not be warranted based on the likelihood of threatened fauna species utilising a corridor, and the added risk to threatened species it may present, the retention of vegetation and fauna habitat has ecological value. Considered rehabilitation and revegetation of green space areas will provide shelter and protection to wildlife, and use of plants that increase the availability of critical resources for threatened fauna will result in positive ecological and conservation outcomes. The existing drainage lines within the proposed precinct area provide opportunities to rehabilitate and revegetate the waterbodies, drainage lines and adjacent land to reintroduce native flora and habitat for fauna. The scale of the green spaces retained should depend on the achievable management expectations as positive ecological outcomes in such a modified landscape will depend on ongoing management. Weed management during restoration and rehabilitation of all green space, should aim to eradicate declared weeds.

Opportunities to enhance and provide refuge and critical resources and reduce potential impacts for/to wildlife within the planning design of the precinct area are provided. These include but are not limited to:

- Lower housing density and larger lot sizes along the northern precinct boundary adjacent to core habitat areas;
- Ensure water sources outside the precinct area are retained;
- Reduction of roadkill by provision of wildlife road-crossing points;
- Retain and improve waterway corridors, road verges, and other greenspace;
- Consider fencing to minimise impact of domestic predators on wildlife; and
- Consider internal road layout and design with respect to decreasing likelihood of wildlife entering roadways.



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# 1. PROJECT DETAILS

## 1.1. STUDY AREA

In order to maintain a sustainable housing supply for population growth and housing requirements into the future, Brighton Council has commissioned a Holmes Dyer Pty Ltd (herein referred to as Holmes Dyer) to prepare a precinct structure plan, infrastructure funding framework, and planning scheme amendment for an area approximately 103 ha in size between Boyer Road and Cobbs Hill Road, 1 km west of Bridgewater (Figure 1). The precinct structure plan will contribute to the *Bridgewater Bridge Waterfront Masterplan* which integrates considerations of heritage, culture, ecology and economy, and aims to create a mixed-use development area, new open spaces, and enhance water access. North Barker Ecosystem Services (NBES) has been commissioned by Holmes Dyer to undertake an assessment of the flora, fauna and environment aspects of this project.

The study area, as defined by Brighton Council, is made up of six titles with three fronting onto Boyer Road and three onto Cobbs Hill Road (Figure 1).

Current land use within the study area is agricultural with the exception of one title (31 Cobbs Road, . CT 152364/2) which is best described as natural and cultural values management, as it lacks residential use and protected through the mechanism of a conservation covenant (Figure 2). The remaining titles contain single dwellings and are presently used for livestock grazing.

The study area is currently zoned 'Future Urban' (58 ha or ~60 % study area) and 'Landscape Conservation' (being the balance - the 45 ha northern portion of the study area fronting Cobbs Hill Road) (Figure 2). Three of the subject titles (with frontages to Cobbs Hill Road) have split zoning between 'Future Urban' and 'Landscape Conservation'.

Much of the 'Landscape Conservation' zone of these titles is also under a 'Priority Vegetation' overlay under the Natural Assets code (Figure 2). There are several small dams and natural drainage lines within the study area which are subject to the 'Waterways and Coastal Protection Area' overlay under the Natural Assets code (Figure 2).

The land zoned 'Future Urban' has always been intended for residential development once the time arrived that it was needed to help accommodate Hobart's growth. With the current crisis in housing supply and costs, it has been determined that the time is right to commence investigation of this land for its suitability for urban development. The Precinct Structure Plan (PSP) is primarily focussed on the planning of the Future Urban zoned part of the study area and a proposed precinct plan has been provided for consideration during assessments (with 2 options provided to NBES by Holmes Dyer, October 2024 – Appendix A). However, NBES has been engaged as part of the planning process to provide information on any constraints and recommendations associated with existing natural values for the entirety of the study area. Particular consideration of constraints and recommendations with regard to the following has been requested:

- Natural values; vegetation and fauna habitat;
- Wildlife corridors; and
- Vegetation and fauna habitat protection zones.

## 1.2. METHODS

A site visit was undertaken by two ecologists on October 21<sup>st</sup> 2024. The purpose of this visit to field verify vegetation mapping, assess potential presence of threatened flora and fauna habitat, and assess likelihood of limitations to the design of the PSP.

The study area was surveyed using a meandering area search technique<sup>1</sup>. Vegetation was mapped in accordance with units defined in TASVEG 4.0<sup>2</sup>. Suitability of habitats for threatened flora and fauna species was noted, and evidence of threatened flora, threatened fauna (e.g., scats and tracks), and presence of potential threatened fauna habitat elements was opportunistically recorded during the field visit. Presence of 'declared' weeds listed under the Tasmanian *Biosecurity Act 2019* was noted.

Any location data were recorded with a handheld GPS and/or GPS mobile app ( $\pm 5$  m accuracy). Botanical nomenclature follows the current census of Tasmanian plants<sup>3</sup>.

The Natural Values Atlas (NVA) database was consulted for records of threatened species and vegetation types within a 5 km radius. The possibility of the study area supporting threatened natural values known from within this radius has been considered in the interpretation of results and discussion.

### 1.3. LIMITATIONS

The field survey was undertaken in late spring. Values that are seasonal or require specific germination triggers may have been absent or undetectable. Fauna habitat, including the presence of hollows and nests, was assessed from ground level only.

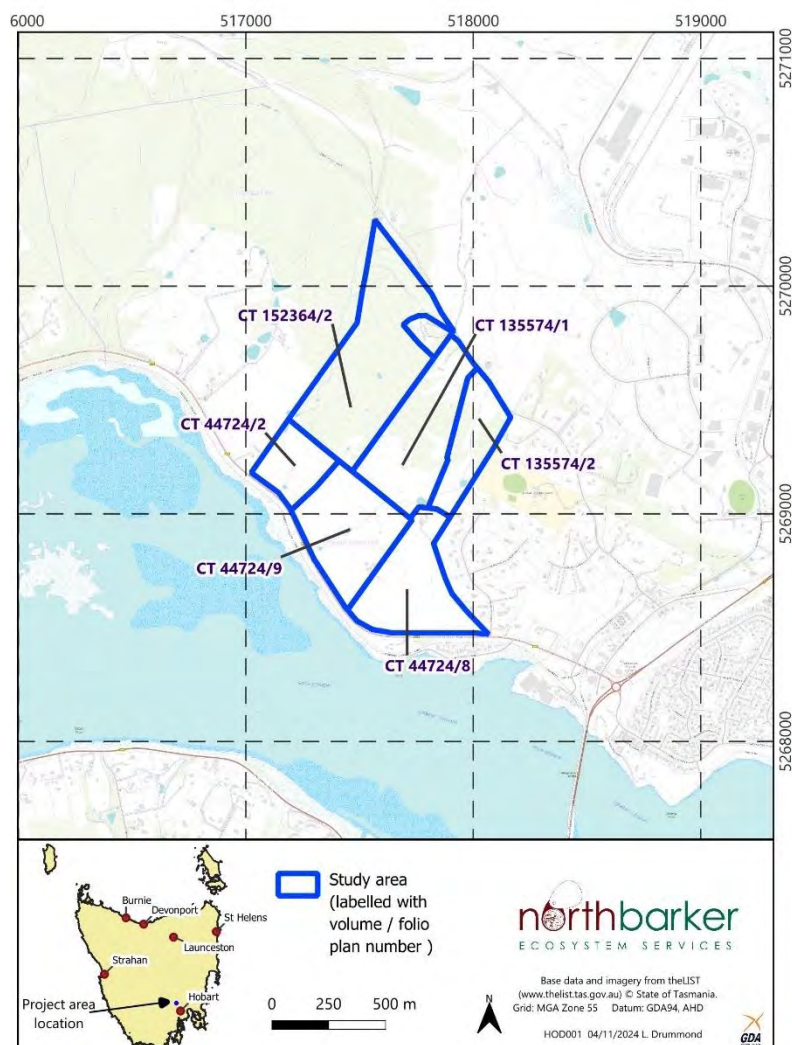


Figure 1: Locality of the Project Area

<sup>1</sup> Goff *et al.* (1982)

<sup>2</sup> Kitchener and Harris (2013)

<sup>3</sup> de Salas & Baker (2024)

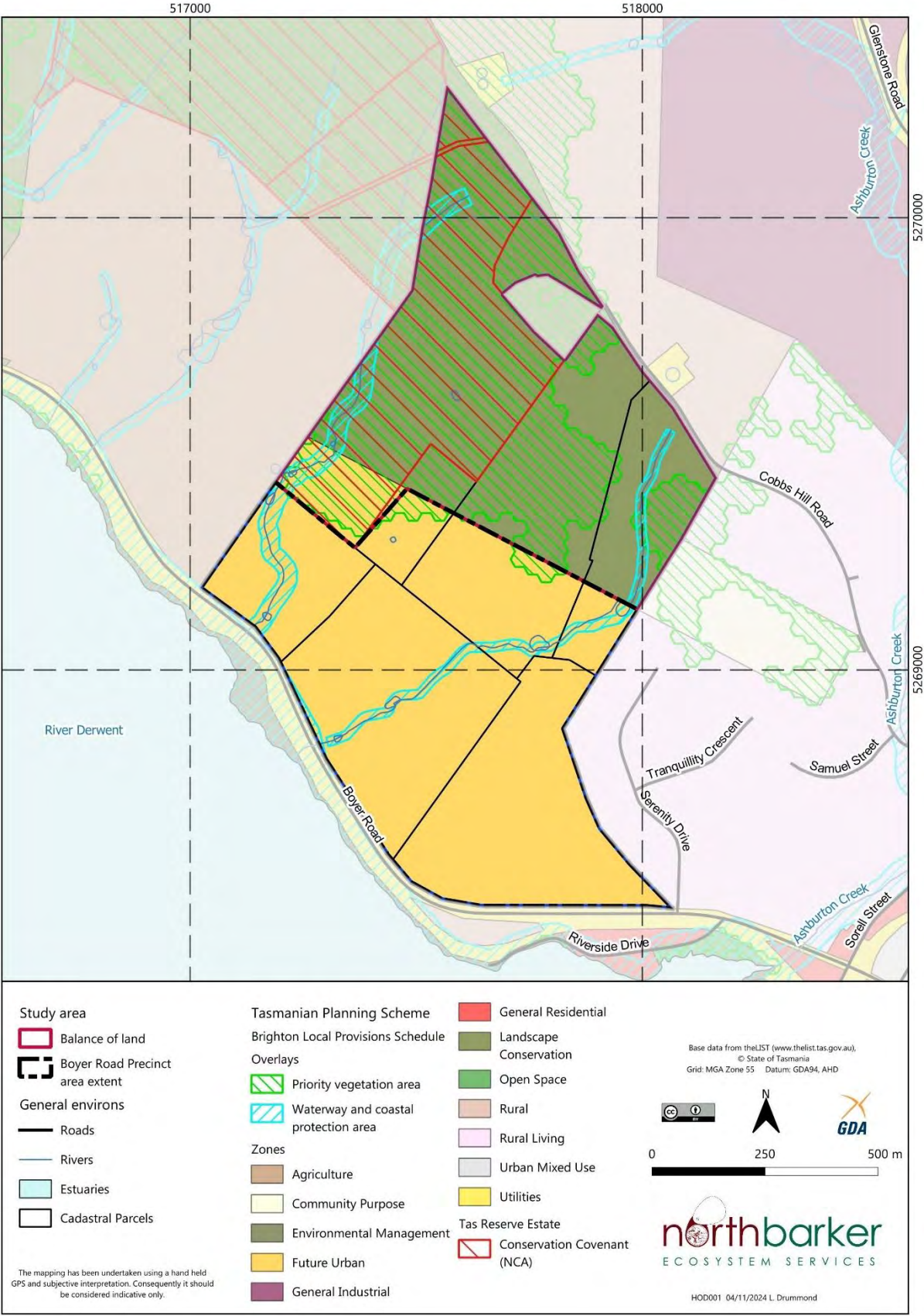


Figure 2: Zoning and code overlays within the Study Area

## 2. NATURAL VALUES

### 2.1. VEGETATION COMMUNITIES

Five native vegetation communities and three non-native or modified land units were identified in the study area (Figure 3). Native vegetation accounts for 40.87 % of the study area, 58.85 % is modified land, and 0.28 % is water. Native vegetation is restricted to the northern extent of the study area where the land is zoned 'Landscape Conservation', and within a conservation covenant. The proposed precinct area (southern extent) is generally agricultural land, while the interface between the native and modified land units has been largely mapped as improved pasture with native tree canopy (FAC).

Three native vegetation communities are NC Act listed threatened vegetation communities: *Eucalyptus amygdalina* forest and woodland on sandstone (DAS), *Eucalyptus globulus* dry forest and woodland (DGL), and *Eucalyptus risdonii* forest and woodland (DRI). No EPBC Act listed communities are present in the study area.

#### 2.1.1. *Eucalyptus amygdalina* forest on mudstone (DAM)

This vegetation is the dominant native vegetation type, covering 27.53 ha (65.04 % of native vegetation, 26.58 % of total study area vegetation). It occurs as two mappable facies: DAM dominated by *E. amygdalina* (Plate 1) and patches of DAM dominated by *E. viminalis* (Plate 2). TASVEG 4.0<sup>4</sup> allows for DAM to include areas where *E. viminalis* is locally dominant and within the study area, 6.04 ha of this vegetation community facies exists. *Eucalyptus globulus* trees also occur scattered through this community and are locally dominant in small patches. These patches are too small to be mapped as a separate facies of DAM, or as DGL community, but nevertheless represent threatened fauna habitat (Section 2.3).

*Eucalyptus amygdalina* trees are typically small throughout the community, however, through the *Eucalyptus viminalis* dominant patches there are scattered trees (*E. viminalis*) that are large enough to have hollows that potentially provide nesting habitat for threatened bird species.

Across its mapped extent, this community has an almost completely open understorey dominated by native grasses. The upper, drier slopes tend to have more bare ground (Plate 1) but also ground cover shrubs such as *Pultenaea pedunculata*, while the lower slopes had a higher grass cover. Community structure and understorey composition did not vary markedly between areas under covenant and the adjacent properties grazed by livestock.

This community is not listed as threatened under the Tasmanian NC Act or the Commonwealth EPBC Act.

This community occurs mostly within the conservation covenant area (16.86 ha, 61.20 %), however 5.18 ha of the *E. viminalis* facies of this community occurs outside the conservation covenant and 0.43 ha of this facies is currently within the precinct area (Figure 3).

---

<sup>4</sup> Kitchener and Harris (2013)





**Plate 1: Typical composition of DAM dominated by *E. amygdalina* on upper slopes**



**Plate 2: Typical composition of DAM dominated by *E. viminalis***



### 2.1.2. *Eucalyptus amygdalina* forest and woodland on sandstone (DAS)

This vegetation community occurs as one small patch (0.33 ha) within the conservation covenant area at the western boundary of the study area. It is most likely the eastern extent of a larger patch of DAS that occurs outside the study area. A sharp transition from the adjacent DAM vegetation is evident at a creek line by the presence of *Pteridium esculentum* (Plate 3) and likely due to a change in geology.

This community is listed as threatened under Schedule 3A of the Tasmanian NC Act.



Plate 3: Typical composition of DAS, interface with DAM on right hand side of image

### 2.1.3. *Eucalyptus globulus* dry forest and woodland (DGL)

This vegetation community has been previously mapped within the conservation covenant area. The southern patch has been extended but the patch previously mapped upslope within the DRI/DAM complex, has been remapped as DAM. While *E. globulus* trees in this area were locally dominant in a small patch (0.07 ha), this does not constitute a patch of DGL. The re-mapped DGL (Figure 3) represents 3.27 % (3.39 ha) of total vegetation and 8.01 % of the total native vegetation.

The vegetation in this community is relatively open, with a canopy of *E. globulus*, and occasional *E. amygdalina* and *E. viminalis*. The understorey is open with almost no shrubby layer by rather dominated by grasses (Plate 4).

This community is listed as threatened under Schedule 3A of the Tasmanian NC Act; however, it is not listed as threatened under the Commonwealth EPBC Act.

This community occurs almost entirely within the conservation covenant area (2.36 ha, 69.66 % within the conservation covenant), however the 0.95 ha previously mapped as GCL has been re-mapped as DGL. This area is currently outside of the conservation covenant. The floristic composition of this area matches that of DGL despite the canopy cover being lower, and there is evidence of *E. globulus* seedling recruitment (Plate 5). This area (0.95 ha) is not only outside the conservation covenant but is currently within the proposed precinct area (Figure 3). A further 0.07 ha of DGL is outside the conservation covenant but also outside the proposed precinct area.





**Plate 4: Southern edge of DGL within the conservation covenant area**



**Plate 5 :DGL previously mapped as GCL, young *E. globulus* evident**



#### 2.1.4. *Eucalyptus risdonii* forest and woodland (DRI)

This vegetation community has been previously mapped in the northwestern corner of the study area within the conservation covenant. This was confirmed during the field surveys, although the extent of the community has been refined and extended to accurately reflect the on-ground observations. The DRI community covers 6.65 ha, which equates to 6.42 % of the study area and 15.71 % of the total native vegetation in the study area.

This community occurs on the higher, drier slopes of the study area. The canopy of this community is a dense cover of *Eucalyptus risdonii* only, and the understorey is extremely sparse with no shrub layer and only occasional ground species. The ground under this community is predominantly bare or covered by leaf litter (Plate 6).

This community is listed as threatened under Schedule 3A of the Tasmanian NC Act; however, it is not listed as threatened under the Commonwealth EPBC Act. It occurs entirely within the conservation covenant and likely extends beyond the study area boundary to the west (Figure 3).



Plate 6: Typical composition of DRI



### 2.1.5. Bursaria–Acacia woodland and scrub (NBA)

This community has been mapped in the northeastern corner of the study area and covers 4.43 ha (4.28 % of the total native vegetation cover, 10.47 % of total study area).

The community is dominated by *Acacia dealbata*, *A. mearnsii*, and *Dodonaea viscosa* species in the shrub and tree layer, with a mixture of heavily grazed native and exotic grasses and herbs in the understorey (Plate 7).

The NBA mapped within the study area is a transitional community and is the product of past clearance and disturbance. Patches of this community were previously mapped regenerating cleared land (patch on the west facing slope) and agricultural land (east facing slope). These patches are likely to have been DVG (*Eucalyptus viminalis* grassy forest and woodland) prior to disturbance and would likely return to this community if allowed to regenerate, as evidenced by recruitment of *E. viminalis* seedlings (Plate 8).

This community is not listed as threatened under the Tasmanian NC Act or the Commonwealth EPBC Act.

This community occurs entirely outside the proposed precinct area and conservation covenant and represents a buffer and link to adjacent native vegetation communities.



**Plate 7: NBA on west facing slope in the northeast corner of the Project Area**





**Plate 8: NBA transitional community between agricultural land unmodified vegetation communities, *E. viminalis* recruitment in foreground**

#### 2.1.6. Grassland communities

The lowland grassland complex (GCL) grassland community has been previously mapped within the study area. This community can form part of an EPBC Act listed critically endangered ecological community "Lowland Native Grasslands of Tasmania" (LNGT) if condition criteria are met<sup>5</sup>. However, no native grassland communities were mapped within the study area. Previously mapped patches were reassigned as non-native pasture (FAG), or other native communities where it was determined that the key floristic elements of those communities were present.

The NBA community can also form part of the LNGT ecological community if condition criteria are met<sup>6</sup>. However, the NBA within the study area does not contain sufficient cover of the key grass species *Themeda triandra* or *Poa labillardierei* and does not meet condition criteria. Therefore, this threatened grassland community is not considered to occur in the study area.

#### 2.1.7. Modified land (FUR, FAG & FAC)

Approximately 60.94 ha (58.85 %) of the study area is modified land and has been mapped as urban areas (FUR), agricultural land (FAG) and improved pasture with native tree canopy (FAC) (Figure 3). These mapping units are described below.

##### **Urban areas (FUR)**

Each property within the study area has a single dwelling on development on it, with the exception of 31 Cobbs Hill Road.(CT 152364/2) which has had the dwelling excised from the study area. As such only 3.51 ha is mapped as FUR. These areas are currently occupied by private residences and contain a mixture of built infrastructure, such as sheds and houses, and planted gardens/lawns.

##### **Agricultural Land (FAG)**

The southern half of the study area is largely agricultural land and consists of cleared paddocks. The area is heavily modified with vegetation intensively grazed (Plate 9) or left unmanaged after historical

<sup>5</sup> Department of the Environment, Water, Heritage and the Arts (2010)

<sup>6</sup> Department of the Environment, Water, Heritage and the Arts (2010)



agriculture use (Plate 10). Small areas of FAG exist in the 'Landscape Conservation' zone where the land is used for stock grazing.

The composition of the vegetation is dominated by introduced pasture grasses, such as *Avena* sp., *Hordeum* sp., *Dactylis glomerata* and *Cynosurus* spp., and agricultural weeds such as capeweed and large patches of sweet briar. Scattered blackberry and gorse are present as well as large thickets of African boxthorn particularly within drainage lines.



**Plate 9: Typical composition of the FAG used for livestock grazing**



**Plate 10: Ungrazed FAG area north of Boyer Road with infestation of woody weeds**



### **Improved pasture with native tree canopy (FAC)**

The interface between the native and modified land units has been largely mapped FAC. This modified land unit is comprised of a native tree canopy, mostly *E. amygdalina*, over open pasture grass, and is missing the structure and floristic composition of the native community. It is distinguished from the native communities within the study area that have been grazed by the lack of native floristic elements (Plate 11).

While FAC is a modified community, it still holds ecological value as a buffer to the native communities from agricultural land. In addition, retained trees may provide habitat for threatened fauna.



**Plate 11: Typical FAC native trees over pasture at the interface between native forest and pasture**



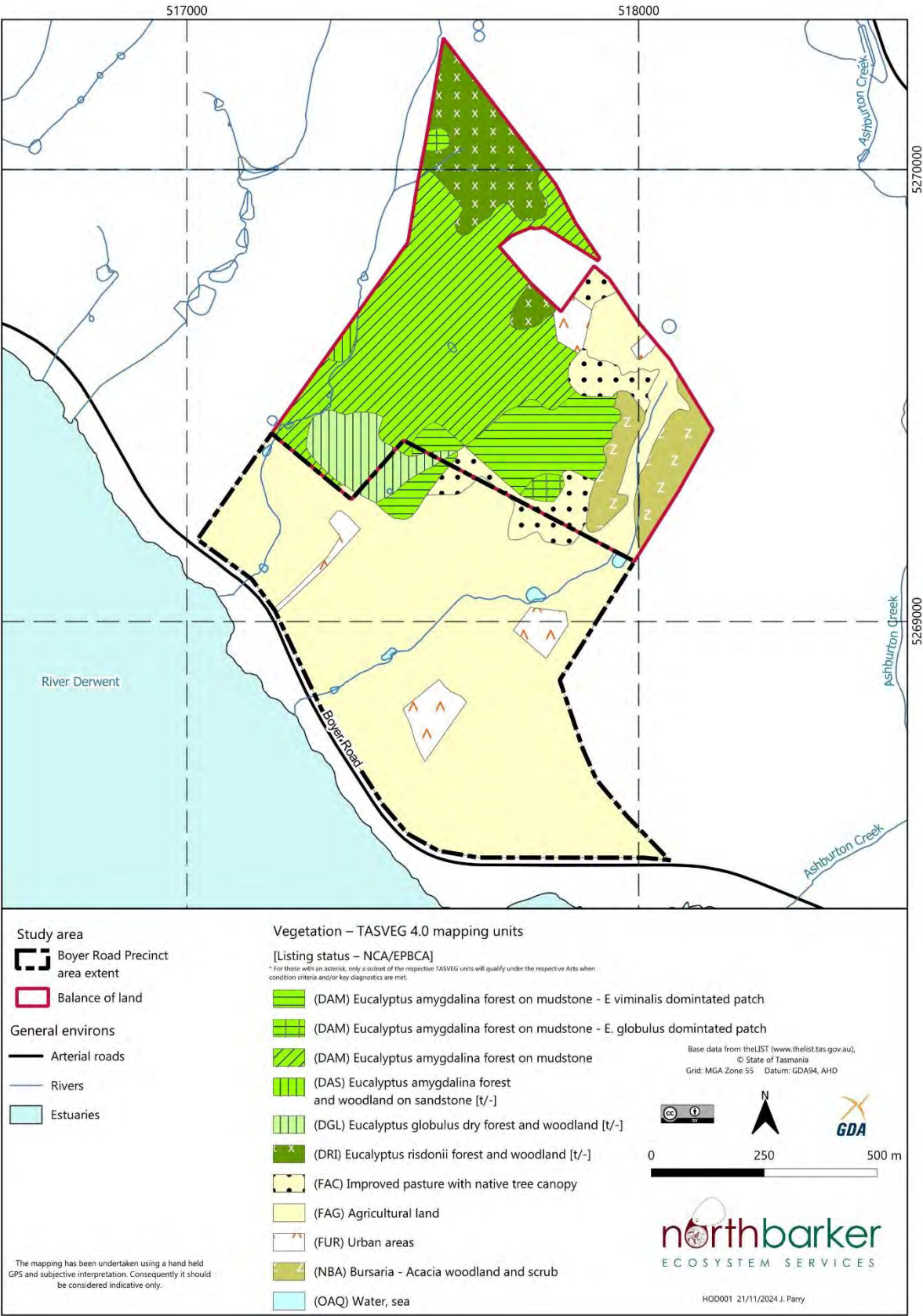


Figure 3: Vegetation mapped by NBES and classified using TASVEG 4.0 units within the Project Area

## 2.2. CONSERVATION SIGNIFICANT FLORA

The Natural Values Atlas database<sup>7</sup> shows records of four threatened flora species within 500 m of the study area (Table 1). *Eucalyptus risdonii* is listed as rare under the TSP Act and was observed in abundance within the forested part of the study area outside the proposed precinct area. This species is the dominant tree species of the threatened DRI vegetation community and was also noted as scattered individuals within other forest communities surrounding the mapped DRI.

*Asperula scoparia* subsp. *scoparia* is a TSP Act rare listed species that has also been recorded within the study area within the NBA vegetation community. It is a widespread species in a diverse range of habitats from grassy woodland to tall eucalypt forest but only occasionally found. It was recorded in 2000 and may still to occur within the study area, although wasn't observed during the site visit.

The other two species recorded within 500 m (*Stuckenia pectinata* and *Thesium australe*) are unlikely to occur in the study area.

**Table 1: Verified threatened flora records from within 500 m of the Project Area. Sourced from the Natural Values Atlas (Department of Natural Resources and Environment, 2023)**

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
<i>Asperula scoparia</i> subsp. <i>scoparia</i>	prickly woodruff	r		n	1	30-Nov-2000
<i>Eucalyptus risdonii</i>	risdon peppermint	r		e	53	12-Dec-2012
<i>Stuckenia pectinata</i>	fennel pondweed	r		n	1	06-Feb-1869
<i>Thesium australe</i>	southern toadflax	x	VU	n	1	01-Jan-1804

Forty-nine threatened flora species listed under the TSP Act (with nine also listed under the EPBC Act) have previously been recorded within 5 km of the study area<sup>8</sup> (Attachment A, Natural Values Atlas search report). The lower grassy slopes of the DAM and DGL vegetation provide excellent habitat for orchids and though no threatened orchid species have been recorded within the study area, a number of common species were noted during the reconnaissance visit. The NBA vegetation may also support the grassland and grassy woodland threatened species, however at the time of field visit, these areas were so heavily grazed no assessment on the likelihood of presence could be made.

Threatened flora species known from within 5 km of the study area have been considered, however due to the highly modified nature of the FAG and FUR vegetation units, it is highly unlikely that any of these species occur within the proposed precinct area.

## 2.3. CONSERVATION SIGNIFICANT FAUNA

The Natural Values Atlas database<sup>9</sup> shows records of six threatened fauna species within 500 m of the study area. A further 26 threatened fauna species are known from within 5 km of the study area (Attachment A). Of the species recorded within 500 m, there is no habitat in the study area for the Australasian bittern or shy albatross. The grey goshawk, wedge-tailed eagle, white-bellied sea-eagle, and masked owl (recorded within 5 km) are likely to be transient visitors, and may use the forest areas to perch, but there is no suitable nesting habitat for these species within the study area.

The Tasmanian devil, spotted-tailed quoll, eastern quoll, eastern barred bandicoot, blue-winged parrot, and swift parrot considered to have suitable habitat available in the study area and are discussed below.

<sup>7</sup> Department of Natural Resources & Environment (2024)

<sup>8</sup> Department of Natural Resources & Environment (2024)

<sup>9</sup> Department of Natural Resources & Environment (2024)

**Table 2: Verified threatened fauna records from within 500 m of the Project Area. Sourced from the Natural Values Atlas (Department of Natural Resources and Environment, 2023)**

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
<i>Accipiter novaehollandiae</i>	grey goshawk	e		n	1	01-May-1911
<i>Aquila audax</i>	wedge-tailed eagle	pe	PEN	n	2	14-Oct-2022
<i>Botaurus poiciloptilus</i>	australasian bittern		EN	n	1	11-Jun-1981
<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle	v		n	7	16-Jan-2023
<i>Sarcophilus harrisii</i>	tasmanian devil	e	EN	e	4	12-Mar-2024
<i>Thalassarche cauta</i>	shy albatross	v	EN	ae	1	23-Nov-1884

### 2.3.1. Tasmanian devil, eastern quoll & spotted-tail quoll

Tasmanian devils (*Sarcophilus harrisii*) have been recorded within 500 m of the study area and eastern quoll (*Dasyurus viverrinus*) and spotted-tail quolls (*Dasyurus maculatus* subsp. *maculatus*) within 5 km. The forest vegetation types within the study area are dry and open and are not highly suitable denning habitat. Irrespective of denning opportunity these species may use the study area, particularly the forest areas, as foraging habitat as the study area is contiguous with extensive areas of native vegetation outside of the site boundaries. The modified land within the proposed precinct area may be visited by foraging animals but is not considered to be core or optimal habitat.

### 2.3.2. Eastern barred bandicoot

Foraging habitat exists for the eastern barred bandicoot (*Perameles gunnii*) within the paddock areas and grassy understorey of the native vegetation with the study area<sup>10</sup>. The open nature of the native vegetation communities and grazed areas do not provide sufficient vegetation cover of tussocks and sedges to provide suitable nesting habitat for this species<sup>11</sup>. However, the ungrazed agricultural land (Plate 10) within the proposed precinct area, may provide nesting habitat for this species if it is present in the area.

### 2.3.3. Swift parrot

Potential nesting habitat for the swift parrot (*Lathamus discolor*) occurs within the *E. amygdalina*, *E. globulus*, and *E. viminalis* dominated vegetation types, including the FAC vegetation where trees have been retained. While not numerous, there are scattered trees that either contain hollows, or have potential to contain hollows (Plate 11) within the study area, particularly *E. globulus* and *E. viminalis* individual trees. *Eucalyptus globulus* trees also represent foraging habitat for swift parrot and are present scattered through the DAM vegetation as well as the DGL.

This habitat is largely outside the proposed precinct area, however some DGL and potential nesting habitat trees fall within the proposed precinct area (Figure 4). Efforts should be made to retain hollow-bearing trees that may provide nesting habitat in the PSP design.

### 2.3.4. Blue-winged parrot

This species was listed as a vulnerable species under the EPBC Act in March 2023<sup>12</sup>. Suitable foraging habitat for this species is present, as it is known to forage in paddocks to feed on seeds of native and introduced grasses, herbs, and shrubs<sup>12</sup>. Suitable nesting habitat for this species is equivalent to that of the swift parrot and exists within study area. Efforts should be made to retain hollow-bearing trees that may provide nesting habitat in the PSP design.

<sup>10</sup>Department of the Environment, Water, Heritage and the Arts (2008)

<sup>11</sup> Department of the Environment, Water, Heritage and the Arts (2008)

<sup>12</sup> Department of Climate Change, Energy, the Environment and Water (2023)





**Plate 12: Hollow bearing tree within the FAC vegetation. This tree is within the proposed precinct area**

## **2.4. INTRODUCED PLANTS AND PATHOGENS**

Four species listed as declared under the Tasmanian *Biosecurity Regulations 2022* (which is in effect under the Tasmanian *Biosecurity Act 2019*) were detected during the site visit. All declared weed species were noted within the agriculture vegetation.

- African boxthorn (*Lycium ferocissimum*). Abundant and forms thick patches in the agricultural paddocks, along fence lines and in drainage lines;
- Blackberry (*Rubus fruticosus* aggregate). Scattered patches;
- Gorse (*Ulex europaeus*). Scattered occasional bushes; and
- White weed (*Lepidium draba*). Large patches along road edges, drive edges, and in ungrazed paddocks.

These species are classified as Class B weeds in the Brighton Council area. According to the provisions of the Tasmanian *Biosecurity Regulations 2022*, administered under the Tasmanian *Biosecurity Act 2019*, Class B municipalities are those which host moderate or large infestations of the declared weed that are not deemed eradicable because the feasibility of effective management is low at this time. Therefore, the objective is containment of infestations. This includes preventing spread of the declared weed from the municipality or into properties currently free of the weed, or for which a locally integrated weed management plan for that species has been developed or is being implemented. There is also a requirement to prevent spread of the weeds to properties containing sites for significant flora, fauna, and vegetation communities.

Numerous additional declared weeds are known from the broader area, most notably, espartillo (*Amelichloa caudata*) which is highly invasive. Other weeds known from the area include boneseed (*Chrysanthemoides monilifera* subsp. *monilifera*), bridal creeper (*Asparagus asparagoides*), and fennel (*Foeniculum vulgare*).

In addition to the declared weeds above, the environmental weed sweet briar (*Rosa rubiginosa*) was locally abundant within ungrazed paddocks.

Any future planning permits should ensure best-practice guidelines for weed and hygiene management are undertaken to manage existing weed infestations and to prevent the establishment of any new infestations in the project area. At minimum, the PSP must include provisions for weed and hygiene management through the implementation of a weed and hygiene management plan throughout any staged developments, with particular focus on the management and prevention of introducing espartillo within the study area.

The weed and hygiene management plan must include provisions from the following best-practice guidelines:

- *Keeping it clean - A Tasmanian field hygiene manual to prevent the spread of freshwater pests and pathogens* (Allen and Gartenstein, 2010); and
- *Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania* (DPIPWE, Stewart and Askey-Doran, 2015).

### 3. CONSTRAINTS SUMMARY AND OPPORTUNITIES

This section provides recommendations regarding potential impacts and opportunities that the PSP may present. A summary of constraints to natural values is provided in Table 3.

#### 3.1. VEGETATION AND FAUNA HABITAT PROTECTION ZONES

The vegetation of the study area has been verified and adjusted to reflect the current distribution. The majority of native vegetation is within the balance to the study area, outside the precinct area. The native vegetation also represents habitat for native fauna including mammal and avian threatened fauna. However, adjusted vegetation falls in the proposed precinct area, namely DGL vegetation which is listed as threatened under the NC Act (Figure 4).

While 25 ha of native vegetation is protected by a conservation covenant, the adjacent land, including the threatened DGL community, represents good quality habitat for a range of threatened fauna species including Tasmanian devils, quolls, blue-winged and swift parrots and potentially eastern barred bandicoots. On a landscape scale, this vegetation not only supports potential nesting/denning and foraging habitat but also provides connectivity between habitat areas and a refuge buffer around cleared land. Therefore, it is recommended that the balance of the native vegetation outside the conservation covenant (Figure 4) is appended to the covenant in order to afford this vegetation and threatened fauna habitat the same protection. It is recommended that the modified area in the northeast of the study area (NBA and FAG) is also protected as rehabilitation of this area will provide a mosaic of vegetation types for fauna and extend the connectivity of native vegetation.

The Boyer Road Concept Plan option 2 (Appendix A) layout will assist in reducing impacts to threatened vegetation and threatened fauna habitat.

Retaining intact and connected existing habitat has significant conservation value, therefore retaining, and in some areas improving, the vegetated areas outside the precinct area will maintain ecological value and facilitate wildlife movement to the rural living zoned area to the east and forested areas to the west of the study area.

Furthermore, it is recommended that the areas FAC (native trees over pasture) are retained and protected to provide a buffer to the high-quality vegetation and threatened fauna habitat to the north. In particular, any blue gum (*E. globulus*) or hollow bearing trees should be protected as they represent critical habitat for swift parrots.

### **3.2. WILDLIFE CORRIDORS**

Wildlife corridors are connections across the landscape that link up areas of habitat. They support natural processes that occur in a healthy environment, including the movement of species to find resources, such as food and water<sup>13</sup>.

The proposed PSP is situated within largely modified agricultural land between native forest vegetation to the north and the Derwent estuary to the south. While native wildlife may venture into this area to feed or use water sources, or occasionally pass through to the estuary, the forest vegetation represents primary core habitat and restricted movement opportunity into or through the PSP does not represent a key threat to fauna. Indeed, encouraging wildlife into the proposed precinct area once developed as a residential area may increase potential impacts to fauna species by, for example, increasing interaction of fauna with domestic predators, suburban roads and traffic, and poisons. Providing movement corridors from the forested areas through the Precinct Area towards the Derwent Estuary will also increase the wildlife around the Boyer Road, which will also undergo a significant increase in traffic volumes due to the construction of the proposed PSP. Therefore, providing corridors for wildlife movement through the precinct area is not warranted and will provide little ecological or conservation value.

### **3.3. RESTORATION, REHABILITATION AND WEED MANAGEMENT**

Although facilitating wildlife corridors within the precinct area may not be warranted based on the likelihood of threatened fauna species utilising a corridor, and the added risk to threatened species it may present, the retention of vegetation and fauna habitat has ecological value, particularly within natural the drainage lines. While the drainage lines within the proposed precinct area are currently dominated by introduced agricultural species and herbaceous and woody weeds, there are opportunities to rehabilitate and revegetate the waterbodies and drainage lines to reintroduce native flora and create habitat for aquatic and semi aquatic fauna including aquatic birds. The scale of the green spaces retained should depend on the achievable management expectations as positive ecological outcomes in such a modified landscape will depend on ongoing management. However, it is recommended that the waterway protection area be taken as a minimum, that is 10 m either side of the stream bank.

Weed management should be a focus of restoration and rehabilitation of all green space, with the aim to eradicate declared weeds within the proposed precinct area to prevent the spread, particularly to the largely weed-free balance of the study area. Buffer areas between the precinct area and native forest areas will help reduce the spread of weeds and exotic garden plants into these areas.

The PSP must also include provisions for weed and hygiene management through the implementation of a weed and hygiene management plan throughout any staged developments, with particular focus on the management and prevention of introducing espartillo within the study area.

Considered rehabilitation and revegetation of green space areas will provide shelter and protection to wildlife. Furthermore, use of plants that increase the availability of critical resources for threatened fauna will result in positive ecological and conservation outcomes. For example, blue gum trees will provide additional food sources for swift parrots.

### **3.4. IMPACTS TO WILDLIFE**

Opportunities are available to enhance and provide refuge and critical resources and reduce potential impacts for / to wildlife within the planning design of the precinct area. These include but are not limited to:

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<sup>13</sup> Department of Climate Change, Energy, the Environment and Water (2024)



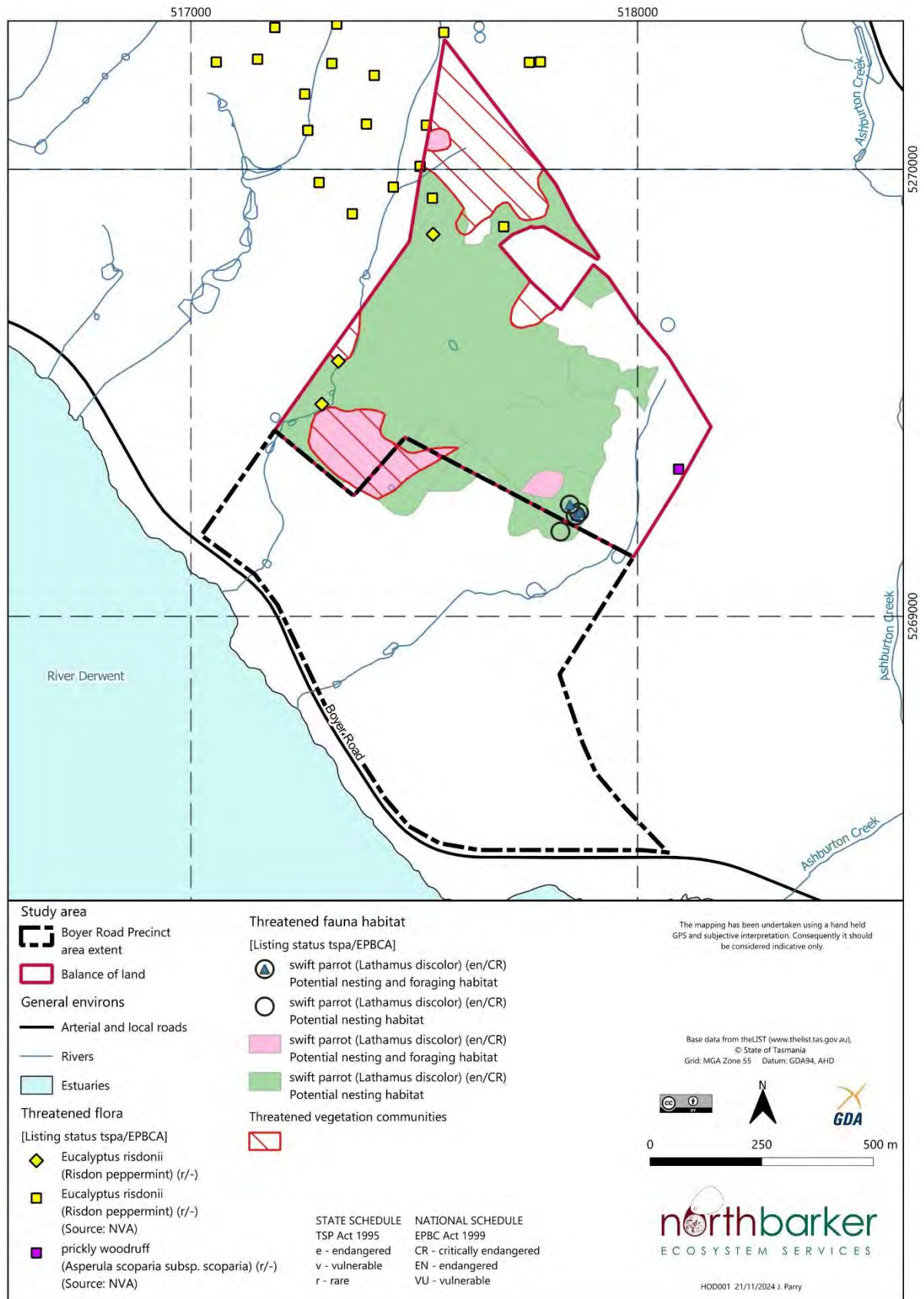
- Lower housing density and larger lot sizes along the northern precinct boundary adjacent to core habitat areas. This will provide opportunities for animals such as bandicoots to utilise these areas.
- Ensure water sources outside the precinct area are retained. Maintaining or increasing available water, especially during the drier months provide a valuable resource to wildlife and may decrease the number of animals moving into urban areas.
- Reduction of roadkill by provision of wildlife road-crossing points. In particular, wildlife underpasses should be considered under Boyer Road to facilitate movement of water birds, amphibians and reptiles between water bodies that may be retained within the precinct area, and the Derwent estuary.
- Retain and improve waterway corridors, road verges, and other greenspace with diverse native vegetation as above to provide cover, refuge and protection to animals in order to reduce potential impacts from traffic strike and domestic predators.
- Consider fencing to minimise impact of domestic predators (namely cats and dogs) on wildlife.
- Consider internal road layout and design with respect to decreasing likelihood of wildlife entering roadways.

### **3.5. REZONING**

Brighton Council intends to apply to have the 'Future Urban' zone rezoned to 'General Residential' under the Tasmanina Planning Scheme and in doing so implement the PSP into the Brighton Local Provisions Schedule. It is recommended that as part of the rezoning application, the area currently under conservation covenant is rezoned as 'Landscape Conservation' or 'Environmental Management'. In addition, any natural values constraint areas currently zoned 'Future Urban' (Figure 4) that will not be included in the Boyer precinct area should also be rezoned as 'Landscape Conservation' or 'Environmental Management' to provide for adequate protection of the natural values that are present.

The rezoning of the balance of the 'Future Urban' zone to any of the residential zone classes will not have any impact on natural values provided the following are undertaken:

- Recommendations for avoidance of vegetation and threatened fauna habitat adhered to;
- Provisions for weed and hygiene management through the implementation of a weed and hygiene management plan included within the PSP, with particular focus on the management and prevention of introducing espartillo within the study area; and
- Maintain legislative overlays including the natural assets code overlays and conservation covenants.



**Figure 4: Natural values constraints to the Project: Threatened vegetation, threatened flora, and threatened fauna habitat of the study area**

**Table 3: Summary of potential implications on natural values**

Natural Value	Potential Constraint	Context & Potential Implications to Natural Values <sup>14</sup>
<b>EPBCA threatened ecological communities</b>		
<b>None present</b>	No constraints anticipated	<p>The community NBA can form part of an EPBC Act critically endangered ecological community if certain criteria are satisfied<sup>15</sup>. The patch of NBA present in the study area does not satisfy these criteria<sup>16</sup> because:</p> <ul style="list-style-type: none"> <li>it does not have sufficient cover of the indicator tussock grass species,</li> <li>it has more than 30% solid crown cover of <i>Bursaria spinosa</i></li> </ul>
<b>NCA threatened vegetation communities</b>		
<b>DAS</b> – <i>Eucalyptus amygdalina</i> forest and woodland on sandstone	<p>No constraints anticipated</p> <p>0.33 ha present</p>	<p>This vegetation community occurs as one small patch (0.33 ha) within the conservation covenant area at the western boundary of the study area.</p> <p>There is no likelihood of impacts to this community through the future developments within the PSP.</p>
<b>DGL</b> – <i>Eucalyptus globulus</i> dry forest and woodland	<p>Minimal constraints anticipated</p> <p>3.39 ha present</p>	<p>This vegetation community has been previously mapped within the conservation covenant area. The southern patch has been extended but the patch previously mapped upslope within the DRI/DAM complex, has been remapped as DAM.</p> <p>This community occurs almost entirely within the conservation covenant (2.36 ha, 69.66 % within the conservation covenant). A small area is located with the precinct area, however if the concept plan option 2 (Appendix A) was selected, impacts to this vegetation community would be negligible.</p>

<sup>14</sup> Includes statements from Department of Natural Resources and Environment's Threatened Species Link summaries and note sheets.

<sup>15</sup> NBA can form part of the EPBCA-listed community "Lowland Grasslands of Tasmania" if specific criteria are met; Department of the Environment, Water, Heritage and the Arts (2010)

<sup>16</sup> Department of the Environment, Water, Heritage and the Arts (2010)



Natural Value	Potential Constraint	Context & Potential Implications to Natural Values <sup>14</sup>
<b>DRI</b> – <i>Eucalyptus risdonii</i> forest and woodland	No constraints anticipated 6.65 ha present	This community occurs on the higher, drier slopes of the study area. It occurs entirely within the conservation covenant and likely extends beyond the study area boundary to the west.  There is no likelihood of impacts to this community through the future developments within the PSP.
<b>Native vegetation communities (TASVEG 4.0 units)</b>		
<b>DAM</b> – <i>Eucalyptus amygdalina</i> forest and woodland on mudstone	No constraints anticipated 27.54 ha present	This vegetation is the dominant native vegetation type across the study area. It occurs as two mappable facies: DAM dominated by <i>E. amygdalina</i> (Plate 1) and patches of DAM dominated by <i>E. viminalis</i> . <i>Eucalyptus globulus</i> trees also occur scattered through this community and are locally dominant in small patches. These patches are too small to be mapped as a separate facies of DAM, or as DGL community, but nevertheless represent threatened fauna habitat.  A small area is located with the precinct area, however if the concept plan option 2 (Appendix A) was selected, impacts to this vegetation community would be negligible.
<b>NBA</b> – <i>Bursaria-Acacia</i> woodland and scrub	No constraints anticipated 4.43 ha present	This community occurs northeastern corner of the study area and is outside of the proposed precinct area and is not at risk of impacts.  This community does not qualify as LNGT under the EPBC Act, as detailed above.  This community represents a buffer and link to adjacent native vegetation communities and should be retained to maintain this connectivity across the landscape.
<b>Modified vegetation communities (TASVEG 4.0 units)</b>		
<b>FAC</b> – Improved pasture over native tree canopy <b>FAG</b> – Agricultural land <b>FUR</b> – Urban areas	No constraints anticipated 60.92 ha present	These modified land areas cover most of the study area (Figure 3) and have a very low number of natural values present. As such, future development will not lead to direct impacts on observed natural values.

Natural Value	Potential Constraint	Context & Potential Implications to Natural Values <sup>14</sup>
		It is recommended that areas of FAC are retained to provide an ecotonal buffer between existing agricultural and native forest vegetation.
<b>EPBCA and/or TSPA listed threatened flora</b>		
<b><i>Eucalyptus risdonii</i></b> Risdon peppermint EPBCA: not listed TSPA: rare	No constraints anticipated	This species occurs within DRI forest vegetation and occurrences of this species within the study area are contained entirely within the conservation covenant. There is no likelihood of impacts to this species through the future developments within the PSP.
<b>Threatened fauna and threatened fauna habitat</b>		
<b><i>Perameles gunnii</i></b> Eastern barred bandicoot EPBCA: VULNERABLE TSPA: not listed	No constraints anticipated Minimal impact to foraging and nesting habitat	<p>This species is widespread in Tasmania and resilient to disturbance<sup>17</sup>. Suitable habitat for this species was observed within the study area. Further investigations would be needed to reliably determine the presence of the species in the study area.</p> <p>It is considered unlikely that any future development options would reduce the carrying capacity of the habitat at all given that this species is known to be successful in peri urban environments and the extent of suitable habitat in the broader area.</p> <p>There is some potential for indirect impacts associated with future occupation of the residential homes and the introduction of cats and dogs. Given the presence of rural residences these threats are likely already present in the study area. As stated above the species is also known to be successful in peri urban environments. Also, the creation of green space along the creek lines may provide protection and cover for this species.</p> <p>Regardless of which PSP option is selected, it is unlikely that any future development would warrant referral under the EPBC Act based on potential impacts to this species.</p>

<sup>17</sup> Department of the Environment, Water, Heritage and the Arts (2008)

Natural Value	Potential Constraint	Context & Potential Implications to Natural Values <sup>14</sup>
<p><b><i>Dasyurus maculatus</i> subsp. <i>maculatus</i></b></p> <p>Spotted-tail quoll</p> <p>EPBCA: VULNERABLE</p> <p>TSPA: Rare</p> <p><b><i>Dasyurus viverrinus</i></b></p> <p>Eastern quoll</p> <p>EPBCA: ENDANGERED</p> <p>TSPA: not listed</p> <p><b>AND</b></p> <p><b><i>Sarcophilus harrisii</i></b></p> <p>Tasmanian devil</p> <p>EPBCA: ENDANGERED</p> <p>TSPA: endangered</p>	<p>Minimal constraints anticipated</p> <p>Minimal impact to denning and foraging habitat</p>	<p>The forest vegetation types within the study area are dry and open and are not highly suitable denning habitat. Irrespective of denning opportunity these species may use the study area, particularly the forest areas, as foraging habitat as the study area is contiguous with extensive areas of native vegetation outside of the site boundaries. The modified land within the proposed precinct area may be visited by foraging animals but is not considered to be core or optimal habitat.</p> <p>Regardless of which PSP option is selected, it is unlikely that any future development would warrant referral under the EPBC Act based on potential impacts to this species.</p>
<p><b><i>Lathamus discolor</i></b></p> <p>Swift parrot</p> <p>EPBCA: CRITICALLY ENDANGERED</p> <p>TSPA: Endangered</p> <p><b>AND</b></p> <p><b><i>Neophema chrysostoma</i></b></p> <p>Blue-winged parrot</p> <p>EPBCA: VULNERABLE</p>	<p>Minimal constraints anticipated</p> <p>Potential impact to nesting and foraging habitat</p>	<p>Suitable foraging habitat for both species is present. The swift parrot forages on blue gums, and the blue-winged parrot is known to forage in paddocks to feed on seeds of native and introduced grasses, herbs and shrubs<sup>18</sup>.</p> <p>Any future developments that could potentially arise from the PSP are unlikely to have the potential to lead to a decline in the species population, as there is abundant alternative foraging habitat in the immediate surrounds for these highly mobile species.</p> <p>Efforts should be made to retain any hollow-bearing trees that may provide nesting habitat for these species.</p>

<sup>18</sup> Department of Climate Change, Energy, the Environment and Water (2023)



Natural Value	Potential Constraint	Context & Potential Implications to Natural Values <sup>14</sup>
TSPA: not listed		Regardless of which PSP option is selected, it is unlikely that any future development would warrant referral under the EPBC Act based on potential impacts to this species.
<b>Introduced flora</b>		
<b>Declared, WoNS and Environmental weed species</b> <i>See Section 2.4 for details of weed species present and/or likely to be present</i>	Spread of weed species and contamination of nearby private land and other areas through the spreading of propagules.	<p>Four Class B declared weeds<sup>19</sup> were observed in the study area.</p> <p>The PSP concept plan options will not change the legislative requirement to manage declared weed species.</p> <p>Any future developments associated with changes to the zoning are likely to increase the risk of spreading weeds locally (or further) through creating new disturbance niches in the project area or spreading propagules through contaminated soil, equipment and/or machinery.</p> <p>Any future planning permits should ensure best-practice guidelines for weed and hygiene management are undertaken to manage existing weed infestations and to prevent the establishment of any new infestations in the project area. At minimum, the PSP must include provisions for weed and hygiene management through the implementation of a weed and hygiene management plan throughout any staged developments, with particular focus on the management and prevention of introducing espartillo within the study area.</p> <p>The weed and hygiene management plan must include provisions from the following best-practice guidelines:</p> <ul style="list-style-type: none"> <li>• <i>Keeping it clean - A Tasmanian field hygiene manual to prevent the spread of freshwater pests and pathogens</i> (Allen and Gartenstein, 2010)</li> <li>• <i>Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania</i> (DPIPWE, Stewart and Askey-Doran, 2015)</li> </ul>

<sup>19</sup> In Brighton Council, according to the relevant Statutory Weed Management Strategies accessed via the Department of Natural Resources and Environment website.

## REFERENCES

- de Salas M. F. & Baker M. J. (2024). A Census of the Vascular Plants of Tasmania, including Macquarie Island. (Tasmanian Herbarium, Tasmanian Museum and Art Gallery, Hobart) <https://flora.tmag.tas.gov.au/resources/census/>
- Department of Climate Change, Energy, the Environment and Water (2023). Conservation Advice for *Neophema chrysostoma* (blue-winged parrot). Canberra: Department of Climate Change, Energy, the Environment and Water. Available from: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/726-conservation-advice-31032023.pdf>. In effect under the EPBC Act from 31-Mar-2023.
- Department of Climate Change, Energy, the Environment and Water (2024) <https://www.dcceew.gov.au/environment/biodiversity/conservation/wildlife-corridors>, accessed 29/10/2024
- Department of the Environment, Water, Heritage and the Arts (2008). Approved Conservation Advice for *Perameles gunnii gunnii* (Eastern Barred Bandicoot (Tasmania)). Canberra: Department of the Environment, Water, Heritage and the Arts. Available from: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/66651-conservation-advice.pdf>. In effect under the EPBC Act from 26-Mar-2008.
- Department of the Environment, Water, Heritage and the Arts (2010). Lowland Native Grasslands of Tasmania — a nationally threatened ecological community. Environment Protection and Biodiversity Conservation Act 1999 Policy Statement 3.18. Australian Government, Canberra.
- Department of Natural Resources and Environment (2024). Natural Values Report\_1\_29-Oct-2024, Natural Values Atlas, Threatened Species Section, Department of Natural Resources and Environment Tasmania, Hobart, Tasmania.
- Goff, F. G, Dawson, G. A. & Rochow, J. J. (1982). Site examination for threatened and endangered plant species. *Environmental Management*, 6(4), pp. 307-316.
- Kitchener, A. and Harris, S. (2013). *From Forest to Fjaeldmark: Descriptions of Tasmania's Vegetation*. Edition 2. Department of Primary Industries, Parks, Water and Environment, Tasmania.

## APPENDIX A – BOYER ROAD PRECINCT CONCEPT PLAN



Figure A1: Boyer Road Precinct Concept Plan Option 1





Figure A2: Boyer Road Precinct Concept Plan Option 2

Boyer Road, Bridgewater  
(NBES Job Code: HOD001)

May 19<sup>th</sup>, 2025

## Natural Values Constraints – Addendum letter

Dear Nitsan,

Thank you for sending through the revised development framework for the Boyer Road Precinct (Figure 1) which updates are based on the recommendations made in our natural values constraints report<sup>1</sup>.

It is my understanding that through an iterative process between NBES and Holmes Dyer recommendations made in our constraints report have resulted in these alterations.

These recommendations were based on avoidance of 0.95 ha of the threatened vegetation community *Eucalyptus globulus* dry forest (TASVEG 4.0 DGL) listed under the Tasmanian *Nature Conservation Act 2002*. Not only was this community recommended for avoidance due to its status as threatened but also as it represents habitat for the critically endangered swift parrot. This community meets the definitions for priority vegetation under the Tasmanian Planning Scheme (2020).

We acknowledge that Figure 1 below (new development framework) clearly shows the new design avoids the DGL community as mapped in our constraints report when compared to Figure 2. (option 4) and Figure 3 (concept plan) which was used as the basis for the original natural values constraints report.

### Summary

In consideration of figures 1, 2 and 3 below, it is our assessment that the updated design (concept plan), will avoid impacts to threatened native vegetation communities, and thus will not have any direct impact on habitat for the critically endangered swift parrot. This change is endorsed by North Barker, and we are pleased that our recommendations have resulted in the avoidance of these values.

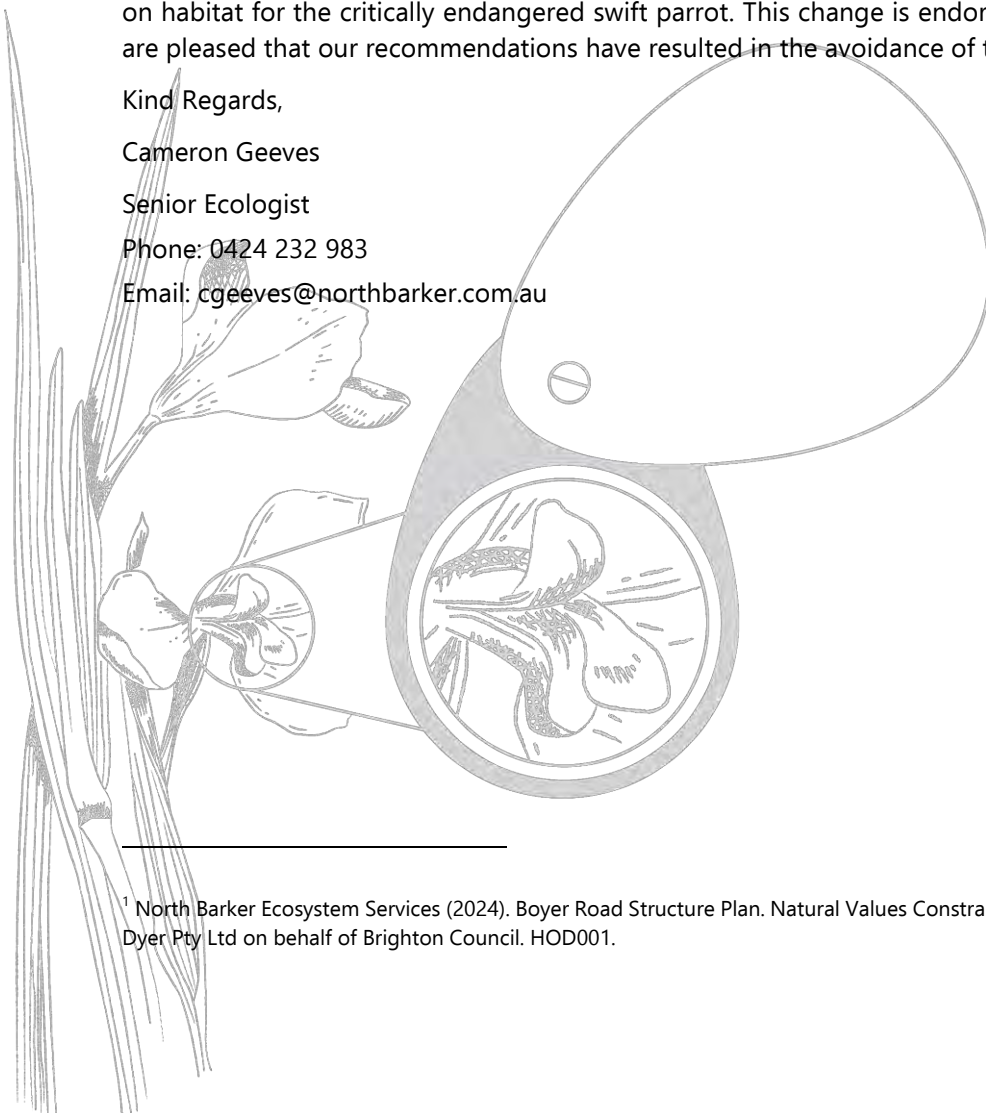
Kind Regards,

Cameron Geeves

Senior Ecologist

Phone: 0424 232 983

Email: [cgeeves@northbarker.com.au](mailto:cgeeves@northbarker.com.au)



<sup>1</sup> North Barker Ecosystem Services (2024). Boyer Road Structure Plan. Natural Values Constraints. 8<sup>th</sup> November 2024. For Holmes Dyer Pty Ltd on behalf of Brighton Council. HOD001.





Figure 1. New Development Framework (structure plan). Received Thursday 15<sup>th</sup> May 2025.





Figure 2. Structure Plan (Option 4) supplied 15<sup>th</sup> April 2025.





Figure 3. Original Concept Plan which was the basis for the Natural Values Constraints Report.



**CULTURAL  
HERITAGE  
MANAGEMENT  
AUSTRALIA**

Boyer Road Precinct Structure Plan

Historic Heritage Assessment  
Draft Report

AUTHORS NAME: Stuart Huys

CLIENT: Holmes Dyer

21.11.2024



**Report Version Control**

Report version	Report distribution	Date of Distribution
Draft Report V1	Zoe Smith (CHMA) for editing	21.11.2024
Draft Report V1	Proponent for review	21.11.2024
Final Draft Report V1	Heritage Tasmania	
Final report V2	Heritage Tasmania	

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## Executive Summary

### Project Details

The Brighton Council has engaged Holmes Dyer to prepare a Precinct Structure Plan (PSP) for land along Boyer Road at Bridgewater. The area of land encompasses approximately 59ha and is zoned Future Urban under the Brighton Local Provision Schedule. Figures 1-3 show the location and boundaries of the land, with Figure 4 providing a very preliminary development concept plan for the Boyer Road Precinct. It should be noted that this concept plan is likely to change, pending the outcomes of the various studies being undertaken.

CHMA Pty Ltd has been engaged by the Holmes Dyer to undertake an Historic heritage assessment for the 59ha parcel of land (the study area), in order to identify any potential heritage constraints. The information generated from heritage assessment will be used to inform the Boyer Road PSP. This report presents the findings of the assessment.

### Assessment Results

The search of the various historic heritage registers shows that there are is one heritage registered property that is situated within the boundaries of the Boyer Road Precinct study area. This is the property known as Genappe. Located at 50 Boyer Road, Bridgewater, Genappe is a permanently-listed property on the Tasmanian Heritage Register (THR ID 620) comprised of a Georgian, two-storey brick farm house and associated out-buildings. The property is also identified in Table C6.1 Local Heritage Places of the *Tasmanian Planning Scheme—Brighton (Local Provisions Schedule)*. The THR heritage listing applies to the whole of the property boundaries (see Figure i). Section 5 of this report provides further details.

The survey assessment confirmed the presence of a number of heritage features associated with Genappe property within the Boyer Road Precinct study area. Table i provides the summary details for the recorded historic features, with Figure ii showing the location of these features. The detailed results are presented in section 5.2 of this report.

### Statement of Archaeological Potential

Besides the recorded features described above, no other suspected historic heritage features, or specific areas of elevated archaeological potential were identified within the bounds of the Boyer Road Precinct study area. Surface visibility throughout the study area was restricted to an estimated average of between 20%-40%, due to vegetation cover. Given these constraints, it can't be stated with certainty that there are no undetected features present. Based on the observations made during the field survey assessment, together with the archival and heritage register data collated for the project, it is clear that the Genappe Homestead complex is the main heritage feature present in the study area, and that this complex (which is confined to an approximate 1ha area) has the highest archaeological potential. Outside of the bounds of the homestead complex it is assessed that there is generally a low to very low potential for undetected heritage features to be present.

**Table i: Summary details for recorded historic features**

Historic Feature	Grid Reference (GDA94)	Description
Genappe Homestead Complex	E517727 N5268973 E517760 N5269030 E517857 N5269003 E517801 N5268906	Main Genappe Homestead complex, which includes out buildings, sheds and garden plantings that are confined to within an approximate 1ha area.
Hedgerow1	E517587 N5268764 To E517732 N5268969	Hawthorn Hedgerow on Genappe property. Approximately 230m in length and runs along fence line on western boundary of property. Hedgerow is mature and reasonably intact.
Hedgerow2	E517568 N5268510 To E517718 N5268729	Hawthorn Hedgerow on Genappe property. Approximately 270m in length and runs along an internal property fence line. Hedgerow is mature and reasonably intact.
Hedgerow3	E517800 N5268473 To E517897 N5268647	Hawthorn Hedgerow on Genappe property. Approximately 270m in length and runs along an internal property fence line. Hedgerow is mature and reasonably intact.
Red Brick feature	E517689 N5269020 To E517697 N5269013	An 8m x 2m red clay brick feature located just north of fence line and 35m west of Genappe property boundary. Possible foundation feature associated with Genappe property. May also be a later re-use and repurposing of brick.

## Heritage Management Plan

### **Recommendation 1 (The Genappe Property)**

The Genappe property is a permanent registration on the Tasmanian Heritage Register (THR 620). The THR heritage listing applies to the whole of the property boundaries, which are entirely within the bounds of the Boyer Road Precinct study area (see Figure ii).

The Boyer Road Precinct Structure Plan is in the early concept phase and at this stage it is unclear as to what the potential impacts on the heritage values of the Genappe property will be.

Works to places included in the THR require approval, either through a Certificate of Exemption for works which will have no or negligible impact, or through a Discretionary Permit for those works which may impact on the significance of the place. If the registered boundaries of the property cannot be avoided, then a Statement of Heritage Impacts will need to be prepared for the property, based on the preferred concept design for the Boyer Road Precinct Structure Plan.

The Genappe homestead complex (comprising an area of approximately 1ha) incorporates the main homestead and associated out buildings, sheds and garden



plantings. (see Figure ii). It would seem that the main significance values attributed to Genappe are predominantly confined to this area. It is recommended that at a minimum, this area incorporating the main homestead complex should be excluded from any future development.

The three recorded hedgerow features are also situated within the registered boundaries of the Genappe property and are a component of the early pastoral development of the property (see Figure ii). As such, these hedgerows retain a level of associated significance as part of the broader setting of the property. It is recommended that consideration also be given to the retention of these hedgerow features.

Works to places included in the THR require approval, either through a Certificate of Exemption for works which will have no or negligible impact, or through a Discretionary Permit for those works which may impact on the significance of the place. If the registered boundaries of the property cannot be avoided, then either a Certificate of Exemption or a Discretionary Permit will be required, depending on the outcomes of the Statement of Heritage Impacts.

***Recommendation 2 (Red Clay Brick Feature)***

The recorded red clay brick feature (see Figure ii) is situated outside the heritage listed boundaries of the Genappe property and is not listed on the Local Heritage Places of the *Tasmanian Planning Scheme—Brighton (Local Provisions Schedule)*.

At this point it is unclear what this feature is and whether it is associated with the Genappe property. As such, it is not possible at this stage to accurately assess the significance of the feature.

If there is the potential that this feature may be impacted by future development within the Boyer Road precinct, then it is recommended that a detailed archival recording should be carried out for this feature, together with additional background research. The aim being to more accurately determine the origins, extent and significance of this feature. Future management decisions for the feature will be predicated on the outcomes of these additional investigations.

***Recommendation 3 (Unanticipated Discoveries of historic features)***

No other historic sites or suspected features were identified during the field survey assessment of the AFL High Performance Centre study area and it is assessed that there is a low to very low potential for undetected Historic heritage sites to occur within the study area. However, as per the Practice Note No 2 by the Tasmanian Heritage Council, processes must be followed should any unexpected archaeological features and/or deposits be revealed during works. An Unanticipated Discovery Plan for the project is presented in Section 9 of this report.

***Recommendation 4 (Provision of Report to Heritage Tasmania)***

Copies of this report should be provided to Heritage Tasmania for review.

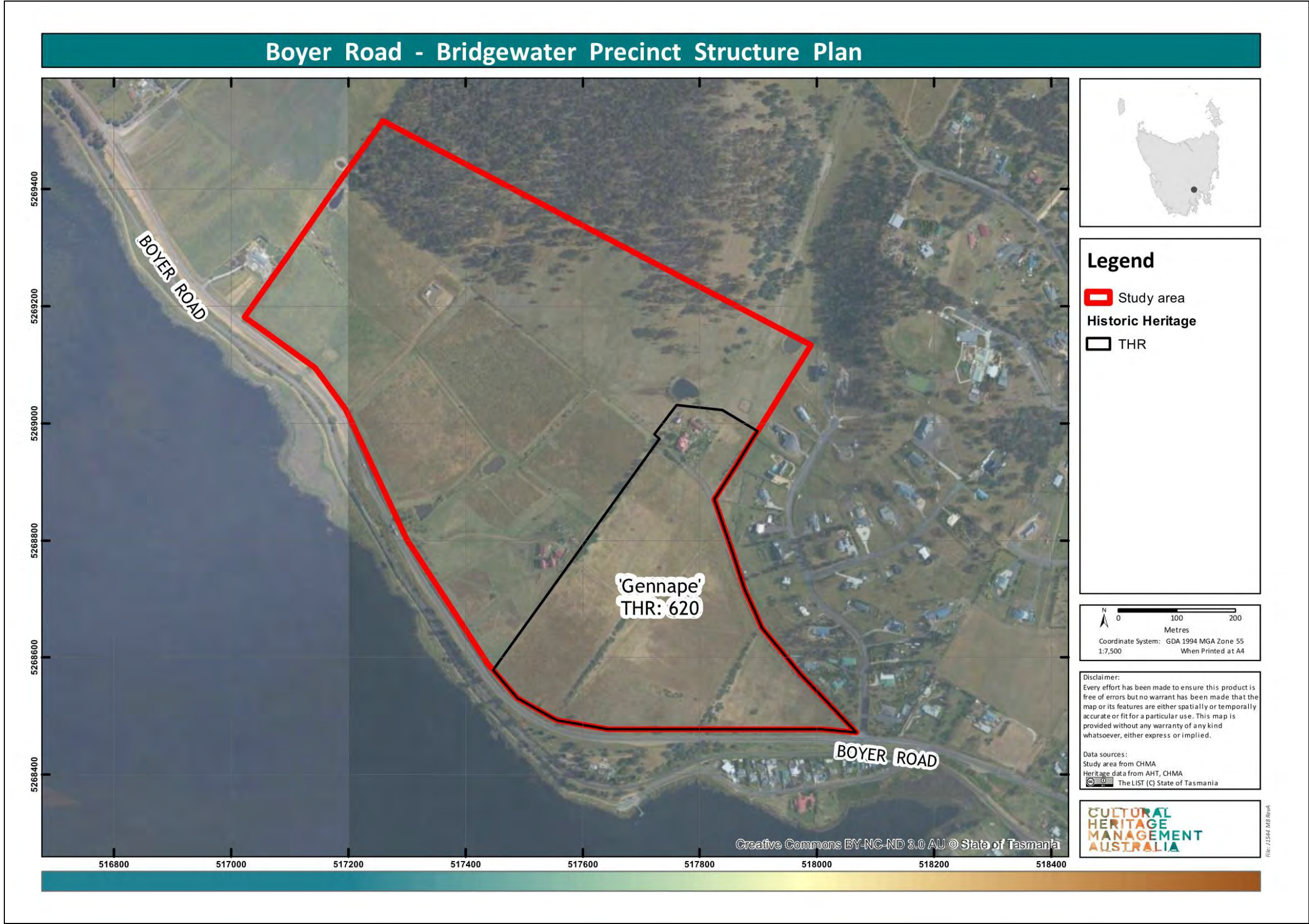


Figure i: Aerial image showing the registered boundaries of the Genappe property within the Boyer Road Precinct study area





**Figure ii: Aerial image showing the heritage features identified within the Boyer Road Precinct study area**



## 1.0 Project Outline

### 1.1 Project Details

The Brighton Council has engaged Holmes Dyer to prepare a Precinct Structure Plan (PSP) for land along Boyer Road at Bridgewater. The area of land encompasses approximately 59ha and is zoned Future Urban under the Brighton Local Provision Schedule. Figures 1-3 show the location and boundaries of the land, with Figure 4 providing a very preliminary development concept plan for the Boyer Road Precinct. It should be noted that this concept plan is likely to change, pending the outcomes of the various studies being undertaken.

CHMA Pty Ltd has been engaged by the Holmes Dyer to undertake an Historic heritage assessment for the 59ha parcel of land (the study area), in order to identify any potential heritage constraints. The information generated from heritage assessment will be used to inform the Boyer Road PSP. This report presents the findings of the assessment.

### 1.2 Aims of the Investigation

The principal aims of the heritage assessment are as follows.

- To undertake an Historic cultural heritage assessment for the area encompassed by the Boyer Road PSP (the study area as shown in Figures 1-3). The assessment is to be compliant with both State and Commonwealth legislative regimes.
- To determine the extent of previously identified Historic heritage sites within and in the immediate vicinity of the study area.
- To locate and document Historic heritage sites that may be present within the identified bounds of the study area.
- To assess the archaeological sensitivity values of the study area.
- To assess the scientific and cultural values of identified Historic heritage sites.
- To advise on the management of Historic heritage in line with best practice archaeological guidelines.
- Prepare a report which documents the findings of the Historic heritage assessment.

### 1.3 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 CHMA staff.

#### ***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 and the collation of information pertaining to any registered heritage sites located within the general vicinity of the study area.
- Maps of the study areas.
- Relevant reports documenting the outcomes of previous heritage studies in the vicinity of the study area.
- Historical 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.

### ***Stage 2 (Field Work)***

Stage 2 entailed the field work component of the assessment. The field survey was undertaken over a period of two days (22.10.2024 and 23.10.2024) by Stuart Huys (CHMA archaeologist) and Rocky Sainty (Aboriginal Heritage Officer). As noted in section 1.1 of this report, the land that is the focus of this assessment encompasses approximately 59ha. The field team walked a series of 13.7km of survey transects across this area, with the average width of each transect being 5m. Section 3 provides further details as to the survey coverage achieved within the study area.

### ***Stage 3***

Stage three of the project involves the production of a Draft and Final Report that includes an analysis of the data obtained from the field survey, an assessment of archaeological sensitivity and management recommendations. The report has been prepared by Stuart Huys from CHMA. A draft copy (one electronic copy) of the report has been submitted to Holmes Dyer and Heritage Tasmania (HT) for review.

## **1.4 Project Limitations**

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 primarily to the presence of vegetation cover and the presence of introduced gravels. Surface visibility across the study area varied between an estimated average of 10% and 50%. Erosion scalds, vehicle tracks and animal diggings provided locales of improved surface visibility. The constraints in surface visibility limited the effectiveness of the survey assessment to some degree. This is discussed in more detail in Section 3 of this report.

The other limitation relates to property access constraints. There are two rural properties within the study area where there are existing residential dwellings. The field team were requested not to enter the core house yard areas surrounding these dwellings.



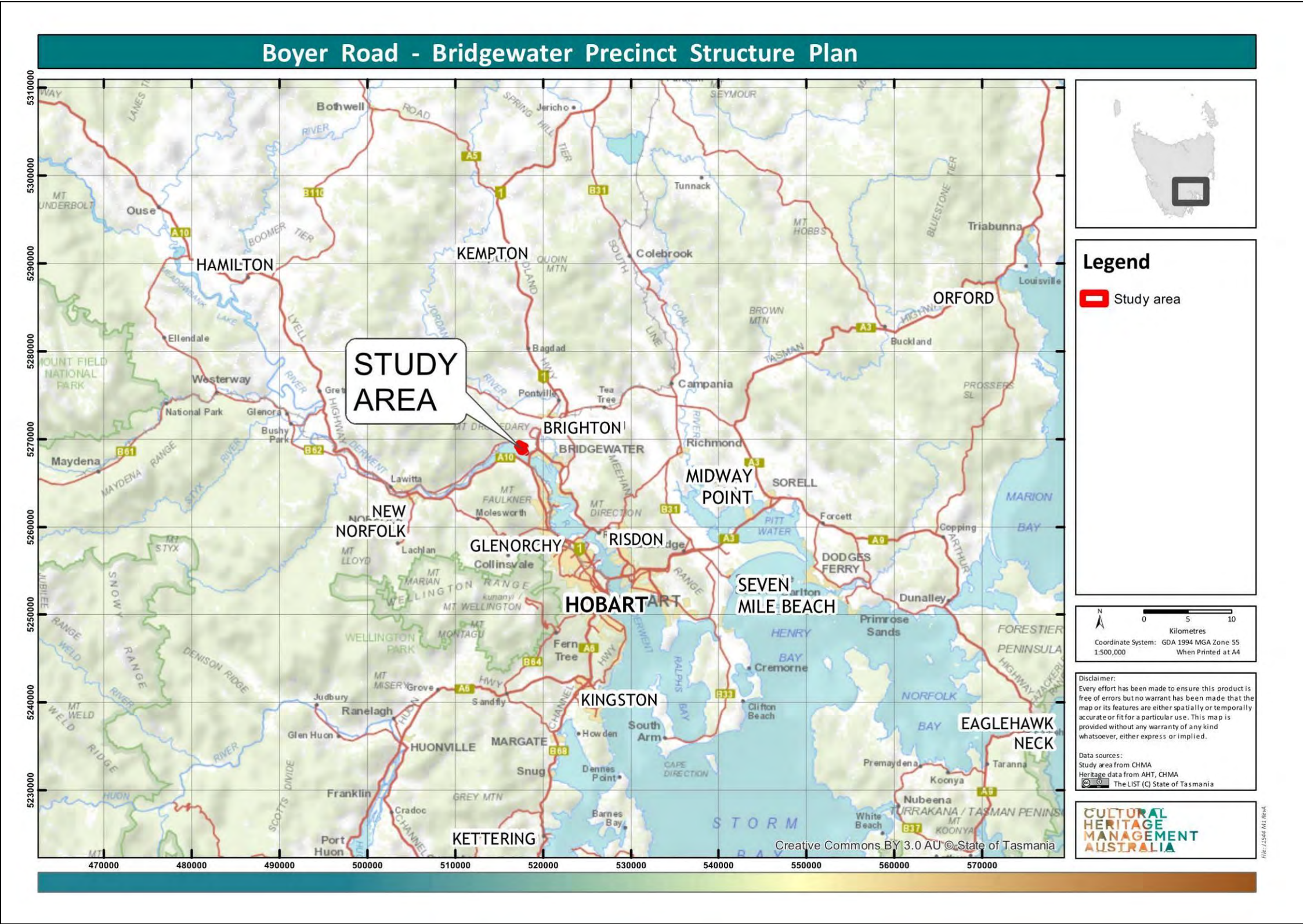


Figure 1: Topographic map showing the general location of the study area at Boyer Road, Brighton, in the South East Region of Tasmania



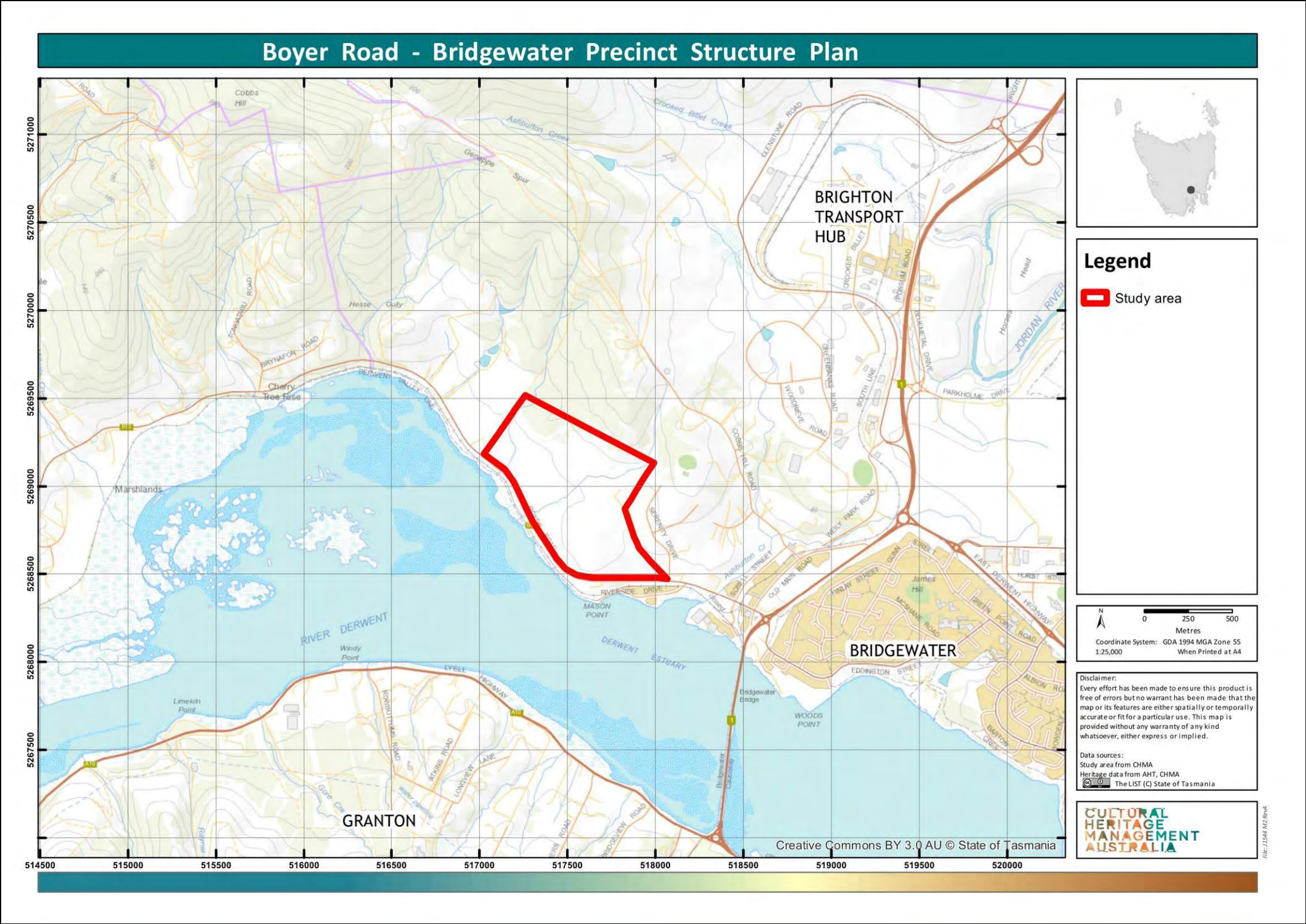


Figure 2: Topographic map showing the landscape setting of the Boyer Road Precinct (the study area)





Figure 3: Aerial image showing the boundaries for the Boyer Road Precinct (the study area)





Figure 4: The Preliminary Concept Plan for the Boyer Road Precinct



## 2.0 Environmental Setting of the Study Area

The Boyer Road Precinct encompasses approximately 59ha and is located at Bridgewater in the South East Region of Tasmania. The land is situated on the lower to basal southern slopes of the Genappe Spur, which runs in a north-west to south-east direction off Cobbs Hill. The slope gradients across the land range from around 15° to 20° in the northern portion of the study area (see Plate 1), with gradients generally decreasing to less than 5°, approaching Boyer Road in the south-west of the study area (see Plate 2). Within the central eastern portion of the study area there is a discrete benched slope areas, where gradients decrease to less than 2° (see Plate 3).

The south-west boundary of the study area, along Boyer Road, approaches to within 150m of the River Derwent Estuary. The River Derwent estuary is a 'ria' or drowned river valley formed by coastal submergence about 6,000 years ago. The shoreline of the estuary in the surrounds of Bridgewater is low-energy, with mudflats and shoals exposed at low tide. The River is estuarine at this point, and subject to tidal influences. The other major water course in the vicinity of the study area is the Jordan River. The Jordan River has its' headwaters at Lake Tiberias, around 40km to the north-east of the study area. From here the river flows in a north-west direction through a broad open valley system, cutting across the Midland Highway near Jericho. It then enters more steeply incised hills just south of Melton Mowbray, where the river then loops around to the south-east, eventually emptying into the Derwent River at Herdsmans Cove. The river is also estuarine at this point, and subject to tidal influences.

Ashburton Creek, which is located around 500m to the east of the study area is the closest named fresh water course. This is an ephemeral water course that flows in a south-east direction down from Cobbs Hill and along the east edge of the Genappe Spur, through the study area and eventually emptying into the River Derwent just east of Mason Point. Within the study area itself, the hill slopes are drained by a series of small ephemeral un-named gullies. These gullies have a series of small farm dams constructed at various points (see Plate 4).

The underlying geology across the south-east portion of the study area is dominated by Jurassic dolerite and related rocks. There is a transition to Permian siltstone bedrock within the north-west portion of the study area (TheList 2024). The existing soil landscapes broadly reflect the underlying geology. Within the south-east of the study area there are moderately well drained black soils developed on Jurassic dolerite bedrock and colluvium on low undulating (3-10%) land. Across the north-west of the study area there are poor to imperfectly drained grey brown texture contrast soils developed on Permian siltstone bedrock and colluvium on undulating to rolling (3-32%) land. Rainfall <750mm. Undifferentiated soils developed on Quaternary alluvium occur across the basal slopes on the south-west boundary (TheList 2024). Although not noted on the Listmap, there is a deposit of what appears to be aeolian (wind blown) sand deposits present within the south-east portion of the study area (see Plate 5).

The vegetation across the majority of the south-west and central parts of the study area consists primarily of agricultural, urban, and exotic vegetation. The native vegetation in these areas has been cleared and replanted with grasses (see Plates 1-3). There are also a number of residential dwellings and associated infrastructure in these areas (roads, powerlines etc). Within the north-west portion of the study area there are remnant patches of native vegetation comprising *Eucalyptus tenuiramis* forest and woodland on sediments, *Eucalyptus amygdalina* forest on mudstone and *Eucalyptus risdonii* forest and woodland (see Plate 6).



Plate 1: View south-west across the study area from the northern boundary, showing typical topography and vegetation





Plate 2: View south-east showing the gentle hill slope gradients within the south-west of the study area



Plate 3: View east at the benched slope area within the central-eastern portion of the study area





Plate 4: View north at a farm dam along one of the gullies that run through the study area



Plate 5: A patch of aeolian wind blow sand deposits in the south-east of the study area





Plate 6: View west at a remnant patch of Eucalypt woodland in the northern part of the study area

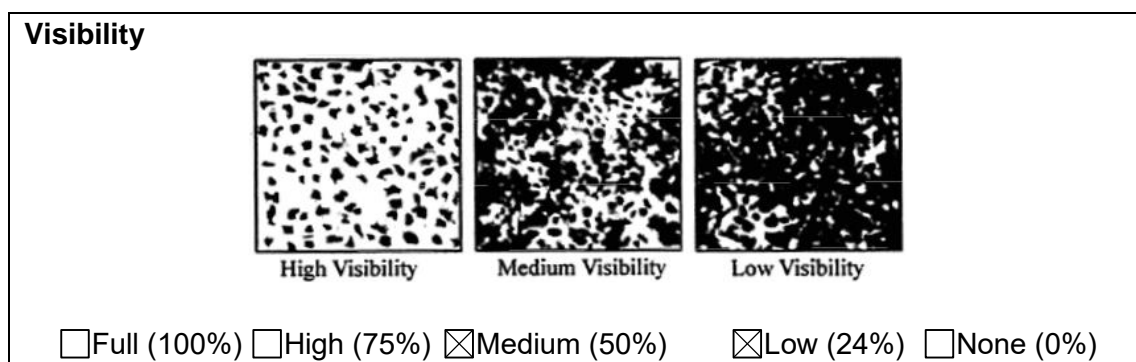
### 3.0 Survey Coverage of the Study Area

#### Survey Coverage and Surface Visibility

Survey coverage refers to the estimated portion of a study area that has actually been visually inspected during a field survey. 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. Figure 5 provides a useful guide for estimating ground surface visibility.

The field survey was undertaken over a period of two days (22.10.2024 and 23.10.2024) by Stuart Huys (CHMA archaeologist) and Rocky Sainty (Aboriginal Heritage Officer). As noted in section 1.1 of this report, the land that is the focus of this assessment encompasses approximately 59ha. The field team walked a series of 13.7km of survey transects across this area, with the average width of each transect being 5m. This equates to a survey coverage of 68 500m<sup>2</sup>. Figure 6 shows the survey transects walked across the study area. As noted in section 1, the field team were requested not to enter the core house yard areas surrounding the two rural dwellings in the study area.

In order to maximise effective coverage, the field team targeted existing informal walking tracks and erosion scalds throughout the study area, which provided transects of improved surface visibility. Away from these areas, surface visibility was reduced to between 20%-40% due to vegetation cover (see Plates 7-10). As a general observation, surface visibility was typically slightly more improved in the northern parts of the study area, on the steeper hill slopes, where vegetation cover was generally more sparse. Average visibility was estimated at 40% in these areas. Surface visibility was reduced to an average of 20% in the southern portion of the study area, on the lower hill slopes, where grass cover was thickest.



**Figure 5: 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 historic heritage sites. The combination of survey coverage and surface visibility is referred to as effective survey coverage. Table 1 presents the effective survey coverage achieved during the course of the survey assessment of the Boyer Road Precinct study area. The effective coverage achieved



by the field survey is estimated at 21 600m<sup>2</sup>, which is deemed to be sufficient for generating a reasonable understanding as to the potential extent and nature of historic heritage values that may be present.

**Table 1: Effective survey coverage during the survey assessment**

Area Surveyed	Total Survey Transects	Estimated Average Surface Visibility	Effective Survey Coverage
Areas of improved visibility	900m x 5m = 4 500m <sup>2</sup>	60%	2 700m <sup>2</sup>
Transects in North of study area	6 100m x 5m = 30 500m <sup>2</sup>	40%	12 200m <sup>2</sup>
Transects in South of study area	6 700m x 5m = 33 500m <sup>2</sup>	20%	6 700m <sup>2</sup>
<b>Total</b>	<b>13 700m x 5m = 68 500m<sup>2</sup></b>		<b>21 600m<sup>2</sup></b>



Plate 7: View west showing typical surface visibility in the north portion of the study area





Plate 8: View west showing typical surface visibility in the south portion of the study area



Plate 9: View west at erosion scalds and a vehicle track in the north of the study area providing improved visibility





Plate 10: View north-west at erosion scalds in the south of the study area providing improved visibility





**Figure 6: Aerial image showing survey transects walked by the field team during the assessment of the Boyer Road Precinct study area**



## 4.0 Historic Background

### 4.1 Establishment of the European Settlement at Brighton

The first exploration of the Derwent River by Europeans was by Lieutenant John Hayes, who produced a sketch of the Brighton district in 1793 (Alexander 2006:2). He sailed up the Derwent and named the plains New Yorkshire (Alexander 2006:2). Herdsman's Cove was named by Flinders in 1798 when he and George Bass also sailed up the Derwent River (Alexander 2006:2). From the earliest observations this area was recognised as having potential to support a pastoral industry. From this point on, settlement was inevitable.

In 1803 Freycinet and Peron were sent by Baudin to explore the Derwent River. They observed Aboriginal huts and cooking fires around Bridgewater, but the people themselves seemed to have left (Alexander 2006:3). In 1803 when James Meehan surveyed up the Jordan to Bagdad, he reported that it was very poor land, but when he returned a few months later he reported 'gentle grassy hills...very good pasturage' (Alexander 2006:4).

The Brighton area was first occupied by Europeans in 1809, although exploration and hunting parties are known to have visited the area earlier. Early settlement was focussed upon the shores of the Derwent and Jordan rivers and took the form of pockets of cleared land with small clusters of buildings set upon them.

The muster of 1809 records just one farm at Herdsman's Cove, that belonging to John Devereaux (Alexander 2006:5). This location became important after Grimes established the route from Herdsman's Cove across the Brighton Plains as the north bound road, rather than through the Coal River valley (Alexander 2006:5).

The resettled Norfolk Islanders were given land grants along the Derwent River. These grants were registered in 1813, although as the Islanders arrived in 1808 it is likely their blocks were occupied several years before 1813 (LSD 354; Sheridan 2000). Prominent among these early settlers along the Derwent were Daniel Stanfield and Francis Cox Snr. The other group of early settlers along the Jordan River were ex Marines who had arrived with Collins in 1804. Men such as Edward Westwood and George Kearley received small grants in the mid 1810s.

The extent of land under cultivation was limited during this period, the early settlers focussing upon the husbandry of sheep and cattle which, owing to the lack of fencing, were often allowed to roam about the countryside unrestricted (Austral Archaeology 2008).

In this early period the Brighton district served as the gateway between the northern approaches to Hobart Town and the interior. Thomas Laycock was the first European to successfully travel overland from Port Dalrymple to Hobart in February 1807 (Stancombe 1969:2). His expedition opened the way for European settlement of the interior.

One month after Laycock's successful expedition, in March 1807, Governor Bligh sent Surveyor-General Charles Grimes to examine Laycock's route and establish a road alignment (Stancombe 1969:4). Grimes' work was vital in forming what became known as the 'Main Line of Road' that was established by the time Macquarie travelled overland in 1811 (Stancombe 1969:5).

In the 1820s, Major Bell selected an alternative alignment that made significant changes to Grimes' route. Bell's alignment crossed the Derwent at Old Beach (east of the earlier crossing at Herdsman's Cove) before traversing lands to the east and north of the Jordan River (Sheridan 2000:1). From the 1820s on this route became the main northbound road.

The first ferry across the Ricer Derwent was listed in 1817 and ran from Roseneath to Old Beach (Alexander 2006:13). In 1821 a second ferry was established from Cove Point at the mouth of the Jordan to Stoney Point 'which saved the settlers the hilly road from Old Beach' (Alexander 2006:13). A third ferry operated from Black Snake to Green Point along much the same line as the modern Bridgewater bridge (Alexander 2006:13). Richard Allwright for a time ran the inn which he called the Wheatsheaf at Herdsman's Cove serving the ferry terminal and first established by Andrew Whitehead in 1818 (Alexander 2006:14).

Macquarie declared the town of Brighton in 1821 on the 'peninsula' formed by the Jordan and Strathallen Creeks (Alexander 2006:12). The town was surveyed in 1824, to the south of Strathallen Creek and slightly south of the location chosen by Macquarie. (Alexander 2006:12). In 1825 Governor Arthur suggested Brighton as an alternative capital city (Alexander 2006:12). This caused great angst amongst the settlers in Hobart, but also led to the establishment of sites for churches, a courthouse and gaol, and saw convicts employed making bricks for these intended structures (Alexander 2006:12). However, the town did not boom, Hobart remained the capital and Brighton continued as a roadside outpost (Alexander 2006:12).

#### **4.2 Settlement of the Bridgewater Area**

In 1808, Daniel Stanfield took up a lease at Green Point, the site of modern-day Bridgewater, for the purposes of cultivation and raising sheep. Stanfield had been a corporal in the Royal Marines, stationed at Norfolk Island Penal Settlement, where he ultimately took up a 120-hectare land grant. The Norfolk Island Penal Settlement was decommissioned in 1804 and after struggling on for a few years, Stanfield together with his wife and five children sought fresh opportunities in Tasmania. Stanfield was granted 468 hectares at Green Point, where he built up assets including 1,000 cattle, 800 sheep, 10 horses and a flour mill. The weatherboard home he constructed on the property stood for more than 100 years.

In 1813, land west of the Black Snake Rivulet (at modern-day Granton) was reserved for the establishment of a settlement, which was to be named "Bridgewater". However, this site was subsequently abandoned, and the town of Bridgewater was later developed on the north-eastern shore of the Derwent. The township that developed at Black Snake was, by 1816, a major crossing-point of the Derwent, with



a ferry operating to Herdsman's Cove (now Gagebrook) and Green Point, where Bridgewater was later established.

By 1820 the west bank of the Derwent River was lined by farms. Figure 7 is a map drawn by Deputy Surveyor General G.W. Evans in 1819 shows property leases in the immediate vicinity of the study area. A modern satellite map overlain by Evans's map is provided at Figure 8. Ownership of the property leases identified in Figure 8 is shown in Table 2 below.

Construction of a causeway across the Derwent between Bridgewater and Granton began in 1829 and was completed in 1826. The 1.3 kilometre span was built by 200 convicts using wheelbarrows and hand tools, moved an estimated two million tonnes of earth during the seven-year construction period. Assignment to the causeway gang was a "secondary punishment" reserved for recidivists and otherwise badly-behaved convicts. Men who did not work hard enough faced solitary confinement in a tiny 2m x 0.5m cell.

The 1836 causeway did not span the entire river, so a ferry was still required to cross the deepest part of the river between the two causeway sections. In 1846, work commenced on a timber road bridge connecting the causeway, which was opened in 1849.

In 1874, a separate swing-span rail bridge was constructed next to the timber road bridge, with the latter replaced by a swing-span road bridge in 1893. In 1946, both earlier bridges were replaced by a lift span combined road-rail bridge. Rail services ceased using the bridge when the Brighton Transport Hub was established in 2014, but the bridge remains operational for road traffic, pending completion of the new Bridgewater Bridge in 2025.

Bridgewater's status as a critical node for ferry, and later road and rail, transport has contributed significantly to its early establishment and continued growth.

***Table 2: Property leases from 1819 in the immediate vicinity of the study area.***

LAND PARCEL NO.	PARCEL SIZE (ACRES)	OWNER
<b>2</b>	80	Jon McCarty
<b>3</b>	40	William Able
<b>4</b>	52	William Coventry
<b>5</b>	60	Francis Cox
<b>6</b>	30	John Avory
<b>7</b>	33	Stephen Martin
<b>8</b>	65	John Devereaux
<b>9</b>	800	Lieutenant George Brook Foster
<b>10</b>	310	Daniel Stanfield



**Figure 7: Map of the settlements on and near the Derwent River Van Diemen's Land by G.W. Evans, Deputy Surveyor General, Hobart Town 1819, National Library of Australia. The green circle indicates the general location of study area**





**Figure 8: Detail of Evans's 1819 property ownership map overlaying current satellite map of study area. (Map created by CartoGIS, College of Asia and the Pacific, ANU, and the National Centre of Biography, College of Arts and Social Sciences, ANU, 2017)**

### 4.3 The Derwent Valley Railway Line and New Norfolk Station

In 1871, the Launceston and Western Railway Company (L&WRC) opened Tasmania's first railway—a broad gauge line between Launceston and Deloraine (Clements cited in Alexander 2005:299). This was followed in 1876, by the construction of a rail line between Hobart and Evandale and then on to Launceston. This project between the Tasmanian Main Line Railway Company (Hobart to Evandale) and L&WRC (on to Launceston) reduced travel times between Hobart and Launceston from 15 hours by coach to seven hours (Clements cited in Alexander 2005:299).

On 20 December 1883, a Railway Act was passed which authorised the Derwent Valley, Fingal and Scottsdale railway lines (Whitham 2002:158). The Bridgewater-New Norfolk Line (1 September 1887) and New-Norfolk-Glenora Line (22 July 1888) were built by the Tasmanian Government Railways Department (Cooley 1987:181). The line was known as the Derwent Valley Line (later referenced as Line 9):

*The railway from Hobart to New Norfolk came through on 1<sup>st</sup> September 1887, and the railway station was built in the same year. The railway reached Glenora in 1888, and now runs as far as Kallista, past Maydena, this extension was first built to meet the demands of the Pioneer Woodware Co's peg-making factory at New Norfolk, which was founded in about 1927. Sassafras from Maydena being the favourite timber for making clothes-pegs. (Von Stieglitz 1961:72)*

According to The Cyclopedia of Tasmania (CT), in 1900: '*There is perhaps no more popular place of resort for tourists and holiday-makers than New Norfolk, and it is only fitting that there should be a railway station, in proportion to the large amount of traffic done*' (1900:424). The station was described as a:

*handsome little edifice with a long raised platform and a well-constructed veranda. Two waiting rooms are provided for the general public and commodious offices for the employees. A medium-sized goods-shed with the rails laid through it, coach and stable accommodation, stock-yards, etc... a little distance off is the stationmaster's dwelling house. (CT 1900:424)*

In 1900 Mr John Gillett, Stationmaster, oversaw '*a daily service, four trains four days a week and six on two days, whist on Sundays special excursions were run*' (1900:424).

The line was extended to in 1909 to Westerway, in 1917 to Fitzgerald and finally in 1936 to Kallista (74Km from the Bridgewater Junction). During the 1920-30s a 'determined' effort was made to relay the track with heavier rails allowing for the use of Q Class locomotives (Stokes 1971:21). This permitted for the movement of heavy freight along the line (Cooley 1963:4). During the 1940s two deviations and new facilities were added to accommodate the increased traffic resulting from the Boyer Paper Mill.

During the Second World War maintenance of the rail system declined and road transport began to compete with railways. Unprofitable railways closed, a fate which



befell much of the Derwent Rail Line and by September 1995 TasRail closed the line beyond New Norfolk.

For the last 25 years the Derwent Valley Railway, a volunteer organisation, have been lobbying to have the Derwent Valley Line reopened. The group also manage, maintain and restore an impressive collection of locomotives and rolling stock, and facilitate educational tours of the New Norfolk rail yard (Derwent Valley Railway Inc. 2020).

## 5.0 Results of the Assessment

### 5.1 Results of the Heritage Database Searches

A search was carried out of a number of historic registers and databases in order to determine the extent of historic sites and features in the vicinity of the study area.

Agency databases searched included:

- Australian National Heritage List (NHL)
- Australian Commonwealth Heritage List (CHL)
- The Australian Heritage Database (AHD)
- Tasmanian Heritage Register (THR)
- The Register of the National Estate (RNE)
- Australian Heritage Places Inventory (AHPI)
- The National Trust (NT)
- Brighton Interim Planning Scheme (2015) (BIPS)
- Derwent Valley Interim Planning Scheme (2015) (DVIPS)

The search of the various historic heritage registers shows that there is one heritage registered property that is situated within the boundaries of the Boyer Road Precinct study area. This is the property known as Genappe. Located at 50 Boyer Road, Bridgewater, Genappe is a permanently-listed property on the Tasmanian Heritage Register (THR ID 620) comprised of a Georgian, two-storey brick farm house and associated out-buildings. The property is also identified in Table C6.1 Local Heritage Places of the *Tasmanian Planning Scheme—Brighton (Local Provisions Schedule)*.

Table 3 provides the summary details for the heritage listing of the Genappe property, with Figure 11 showing the registered boundaries of the properties in relation to the study area. It should be noted that the THR heritage listing applies to the whole of the property boundaries. The Tasmanian Heritage Register Datasheet entry for Genappe is provided in Appendix 1. A summary overview of the available historic information for the Genappe property is presented below.

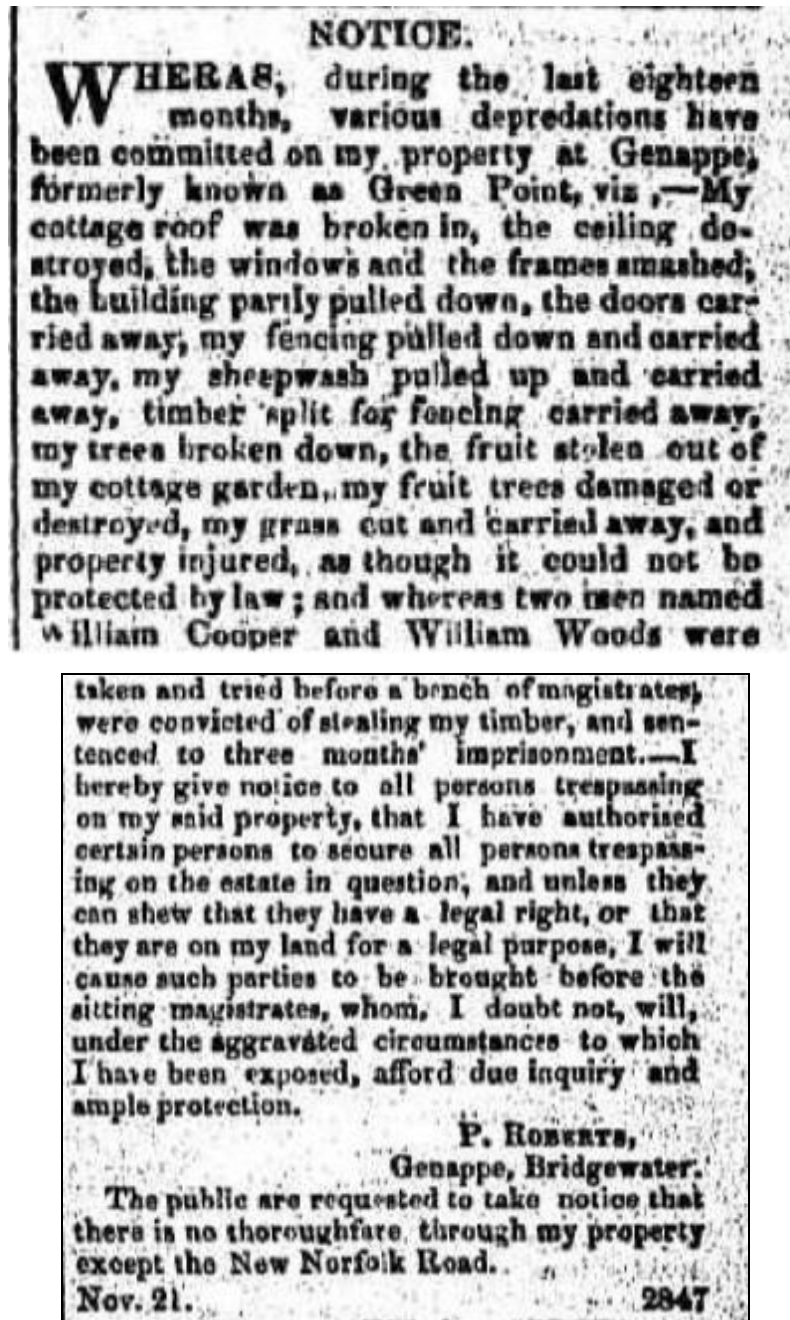
**Table 3: Heritage Registered properties that are within the Boyer Road Precinct study area**

Name	Address	Register and Municipality	THR Place ID	Title Reference	Description
Genappe	50 BOYER RD, BRIDGEWATER 7030 TAS	Tasmanian Heritage Register  Brighton Council Table C6.1 Local Heritage Places of the <i>Tasmanian Planning Scheme—Brighton</i>	620	44724/8	A two storey vernacular Georgian farm house built from brick. It has a centrally placed door with flanking windows and is three bays wide.

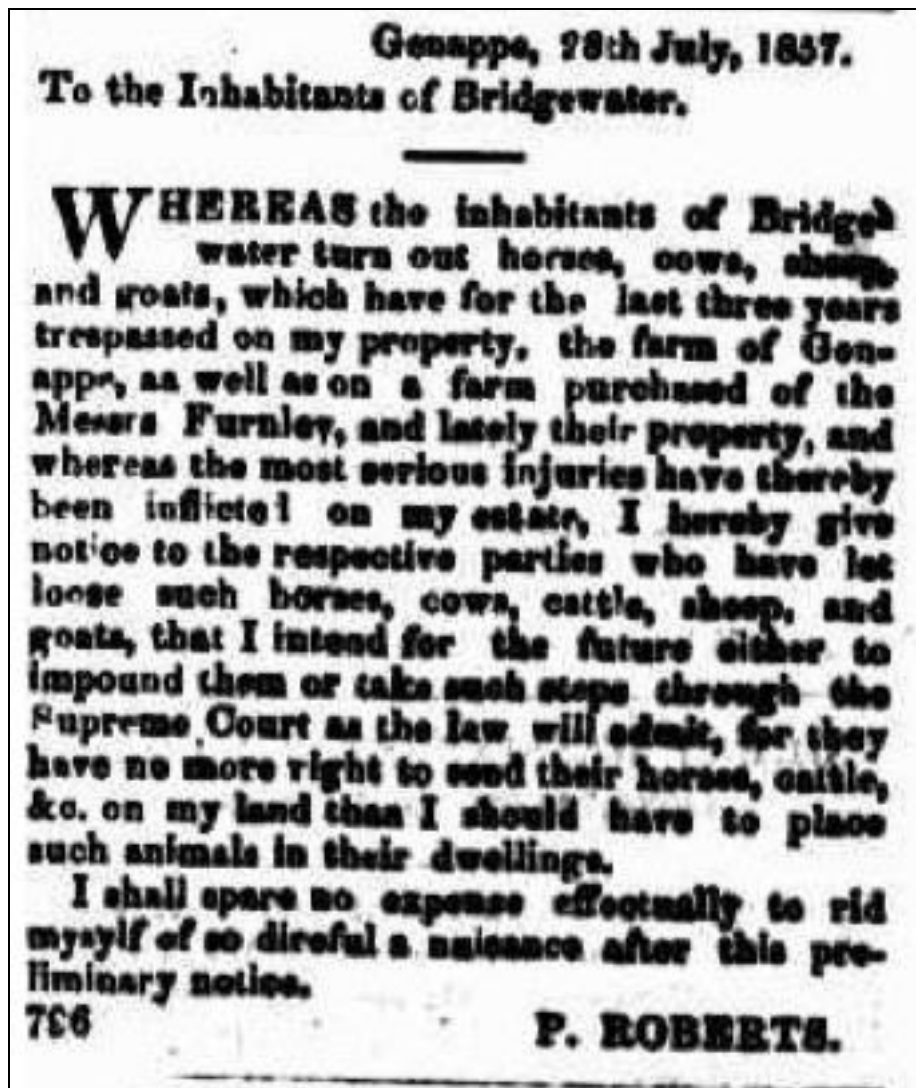


Genappe is noted to be of high historic cultural heritage significance for its ability to illustrate the historical and sequential development of agriculture and land in the outlying districts.

Despite a comprehensive search of state and national historical records and archives, this study was unable to determine an exact construction date for Genappe. By 1855, however, the property was occupied by a Mt Peter Roberts, who, according to public notices placed in Hobart newspapers, had persistent difficulties with trespassers on the property (see Figures 9 and 10).



*Figure 9: Public Notice, Colonial Times, Saturday 24 November 1855, p.3.  
Warning by P. Roberts that legal action will be taken against trespassers on the Genappe property.*



**Figure 10: Public Notice, Colonial Times, Thursday 23 July 1857, p.3. A further warning by P. Roberts to “the Inhabitants of Bridgewater” against grazing stock on his land indicates that the trespassing problem was not easily resolved.**

In 1856, a “To Let” advertisement appearing in the Colonial Times (Saturday 13 December, p.1) provided the following detailed description of the property:

*“GENAPPE, BRIDGEWATER. TO LET The above well-known excellent House and Grounds, the whole fenced in There is an excellent house in good repair, consisting of eight rooms, a kitchen, and several convenient out-buildings near the back of the house. The garden is exactly one acre. The lawn and shrubbery in front of the house is above an acre. The out-buildings consist of a convenient barn, and stabling for six horses, with piggeries, and cow-house sufficient for six cows, besides stack yards and a small paddock at the back of the house of above one acre. In this spot there is a brick cottage, consisting of two large rooms, a pigeon-house, poultry sheds, and many conveniences. There is near the river side a cottage, some fruit trees, and a garden of several acres. The cottage has three good rooms, and is in good repair, and fit for a market gardener. The total acres belonging to this estate two hundred*



*and ninety-six acres, of which one hundred and sixty-six are under cultivation. There is an unlimited supply of mark, and a fresh water spring near the cottage. The whole is fenced in, and divided into paddocks; with the above will be let a plot of about forty of grass land, lately the property of Messrs. Turnly's; this is nearly all fenced in, and such as is not fenced will be enclosed with a stabbed fence erected at the cost of present proprietor. The whole will be let on such terms as may be agreed upon an application to the proprietor on the estate. The farm is one mile from the high road, to which a good road will shortly be made, though the present one is far from bad. Possession given on 1st March, 1857."*

It is not known if Roberts was successful in leasing the property on this occasion, but on 7 August 1862, "the valuable estate of Genappe" was advertised for sale in The Advertiser (p.4). The property was eventually sold by public auction in January 1863. By 1874, Genappe had passed into the hands of Samson Johnson, James Miller and John Sheppard. Trespassers (particularly "opossum hunters") remained a problem, prompting the owners to place a public notice in The Mercury (Tuesday 8 June 1875, p.3) warning that poison had been laid on the property and dogs would be shot.

In September 1901, Genappe was once again offered to let. In 1912 it was sold to Andrew E. Mansell, who in turn sold the property in 1918.

In 1939, Genappe was purchased by Mr Frank Charles King Pitt, described in his 1947 obituary as "one of Tasmania's best-known pastoralists" (The Mercury, Wednesday 25 June 1947, p.6). Pitt relocated to Genappe after passing his midlands properties, Glen Dhu and Kenmere, on to his sons. It is F.C.K. Pitt who is noted as the owner of Genappe on the property's Tasmanian Heritage Register listing.

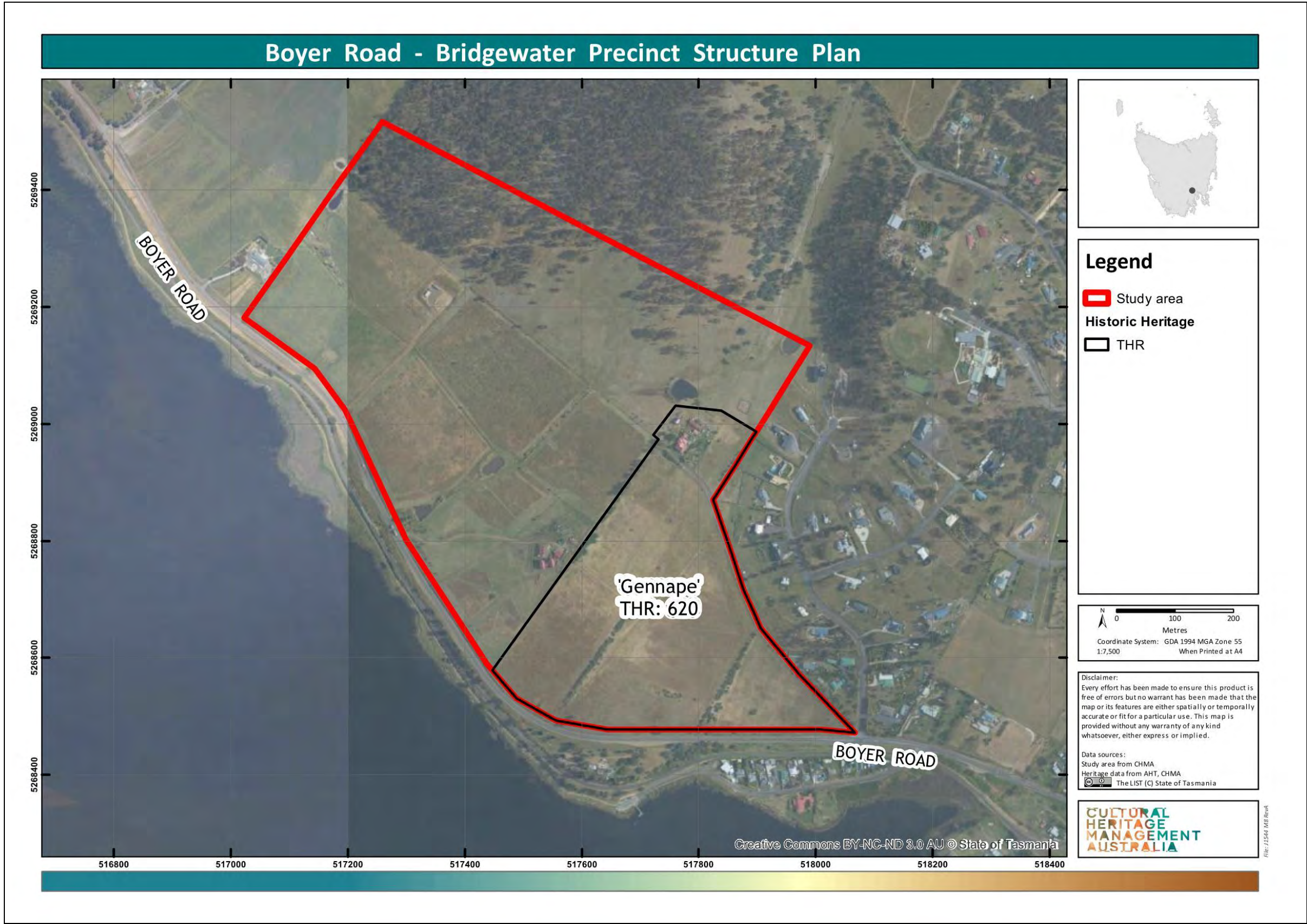


Figure 11: Aerial image showing the registered boundaries of the Genappe property within the Boyer Road Precinct study area



## **5.2 Survey Results and Statement of Archaeological Potential**

As noted in section 5.1, there is one registered historic heritage property that is situated within the Boyer Road Precinct study area, this being the Genappe property. The THR heritage listing applies to the whole of the property boundaries (see Figure 11).

The survey assessment confirmed the presence of a number of heritage features associated with Genappe property within the Boyer Road Precinct study area. Table 4 provides the summary details for the recorded historic features, with Figure 12 showing the location of these features. The following provides a brief overview of the recorded features.

### *The Main Homestead Complex*

The main Genappe homestead complex and associated out buildings, sheds and garden plantings are situated within an approximate 1ha area which is roughly defined by the grid references provided in Table 4 below. This is in the north-east portion of the study area (see Figure 12 and Plates 11-13). The field team did not access this 1ha area during the field survey and as such an accurate inventory and recording of the buildings and features present in this area was not undertaken. However, it is clear that there are no extant buildings or structures associated with the Genappe property that sit outside this 1ha area.

### *Hawthorn Hedgerows*

There are three linear Hawthorn hedgerow plantings that are situated on the Genappe property, within the study area (see Figure 12 and Plate 14). The three hedgerows are mature plantings which are reasonably intact and delineate property fence lines. They are likely to be associated with the early pastoral development of the property.

### *Red Clay Brick Feature*

A small feature of red clay bricks was recorded in an area immediately to the north of a fence line, within a farm paddock, around 35m west of the boundary of the Genappe property (see Figure 12). The feature measures approximately 8m x 2m and comprises what appears to be a floor foundation. The foundation is partially covered by grass and has hawthorn bushes growing through the brick (see Plate 15). It is unclear what this feature is. It may possibly be the remnant floor foundation of an earlier dwelling, or could be an adaptive re-use of salvaged red clay bricks for another purpose. Whether or not the feature is associated with the Genappe property is also not clear, although this is a reasonable probability, given the close proximity.

### **Statement of Archaeological Potential**

Besides the recorded features described above, no other suspected historic heritage features, or specific areas of elevated archaeological potential were identified within the bounds of the Boyer Road Precinct study area. As noted in section 3 of this report, surface visibility throughout the study area was restricted to an estimated average of between 20%-40%, due to vegetation cover. Given these constraints, it can't be stated with certainty that there are no undetected features present. Based

on the observations made during the field survey assessment, together with the archival and heritage register data collated for the project, it is clear that the Genappe Homestead complex is the main heritage feature present in the study area, and that this complex (which is confined to an approximate 1ha area) has the highest archaeological potential. Outside of the bounds of the homestead complex it is assessed that there is generally a low to very low potential for undetected heritage features to be present.

**Table 4: Summary details for recorded historic features**

Historic Feature	Grid Reference (GDA94)	Description
Genappe Homestead Complex	E517727 N5268973 E517760 N5269030 E517857 N5269003 E517801 N5268906	Main Genappe Homestead complex, which includes out buildings, sheds and garden plantings that are confined to within an approximate 1ha area.
Hedgerow1	E517587 N5268764 To E517732 N5268969	Hawthorn Hedgerow on Genappe property. Approximately 230m in length and runs along fence line on western boundary of property. Hedgerow is mature and reasonably intact.
Hedgerow2	E517568 N5268510 To E517718 N5268729	Hawthorn Hedgerow on Genappe property. Approximately 270m in length and runs along an internal property fence line. Hedgerow is mature and reasonably intact.
Hedgerow3	E517800 N5268473 To E517897 N5268647	Hawthorn Hedgerow on Genappe property. Approximately 270m in length and runs along an internal property fence line. Hedgerow is mature and reasonably intact.
Red Brick feature	E517689 N5269020 To E517697 N5269013	An 8m x 2m red clay brick feature located just north of fence line and 35m west of Genappe property boundary. Possible foundation feature associated with Genappe property. May also be a later re-use and repurposing of brick.





Plate 11: View south at the Genappe homestead complex



Plate 12: View north-west at the main Genappe homestead





Plate 13: View south-east at the main Genappe homestead complex



Plate 14: View south along Hedgerow 2 within the Genappe property





Plate 15: View west at the red clay brick feature





Figure 12: Aerial image showing the heritage features identified within the Boyer Road Precinct study area



## 6.0 Site Significance Assessments

### 6.1 Tasmanian Heritage Assessment Criteria

Point 11 of the *Historic Cultural Heritage Amendment Bill 2013* repeals Section 16 of the *HCH Act 1995*, and advocates that heritage values be assessed through the following eight assessment criteria:

- Criterion (a): It is important in demonstrating the evolution or pattern of Tasmania's history
- Criterion (b): It demonstrates rare, uncommon or endangered aspects of Tasmania's heritage
- Criterion (c): It has potential to yield information that will contribute to an understanding of Tasmania's history
- Criterion (d): It is important as a representative in demonstrating the characteristics of a broader class of cultural places
- Criterion (e): It is important in demonstrating a high degree of creative or technical achievement
- Criterion (f): It has strong or special meaning for any group or community because of social, cultural or spiritual associations
- Criterion (g): It has a special association with the life or work of a person, a group or organisation that was important in Tasmania's history.
- Criterion (h): It is important in exhibiting particular aesthetic characteristics.

In Tasmania, heritage may be afforded protection as either a place of State heritage significance (entered on the THR) or of local significance (listed in a heritage schedule of a local planning authority).

State heritage significance as defined by the *Historic Cultural Heritage Act 1995* means:

*'aesthetic, archaeological, architectural, scientific, social, spiritual or technical value to the whole STATE for past, present and future generations.'*

This compares with the definition for Local heritage significance:

*'aesthetic, archaeological, architectural, scientific, social, spiritual or technical value to a LOCAL OR REGIONAL AREA for past, present and future generations.'*

### 6.2 Significance Assessment for Historic Sites Located Within the Study Area

The Genappe property situated within the bounds of the study area. The heritage significance of this property has already been formally recognised, with the property having been assessed as being of State significance, and Permanently Registered on the Tasmanian Heritage Register. The title boundaries of the property form the THR listed boundaries. The THR Datasheet entry for the Genappe property notes that the property is significant in accordance with Criterion a) *The place is important to the course or pattern of Tasmania's history.*

Genappe is stated to be “*of high historic cultural heritage significance for its ability to illustrate the historical and sequential development of agriculture and land in the outlying districts*”. (see Appendix 1 for the full Datasheet entry).

The statement of significance for Genappe under Criterion (a) is quite broad, and is open to interpretation regarding what specific features of the property contribute to this significance. The Genappe homestead complex (comprising an area of approximately 1ha) incorporates the main homestead and associated out buildings, sheds and garden plantings. It would seem that the main significance values attributed to Genappe are predominantly confined to this area. However, the three recorded hedgerow features are also situated within the registered boundaries of the Genappe property and are a component of the early pastoral development of the property. As such, these hedgerows retain a level of associated significance as part of the broader setting of the property. The broader pastoral setting of the property and the aesthetic values of this setting may also be a contributing factor.

The red clay brick feature is situated outside the heritage listed boundaries of the Genappe property. At this point it is unclear what this feature is and whether it is associated with the Genappe property. As such, it is not possible at this stage to accurately assess the significance of the feature.



## 7.0 Statutory Controls and Legislative Requirements

The following provides a summary overview of the various legislative instruments and statutory requirements relating to historic heritage in Tasmania. The review is presented in order to provide the proponent with a basic understanding of the statutory frameworks and procedures relating to heritage in Tasmania.

### 7.1 National Conventions

#### *Council of Australian Governments Agreement 1997*

In 1997, COAG reached an agreement on Commonwealth, State and local government roles and responsibilities for heritage management. Local government, through the Australian Local Government Association, and the Tasmanian Government were both signatories to this Agreement. The Agreement resulted in the following outcomes:

- Acceptance of a tiered model of heritage management, with the definition of places as being of either, world, national, state or of local heritage significance;
- Nominations of Australian places for the World Heritage List and management of Australia's obligations under the World Heritage Convention would be carried out by the Commonwealth Government;
- A new National Heritage System on one was created in January 2004, comprising the Australian Heritage Council (AHC), National Heritage List (NHL) and Commonwealth Heritage List (CHL);
- The Commonwealth Government, through the Australian Heritage Council would be responsible for listing, protecting and managing heritage places of national significance;
- State and Territory Governments would be responsible for listing, protecting and managing heritage places of state significance; and
- Local government would be responsible for listing, protecting and managing heritage places of local significance.

#### *Environment Protection and Heritage Council of the Australian and State/Territory Governments 1998*

In 1998, the National Heritage Convention proposed a set of common criteria to be used in order to better assess, understand and manage the heritage values of places.

The Environment Protection and Heritage Council of the Australian and State/Territory Governments adopted this as a national set of desirable common criteria (known as the HERCON criteria). The adoption of these criteria by Heritage Tasmania has not yet been formalised. These criteria are also based upon the Burra Charter values. The Common Criteria (HERCON Criteria) adopted in April 2008 are summarised below:

- a) *Importance to the course or pattern of our cultural or natural history.*
- b) *Possession of uncommon, rare or endangered aspects of our cultural or natural history.*

- c) *Potential to yield information that will contribute to an understanding of our cultural or natural history.*
- d) *Importance in demonstrating the principal characteristics of a class of cultural or natural places or environments.*
- e) *Importance in exhibiting particular aesthetic characteristics*
- f) *Importance in demonstrating a high degree of creative or technical achievement at a particular period.*
- g) *Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons. This includes the significance of a place to Indigenous peoples as part of their continuing and developing cultural traditions.*
- h) *Special association with the life or works of a person, or group of persons, of importance in our history.*

These criteria have been endorsed by the Heritage Chairs and Officials of Australia and New Zealand (HCOANZ) in the Supporting Local Government Project document, "Protecting Local Heritage Places: A National Guide for Local Government and Communities" (March 2009).

#### ***Burra Charter 1999***

Australia ICOMOS (International Council on Monuments and Sites) is the peak body of professionals working in heritage conservation in Australia. The Burra Charter was adopted by Australia ICOMOS in 1979 in Burra, South Australia based on other international conventions. Further revisions were adopted in 1981, 1988 and 1999 to ensure the Charter continues to reflect best practice in heritage and conservation management. The current version of the Australia ICOMOS Burra Charter 1999 is the only version that should be used.

The Burra Charter provides guidance for the conservation and management of places of cultural significance (cultural heritage places), and is based on the knowledge and experience of Australian ICOMOS members. The Charter sets a standard of practice for those who provide advice, make decisions about, or undertake works to places of cultural significance, including owners, managers and custodians.

The Charter recognises the need to involve people in the decision-making process, particularly those that have strong associations with a place. It also advocates a cautious approach to changing heritage places: do as much as necessary to care for the place and to make it useable, but otherwise change it as little as possible so that its cultural significance is retained.

## **7.2 Commonwealth Legislation**

### ***Environment Protection and Biodiversity Conservation Act 1999***

The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) provides for the listing of natural, historic or indigenous places that are of outstanding national heritage value to the Australian nation as well as heritage places on Commonwealth lands and waters under Australian Government control.



Once a heritage place is listed under the EPBC Act, special requirements come into force to ensure that the values of the place will be protected and conserved for future generations. The following heritage lists are established through the EPBC Act:

- *National Heritage List* - a list of places of natural, historic and indigenous places that are of outstanding national heritage value to the Australian nation
- *Commonwealth Heritage List* - a list of natural, historic and indigenous places of significance owned or controlled by the Australian Government.
- *List of Overseas Places of Historic Significance to Australia* – this list recognises symbolically sites of outstanding historic significance to Australia but not under Australian jurisdiction.

#### *Australian Heritage Council Act 2003*

The Australian Heritage Council is a body of heritage experts that has replaced the Australian Heritage Commission as the Australian Government's independent expert advisory body on heritage matters when the new Commonwealth Heritage System was introduced in 2004 under amendments to the Environment Protection and Biodiversity and Conservation Act 1999.

The Council plays a key role in assessment, advice and policy formulation and support of major heritage programs. Its main responsibilities are to assess and nominate places for the National Heritage List and the Commonwealth Heritage List, promote the identification, assessment, conservation and monitoring of heritage; and advise the Minister on various heritage matters.

#### *Protection of Movable Cultural Heritage Act 1986*

The PMCH Act regulates the export of cultural heritage objects from Australia. The purpose of the Act is to protect, for the benefit of the nation, objects which if exported would significantly diminish Australia's cultural heritage. Some Australian protected objects of Aboriginal, military heritage and historical significance cannot be granted a permit for export. Other Australian protected objects may be exported provided a permit or certificate has been obtained.

### **7.3 State Legislation**

#### *Land Use Planning and Approvals Act 1993*

This Act (LUPA) is the cornerstone of the State Resource Management and Planning System (RMPS). It establishes the legitimacy of local planning schemes and regulates land use planning and development across Tasmania. With regard to historic heritage, LUPAA requires that planning authorities will work to conserve those buildings, areas or other places which are of scientific, aesthetic, architectural or historical interest, or otherwise of special cultural value" [Schedule 1 Part 2(g)].

#### *Resource Planning and Development Commission Act 1997*

The Resource Planning and Development Commission (now referred to as the Tasmanian Planning Commission) is responsible for overseeing Tasmania's planning system, approving planning schemes and amendments to schemes and assessing Projects of State Significance. In terms of heritage management, the TPC will

consider the establishment of heritage overlays, precincts or areas as part of the creation of planning schemes.

*Resource Management and Planning Appeal Tribunal Act 1993*

The Resource Management and Planning Appeal Tribunal determine planning appeals and enforce the Acts within the RMPS. The Tribunal plays an important role in the management of heritage places through its determinations on proposed development on, or near to, places of heritage significance.

*Historic Cultural Heritage Act 1995*

The *Historic Cultural Heritage Act 1995* (HCH Act) is the key piece of Tasmanian legislation for the identification, assessment and management of historic cultural heritage places. The stated purpose of the HCH Act is to promote the identification, assessment, protection and conservation of places having historic cultural heritage significance and to establish the Tasmanian Heritage Council". The HCH Act also includes the requirements to:

- establish and maintain the Tasmanian Heritage Register (THR);
- provide for a system for a system of approvals for work on places on the Register;
- provide for Heritage Agreements and assistance to property owners;
- provide for protection of shipwrecks;
- provide for control mechanisms and penalties for breaches of the Act.

Under the HCH Act, "conservation" in relation to a place is defined as

- the retention of the historic cultural heritage significance of the place; and
- any maintenance, preservation, restoration, reconstruction and adaption of the place.

The definition of "place" under the HCH Act includes:

- a site, precinct or parcel of land;
- any building or part of a building;
- any shipwreck;
- any item in or on, or historically or physically associated or connected with, a site precinct or parcel of land where the primary importance of the item derives in part from its association with that site, precinct or parcel of land; and
- any equipment, furniture, fittings, and articles in or on, or historically or physically associated or connected with any building or item.

The Act created the Tasmanian Heritage Council (THC), which came into existence in 1997 and operates within the State RMPS. The THC is a statutory body, separate from government, which is responsible for the administration of the HCH Act and the establishment of the Tasmanian Heritage Register (THR), which lists all places assessed as having heritage values of state significance. The THC also assesses works that may affect the heritage significance of places and provides advice to state and local government on heritage matters. The primary task of the THC is as a resource management and planning body, which is focused on heritage conservation



issues. Any development on heritage-listed places requires the approval of the THC before works can commence.

Heritage Tasmania (HT), which is part of the Department of Primary Industry, Parks, Water and the Environment, also plays a key role in fulfilling statutory responsibilities under the HCH Act.

HT has three core roles:

- coordinating historic heritage strategy and activity for the State Government;
- supporting the Tasmanian Heritage Council to implement the HCH Act; and
- facilitating the development of the historic heritage register.

In 2013, *Historic Cultural Heritage Act 1995* was amended, with the primary goal of streamlining the approvals process and better align the Heritage Act with the Planning Act. Under the Amendment applicants need only lodge a single Development Application (DA) (as opposed to both a Works Application and DA), which will be referred to the Heritage Council by the local planning authority. Heritage Council then has the opportunity to advise the planning authority whether or not it has an interest in the DA and may request further information under s57 of the LUPAA. If the Heritage Council does not have an interest in the DA, it reverts to the status it has under the Scheme or Planning Act. Where Heritage Council does have an interest in the DA, the Council decision must be incorporated into the final permit (or refusal) issued by the local planning authority.

Also included in the amendments is the incorporation of the HERCON significance criteria for assessing the significance of heritage sites. The Heritage Council may enter a place in the Heritage Register if it satisfied that the place has historic cultural heritage significance by meeting threshold values for one or more of eight individual criteria. Aesthetic characteristics of a place now forms the eighth criterion against which heritage significance may be assessed.

Works to places included in the THR require approval, either through a Certificate of Exemption for works which will have no or negligible impact, or through a discretionary permit for those works which may impact on the significance of the place.

Discretionary permit applications are lodged with the relevant local planning authority. On receipt, the application is sent to the Heritage Council, which will firstly decide whether they have an interest in determining the application. If the Heritage Council has no interest in the matter, the local planning authority will determine the application.

If the Heritage Council has an interest in determining the application, a number of matters may be relevant to its decision. This includes the likely impact of the works on the significance of the place; any representations; and any regulations and works guidelines issued under the HCH Act. The Heritage Council may also consult with the planning authority when making a decision.

In making a decision, the Heritage Council will exercise one of three options: consent to the discretionary permit being granted; consent to the discretionary permit being granted subject to certain conditions; or advise the planning authority that the discretionary permit should be refused. The Heritage Council's decision is then forwarded to the planning authority, which will incorporate the decision into any planning permit

#### *Works Guidelines for Historic Heritage Places*

The Tasmanian Heritage Council and Heritage Tasmania have issued Works Guidelines for Historic Heritage Places. The guidelines provide a general reference for the types of works, which may be exempt, or those where a permit will be required. They also define appropriate outcomes for a range of different works and development scenarios. Although specifically designed for places included in the THR, the guidelines provide useful advice for the management of heritage places generally.

#### **7.4 The Tasmanian Planning Scheme**

The *Tasmanian Planning Scheme* came into effect on 22 July 2020 and replaces the former *Brighton Interim Planning Scheme 2015*. The *Tasmanian Planning Scheme* provides a single planning scheme and a consistent set of rules and requirements in relation to the manner in which all land in Tasmania may be used, developed, protected and conserved. It consists of two parts:

1. **State Planning Provisions** contain the mandatory common rules that are to apply in all municipal areas. For consistency in permit and compliance requirements that must be met by a proposed use or development.
2. **Local Provision Schedule** for each municipal area setting out how the State Planning Provisions are to apply. The Clarence Local Provision Schedule (LPS) contains all of the Clarence specific local controls including the Zone and Code Maps, Code lists, Specific Area Plans (mapping & controls) and Site Specific Qualifications.

The planning scheme supports strategic land use planning for residential, business, agriculture, utilities, environmental and recreational zones. The scheme includes considerations such as natural hazards, local heritage values, natural assets, parking requirements and the protection of road, railway and electricity infrastructure.\

Section C6 of the *Tasmanian Planning Scheme* deals specifically with the Local Heritage Code. The stated purpose of the code is to recognise and protect the local historic heritage significance of local places, precincts, landscapes and areas of archaeological potential and significant trees by regulating development that may impact on their values, features and characteristics.

This code applies to:

- (a) development on land within any of the following, as defined in this code:
- (i) a local heritage place;
  - (ii) a local heritage precinct;
  - (iii) a local historic landscape precinct; and



(iv) for excavation only, a place or precinct of archaeological potential;  
and  
(b) the lopping, pruning, removal or destruction of a significant tree as defined in this code.

If a site is listed as a local heritage place and also within a local heritage precinct or local historic landscape precinct, it is only necessary to demonstrate compliance with the standards for the local heritage place unless demolition, buildings and works are proposed for an area of the site outside the identified specific extent of the local heritage place.

Developments that affect places protected by the code and are not exempt are likely to require to specific approval from the council where the development is to take place.

This code does not apply to a registered place entered on the Tasmanian Heritage Register.

***Brighton Local Provisions Schedule***

The study area falls within the Brighton Council municipal area. Brighton Council is responsible for statutory and strategic land use and development, including the assessment of applications for use and development under the [\*The Tasmanian Planning Scheme – Brighton\*](#) (the 'Scheme'). The *Tasmanian Planning Scheme – Brighton* is made up of the State Planning Provisions (SPP's) and a Local Provisions Schedule (LPS) for each council area.

The Genappe property is listed on both the THR and is also identified in Table C6.1 Local Heritage Places of the *Tasmanian Planning Scheme—Brighton (Local Provisions Schedule)*.

No other places, precincts or places of local heritage significance included in the Brighton Local Provisions Schedule are within the study area.

## 8.0 Heritage Management Plan

### ***Recommendation 1 (The Genappe Property)***

The Genappe property is a permanent registration on the Tasmanian Heritage Register (THR 620). The THR heritage listing applies to the whole of the property boundaries, which are entirely within the bounds of the Boyer Road Precinct study area (see Figure 13).

The Boyer Road Precinct Structure Plan is in the early concept phase and at this stage it is unclear as to what the potential impacts on the heritage values of the Genappe property will be.

Works to places included in the THR require approval, either through a Certificate of Exemption for works which will have no or negligible impact, or through a Discretionary Permit for those works which may impact on the significance of the place. If the registered boundaries of the property cannot be avoided, then a Statement of Heritage Impacts will need to be prepared for the property, based on the preferred concept design for the Boyer Road Precinct Structure Plan.

The Genappe homestead complex (comprising an area of approximately 1ha) incorporates the main homestead and associated out buildings, sheds and garden plantings. (see Figure 13). It would seem that the main significance values attributed to Genappe are predominantly confined to this area. It is recommended that at a minimum, this area incorporating the main homestead complex should be excluded from any future development.

The three recorded hedgerow features are also situated within the registered boundaries of the Genappe property and are a component of the early pastoral development of the property (see Figure 13). As such, these hedgerows retain a level of associated significance as part of the broader setting of the property. It is recommended that consideration also be given to the retention of these hedgerow features.

- Works to places included in the THR require approval, either through a Certificate of Exemption for works which will have no or negligible impact, or through a Discretionary Permit for those works which may impact on the significance of the place. If the registered boundaries of the property cannot be avoided, then either a Certificate of Exemption or a Discretionary Permit will be required, depending on the outcomes of the Statement of Heritage Impacts.

### ***Recommendation 2 (Red Clay Brick Feature)***

The recorded red clay brick feature (see Figure 13) is situated outside the heritage listed boundaries of the Genappe property and is not listed on the Local Heritage Places of the *Tasmanian Planning Scheme—Brighton (Local Provisions Schedule)*.



At this point it is unclear what this feature is and whether it is associated with the Genappe property. As such, it is not possible at this stage to accurately assess the significance of the feature.

If there is the potential that this feature may be impacted by future development within the Boyer Road precinct, then it is recommended that a detailed archival recording should be carried out for this feature, together with additional background research. The aim being to more accurately determine the origins, extent and significance of this feature. Future management decisions for the feature will be predicated on the outcomes of these additional investigations.

***Recommendation 3 (Unanticipated Discoveries of historic features)***

No other historic sites or suspected features were identified during the field survey assessment of the AFL High Performance Centre study area and it is assessed that there is a low to very low potential for undetected Historic heritage sites to occur within the study area. However, as per the Practice Note No 2 by the Tasmanian Heritage Council, processes must be followed should any unexpected archaeological features and/or deposits be revealed during works. An Unanticipated Discovery Plan for the project is presented in Section 9 of this report.

***Recommendation 4 (Provision of Report to Heritage Tasmania)***

Copies of this report should be provided to Heritage Tasmania for review.





**Figure 13: Aerial image showing the heritage features identified within the Boyer Road Precinct study area**



## 9.0 Unanticipated Discovery Plan

The following text describes the proposed method for dealing with unanticipated discoveries of heritage features or objects during any future proposed development works in the Boyer Road Precinct study area. The plan provides guidance to project personnel so that they may meet their obligations with respect to heritage legislation. Please Note: There are two different processes presented for the mitigation of these unanticipated discoveries. The first process applies for the discovery of all cultural heritage objects or features, with the exception of skeletal remains (burials). The second process applies exclusively to the discovery of skeletal remains (burials).

### Discovery of Heritage Objects or Features

#### *Step 1*

If any person believes that they have discovered or uncovered a heritage object or feature, the individual should notify any machinery operators that are working in the general vicinity of the area that earth disturbance works should stop immediately.

#### *Step 2*

A buffer protection zone of 5m x 5m should be established around the suspected heritage find. No unauthorised entry or earth disturbance will be allowed within this 'archaeological zone' until such time as the suspected heritage find has been assessed, and appropriate mitigation measures have been carried out.

#### *Step 3*

A qualified heritage consultant should be engaged to assess the suspected heritage find. As a first step in the process, the heritage consultant should contact Heritage Tasmania, the Heritage Council and the Local Council and notify them of the find. The heritage consultant will ensure that Heritage Tasmania, the Heritage Council and the Local Council are consulted throughout the assessment process.

#### *Step 4*

If the heritage find is a movable object, then the find should be recorded, photographed and a decision should be made as to whether the object should be re-located to a designated Keeping Place. If the find is an unmovable heritage object or feature, then the find should be recorded and photographed and a HIA and HMP developed for the feature. This should be then submitted to Heritage Tasmania, the Heritage Council and the Local Council for review and advice.

Possible outcomes may necessitate:

- a. An amendment to the design of the development
- b. Carrying out of archaeological excavations prior to the re-commencement of works
- c. Archaeological monitoring and recording during works
- d. Preparation (and implementation) of a strategy to ensure communication of the new information to the community.
- e. A combination of the above.

### **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*.



## References Cited

- Alexander, A.  
2006. *Brighton and Surrounds*. Brighton Council: Brighton, Tas.
- Alexander, A (Ed).  
2005. *The Companion to Tasmanian History*. Centre for Tasmanian Historical Studies, University of Tasmania. Hobart.
- Austral Archaeology (AA).  
2008. *Brighton Intermodal Transport Hub: Historic Heritage Assessment*. A report to Pitt and Sherry.
- Bethell, L.S.  
1960. *The Valley of the Derwent*. Government Printer. Hobart.
- Boyce, James.  
2009. *Van Diemen's Land*. Black Inc: Melbourne.
- Cooley, T. C. T.  
1963. *Railroading in Tasmania, 1868-1961*. Government Printers. Hobart.  
  
1987. *A History of Trains and Trams in Tasmania*. Government Printers. Hobart.
- Derwent Valley Railway Inc.  
2020. [dvr.org.au](http://dvr.org.au). Website access 25 June 2020/ Giblin, R.W. (1939). *The Early History of Tasmania*. Volume II. Melbourne University Press. Melbourne.
- Gray, F.J. 1995. Old Pontville: a Seamless Web. Unpublished manuscript
- Kearley Family History Project Committee (KFHPC).  
2003. *The Kearley Family: a story of the founding of Tasmania*. Produced by the Kearley Family History Project Committee.
- Lines William J.  
1991. *Taming the Great South Land: a history of the conquest of nature in Australia*. University of Georgia Press: Athens, Georgia
- Maitland and Krone (publishers).  
1900. *The Cyclopedia of Tasmania: An Epitome of Progress*. Maitland and Krone. Hobart.
- Plomley, N.J.B  
1966 *Friendly Mission: The Journals of Augustus Robinson 1829-1834, 1<sup>st</sup> Edition*. Hobart: Tasmanian Historical Research Association.
- Quinlan, H. and Newland J.R.  
2000. *Australian Railway Routes 1854 to 2000*. Australian Railway Historical Society NSW Division. Redfern.

- Robson, L.  
1983. *A History of Tasmania: Van Diemen's Land from the Earliest Times to 1855*. Oxford University Press. Volume 1. Melbourne.
- Ryan, L.  
2012 *Tasmanian Aborigines: a History Since 1803*. Crow's Nest, NSW: Allen and Unwin.
- Schaffer, I. and McKay, T.  
1992. *Exiled! Three Times Over: Profiles of Norfolk Islanders Exiled in Van Diemen's Land 1807-13*. St. David's Park Publishing. Hobart.
- Sheridan, G.  
2000. *A Changed Pattern of Landscape: Brighton in the Nineteenth Century*. A report to the Brighton Council.
- Stancombe, G. H.  
1969. *Highway in Van Dieman's Land*. National Trust of Australia (Tas) and Halsted Press: Sydney.
- Stokes, H.J.W.  
1971. *A Century of Tasmanian Railways: 1871-1971*. Government Printers Hobart.
- Von Stieglitz, K.R.  
1961. *A History of New Norfolk and the Derwent Valley*. Telegraph Printery. Launceston.
- Whitham, L.  
2002. *Railways, Mines, Pubs and People: and other historical research*. Tasmanian Historical Research Association. Tasmania.



## **Appendix 1**

### **Tasmanian Heritage Register Datasheet for the Heritage Listed Genappe Property**

134 Macquarie Street (GPO Box 618)  
Hobart Tasmania 7001  
Phone: 1300 850 332 (local call cost)  
Email: [enquiries@heritage.tas.gov.au](mailto:enquiries@heritage.tas.gov.au)  
Web: [www.heritage.tas.gov.au](http://www.heritage.tas.gov.au)

**Name:** Genappe  
**Status:** Permanently Registered  
**Tier:** State

**THR ID Number:** 620  
**Municipality:** Brighton Council  
**Boundary:** Whole of Title

**Location Addresses**

50 BOYER RD, BRIDGEWATER 7030 TAS

**Title References**

44724/8

**Property Id**

7676361



Genappe  
DEPHA, 2006



Genappe  
DEPHA, 2006

**Statement of Significance:** (non-statutory summary)

No Statement is provided for places listed prior to 2007

**Why is it significant?:**

The Heritage Council may enter a place in the Heritage Register if it meets one or more of the following criteria from the Historic Cultural Heritage Act 1995:

**a) The place is important to the course or pattern of Tasmania's history.**

Genappe is of high historic cultural heritage significance for its ability to illustrate the historical and sequential development of agriculture and land in the outlying districts

**b) The place possesses uncommon or rare aspects of Tasmania's history.**

**c) The place has the potential to yield information that will contribute to an understanding of Tasmania's history.**

**d) The place is important in demonstrating the principal characteristics of a class of place in Tasmania's history.**

**e) The place is important in demonstrating a high degree of creative or technical achievement.**



- f) The place has a strong or special association with a particular community or cultural group for social or spiritual reasons.
- g) The place has a special association with the life or works of a person, or group of persons, of importance in Tasmania's history.
- h) The place is important in exhibiting particular aesthetic characteristics.

Heritage approval is required for work that will result in changes to the nature or appearance of the fabric of a Heritage place, both internal and external.

Please refer to the Heritage Council's Works Guidelines ([www.heritage.tas.gov.au](http://www.heritage.tas.gov.au)) for information about the level of approval required and appropriate outcomes.

Heritage Advisors are also available to answer questions and provide guidance on [enquiries@heritage.tas.gov.au](mailto:enquiries@heritage.tas.gov.au) or Tel 1300850332

This data sheet is intended to provide sufficient information and justification for listing the place on the Heritage Register. Under the legislation, only one of the criteria needs to be met. The data sheet is not intended to be a comprehensive inventory of the heritage values of the place, there may be other heritage values of interest to the Heritage Council not currently acknowledged.

**Setting:**

No Data Recorded

**Description:**

A two storey vernacular Georgian farm house built from brick. It has a centrally placed door with flanking windows and is three bays wide.

**History:**

No Data Recorded



Boyer Road Precinct Structure Plan  
Genappe Property

Statement of Heritage Impacts and  
Archaeological Potential

Final Draft  
Version 1

AUTHOR: Stuart Huys  
27 Apsley St South Hobart, TAS 7004

CLIENT:  
Holmes Dyer

4.6.2025

CULTURAL  
HERITAGE  
MANAGEMENT  
AUSTRALIA



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## **Executive Summary**

### **Project Background**

The Brighton Council has engaged Holmes Dyer to prepare a Precinct Structure Plan (PSP) for land along Boyer Road at Bridgewater. The area of land encompasses approximately 59ha and is zoned Future Urban under the Brighton Local Provision Schedule. Figures 1-2 show the location and boundaries of the land, with Figure 3 providing a very preliminary development concept plan for the Boyer Road Precinct.

CHMA Pty Ltd were engaged by the Holmes Dyer to undertake an Historic heritage assessment for the 59ha parcel of land (the study area), in order to identify any potential heritage constraints. The CHMA (2024) assessment confirmed that there is one heritage registered property that is situated within the boundaries of the Boyer Road Precinct study area. This is the property known as Genappe. Located at 50 Boyer Road, Bridgewater, Genappe is a permanently-listed property on the Tasmanian Heritage Register (THR ID 620). CHMA Pty Ltd has been engaged by Holmes Dyer to prepare a Statement of Heritage Impacts (SHI) and Statement of archaeological potential (SAP) for the Genappe property. This report presents the findings of the assessment.

### **Statement of Heritage Impacts and Archaeological Potential**

The following provides an overview of the key findings. The more detailed findings and discussions are presented in section 3.

#### *The Main Homestead Complex*

The assessment confirmed that the main Genappe homestead complex and associated out buildings, sheds and garden plantings (which are situated within an approximate 1ha area) is excluded from the Masterplan development footprint. A buffer has also been created around the main Genappe homestead complex, incorporating open space landscaped zones (see Figure i). The open space incorporated in the current masterplan also maintains viewing lines from the Genappe homestead, south and west through to River Derwent (see Figure i). On this basis it is advised that the current Masterplan proposal will not physically impact on the main Genappe homestead complex (incorporating the and associated out buildings, sheds and garden plantings). Furthermore, the incorporation of viewing lines and a buffer zone around the homestead complex means that the visual and aesthetic values of the main homestead complex will not be significantly impacted.

#### *The Red Brick Feature*

The Red brick feature identified by CHMA (2024) is confirmed as being situated within an open space area in the current Masterplan, just to the west of the main homestead complex (see Figure i). Under the current Masterplan proposal, there is no residential development proposed for this area and is designated open space. However, the open

space area is proposed to be landscaped. This would mean that the red brick feature is potentially at risk of being impacted by landscaping works.

#### *The Hawthorn Hedgerows*

The original assessment undertaken by CHMA (2024) recorded three linear Hawthorn hedgerow plantings that are situated on the Genappe property. The three hedgerows are mature plantings which are reasonably intact and delineate property fence lines. CHMA (2024) was of the opinion that the hedgerows were likely to be associated with the early pastoral development of the property. Based on historic aerial imagery it would appear that Hedgerow 3 may be an early original planting and that Hedgerows 1 and 2 may be latter plantings. In terms of significance value, this would mean that Hedgerow 3 is of a comparatively higher landscape significance compared to Hedgerows 1 and 2, because of its potential association with the early pastoral development of the Genappe property. The current masterplan proposal shows that Hedgerow 2 and possibly a small portion of Hedgerow 1 will be retained in open space and will not be impacted to any significant extent. Hedgerow 3 will be completely removed as part of the development of the Mixed Use Precinct (see Figure i).

#### *Statement of Archaeological Potential*

CHMA (2024) advised that besides the recorded features described above, no other suspected historic heritage features, or specific areas of elevated archaeological potential were identified within the bounds of the Boyer Road Precinct study area. CHMA (2024) noted that it was clear that the Genappe Homestead complex is the main heritage feature present in the study area, and that this complex (which is confined to an approximate 1.5ha area) has the highest archaeological potential. Outside of the bounds of the homestead complex it was assessed that there was generally a low to very low potential for undetected heritage features to be present. The possible exception would be the area around the recorded red brick feature. Based on the historic aerial imagery, the current assessment has confirmed that the area around the red brick feature does indeed have a moderate to high level of archaeological potential, given that it is now evident that this would appear to be the foundations of a structure pre-dating 1946. The archaeological potential for the remainder of the study area (excluding the homestead and red brick feature complex) is still assessed as being low.

### **Management Recommendations**

#### **Recommendation 1 (Amendment of the THR registered boundaries of the Genappe property)**

The main Genappe homestead complex and associated out buildings, sheds and garden plantings are situated within an approximate 1.5ha area. This assessment has confirmed that the main heritage values associated with the Genappe property are confined to within this area which is delineated by the grid references below. The main zone of archaeological potential is also confined to within this area. Figure ii shows the



boundaries of this area. It is recommended that the THR registered boundaries are amended to reflect this area. If adopted, then the revised THR boundaries of the Genappe property should be excluded from the Masterplan development footprint. It is noted that under the current Masterplan proposal, a buffer has been created around the main Genappe homestead complex, incorporating open space landscaped zones. The open space incorporated in the current masterplan also maintains viewing lines from the Genappe homestead, south and west through to River Derwent. This is supported.

- E517871 N5269003
- E517837 N5269022
- E517759 N5269032
- E517721 N5268981
- E517736 N5268970
- E517731 N5268958
- E517774 N5268921
- E517763 N5268887
- E517790 N5268887
- E517798 N5268898

Works to places included in the THR require approval, either through a Minor Works Approval for works which will have no or negligible impact, or through a Discretionary Permit for those works which may impact on the significance of the place. It is advised that if the amendment to the THR registered above is implemented, then any works within the amended registration will be subject to the appropriate approvals.

### **Recommendation 2 (The Red Brick Heritage Feature)**

Immediately to the west of the Genappe Homestead Complex is the red brick feature which is likely to be the foundations of a structure pre-dating 1946. This feature is situated outside of the current THR registered boundaries of the Genappe property). The archaeological potential of this area is assessed as potentially being moderate to high. The grid references below delineate the boundaries of the red brick feature, including the zone of archaeological potential, with Figure ii showing the spatial extent of this area.

- E517710 N5268988
- E517718 N5269002
- E517688 N5269026
- E517677 N5269014

Under the current Masterplan proposal, the red brick feature is situated in open space, in an area where there is no residential development proposed. However, the open space area is proposed to be landscaped. This would mean that the red brick feature is potentially at risk of being impacted by landscaping works. In order to protect the potential archaeological integrity of this feature, it is recommended that the zone incorporating the red brick feature is conserved in-situ and is landscaped in a manner that involves no soil disturbances. As a precautionary measure, this advice should be passed on to construction and or landscaping contractors so that they are aware of these requirements.

***Recommendation 3 (Hawthorn Hedgerows)***

The current masterplan proposal shows that Hedgerow 2 and approximately half of Hedgerow 1 will be retained in open space and will not be impacted to any significant extent. Hedgerow 3 will be completely removed as part of the development of the Mixed Use Precinct. If Recommendation 1 (above) is adopted, then these hedgerows will be situated outside the adjusted registered boundaries of the Genappe homestead complex. There are therefore no State Statutory heritage requirements for approvals to impact these hedgerows. However, it is recommended that where possible, hedgerow features (not necessarily hawthorn) should be incorporated into the open space design to reflect the early pastoral hedgerow arrangements within the study area.

***Recommendation 4 (Unanticipated Discoveries of historic features)***

It is assessed that there is a low to very low potential for undetected Historic heritage sites to occur within the Masterplan area, outside the recommended amended THR boundaries for Genappe. However, as per the Practice Note No 2 by the Tasmanian Heritage Council, processes must be followed should any unexpected archaeological features and/or deposits be revealed during works. An Unanticipated Discovery Plan for the project is presented in Section 5 of this report.

***Recommendation 5 (Provision of Report to Heritage Tasmania)***

Copies of this report should be provided to Heritage Tasmania for review.









**Figure ii: Aerial image showing the recommended amendment to the THR registered boundaries of the Genappe property and the Protection Zone for the Red Brick feature**



## 1.0 Project Background

### 1.1 Project Description

The Brighton Council has engaged Holmes Dyer to prepare a Precinct Structure Plan (PSP) for land along Boyer Road at Bridgewater. The area of land encompasses approximately 59ha and is zoned Future Urban under the Brighton Local Provision Schedule. Figures 1-2 show the location and boundaries of the land, with Figure 3 providing a very preliminary development concept plan for the Boyer Road Precinct.

CHMA Pty Ltd were engaged by the Holmes Dyer to undertake an Historic heritage assessment for the 59ha parcel of land (the study area), in order to identify any potential heritage constraints. The CHMA (2024) assessment confirmed that there is one heritage registered property that is situated within the boundaries of the Boyer Road Precinct study area. This is the property known as Genappe. Located at 50 Boyer Road, Bridgewater. Genappe is a permanently-listed property on the Tasmanian Heritage Register (THR ID 620). The property is also identified in Table C6.1 Local Heritage Places of the *Tasmanian Planning Scheme—Brighton (Local Provisions Schedule)*. The THR heritage listing applies to the whole of the property boundaries.

CHMA (2024) advised that works to places included in the THR require approval, either through a Minor Works Approval for works which will have no or negligible impact, or through a Discretionary Permit for those works which may impact on the significance of the place. CHMA (2024) recommended that if the registered boundaries of the property cannot be avoided, then a Statement of Heritage Impacts would need to be prepared for the property, based on the preferred concept design for the Boyer Road Precinct Structure Plan. This would be used as the basis for determining the appropriate approvals process.

The concept design for the Boyer Road Precinct Structure Plan has now been formalised and CHMA Pty Ltd has been engaged by Holmes Dyer to prepare a Statement of Heritage Impacts (SHI) and Statement of archaeological potential (SAP) for the Genappe property. This report presents the findings of the assessment.

### 1.2 Project Methodology

This SHI and SAP assessment has been implemented in three broad stages.

#### Stage 1 (Background Research and Project Liaison)

##### ***Contact with Heritage Tasmania (HT)***

On the 3.6.2025, Stuart Huys met with Russel Dobie from Heritage Tasmania (HT). The purpose for these meetings was to discuss the details of the project and potential heritage implications and requirements.



### ***Collation of Background Information***

As part of Stage 1 the following research was carried out and background information collated for this project.

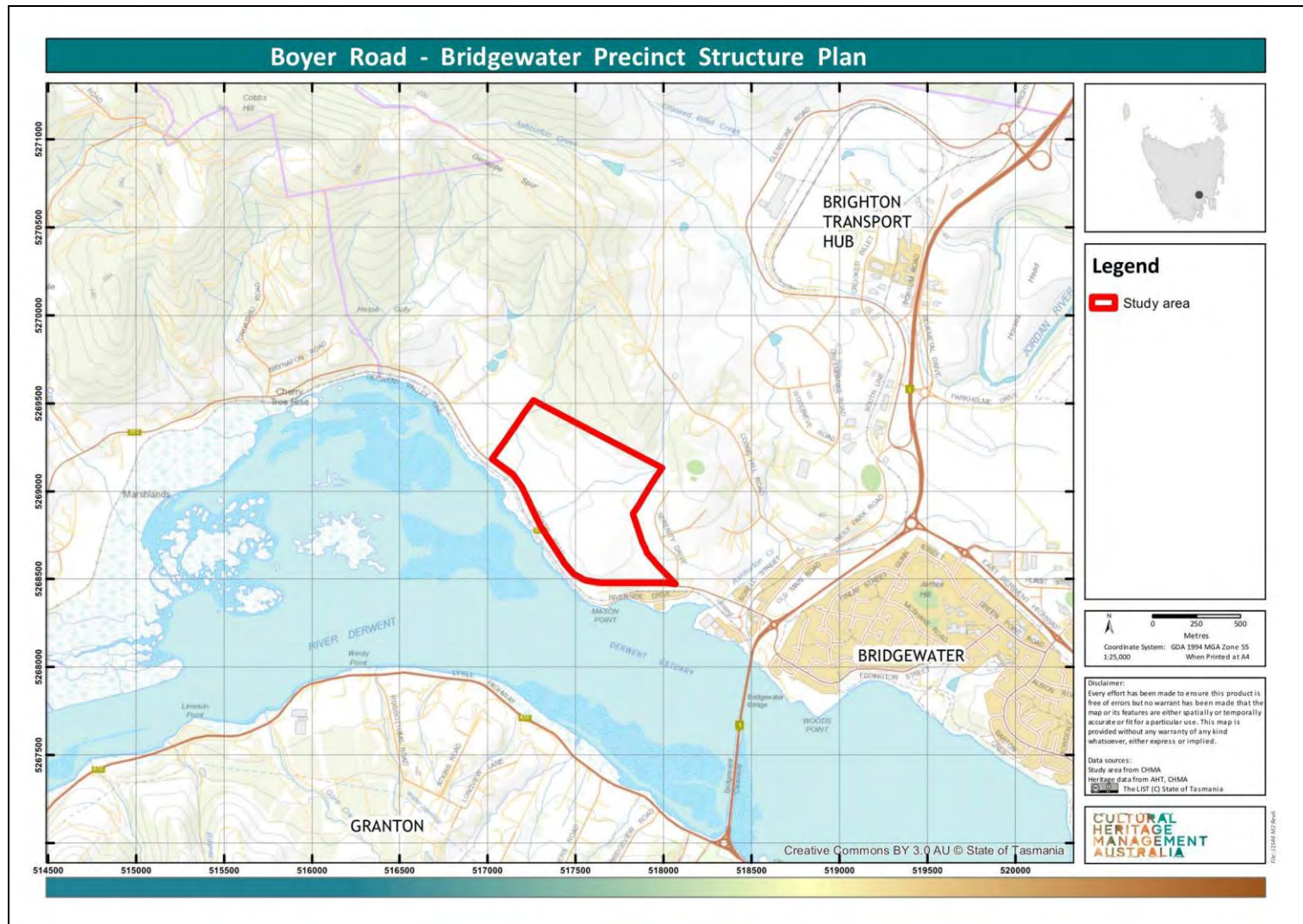
- Historic literature, site plans and records for the for the study area.
- Documentation and plans relating to the proposed installation of infrastructure associated with the Project.
- Planning and Regulatory requirements for heritage sites in Tasmania.

### **Stage 2 (Field Inspection)**

Stage 2 entailed the fieldwork component of the Assessment. The field inspection was undertaken on the 13.5.2025 by Stuart Huys (CHMA archaeologist). The primary purpose of the field inspection was to ground truth the proposed revised boundaries of the Genappe Homestead Precinct and to verify the location of key heritage features in relation to the current masterplan proposal. These observations were used as the basis for determining the extent of potential impacts that the Masterplan proposal may have on heritage values of the Genappe property.

### **Stage 3 (Preparation of Report)**

Stage three of the project involved the production of this report which details the findings of the assessment and includes a SHI and SAP for the proposed scope of works specified in section 1.1. The report has been prepared by Stuart Huys from CHMA Pty Ltd.



**Figure 1: Topographic map showing the landscape setting of the Boyer Road Precinct (the study area)**



**Figure 2: Aerial image showing the boundaries for the Boyer Road Precinct (the study area)**





**Figure 3: The current proposed Masterplan for Plan for the Boyer Road Precinct**

## 2.0 The Genappe Property

### 2.1 The Heritage Listing Status of the Genappe Property

The Genappe property is located at 50 Boyer Road, Bridgewater and is a permanent listing on the Tasmanian Heritage Register (THR ID 620). The property is also identified in Table C6.1 Local Heritage Places of the Tasmanian Planning Scheme—Brighton (Local Provisions Schedule). The THR heritage listing applies to the whole of the property boundaries. Table 1 provides the summary details for the heritage listing of the Genappe property, with Figure 4 showing the registered boundaries of the properties in relation to the study area. The Tasmanian Heritage Register Datasheet entry for Genappe is provided in Appendix 1. A summary overview of the available historic information for the Genappe property is presented below.

**Table 1: The Heritage listing details for the Genappe property**

Name	Address	Register and Municipality	THR Place ID	Title Reference	Description
Genappe	50 BOYER RD, BRIDGEWATER 7030 TAS	Tasmanian Heritage Register  Brighton Council Table C6.1 Local Heritage Places of the <i>Tasmanian Planning Scheme—Brighton</i>	620	44724/8	A two storey vernacular Georgian farm house built from brick. It has a centrally placed door with flanking windows and is three bays wide.

### 2.2 The Findings of the CHMA (2024) Survey Assessment

The survey assessment undertaken by CHMA (2024) confirmed the presence of a number of heritage features associated with Genappe property within the Boyer Road Precinct study area. Table 2 provides the summary details for the recorded historic features, with Figure 5 showing the location of these features. The following provides a brief overview of the recorded features.

#### *The Main Homestead Complex*

The main Genappe homestead complex and associated out buildings, sheds and garden plantings are situated within an approximate 1ha area which is roughly defined by the grid references provided in Table 2 below. CHMA (2024) did not access this 1ha area during the field survey and as such an accurate inventory and recording of the buildings and features present in this area was not undertaken. However, CHMA (2024) noted that it was clear that there are no extant buildings or structures associated with the Genappe property that sit outside this 1ha area.



### *Hawthorn Hedgerows*

There are three linear Hawthorn hedgerow plantings that are situated on the Genappe property, within the study area. The three hedgerows are mature plantings which are reasonably intact and delineate property fence lines. They are likely to be associated with the early pastoral development of the property.

### *Red Clay Brick Feature*

A small feature of red clay bricks was recorded in an area immediately to the north of a fence line, within a farm paddock, around 35m west of the boundary of the Genappe property. The feature measures approximately 8m x 2m and comprises what appears to be a floor foundation. The foundation is partially covered by grass and has hawthorn bushes growing through the brick. It is unclear what this feature is. It may possibly be the remnant floor foundation of an earlier dwelling, or could be an adaptive re-use of salvaged red clay bricks for another purpose. Whether or not the feature is associated with the Genappe property is also not clear, although this is a reasonable probability, given the close proximity.

**Table 2: Summary details for recorded historic features**

Historic Feature	Grid Reference (GDA94)	Description
Genappe Homestead Complex	E517727 N5268973 E517760 N5269030 E517857 N5269003 E517801 N5268906	Main Genappe Homestead complex, which includes out buildings, sheds and garden plantings that are confined to within an approximate 1ha area.
Hedgerow1	E517587 N5268764 To E517732 N5268969	Hawthorn Hedgerow on Genappe property. Approximately 230m in length and runs along fence line on western boundary of property. Hedgerow is mature and reasonably intact.
Hedgerow2	E517568 N5268510 To E517718 N5268729	Hawthorn Hedgerow on Genappe property. Approximately 270m in length and runs along an internal property fence line. Hedgerow is mature and reasonably intact.
Hedgerow3	E517800 N5268473 To E517897 N5268647	Hawthorn Hedgerow on Genappe property. Approximately 270m in length and runs along an internal property fence line. Hedgerow is mature and reasonably intact.
Red Brick feature	E517689 N5269020 To E517697 N5269013	An 8m x 2m red clay brick feature located just north of fence line and 35m west of Genappe property boundary. Possible foundation feature associated with Genappe property. May also be a later re-use and repurposing of brick.

### **2.3 The Significance of the Genappe Property**

The heritage significance of the Genappe property has already been formally recognised, with the property having been assessed as being of State significance, and Permanently Registered on the Tasmanian Heritage Register. The title boundaries of the property form the THR listed boundaries. The THR Datasheet entry for the Genappe property notes that the property is significant in accordance with Criterion a) *The place is important to the course or pattern of Tasmania's history.*

Genappe is stated to be “*of high historic cultural heritage significance for its ability to illustrate the historical and sequential development of agriculture and land in the outlying districts*”. (see Appendix 1 for the full Datasheet entry).

The statement of significance for Genappe under Criterion (a) is quite broad and is open to interpretation regarding what specific features of the property contribute to this significance. The Genappe homestead complex (comprising an area of approximately 1ha) incorporates the main homestead and associated out buildings, sheds and garden plantings. It would seem that the main significance values attributed to Genappe are predominantly confined to this area. However, the three recorded hedgerow features are also situated within the registered boundaries of the Genappe property and are a component of the early pastoral development of the property. As such, these hedgerows retain a level of associated significance as part of the broader setting of the property. The broader pastoral setting of the property and the aesthetic values of this setting may also be a contributing factor. The red clay brick feature is situated outside the heritage listed boundaries of the Genappe property. At this point it is unclear what this feature is and whether it is associated with the Genappe property. As such, it is not possible at this stage to accurately assess the significance of the feature.





**Figure 4: Aerial image showing the registered boundaries of the Genappe property within the Boyer Road Precinct study area**





**Figure 5: Aerial image showing the heritage features associated with the Genappe property that were recorded by CHMA (2024)**



### **3.0 Statement of Heritage Impacts and Statement of Archaeological Potential**

#### **3.1 Statement of Heritage Impacts**

The field inspection was undertaken on the 13.5.2025 by Stuart Huys (CHMA archaeologist). The primary purpose of the field inspection was to ground truth the proposed revised boundaries of the Genappe Homestead Precinct and to verify the location of key heritage features in relation to the current masterplan proposal. These observations were used as the basis for determining the extent of potential impacts that the Masterplan proposal may have on heritage values of the Genappe property.

##### *The Main Homestead Complex*

The assessment confirmed that the main Genappe homestead complex and associated out buildings, sheds and garden plantings (which are situated within an approximate 1.5ha area) is excluded from the Masterplan development footprint. A buffer has also been created around the main Genappe homestead complex, incorporating open space landscaped zones (see Figure 6). The open space incorporated in the current masterplan also maintains viewing lines from the Genappe homestead, south and west through to River Derwent (see Figure 6). On this basis it is advised that the current Masterplan proposal will not physically impact on the main Genappe homestead complex (incorporating the and associated out buildings, sheds and garden plantings). Furthermore, the incorporation of viewing lines and a buffer zone around the homestead complex means that the visual and aesthetic values of the main homestead complex will not be significantly impacted.

##### *The Red Brick Feature*

The Red brick feature identified by CHMA (2024) is confirmed as being situated within an open space area in the current Masterplan, just to the west of the main homestead complex (see Figure 6). Under the current Masterplan proposal, there is no residential development proposed for this area. However, the area is likely to be extensively landscaped. This would mean that the red brick feature is potentially at risk of being significantly impacted by landscaping works.

CHMA (2024) noted that it was unclear what this feature was. It could possibly be the remnant floor foundation of an earlier dwelling or could be an adaptive re-use of salvaged red clay bricks for another purpose. Whether or not the feature was associated with the Genappe property was also not clear, although CHMA (CHMA) noted that this was a reasonable probability, given the close proximity. As part of the current assessment, CHMA reviewed some historic aerial imagery dating to 1946 and the early 1970s, which cover the study area. The 1946 imagery does clearly show some form of structure in the place where the red brick feature is located (see Figures 7 and 8). This demonstrates that the structure was in place prior to 1946 and potentially provides supportive evidence that this may have been some form of 19<sup>th</sup> Century building

(possibly a barn) that was associated with the early development phase of the Genappe property. In the 1970s imagery the building appears to have been demolished, however the foundations are still evident (see Figure 9).

#### *The Hawthorn Hedgerows*

The original assessment undertaken by CHMA (2024) recorded three linear Hawthorn hedgerow plantings that are situated on the Genappe property. The three hedgerows are mature plantings which are reasonably intact and delineate property fence lines. CHMA (2024) was of the opinion that the hedgerows were likely to be associated with the early pastoral development of the property.

As part of the current assessment, CHMA reviewed some historic aerial imagery dating to 1946 and the early 1970s, which cover the study area. The 1946 imagery shows that Hedgerow 3 (recorded by CHMA 2024) is in existence in 1946. However, Hedgerows 1 and 2 appear to be absent (see Figure 7). In the aerial imagery from the 1970s, all three hedgerows are evident and appear to be roughly the same extent as recorded by CHMA (2024) (see Figure 10). Based on this imagery it would appear that Hedgerow 3 may be an early original planting and that Hedgerows 1 and 2 may be latter plantings. In terms of significance value, this would mean that Hedgerow 3 is of a comparatively higher landscape significance compared to Hedgerows 1 and 2, because of its potential association with the early pastoral development of the Genappe property.

The current masterplan proposal shows that Hedgerow 2 and approximately half of Hedgerow 1 will be retained in open space and will not be impacted to any significant extent. Hedgerow 3 will be completely removed as part of the development of the Mixed Use Precinct (see Figure 6).

### **3.2 Statement of Archaeological Potential**

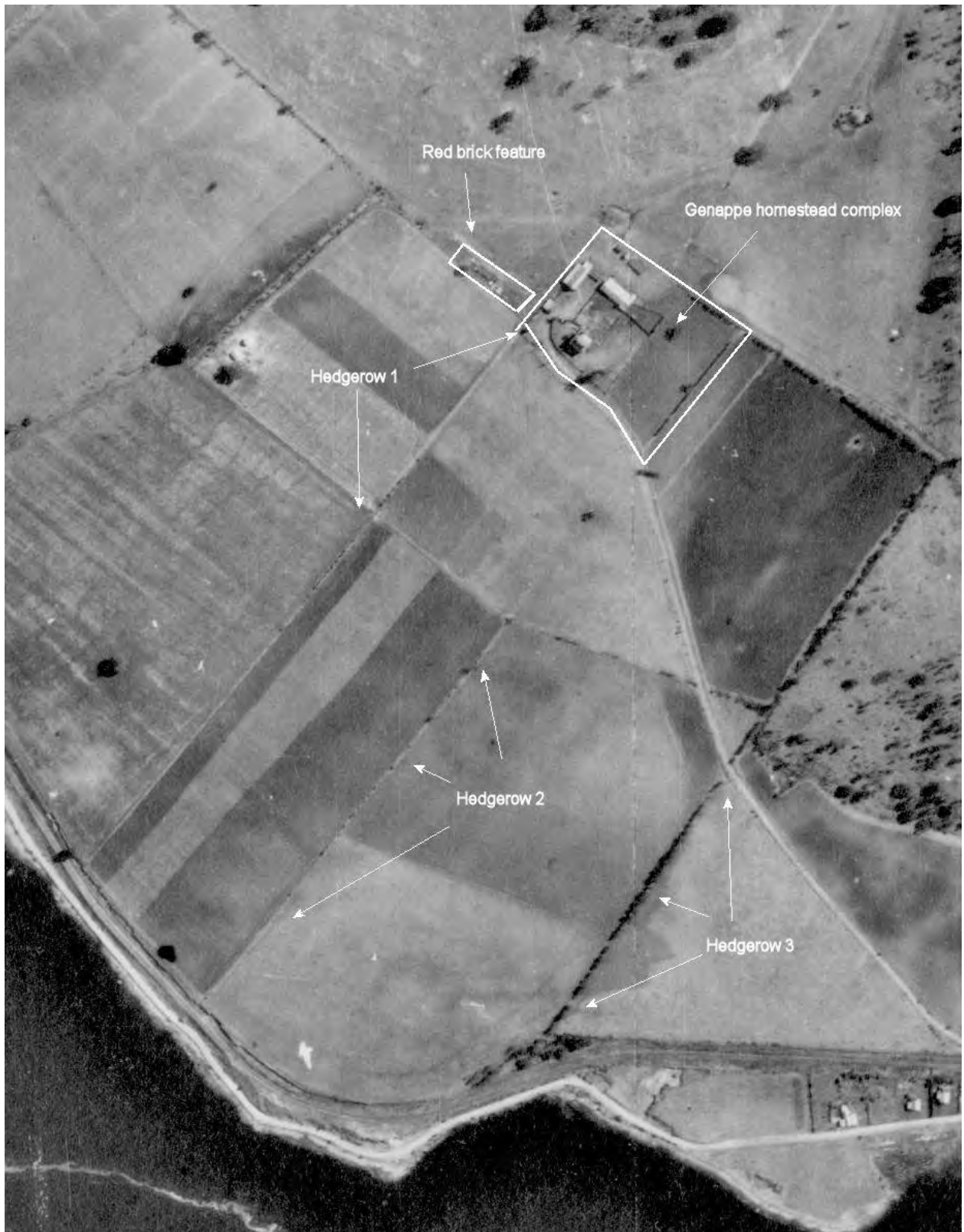
CHMA (2024) advised that besides the recorded features described above, no other suspected historic heritage features, or specific areas of elevated archaeological potential were identified within the bounds of the Boyer Road Precinct study area. CHMA (2024) noted that it was clear that the Genappe Homestead complex is the main heritage feature present in the study area, and that this complex (which is confined to an approximate 1ha area) has the highest archaeological potential. Outside of the bounds of the homestead complex it was assessed that there was generally a low to very low potential for undetected heritage features to be present. The possible exception would be the area around the recorded red brick feature. Based on the historic aerial imagery, the current assessment has confirmed that the area around the red brick feature does indeed have a moderate to high level of archaeological potential, given that it is now evident that this would appear to be the foundations of a structure pre-dating 1946. The archaeological potential for the remainder of the study area (excluding the homestead and red brick feature complex) is still assessed as being low.





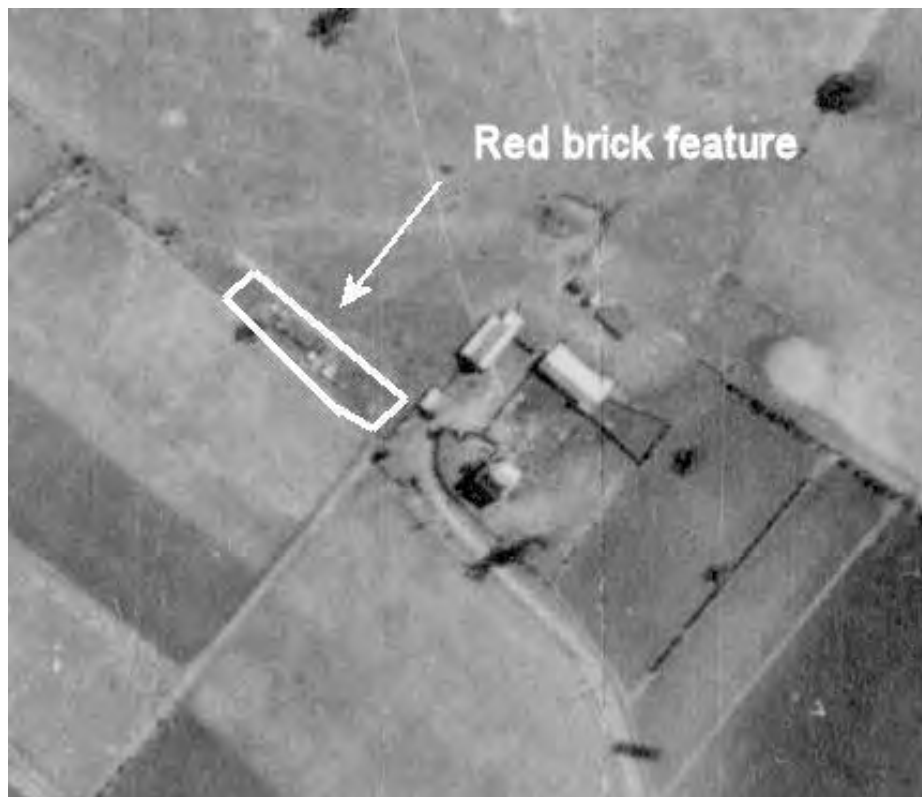
Figure 6: The current proposed Masterplan for Plan for the Boyer Road Precinct, showing the Genappe homestead complex, the red brick feature and the hedgerows





**Figure 7: Aerial photo from 1946 showing the Genappe homestead complex and the location of the Redbrick feature and Hawthorn Hedgerows**





***Figure 8: Aerial imagery from 1946 showing a structure present where CHMA (2024) recorded the red brick feature***



***Figure 9: Aerial imagery from the 1970 showing the structure removed and just the foundations remaining***



***Figure 10: Aerial imagery from the 1970s showing the hedgerow features***



## 4.0 Management Recommendations

### **Recommendation 1 (Amendment of the THR registered boundaries of the Genappe property)**

The main Genappe homestead complex and associated out buildings, sheds and garden plantings are situated within an approximate 1.5ha area. This assessment has confirmed that the main heritage values associated with the Genappe property are confined to within this area which is delineated by the grid references below. The main zone of archaeological potential is also confined to within this area. Figure 11 shows the boundaries of this area. It is recommended that the THR registered boundaries are amended to reflect this area. If adopted, then the revised THR boundaries of the Genappe property should be excluded from the Masterplan development footprint. It is noted that under the current Masterplan proposal, a buffer has been created around the main Genappe homestead complex, incorporating open space landscaped zones. The open space incorporated in the current masterplan also maintains viewing lines from the Genappe homestead, south and west through to River Derwent. This is supported.

- E517871 N5269003
- E517837 N5269022
- E517759 N5269032
- E517721 N5268981
- E517736 N5268970
- E517731 N5268958
- E517774 N5268921
- E517763 N5268887
- E517790 N5268887
- E517798 N5268898

Works to places included in the THR require approval, either through a Minor Works Approval for works which will have no or negligible impact, or through a Discretionary Permit for those works which may impact on the significance of the place. It is advised that if the amendment to the THR registered above is implemented, then any works within the amended registration will be subject to the appropriate approvals.

### **Recommendation 2 (The Red Brick Heritage Feature)**

Immediately to the west of the Genappe Homestead Complex is the red brick feature which is likely to be the foundations of a structure pre-dating 1946. This feature is situated outside of the current THR registered boundaries of the Genappe property). The archaeological potential of this area is assessed as potentially being moderate to high. The grid references below delineate the boundaries of the red brick feature, including the zone of archaeological potential, with Figure 11 showing the spatial extent of this area.

- E517710 N5268988
- E517718 N5269002
- E517688 N5269026
- E517677 N5269014

Under the current Masterplan proposal, the red brick feature is situated in open space, in an area where there is no residential development proposed. However, the open space area is proposed to be landscaped. This would mean that the red brick feature is potentially at risk of being impacted by landscaping works. In order to protect the potential archaeological integrity of this feature, it is recommended that the zone incorporating the red brick feature is conserved in-situ and is landscaped in a manner that involves no soil disturbances. As a precautionary measure, this advice should be passed on to construction and or landscaping contractors so that they are aware of these requirements.

***Recommendation 3 (Hawthorn Hedgerows)***

The current masterplan proposal shows that Hedgerow 2 and approximately half of Hedgerow 1 will be retained in open space and will not be impacted to any significant extent. Hedgerow 3 will be completely removed as part of the development of the Mixed Use Precinct. If Recommendation 1 (above) is adopted, then these hedgerows will be situated outside the adjusted registered boundaries of the Genappe homestead complex. There are therefore no State Statutory heritage requirements for approvals to impact these hedgerows. However, it is recommended that where possible, hedgerow features (not necessarily hawthorn) should be incorporated into the open space design to reflect the early pastoral hedgerow arrangements within the study area.

***Recommendation 4 (Unanticipated Discoveries of historic features)***

It is assessed that there is a low to very low potential for undetected Historic heritage sites to occur within the Masterplan area, outside the recommended amended THR boundaries for Genappe. However, as per the Practice Note No 2 by the Tasmanian Heritage Council, processes must be followed should any unexpected archaeological features and/or deposits be revealed during works. An Unanticipated Discovery Plan for the project is presented in Section 5 of this report.

***Recommendation 5 (Provision of Report to Heritage Tasmania)***

Copies of this report should be provided to Heritage Tasmania for review.





**Figure 11: Aerial image showing the recommended amendment to the THR registered boundaries of the Genappe property and the Protection Zone for the Red Brick feature**

## 5.0 Unanticipated Discovery Plan

The following text describes the proposed method for dealing with unanticipated discoveries of heritage features or objects during any future proposed development works in the Boyer Road Precinct study area. The plan provides guidance to project personnel so that they may meet their obligations with respect to heritage legislation. Please Note: There are two different processes presented for the mitigation of these unanticipated discoveries. The first process applies for the discovery of all cultural heritage objects or features, with the exception of skeletal remains (burials). The second process applies exclusively to the discovery of skeletal remains (burials).

### Discovery of Heritage Objects or Features

#### *Step 1*

If any person believes that they have discovered or uncovered a heritage object or feature, the individual should notify any machinery operators that are working in the general vicinity of the area that earth disturbance works should stop immediately.

#### *Step 2*

A buffer protection zone of 5m x 5m should be established around the suspected heritage find. No unauthorised entry or earth disturbance will be allowed within this 'archaeological zone' until such time as the suspected heritage find has been assessed, and appropriate mitigation measures have been carried out.

#### *Step 3*

A qualified heritage consultant should be engaged to assess the suspected heritage find. As a first step in the process, the heritage consultant should contact Heritage Tasmania, the Heritage Council and the Local Council and notify them of the find. The heritage consultant will ensure that Heritage Tasmania, the Heritage Council and the Local Council are consulted throughout the assessment process.

#### *Step 4*

If the heritage find is a movable object, then the find should be recorded, photographed and a decision should be made as to whether the object should be re-located to a designated Keeping Place. If the find is an unmovable heritage object or feature, then the find should be recorded and photographed and a HIA and HMP developed for the feature. This should be then submitted to Heritage Tasmania, the Heritage Council and the Local Council for review and advice.

Possible outcomes may necessitate:

- a. An amendment to the design of the development
- b. Carrying out of archaeological excavations prior to the re-commencement of works
- c. Archaeological monitoring and recording during works
- d. Preparation (and implementation) of a strategy to ensure communication of the new



information to the community.  
e. A combination of the above.

### **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*.

## References Cited

CHMA 2024 *Boyer Road Precinct Structure Plan: Historic Heritage Assessment*. A report to Holmes Dyer.



## **Appendix 1**

### **Tasmanian Heritage Register Datasheet for the Heritage Listed Genappe Property**

134 Macquarie Street (GPO Box 618)  
Hobart Tasmania 7001  
Phone: 1300 850 332 (local call cost)  
Email: [enquiries@heritage.tas.gov.au](mailto:enquiries@heritage.tas.gov.au)  
Web: [www.heritage.tas.gov.au](http://www.heritage.tas.gov.au)

**Name:** Genappe  
**Status:** Permanently Registered  
**Tier:** State

**THR ID Number:** 620  
**Municipality:** Brighton Council  
**Boundary:** Whole of Title

**Location Addresses**

50 BOYER RD, BRIDGEWATER 7030 TAS

**Title References**

44724/8

**Property Id**

7676361



Genappe  
DEPHA, 2006



Genappe  
DEPHA, 2006

**Statement of Significance:** (non-statutory summary)

No Statement is provided for places listed prior to 2007

**Why is it significant?:**

The Heritage Council may enter a place in the Heritage Register if it meets one or more of the following criteria from the Historic Cultural Heritage Act 1995:

**a) The place is important to the course or pattern of Tasmania's history.**

Genappe is of high historic cultural heritage significance for its ability to illustrate the historical and sequential development of agriculture and land in the outlying districts

**b) The place possesses uncommon or rare aspects of Tasmania's history.**

**c) The place has the potential to yield information that will contribute to an understanding of Tasmania's history.**

**d) The place is important in demonstrating the principal characteristics of a class of place in Tasmania's history.**

**e) The place is important in demonstrating a high degree of creative or technical achievement.**



- f) The place has a strong or special association with a particular community or cultural group for social or spiritual reasons.
- g) The place has a special association with the life or works of a person, or group of persons, of importance in Tasmania's history.
- h) The place is important in exhibiting particular aesthetic characteristics.

Heritage approval is required for work that will result in changes to the nature or appearance of the fabric of a Heritage place, both internal and external.

Please refer to the Heritage Council's Works Guidelines ([www.heritage.tas.gov.au](http://www.heritage.tas.gov.au)) for information about the level of approval required and appropriate outcomes.

Heritage Advisors are also available to answer questions and provide guidance on [enquiries@heritage.tas.gov.au](mailto:enquiries@heritage.tas.gov.au) or Tel 1300850332

This data sheet is intended to provide sufficient information and justification for listing the place on the Heritage Register. Under the legislation, only one of the criteria needs to be met. The data sheet is not intended to be a comprehensive inventory of the heritage values of the place, there may be other heritage values of interest to the Heritage Council not currently acknowledged.

**Setting:**

No Data Recorded

**Description:**

A two storey vernacular Georgian farm house built from brick. It has a centrally placed door with flanking windows and is three bays wide.

**History:**

No Data Recorded

# BUSHFIRE HAZARD REPORT

---

BOYER ROAD PRECINCT STRUCTURE PLAN  
BRIDGEWATER

November 2024



Unlocking land potential.

**NOVA**  
LAND  
CONSULTING



Job number: L240907  
NLO1924

Prepared by: James Stewart  
Town Planner & Bushfire Hazard Practitioner BFP 157

Rev. no	Description	Date
1	DRAFT	08/11/2024
2	TFS CONSULTATION	
3	FINAL	

#### Disclaimer

This report deals with the potential bushfire risk only, all other statutory assessments sit outside of this report. This report is not to be used for future or further development on the site, other than what has been specifically provided for in the assessed plans attached. Nova Land Consulting Pty Ltd accepts no responsibility to any purchaser, prospective purchaser or mortgagee of the property who in any way rely on this report. This report has been undertaken to guide use and development relating to bushfire risk within the Boyer Road Precinct and does not guarantee that buildings will survive in the event of a bushfire event. If characteristics of the property change or are altered from those which have been identified, the assessment may be different to that which has been identified as part of this report.

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Launceston | Hobart  
novaland.com.au

## Executive Summary

Nova Land Consulting has been engaged by Holmes Dyer, to provide a Bushfire Risk Assessment in relation to land within the Boyer Road Precinct. The precinct has been identified by Brighton Council, to provide future residential supply within one of the fastest growing municipalities within the State.

As part of Brighton Councils strategic planning for the area, Holmes Dyer have been awarded the tender to prepare and submit a draft amendment, rezoning the site from Future Urban Zone (FUZ) to General Residential Zone (GRZ) under the *Tasmanian Planning Scheme – Brighton*.

A Specific Area Plan (SAP) for the site would be prepared and submitted as part of the draft amendment.

The purpose of this report is to guide future use and development of the site, while making recommendations in relation to:

- Bushfire risk
- BAL Ratings & setbacks for the site
- Future subdivision layout, and;
- Bushfire recommendations under the proposed SAP

The site is entirely within the boundary of a bushfire prone area shown on an overlay on a planning scheme map for the *Tasmanian Planning Scheme – Brighton*.

A bushfire event at this site or within the immediate area is likely to impact on future buildings at this location and subject development to considerable radiant heat and ember attack.

A detailed bushfire assessment and bushfire hazard management plan (BHMP) would be required for any future subdivision of the land or construction of habitable buildings on the site.

The conclusions and recommendations in this report will assist in the planning and delivery of a SAP and subdivision layout that is considered best practice in relation to bushfire hazards.

## Conclusions & Recommendations

- a) The site is well located, with the proposed urban areas located downslope of the heavier bushfire fuel areas.
- b) Larger lots should be provided along the northern interface between urban areas and the more densely vegetated land which extends to the north. Dwellings on these lots are required to provide a 20m setback to meet BAL 19 standards.
- c) Larger lots should be provided along the western interface, between urban areas and the agricultural land to the west. Dwellings on these lots are required to provide a 12m setback to meet BAL 19 standards.
- d) Any lot to the north of the land associated with the State Heritage Registered dwelling at 50 Boyer Road, should provide a minimum separation of 14m setback to meet BAL 19 standards.
- e) Lots must be of a sufficient size to provide hazard management areas within lot boundaries. We recommend avoiding Section 71 Agreements or bushfire easements/covenants on adjoining land where possible.
- f) Public Open Space and Wildlife Corridors should be maintained as low threat vegetation by the Brighton Council. Alternatively, Council should consider perimeter breaks along residential boundaries.



- g) All proposed roads, private accesses and fire trails (if applicable) must be in compliance with Table C13.1, C13.2 and C13.3 as outlined in C13.0 Bushfire Prone Areas Code of the Tasmanian Planning Scheme, and section 5 of this report.
- h) Any water supply required for the subdivision must be in compliance with Table C13.4 or Table C13.5, as outlined in C13.0 Bushfire Prone Areas Code of the Tasmanian Planning Scheme, and section 5 of this report.
- i) We recommend the SAP provide an acceptable solution habitable building line setback of 20m for all lots along the northern boundary of the proposed GRZ area. Any corresponding performance criteria must have regard to the presence of natural hazards.
- j) We recommend the SAP provide an acceptable solution habitable building line setback of 12m for all lots along the western boundary of the proposed GRZ area. Any corresponding performance criteria must have regard to the presence of natural hazards.
- k) The Holmes Dyer concept plan of subdivision generally provides good connectivity with multiple access points onto Boyer Road. The SAP should include a plan of subdivision, which is referred to under an acceptable solution. Any performance criteria which provides for an alternate lot layout must have regard to the presence of natural hazards.
- l) The Homes Dyer concept plan of subdivision indicates three access points onto Boyer Road. It is recommended that at least 2 access/egress points are available onto Boyer prior to any large-scale residential development occurring on the site.
- m) If a Council policy does not exist, it would be recommended that a vegetation or fire management policy be prepared which would guide Council on how to appropriately manage and vegetate public open space/wildlife areas that adjoin urban and other residential land.

Signed:



**Author:** James Stewart

**Position:** Town Planner and Accredited Bushfire Practitioner BFP 157

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# 1. Introduction

This Bushfire Hazard Report has been prepared in relation to the Boyer Road Precinct (BRP).

## 1.1 Scope of works

Nova Land Consulting has been engaged by Holmes Dyer, to provide a Bushfire Risk Assessment in relation to land within the BRP. The precinct has been identified by Brighton Council, to provide future residential supply within one of the fastest growing municipalities within the State.

This report will provide an analysis of the site and make recommendations regarding bushfire risk and BAL setbacks for future development.

A concept subdivision plan has been provided by Holmes Dyer. We have undertaken a review of the concept plan, and provide comments on the plan in section 6 of this report.

Several recommendations have been made in relation to the site, and which will assist in future subdivision design and the preparation of the SAP.

## 1.2 The subject site

The following is a summary of the relevant site information:

<b>Property addresses</b>	<ul style="list-style-type: none"><li>• Boyer Road, Bridgewater (CT44724/2)</li><li>• 170 Boyer Road, Bridgewater (CT44724/9)</li><li>• 31 Cobbs Hill Road, Bridgewater (CT152364/2)</li><li>• 29 Cobbs Hill Road, Bridgewater (CT135574/1)</li><li>• 25 Cobbs Hill Road, Bridgewater (CT135574/2)</li><li>• 50 Boyer Road, Bridgewater (CT44724/8)</li></ul>
<b>Land Area</b>	109ha (total) 52ha (Future Urban Zone)
<b>Zoning</b>	<ul style="list-style-type: none"><li>• Future Urban Zone (FUZ)</li><li>• Landscape Conservation Zone (LCZ)</li></ul>
<b>Planning Scheme</b>	Tasmanian Planning Scheme – Brighton
<b>Identified on a Bushfire Overlay Map</b>	The entirety of the site is mapped as being located within a Bushfire Prone Area under the Planning Scheme overlay.
<b>Conservation Covenant</b>	31 Cobbs Hill Road is currently subject to Conservation Covenant CPR9693
<b>Water Supply</b>	<ul style="list-style-type: none"><li>• 50 Boyer Road is identified as being within an area serviced by TasWater reticulated water.</li><li>• There are no other lots on the subject site which are serviced by TasWater reticulated water.</li></ul>
<b>Vehicular Access</b>	<ul style="list-style-type: none"><li>• Boyer Road (Department of State Growth maintained).</li><li>• Cobbs Hill Road (Council maintained)</li></ul>



### 1.3 Bushfire Assessment

A bushfire assessment is a process of analysing information about the potential impacts on a proposed development that are likely to occur in a bushfire hazard scenario. A 'bushfire-prone area' is an area where a bushfire event is likely to occur that may result in significant adverse impact on buildings and lives.

In Tasmania, most local Councils have a planning scheme overlay map that identifies bushfire-prone areas. Subdivision within a bushfire-prone area triggers the assessment of the Bushfire-Prone Areas Code under the planning schemes and subsequently requires assessment against the provisions of the Code.

The assessment generally requires a Bushfire Hazard Management Plan (BHMP) to be provided as part of an application for subdivision.

The bushfire assessment will determine the Bushfire Attack Level (BAL) for future lots, while measuring the possible exposure of a building to a bushfire hazard.

The BAL is assessed in accordance with Australian Standard AS 3959-2018 *construction of buildings in bushfire-prone areas*. The bushfire assessment is required to understand the fuel management requirements for the subject site and to demonstrate that new buildings within each lot can be constructed to minimum BAL19 level under the *Building Act 2016*.

Future assessment of a subdivision within the BRP must be undertaken in accordance with C13.0 Bushfire-Prone Areas Code and must accompany a subdivision application under the *Tasmanian Planning Scheme – Brighton*.

Holmes Dyer have prepared a concept subdivision plan for the BRP. While the plan is not being lodged as a formal subdivision application for assessment, it provides an indicative starting point in relation to possible lot layouts, road locations, and servicing. To assist Holmes Dyer in finalising a subdivision plan for the site, a bushfire advisory plan has been provided utilising the current subdivision concept.

### 1.4 References

The following documents and organisations were referred to in the preparation of this report. This report should be read in conjunction with any relevant legislation and other statutory requirements.

- C13.0 Bushfire-Prone Areas Code – Tasmanian Planning Scheme.
- Tasmanian Planning Scheme – Brighton
- Southern Tasmania Regional Land Use Strategy 2010-2035 (SRLUS)
- The Land Use Planning and Approvals Act 1993 (the Act).
- Tasmanian State Government, Director's Determination – Bushfire Hazard Areas V1.1
- Australian Standard, AS3959-2018 construction of buildings in bushfire-prone areas.
- Building Act 2016
- Tasmanian Fire Service, Bushfire Hazard Advisory Notes
- Tasmanian Fire Service

## 2. Site Description

### 2.1 Site context

The subject site consists of several titles located within the BRP. Details of the lots included as part of the subject site are shown below:

Address:	Title Number:	Lot Size	Existing buildings
Boyer Road, Bridgewater	CT44724/2	7.6ha	Existing outbuildings.
170 Boyer Road, Bridgewater	CT44724/9	17.7ha	Single dwelling and outbuildings.
50 Boyer Road, Bridgewater	CT44724/8	17.1ha	Single dwelling and outbuildings.
31 Cobbs Hill Road, Bridgewater	CT152364/2	31.3ha	Vacant land
29 Cobbs Hill Road, Bridgewater	CT135574/1	19.7ha	Single dwelling and outbuilding.
25 Cobbs Hill Road, Bridgewater	CT135574/2	10ha	Single Dwelling and outbuilding.

The BRP is located north of the River Derwent, on the periphery of an existing residential area to the east. There are established low density dwellings located to the east of the site, which are rural residential in character. Land to the west is utilised for primary industry purposes, located within a cleared rural environment. Land to the north west remains in its natural uncleared state.

The town centre of Bridgewater is located approximately 1.8km to the east, with the existing GRZ and urban areas of Bridgewater generally located on the eastern side of the Midland Highway. The Midland situated 600m to the east of the site. The Brighton Industrial estate is located north of Cobbs Hill Road, extending through to the east to include the existing Boral Quarries.



Figure 1 - Aerial view of the BRP and surrounding area (source: The LIST Map)

## 2.2 Planning controls

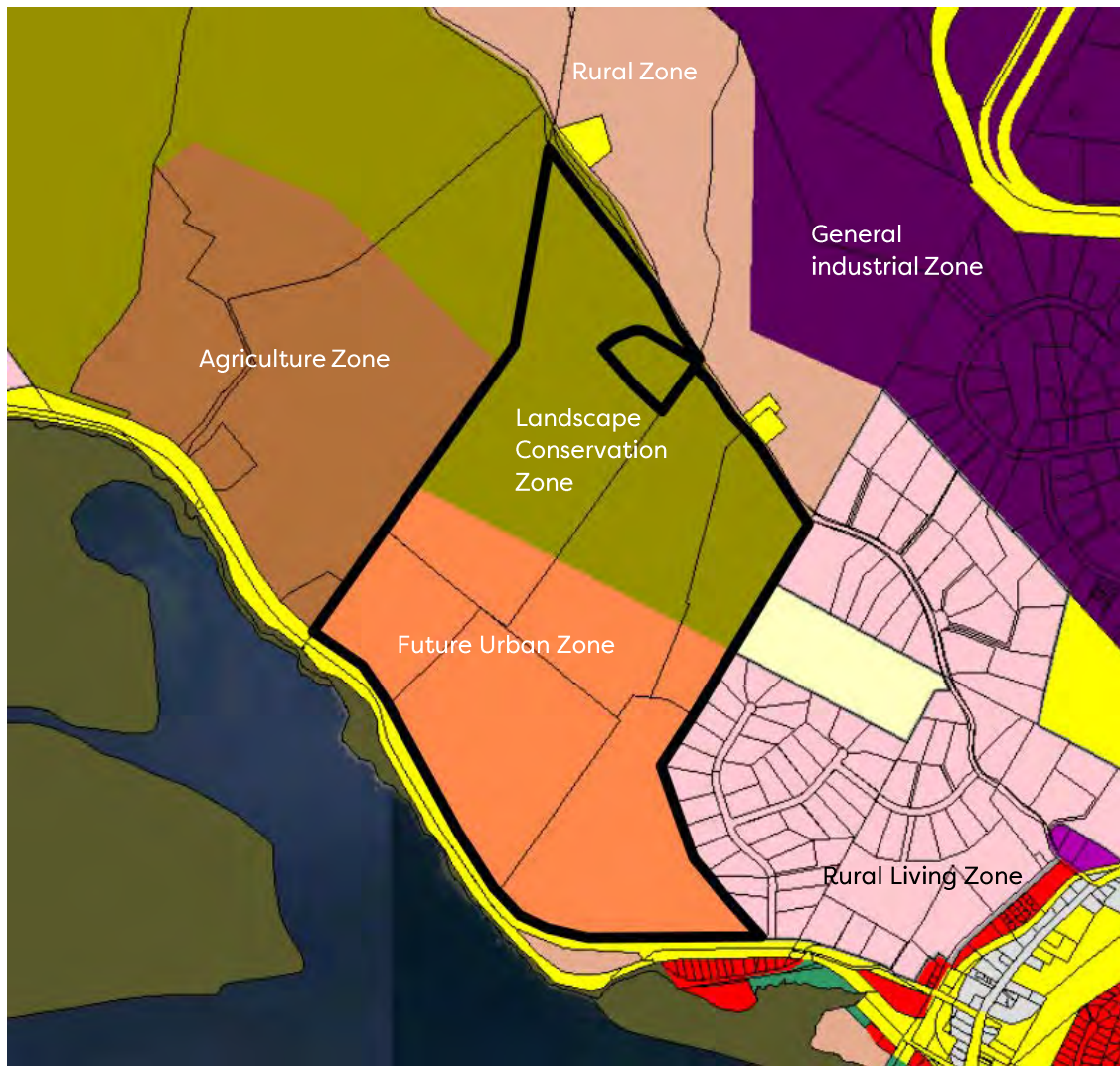
The BRP is located within the municipal area of Brighton. Therefore, the planning instrument is the *Tasmanian Planning Scheme – Brighton* (The Scheme).

The subject site is currently within the Future Urban Zone (FUZ) in the south, and the Landscape Conversation Zone (LCZ) in the north.

The purpose of this report is to analyse and support a rezoning of land from FUZ to GRZ, along with the preparation of a SAP, as part of a draft amendment application.

The subject site falls within the Bushfire-Prone Areas Overlay.





*Figure 2 - Zoning map of subject site and surrounds.*

### 3. Legislative Requirements

A bushfire hazard assessment has been prepared to support a planning scheme amendment, under Division 2 of the *Land Use Planning and Approvals Act 1993*. The legislation requires that the draft amendment must satisfy the relevant strategic planning policy considerations.

#### 3.1 Southern Regional Land Use Strategy 2010-2035

The Southern Regional Land Use Strategy (SRLUS) is a relevant document that the draft amendment must seek to be practically consistent with.

Section 8 of the SRLUS relates to management of risks and hazards when considering land use planning.

Bushfire is identified as a key land hazard which must be taken into consideration. Policy MRH 1, relates to minimising the loss of life and property as a result of bushfire. Relevant sections of the SRLUS relating to bushfire hazards are considered below, with a response provided.

Managing Risks and Hazards	Response:
<b>MRH 1.1</b> <i>Provide for the management and mitigation of bushfire risk at the earliest possible stage of the land use planning process (rezoning or if no rezoning required; subdivision) by the identification and protection (in perpetuity) of buffer distances or through the design and layout of lots.</i>	<p>This report has been prepared to ensure Bushfire Risk is considered as part of any rezoning process.</p> <p>A concept subdivision plan has been prepared with comments and recommendations provided as part of this report.</p> <p>Buffer distances have been calculated and included in the recommended outcomes.</p> <p>The development of a specific area plan (SAP) can utilise bushfire setbacks as recommended in this report to ensure a hard building line is provided along the interface between urban and vegetated areas.</p> <p>The future subdivision and design of lot layouts will be informed through this report.</p>
<b>MRH 1.2</b> <i>Ensure subdivision road layout designs provide for safe exit points in areas subject to bushfire hazard.</i>	<p>The bushfire prone areas code outlines requirements relating to roads, fire trails, and private accesses.</p> <p>This report has provided recommendations in relation to road layout design of future subdivisions.</p> <p>The report has recommended that at least two ingress and access points be provided onto Boyer Road as part of any larger scale subdivision.</p>
<b>MRH 1.3</b> <i>Allow clearance of vegetation in areas adjacent to dwellings existing at the time that planning schemes based on this Strategy come into effect, in order to implement bushfire management plans. Where such vegetation is subject to a biodiversity code, the extent of clearing allowable is to be the minimum necessary</i>	<p>The areas currently zoned for FRZ are largely clear of denser and more established vegetation. The primary vegetation type in the south of the BRP is 'Grassland', which transitions to woodland as the site rises to the north. The LCZ portion of the site is generally classified as woodland, being located within an existing conservation covenant.</p>

<i>to provide adequate bushfire hazard protection.</i>	<p>Details around the extent of vegetation clearing to achieve BAL setbacks have been provided within the report. These details can assist in planning for a future subdivision.</p> <p>The setbacks ensure that adequate bushfire protection measures are in place in relation to vegetation management.</p>
<p><b>MRH 1.4</b>  <i>Include provisions in planning schemes for use and development in bushfire prone areas based upon best practice bushfire risk mitigation and management.</i></p>	<p>The Boyer Road SAP will be implemented over the FRZ portion of the site. The SRLUS notes that best practice bushfire risk mitigation should be examined.</p> <p>Best practice does not mean the same as minimum compliance.</p> <p>Bushfire setbacks for future habitable development have been recommended based on best practice.</p>
<p><b>MRH 1.5</b>  <i>Allow new development (at either the rezoning or development application stage) in bushfire prone areas only where any necessary vegetation clearance for bushfire risk reduction is in accordance with the policies on biodiversity and native vegetation.</i></p>	<p>Development of the area mapped FRZ will require some vegetation management of the site. This report provides setbacks to ensure that land outside of the site, is not relied on via covenants or section 71 agreements.</p> <p>A natural values report will be undertaken in relation to vegetation removal on the subject site.</p> <p>This report does not recommend or require any removal of vegetation on land zoned LCZ in order to achieve bushfire compliance.</p>
<p><b>MRH 1.6</b>  <i>Develop and fund a program for regular compliance checks on the maintenance of bushfire management plans by individual landowners.</i></p>	<p>A future subdivision application will provide recommendations relating to Bushfire. Under the Local Government Act 1993, Council provides hazard abatement. This involves inspections of land and contacting land owners where removal of fire hazards is required.</p>

## 3.2 Tasmanian Planning Policies

The Tasmanian Policies are a planning instrument made under part 2A of the Act. A draft amendment is required to address the LPS criteria, as outlined in section 34 of the Act. One of the LPS criteria that is required to be considered relates to the Tasmanian Planning Policies (TPP's).

While the TPP's are currently drafted, they have not yet been declared. Nevertheless, it is viewed as pertinent to examine relevant draft TPP's relating to Bushfire, noting that they may be in place by the time a draft amendment is applied for.

Section 3.1 of the TPP's relates to Bushfire. The objective of the TPP's for bushfire is;

*To prioritise the protection of human life and to support the resilience of settlements and communities by reducing the potential impacts of bushfire on life, property and infrastructure.*



This is achieved, by the nine strategies listed below.

Strategies:	Response:
<p>1. <i>Identify and map land that is exposed to bushfire hazards, including consideration of the potential impacts of future bushfire conditions as a result of climate change, based on the best available scientific evidence</i></p>	<p>The site is currently mapped as being within a bushfire prone area on a planning scheme overlay.</p> <p>The draft amendment will not seek to alter the bushfire prone areas overlay mapping.</p> <p>The mapping ensures that bushfire risk is appropriately considered as part of subdivision and future planning for the area.</p>
<p>2. <i>The protection of human life from harm caused by bushfire will be considered and prioritised at every stage of the planning process.</i></p>	<p>The development of land within the FUZ can be undertaken in a manner which ensure compliance with best practice bushfire standards, and in accordance with C13.0 <i>Bushfire Prone Areas Code</i>, and AS3959:2018 – <i>Construction of Buildings in Bushfire Prone Areas</i>.</p> <p>Appropriate bushfire protection measures, including setbacks of future buildings, reduces the risk to human life and property.</p>
<p>3. <i>Avoid designating land for purposes that expose people, property and supporting infrastructure to risk arising from bushfire hazards, especially significant risks.</i></p>	<p>The draft amendment will seek to see the site develop in a manner which reduces and manages any bushfire risk.</p> <p>Bushfire setbacks have been provided to ensure any future bushfire risk can be reduced.</p> <p>Overtime, it would be expected that the bushfire prone areas overlay could be amended to remove urban areas which are not required to be included in the overlay (i.e. over 100m from bushfire prone vegetation).</p>
<p>4. <i>Where it is not practical to avoid bushfire hazards, use and development is to</i></p> <ul style="list-style-type: none"> <li><i>a) identify the risk of harm to human life, property and infrastructure caused by bushfire;</i></li> <li><i>b) incorporate bushfire protection measures that manage the identified risk and reduce it to within a tolerable level; and</i></li> <li><i>c) provide a higher level of risk mitigation for uses deemed particularly vulnerable or hazardous.</i></li> </ul>	<p>This report has:</p> <ul style="list-style-type: none"> <li>a) identified the risk of harm to human life, property and infrastructure</li> <li>b) provided recommendations that ensure the threat can be reduced to a tolerable level.</li> <li>c) The draft amendment does not anticipate any vulnerable or hazardous uses within the study area.</li> </ul> <p>Should future uses be proposed, they would be required to be assessed on their own merits.</p>

<p>5. <i>Support the efficient and safe intervention of firefighting personnel and emergency evacuation</i></p>	<p>Future residential infrastructure will need to be constructed in accordance with the standards under C13.0 Bushfire Prone Areas Code. This includes all public roads, fire trails (if applicable), and private access (if applicable).</p> <p>Appropriate connectivity, including ingress and egress should be considered as part of any subdivision design. Recommendations have been made relating to ingress and egress.</p>
<p>6. <i>Facilitate the provision of firefighting infrastructure and support emergency services and the community to prevent, prepare, respond and recover from bushfire events.</i></p>	<p>Future infrastructure will need to be constructed in accordance with the standards under C13.0 Bushfire Prone Areas Code. These include all road infrastructure, along with water infrastructure for firefighting purposes.</p> <p>Ensuring future development provides for compliant infrastructure will allow the community to respond and recover in a possible bushfire event.</p>
<p>7. <i>Consider the cumulative effects of planning decisions so new use and development will not result in an unacceptable increase to bushfire risks for existing use and development.</i></p>	<p>Should recommendations, including future building setbacks, be implemented as part of the SAP preparation and subdivision design, it is considered that new use and development of the site will not result in an unacceptable risk.</p>
<p>8. <i>When designating land for particular purposes and considering use and development in areas subject to bushfire hazards:</i></p> <ul style="list-style-type: none"> <li>a) <i>priority should be given to minimising the impacts, associated with implementing future bushfire protection measures, on environmental values and on the cost to the community as a result of defending properties from bushfire; and</i></li> <li>b) <i>where possible, avoid locations that require bushfire hazard management to be undertaken on land external to the site where that land is publicly owned and managed for conservation purposes.</i></li> <li>c) <i>Allow the implementation of bushfire protection measures that are carried out in accordance with an endorsed plan, including hazard reduction burns.</i></li> </ul>	<p>The land has been designated as being appropriate for future residential use, this is reflected in the existing FUZ.</p> <p>The draft amendment will rezone the site to GRZ and implement a SAP over the site.</p> <ul style="list-style-type: none"> <li>a) This report doesn't seek to impose clearing requirements outside of the site. Vegetation management will be required. The flora and fauna report will be required to address environmental values, taking into consideration this clearing.</li> <li>b) Bushfire hazard management will not be required to be undertaken outside of the site.</li> <li>c) A future subdivision will be required to provide a compliant BHMP, certified by the TFS or an accredited person. Council currently conducts fire abatement as part of their responsibilities under the Local Government Act.</li> </ul>

<p>9. <i>Allow the implementation of bushfire protection measures that are carried out in accordance with an endorsed plan, including hazard reduction burns.</i></p>	<p>A future subdivision of the site will be required to provide bushfire protection measures, as outlined and certified in a BHMP. Council and the TFS will liaise with landowners in relation to any hazard reduction burns if required.</p>
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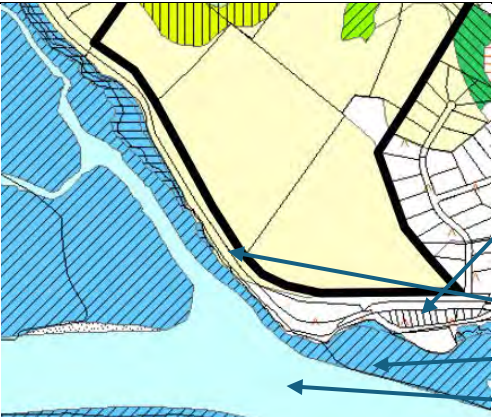




## 4. Bushfire Site Assessment

### 4.1 TasVeg Analysis

The TasVeg map 4.0 provides general information indicating potential bushfire prone vegetation, within 120m of the site, and within the subject site.

Understanding vegetation types within 100m+ of the site is a recommendation under C2.2.3.1 of AS3959:2018. For the BRP, it is considered appropriate to analyse vegetation within 120m of the site, noting that the identified vegetation does not vary greatly after 100m.

Direction	TasVeg Mapping	Comments:
North		<p><b>FUM</b> – Modified Land</p> <p><b>FAG</b> – Agricultural Land</p> <p><b>DTO</b> – Eucalyptus Forest &amp; Woodland (tenuiramis)</p> <p><b>DRI</b> – Eucalyptus Forest &amp; Woodland (risdonii)</p>
South		<p><b>FUR</b> – Urban Areas</p> <p><b>FAG</b> – Agricultural Land</p> <p><b>AHS</b> – Saline aquatic herb land</p> <p><b>OAQ</b> – Water Body</p>

East		<p><b>DVG</b> – Eucalyptus Forest &amp; Woodland (viminalis grassy)</p> <p><b>FAG</b> – Agricultural Land</p> <p><b>FUR</b> – Urban Areas</p>
West		<p><b>DAS</b> – Eucalyptus Forest &amp; Woodland (on sandstone)</p> <p><b>FAG</b> – Agricultural Land</p>

Within the subject site itself, the land was primarily separated into four different vegetation types based on the TasVeg 4 mapping. These are shown below:

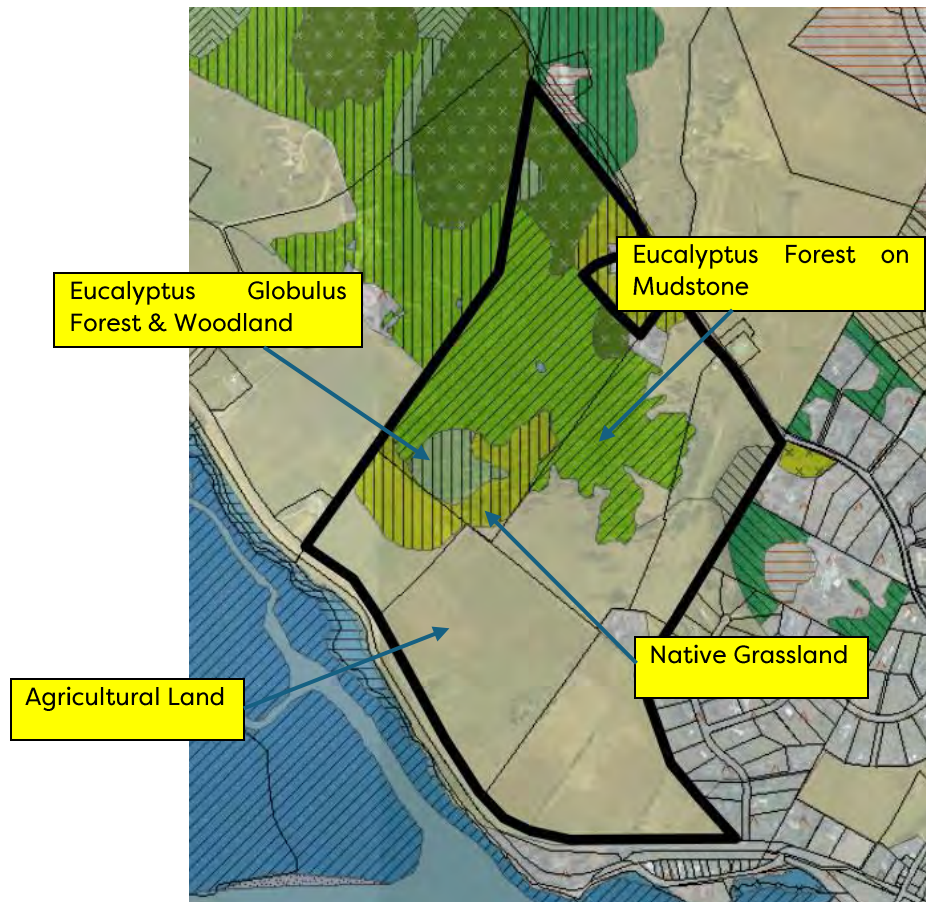


Figure 3 - TasVeg analysis of subject site

## 4.2 Vegetation Field Analysis

A site inspection was undertaken on Thursday 17<sup>th</sup> October 2024. The assessment focussed on those areas proposed for future development within the FUZ, however also examined land outside of the site for approximately 120m.

Land to the north of the FUZ was inspected and assessed in relation to vegetation type and bushfire risk.

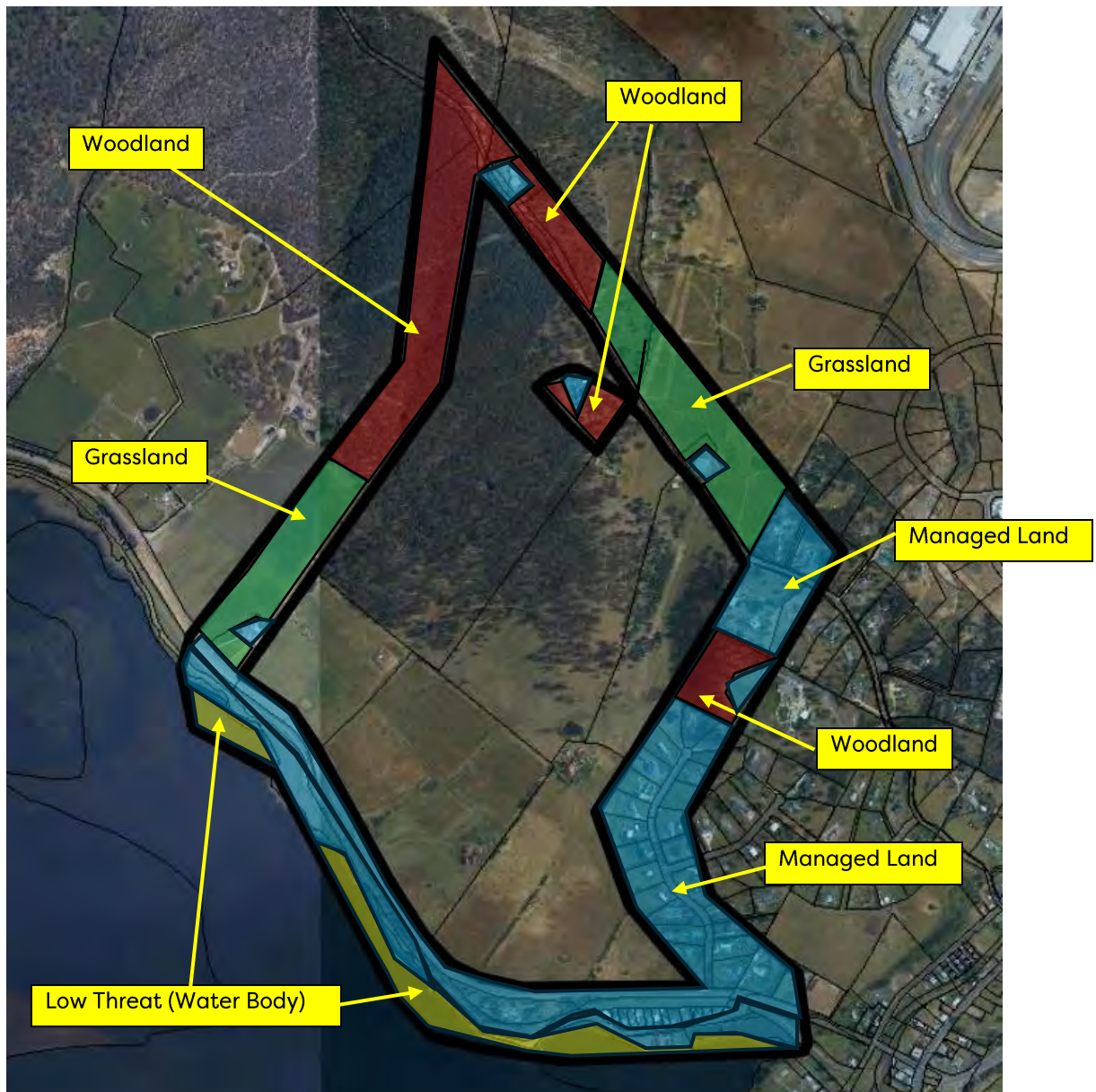
For the purposes of undertaking a vegetation assessment under Table 2.3 of AS3959:2018, the vegetation has been examined against the vegetation types listed in the classification.

It was determined that both within the subject site, and within 120m of the subject site, the vegetation was classified as:

- Woodland; and
- Grassland.

A vegetation classification map, based on land 150m outside of the subject site is provided below.





*Figure 4 - Vegetation classification within 120m of subject site*

A vegetation classification map, within the subject site, is provided below.



*Figure 5 - Vegetation classification within the subject site*

The southern parts of the site were clearly identifiable as grassland. There was no overstory present throughout the classified area. A single windbreak hedge, along with individual occasional trees were identified within the area, however the predominant vegetation type remained grassland. The grassland was low lying, with the majority of the areas used as pasture.

The central and northern parts of the site were classified as woodland. The woodland classification was based on:

- The canopy cover was estimated to be between 10%-30%
- A prominent grassy understory was present.
- The vegetation didn't provide a dense or shrubby understory. The vegetation ranged in height between 10m-20m, with the occasional larger eucalypt present.



### 4.3 Slope Analysis

The slope of the land under the identified vegetation was generally upslope. The block provided a low point of 10m AHD, located in the south west of the site, while the highest point of the land was situated in the north west, sitting at the 140m AHD contour. The woodland vegetation was located at or above the 30m AHD contour, with grassland generally located below this point.

The area of woodland was classified upslope from land zoned FUZ, which is proposed for rezoning as part of the draft amendment. Land to the east and west of the site was classified as upslope or flat. It was observed that land associated with the heritage listed property would potentially be classified as downslope 0-5° grassland. This is on the assumption that the larger lot associated with the heritage listed dwelling would not be entirely managed, and any lots to the north of that site would need to consider possible bushfire offsets.

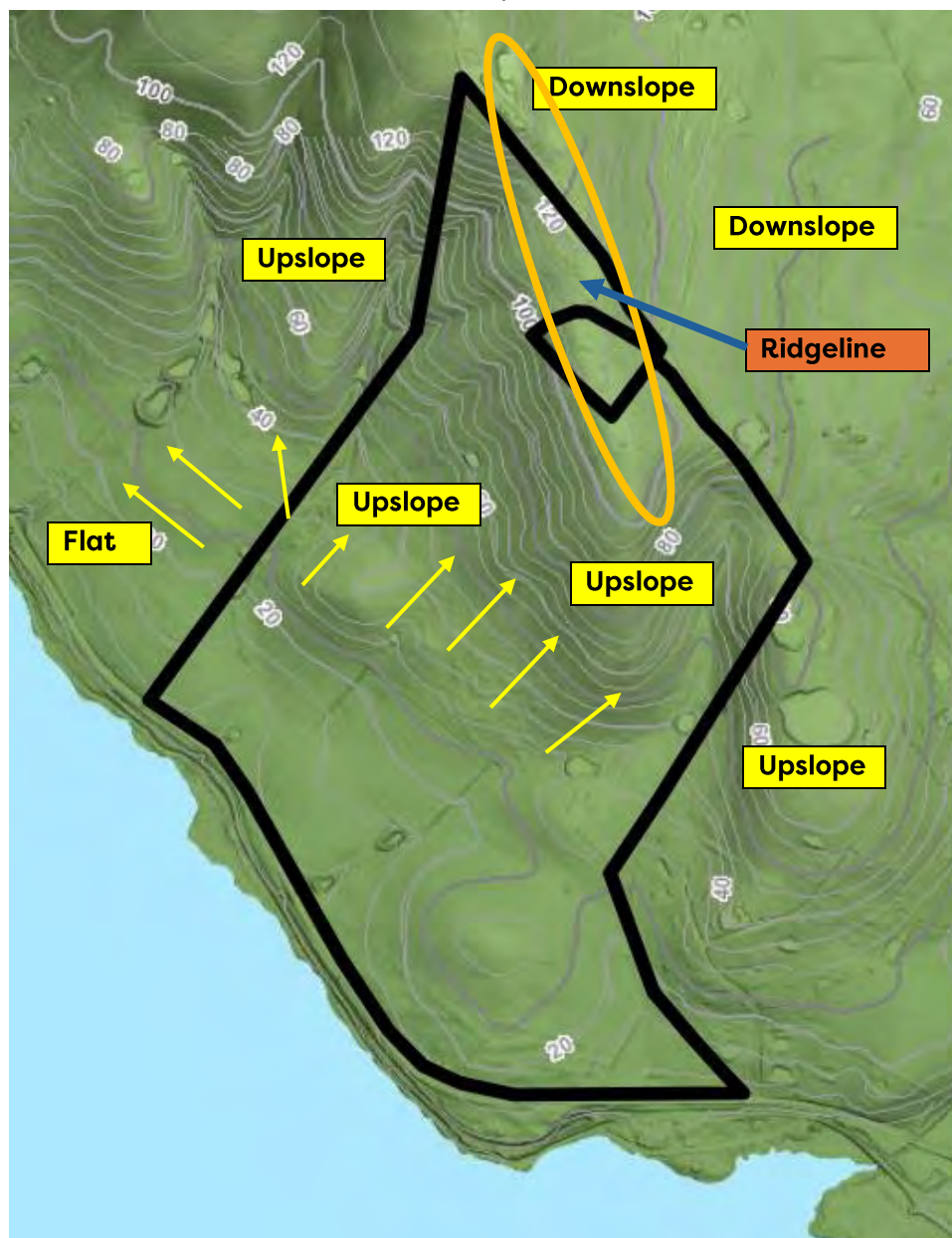


Figure 6 - Slope under bushfire prone vegetation.



## 4.4 Photos



*Figure 7 – Looking north west from CT44724/2. Grassland on adjoining agricultural property.*



*Figure 8 – Looking south west, from CT44724/2, taken from northern side of title. Grassland.*



*Figure 9 – Looking north east from CT44724/2, woodland on the adjoining land at 31 Cobbs Hill Road. Grassy understory and open canopy were evident.*



*Figure 10 – Looking north from CT44724/2, woodland on the adjoining land at 31 Cobbs Hill Road.*



*Figure 11 – Looking south east over CT44724/2, currently grassland.*



*Figure 12 – Looking north from 170 Boyer Road, woodland on adjoining title. Taken from north western boundary of property.*





*Figure 13 – Looking south across 170 Boyer Road. Downslope grassland.*



*Figure 14 – Looking north west from rear boundary of 170 Boyer Road.*



*Figure 15 – Existing managed area around dwelling at 170 Boyer Road.*



*Figure 16 – Looking north from 50 Boyer Road. Paddock to the east of the heritage dwelling. Currently grassland.*



*Figure 17 – Looking east from 150 Boyer Road, over managed properties on Serenity Drive.*



*Figure 18 – Looking east from 25 Cobbs Hill Road, managed properties on Serenity Drive.*





*Figure 19 – Looking east from 25 Cobbs Hill Road. Woodland at adjoining Northern Christian School site.*



*Figure 20 – Looking west from 25 Cobbs Hill Road, woodland on adjoining title at 29 Cobbs Hill Road.*



*Figure 21 – Woodland on 29 Cobbs Hill Road. Looking west from 25 Cobbs Hill Road.*



*Figure 22 – Woodland on north western side of 25 Cobbs Hill Road.*



*Figure 23 – Woodland at 31 Cobbs Hill Road, taken in the southern section of the site.*



*Figure 24 – Woodland at 31 Cobbs Hill Road, centrally located on the lot.*





*Figure 25 – Woodland at the northern end of 31 Cobbs Hill Road. Near the Cobbs Hill Road entrance.*



*Figure 26 – 31 Cobbs Hill Road, taken looking south from the northern end of the title.*



*Figure 27 – Woodland at 29 Cobbs Hill Road, in the north of the site.*



*Figure 28 – Looking North from Cobbs Hill Road. Grassland downslope, with the Brighton Industrial hub in the background.*

## 5. Bushfire Protection Measures

### 5.1 BAL Rating and Risk Assessment

The purpose of the BAL rating assessment in this report is to identify the separation between the bushfire prone vegetation and building area within each proposed lot.

The assessment aims to achieve the minimum requirements of **BAL 19**. It also demonstrates the required protection areas required with future residential development.

The BRP provides a number of advantages when assessing the bushfire risk. The existing FUZ area, which will be the subject of the draft amendment, is located to the south of the existing heavier fuel loads of the established woodland area. The woodland (north) and grassland (north/west) are all located upslope of the future urban areas proposed for subdivision and further development.

In a bushfire event, the predominant wind and likely threat would come from the north or north west.

The bushfire Prone Areas Code currently utilises fire danger index (FDI) 50, as per the requirements of table 2.1 of AS3959. Discussion with the Tasmanian Fire Service has indicated that for the purposes of providing a 'best practice' outcome, utilising FDI 80 under AS3959 would be more consistent with the intent of the SRLUS requirements around management of natural hazards.

The definition of the various BAL ratings is shown below. Future dwellings should aim to provide a minimum BAL 19 separation.

Bushfire attack level (BAL)	Predicted bushfire attack and exposure level
BAL-LOW	Insufficient risk to warrant specific construction requirements
BAL-12.5	Ember attack, radiant heat below 12.5kW/m <sup>2</sup>
BAL-19	Increasing ember attack and burning debris ignited by windborne embers together with increasing heat flux between 12.5-19kW/m <sup>2</sup>
BAL-29	Increasing ember attack and burning debris ignited by windborne embers together with increasing heat flux between 19-29kW/m <sup>2</sup>
BAL-40	Increasing ember attack and burning debris ignited by windborne embers together with increasing heat flux between 29-40kW/m <sup>2</sup>
BAL-FZ	Direct exposure to flames radiant heat and embers from the fire front.

The following setbacks have been provided based on FDI 80.

- Future dwellings in the north of the FUZ, should provide a minimum separation of **20m to the north** (BAL 19).
- Future dwellings in the west of the FUZ should provide a minimum separation of **12m to the west** (BAL 19).
- Any lot to the north of the land associated with the State Heritage Registered dwelling at 50 Boyer Road, should provide a minimum separation of **14m to the south** (BAL 19).

## 5.2 Hazard Management Areas

Section C13.0 *Bushfire-Prone Areas Code*, will apply to any subdivision of the site. The code requires that a Bushfire Hazard Management Area (BHMA) will be managed in accordance with the provided plan.

Existing vegetation within the BHMA needs to be strategically modified and maintained in accordance with the Bushfire Hazard Management Plan (BHMP) to achieve the following outcomes:

- to reduce the quantity of windborne sparks and embers reaching buildings;
- to reduce radiant heat at the building; and
- to halt or check direct flame attack.

The BHMA will be developed within and up to the property boundaries to provide access to a fire front for firefighting, which is maintained in a minimal fuel condition and in which there are no other hazards present that will significantly contribute to the spread of a bushfire.

The BHMA will be achieved by adoption of the following strategies:

### **Maintenance of Fuel Management Areas**

It is the responsibility of the property owner, and in some cases Council, to maintain and manage the landscaping in accordance with the BHMP.

The BHMA is to be regularly managed and maintained. Landscaping in this area will be minimised:

- Grass maintained to a maximum height of 100mm, with fuel loads kept to less than 2 tonnes per hectare which will be maintained at this level.
- Trees and any undergrowth will be clear of (BCA) class 1 – 9 buildings on all sides.
- All undergrowth and understorey of trees (up to 2m) will be removed within the bushfire hazard management area.
- Larger trees can be maintained, where ensuring the understory is managed and a 5m canopy separation is provided.
- Pathways to 1 metre surrounding the buildings and landscaping material, will be non-combustible (stone, pebbles etc.).
- The total shrub cover will be a maximum of 20% of the available area.
- There will be a clear space from the buildings of at least four (4) times the mature height of any shrubs planted.
- Shrubs will not be planted in clumps, this is to avoid build-up of debris and dead vegetation materials.

### **Landscaping**

- vegetation along the pathways to comprise non-flammable style succulent ground cover or plants (avoid plants that produce fine fuel which is easily ignited, plants that produce a lot of debris, trees and shrubs which retain dead material in branches or which shed long strips of bark, rough fibrous bark or drop large quantities of leaves in the spring and summer, vines on walls or tree canopies which overhang roofs)
- timber woodchip and flammable mulches cannot be used and brush and timber fencing should be avoided where possible
- Council must consider management of landscaping within the wildlife corridors, to ensure that a corridor can be maintained while not presenting an unacceptable fire risk to residents.



## 5.3 Roads

Table C13.1 of the code outlines the requirements for road construction as part of any subdivision. All public roads which are to be maintained by Council as the Road Authority are required to be constructed to this standard.

If a subdivision is designed to include staging, temporary turning heads may be required to ensuring adequate manoeuvring for fire trucks.

Element		Requirement
A.	Roads	<p>Unless the development standards in the zone require a higher standard, the following apply:</p> <ul style="list-style-type: none"> <li>(a) two-wheel drive, all-weather construction;</li> <li>(b) load capacity of at least 20t, including for bridges and culverts;</li> <li>(c) minimum carriageway width is 7m for a through road, or 5.5m for a dead-end or cul-de-sac road;</li> <li>(d) minimum vertical clearance of 4m;</li> <li>(e) minimum horizontal clearance of 2m from the edge of the carriageway;</li> <li>(f) cross falls of less than 3 degrees (1:20 or 5%);</li> <li>(g) maximum gradient of 15 degrees (1:3.5 or 28%) for sealed roads, and 10 degrees (1:5.5 or 18%) for unsealed roads;</li> <li>(h) curves have a minimum inner radius of 10m;</li> <li>(i) dead-end or cul-de-sac roads are not more than 200m in length unless the carriageway is 7 meters in width;</li> <li>(j) dead-end or cul-de-sac roads have a turning circle with a minimum 12m outer radius; and</li> <li>(k) carriageways less than 7m wide have 'No Parking' zones on one side, indicated by a road sign that complies with <i>Australian Standard AS1743-2001 Road signs-Specifications</i>.</li> </ul>

## 5.4 Property Access

Table C13.2 of the code outlines the private access requirements. Where a dwelling cannot be protected from an existing hydrant, a compliant private access will need to be provided. The majority of lots in the urban areas will generally provide for adequate protection via hydrants, however any larger lots, or internal lots, may be required to comply with the standards for private access.

Element		Requirement
A.	Property access length is less than 30m; or access is not required for a fire appliance to access a fire fighting water point.	There are no specified design and construction requirements.
B.	Property access length is 30m or greater; or access is required for a fire	<p>The following design and construction requirements apply to property access:</p> <ul style="list-style-type: none"> <li>(a) all-weather construction;</li> </ul>

	appliance to a fire fighting water point.	<ul style="list-style-type: none"> <li>(b) load capacity of at least 20t, including for bridges and culverts;</li> <li>(c) minimum carriageway width of 4m;</li> <li>(d) minimum vertical clearance of 4m;</li> <li>(e) minimum horizontal clearance of 0.5m from the edge of the carriageway;</li> <li>(f) cross falls of less than 3 degrees (1:20 or 5%);</li> <li>(g) dips less than 7 degrees (1:8 or 12.5%) entry and exit angle;</li> <li>(h) curves with a minimum inner radius of 10m;</li> <li>(i) maximum gradient of 15 degrees (1:3.5 or 28%) for sealed roads, and 10 degrees (1:5.5 or 18%) for un-sealed roads; and</li> <li>(j) terminate with a turning area for fire appliances provided by one of the following: <ul style="list-style-type: none"> <li>(i) a turning circle with a minimum outer radius of 10m; or</li> <li>(ii) a property access encircling the building; or</li> <li>(iii) a hammerhead "T" or "Y" turning head 4m wide and 8m long.</li> </ul> </li> </ul>
C.	Property access length is 200m or greater.	<p>The following design and construction requirements apply to property access:</p> <ul style="list-style-type: none"> <li>(a) the requirements for B above; and</li> <li>(b) passing bays of 2m additional carriageway width and 20m length provided every 200m.</li> </ul>
D.	Property access length is greater than 30m, and access is provided to 3 or more properties.	<p>The following design and construction requirements apply to property access:</p> <ul style="list-style-type: none"> <li>(a) complies with requirements for B above; and</li> <li>(b) passing bays of 2m additional carriageway width and 20m length must be provided every 100m.</li> </ul>

## 5.5 Fire Trails

Table C13.3 outlines the requirements for fire trails. Subdivision design may consider fire trails to provide support for emergency personal in a bushfire event. Properly designed perimeter fire trails along an urban interface can assist the ability of fire fighters to protect properties during a bushfire. The current concept subdivision layout would not require fire trails.

Element		Requirement
A.	All fire trails	<p>The following design and construction requirements apply:</p> <ul style="list-style-type: none"> <li>(a) all-weather, 4-wheel drive construction;</li> <li>(b) load capacity of at least 20t, including for bridges and culverts;</li> </ul>

		<ul style="list-style-type: none"> <li>(c) minimum carriageway width of 4m;</li> <li>(d) minimum vertical clearance of 4m;</li> <li>(e) minimum horizontal clearance of 2m from the edge of the carriageway;</li> <li>(f) cross falls of less than 3 degrees (1:20 or 5%);</li> <li>(g) dips less than 7 degrees (1:8 or 12.5%) entry and exit angle;</li> <li>(h) curves with a minimum inner radius of 10m;</li> <li>(i) maximum gradient of 15 degrees (1:3.5 or 28%) for sealed fire trails, and 10 degrees (1:5.5 or 18%) for unsealed fire trails;</li> <li>(j) gates if installed at fire trail entry, have a minimum width of 3.6m, and if locked, keys are provided to TFS; and</li> <li>(k) terminate with a turning area for fire appliances provided by one of the following: <ul style="list-style-type: none"> <li>(i) a turning circle with a minimum outer radius of 10m; or</li> <li>(ii) A hammerhead “T” or “Y” turning head 4m wide and 8m long.</li> </ul> </li> </ul>
B.	Fire trail length is 200m or greater.	<p>The following design and construction requirements apply:</p> <ul style="list-style-type: none"> <li>(a) the requirements for A above; and</li> <li>(b) passing bays of 2m additional carriageway width and 20m length provided every 200m.</li> </ul>

## 5.6 Reticulated Fire Fighting Water Supply

Table C13.4 outlines the requirements for fire fighting water supply in reticulated areas.

Based on the future GRZ being applied to the site, it is expected that a reticulated firefighting water supply will be provided for the subdivision.

Future development will connect to the reticulated water supply and provide hydrants. The indicative locations of hydrants will be marked on a BHMP associated with a future plan of subdivision, generally providing hydrants at 60m intervals and at street intersections.

Table C13.4 Reticulated water supply for firefighting.

Element		Requirement
A.	Distance between building area to be protected and water supply.	<p>The following requirements apply:</p> <ul style="list-style-type: none"> <li>(a) the building area to be protected must be located within 120m of a fire hydrant; and</li> <li>(b) the distance must be measured as a hose lay, between the fire fighting water point and the furthest part of the building area.</li> </ul>
B.	Design criteria for fire hydrants	<p>The following requirements apply:</p> <ul style="list-style-type: none"> <li>(a) fire hydrant system must be designed and constructed in accordance with <i>TasWater Supplement to Water Supply Code of Australia WSA 03 – 2011-3.1 MRWA 2<sup>nd</sup> Edition</i>; and</li> </ul>



		(b) fire hydrants are not installed in parking areas.
C.	Hardstand	<p>A hardstand area for fire appliances must be:</p> <ul style="list-style-type: none"> <li>(a) no more than 3m from the hydrant, measured as a hose lay;</li> <li>(b) no closer than 6m from the building area to be protected;</li> <li>(c) a minimum width of 3m constructed to the same standard as the carriageway; and</li> <li>(d) connected to the property access by a carriageway equivalent to the standard of the property access.</li> </ul>

## 5.7 Static Water Supply for Fire Fighting

Table C13.4 outlines the requirements for static fire fighting water supply in areas not serviced by a reticulated supply.

While it is expected that the majority of lots can be serviced via hydrants in a reticulated network, there may be some occasions where a static water supply is required.

The BHMP for a future subdivision will be required to identify these lots and provide recommendations on compliant static water supply.

Element		Requirement
A.	Distance between building area to be protected and water supply.	<p>The following requirements apply:</p> <ul style="list-style-type: none"> <li>(a) the building area to be protected must be located within 90m of the fire fighting water point of a static water supply; and</li> <li>(c) the distance must be measured as a hose lay, between the fire fighting water point and the furthest part of the building area.</li> </ul>
B.	Static Water Supplies	<p>A static water supply:</p> <ul style="list-style-type: none"> <li>(a) may have a remotely located offtake connected to the static water supply;</li> <li>(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;</li> <li>(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;</li> <li>(d) must be metal, concrete or lagged by non-combustible materials if above ground; and</li> <li>(e) if a tank can be located so it is shielded in all directions in compliance with section 3.5 of Australian Standard 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: <ul style="list-style-type: none"> <li>(i) metal;</li> <li>(ii) non-combustible material; or</li> <li>(iii) fibre-cement a minimum of 6mm thickness.</li> </ul> </li> </ul>

## 6. BRP – Concept Subdivision Layout

A concept subdivision plan has been provided by Holmes Dyer. The plan applies to the FUZ section of the site, and provides an indicative urban lot layout which includes the following:

- 287 residential lots;
- A new road network that provides three new access points onto Boyer Road.
- Public open space that has been designed to incorporate overland flow paths and serve as wildlife corridors.
- Retention of existing dwellings onto new lots within the site.
- Road connectivity with one cul de sac currently shown.
- Pedestrian walking trails that link into Boyer Road.



*Figure 29 - Concept subdivision plan for BRP. Source: Holmes Dyer*

From a landscape risk perspective, the concept plan of subdivision provides some advantages. The areas proposed for residential development are located downslope from the existing heavier fuel loads to the north. The River Derwent is located to the south, and existing managed residential lots to the east.

It will be critical to manage the interface between the residential land in the north of the subdivision, and the bushfire prone vegetation located to the north. Equally, it will be important to ensure there is appropriate management between future dwellings in the west, and the adjoining agricultural land.

The rear setbacks for buildings along the urban/bush and grassland interface should be contained within the residential lots. This report does not recommend that section 71 (part 5) agreements or covenants be entered into to allow for maintenance of land outside of the site.

To this end, we note that the lot sizes currently shown to the north and west will need to be increased to provide with the recommended setbacks as provided in section 5 of this report. The concept plan provides large areas of public open space, which transect the sites, appearing to provide for the overland flow path, while also providing an opportunity for walking trails and wildlife corridors. Understanding how these areas of public open space will be used and managed will be critical. Council as the relevant authority will need to agree to not only take ownership of any public open space, but also to maintain public open space as low threat vegetation. A conflict can arise where revegetation of wildlife corridors is proposed when adjoining land shown for residential purposes. The corridors have the potential to present a fire risk as they adjoin large residential areas, both within the site, and to the east along Serentiy Drive. If Brighton Council is not going to maintain the public open space corridors as low threat vegetation, then controls should be built into the SAP around revegetation and/or perimeter breaks. Future subdivision design will need to consider whether building setbacks will be required from any public open space areas.

The subdivision provides a road network which is considered generally appropriate within a bushfire prone area. Cul de sacs have been reduced, and there are three access points onto Boyer Road. Providing multiple entry/exit points into a residential area ensures multiple avenues of escape in a bushfire event. Perimeter roads can provide a buffer between residential development and a bushfire threat. We acknowledge that while such roads provide a practical benefit in relation to bushfire, they are not always cost effective from a developer perspective.

We recommend that any SAP look at ensuring at least two new road points be provided onto Boyer Road as part of any large scale subdivision.

We would recommend that the SAP provide a road layout plan, that generally encourages developers to adhere to a particular design or plan of subdivision that has been inserted into the SAP. Any performance criteria that allows developers to deviate away from compliance with the plan, should provide for consideration of natural hazards.

## **7. Conclusions and Recommendations**

This report has been prepared to consider and provide recommendations for a draft amendment of the Boyer Road Precinct. Once developed, the precinct anticipated providing an additional 300 residential lots.

The site has been analysed from a bushfire risk perspective, and concluded that with appropriate recommendations being followed, the risk can be managed to a tolerable level.

The denser areas of vegetation are located upslope from the proposed urban areas, while the land to the east and west presents a lower risk in relation to bushfire. Future subdivision of the site will need to ensure appropriate roads layouts are provided, seeking to maximise connectivity while reducing dead end streets and cul de sacs. Multiple access points onto Boyer Road are encouraged, as are building lines for habitable development between the interface of urban areas and classified vegetation.

We conclude that future development of the site for residential purposes is appropriate subject to recommendations being adhered to.



- a) The site is well located, with the proposed urban areas located downslope of the heavier bushfire fuel areas.
- b) Larger lots should be provided along the northern interface between urban areas and the more densely vegetated land which extends to the north. Dwellings on these lots are required to provide a 20m setback to meet BAL 19 standards.
- c) Larger lots should be provided along the western interface, between urban areas and the agricultural land to the west. Dwellings on these lots are required to provide a 12m setback to meet BAL 19 standards.
- d) Any lot to the north of the land associated with the State Heritage Registered dwelling at 50 Boyer Road, should provide a minimum separation of 14m setback to meet BAL 19 standards.
- e) Lots must be of a sufficient size to provide hazard management areas within lot boundaries. We recommend avoiding Section 71 Agreements or bushfire easements/covenants on adjoining land where possible.
- f) Public Open Space and Wildlife Corridors should be maintained as low threat vegetation by the Brighton Council. Alternatively, Council should consider perimeter breaks along residential boundaries.
- g) All proposed roads, private accesses and fire trails (if applicable) must be in compliance with Table C13.1, C13.2 and C13.3 as outlined in C13.0 Bushfire Prone Areas Code of the Tasmanian Planning Scheme, and section 5 of this report.
- h) Any water supply required for the subdivision must be in compliance with Table C13.4 or Table C13.5, as outlined in C13.0 Bushfire Prone Areas Code of the Tasmanian Planning Scheme, and section 5 of this report.
- i) We recommend the SAP provide an acceptable solution habitable building line setback of 20m for all lots along the northern boundary of the proposed GRZ area. Any corresponding performance criteria must have regard to the presence of natural hazards.
- j) We recommend the SAP provide an acceptable solution habitable building line setback of 12m for all lots along the western boundary of the proposed GRZ area. Any corresponding performance criteria must have regard to the presence of natural hazards.
- k) The Holmes Dyer concept plan of subdivision generally provides good connectivity with multiple access points onto Boyer Road. The SAP should include a plan of subdivision, which is referred to under an acceptable solution. Any performance criteria which provides for an alternate lot layout must have regard to the presence of natural hazards.
- l) The Homes Dyer concept plan of subdivision indicates three access points onto Boyer Road. It is recommended that at least 2 access/egress points are available onto Boyer prior to any large-scale residential development occurring on the site.
- m) If a Council policy does not exist, it would be recommended that a vegetation or fire management policy be prepared which would guide Council on how to appropriately manage and vegetate public open space/wildlife areas that adjoin urban and other residential land.

## **Annexure 1 – BRP Bushfire Advisory Plan**

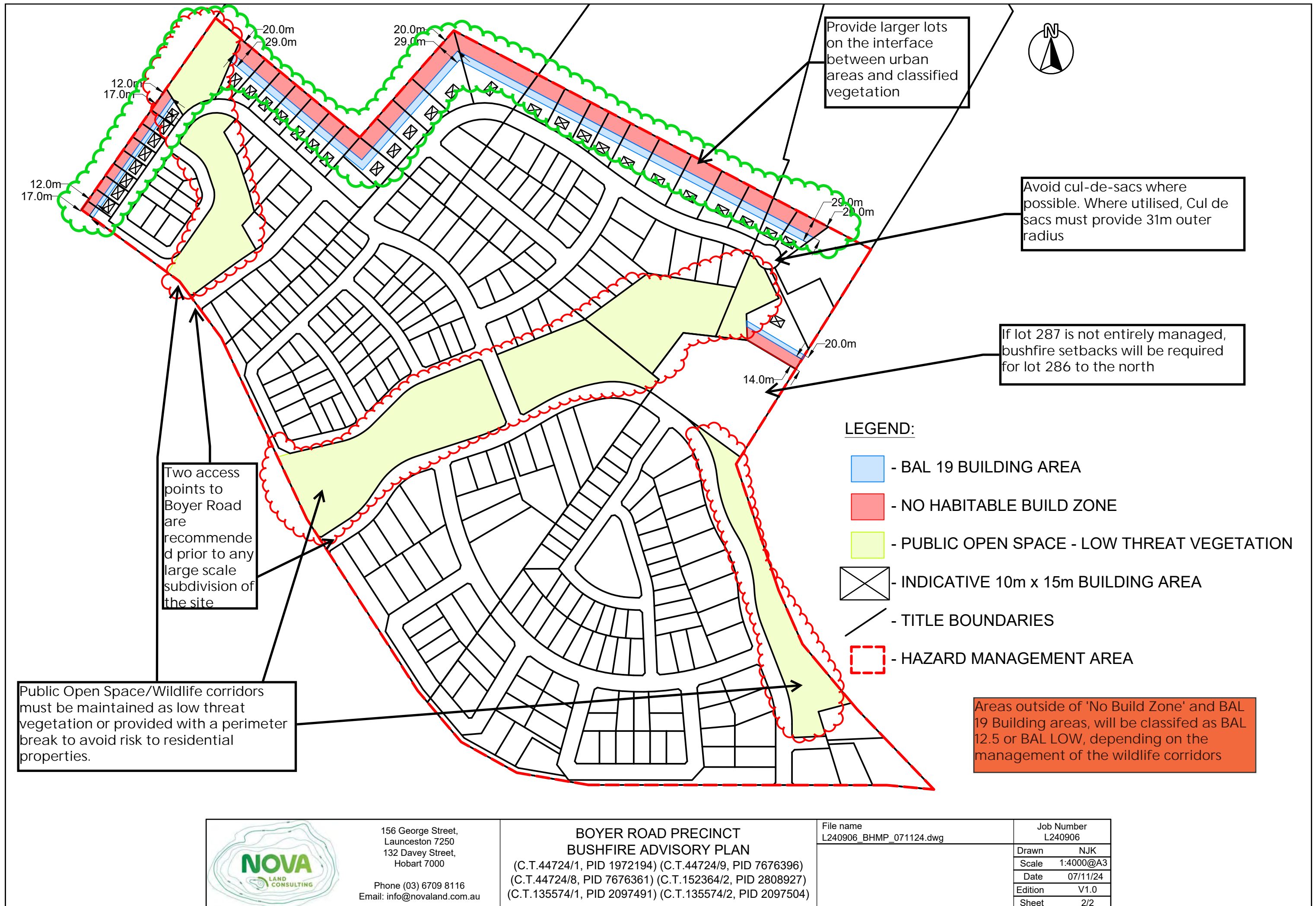


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**BOYER ROAD PRECINCT  
BUSHFIRE ADVISORY PLAN**  
(C.T.44724/1, PID 1972194) (C.T.44724/9, PID 7676396)  
(C.T.44724/8, PID 7676361) (C.T.152364/2, PID 2808927)  
(C.T.135574/1, PID 2097491) (C.T.135574/2, PID 2097504)

File name L240906_BHMP_071124.dwg	Job Number L240906
	Drawn NJK
	Scale 1:8000@A3
	Date 07/11/24
	Edition V1.0
	Sheet 1/2





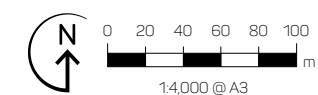
## **Annexure 2 – BRP Concept Subdivision Plan.**





**CONCEPT PLAN (SOUTH)**  
*Boyer Road Precinct*

- WALKING TRAIL
- WILDLIFE CORRIDOR



**HOLMES DYER**





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# BUSHFIRE HAZARD REPORT

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BOYER ROAD PRECINCT STRUCTURE PLAN  
BRIDGEWATER

November 2024



Job number: L240907  
NL01924

Prepared by: James Stewart  
Town Planner & Bushfire Hazard Practitioner BFP 157

Rev. no	Description	Date
1	FINAL	8/11/2024
2	LAYOUT UPDATES	21/05/2025

#### Disclaimer

This report deals with the potential bushfire risk only, all other statutory assessments sit outside of this report. This report is not to be used for future or further development on the site, other than what has been specifically provided for in the assessed plans attached. Nova Land Consulting Pty Ltd accepts no responsibility to any purchaser, prospective purchaser or mortgagee of the property who in any way rely on this report. This report has been undertaken to guide use and development relating to bushfire risk within the Boyer Road Precinct and does not guarantee that buildings will survive in the event of a bushfire event. If characteristics of the property change or are altered from those which have been identified, the assessment may be different to that which has been identified as part of this report.

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## Executive Summary

Nova Land Consulting has been engaged by Holmes Dyer, to provide a Bushfire Risk Assessment in relation to land within the Boyer Road Precinct. The precinct has been identified by Brighton Council, to provide future residential supply within one of the fastest growing municipalities within the State.

As part of Brighton Councils strategic planning for the area, Holmes Dyer have been awarded the tender to prepare and submit a draft amendment, rezoning the site from Future Urban Zone (FUZ) to General Residential Zone (GRZ) under the *Tasmanian Planning Scheme – Brighton*.

A Specific Area Plan (SAP) for the site would be prepared and submitted as part of the draft amendment.

The purpose of this report is to guide future use and development of the site, while making recommendations in relation to:

- Bushfire risk
- BAL Ratings & setbacks for the site
- Future subdivision layout, and;
- Bushfire recommendations under the proposed SAP

The site is entirely within the boundary of a bushfire prone area shown on an overlay on a planning scheme map for the *Tasmanian Planning Scheme – Brighton*.

A bushfire event at this site or within the immediate area is likely to impact on future buildings at this location and subject development to considerable radiant heat and ember attack.

A detailed bushfire assessment and bushfire hazard management plan (BHMP) would be required for any future subdivision of the land or construction of habitable buildings on the site.

The conclusions and recommendations in this report will assist in the planning and delivery of a SAP and subdivision layout that is considered best practice in relation to bushfire hazards.

## Conclusions & Recommendations

- a) The site is well located, with the proposed urban areas located downslope of the heavier bushfire fuel areas.
- b) Larger lots should be provided along the northern interface between urban areas and the more densely vegetated land which extends to the north. Dwellings on these lots are required to provide a 20m setback to meet BAL 19 standards.
- c) Larger lots should be provided along the western interface, between urban areas and the agricultural land to the west. Dwellings on these lots are required to provide a 12m setback to meet BAL 19 standards.
- d) Any lot to the north of the land associated with the State Heritage Registered dwelling at 50 Boyer Road, should provide a minimum separation of 14m setback to meet BAL 19 standards.
- e) Lots must be of a sufficient size to provide hazard management areas within lot boundaries. We recommend avoiding Section 71 Agreements or bushfire easements/covenants on adjoining land where possible.
- f) Public Open Space and Wildlife Corridors should be maintained as low threat vegetation by the Brighton Council. Alternatively, Council should consider perimeter breaks along residential boundaries.
- g) All proposed roads, private accesses and fire trails (if applicable) must be in compliance with Table C13.1, C13.2 and C13.3 as outlined in C13.0 Bushfire Prone Areas Code of the

Tasmanian Planning Scheme, and section 5 of this report. The proposed 'T' turning heads in the north west of the site should be replaced with compliant cul-de-sac turning heads.

- h) Any water supply required for the subdivision must be in compliance with Table C13.4 or Table C13.5, as outlined in C13.0 Bushfire Prone Areas Code of the Tasmanian Planning Scheme, and section 5 of this report.
- i) We recommend the SAP provide an acceptable solution habitable building line rear setback of 20m for all lots along the northern boundary of the proposed GRZ area. Any corresponding performance criteria must have regard to the presence of natural hazards.
- j) We recommend the SAP provide an acceptable solution habitable building line rear setback of 12m for all lots along the western boundary of the proposed GRZ area. Any corresponding performance criteria must have regard to the presence of natural hazards.
- k) The Holmes Dyer concept plan of subdivision generally provides good connectivity with multiple access points onto Boyer Road. The SAP should include a plan of subdivision, which is referred to under an acceptable solution. Any performance criteria which provides for an alternate lot layout must have regard to the presence of natural hazards.
- l) The three cul-de-sacs in the west of the site, should seek to provide gated connectivity for fire appliances within the open space network. This connectivity may not be required depending on staging, management of vegetation within 100m of cul de sacs, and surrounding development proposed at the time of subdivision.
- m) Any proposed shelter belt in the west must be provided as a single row of trees, so as not to increase the fuel load or change the vegetation classification to the west.
- n) The Homes Dyer concept plan of subdivision indicates three access points onto Boyer Road. It is recommended that at least 2 access/egress points are available onto Boyer prior to any large-scale residential development occurring on the site.
- o) If a Council policy does not exist, it would be recommended that a vegetation or fire management policy be prepared which would guide Council on how to appropriately manage and vegetate public open space/wildlife areas that adjoin urban and other residential land.

Signed:



**Author:** James Stewart

**Position:** Town Planner and Accredited Bushfire Practitioner BFP 157

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# 1. Introduction

This Bushfire Hazard Report has been prepared in relation to the Boyer Road Precinct (BRP).

## 1.1 Scope of works

Nova Land Consulting has been engaged by Holmes Dyer, to provide a Bushfire Risk Assessment in relation to land within the BRP. The precinct has been identified by Brighton Council, to provide future residential supply within one of the fastest growing municipalities within the State.

This report will provide an analysis of the site and make recommendations regarding bushfire risk and BAL setbacks for future development.

A concept subdivision plan has been provided by Holmes Dyer. We have undertaken a review of the concept plan, and provide comments on the plan in section 6 of this report.

Several recommendations have been made in relation to the site, and which will assist in future subdivision design and the preparation of the SAP.

## 1.2 The subject site

The following is a summary of the relevant site information:

<b>Property addresses</b>	<ul style="list-style-type: none"><li>• Boyer Road, Bridgewater (CT44724/2)</li><li>• 170 Boyer Road, Bridgewater (CT44724/9)</li><li>• 31 Cobbs Hill Road, Bridgewater (CT152364/2)</li><li>• 29 Cobbs Hill Road, Bridgewater (CT135574/1)</li><li>• 25 Cobbs Hill Road, Bridgewater (CT135574/2)</li><li>• 50 Boyer Road, Bridgewater (CT44724/8)</li></ul>
<b>Land Area</b>	109ha (total) 52ha (Future Urban Zone)
<b>Zoning</b>	<ul style="list-style-type: none"><li>• Future Urban Zone (FUZ)</li><li>• Landscape Conservation Zone (LCZ)</li></ul>
<b>Planning Scheme</b>	Tasmanian Planning Scheme – Brighton
<b>Identified on a Bushfire Overlay Map</b>	The entirety of the site is mapped as being located within a Bushfire Prone Area under the Planning Scheme overlay.
<b>Conservation Covenant</b>	31 Cobbs Hill Road is currently subject to Conservation Covenant CPR9693
<b>Water Supply</b>	<ul style="list-style-type: none"><li>• 50 Boyer Road is identified as being within an area serviced by TasWater reticulated water.</li><li>• There are no other lots on the subject site which are serviced by TasWater reticulated water.</li></ul>
<b>Vehicular Access</b>	<ul style="list-style-type: none"><li>• Boyer Road (Department of State Growth maintained).</li><li>• Cobbs Hill Road (Council maintained)</li></ul>

### 1.3 Bushfire Assessment

A bushfire assessment is a process of analysing information about the potential impacts on a proposed development that are likely to occur in a bushfire hazard scenario. A 'bushfire-prone area' is an area where a bushfire event is likely to occur that may result in significant adverse impact on buildings and lives.

In Tasmania, most local Councils have a planning scheme overlay map that identifies bushfire-prone areas. Subdivision within a bushfire-prone area triggers the assessment of the Bushfire-Prone Areas Code under the planning schemes and subsequently requires assessment against the provisions of the Code.

The assessment generally requires a Bushfire Hazard Management Plan (BHMP) to be provided as part of an application for subdivision.

The bushfire assessment will determine the Bushfire Attack Level (BAL) for future lots, while measuring the possible exposure of a building to a bushfire hazard.

The BAL is assessed in accordance with Australian Standard AS 3959-2018 *construction of buildings in bushfire-prone areas*. The bushfire assessment is required to understand the fuel management requirements for the subject site and to demonstrate that new buildings within each lot can be constructed to minimum BAL19 level under the *Building Act 2016*.

Future assessment of a subdivision within the BRP must be undertaken in accordance with C13.0 Bushfire-Prone Areas Code and must accompany a subdivision application under the *Tasmanian Planning Scheme – Brighton*.

Holmes Dyer have prepared a concept subdivision plan for the BRP. While the plan is not being lodged as a formal subdivision application for assessment, it provides an indicative starting point in relation to possible lot layouts, road locations, and servicing. To assist Holmes Dyer in finalising a subdivision plan for the site, a bushfire advisory plan has been provided utilising the current subdivision concept.

### 1.4 References

The following documents and organisations were referred to in the preparation of this report. This report should be read in conjunction with any relevant legislation and other statutory requirements.

- C13.0 Bushfire-Prone Areas Code – Tasmanian Planning Scheme.
- Tasmanian Planning Scheme – Brighton
- Southern Tasmania Regional Land Use Strategy 2010-2035 (SRLUS)
- The Land Use Planning and Approvals Act 1993 (the Act).
- Tasmanian State Government, Director's Determination – Bushfire Hazard Areas V1.1
- Australian Standard, AS3959-2018 construction of buildings in bushfire-prone areas.
- Building Act 2016
- Tasmanian Fire Service, Bushfire Hazard Advisory Notes
- Tasmanian Fire Service

## 2. Site Description

### 2.1 Site context

The subject site consists of several titles located within the BRP. Details of the lots included as part of the subject site are shown below:

Address:	Title Number:	Lot Size	Existing buildings
Boyer Road, Bridgewater	CT44724/2	7.6ha	Existing outbuildings.
170 Boyer Road, Bridgewater	CT44724/9	17.7ha	Single dwelling and outbuildings.
50 Boyer Road, Bridgewater	CT44724/8	17.1ha	Single dwelling and outbuildings.
31 Cobbs Hill Road, Bridgewater	CT152364/2	31.3ha	Vacant land
29 Cobbs Hill Road, Bridgewater	CT135574/1	19.7ha	Single dwelling and outbuilding.
25 Cobbs Hill Road, Bridgewater	CT135574/2	10ha	Single Dwelling and outbuilding.

The BRP is located north of the River Derwent, on the periphery of an existing residential area to the east. There are established low density dwellings located to the east of the site, which are rural residential in character. Land to the west is utilised for primary industry purposes, located within a cleared rural environment. Land to the north west remains in its natural uncleared state.

The town centre of Bridgewater is located approximately 1.8km to the east, with the existing GRZ and urban areas of Bridgewater generally located on the eastern side of the Midland Highway. The Midland situated 600m to the east of the site. The Brighton Industrial estate is located north of Cobbs Hill Road, extending through to the east to include the existing Boral Quarries.



Figure 1 - Aerial view of the BRP and surrounding area (source: The LIST Map)



## 2.2 Planning controls

The BRP is located within the municipal area of Brighton. Therefore, the planning instrument is the *Tasmanian Planning Scheme – Brighton* (The Scheme).

The subject site is currently within the Future Urban Zone (FUZ) in the south, and the Landscape Conservation Zone (LCZ) in the north.

The purpose of this report is to analyse and support a rezoning of land from FUZ to GRZ, along with the preparation of a SAP, as part of a draft amendment application.

The subject site falls within the Bushfire-Prone Areas Overlay.

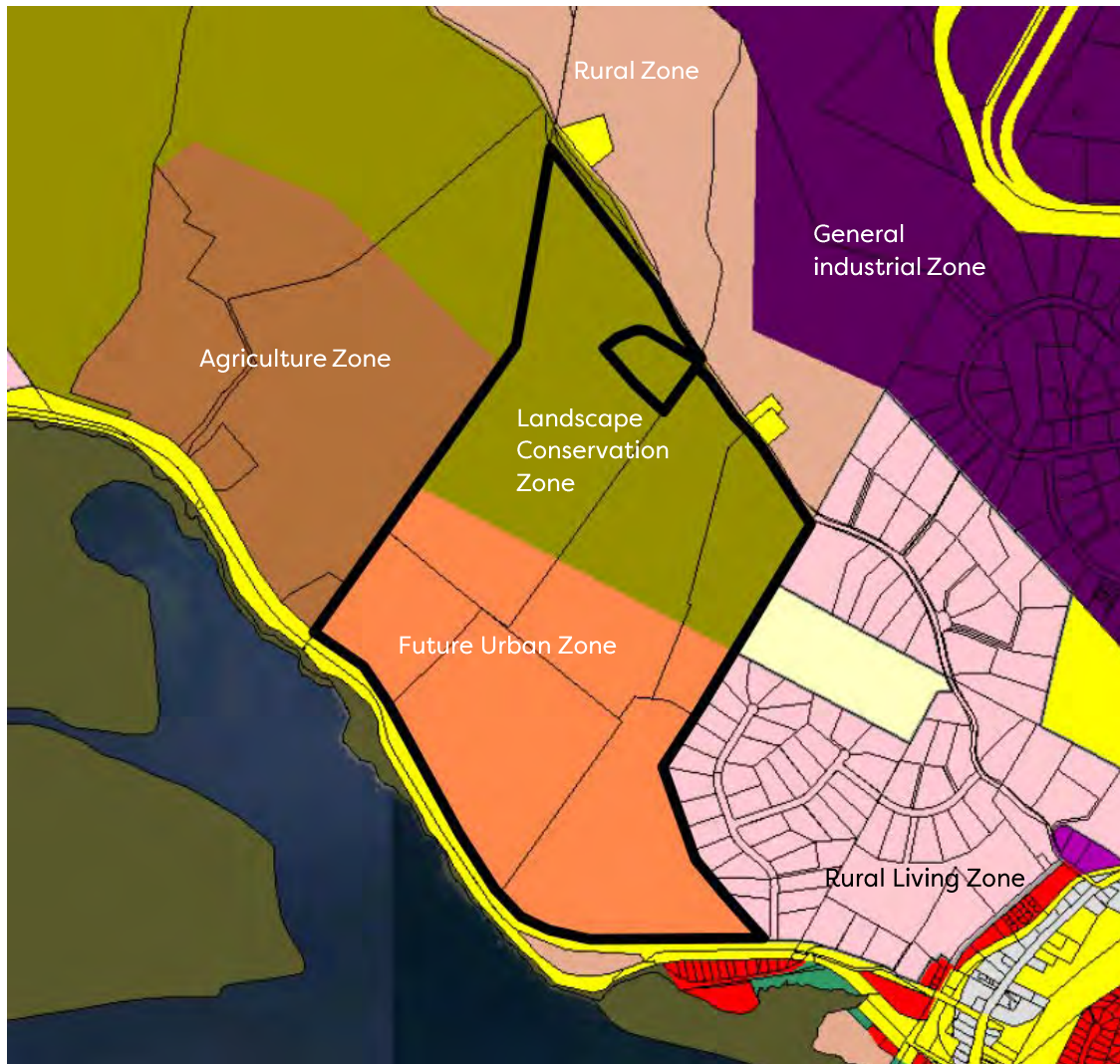


Figure 2 - Zoning map of subject site and surrounds.

### 3. Legislative Requirements

A bushfire hazard assessment has been prepared to support a planning scheme amendment, under Division 2 of the *Land Use Planning and Approvals Act 1993*. The legislation requires that the draft amendment must satisfy the relevant strategic planning policy considerations.

#### 3.1 Southern Regional Land Use Strategy 2010-2035

The Southern Regional Land Use Strategy (SRLUS) is a relevant document that the draft amendment must seek to be practically consistent with.

Section 8 of the SRLUS relates to management of risks and hazards when considering land use planning.

Bushfire is identified as a key land hazard which must be taken into consideration. Policy MRH 1, relates to minimising the loss of life and property as a result of bushfire. Relevant sections of the SRLUS relating to bushfire hazards are considered below, with a response provided.

Managing Risks and Hazards	Response:
<p><b>MRH 1.1</b>  <i>Provide for the management and mitigation of bushfire risk at the earliest possible stage of the land use planning process (rezoning or if no rezoning required; subdivision) by the identification and protection (in perpetuity) of buffer distances or through the design and layout of lots.</i></p>	<p>This report has been prepared to ensure Bushfire Risk is considered as part of any rezoning process.</p> <p>A concept subdivision plan has been prepared with comments and recommendations provided as part of this report.</p> <p>Buffer distances have been calculated and included in the recommended outcomes.</p> <p>The development of a specific area plan (SAP) can utilise bushfire setbacks as recommended in this report to ensure a hard building line is provided along the interface between urban and vegetated areas.</p> <p>The future subdivision and design of lot layouts will be informed through this report.</p>
<p><b>MRH 1.2</b>  <i>Ensure subdivision road layout designs provide for safe exit points in areas subject to bushfire hazard.</i></p>	<p>The bushfire prone areas code outlines requirements relating to roads, fire trails, and private accesses.</p> <p>This report has provided recommendations in relation to road layout design of future subdivisions.</p> <p>The report has recommended that at least two ingress and access points be provided onto Boyer Road as part of any larger scale subdivision.</p>
<p><b>MRH 1.3</b>  <i>Allow clearance of vegetation in areas adjacent to dwellings existing at the time that planning schemes based on this Strategy come into effect, in order to implement bushfire management plans. Where such vegetation is subject to a biodiversity code, the extent of clearing allowable is to be the minimum necessary</i></p>	<p>The areas currently zoned FUZ are largely clear of denser and more established vegetation. The primary vegetation type in the south of the BRP is 'Grassland', which transitions to woodland as the site rises to the north. The LCZ portion of the site is generally classified as woodland, being located within an existing conservation covenant.</p>

<i>to provide adequate bushfire hazard protection.</i>	<p>Details around the extent of vegetation clearing to achieve BAL setbacks have been provided within the report. These details can assist in planning for a future subdivision.</p> <p>The setbacks ensure that adequate bushfire protection measures are in place in relation to vegetation management.</p>
<p><b>MRH 1.4</b>  <i>Include provisions in planning schemes for use and development in bushfire prone areas based upon best practice bushfire risk mitigation and management.</i></p>	<p>The Boyer Road SAP will be implemented over the FUZ portion of the site. The SRLUS notes that best practice bushfire risk mitigation should be examined.</p> <p>Best practice does not mean the same as minimum compliance.</p> <p>Bushfire setbacks for future habitable development have been recommended based on best practice.</p>
<p><b>MRH 1.5</b>  <i>Allow new development (at either the rezoning or development application stage) in bushfire prone areas only where any necessary vegetation clearance for bushfire risk reduction is in accordance with the policies on biodiversity and native vegetation.</i></p>	<p>Development of the area mapped FUZ will require some vegetation management of the site. This report provides setbacks to ensure that land outside of the site, is not relied on via covenants or section 71 agreements.</p> <p>A natural values report will be undertaken in relation to vegetation removal on the subject site.</p> <p>This report does not recommend or require any removal of vegetation on land zoned LCZ in order to achieve bushfire compliance.</p>
<p><b>MRH 1.6</b>  <i>Develop and fund a program for regular compliance checks on the maintenance of bushfire management plans by individual landowners.</i></p>	<p>A future subdivision application will provide recommendations relating to Bushfire. Under the Local Government Act 1993, Council provides hazard abatement. This involves inspections of land and contacting land owners where removal of fire hazards is required.</p>

## 3.2 Tasmanian Planning Policies

The Tasmanian Policies are a planning instrument made under part 2A of the Act. A draft amendment is required to address the LPS criteria, as outlined in section 34 of the Act. One of the LPS criteria that is required to be considered relates to the Tasmanian Planning Policies (TPP's).

While the TPP's are currently drafted, they have not yet been declared. Nevertheless, it is viewed as pertinent to examine relevant draft TPP's relating to Bushfire, noting that they may be in place by the time a draft amendment is applied for.

Section 3.1 of the TPP's relates to Bushfire. The objective of the TPP's for bushfire is;

*To prioritise the protection of human life and to support the resilience of settlements and communities by reducing the potential impacts of bushfire on life, property and infrastructure.*



This is achieved, by the nine strategies listed below.

Strategies:	Response:
<p>1. <i>Identify and map land that is exposed to bushfire hazards, including consideration of the potential impacts of future bushfire conditions as a result of climate change, based on the best available scientific evidence</i></p>	<p>The site is currently mapped as being within a bushfire prone area on a planning scheme overlay.</p> <p>The draft amendment will not seek to alter the bushfire prone areas overlay mapping.</p> <p>The mapping ensures that bushfire risk is appropriately considered as part of subdivision and future planning for the area.</p>
<p>2. <i>The protection of human life from harm caused by bushfire will be considered and prioritised at every stage of the planning process.</i></p>	<p>The development of land within the FUZ can be undertaken in a manner which ensure compliance with best practice bushfire standards, and in accordance with C13.0 <i>Bushfire Prone Areas Code</i>, and AS3959:2018 – <i>Construction of Buildings in Bushfire Prone Areas</i>.</p> <p>Appropriate bushfire protection measures, including setbacks of future buildings, reduces the risk to human life and property.</p>
<p>3. <i>Avoid designating land for purposes that expose people, property and supporting infrastructure to risk arising from bushfire hazards, especially significant risks.</i></p>	<p>The draft amendment will seek to see the site develop in a manner which reduces and manages any bushfire risk.</p> <p>Bushfire setbacks have been provided to ensure any future bushfire risk can be reduced.</p> <p>Overtime, it would be expected that the bushfire prone areas overlay could be amended to remove urban areas which are not required to be included in the overlay (i.e. over 100m from bushfire prone vegetation).</p>
<p>4. <i>Where it is not practical to avoid bushfire hazards, use and development is to</i></p> <ul style="list-style-type: none"> <li>a) <i>identify the risk of harm to human life, property and infrastructure caused by bushfire;</i></li> <li>b) <i>incorporate bushfire protection measures that manage the identified risk and reduce it to within a tolerable level; and</i></li> <li>c) <i>provide a higher level of risk mitigation for uses deemed particularly vulnerable or hazardous.</i></li> </ul>	<p>This report has:</p> <ul style="list-style-type: none"> <li>a) identified the risk of harm to human life, property and infrastructure</li> <li>b) provided recommendations that ensure the threat can be reduced to a tolerable level.</li> <li>c) The draft amendment does not anticipate any vulnerable or hazardous uses within the study area.</li> </ul> <p>Should future uses be proposed, they would be required to be assessed on their own merits.</p>

<p>5. <i>Support the efficient and safe intervention of firefighting personnel and emergency evacuation</i></p>	<p>Future residential infrastructure will need to be constructed in accordance with the standards under C13.0 Bushfire Prone Areas Code. This includes all public roads, fire trails (if applicable), and private access (if applicable).</p> <p>Appropriate connectivity, including ingress and egress should be considered as part of any subdivision design. Recommendations have been made relating to ingress and egress.</p>
<p>6. <i>Facilitate the provision of firefighting infrastructure and support emergency services and the community to prevent, prepare, respond and recover from bushfire events.</i></p>	<p>Future infrastructure will need to be constructed in accordance with the standards under C13.0 Bushfire Prone Areas Code. These include all road infrastructure, along with water infrastructure for firefighting purposes.</p> <p>Ensuring future development provides for compliant infrastructure will allow the community to respond and recover in a possible bushfire event.</p>
<p>7. <i>Consider the cumulative effects of planning decisions so new use and development will not result in an unacceptable increase to bushfire risks for existing use and development.</i></p>	<p>Should recommendations, including future building setbacks, be implemented as part of the SAP preparation and subdivision design, it is considered that new use and development of the site will not result in an unacceptable risk.</p>
<p>8. <i>When designating land for particular purposes and considering use and development in areas subject to bushfire hazards:</i></p> <ul style="list-style-type: none"> <li>a) <i>priority should be given to minimising the impacts, associated with implementing future bushfire protection measures, on environmental values and on the cost to the community as a result of defending properties from bushfire; and</i></li> <li>b) <i>where possible, avoid locations that require bushfire hazard management to be undertaken on land external to the site where that land is publicly owned and managed for conservation purposes.</i></li> <li>c) <i>Allow the implementation of bushfire protection measures that are carried out in accordance with an endorsed plan, including hazard reduction burns.</i></li> </ul>	<p>The land has been designated as being appropriate for future residential use, this is reflected in the existing FUZ.</p> <p>The draft amendment will rezone the site to GRZ and implement a SAP over the site.</p> <ul style="list-style-type: none"> <li>a) This report doesn't seek to impose clearing requirements outside of the site. Vegetation management will be required. The flora and fauna report will be required to address environmental values, taking into consideration this clearing.</li> <li>b) Bushfire hazard management will not be required to be undertaken outside of the site.</li> <li>c) A future subdivision will be required to provide a compliant BHMP, certified by the TFS or an accredited person. Council currently conducts fire abatement as part of their responsibilities under the Local Government Act.</li> </ul>

<p>9. <i>Allow the implementation of bushfire protection measures that are carried out in accordance with an endorsed plan, including hazard reduction burns.</i></p>	<p>A future subdivision of the site will be required to provide bushfire protection measures, as outlined and certified in a BHMP. Council and the TFS will liaise with landowners in relation to any hazard reduction burns if required.</p>
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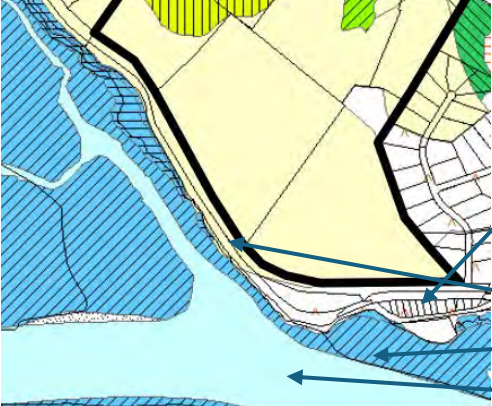




## 4. Bushfire Site Assessment

### 4.1 TasVeg Analysis

The TasVeg map 4.0 provides general information indicating potential bushfire prone vegetation, within 120m of the site, and within the subject site.

Understanding vegetation types within 100m+ of the site is a requirement under C2.2.3.1 of AS3959:2018. For the BRP, it is considered appropriate to analyse vegetation within 150m of the site, noting that the identified vegetation does not vary greatly after 100m.

Direction	TasVeg Mapping	Comments:
North		<p><b>FUM</b> – Modified Land</p> <p><b>FAG</b> – Agricultural Land</p> <p><b>DTO</b> – Eucalyptus Forest &amp; Woodland (tenuiramis)</p> <p><b>DRI</b> – Eucalyptus Forest &amp; Woodland (risdonii)</p>
South		<p><b>FUR</b> – Urban Areas</p> <p><b>FAG</b> – Agricultural Land</p> <p><b>AHS</b> – Saline aquatic herb land</p> <p><b>OAQ</b> – Water Body</p>

East		<p><b>DVG</b> – Eucalyptus Forest &amp; Woodland (viminalis grassy)</p> <p><b>FAG</b> – Agricultural Land</p> <p><b>FUR</b> – Urban Areas</p>
West		<p><b>DAS</b> – Eucalyptus Forest &amp; Woodland (on sandstone)</p> <p><b>FAG</b> – Agricultural Land</p>

Within the subject site itself, the land was primarily separated into four different vegetation types based on the TasVeg 4 mapping. These are shown below:

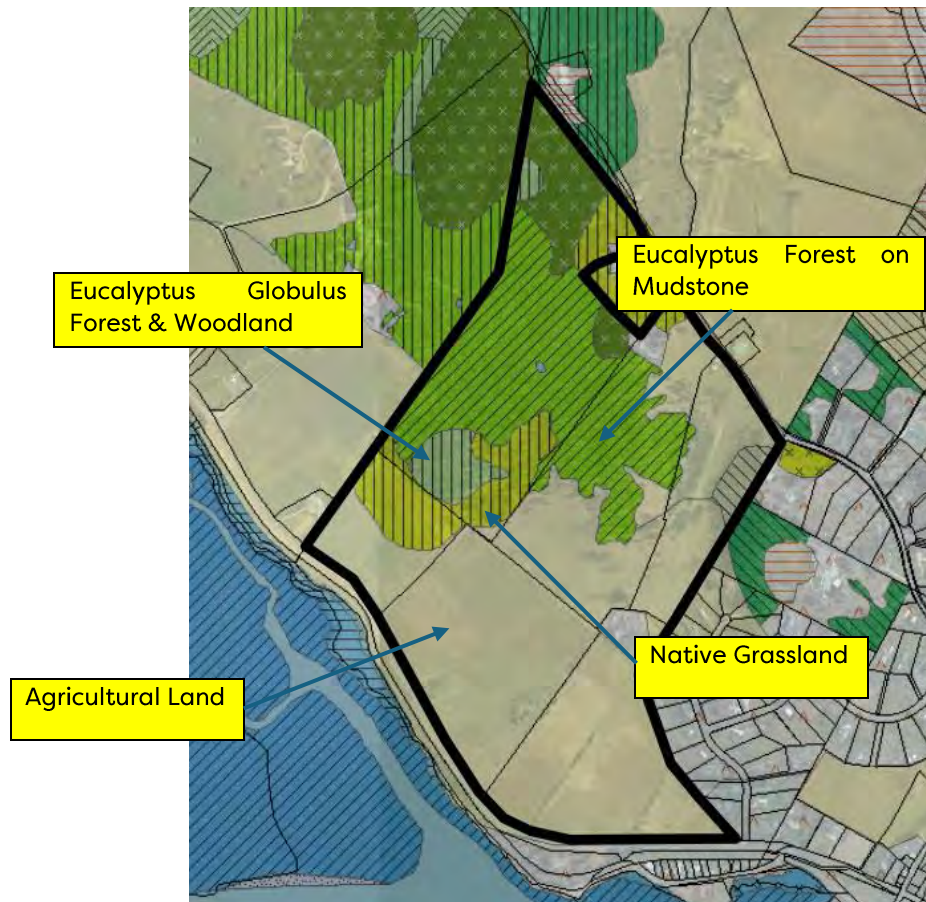


Figure 3 - TasVeg analysis of subject site

## 4.2 Vegetation Field Analysis

A site inspection was undertaken on Thursday 17<sup>th</sup> October 2024. The assessment focussed on those areas proposed for future development within the FUZ, however also examined land outside of the site for approximately 120m.

Land to the north of the FUZ was inspected and assessed in relation to vegetation type and bushfire risk.

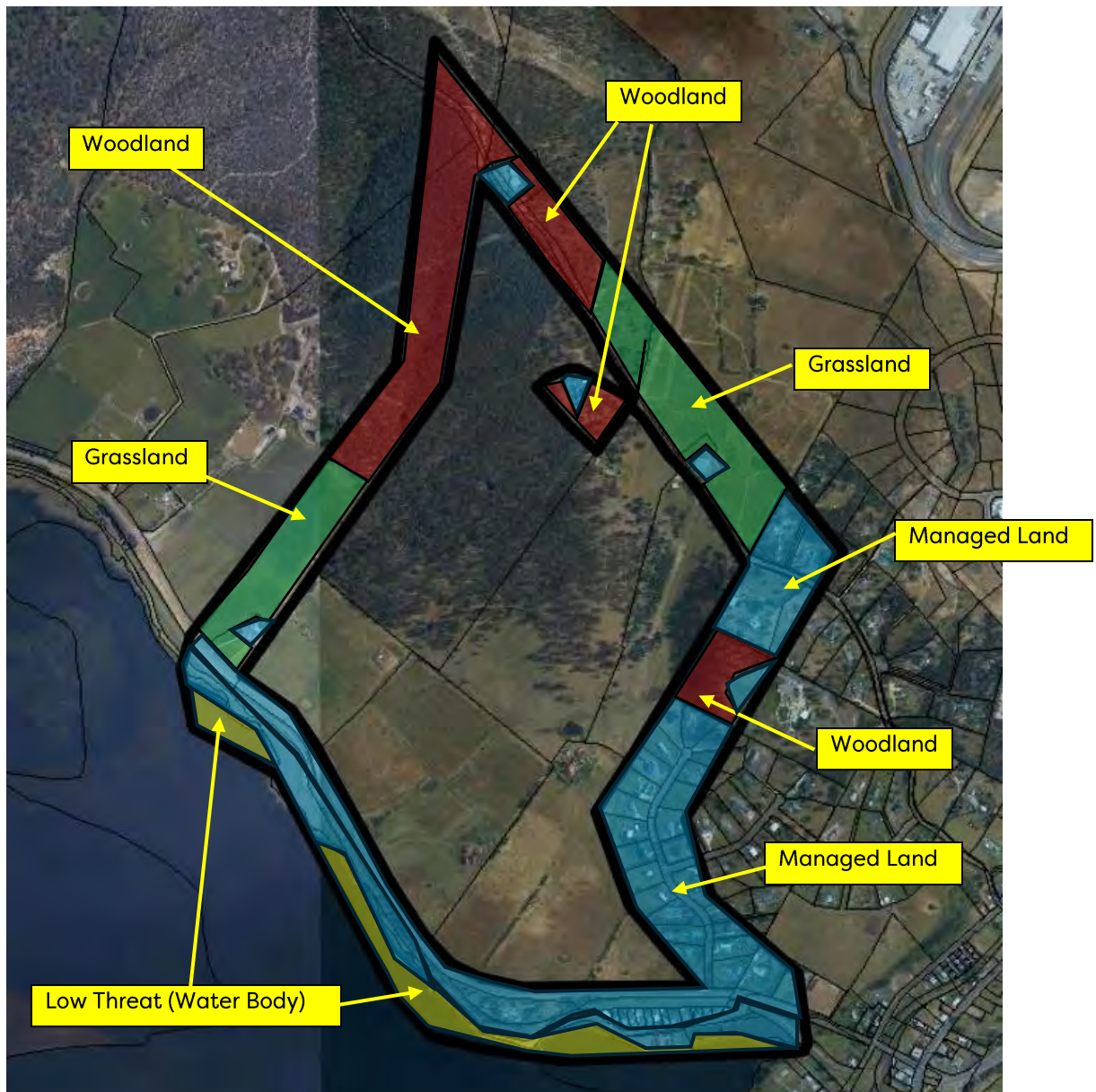
For the purposes of undertaking a vegetation assessment under Table 2.3 of AS3959:2018, the vegetation has been examined against the vegetation types listed in the classification.

It was determined that both within the subject site, and within 150m of the subject site, the vegetation was classified as:

- Woodland; and
- Grassland.

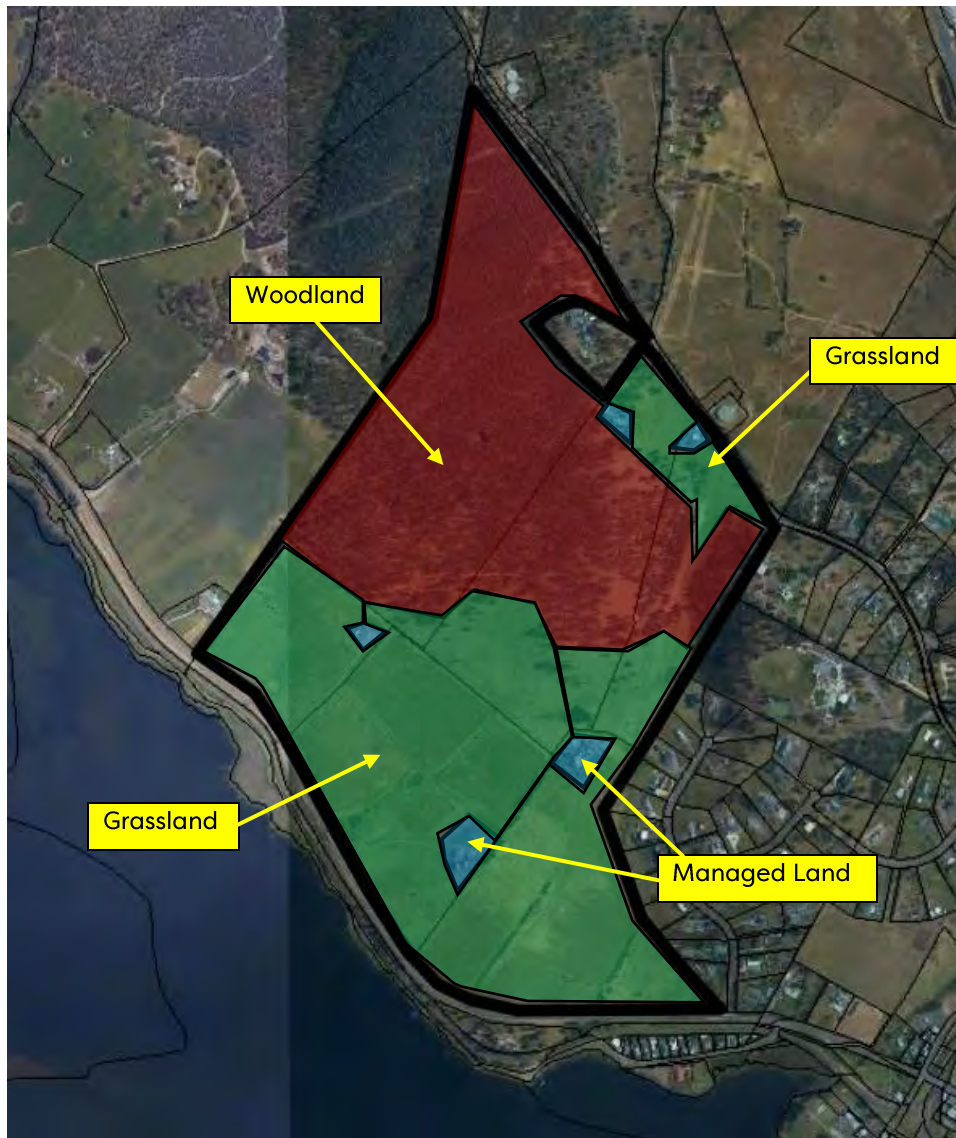
A vegetation classification map, based on land 150m outside of the subject site is provided below.





*Figure 4 - Vegetation classification within 150m of subject site*

A vegetation classification map, within the subject site, is provided below.



*Figure 5 - Vegetation classification within the subject site*

The southern parts of the site were clearly identifiable as grassland. There was no overstory present throughout the classified area. A single windbreak hedge, along with individual occasional trees were identified within the area, however the predominant vegetation type remained grassland. The grassland was low lying, with the majority of the areas utilised as pasture.

The central and northern parts of the site were classified as woodland. The woodland classification was based on:

- The canopy cover was estimated to be between 10%-30%
- A prominent grassy understory was present.
- The vegetation didn't provide a dense or shrubby understory. The vegetation ranged in height between 10m-20m, with the occasional larger eucalypt present.



### 4.3 Slope Analysis

The slope of the land under the identified vegetation was generally upslope. The block provided a low point of 10m AHD, located in the south west of the site, while the highest point of the land was situated in the north west, sitting at the 140m AHD contour. The woodland vegetation was located at or above the 30m AHD contour, with grassland generally located below this point.

The area of woodland was classified upslope from land zoned FUZ, which is proposed for rezoning as part of the draft amendment. Land to the east and west of the site was classified as upslope or flat. It was observed that land associated with the heritage listed property would potentially be classified as downslope 0-5° grassland. This is on the assumption that the larger lot associated with the heritage listed dwelling would not be entirely managed, and any lots to the north of that site would need to consider possible bushfire offsets.

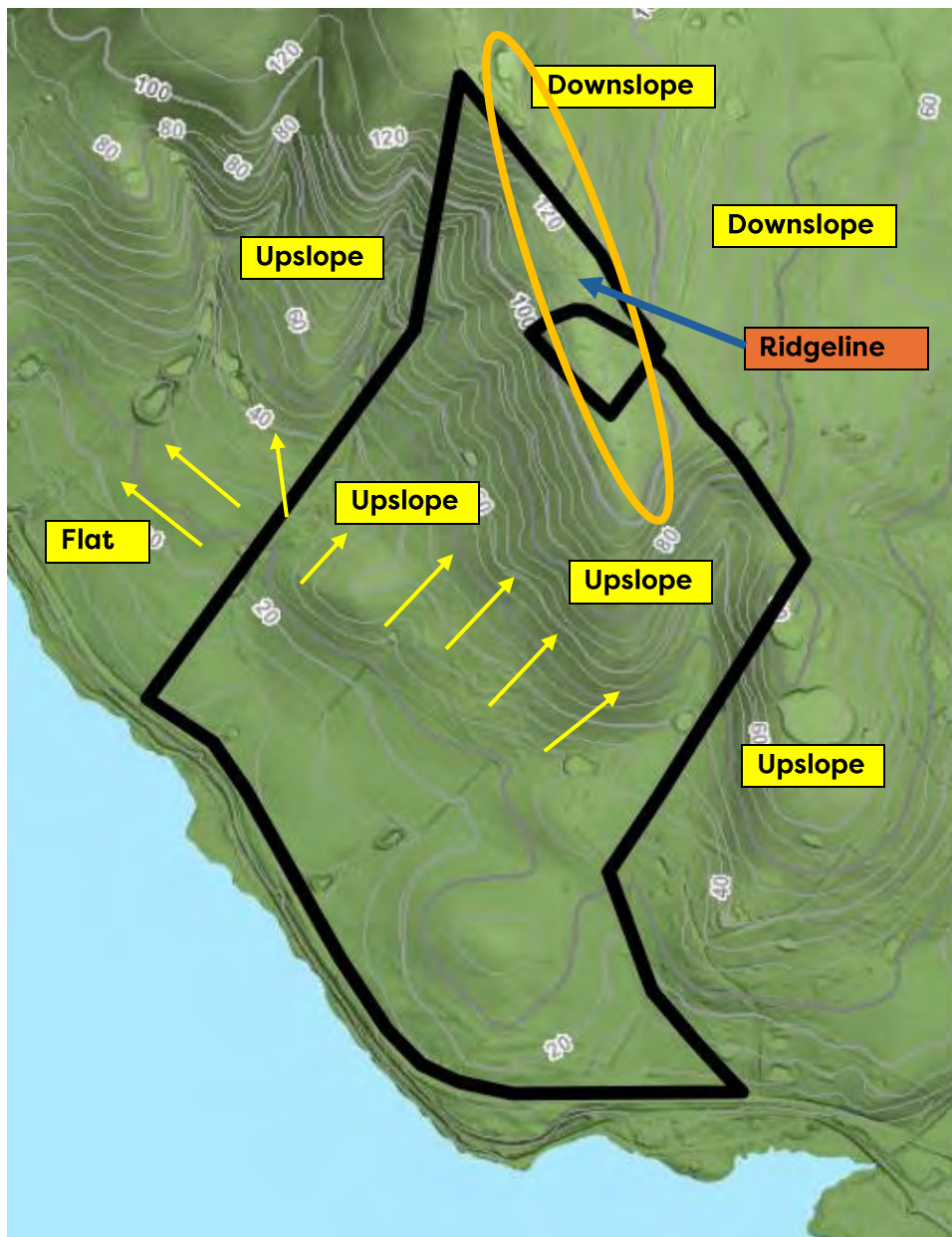


Figure 6 - Slope under bushfire prone vegetation.



## 4.4 Photos



*Figure 7 – Looking north west from CT44724/2. Grassland on adjoining agricultural property.*



*Figure 8 – Looking south west, from CT44724/2, taken from northern side of title. Grassland.*



*Figure 9 – Looking north east from CT44724/2, woodland on the adjoining land at 31 Cobbs Hill Road. Grassy understory and open canopy were evident.*



*Figure 10 – Looking north from CT44724/2, woodland on the adjoining land at 31 Cobbs Hill Road.*



*Figure 11 – Looking south east over CT44724/2, currently grassland.*



*Figure 12 – Looking north from 170 Boyer Road, woodland on adjoining title. Taken from north western boundary of property.*





*Figure 13 – Looking south across 170 Boyer Road. Downslope grassland.*



*Figure 14 – Looking north west from rear boundary of 170 Boyer Road.*



*Figure 15 – Existing managed area around dwelling at 170 Boyer Road.*



*Figure 16 – Looking north from 50 Boyer Road. Paddock to the east of the heritage dwelling. Currently grassland.*



*Figure 17 – Looking east from 150 Boyer Road, over managed properties on Serenity Drive.*



*Figure 18 – Looking east from 25 Cobbs Hill Road, managed properties on Serenity Drive.*





*Figure 19 – Looking east from 25 Cobbs Hill Road. Woodland at adjoining Northern Christian School site.*



*Figure 20 – Looking west from 25 Cobbs Hill Road, woodland on adjoining title at 29 Cobbs Hill Road.*



*Figure 21 – Woodland on 29 Cobbs Hill Road. Looking west from 25 Cobbs Hill Road.*



*Figure 22 – Woodland on north western side of 25 Cobbs Hill Road.*



*Figure 23 – Woodland at 31 Cobbs Hill Road, taken in the southern section of the site.*



*Figure 24 – Woodland at 31 Cobbs Hill Road, centrally located on the lot.*





*Figure 25 – Woodland at the northern end of 31 Cobbs Hill Road. Near the Cobbs Hill Road entrance.*



*Figure 26 – 31 Cobbs Hill Road, taken looking south from the northern end of the title.*



*Figure 27 – Woodland at 29 Cobbs Hill Road, in the north of the site.*



*Figure 28 – Looking North from Cobbs Hill Road. Grassland downslope, with the Brighton Industrial hub in the background.*

## 5. Bushfire Protection Measures

### 5.1 BAL Rating and Risk Assessment

The purpose of the BAL rating assessment in this report is to identify the separation between the bushfire prone vegetation and building area within each proposed lot.

The assessment aims to achieve the minimum requirements of **BAL 19**. It also demonstrates the required protection areas required with future residential development.

The BRP provides a number of advantages when assessing the bushfire risk. The existing FUZ area, which will be the subject of the draft amendment, is located to the south of the existing heavier fuel loads of the established woodland area. The woodland (north) and grassland (north/west) are all located upslope of the future urban areas proposed for subdivision and further development.

In a bushfire event, the predominant wind and likely threat would come from the north or north west.

The bushfire Prone Areas Code currently utilises fire danger index (FDI) 50, as per the requirements of table 2.1 of AS3959. Discussion with the Tasmanian Fire Service has indicated that for the purposes of providing a 'best practice' outcome, utilising FDI 80 under AS3959 would be more consistent with the intent of the SRLUS requirements around management of natural hazards.

The definition of the various BAL ratings is shown below. Future dwellings should aim to provide a minimum BAL 19 separation.

Bushfire attack level (BAL)	Predicted bushfire attack and exposure level
BAL-LOW	Insufficient risk to warrant specific construction requirements
BAL-12.5	Ember attack, radiant heat below 12.5kW/m <sup>2</sup>
BAL-19	Increasing ember attack and burning debris ignited by windborne embers together with increasing heat flux between 12.5-19kW/m <sup>2</sup>
BAL-29	Increasing ember attack and burning debris ignited by windborne embers together with increasing heat flux between 19-29kW/m <sup>2</sup>
BAL-40	Increasing ember attack and burning debris ignited by windborne embers together with increasing heat flux between 29-40kW/m <sup>2</sup>
BAL-FZ	Direct exposure to flames radiant heat and embers from the fire front.

The following setbacks have been provided based on FDI 80.

- Future dwellings in the north of the FUZ, should provide a minimum separation of **20m to the north** (BAL 19).
- Future dwellings in the west of the FUZ should provide a minimum separation of **12m to the west** (BAL 19).
- Any lot to the north of the land associated with the State Heritage Registered dwelling at 50 Boyer Road, should provide a minimum separation of **14m to the south** (BAL 19).

## 5.2 Hazard Management Areas

Section C13.0 *Bushfire-Prone Areas Code*, will apply to any subdivision of the site. The code requires that a Bushfire Hazard Management Area (BHMA) will be managed in accordance with the provided plan.

Existing vegetation within the BHMA needs to be strategically modified and maintained in accordance with the Bushfire Hazard Management Plan (BHMP) to achieve the following outcomes:

- to reduce the quantity of windborne sparks and embers reaching buildings;
- to reduce radiant heat at the building; and
- to halt or check direct flame attack.

The BHMA will be developed within and up to the property boundaries to provide access to a fire front for firefighting, which is maintained in a minimal fuel condition and in which there are no other hazards present that will significantly contribute to the spread of a bushfire.

The BHMA will be achieved by adoption of the following strategies:

### **Maintenance of Fuel Management Areas**

It is the responsibility of the property owner, and in some cases Council, to maintain and manage the landscaping in accordance with the BHMP.

The BHMA is to be regularly managed and maintained. Landscaping in this area will be minimised:

- Grass maintained to a maximum height of 100mm, with fuel loads kept to less than 2 tonnes per hectare which will be maintained at this level.
- Trees and any undergrowth will be clear of (BCA) class 1 – 9 buildings on all sides.
- All undergrowth and understorey of trees (up to 2m) will be removed within the bushfire hazard management area.
- Larger trees can be maintained, where ensuring the understory is managed and a 5m canopy separation is provided.
- Pathways to 1 metre surrounding the buildings and landscaping material, will be non-combustible (stone, pebbles etc.).
- The total shrub cover will be a maximum of 20% of the available area.
- There will be a clear space from the buildings of at least four (4) times the mature height of any shrubs planted.
- Shrubs will not be planted in clumps, this is to avoid build-up of debris and dead vegetation materials.

### **Landscaping**

- vegetation along the pathways to comprise non-flammable style succulent ground cover or plants (avoid plants that produce fine fuel which is easily ignited, plants that produce a lot of debris, trees and shrubs which retain dead material in branches or which shed long strips of bark, rough fibrous bark or drop large quantities of leaves in the spring and summer, vines on walls or tree canopies which overhang roofs)
- timber woodchip and flammable mulches cannot be used and brush and timber fencing should be avoided where possible
- Council must consider management of landscaping within the wildlife corridors, to ensure that a corridor can be maintained while not presenting an unacceptable fire risk to residents.



## 5.3 Roads

Table C13.1 of the code outlines the requirements for road construction as part of any subdivision. All public roads which are to be maintained by Council as the Road Authority are required to be constructed to this standard.

If a subdivision is designed to include staging, temporary turning heads may be required to ensuring adequate manoeuvring for fire trucks.

Element		Requirement
A.	Roads	<p>Unless the development standards in the zone require a higher standard, the following apply:</p> <ul style="list-style-type: none"> <li>(a) two-wheel drive, all-weather construction;</li> <li>(b) load capacity of at least 20t, including for bridges and culverts;</li> <li>(c) minimum carriageway width is 7m for a through road, or 5.5m for a dead-end or cul-de-sac road;</li> <li>(d) minimum vertical clearance of 4m;</li> <li>(e) minimum horizontal clearance of 2m from the edge of the carriageway;</li> <li>(f) cross falls of less than 3 degrees (1:20 or 5%);</li> <li>(g) maximum gradient of 15 degrees (1:3.5 or 28%) for sealed roads, and 10 degrees (1:5.5 or 18%) for unsealed roads;</li> <li>(h) curves have a minimum inner radius of 10m;</li> <li>(i) dead-end or cul-de-sac roads are not more than 200m in length unless the carriageway is 7 meters in width;</li> <li>(j) dead-end or cul-de-sac roads have a turning circle with a minimum 12m outer radius; and</li> <li>(k) carriageways less than 7m wide have 'No Parking' zones on one side, indicated by a road sign that complies with <i>Australian Standard AS1743-2001 Road signs-Specifications</i>.</li> </ul>

## 5.4 Property Access

Table C13.2 of the code outlines the private access requirements. Where a dwelling cannot be protected from an existing hydrant, a compliant private access will need to be provided. The majority of lots in the urban areas will generally provide for adequate protection via hydrants, however any larger lots, or internal lots, may be required to comply with the standards for private access.

Element		Requirement
A.	Property access length is less than 30m; or access is not required for a fire appliance to access a fire fighting water point.	There are no specified design and construction requirements.
B.	Property access length is 30m or greater; or access is required for a fire	<p>The following design and construction requirements apply to property access:</p> <ul style="list-style-type: none"> <li>(a) all-weather construction;</li> </ul>

	appliance to a fire fighting water point.	<ul style="list-style-type: none"> <li>(b) load capacity of at least 20t, including for bridges and culverts;</li> <li>(c) minimum carriageway width of 4m;</li> <li>(d) minimum vertical clearance of 4m;</li> <li>(e) minimum horizontal clearance of 0.5m from the edge of the carriageway;</li> <li>(f) cross falls of less than 3 degrees (1:20 or 5%);</li> <li>(g) dips less than 7 degrees (1:8 or 12.5%) entry and exit angle;</li> <li>(h) curves with a minimum inner radius of 10m;</li> <li>(i) maximum gradient of 15 degrees (1:3.5 or 28%) for sealed roads, and 10 degrees (1:5.5 or 18%) for un-sealed roads; and</li> <li>(j) terminate with a turning area for fire appliances provided by one of the following: <ul style="list-style-type: none"> <li>(i) a turning circle with a minimum outer radius of 10m; or</li> <li>(ii) a property access encircling the building; or</li> <li>(iii) a hammerhead “T” or “Y” turning head 4m wide and 8m long.</li> </ul> </li> </ul>
C.	Property access length is 200m or greater.	<p>The following design and construction requirements apply to property access:</p> <ul style="list-style-type: none"> <li>(a) the requirements for B above; and</li> <li>(b) passing bays of 2m additional carriageway width and 20m length provided every 200m.</li> </ul>
D.	Property access length is greater than 30m, and access is provided to 3 or more properties.	<p>The following design and construction requirements apply to property access:</p> <ul style="list-style-type: none"> <li>(a) complies with requirements for B above; and</li> <li>(b) passing bays of 2m additional carriageway width and 20m length must be provided every 100m.</li> </ul>

## 5.5 Fire Trails

Table C13.3 outlines the requirements for fire trails. Subdivision design may consider fire trails to provide support for emergency personal in a bushfire event. Properly designed perimeter fire trails along an urban interface can assist the ability of fire fighters to protect properties during a bushfire.

Element		Requirement
A.	All fire trails	<p>The following design and construction requirements apply:</p> <ul style="list-style-type: none"> <li>(a) all-weather, 4-wheel drive construction;</li> <li>(b) load capacity of at least 20t, including for bridges and culverts;</li> </ul>

		<ul style="list-style-type: none"> <li>(c) minimum carriageway width of 4m;</li> <li>(d) minimum vertical clearance of 4m;</li> <li>(e) minimum horizontal clearance of 2m from the edge of the carriageway;</li> <li>(f) cross falls of less than 3 degrees (1:20 or 5%);</li> <li>(g) dips less than 7 degrees (1:8 or 12.5%) entry and exit angle;</li> <li>(h) curves with a minimum inner radius of 10m;</li> <li>(i) maximum gradient of 15 degrees (1:3.5 or 28%) for sealed fire trails, and 10 degrees (1:5.5 or 18%) for unsealed fire trails;</li> <li>(j) gates if installed at fire trail entry, have a minimum width of 3.6m, and if locked, keys are provided to TFS; and</li> <li>(k) terminate with a turning area for fire appliances provided by one of the following: <ul style="list-style-type: none"> <li>(i) a turning circle with a minimum outer radius of 10m; or</li> <li>(ii) A hammerhead “T” or “Y” turning head 4m wide and 8m long.</li> </ul> </li> </ul>
B.	Fire trail length is 200m or greater.	<p>The following design and construction requirements apply:</p> <ul style="list-style-type: none"> <li>(a) the requirements for A above; and</li> <li>(b) passing bays of 2m additional carriageway width and 20m length provided every 200m.</li> </ul>

## 5.6 Reticulated Fire Fighting Water Supply

Table C13.4 outlines the requirements for fire fighting water supply in reticulated areas.

Based on the future GRZ being applied to the site, it is expected that a reticulated firefighting water supply will be provided for the subdivision.

Future development will connect to the reticulated water supply and provide hydrants. The indicative locations of hydrants will be marked on a BHMP associated with a future plan of subdivision, generally providing hydrants at 60m intervals and at street intersections.

Table C13.4 Reticulated water supply for firefighting.

Element		Requirement
A.	Distance between building area to be protected and water supply.	<p>The following requirements apply:</p> <ul style="list-style-type: none"> <li>(a) the building area to be protected must be located within 120m of a fire hydrant; and</li> <li>(b) the distance must be measured as a hose lay, between the fire fighting water point and the furthest part of the building area.</li> </ul>
B.	Design criteria for fire hydrants	<p>The following requirements apply:</p> <ul style="list-style-type: none"> <li>(a) fire hydrant system must be designed and constructed in accordance with <i>TasWater Supplement to Water Supply Code of Australia WSA 03 – 2011-3.1 MRWA 2<sup>nd</sup> Edition</i>; and</li> </ul>



		(b) fire hydrants are not installed in parking areas.
C.	Hardstand	<p>A hardstand area for fire appliances must be:</p> <ul style="list-style-type: none"> <li>(a) no more than 3m from the hydrant, measured as a hose lay;</li> <li>(b) no closer than 6m from the building area to be protected;</li> <li>(c) a minimum width of 3m constructed to the same standard as the carriageway; and</li> <li>(d) connected to the property access by a carriageway equivalent to the standard of the property access.</li> </ul>

## 5.7 Static Water Supply for Fire Fighting

Table C13.4 outlines the requirements for static fire fighting water supply in areas not serviced by a reticulated supply.

While it is expected that the majority of lots can be serviced via hydrants in a reticulated network, there may be some occasions where a static water supply is required.

The BHMP for a future subdivision will be required to identify these lots and provide recommendations on compliant static water supply.

Element		Requirement
A.	Distance between building area to be protected and water supply.	<p>The following requirements apply:</p> <ul style="list-style-type: none"> <li>(a) the building area to be protected must be located within 90m of the fire fighting water point of a static water supply; and</li> <li>(c) the distance must be measured as a hose lay, between the fire fighting water point and the furthest part of the building area.</li> </ul>
B.	Static Water Supplies	<p>A static water supply:</p> <ul style="list-style-type: none"> <li>(a) may have a remotely located offtake connected to the static water supply;</li> <li>(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;</li> <li>(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;</li> <li>(d) must be metal, concrete or lagged by non-combustible materials if above ground; and</li> <li>(e) if a tank can be located so it is shielded in all directions in compliance with section 3.5 of Australian Standard 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: <ul style="list-style-type: none"> <li>(i) metal;</li> <li>(ii) non-combustible material; or</li> <li>(iii) fibre-cement a minimum of 6mm thickness.</li> </ul> </li> </ul>

## 6. BRP – Concept Subdivision Layout

A concept subdivision plan has been provided by Holmes Dyer. The plan applies to the FUZ section of the site, and provides an indicative urban lot layout which includes the following:

- 388 residential lots;
- A new road network that provides three new access points onto Boyer Road.
- Public open space that has been designed to incorporate overland flow paths and serve as wildlife corridors.
- Retention of existing dwellings onto new lots within the site.
- Road connectivity with four cul de sacs, and two 'T' turning heads.



Figure 29 - Concept subdivision plan for BRP. Source: Holmes Dyer

From a landscape risk perspective, the concept plan of subdivision provides some advantages. The areas proposed for residential development are located downslope from the existing heavier fuel loads to the north. The River Derwent is located to the south, and existing managed residential lots to the east.

It will be critical to manage the interface between the residential land in the north of the subdivision (referred to as Precinct 'C'), and the bushfire prone vegetation located to the north. It is understood that the draft SAP provisions require lots within Precinct 'C' to have a minimum lot size of 1000m<sup>2</sup> as part of an acceptable solution, or 750m<sup>2</sup> under the performance criteria.

Equally, it will be important to ensure there is appropriate management between future dwellings in the west, and the adjoining agricultural land. The concept plan currently indicates a perimeter road in the north west, which would provide a adequate buffer between the bushfire prone vegetation on the adjoining agricultural land, and the proposed residential lots. A shelter belt is shown on the north western boundary. It is recommended the shelter belt be provided as a single row of trees, so as not to increase the fuel load or change the vegetation classification to the west.

The rear setbacks for buildings along the urban/bush and grassland interface should be contained within the residential lots. This report does not recommend that section 71 (part 5) agreements or covenants be entered into to allow for management of land outside of the site. The draft SAP criteria for Precinct 'C' appropriately requires a 20m wide hazard management area be provided on the interface of bushfire prone vegetation to the north.

The concept plan provides large areas of public open space, which transect the sites, appearing to provide for the overland flow path, while also providing an opportunity for walking trails and wildlife corridors. Understanding how these areas of public open space will be used and managed will be critical. Council as the relevant authority will need to agree to not only take ownership of any public open space, but also to maintain public open space as low threat vegetation. A conflict can arise where revegetation of wildlife corridors is proposed when adjoining land shown for residential purposes. The corridors have the potential to present a fire risk as they adjoin large residential areas, both within the site, to the east along Serentiy Drive and in the north west of the site, adjoining agricultural land.

If Brighton Council is not going to maintain the public open space corridors as low threat vegetation, then controls should be built into the SAP around revegetation and/or perimeter breaks. Future subdivision design will need to consider whether building setbacks will be required from any public open space areas.

The subdivision provides a road network which is considered appropriate within a bushfire prone area, noting three access points onto Boyer Road. Providing multiple entry/exit points into a residential area ensures multiple avenues of escape in a bushfire event.

While four cul-de-sacs are proposed, the location of cul-de-sacs are generally central and separate from any bushfire threat. As part of a subdivision design, a fire trail link could be explored to provide improved connectivity for emergency vehicles utilising the open space network (i.e. gated shared user trail).

The plan shows two 'T' turning heads in the west. It is recommended these turning heads be replaced with bushfire compliant cul-de-sacs. Perimeter roads can provide a buffer between residential development and a bushfire threat. We acknowledge that while such roads provide a practical benefit in relation to bushfire, they are not always cost effective from a developer perspective.

We recommend that any SAP look at ensuring at least two new road points be provided onto Boyer Road as part of any large scale subdivision.

We would recommend that the SAP provide a road layout plan, that generally encourages developers to adhere to a particular design or plan of subdivision that has been inserted into the SAP. Any performance criteria that allows developers to deviate away from compliance with the plan, should provide for consideration of natural hazards.



## 7. Conclusions and Recommendations

This report has been prepared to consider and provide recommendations for a draft amendment of the Boyer Road Precinct. Once developed, the precinct anticipated providing an additional 388 residential lots.

The site has been analysed from a bushfire risk perspective, and concluded that with appropriate recommendations being followed, the risk can be managed to a tolerable level.

The denser areas of vegetation are located upslope from the proposed urban areas, while the land to the east and west presents a lower risk in relation to bushfire. Future subdivision of the site will need to ensure appropriate roads layouts are provided, seeking to maximise connectivity while reducing dead end streets and cul de sacs. Multiple access points onto Boyer Road are encouraged, as are building lines for habitable development between the interface of urban areas and classified vegetation.

We conclude that future development of the site for residential purposes is appropriate subject to recommendations being adhered to.

- a) The site is well located, with the proposed urban areas located downslope of the heavier bushfire fuel areas.
- b) Larger lots should be provided along the northern interface between urban areas and the more densely vegetated land which extends to the north. Dwellings on these lots are required to provide a 20m setback to meet BAL 19 standards.
- c) Larger lots should be provided along the western interface, between urban areas and the agricultural land to the west. Dwellings on these lots are required to provide a 12m setback to meet BAL 19 standards.
- d) Any lot to the north of the land associated with the State Heritage Registered dwelling at 50 Boyer Road, should provide a minimum separation of 14m setback to meet BAL 19 standards.
- e) Lots must be of a sufficient size to provide hazard management areas within lot boundaries. We recommend avoiding Section 71 Agreements or bushfire easements/covenants on adjoining land where possible.
- f) Public Open Space and Wildlife Corridors should be maintained as low threat vegetation by the Brighton Council. Alternatively, Council should consider perimeter breaks along residential boundaries.
- g) All proposed roads, private accesses and fire trails (if applicable) must be in compliance with Table C13.1, C13.2 and C13.3 as outlined in C13.0 Bushfire Prone Areas Code of the Tasmanian Planning Scheme, and section 5 of this report. The proposed 'T' turning heads in the north west of the site should be replaced with compliant cul-de-sac turning heads.
- h) Any water supply required for the subdivision must be in compliance with Table C13.4 or Table C13.5, as outlined in C13.0 Bushfire Prone Areas Code of the Tasmanian Planning Scheme, and section 5 of this report.
- i) We recommend the SAP provide an acceptable solution habitable building line setback of 20m for all lots along the northern boundary of the proposed GRZ area. Any corresponding performance criteria must have regard to the presence of natural hazards.
- j) We recommend the SAP provide an acceptable solution habitable building line setback of 12m for all lots along the western boundary of the proposed GRZ area. Any corresponding performance criteria must have regard to the presence of natural hazards.

- k) The Holmes Dyer concept plan of subdivision generally provides good connectivity with multiple access points onto Boyer Road. The SAP should include a plan of subdivision, which is referred to under an acceptable solution. Any performance criteria which provides for an alternate lot layout must have regard to the presence of natural hazards.
- l) The three cul-de-sacs in the west of the site, should seek to provide gated connectivity for fire appliances within the open space network. This connectivity may not be required depending on staging, management of vegetation within 100m of cul de sacs, and surrounding development proposed at the time of subdivision.
- m) Any proposed shelter belt in the west must be provided as a single row of trees, so as not to increase the fuel load or change the vegetation classification to the west.
- n) The Holmes Dyer concept plan of subdivision indicates three access points onto Boyer Road. It is recommended that at least 2 access/egress points are available onto Boyer prior to any large-scale residential development occurring on the site.
- o) If a Council policy does not exist, it would be recommended that a vegetation or fire management policy be prepared which would guide Council on how to appropriately manage and vegetate public open space/wildlife areas that adjoin urban and other residential land.

## **Annexure 1 – BRP Bushfire Advisory Plan**





Provide larger lots on the interface between urban areas and classified vegetation

Public Open Space/Wildlife Corridors must be maintained as low threat vegetation or provided with a perimeter break to avoid risk to residential properties

Avoid cul-de-sacs where possible. Where utilised, Cul de sacs must provide 31m outer radius

LEGEND:

- BAL 19 BUILDING AREA
- NO HABITABLE BUILD ZONE
- PUBLIC OPEN SPACE OR MANAGED RESERVE
- INDICATIVE 10m x 15m BUILDING AREA
- TITLE BOUNDARIES
- HAZARD MANAGEMENT AREA

Any vegetation buffer or windbreak to not exceed one row of trees

Two access points onto Boyer Road are recommended prior to any large scale subdivision of the site

If Heritage Listed property is not entirely managed, bush fire setbacks will be required for lots to the north.

Public Open Space/Wildlife Corridors must be maintained as low threat vegetation or provided with a perimeter break to avoid risk to residential properties

Areas outside of 'No Build Zone' and BAL 19 Building areas, will be classified as BAL 12.5 or BAL LOW, depending on the management of the wildlife corridors



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**BUSHFIRE HAZARD MANAGEMENT PLAN**  
**BOYER ROAD PRECINT**  
(C.T.44724/1, PID 1972194) (C.T.44724/9, PID 7676396)  
(C.T.44724/8, PID 7676361) (C.T.152364/2, PID 2808927)  
(C.T.135574/1, PID 2097491) (C.T.135574/2, PID 2097504)

File name  
L240907\_BHMP\_220525.dwg  
  
Bushfire Assessment Based on Stamped Plans  
James Stewart - BFP 157. Scope of Work: 1, 2, 3B, 3C  
  
**NOVA**  
LAND CONSULTING

Job Number	L240907
Drawn	NJK
Scale	1:4000@A3
Date	22/05/25
Edition	V1.0
Sheet	1/1

## **Annexure 2 – BRP Concept Subdivision Plan.**





## ALTERNATIVE 4

Boyer Road Precinct

Road Pavement 11m in 20.0m Road Reserve  
 Road Pavement 8.9m in 18.0m Road Reserve  
 Road Pavement 6.9m in 15.0m Road Reserve

Traditional Lots  
 Diverse Housing Typologies  
 Low Density

Strata Lots  
 Mixed Use Precinct  
 Irrigation Pipeline

Zone Boundary  
 Hazard Management Area  
 Open Space Network

Shelter Belt  
 Stormwater Basin

0 20 40 60 80 100  
 1:4,000 @ A3

HOLMES DYER



**Hazard  
Management  
Area**

**A**

**C**

**B**

**C**

**A**

**A**

**C**

**B**

**C**

**A**

**A**

**D**

Boyer Road

Cobbs Hill Road

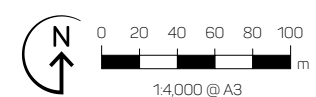
Tranquillity Crescent

Serenity Drive

Samuel Street

**PRECINCT PLAN**  
*Boyer Road Precinct*

- |   |  |
|---|--|
| <p>■ A – Medium density: min. 250m<sup>2</sup> lots + smaller lots adjacent open space</p> <p>■ B – Low-medium density: min. 500m<sup>2</sup> lots + smaller lots adjacent open space</p> | <p>■ C – Low density: min. 1000m<sup>2</sup> lots plus hazard management zones</p> <p>■ D – Medium density: min. 200m<sup>2</sup> lots + mixed use and non-residential use</p> |
|---|--|



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# Preliminary Site Investigation

(Tender Doc -

Contamination Risk Assessment)

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Boyer Road  
Precinct Structural  
Plan Area

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Project No: 9420

---

Date: 15/11/2024

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## Document Control

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## 1 Introduction

Environmental Service and Design (ES&D) were commissioned their client Homes Dyer to undertake a Preliminary Site Investigation (PSI) on the proposed development at Boyer Road Precinct Structural Plan Area . Stage 1 being the subdivision. The site may have triggered the potentially contaminated land code due to the need to check.

The objective of the PSI was to conduct a site inspection and collate site historical information to determine whether activities have occurred on or near the site which may result in contamination of the land and if so, whether the level of risk will increase with the proposed or future development.

### **C14.5 Use Standards**

For a sensitive use, or a specified use listed in Table C14.1, the Director, or a person approved by the Director for the purpose of this code:

- (a) certifies that land is suitable for the intended use; or
- (b) certifies a plan to manage contamination and associated risk to human health or the environment, so that the land is suitable for the intended use,

### **C14.7 Development Standards for Subdivision:**

For subdivision of land, the Director, or a person approved by the Director for the purpose of this code:

- (a) certifies that the land is suitable for the intended use or development; or
- (b) certifies a plan to manage contamination and associated risk to human health or the environment, so that the subdivision does not adversely impact on human health or the environment and is suitable for its intended use or development.

The preliminary site investigation was prepared by Rod Cooper and Assessed/Certified by Richard Evans, CEnvP Site Contamination.

The CSM was used to identify sources and pathways to the receptors. The conclusion of the risk assessment is that there are no sources of contamination on or near the site. The risk is acceptable for the development to occur. There is an old sheep dip on the site, although no contamination was detected the area will be remediated for residential development.

## 2 Scope of Works

The scope of the preliminary site investigation included:

- Desktop review of the site and surrounding land use history;
- Determination of potential contaminants of concern;
- Field investigations and site visit;
- Consideration of the site's environmental settings;
- Identification of potential human and ecological receptors and consideration of risks to identified receptors;
- Development of a Conceptual Site Model (CSM); and,
- Site sampling plan, sample and dispatch to a NATA Laboratory.
- Preparation of the assessment report.

## 3 Basis for Assessment

As a State Policy for the purposes of State policies and Procedures Act 1993, the National Environmental Protection (Assessment of Site Contamination) Measure 1999 (NEPM) was the guideline used for the assessment.

The assessment included elements of a Preliminary Environmental Site Assessment as defined in NEPM Schedule B2. NEPM advises that if a thorough preliminary investigation shows a history of non-contaminating activities and there is no other evidence or suspicion of contamination, further investigation is not required (Schedule B2 and Section 2.1).

Even so site samples were taken to show there is no contamination.

## 4 Information Sources

- (the LIST) Land Information System Tasmania ([www.thelist.tas.gov.au](http://www.thelist.tas.gov.au)), accessed 12/11/2024;
- (GIP) DPIPWE Groundwater Information Portal (<http://wrt.tas.gov.au/groundwater-info>);
- Brighton Planning Scheme ([www.iplan.tas.gov.au](http://www.iplan.tas.gov.au)), accessed 12/11/2024;
- National Environment Protection (assessment of Site Contamination) Amendment Measure 2013 (no. 1).
- Google Earth Pro, accessed 12/11/2024
- Site visit and interviews.

## 5 Site Details

### 5.1 Site Identification



Figure 1 Site location





Figure 2 Proposed Development

## 5.2 Zoning

The site is currently zoned “Future Urban” (Tasmania Planning Scheme,

Assessment of the Environmental Issues it is noted that the zoning covers some vegetation (outside the project scope that contains rare and endangered vegetation. Figure 4 shows the titles and PI’s of the development scope.

The Boyer Road Precinct Structure Plan area ('the site') is made up of the following titles:

- Boyer Road, Bridgewater (CT 44724/2)
- 170 Boyer Road, Bridgewater (CT 44724/9)
- 31 Cobbs Hill Road, Bridgewater (part of) (CT 152364/2)
- 29 Cobbs Hill Road, Bridgewater (part of) (CT 135574/1)
- 25 Cobbs Hill Road, Bridgewater (part of) (CT 135574/2)
- 50 Boyer Road, Bridgewater (CT 44724/8)

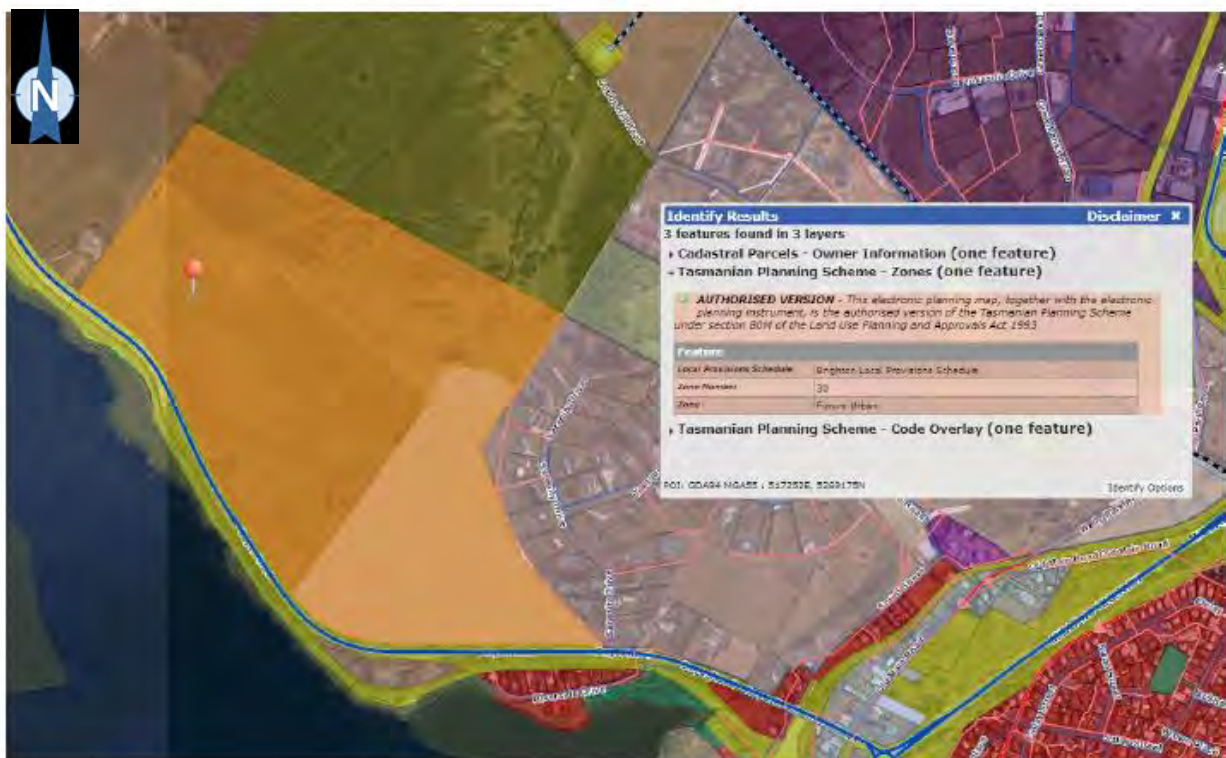


Figure 3: Zoning – Future Urban

## 6 Site Description

The subject site for “future urban development”. The site is essentially rural land that has always been rural land. It is on the banks of the Derwent. Groundwater flows to the Derwent off the site and under the rail and road infrastructure. ASS assessment from thelist confirms there is no acid Sulphate soil onsite. Sampling has confirmed there is no ASS,

Several rural residents are on the site and infrastructure associated into the Derwent River.

## **7 Geology, Hydrology and Hydrogeology**

### **7.1 Topography**

A review of Google Earth indicates a slope up to the north with elevations around 10 m AHD at the southern end of the site and 50 m AHD at the north.

### **7.2 Surface Water**

The nearest major surface water body is the Derwent River at the southern boundary. The subdivision design highlights the series of water features of small dams and creeks down the hill to the river. The surface water system is well developed.

### **7.3 Regional Geology**

The Mineral Resources Tasmania Digital Geological Atlas, 1:25,000 Series, the site is located on Triassic-Jurassic Age with Basic Igneous Rock. The Northern section transitions to Carboniferous-Permian with Sedimentary argillaceous.

### **7.4 Regional Hydrogeology**

Groundwater is likely to flow towards the Derwent River. As the hydrogeology is not complex and contamination was not detected, detailed assessment was not required.

### **7.5 Acid Sulphate Soils**

Review of the LIST (Land Information System Tasmania) shows that the site is north impacted by any form of ASS. Sampling was conducted of site soils (Sample #3) and confirmation that the soil is not ASS.

## **8 Site History**

The following information has been reviewed to determine the historical land use and assess the likelihood of potentially contaminating activities occurring on the site:

- Anecdotal information; and
- Historical aerial photographs
- Worksafe Tasmania Dangerous Goods Registers for the area.



A full historic title search was not deemed necessary after reviewing other documents and conducting interviews. WorkSafe Tasmania Dangerous Goods Records were completed for all properties in the area.



Figure 4 Site (Green) Proximity to the Paper Mill (Red)

### 8.1 Historical Aerial photography

A review of historical aerial photographs available on the LIST and Google Earth was undertaken to identify any historical potentially contaminating land uses in the area. Photos from 1969, 1970, 1980, 1996 and 2006 are shown in (Figure 5 -Figure -9) below.



Figure 5: Aerial 1969 (Source: TheLIST) Brickworks.



Figure 6: Aerial 1970 (Source: TheLIST) Brickworks



Figure 7: Aerial 1980(Source: TheLIST)



Figure 8: Aerial 1996 (Source: TheLIST)



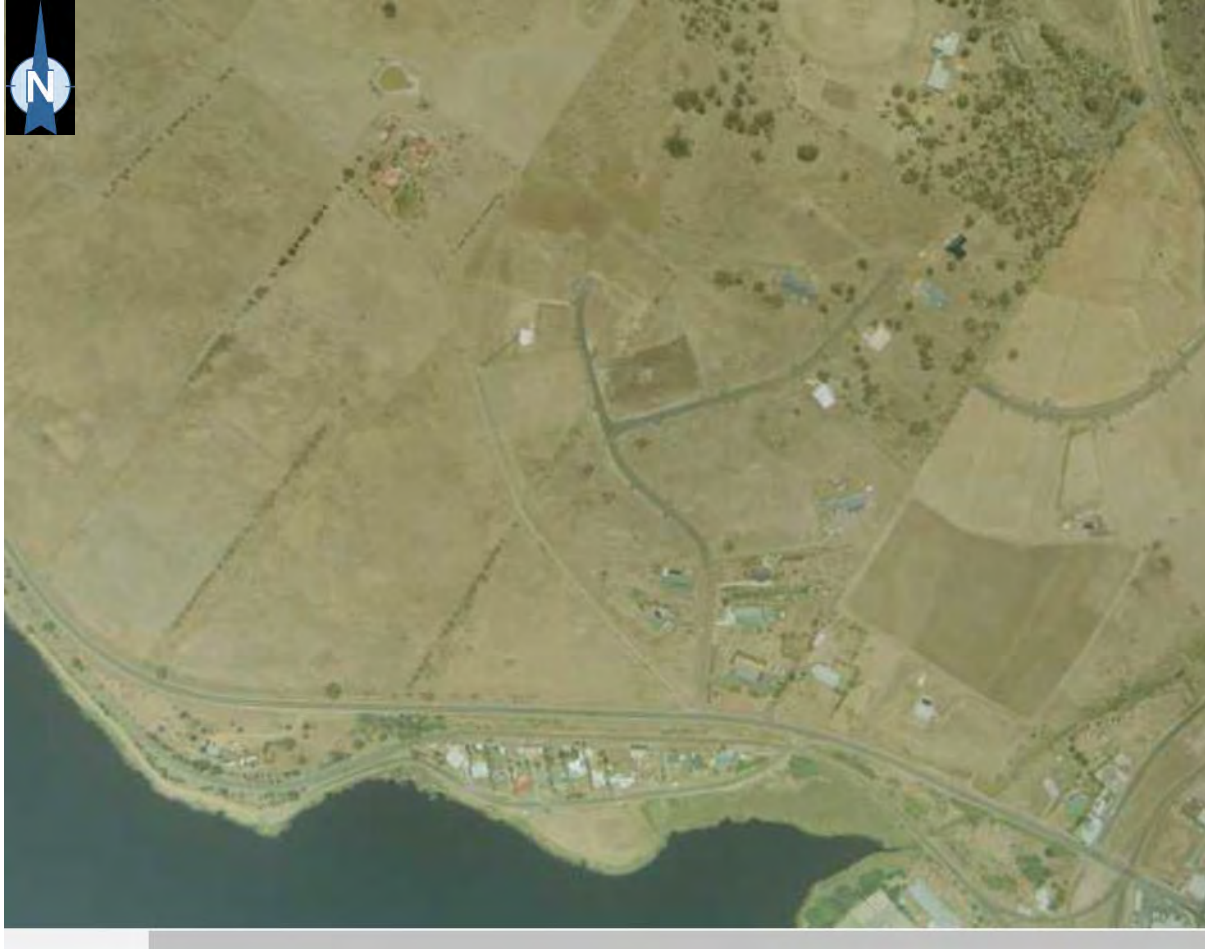


Figure 9: Aerial 2006 (Source: TheLIST)

## 9 Site History Summary

The site is currently farm land with farm houses and some bush at the edge of the proposed development. The site has always been farmland, the historic photos were assessed and no features were detected of concern.

There are rare and endangered species nearby. Site visit clarified there were no contamination issues apart from a sheep dip area.

## 10 Potential Site Contamination

### 10.1 Onsite contamination

The site was found to not contain contamination. The rail lines are not on or near the site and historic photo's and worksafe documentation indicate no sources on or near the site.

The remains of a sheep dip area was found and the analysis indicates that there is no residual contamination, even so it will require remediation. Sample (#13) was moved to the sheep dip area and no contamination was detected.

### 10.2 Offsite Sources

There are some commercial based businesses nearby, but nothing that constitutes an offsite source of contamination based on worksafe documentation and observation. 2-4 Cobbs Hill Road is a Council Depot with a UPSS. This was assessed to be too far away and not up gradient of the site.

## 11 Site Visit

A site inspection by Environmental Service and Design representatives occurred on the 1<sup>st</sup> of November 2024. The whole site was assessed and the sample plan was used and samples taken. Ten soil samples (+ Duplicate and Rinsate) were taken across the site from 10 separate hand bore holes, as per the sampling plan except that Sample (#13) was moved to sample the sheep dip area.

## 12 Results

The results from the soil testing are shown below in Table 1 & 2. All samples had acceptable metals concentrations. OC/OP analysis found no organochlorides or Organophosphates. Acid Sulphate Soil assessment confirmed that there were no ASS.

Project name/number:			25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	NEPM
			#1	#6	#7	#3	#8	#10	#11	#12	#13	#14	Residential
													HIL's
Total Metals													
Arsenic	mg/kg	5	8	<5	<5	<5	<5	<5	<5	<5	9	<5	100
Cadmium	mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	20
Chromium	mg/kg	2	16	45	32	26	26	24	20	9	14	6	100
Copper	mg/kg	5	5	13	20	9	35	13	16	6	7	8	6000
Lead	mg/kg	5	18	10	15	10	10	10	11	19	27	13	300
Nickel	mg/kg	2	5	20	14	11	20	11	9	4	6	3	400
Zinc	mg/kg	5	51	54	77	52	57	45	47	54	98	37	7400
Total Recoverable Mercury by FIMS													
Mercury	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	40
Organochlorine Pesticides (OC)													
alpha-BHC	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Hexachlorobenzene (HCB)	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
beta-BHC	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
gamma-BHC - (Lindane)	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
delta-BHC	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Heptachlor	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Aldrin	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Heptachlor epoxide	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Total Chlordane (sum)	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
trans-Chlordane	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
alpha-Endosulfan	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
cis-Chlordane	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Dieldrin	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
4,4'-DDE	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Endrin	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	10
Endosulfan (sum)	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	270
beta-Endosulfan	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
4,4'-DDD	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Endrin aldehyde	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Endosulfan sulfate	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
4,4'-DDT	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Endrin ketone	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Methoxychlor	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	300
Sum of DDD + DDE + DDT	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	240
Sum of Aldrin + Dieldrin	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	6
Organophosphorus Pesticides (OP)													
Dichlorvos	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Demeton-S-methyl	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Monocrotophos	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Dimethoate	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Diazinon	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Chlorpyrifos-methyl	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Parathion-methyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Malathion	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Fenthion	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Chlorpyrifos	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Parathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Pirimphos-ethyl	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Chlorfenvinphos	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Bromophos-ethyl	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Fenamiphos	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Prothiofos	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Ethion	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Carbophenothion	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Azinphos Methyl	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	

Table 1: Soil test results -Metals /OC/OP



Table 2 Soil Test ASS

Project name/number:			25/10/2024
Analyte grouping/Analyte	Units	LOR	#3
EA003 :pH (field/fox)			
pH (F)	pH Unit	0.1	6.2
pH (Fox)	pH Unit	0.1	2.7
Reaction Rate	Reaction Unit	1	3
EA029-A: pH Measurements			
pH KCl (23A)	pH Unit	0.1	5.4
pH OX (23B)	pH Unit	0.1	3.2
EA029-B: Acidity Trail			
Titratable Actual Acidity (23F)	mole H+ / t	2	11
Titratable Peroxide Acidity (23G)	mole H+ / t	2	12
Titratable Sulfidic Acidity (23H)	mole H+ / t	2	<2
sulfidic - Titratable Actual Acidity (s-23F)	% pyrite S	0.02	<0.020
sulfidic - Titratable Peroxide Acidity (s-23G)	% pyrite S	0.02	0.02
sulfidic - Titratable Sulfidic Acidity (s-23H)	% pyrite S	0.02	<0.020
EA029-C: Sulfur Trail			
KCl Extractable Sulfur (23Ce)	% S	0.02	<0.020
Peroxide Sulfur (23De)	% S	0.02	<0.020
Peroxide Oxidisable Sulfur (23E)	% S	0.02	<0.020
acidity - Peroxide Oxidisable Sulfur (a-23E)	mole H+ / t	10	<10
EA029-D: Calcium Values			
KCl Extractable Calcium (23Vh)	% Ca	0.02	0.115
Peroxide Calcium (23Wh)	% Ca	0.02	0.116
Acid Reacted Calcium (23X)	% Ca	0.02	<0.020
acidity - Acid Reacted Calcium (a-23X)	mole H+ / t	10	<10
sulfidic - Acid Reacted Calcium (s-23X)	% S	0.02	<0.020
EA029-E: Magnesium Values			
KCl Extractable Magnesium (23Sm)	% Mg	0.02	0.043
Peroxide Magnesium (23Tm)	% Mg	0.02	0.045
Acid Reacted Magnesium (23U)	% Mg	0.02	<0.020
Acidity - Acid Reacted Magnesium (a-23U)	mole H+ / t	10	<10
sulfidic - Acid Reacted Magnesium (s-23U)	% S	0.02	<0.020
EA029-H: Acid Base Accounting			
ANC Fineness Factor		0.5	1.5
Net Acidity (sulfur units)	% S	0.02	<0.02
Net Acidity (acidity units)	mole H+ / t	10	11
Liming Rate	kg CaCO3/t	1	<1
Net Acidity excluding ANC (sulfur units)	% S	0.02	<0.02
Net Acidity excluding ANC (acidity units)	mole H+ / t	10	11
Liming Rate excluding ANC	kg CaCO3/t	1	<1

## 13 QA/QC

[illegible]

## 14 Potential Receptors

A final Conceptual Site Model (CSM) (Table 3) was developed after consideration of risks to potential human receptors as outlined below.

Future workers involved in the construction of the development were considered in the preliminary CSM, along with subsurface workers and future commercial/industrial site users.

**Table 3: Final Conceptual Site Model**

Contamination Source	COPC	Pathway	Receptor
Acid sulphate Soil	<ul style="list-style-type: none"> <li>● Soluble Heavy Metals</li> <li>● Acid</li> </ul>	<p><b>Dermal and runoff to the environment. Likelihood – low</b></p> <p><b>Based on the topsoil sampled there is no contaminants of concern</b></p>	<ul style="list-style-type: none"> <li>● EcoSystem</li> <li>● Future users</li> <li>● Construction / subsurface workers</li> </ul>
Sheep Dip	<p>Heavy metals As, Cu.</p> <ul style="list-style-type: none"> <li>● Chemicals OC/OP</li> </ul>	<p><b>Dermal and runoff to the environment. Soil and groundwater.</b></p> <p><b>No Contamination Detected</b></p> <p><b>No contamination detected; likelihood low.</b></p>	<ul style="list-style-type: none"> <li>● EcoSystem</li> <li>● Future users</li> <li>● Construction / subsurface workers</li> </ul>
Other Chemical Contamination	<ul style="list-style-type: none"> <li>● Metals</li> <li>● OC/OP</li> </ul>	<p><b>Dermal and runoff to the environment. Soil and groundwater.</b></p> <p><b>No Contamination Detected</b></p> <p><b>No contamination detected; likelihood low.</b></p>	<ul style="list-style-type: none"> <li>● EcoSystem</li> <li>● Future users</li> <li>● Construction / subsurface workers</li> </ul>



## 15 Soil Sampling



Figure 10 Sample Plan

## 16 Environmental Impacts



Figure 11 Ecological impacts

## 17 Conclusions and Recommendations

Environmental Service and Design (ES&D) were commissioned by their client, Homes Dyer, to conduct a Preliminary Site Investigation for the proposed subdivision at Boyer Road Precinct Structural Plan Area .

The results of the preliminary site investigation, based on the site history, soil sampling and desktop assessment. The preliminary site investigation was prepared by Rod Cooper and Assessed/Certified by Richard Evans, CEnvP Site Contamination.

The CSM was used to identify sources and pathways to the receptors. The conclusion of the risk assessment is that there are no sources of contamination on or near the site. The risk is acceptable for the development to occur. There is an old sheep dip on the site, although no contamination was detected the area will be remediated for residential development.

Yours sincerely,



---

Rod Cooper BSc.,  
Principal Consultant ES&D



## References

AS 2870 - 2011 Residential Slabs and Footings

Department of Primary Industries, Parks, Water and Environment (DPIPWE) Groundwater Information Access Portal: <http://wrt.tas.gov.au/groundwater-info/>

EVERARD, J.L. and CALVER, C.R. (compilers) 2006. Digital Geological Atlas 1:25 000 Scale Series. Sheet 3846. Wynyard. Mineral Resources Tasmania.

Land Information System Tasmania (the List): [www.thelist.tas.gov.au](http://www.thelist.tas.gov.au)

National Environmental Protection (Assessment of Site Contamination) Measure, *Guideline on the Investigation Levels for Soil and Groundwater*, Schedule B (1), (1999) as amended 2013

## **Appendices**

**Appendix 1 – NATA Certified Results**

**Appendix 2 – WST Data**



## CERTIFICATE OF ANALYSIS

Work Order	: EM2418841	Page	: 1 of 14
Client	: ENVIRONMENTAL SERVICE AND DESIGN PTY LTD	Laboratory	: Environmental Division Melbourne
Contact	: John Gorrie	Contact	: Hannah White
Address	: 74 Minna Road Heybridge	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +61-3-8549 9600
Project	: Boyer Road Precinct	Date Samples Received	: 30-Oct-2024 11:35
Order number	: ----	Date Analysis Commenced	: 07-Nov-2024
C-O-C number	: ----	Issue Date	: 15-Nov-2024 15:08
Sampler	: John Gorrie		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 16		
No. of samples analysed	: 12		



Accreditation No. 825  
Accredited for compliance with  
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Jarwis Nheu	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC





## General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- ASS: EA029 (SPOCAS): Analysis is performed as per the Acid Sulfate Soils Laboratory Methods Guidelines (2004), 4969.12-2009 Analysis of Acid Sulphate Soil and the updated National Acid Sulfate Soils Guidance: National acid sulfate soils identification and laboratory methods manual, Department of Agriculture and Water Resources, Canberra, ACT (2018)
- ASS: EA029 (SPOCAS): Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA029 (SPOCAS): Excess ANC not required because pH OX less than 6.5.
- ASS: EA029 (SPOCAS): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO<sub>3</sub>) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from kg/t dry weight to kg/m<sup>3</sup> in-situ soil, multiply reported results x wet bulk density of soil in t/m<sup>3</sup>.
- ASS: EA003 (NATA Field and F(ox) screening): pH F(ox) Reaction Rate: 1 - Slight; 2 - Moderate; 3 - Strong; 4 - Extreme



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	#1	#3	#6	#7	#8
Sampling date / time					25-Oct-2024 00:00	25-Oct-2024 00:00	25-Oct-2024 00:00	25-Oct-2024 00:00	25-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EM2418841-001	EM2418841-003	EM2418841-006	EM2418841-007	EM2418841-008
					Result	Result	Result	Result	Result
<b>EA003 :pH (field/fox)</b>									
pH (F)	----	0.1	pH Unit		----	6.2	----	----	----
pH (Fox)	----	0.1	pH Unit		----	2.7	----	----	----
Reaction Rate	----	1	Reaction Unit		----	3	----	----	----
<b>EA029-A: pH Measurements</b>									
pH KCl (23A)	----	0.1	pH Unit		----	5.4	----	----	----
pH OX (23B)	----	0.1	pH Unit		----	3.2	----	----	----
<b>EA029-B: Acidity Trail</b>									
Titrateable Actual Acidity (23F)	----	2	mole H+ / t		----	11	----	----	----
Titrateable Peroxide Acidity (23G)	----	2	mole H+ / t		----	12	----	----	----
Titrateable Sulfidic Acidity (23H)	----	2	mole H+ / t		----	<2	----	----	----
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.020	% pyrite S		----	<0.020	----	----	----
sulfidic - Titrateable Peroxide Acidity (s-23G)	----	0.020	% pyrite S		----	0.020	----	----	----
sulfidic - Titrateable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S		----	<0.020	----	----	----
<b>EA029-C: Sulfur Trail</b>									
KCl Extractable Sulfur (23Ce)	----	0.020	% S		----	<0.020	----	----	----
Peroxide Sulfur (23De)	----	0.020	% S		----	<0.020	----	----	----
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S		----	<0.020	----	----	----
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t		----	<10	----	----	----
<b>EA029-D: Calcium Values</b>									
KCl Extractable Calcium (23Vh)	----	0.020	% Ca		----	0.115	----	----	----
Peroxide Calcium (23Wh)	----	0.020	% Ca		----	0.116	----	----	----
Acid Reacted Calcium (23X)	----	0.020	% Ca		----	<0.020	----	----	----
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t		----	<10	----	----	----
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S		----	<0.020	----	----	----
<b>EA029-E: Magnesium Values</b>									
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg		----	0.043	----	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	#1	#3	#6	#7	#8
Sampling date / time					25-Oct-2024 00:00	25-Oct-2024 00:00	25-Oct-2024 00:00	25-Oct-2024 00:00	25-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EM2418841-001	EM2418841-003	EM2418841-006	EM2418841-007	EM2418841-008
					Result	Result	Result	Result	Result
<b>EA029-E: Magnesium Values - Continued</b>									
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	----	0.045	----	----	----
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	----	<0.020	----	----	----
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	----	<10	----	----	----
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	----	<0.020	----	----	----
<b>EA029-H: Acid Base Accounting</b>									
ANC Fineness Factor	----	0.5	-	----	----	1.5	----	----	----
Net Acidity (sulfur units)	----	0.02	% S	----	----	<0.02	----	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	11	----	----	----
Liming Rate	----	1	kg CaCO3/t	----	----	<1	----	----	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	----	<0.02	----	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	----	11	----	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	----	<1	----	----	----
<b>EA055: Moisture Content (Dried @ 105-110°C)</b>									
Moisture Content	----	1.0	%	----	13.3	9.9	11.6	18.3	14.3
<b>EG005(ED093)T: Total Metals by ICP-AES</b>									
Arsenic	7440-38-2	5	mg/kg	----	8	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	----	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	----	16	26	45	32	26
Copper	7440-50-8	5	mg/kg	----	5	9	13	20	35
Lead	7439-92-1	5	mg/kg	----	18	10	10	15	10
Nickel	7440-02-0	2	mg/kg	----	5	11	20	14	20
Zinc	7440-66-6	5	mg/kg	----	51	52	54	77	57
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP068A: Organochlorine Pesticides (OC)</b>									
alpha-BHC	319-84-6	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05	<0.05





## Analytical Results

Sub-Matrix: SOIL  
 (Matrix: SOIL)

Sample ID

				#1	#3	#6	#7	#8
Sampling date / time				25-Oct-2024 00:00	25-Oct-2024 00:00	25-Oct-2024 00:00	25-Oct-2024 00:00	25-Oct-2024 00:00
Compound	CAS Number	LOR	Unit	EM2418841-001	EM2418841-003	EM2418841-006	EM2418841-007	EM2418841-008
				Result	Result	Result	Result	Result
<b>EP068A: Organochlorine Pesticides (OC) - Continued</b>								
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
<b>EP068B: Organophosphorus Pesticides (OP)</b>								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	#1	#3	#6	#7	#8
Sampling date / time					25-Oct-2024 00:00	25-Oct-2024 00:00	25-Oct-2024 00:00	25-Oct-2024 00:00	25-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EM2418841-001	EM2418841-003	EM2418841-006	EM2418841-007	EM2418841-008
					Result	Result	Result	Result	Result
<b>EP068B: Organophosphorus Pesticides (OP) - Continued</b>									
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
<b>EP068S: Organochlorine Pesticide Surrogate</b>									
Dibromo-DDE	21655-73-2	0.05	%		111	113	105	110	117
<b>EP068T: Organophosphorus Pesticide Surrogate</b>									
DEF	78-48-8	0.05	%		119	120	98.9	114	123



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	#10	#11	#12	#13	#14
Sampling date / time					25-Oct-2024 00:00	25-Oct-2024 00:00	25-Oct-2024 00:00	25-Oct-2024 00:00	25-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EM2418841-010	EM2418841-011	EM2418841-012	EM2418841-013	EM2418841-014
					Result	Result	Result	Result	Result
<b>EA055: Moisture Content (Dried @ 105-110°C)</b>									
Moisture Content	----	1.0	%		10.7	10.7	11.6	16.5	9.4
<b>EG005(ED093)T: Total Metals by ICP-AES</b>									
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	9	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		24	20	9	14	6
Copper	7440-50-8	5	mg/kg		13	16	6	7	8
Lead	7439-92-1	5	mg/kg		10	11	19	27	13
Nickel	7440-02-0	2	mg/kg		11	9	4	6	3
Zinc	7440-66-6	5	mg/kg		45	47	54	98	37
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP068A: Organochlorine Pesticides (OC)</b>									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	#10	#11	#12	#13	#14
Sampling date / time					25-Oct-2024 00:00	25-Oct-2024 00:00	25-Oct-2024 00:00	25-Oct-2024 00:00	25-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EM2418841-010	EM2418841-011	EM2418841-012	EM2418841-013	EM2418841-014
					Result	Result	Result	Result	Result
<b>EP068A: Organochlorine Pesticides (OC) - Continued</b>									
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
<b>EP068B: Organophosphorus Pesticides (OP)</b>									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	#10	#11	#12	#13	#14
Sampling date / time					25-Oct-2024 00:00	25-Oct-2024 00:00	25-Oct-2024 00:00	25-Oct-2024 00:00	25-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EM2418841-010	EM2418841-011	EM2418841-012	EM2418841-013	EM2418841-014
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		107	110	109	102	101
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		114	118	118	104	98.3



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	Duplicate 1	----	----	----	----
Sampling date / time					25-Oct-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2418841-015	-----	-----	-----	-----
					Result	----	----	----	----
<b>EA055: Moisture Content (Dried @ 105-110°C)</b>									
Moisture Content	----	1.0	%		<b>10.4</b>	----	----	----	----
<b>EG005(ED093)T: Total Metals by ICP-AES</b>									
Arsenic	7440-38-2	5	mg/kg		<5	----	----	----	----
Cadmium	7440-43-9	1	mg/kg		<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg		<b>8</b>	----	----	----	----
Copper	7440-50-8	5	mg/kg		<b>8</b>	----	----	----	----
Lead	7439-92-1	5	mg/kg		<b>15</b>	----	----	----	----
Nickel	7440-02-0	2	mg/kg		<b>3</b>	----	----	----	----
Zinc	7440-66-6	5	mg/kg		<b>35</b>	----	----	----	----
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	----	----	----
<b>EP068A: Organochlorine Pesticides (OC)</b>									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg		<0.05	----	----	----	----
gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg		<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	----	----	----	----
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	----	----	----	----





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	Duplicate 1	----	----	----	----
Sampling date / time					25-Oct-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2418841-015	-----	-----	-----	-----
					Result	----	----	----	----
<b>EP068A: Organochlorine Pesticides (OC) - Continued</b>									
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	----	----	----	----
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	----	----	----
4,4'-DDT	50-29-3	0.2	mg/kg		<0.2	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg		<0.05	----	----	----	----
<b>EP068B: Organophosphorus Pesticides (OP)</b>									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	Duplicate 1	----	----	----	----
Sampling date / time					25-Oct-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2418841-015	-----	-----	-----	-----
				Result	----	----	----	----	----
EP068B: Organophosphorus Pesticides (OP) - Continued									
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		94.2	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		96.9	----	----	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Rinsate	----	----	----	----
Sampling date / time					25-Oct-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2418841-016	-----	-----	-----	-----
					Result	----	----	----	----
EG020T: Total Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----





## Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP068S: Organochlorine Pesticide Surrogate</b>			
Dibromo-DDE	21655-73-2	62	128
<b>EP068T: Organophosphorus Pesticide Surrogate</b>			
DEF	78-48-8	40	139

## Inter-Laboratory Testing

Analysis conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818 (Chemistry / Biology).

(SOIL) EA003 :pH (field/fox)

(SOIL) EA029-D: Calcium Values

(SOIL) EA029-E: Magnesium Values

(SOIL) EA029-F: Excess Acid Neutralising Capacity

(SOIL) EA029-H: Acid Base Accounting

(SOIL) EA029-G: Retained Acidity

(SOIL) EA029-A: pH Measurements

(SOIL) EA029-C: Sulfur Trail

(SOIL) EA029-B: Acidity Trail



## QUALITY CONTROL REPORT

Work Order : **EM2418841**

Page : 1 of 11

Client : **ENVIRONMENTAL SERVICE AND DESIGN PTY LTD**

Laboratory : Environmental Division Melbourne

Contact : John Gorrie

Contact : Hannah White

Address : 74 Minna Road  
Heybridge

Address : 4 Westall Rd Springvale VIC Australia 3171

Telephone : ----

Telephone : +61-3-8549 9600

Project : Boyer Road Precinct

Date Samples Received : 30-Oct-2024

Order number : ----

Date Analysis Commenced : 07-Nov-2024

C-O-C number : ----

Issue Date : 15-Nov-2024

Sampler : John Gorrie

Site : ----

Quote number : EN/222

No. of samples received : 16

No. of samples analysed : 12



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Jarwis Nheu	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

RPD = Relative Percentage Difference

# = Indicates failed QC

\* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Laboratory Duplicate (DUP) Report

EA029-A: pH Measurements (QC Lot: 6188116)





Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA029-A: pH Measurements (QC Lot: 6188116) - continued									
EM2418841-003	#3	EA029: pH KCl (23A)	----	0.1	pH Unit	5.4	5.4	0.0	0% - 20%
		EA029: pH OX (23B)	----	0.1	pH Unit	3.2	3.2	0.0	0% - 20%
EA029-B: Acidity Trail (QC Lot: 6188116)									
EM2418841-003	#3	EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	<0.020	0.0	No Limit
		EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	0.020	0.020	0.0	No Limit
		EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	<0.020	0.0	No Limit
		EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	11	11	0.0	No Limit
		EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	12	13	0.0	No Limit
		EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	<2	0.0	No Limit
EA029-C: Sulfur Trail (QC Lot: 6188116)									
EM2418841-003	#3	EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	<0.020	0.0	No Limit
		EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	<0.020	0.0	No Limit
		EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	<0.020	0.0	No Limit
		EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	<10	0.0	No Limit
EA029-D: Calcium Values (QC Lot: 6188116)									
EM2418841-003	#3	EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	0.115	0.108	6.3	No Limit
		EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	0.116	0.114	1.6	No Limit
		EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	<0.020	0.0	No Limit
		EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	<0.020	0.0	No Limit
		EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	<10	0.0	No Limit
EA029-E: Magnesium Values (QC Lot: 6188116)									
EM2418841-003	#3	EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	0.043	0.042	3.4	No Limit
		EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	0.045	0.044	2.4	No Limit
		EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	<0.020	0.0	No Limit
		EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	<0.020	0.0	No Limit
		EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	<10	0.0	No Limit
EA029-H: Acid Base Accounting (QC Lot: 6188116)									
EM2418841-003	#3	EA029: ANC Fineness Factor	----	0.5	-	1.5	1.5	0.0	No Limit
		EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	<0.02	0.0	No Limit
		EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	<0.02	0.0	No Limit
		EA029: Liming Rate	----	1	kg CaCO3/t	<1	<1	0.0	No Limit
		EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	<1	0.0	No Limit
		EA029: Net Acidity (acidity units)	----	10	mole H+ / t	11	11	0.0	No Limit



Sub-Matrix: <b>SOIL</b>				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
<b>EA029-H: Acid Base Accounting (QC Lot: 6188116) - continued</b>									
EM2418841-003	#3	EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	11	11	0.0	No Limit
<b>EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6175084)</b>									
EM2418841-001	#1	EA055: Moisture Content	----	0.1 (1.0)*	%	13.3	12.4	6.7	0% - 50%
EM2418841-015	Duplicate 1	EA055: Moisture Content	----	0.1 (1.0)*	%	10.4	10.9	4.6	0% - 50%
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6180625)</b>									
EM2418841-001	#1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EM2418841-014	#14	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP068A: Organochlorine Pesticides (OC) (QC Lot: 6170630)</b>									
EM2418841-001	#1	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EM2418841-015	Duplicate 1	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 6170630) - continued									
EM2418841-015	Duplicate 1	EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 6170630)									
EM2418841-001	#1	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EM2418841-015	Duplicate 1	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit





Sub-Matrix: <b>SOIL</b>				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 6170630) - continued									
EM2418841-015	Duplicate 1	EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
Sub-Matrix: <b>WATER</b>				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 6184126)									
EM2418841-016	Rinsate	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
EM2419119-008	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.019	0.019	0.0	0% - 50%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.006	0.008	28.1	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6182183)									
EM2418841-016	Rinsate	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EM2419473-006	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit



## Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6180626)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	123 mg/kg	101	70.0	130
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	1.23 mg/kg	67.9	50.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	113	70.0	130
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.9 mg/kg	97.5	70.0	130
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.4 mg/kg	92.9	70.0	130
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	102	70.0	130
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	77.6	70.0	130
EA029-A: pH Measurements (QCLot: 6188116)								
EA029: pH KCl (23A)	----	0.1	pH Unit	<0.1	4.7 pH Unit	99.4	70.0	130
EA029: pH OX (23B)	----	0.1	pH Unit	<0.1	4.5 pH Unit	104	70.0	130
EA029-B: Acidity Trail (QCLot: 6188116)								
EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	23.5 mole H+ / t	106	70.0	130
EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	46.5 mole H+ / t	93.6	70.0	130
EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	----	----	----	----
EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029-C: Sulfur Trail (QCLot: 6188116)								
EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	0.04 % S	99.2	70.0	130
EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	0.105 % S	89.5	70.0	130
EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	----	----	----	----
EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	----	----	----	----
EA029-D: Calcium Values (QCLot: 6188116)								
EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	<0.020	0.108 % Ca	98.8	70.0	130
EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	<0.020	0.1 % Ca	103	70.0	130
EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	----	----	----	----
EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	----	----	----	----
EA029-E: Magnesium Values (QCLot: 6188116)								
EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	0.086 % Mg	86.4	70.0	130



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low      High	
Method: Compound	CAS Number	LOR	Unit	Result				
EA029-E: Magnesium Values (QCLot: 6188116) - continued								
EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	<0.020	0.089 % Mg	103	70.0	130
EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	----	----	----	----
EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	----	----	----	----
EA029-H: Acid Base Accounting (QCLot: 6188116)								
EA029: ANC Fineness Factor	----	0.5	-	<0.5	----	----	----	----
EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate	----	1	kg CaCO3/t	<1	----	----	----	----
EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6180625)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.64 mg/kg	102	69.0	128
EP068A: Organochlorine Pesticides (OC) (QCLot: 6170630)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	107	71.8	126
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	105	72.2	125
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	108	70.0	124
EP068: gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	103	69.1	124
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	107	69.2	125
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	107	66.6	122
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	105	68.8	123
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	106	67.2	124
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	106	66.0	126
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.6	70.2	126
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	105	72.1	124
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	105	68.0	122
EP068: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	106	68.9	124
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	110	55.8	130
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	108	67.9	124
EP068: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	103	72.0	127
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	102	66.3	131
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.7	62.4	131
EP068: 4,4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	101	55.4	130



Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EG020T: Total Metals by ICP-MS (QC Lot: 6184126)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	104	89.2	110
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	88.4	86.4	115
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	101	89.0	112
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	99.5	88.3	111
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	101	88.3	112
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	96.6	88.8	113
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	103	90.0	115

**EG035T: Total Recoverable Mercury by FIMS (QCLot: 6182183)**



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) LowHigh	
Method: Compound	CAS Number	LOR	Unit	Result				
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6182183) - continued								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	90.3	73.4	119

## Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6180626)							
EM2418841-003	#3	EG005T: Arsenic	7440-38-2	50 mg/kg	102	78.0	124
		EG005T: Cadmium	7440-43-9	50 mg/kg	101	79.7	116
		EG005T: Chromium	7440-47-3	50 mg/kg	99.9	79.0	121
		EG005T: Copper	7440-50-8	250 mg/kg	103	80.0	120
		EG005T: Lead	7439-92-1	250 mg/kg	99.4	80.0	120
		EG005T: Nickel	7440-02-0	50 mg/kg	99.5	78.0	120
		EG005T: Zinc	7440-66-6	250 mg/kg	94.5	80.0	120
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6180625)							
EM2418841-003	#3	EG035T: Mercury	7439-97-6	0.5 mg/kg	111	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 6170630)							
EM2418841-003	#3	EP068: gamma-BHC - (Lindane)	58-89-9	0.5 mg/kg	105	51.4	139
		EP068: Heptachlor	76-44-8	0.5 mg/kg	101	49.1	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	103	38.4	135
		EP068: Dieldrin	60-57-1	0.5 mg/kg	108	58.4	136
		EP068: Endrin	72-20-8	0.5 mg/kg	120	33.0	146
		EP068: 4,4'-DDT	50-29-3	0.5 mg/kg	90.5	20.0	133
EP068B: Organophosphorus Pesticides (OP) (QCLot: 6170630)							
EM2418841-003	#3	EP068: Diazinon	333-41-5	0.5 mg/kg	104	65.1	135
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	106	56.3	127
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	102	55.0	133
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	101	55.1	133
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	85.9	43.8	128

Sub-Matrix: **WATER**

Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 6184126)							
EM2418841-016	Rinsate	EG020A-T: Arsenic	7440-38-2	1 mg/L	100	82.0	123



Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 6184126) - continued							
EM2418841-016	Rinsate	EG020A-T: Cadmium	7440-43-9	0.25 mg/L	88.0	81.8	123
		EG020A-T: Chromium	7440-47-3	1 mg/L	103	78.9	119
		EG020A-T: Copper	7440-50-8	1 mg/L	99.5	80.4	118
		EG020A-T: Lead	7439-92-1	1 mg/L	105	80.5	121
		EG020A-T: Nickel	7440-02-0	1 mg/L	97.1	80.0	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	98.2	74.0	120
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6182183)							
EM2419303-007	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	85.9	70.0	130



File No. *M 357.*DEPARTMENT OF MINES, TASMANIANAME OR SUBJECT: *MET. WATER BOARD*ADDRESS: *BRIDGEWATER**Formerly SOUTHERN REGIONAL WATER SUPPLY*  
*(S 304)**Doc/17/5235*

Department of Mines

Tasmania

Date 22 / 5 / 1963 .

MEMORANDUM

For the Director of Mines, Hobart.  
From the Inspector of Explosives, ..... *Shepard* .....

Record of Inspection of Installation

Premises of: *S.R.W.S. Bridgewater.*

Known as:

Oil Company: *Gallex.*

Date of Approval: *18/4/63.*

Date of inspection: *21/5/63.*

Finding: ~~Unsuitable~~  
Suitable ) for licensing

Pump Outfit ~~Package Storage Area~~:

Variation from Approval:

Application Form: Left with occupier/Forwarded herewith.

Amount of Fee advised: Yes/~~No~~

..... *Shepard* .....  
INSPECTOR OF EXPLOSIVES





043 14  
**CALTEX OIL**



**(AUSTRALIA) PTY. LIMITED**  
INC. IN N.S.W.

63 SALAMANCA PLACE - - - - - HOBART, TASMANIA  
BOX 172 C, G.P.O. HOBART - PHONE: B 2761 - TELEGRAMS: 'CALTEX'

In reply please quote: **AJW.BS**

17th April 1963.



The Director,  
Department of Mines,  
Box 124B G.P.O.,  
HOBART.

Dear Sir,

We enclose plans and application fee (£1/-/-),  
requesting approval to re-locate one single manual  
pump and install 1000-gallon tank for the  
Metropolitan Water Commission (formerly known as  
S.R.W.S.), Bridgewater.

Yours very truly,

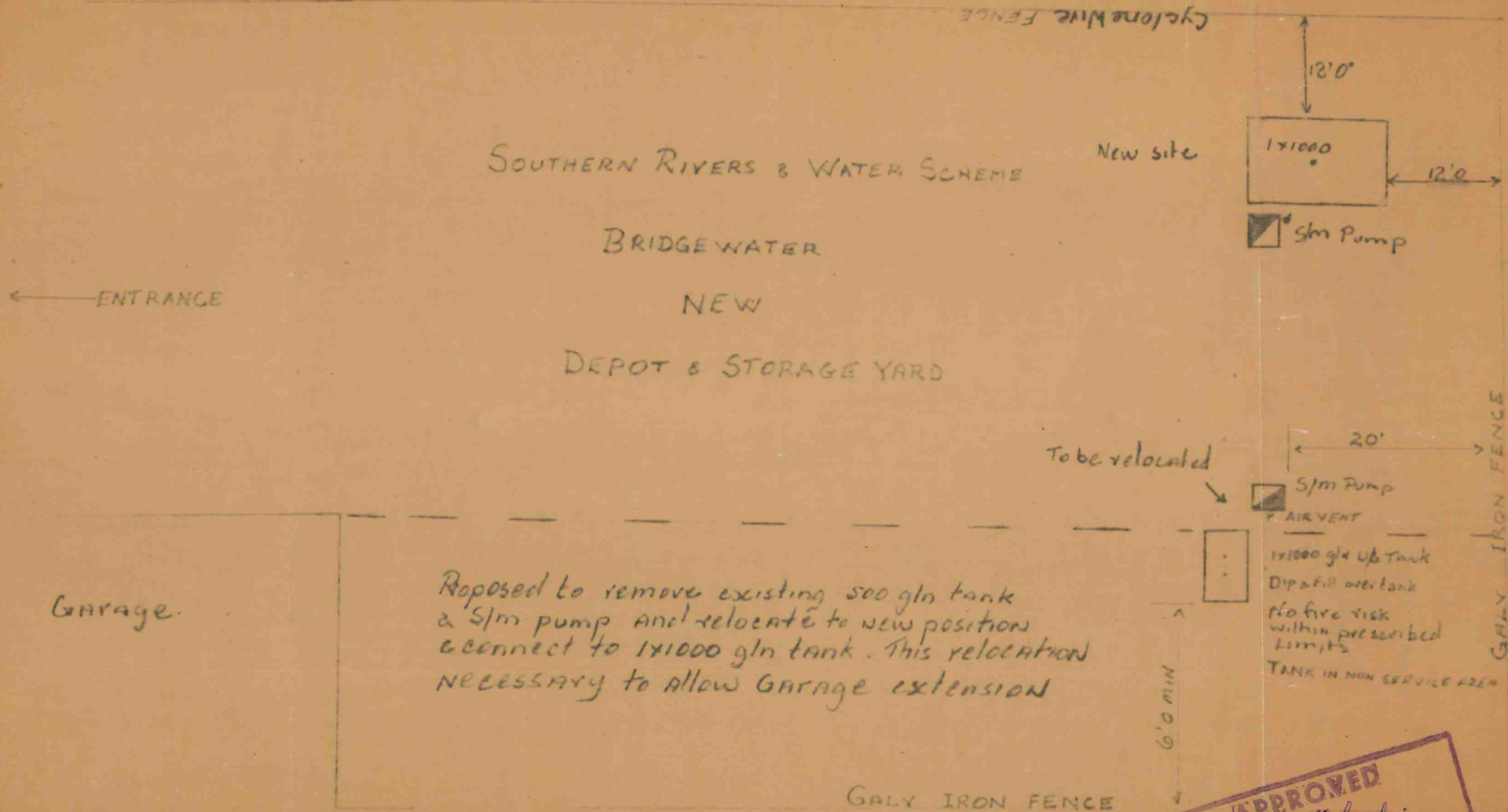
CALTEX OIL (AUST) PTY. LIMITED

*S.H. Gregg*  
S.H. Gregg  
Manager.

Encls.

CALTEX OIL (AUSTRALIA) PTY. LIMITED  
PLACE HOBART

DISTRICT TASMANIA



APPROVED  
Inspector of Explosives  
18 APR 1963

Subject SRWS BRIDGE WATER

DATE 20/07/60 Revised 17/4/63.  
DRAWN BY ASH

Sketch No.

21595  
18/4/63



P1120

Department of Mines  
Tasmania

Date 15 JUL 1960

MEMORANDUM

For the Director of Mines, Hobart.  
From the Inspector of Explosives

Hobart.

Record of Inspection of Installation

Premises of: Southern Regional Water Scheme (SRWS)  
Bridgewater.

Known as:

Oil Company: GalTex.

Date of Approval 31 May 60.

Date of Inspection 14-7-60.

Finding

~~Unsuitable~~  
Suitable )

for Licensing

Pump Outfit ~~Package Storage Area:~~

Variation from Approval:

Application Form:

Left with occupier/~~Forwarded here-~~  
with

Amount of Fee advised:

Yes/~~No~~

A. D. Has.

INSPECTOR OF EXPLOSIVES



*Gallex Oil (Inst) P/W.*  
*Nobart.*

31 MAY 1960

Dear Sir,

INFLAMMABLE LIQUIDS ACT, 1929

Permission is hereby granted for the following installation provided that it be in accordance with the approved drawings and that the requirements of the above Act and Regulations be complied with:-

On the premises of: *Southern Rivers & Water Scheme.*  
*Bridgewater.*

Kerbside Pumps: *One single manual*

Underground Tanks: *1* x *500* gallons  
x gallons


Other Tanks:

Package Storage Area x gallons/feet  
x gallons/feet

Other Installations:

Please advise when the installation is completed.

Yours faithfully,

  
(J. G. Symons)  
DIRECTOR OF MINES  
AND  
CHIEF INSPECTOR OF EXPLOSIVES.

Stencil No. 011

x Insert name of  
owner or proprietor  
of premises

x RIVERS AND WATER SUPPLY COMMISSION  
I \_\_\_\_\_

x Postal  
Address

x 174 Lincolne St.  
\_\_\_\_\_

hereby agree to CALTEX OIL (AUST.) PTY. LTD.

x Number and type  
of pump/s

installating <sup>x</sup> One Pump/s

x Number and  
Capacity of tanks

and <sup>x</sup> 500 Gallon Underground  
tank/s

x Address of  
premises

at my premises situated at <sup>x</sup> \_\_\_\_\_  
Cottrell Hill Road Bridgewater

RIVERS AND WATER SUPPLY COMMISSION

Signed

W. Gallacher

Date

27-4-60

To the Chief Inspector of Explosives,  
P.O. Box 177E,  
HOBART.  
Tasmania.



# CALTEX OIL



**(AUSTRALIA) PTY. LIMITED**  
INC. IN N.S.W.

In reply please quote: **AJW.ALG**

63 SALAMANCA PLACE - - - - - HOBART, TASMANIA  
BOX 172 C. G.P.O. HOBART - PHONE: B 2761 - TELEGRAMS: 'CALTEX'

May 30, 1960.

PROF M	S & A	CG	CC & M	ACIM & E
RECEIVED				REGISTER
ANSWERED				E & H
DEPT. OF MINES				
REF. NO. 2040/60				

*KDS*

Director,  
Department of Mines and Explosives,  
Box 177E, G.P.O.  
HOBART.

Dear Sir,

We attach plans requesting approval to relocate the present  
1 x 500 gallon tank and S/M pump installed at the S.R.W.S.  
Bridgewater to new site on Cobbs Hill Road, Bridgewater.

Yours very truly,

CALTEX OIL (AUSTRALIA) PTY. LIMITED.

*H.M. Bateman*

H.M. Bateman,  
District Manager. *H.M.*

Encl. <sup>4</sup> B.



CALTEX OIL (AUSTRALIA) PTY. LIMITED

PLACE HOBART

DISTRICT ENGINEER

DOF M	S. A.	S. G.	CC. & M.	AD. & M.
31 MAY 1960				
RECEIVED	DEPT. OF MINES			
ANSWERED	REF. NO.			

# SOUTHERN RIVERS & WATER SCHEME

BRIDGE WATER

NEW

DEPOT & STORAGE YARD

ENTRANCE

GALV IRON FENCE

S/m Pump  
AIR VENT

14500 gal Up Tank  
Dip & Fill over tank  
No fire risk  
within prescribed  
limits

TANK IN NON SERVICE AREA

6'0" MIN

GALV IRON FENCE

GALV IRON FENCE

APPROVED  
*Bill Seal*  
Inspector of Explosives  
31 MAY 1960

Subject S.R.W.S. BRIDGE WATER

SCALE MEAS AS SHOWN  
DATE 30/5/60  
DRAWN BY ASH

Sketch No.



Correspondence: <i>P120</i>	Licence No. <i>2869</i>	Initials
	Certificate of Registration	
	Receipt No. <i>9090</i>	
	Amount of Cash Received <i>£1-5-0</i>	
	Date Received <i>23/7/57</i>	<i>1/26</i>

## MEMORANDUM

Department of Mines,

Hobart,

1 JUL 1957

*3/57* Please note that your Licence Certificate of Registration, under the provisions of the Inflammable Liquids Act 1929 in respect of the storage of Petrol, Kerosene, or Carbide of Calcium, expired on the 30th June last.

If you desire the registration renewed, please fill in the form of application hereunder, and return it to me with the prescribed fee.

Any person keeping Inflammable Liquid, except in Licensed or Registered Premises, is liable to a penalty of Fifty Pounds (£50).

J. G. SYMONS,

Director of Mines.

*P.W. Dept.*  
*Davey St*  
*Hobart.*

DEPM	S&A	CG	CC&M	ACIM&E
RECEIVED				REGISTRAR
23 JUL 1957				E & I
ANSWERED				
DEPT. OF MINES				
REF. NO.				

## THE INFLAMMABLE LIQUIDS ACT 1929

## APPLICATION FOR RENEWAL

I, *Public Works Dept* of *Hobart* hereby apply to have the registration of my premises, situate at *Bridgewater* renewed under the provisions of the Inflammable Liquids Act 1929 in respect to the storage of *mineral spirit* and forward herewith the fee.

## REGISTERED QUANTITIES

Fee Paid *£1/5/-*  
Mineral Spirit *2/500* gallons  
Mineral Oil *—* gallons  
Carbide of Calcium *—* lbs.

\* Strike out which does not apply.

## QUANTITIES TO BE REGISTERED

(To be filled in)

Mineral Spirit *5-00* gallons  
Mineral Oil *—* gallons  
Carbide of Calcium *—* lbs.

\*Mr. *[Signature]*  
Signature: \*Mrs. *[Signature]*  
\*Miss *[Signature]*

HYDRAULIC ENGINEER

Date of Application *11 JUL 1957*

Mineral Spirit relates to Petrols, &c., with a flash point of 73°F. or less.

Mineral Oil relates to Kerosene, &c., with a flash point of above 73°F. and less than 150°F.

In the case of Petrol Pumps, please furnish particulars of tanks installed and in use.

Total number of underground tanks on premises	Capacity of each tank	Number of tanks in use

District Inspector's recommendation:

Note.—Cheques, postal notes, or money-orders should be made payable to the Director of Mines. If bank notes are forwarded by post, the letter should be registered. Stamps will not be accepted in payment.



In mine Dept. with blue

# TASMANIA

Department of Mines, Magazines, and Explosives, Hobart

## FORM C

(Regulation 147)

The Inflammable Liquids Act 1929

2093  
8396  
- 12/6  
30/5/57 } 26

A120

### Application for Licence for Underground Tank

1. Applicant's full name Southern Regional Water Supply
2. Applicant's calling or occupation P.W.D.
3. Applicant's postal address Bridgewater
4. Date of installation August 1955
5. Situation of store to be licensed Parking yard.
6. Name of municipality, town, or township within which, or within 5 miles of which, the store is situated Bridgewater (mun. of Brighton)
7. Total quantity (in gallons) of mineral spirit (petrol, &c.) to be stored 500
8. Number of tanks to be installed one
9. Total number of tanks installed one
10. Is tank or pump inside any building? no
11. If so, state construction of building? —
12. How near is the nearest protected works? —
13. Have you provided approved fire-extinguishers? yes
14. Is each depot so situated as not to be within 50 feet of any fire, forge, furnace, explosive, highly inflammable substance, or other source of danger? no
15. Is each tank at least 2 feet underground? yes
16. Are all tank vents clear above building, or 12 feet above ground where in the open? yes
17. Has your installation been approved by an inspector? yes
18. Has the necessary authority for the installation been obtained from the municipal council? yes
19. Name of maker of tank and pump CALTEX
20. Capacity of tank 500 gals
21. Are all junctions of electric wires in gas tight junction-boxes? no wires
22. Are all switches and fuses a safe distance from pump? yes
23. Have you attached approved notices, "No smoking—Stop your Engine," to pump-heads? yes

I declare that the above statements and answers are true to the best of my knowledge and belief.

Signed

**SRWS**

*How the best*

Dated this seventeenth day of MAY Resident Engineer, 1957.

(This application, with a fee of HALF YEAR 12/6 to be forwarded to Director of Mines, Hobart)



20 August, 1964

*Don't forget voucher.*

*manual 100*

Dear Sir,

Permission is granted for the installation of a single manual Caltex pump with one 500-gallon underground tank at the premises of the Public Works Department, at Bridgewater, conditionally that the outfit is sited in accordance with the submitted sketch and is installed to conform with the provisions of the Inflammable Liquids Act.

Please advise when the installation is completed

Yours faithfully

*DB*

INSPECTOR OF EXPLOSIVES

The Manager  
Caltex Oil Aust., Pty., Ltd.,  
63 Salamanca Place  
HOBART

*Request to you for 12/6*  
*15.5.57*

# Schedule

1. INSTALL SINGLE MANUAL PUMP COUPLED TO 1X500 GALL TANK
2. FILL AND DIP BATH OVER TANK
3. STANDARD COVER BOX ON DIP + FILL
4. NO FIRE RISK WITHIN 50'
5. PUMP INSTALLED ON RAISED CONCRETE ISLAND

CALTEX OIL (AUST) PTY. LTD.

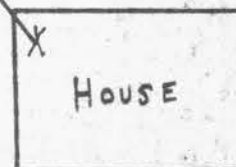
P.W.D. BRIDGEWATER

SCALE 1" = 10'

DATE 11-8-54

DRAWN BY R.L.B

CHIMNEY



WOODEN SHED.

WOODEN SHED

52'

AIR VENT  
X  
DIP  
X  
FILL  
X

38'

NON SERVICE AREA.

Approved D Besford

Inspector of Explosives

19/8/54

P.W.D. PRIVATE ROAD

P.W.D. PROPERTY

MAIN HIGHWAY



## *Search Results (Names Associated With Site)*

---

**Site ID:** 1455

**Address:** 2-4 Cobbs Hill Rd  
Bridgewater 7030

**File Number:** M357

**Held By:** Workplace Standards Tasmania

**File From:** 1954 **To:** 1963

**Location Status:** Confirmed

**PID:** 7834374

**Comments:** Depot and storage yard. Address supplied by Council.

### ***Names Associated With Site:***

Metropolitan Water Board

Southern Regional Water Supply

Public Works Department

Caltex

UST/s