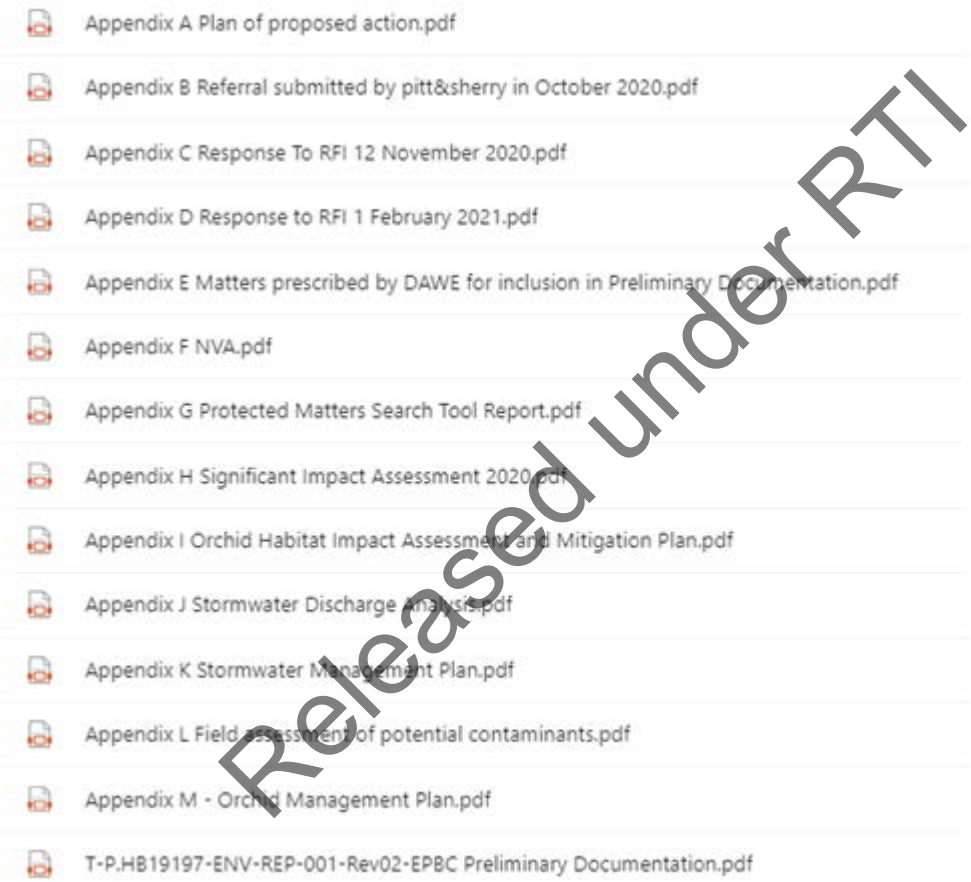
From: s 36
To: [redacted]
Subject: RE: NBES visit
Date: Monday, 17 April 2023 10:24:54 PM
Attachments: image001.png
s 38 [redacted]

Hi [redacted]

The snapshot below lists the documents that we submitted as our "Preliminary Documentation" in February 2022. I have added commentary on s 36 questions in red next to the question. Within reason we should provide s 36 with all documentation that she asks for. It is in the public domain and can be accessed through the EPBCwebsite, s 39 [redacted]



Regards

s 36 [redacted]

Principal Engineer

s 36 [redacted]

Hobart Office — Level 1, Surrey House, 199 Macquarie Street
PO Box 94 Hobart Tasmania 7001 | s 36 [redacted]

pittsh.com.au

From: [redacted]@stategrowth.tas.gov.au>
Sent: Monday, 17 April 2023 3:43 PM
To: s 36 [redacted]@pittsh.com.au>
Subject: FW: NBES visit

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi s 36 [redacted]

Can you assist me in responding to s 36 [redacted] questions below?

Thanks,

[redacted]
Programming and Delivery | Department of State Growth
4 Salamanca Place, Hobart TAS 7000 | GPO Box 536, Hobart TAS 7001
[redacted] | s 36 [redacted]
www.stategrowth.tas.gov.au

Courage to make a difference through
TEAMWORK | INTEGRITY | RESPECT | EXCELLENCE

In recognition of the deep history and culture of this island, I acknowledge and pay my respects to all Tasmanian Aboriginal people; the past, and present custodians of the Land.

Please note I do not work Fridays.

From: s 36 [redacted]>
Sent: Wednesday, 12 April 2023 10:11 AM
To: [redacted]@stategrowth.tas.gov.au>; [redacted] [redacted]@stategrowth.tas.gov.au>; s 36 [redacted]
Cc: s [redacted]
Subject: RE: NBES visit

Good morning [redacted] and everyone, I hope you all had a good Easter break.

Thanks for your email [redacted]. Please can you send me

1. Your responses to my questions in the attachment to my email of Wed 22nd March (See sheet 4 titled Qns from s36 [redacted] to DSG, especially see columns C and G). As noted in that spreadsheet, this needs to include all NBES documents (that s 36 [redacted] noted are critical that I see), some of which are likely included in the list below (but there may be more).

   Quite a lot of this will need to be updated (not significantly) and we need to complete our habitat assessment ahead of determining the parameters of the Offset Area. We also need to obtain s 36 [redacted] approval of the Orchid Management Plan (Offset Mangement Plan) and agreement for it to be implemented on Milford. Recognising this we can provide all of these documents to s 36 s 39 [redacted]

s 39 [redacted] the documents are subject to review and amendment following completion of the habitat assessment for the Offset Area.

2. Your prioritisation of the 32 questions that you have sent to me (from Jan up to 22nd March), which are in the first 3 sheets of the same xls spreadsheet.

3. A copy of the strategic analysis undertaken to identify potential offset areas to the loss of habitat resulting from the works. -Rep-001-Rev02

   DCCEEW require the Department to prepare and Offset Strategy. This is work in progress and cannot be completed until we have carried out the Habitat assessment for the proposed Offset area. Our initial high level analysis indicates that the proposed Offset Area (Unit 4 on Milford) with an area of approximately 6 Ha is significantly larger than would be required using the DCCEEW Offset assessment Guide

4. A copy of the avoidance, mitigation measures and assessment that have been applied, which should also include the reasons why an impact couldn't be avoided entirely.

   These matters are addressed in the Section 8 of the Referral report T-P-HB19197-Env-EPBC Preliminary Documentation listed above and also attached, so that should probably also be supplied to s 36 [redacted] noting that it does need updating as it was written before the requirement for the Offset was mandated by DCCEEW.

5. A copy of the offset spreadsheet and supporting notes that define and/describe the site quality, condition and context parameters that were used to determine the offset area.
   We are still working on this, and it relies on the Habitat Assessment before it can be completed. Note also that we have the proposed 4th May meeting with DCCEEW to clarify aspects of the Habitat Assessment Methodology. The assessment methodology as it stands could be provided to s 36 [redacted] noting also that it is subject to change following the meeting with DCCEEW. The methodology as proposed by s 36 [redacted] is contained in the email that s 36 [redacted] sent to you on 14th March. Note that s 36 [redacted] is proposing increasing the plot size within the 50 m grids from 5m x 5m to 10 m x 10 m which results in 4 times as many samples being taken

6. A copy of the Environmental Impact Assessment.

   That is Appendix H above

Regarding the location of the fire/service access trail, all this area of Milford Forest is defined as habitat, so whether you move the trail to just inside the new boundary fence (which will result in even more tree loss and thus greater impact on the orchids etc) or leave it where it was marked out 18 or so months ago (which as already noted was specifically determined to minimise tree loss and impact on the orchids, and was previously agreed on) will not change the area of the fire/service access trail and its immediately affected habitat. As discussed we will put it where it was marked out 18 months ago.

If you move it however, it will cost more (more clearing, tree felling etc), and increase the environmental impact on surrounding habitat, and that will need to be reflected in the Environmental Impact Assessment.

Thank you – s 36 [redacted]

Attachment 1

pitt&sherry

EPBC Act Referral 2020/8805

ASSESSMENT BY PRELIMINARY DOCUMENTATION

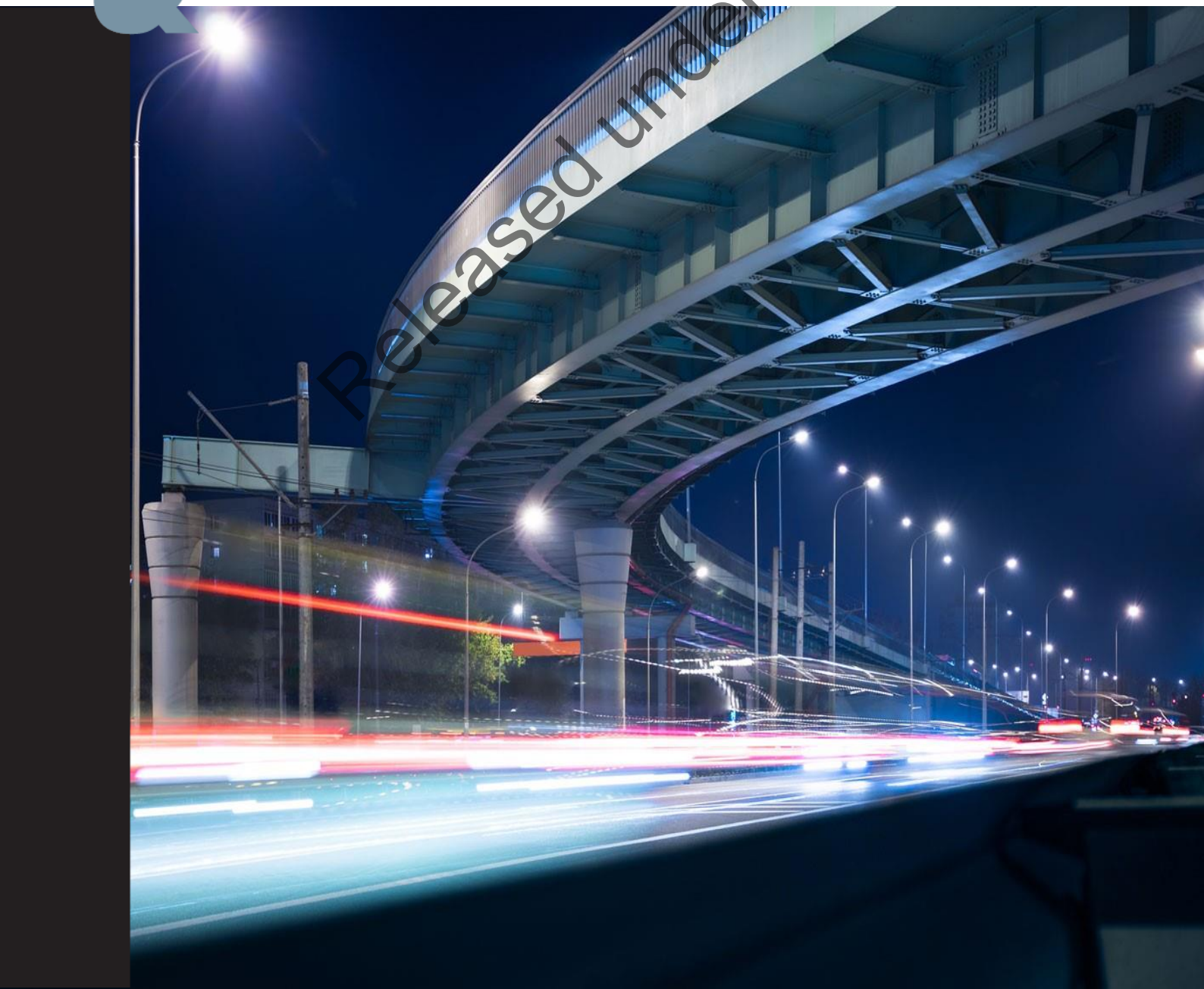
Tasman Highway Upgrade
Hobart Airport to Midway Point Causeway

Prepared for
Department of State Growth

Client representative
[redacted]

Date
25 February 2022

Rev 02



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Prepared by — s36	s36	**Date — 24 February 2022**
Reviewed by — s36	s36	**Date — 24 February 2022**
Authorised by — s36	s36	**Date — 24 February 2022**

Revision History

Rev No.	Description	Prepared by	Reviewed by	Authorised by	Date
A	Draft for client review	s36			5/07/2021
00	Final for submission	s36			19/07/21
01	Revised with DAWE requirements	s36			15/10/21
02	Revised with DAWE requirements	s36			24/02/22

List of abbreviations

Term	Meaning
DAWE	Department of Agriculture, Water and the Environment
DSG	Department of State Growth
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
MNES	Matters of National Environmental Significance
MUSIC	Model for Urban Stormwater Improvement Conceptualisation
NBES	North Barker Ecosystem Services
NVA	Natural Values Assessment
SETS	South East Traffic Solution

1. Introduction

The Tasmanian Government is proposing to upgrade the Tasman Highway between Hobart Airport and the Midway Point Causeway. The Sorell area, 27 km north-east of Hobart, is the leading population growth area in Tasmania's south. The Department of State Growth (DSG) is developing a series of road upgrades to help maintain the livability of Sorell and the Southern Beaches. This program, the South East Traffic Solution (SETS), aims to improve traffic flow within the Tasman Highway corridor between Hobart Airport and Sorell, through a more efficient and safer road network.

A locality map (Figure 1) shows the development footprint. A detailed plan showing the extent of the works in relation to the current property boundary and the airport interchange road works occurring to the west, is included with the proposed road upgrade design plans in Appendix A.

The existing Tasman Highway alignment between Hobart and Sorell has reached capacity. The proposed improvements will widen the Tasman Highway between Hobart Airport and Pittwater Bluff (the start of the first causeway linking to Sorell) to two lanes in each direction. This 2.7 km section of the Tasman Highway is currently a single carriageway with three public access points at Barilla Bay Oysters and the Tasmanian Golf Club on the northern side, and at Pittwater Road on the southern side. There is also a private access to the Milford property, a large private land holding to the south of the highway.

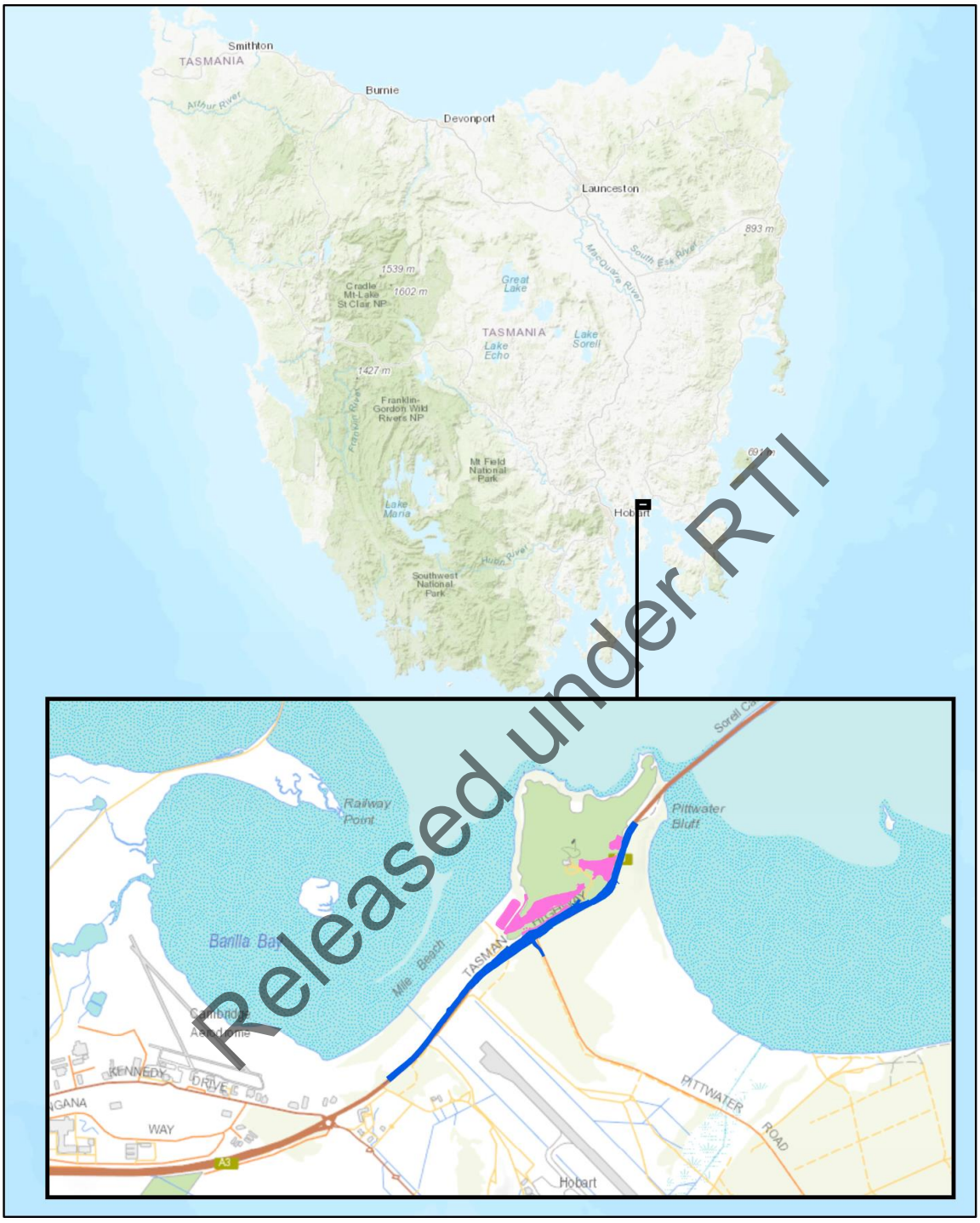
The proposed action includes:

- Widening the Tasman Highway to four lanes between the eastern end of the Hobart Airport interchange road works and a point approximately 300 m south-west of the Midway Point causeway
- Improving access to and from the three main traffic generators on this section of the highway – Barilla Bay Oysters, Pittwater Road and the Tasmania Golf Club, including:
    - A new signalised intersection at Pittwater Road
    - New access roads for the oyster farm and golf club (minor two-lane, sealed roads, running parallel to the northern side of the new highway alignment)
- Providing shared walking/cycling paths on the northern side of the highway (to ensure continuity along the highway, walkers and cyclists will also be able to use the new access road between the oyster farm and the highway)
- Minor realignment of the water main access track at and adjacent the access to the Milford property from Pittwater Road
- Realignment of internal access tracks on the Milford property; and
- Redevelopment of a portion of the Tasmanian Golf Club to accommodate land acquisition for the road.

The upgraded highway will have an 80 km/h design speed. Acquisition of land is required on each side of the existing road alignment and has necessitated the reconfiguration of part of the Tasmania Golf Course. The golf course works are subject to a separate Council approval process and do not impact any Matters of National Environmental Significance (MNES).

A strip of land to the south of the existing road will also be acquired to accommodate the proposed action. The property that contains this strip of land provides habitat for threatened orchid species listed under State and Commonwealth legislation. This preliminary documentation relates to the assessment of impacts on these orchid species and their potential habitats. A plan showing the proposed location of the new boundary and the adjacent road works is provided at Figure 2.

The total area of the proposed action footprint is 17.3 ha. The road works cover an area of 8.9 ha. Redevelopment works on the golf course covers an additional area of 8.4 ha.



Department of State Growth

Hobart Airport to
Pittwater Bluff
Tasman HighwayUpgrade
Site locality

pitt&sherry

Legend

Proposed road works footprint

Proposed golf club works footprint

MAP REF	HB19197R1	**DATA SOURCES**	Base map from ESRI (locality) and The LIST (C) Tasmanian Gov Project data from pitt&sherry & Contour Golf
REVISION	A		
AUTHOR	klawrence		
DATE	8/07/2020		

N

0 15 30 60 Kilometers

Coordinate System: GDA 1994 MGA Zone 55

1:2,500,000 When Printed at A4

Figure 1: Locality map

Figure 2: Location of the new boundary on Milford property (red dashed line)

2. Background

A referral for the project (Referral 2020/8805) was submitted under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) on 1 October 2020 (Appendix B). A request for further information (RFI) was issued on 30 October 2020 seeking

> "*An assessment of the likelihood of presence of the Sagg Spider-orchid (*Caladenia saggicola*), Milford Leek-orchid (*Prasophyllum milfordense*) and/or Tailed Spider-orchid (*Caladenia caudata*), or suitable habitat for these species, in the patch of* Eucalyptus viminalis – E. globulus *coastal forest and woodland (TASVEG Code DVC) within Commonwealth Land on the western side of Pittwater Road*".

A response to the RFI was provided to the Department of Agriculture, Water and the Environment (DAWE) on 12 November 2020 (Appendix C), which indicated that additional orchid survey was proposed for November 2020. DAWE issued a subsequent RFI requesting that the results of the further survey be provided and seeking clarification of the context of the proposed action in relation to other potential actions in the locality. A response to the second RFI (Appendix D) was provided on 1 February 2021 and a decision made on 8 February 2021 that the proposed action is a Controlled Action and will be assessed by preliminary documentation. It was indicated at that time that further information would be required.

The proposed action requires approval under the *Land Use Planning and Assessment Act 1993* but does not require assessment by the Tasmanian Environment Protection Authority under the *Environmental Management and Pollution Control Act 1994*. There is, therefore, no opportunity to assess the project under the Bilateral Agreement between the Tasmanian and Commonwealth Governments.

3. Controlling provisions

The proposed activity is a Controlled Action with the relevant controlling provision being:

- Listed threatened species and communities (Section 18 and Section 18A) protected under Part 3 of the EPBC Act.

The species subject to additional assessment in this preliminary documentation are outlined in Table 1.

Table 1: Species subject to assessment

Species	Status	Comment
Prasophyllum milfordense Milford leek-orchid	Critically Endangered	Development is adjacent to the only known population.
Caladenia saggicola Sagg spider-orchid	Critically Endangered	Development is adjacent to largest of only two known populations
Caladenia caudata Tailed spider-orchid	Vulnerable	Development is adjacent to a small population; one of 48 recorded in Tasmania[1].

[1] Threatened Species and Marine Section (2014). Listing Statement for *Caladenia caudata* (tailed spider-orchid). Department of Primary Industries, Parks, Water and Environment, Tasmania DPIPWE

4. Preliminary documentation

Advice received from DAWE on 17 February 2021 (Appendix E) highlighted the following matters to be addressed in this preliminary documentation:

a) a copy of all available Milford Leek-orchid, Sagg Spider-orchid, and Tailed Spider-orchid survey reports and records from within one kilometre of the proposed action.

b) a detailed assessment of the potential habitat value (for the Milford Leek-orchid, Sagg Spider-orchid, and Tailed Spider-orchid) of the land that may be directly or indirectly impacted by the action. This must include, but not be limited to, assessment of habitat including as it relates to soil, vegetation, ground and surface water, and life-history requirements of the orchid species' including for pollination and reproduction.

The information provided in this preliminary documentation typically relates to those portions of the project area where potential orchid habitat is located. Other general information is included where relevant for context, but the original referral documentation should be referenced for information relating to other aspects of the project. The preliminary documentation is also to include the matters outlined in Table 2. This table indicates where each matter is addressed in this report.

Table 2: Table of information in accordance with Appendix E

Matter	Requirement	Section of this report
General content, format and style		
• The best available scientific literature to be used • Relevant maps, plans, diagrams, and technical information to be included. Maps and diagrams must be clearly annotated, in colour and of high resolution • Details on relevant uncertainties, including whether impacts are unknown, unpredictable, or irreversible, as well as acceptability of the relevant impacts to MNES are to be included; and • References or other descriptive detail in relation to the information provided, including how recent the various pieces of information are, are to be provided.		Throughout
1 Description of the action		**5**
Location		5.1
Proposed works		5.2
Timing and duration		5.3
Ongoing operational requirements		5.4

Matter	Requirement	Section of this report
2 Description of the environment and matters of national environmental significance		**6**
Information that clarifies the Milford Leek-orchid (*Prasophyllum milfordense*), Sagg Spider-orchid (*Caladenia saggicola*) and Tailed Spider-orchid (*Caladenia caudata*) population distributions and habitat present on and adjacent to the project site. This must include:		
• A copy of all available Milford Leek-orchid, Sagg Spider-orchid, and Tailed Spider-orchid survey reports, and records from within 1 km of the action; and		6.3 and 6.4
• A detailed assessment of the potential habitat value (for the Milford Leek-orchid, Sagg Spider-orchid, and Tailed Spider-orchid) of the land that may be directly or indirectly impacted by the action. This must include, but not be limited to, assessment of habitat including as it relates to soil, vegetation, ground and surface water, and life-history requirements of the orchid species' including for pollination and reproduction.		6.5
3 Relevant impacts		**7**
An assessment of potential impacts (including direct, indirect, facilitated, and cumulative impacts) that may occur as a result of all elements and project phases of the proposed action. This must include the following:		
• An assessment of any direct loss of habitat and/or individuals as a result of the proposed action		7.2
• An assessment of any potential indirect impacts resulting from the proposed action, including but not limited to any changes to habitat quality resulting from changes to hydrology and the introduction and/or spread of weeds		7.3
• An assessment of potential facilitated impacts as a result of the proposed action		7.4
• An assessment of the likely duration of all potential impacts as a result of the proposed action		7.6
• An assessment of whether impacts are likely to be repeated, for example as part of maintenance or upkeep; and		7.7
• A discussion of whether any impacts are likely to be unknown, unpredictable, or irreversible.		7.8
4 Proposed avoidance and mitigation measures		**8**
A detailed description of the avoidance and mitigation measures proposed, including: a. A statement of the objectives b. The policy basis for the measures c. The party responsible for implementing and funding each measure d. And locations and timing of each measure e. The ongoing management and monitoring plans f. Details of any measures to minimise weed introduction and spread, including discussion of what extent such measures will reduce the threats posed by edge effects and weed incursion g. Maps that illustrate the location of any proposed construction exclusion zones or buffer zones, and details on how these areas will be excluded or protected; and h. An assessment of the expected or predicted effectiveness of the measures proposed.		8.1 and 8.2

Matter	Requirement	Section of this report
A detailed monitoring and adaptive management plan that sets out the proposed approach to monitoring and responding to any impacts to the Milford Leek-orchid, Sagg Spider-orchid and Tailed Spider-orchid as a result of construction of the proposal. This must include, but not be limited to: a. Baseline species and habitat assessment b. Key species and habitat attributes that will be monitored during and following construction, including justification for selection of attributes c. Trigger points for actions to prevent further impacts or changes to habitat attributes if detected; and d. Actions to be taken in response to identified changes in species or habitat attributes.		8.2.2 Appendix M
5 Residual impacts/ proposed offsets		**9**
Describe the residual impacts on MNES that are likely to occur as a result of the proposed action in its entirety, after proposed avoidance and/or mitigation measures are taken into account. If applicable, this should include the reasons why avoidance or mitigation of impacts cannot be reasonably achieved.		
6 Other approvals and conditions		**10**
a. A description of any approval obtained or required to be obtained from a State or Commonwealth agency or authority (other than an approval under the EPBC Act) b. Any conditions that apply to the proposed action; and c. A description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the proposed action.		
7 Social and economic		**11**
The preliminary documentation must address the economic and social impacts (both positive and negative) of the proposed action. This may include: a. Details of public consultation activities and their outcomes; and b. Projected costs and benefits of the proposed action, including the basis for their estimation.		11
8 Environmental record of person proposing to take the action		**12**
9 Conclusion		**13**
Provide an overall conclusion as to the environmental acceptability of the proposal, including discussion on compliance with the principles of Ecologically Sustainable Development (ESD), and the objects and requirements of the EPBC Act.		

5. Description of the action

5.1 Location

The site of the proposed action comprises the current highway alignment plus 10 to 30 m of the immediately adjacent land, extending from the eastern end of the Hobart International Airport interchange upgrade works, through to just short of the Pittwater Bluff.

The proposed action is located approximately 15 km east of Hobart along the Tasman Highway, in the Tasmanian South East Bioregion. The site is adjacent the Tasmanian Golf Course and Barilla Bay Oysters on the northern side, with private property ('Milford') and the Hobart International Airport located on the southern side.

5.2 Proposed works

5.2.1 Road Construction

A typical cross section of the proposed highway upgrades is shown in Figure 3. The road will include a variable median strip containing a concrete or paved median with flexible safety barrier, four traffic lanes, with shoulders and verges on each side. A shared walking and cycling path is proposed on the northern side of the alignment. While excavations and fill will occur where necessary, the road construction will be comprised of two sub-base layers, a base layer and a two-coat spray seal (chip seal). Exposed batters and roadside drainage swales will be vegetated with a typical, weed-free grass mix.

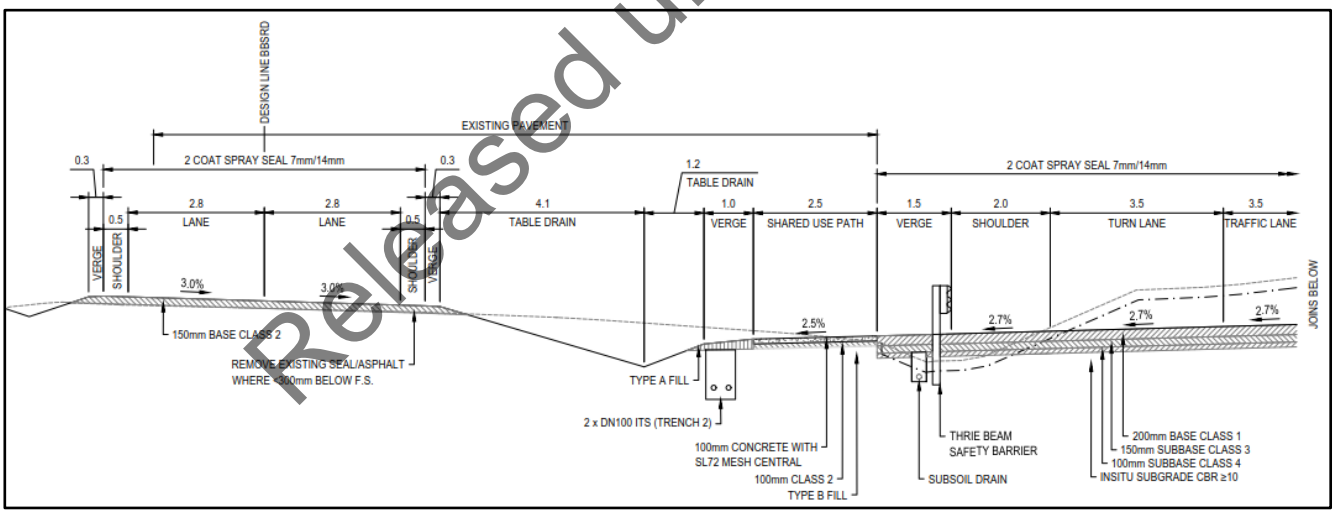


Figure 3: Typical cross section of road

5.2.2 Excavations, Retaining Walls, and Fences

The proposed excavations will be typical for road widening works and can be viewed in detail in the proposed plans at Appendix A. The typical cross section shown in Figure 4 shows the maximum depth of excavations for the roadworks will be 2.8 m at chainage 1620. These particular excavations will be located just west of Pittwater Road on the southern side of the Tasman Highway.

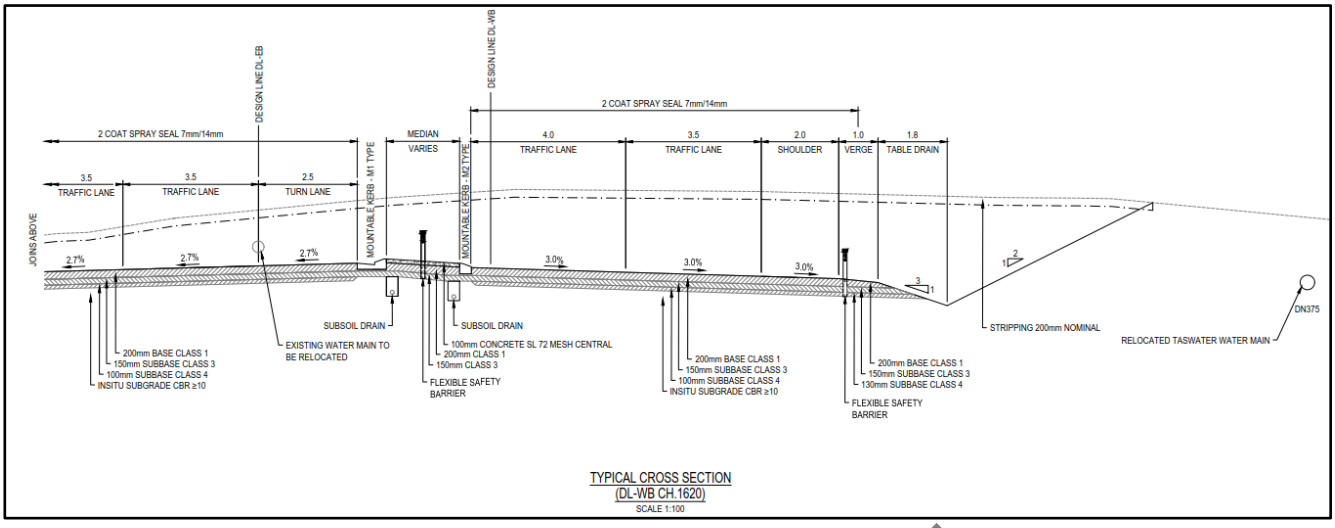


Figure 4: Typical cross section showing maximum depth of 2.8 metres

As shown in the plans at Appendix A, there will be two retaining walls, which will be constructed of Massbloc (interlocking blocks). The design of these walls is typical for major roads and will be maintained by DSG. The most significant retaining wall is located at the new junction for the Barilla Bay Oyster Farm, shown in red in Figure 5 below, and ranges in height from 1 m to 3.5 m, with a 1.1 m height chain mesh fence on top. This fence is located opposite Pittwater Road and will support the new access arrangements for the Barilla Bay Oyster Farm and the Tasmania Golf Course.

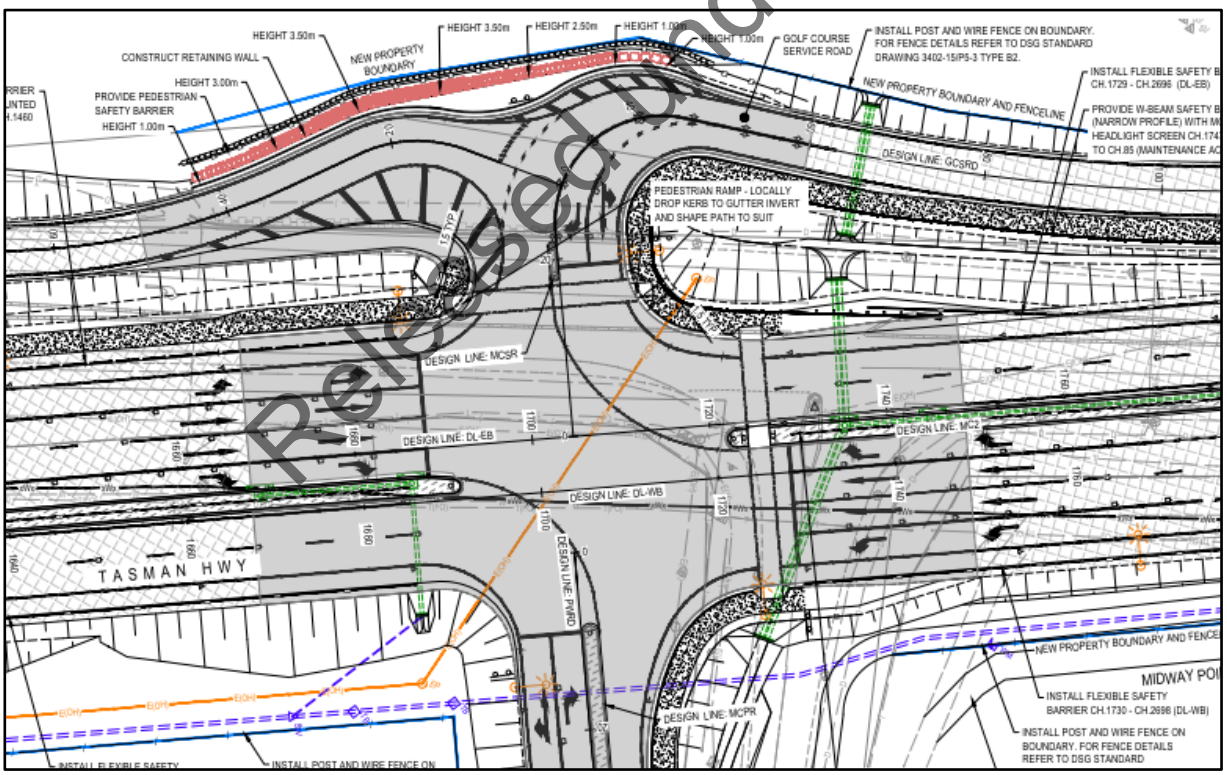


Figure 5: Retaining wall shown red

A section of water main access track on the corner of Pittwater Road and Tasman Highway is to be relocated within the new Milford property boundary. This track extends around the corner along Pittwater Road to the Milford access. This is shown in the detail from Sheet 1908 of the proposed plans (reproduced in Figure 6).

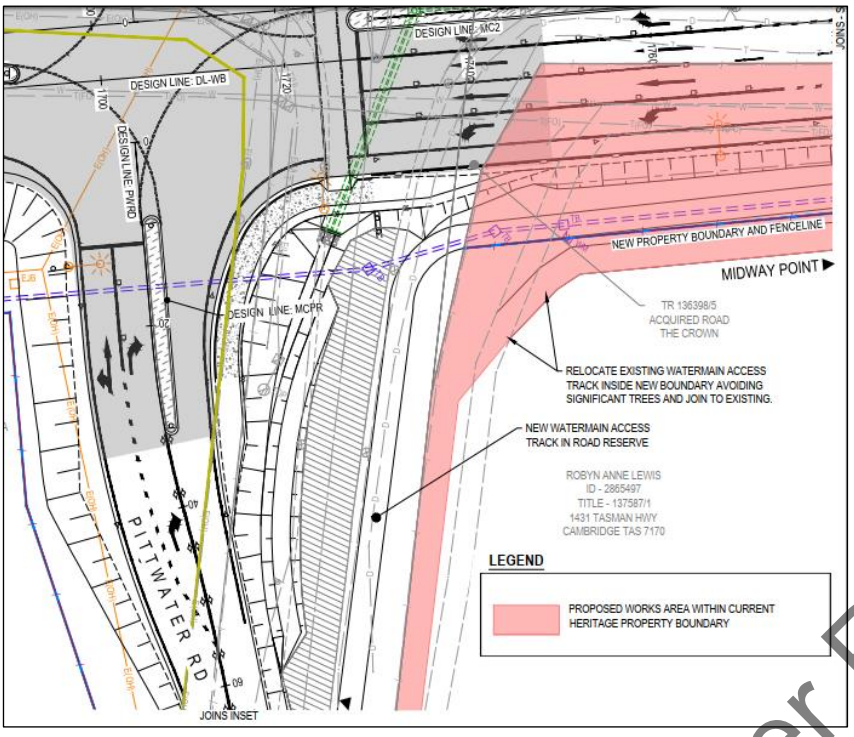


Figure 6: Proposed relocation of water main access track

Other than the abovementioned retaining walls and fences, new boundary fences will be:

- 1.2 m high rural post and wire fences; and
- One 1.8 m high modular fence coloured woodland grey for the purposes of maintaining privacy and reducing the noise of the highway near the golf course driving range (shown as the new property boundary and fence line on Sheets 1112 to 1113 of the proposed plans).

5.2.3 Stormwater Management

The new stormwater design is demonstrated in the detailed plans for the proposed roadworks and will convey stormwater runoff by gravity to existing points of discharge. The existing points of discharge include the following:

- Two western culverts discharging to a table drain along Pittwater Road. From the table drain, water pools in a shallow, hardened roadside pull over approximately 100 m down Pittwater Road. This overflows into the adjacent Milford property; and
- Two eastern culverts discharging into the southern roadside from where water percolates into the adjoining bushland.

The proposed action will require upgrades or reconstruction of the existing drainage. The proposed drainage upgrades reflect best practice Water Sensitive Urban Design Principles and will incorporate drainage swales. Drainage swales will be planted with a mix of grass species that does not include any weed species. The grass-lined drains will mitigate pollution and improve stormwater quality prior to discharging into Barilla Bay or onto vegetated areas. Water treatment is provided by the grass in the table drains and by infiltration into the subsoils.

Stormwater paths and discharge points will, for the most part, remain unchanged, following the natural terrain and topography of the site. At the Pittwater Road intersection, the existing drainage discharges stormwater water onto the Milford property near the south-east corner of the intersection. The proposed drainage conveys the stormwater further south before discharging stormwater to the table drain on the eastern side of Pittwater Road.

5.2.4 Land Acquisition

As the proposed works will traverse various private properties, DSG have negotiated with the affected landowners to acquire relevant portions of land for the proposed action. The new boundaries are shown in blue on the proposed plans at Appendix A.

5.3 Project timing

Key elements of the approvals and development process and the expected timing of each is outlined in Table 3.

Table 3: Estimated project timing

Stage	Anticipated timeframe
Assessment of a development application by Clarence Council	Approved by Council in September 2021 Appeal heard by Resource Management and Planning Appeals Tribunal in December 2021
Completion of the EPBC assessment	On-going
Acquisition of Commonwealth land	On-going
Call for tenders	Planned date for calling tenders mid-2022 (subject to approvals)
Anticipated construction	Works are anticipated to commence in late 2022 and be completed mid to late 2023 (subject to approvals)

5.4 Ongoing operational requirements

On-going operational requirements include management of road surfaces, roadside litter collection and weed management. Stormwater infrastructure will be maintained throughout the life of the project.

6. Description of the environment and matters of national environmental significance

The portion of the project area, where potential orchid habitat is present, includes roadside reserve and adjacent private land and Hobart Airport (Commonwealth land). The area is essentially flat, with gentle inclines at the northern end of the approaching Pittwater Bluff. The site extends from sea level to 20 m at Pittwater Bluff. The area is dry with average annual rainfall around 500 mm per year. The land uses of the broader area include protected native vegetation, recreational areas, transport corridor, open space, residential housing, and light industry.

A Natural Values Assessment (NVA) was prepared for the entire project area (including modifications to the adjacent golf course) by North Barker Ecosystem Services (NBES) in June 2020 (Appendix F). Observations of habitat suitability for terrestrial fauna were made concurrently with flora surveys. Specific surveys were conducted for avian fauna, specifically Tasmanian masked owl (*Tyto novaehollandiae castanops*). Suitable habitat for Tasmanian masked owls was assessed through a combination of ground-based and tree-based assessment.

The dominant native forest type through the project area is *Eucalyptus viminalis – Eucalyptus globulus* Coastal Forest. Where located on the Milford property. This community is dominated by mature trees of *E. viminalis,* with an intact and floristically diverse understorey. Disturbance has been minimal, and woody weed numbers are low and localised. The vegetation is dominated by mature hollow-bearing trees, with trunk diameters frequently exceeding 1 m. Some sections have a dense bracken understorey with less diversity in understorey species.

The areas within the Milford property closer to Pittwater Road are significant for the rich assemblage of orchids. The stand west of Pittwater Road within the Hobart Airport property is largely regenerating following previous disturbance. Eucalypts are younger and less frequent. There is prominent tall shrub /small tree layer dominated by black wattle (*Acacia mearnsii*).

6.1 Matters of national environmental significance

A report was generated using the Protected Matters Search Tool (July 2021 Appendix G). The results of this search are very similar to the previous search undertaken for the initial referral in June 2020. The new search contains one less threatened species and the MNES of relevance have not changed.

6.1.1 Threatened ecological communities

No vegetation communities recorded on site met the criteria to be considered as a threatened ecological community under the EPBC Act.

6.1.2 Threatened fauna

The NVA identified five fauna species listed under the EPBC Act for which potential habitat is present and which could be considered likely to occur in the vicinity:

- *Dasyurus maculatus* subsp. *maculatus*, spotted-tailed quoll (Vulnerable)
- *Dasyurus viverrinus*, Eastern quoll (Endangered)
- *Perameles gunnii*, Eastern barred bandicoot (Vulnerable)
- *Sarcophilus harrisii*, Tasmanian devil (Endangered); and
- *Tyto novaehollandiae* subsp. *castanops*, Tasmanian masked owl (Vulnerable).

A Significant Impact Assessment (NBES July 2020 Appendix H) was prepared for the proposed action. This assessment concluded there was no potential for significant impact on any of the vertebrate carnivores or Eastern barred bandicoot. The availability of habitat, and therefore potential for occurrence, for Tasmanian masked owl was assessed by surveying *E. viminalis* trees.

A total of 46 mature, potentially hollow-bearing trees are present across the entire project area, with 20 located within the road works footprint and 26 located within the golf course footprint. Based on inspection and nesting hollow criteria, 27 of these trees were considered to offer potential nesting habitat. However, no evidence of any nesting by this species was recorded during field surveys. It was also considered that impacts associated with construction noise would be consistent with the existing level of disturbance generated by the highway. Disturbance to a single pair, if present within the vicinity, was not considered likely to constitute a disruption to the population taken as a whole. No significant impact is considered likely.

6.1.3 Threatened flora

Three flora species listed under the EPBC Act are known to occur in the vicinity with no others are considered likely. These are:

- *Prasophyllum milfordense*, Milford leek-orchid (Critically Endangered)
- *Caladenia saggicola*, Sagg spider-orchid (Critically Endangered); and
- *Caladenia caudata*, Tailed spider-orchid (Vulnerable).

These species are considered in more detail in Section 0 and Section 7 of this preliminary documentation.

6.1.4 Ramsar wetlands

The Pitt Water – Orielton Lagoon is a Ramsar listed wetland located to the east of the proposed action. The proposed action is not within the Ramsar site, and the action is unlikely to have a direct impact on the site or the processes that maintain the site. No areas of the wetland are being destroyed or modified as a result of the proposed works. The discharge points of stormwater will remain unchanged in relation to the Ramsar site, and appropriate stormwater management measures are proposed to maintain existing water quality. No significant impact was considered likely in the original referral and this conclusion has not altered.

6.2 Threatened orchid species

6.2.1 Milford leek-orchid *Prasophyllum milfordense* - Critically Endangered

Milford leek-orchid is a terrestrial orchid endemic to southern Tasmania. The species is listed as Critically Endangered under the EPBC Act. It is only known from a single population on the Milford property, with records in close proximity to the development footprint.

Prasophyllum milfordense grows in open woodland dominated by white gum (*E. viminalis*), with a dense ground cover of *Lomandra longifolia*[2]. Soils are well-drained, grey sandy loams. The altitude of the site is 5–10 m above sea level, and the mean annual rainfall is about 500 mm. Peak flowering is mid-late November[3]. This species is threatened by land clearance, inappropriate fire regimes, and grazing by rabbits.

6.2.2 Sagg spider-orchid *Caladenia saggicola* - Critically Endangered

The Sagg spider-orchid is a deciduous herb, endemic to Tasmania where it is confined to the south-east. Sagg spider-orchid are listed as Critically Endangered under the EPBC Act. There are only two known populations with a combined area of occupancy less than 10 ha. The most important population for the continuation of this species is within close proximity to the development footprint.

C. saggicola grows in sparse woodland dominated by large old trees of *E. viminalis* with a dense groundcover of tussocks of *Lomandra longifolia* and scattered low shrubs[4]. The Sagg Spider-orchid grows in and between *L. longifolia* tussocks, on grey soil or tertiary sandy loam, at altitudes around 20 m above sea level. Peak flowering is early/mid-September to mid-October.

6.2.3 Tailed spider-orchid *Caladenia caudata* – Vulnerable

The Tailed spider-orchid is a terrestrial orchid found across the lowland areas of north, south, and south-eastern Tasmania. This spider-orchid is listed as Vulnerable under the EPBC Act. Several populations occupying a total less than 600 ha have been recorded, but no important populations have been formally recognised and the precise sites of subpopulations are unknown. The listing statement refers to 48 populations in Tasmania, 18 of which have been confirmed since 2000. The total population is estimated to support less than 10,000 individuals, with more than 1,000 known from one site and more than 1,000 from three. The Pittwater Road population was estimated at 12 in 2009 (not exceeded since in any one year). This places it as the 10th largest documented population size out of 48 known populations. It is not considered likely to qualify as an important population, as populations listed in the Recovery Plan[5] for Tasmanian Orchids includes five sites, and Milford is not one of these.

C. caudata grows in coastal dry sclerophyll forest, open forest, heathy open forest, in coastal scrub and heath communities, with an altitudinal range from 0-50 m above sea level. Associations include *Eucalyptus amygdalina* heathy open forest, *E. tenuiramis* heathy open forest and *E. viminalis* grassy open forest[6]. Flowering period for this species varies regionally being earlier in southern Tasmania where peak flowering is late August to mid-September at a popular site in Clarence but mid-September to mid-October in other regular sites in Kingborough, Hobart and Glenorchy.

[2] Threatened Species Scientific Committee 2016. Conservation Advice *Prasophyllum milfordense* Milford leek-orchid

[3] Wapstra, M. (2018). Flowering Times of Tasmanian Orchids: A Practical Guide for Field Botanists. Self-published by the author (July 2018 version).

[4] Department of the Environment (2021). *Caladenia saggicola* in Species Profile and Threats Database, Department of the Environment, Canberra. Available from: https://www.environment.gov.au/sprat.

[5] Threatened Species Section (2017). Threatened Tasmanian Orchids Flora Recovery Plan. Department of Primary Industries, Parks, Water & Environment, Hobart.

[6] Department of the Environment (2021). *Caladenia caudata* in Species Profile and Threats Database, Department of the Environment, Canberra. Available from: https://www.environment.gov.au/sprat.

6.3 Survey effort

An Orchid Impact Assessment and Mitigation Plan was prepared by NBES (Appendix I). That assessment identified the following survey effort which has been undertaken for orchid species within the project area and across adjacent land to within 1 km. Surveys have been targeted to align with optimum flowering time for the two highest priority (critically endangered) species each September (occasionally early October) and November, however, survey timing for *Caladenia saggicola* (Sept 14 - Oct 21) varies more markedly than that for *Prasophyllum milfordense* (Nov 1-21). Surveys undertaken include:

- Annual surveys overseen by botanists at the Tasmanian Department of Primary Industries Parks Water and Environment (DPIPWE) assisted by volunteers from Threatened Plants Tasmania (TPT) between 2009 and 2018
- Milford Forest Group with TPT coordinated surveys in 2019 and 2020 (Attachment A in Appendix I) and 2021[7]. These surveys were preceded by preliminary inspections to ensure optimal timing for each survey
- North Barker Ecosystem Services conducted targeted surveys of a buffered footprint (20 m) of the proposed development 2018 (1/10, 19/11) and 2019 (18/9, 2/10, 18/11). This included land on the corner of Pittwater Road where the water main relocation is proposed. The locations of a newly encountered patch of *P. milfordense* closer to the highway than previously seen were accurately surveyed in November 2020; and
- Survey of Milford and adjacent airport land 19 November 2020 to accurately measure locations of *P. milfordense* reported that year in close proximity to the development footprint[8].

Records of *Caladenia caudata* are incidental and are captured in the earlier surveys as the flowering period overlaps with *C. saggicola*. The total number of records for each species is extensive (over 3,700 for *Caladenia caudata* alone) and is summarised in the supporting documentation.

6.4 Results

Orchid survey results are presented in Attachment A of Appendix I. Key findings of the surveys are presented in Table 4.

Table 4: Key findings from surveys (from Appendix I Section 1.2)

Species	Maximum/Minimum Numbers	Comment
P. milfordense	2015 – 20 plants 2016 – 347 plants 2020 – 319 plants 2021 – 270 plants Average just under 150	• The observed number of plants varies markedly year to year • Abundance appears to corelate with rainfall with high numbers in 2009, 2016, 2020 and 2021 all following periods of above average rainfall; and • The 2020 and 2021 surveys extended coverage north toward the Tasman Highway.
C. saggicola	2015 – 60 2018, 2019 - 492 2020 – 763 2021 - 2021	• Peak observations for this species also correlate with higher rainfall seasons; and • The 2020 and 2021 distribution closely correlates with previous distributions with no new outliers recorded despite the abundant season.
C. caudata	A scattered occurrence exists in heathy forest towards the eastern end of the project area	There has been less targeted survey for this species (being incidentally recorded)

[7] 2021 survey results were provided via the Natural Values Atlas.

[8] Note that none of these species were recorded on the airport land during this survey (results are provided in Appendix D of the Natural Values Assessment (provided at Appendix F)).

6.5 Potential orchid habitat

The extent of potential habitat is demonstrated on Figure 7, which maps *E. viminalis – E. globulus* coastal forest within the project area. The community was classified as being in excellent condition, dominated exclusively by mature trees of *E. viminalis* with an intact and floristically diverse understorey.

Disturbance has been minimal, and woody weed numbers are low and localised. West of Pittwater Road, the community was classified as being in good condition, with signs of past disturbance. This community contained mature *E. viminalis* and key elements of the community understory and likely to return to better condition if no longer disturbed.

In addition to the presence of the preferred *E. viminalis* community, suitability of habitat for these species can be influenced by other factors which create areas where the orchids are more likely to be present. These include:

- Community composition at a micro-scale - such as the presence of dense understorey. Increased density of ground cover reduces availability of bare patch for plants to establish. Dense cover of mid-level shrubs reduces light availability for low plants
- Disturbance – some species appear to benefit from burning, slashing or other activities, which reduce the potential for dominance by denser understorey species and weeds. Slashing or grazing at inopportune times or unfavourable burning regimes could reduce seed stock for the next season
- Presence of weeds – competition for light and space resulting in suppression of orchids
- Pest presence - all these orchids are insect pollinated and flower in spring, dying down to a tuber over winter and excessive disturbance by rabbits can reduce tuber numbers and subsequent growth; and
- Long-term weather patterns - survey results from 2009, 2016, 2020 and 2021 suggest that these species are more abundant after drought breaking rains.

The potential for changes to these factors, as well as less certain influences, such as changes to hydrology and nutrient loading (which may affect essential mycorrhiza in soil), are considered in Section 7.

Figure 7: Eucalyptus viminalis – E. globulus coastal forest condition across the project area

Habitat has been qualified by NBES (Appendix I, Section 1.4) based on recorded occurrences of each species along with likely site attributes as outlined below.

6.5.1 Critical habitat

The Orchid Habitat Impact Assessment provides discussion around the nature of critical habitat for these species within the project area (Appendix I, Section 1.4). The *Significant Impact Guidelines* refer to 'habitat critical to the survival of species'. Critical Habitat is rarely well defined and has only been formally prescribed on the Register of Critical Habitat[9] under the EPBC Act for five species and does not include any of the three being considered here. The *Threatened Tasmania Orchids Flora* Recovery Plan[10] defines critical habitat as:

> "*Habitat critical to the survival of species is defined as specific areas within and beyond a species' current distribution range containing biological and ecological characteristics essential to the continued existence of the species. Therefore, habitat critical to the survival of a particular species includes all areas deemed important to that species' survival or recovery, whether the species currently resides in those areas, historically resided in those areas, or may successfully recruit there in the future.*" (pg 8).

For *Prasophyllum milfordense* and *Caladenia saggicola*, all core and primary potential habitat equates to critical habitat. Secondary potential habit is not critical habitat as site conditions currently are not suited to enable the species to recruit there.

For *Caladenia caudata* the Milford subpopulation is one of 48 identified in the Listing Statement[11]. The Recovery Plan [12] includes a list of priority populations (which infers important populations). This subpopulation is not included in that list, however, in Appendix 2 of the Recovery Plan, priority subpopulations for EPBC Act listed species are considered critical for the survival of the respective species and are therefore considered to be 'important populations' (p 9)".

The Recovery Plan further states that the list of priority sub-populations is not complete and requires revision as new surveys are undertaken and baseline information improved. An important population is a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and / or populations that are:

1. Key source populations either for breeding or dispersal
2. Populations that are necessary for maintaining genetic diversity; and / or
3. Populations that are near the limit of the species range.

Appendix I (Section 1.4, page 4) determines that the core and primary potential habitat at Milford for *Caladenia caudata* constitutes 'critical habitat' for the species.

Under Appendix I, and this assessment, critical habitat includes all known and consistently recorded locations for these orchid species. The area has been surveyed extensively over a long period of time, and therefore mapping is not based on a small survey sample but can be relied upon to show distribution with a high level of confidence.

Critical habitat includes vegetation with similar attributes in vegetation composition and structure in proximity to the known records. It also the majority of occasional outlying one-off records.

[9] https://www.environment.gov.au/cgi-bin/sprat/public/publicregisterofcriticalhabitat.pl
[10] Threatened Species Section (2017)
[11] Threatened Species Section (2020)
[12] Threatened Species Section (2017) Appendix 2, p 66

6.5.2 Secondary potential habitat

Secondary potential habitat are areas of heathy woodland with attributes less suitable for orchids but which may over the long term with appropriate management be able to be restored to primary potential habitat. This includes all other areas of *E. viminalis* woodland on Milford that has attributes less suited to orchids e.g. dense bracken cover, weedy ground layer. The factors limiting suitability for orchids are considered reversible. There are no records in this habitat zone. It is very unlikely the habitat is currently unsuitable but through biomass control, weed removal and other related actions it may be possible to enhance habitat suitability.

Areas not included in any of the three categories above are deemed irreversibly degraded or naturally unsuitable due to topography, drainage, or soil type.

Distribution of records for each species and areas of each type of habitat are presented in Figure 8 to Figure 10.

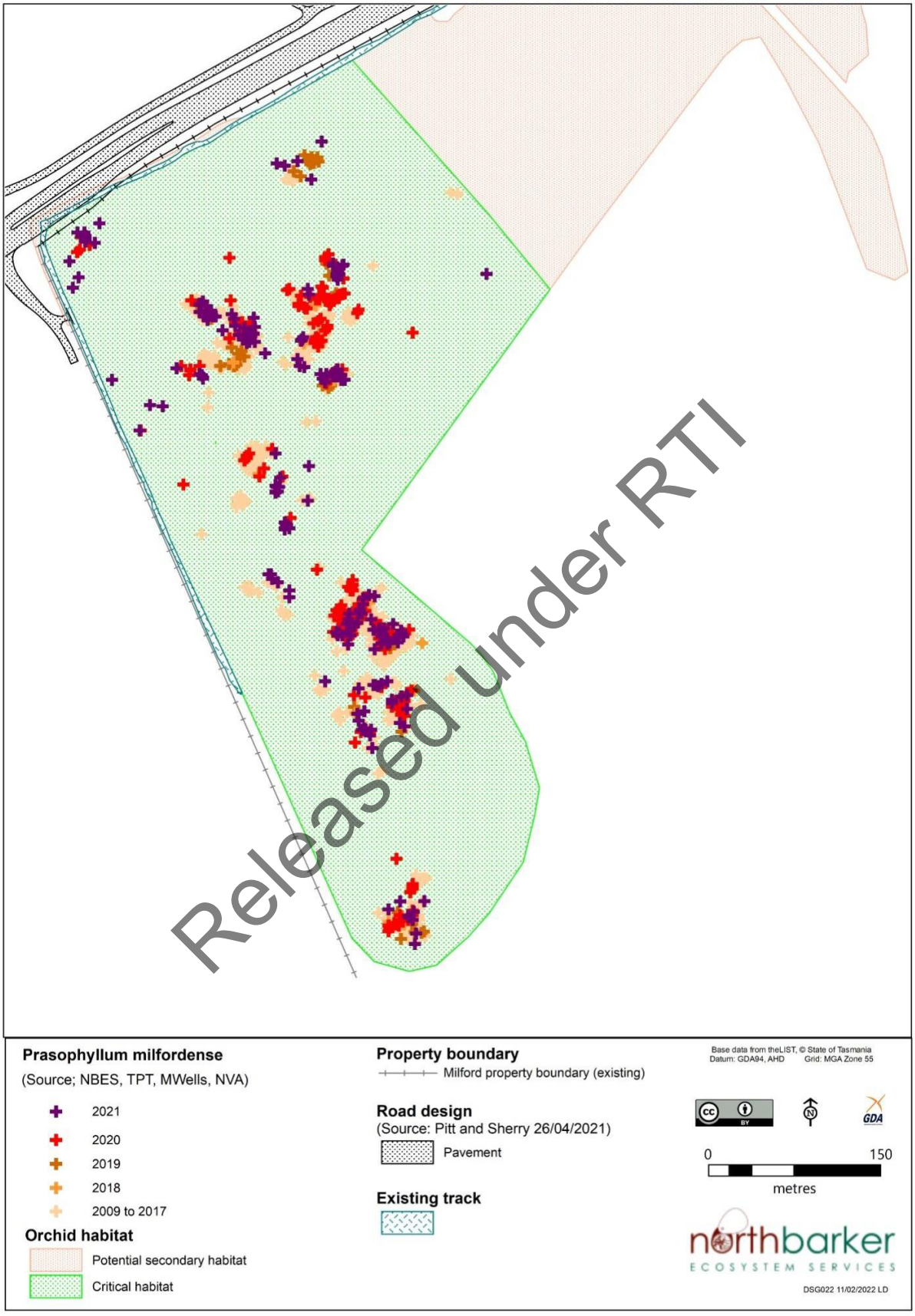


Figure 8: Prasophyllum milfordense records and habitat

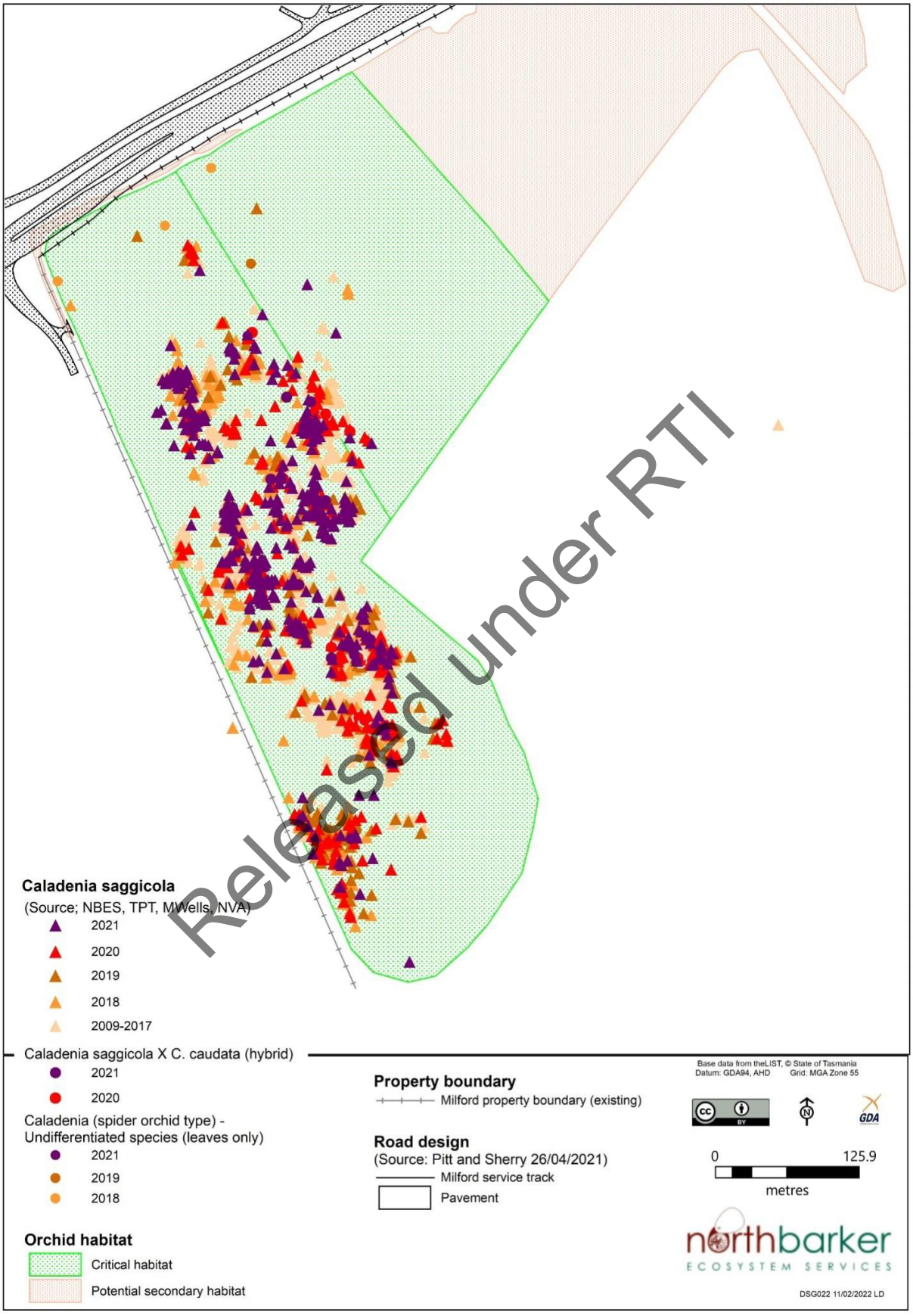


Figure 9: Caladenia saggicola records and habitat

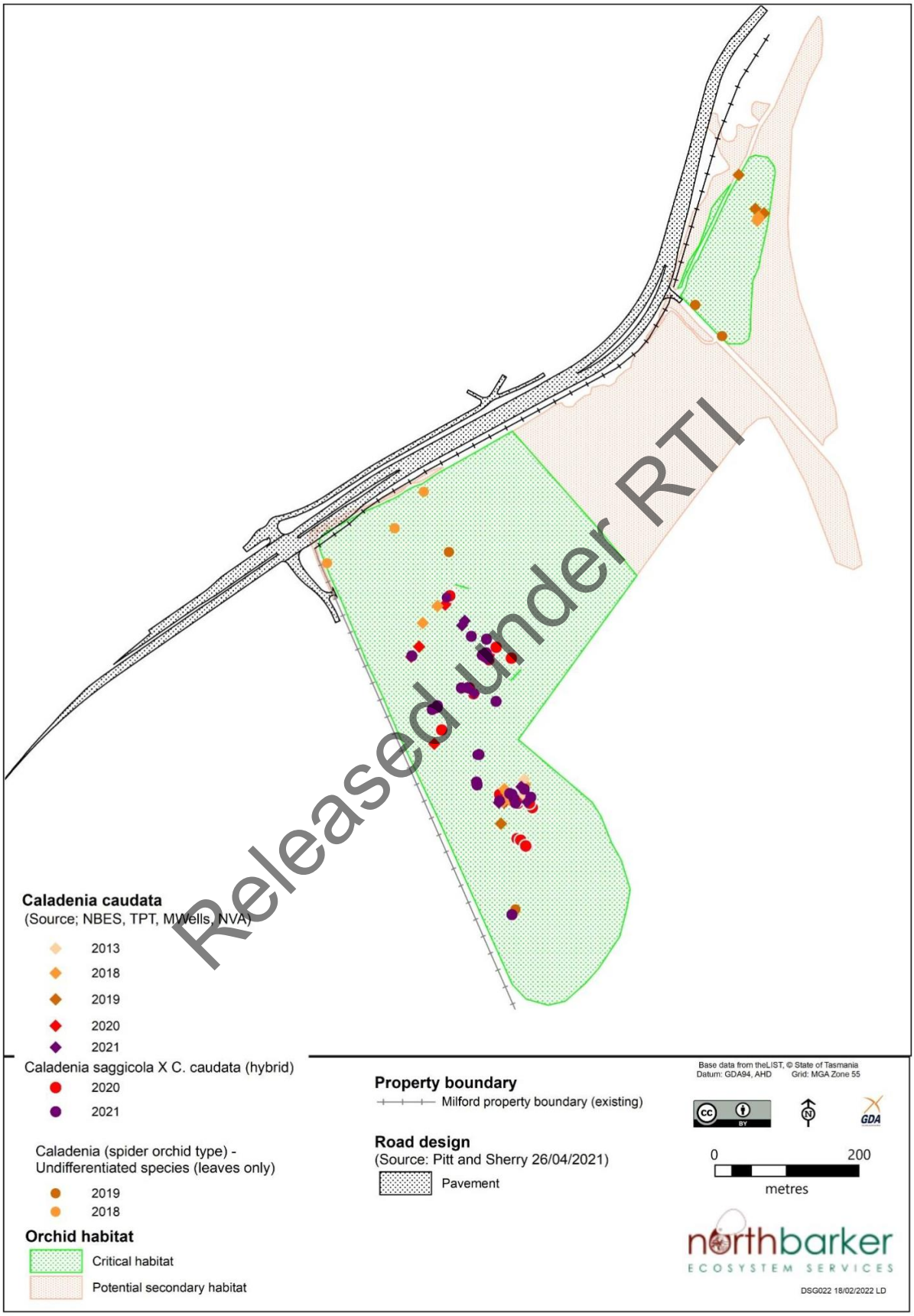


Figure 10: Caladenia caudata records and habitat

7. Potential impacts

7.1 Extent of works

The extent of the proposed action as it relates to the three threatened orchid species is limited to an area immediately south of the existing road on the Milford property. No individuals of the threatened species or potential habitat were identified on the neighbouring Commonwealth land. Roadworks will involve vegetation clearance, topsoil removal, ground disturbance and drainage work. A 20 m buffer to the proposed road works is proposed and has been included in this assessment of impacts as part of the extent of works. An existing service track is to be realigned in places and these areas also form part of the disturbance footprint.

Records of *P. milfordense* and *C. saggicola*, in close proximity to the proposed works, critical habitat and impact areas are presented in Figure 11. Records of *C. caudata* in close proximity, critical habitat and impact areas are shown in Figure 12 (reproduced from Appendix I Figure 4 and Figure 5). There are records shown of hybrid and undifferentiated *Caladenia* species.

7.2 Direct impacts

The direct impact area is defined by the extent of works. The area of works and the proposed service track realignment are identified on Figure 11 and Figure 12 as red hatched areas. The following is a summary of direct impacts:

- No direct impact to any recorded individual threatened orchid species is predicted.
- A very small area of critical habitat for all three species will be impacted
    - 420 m2 of critical habitat for P. milfordense, C. saggicola and C. caudata will be impacted by the proposed road works; and
    - 350 m^2 of critical habitat will be impacted by the relocation of the service track.

The proportionate extent of habitat loss for each species is shown in Table 5. The impact areas for each type of habitat are based on the areas mapped in Figure 8 to Figure 10.

Table 5: Extent of impacts on orchid habitats

Species	Critical Habitat	Impact	Secondary potential habitat	Impact
P. milfordense	19.25 ha	0.08 ha	12.03 ha	0.21 ha
C. saggicola	21.10 ha	0.08 ha	10.22 ha	0.21 ha
C. caudata	21.07 ha	0.08 ha	10.22 ha	0.21 ha

The proportionate direct impact to critical habitat of *P. milfordense* is 0.40 %

The proportionate direct impact to critical habitat of *C. saggicola* and *C. caudata* is 0.37 %

The direct impact to secondary potential habitat is 1.7 % for *Prasophyllum milfordense* and 2 % for *Caladenia saggicola* and *C. caudata*.

In absolute terms, the area of potential habitat of any classification, and the related proportion is very small.

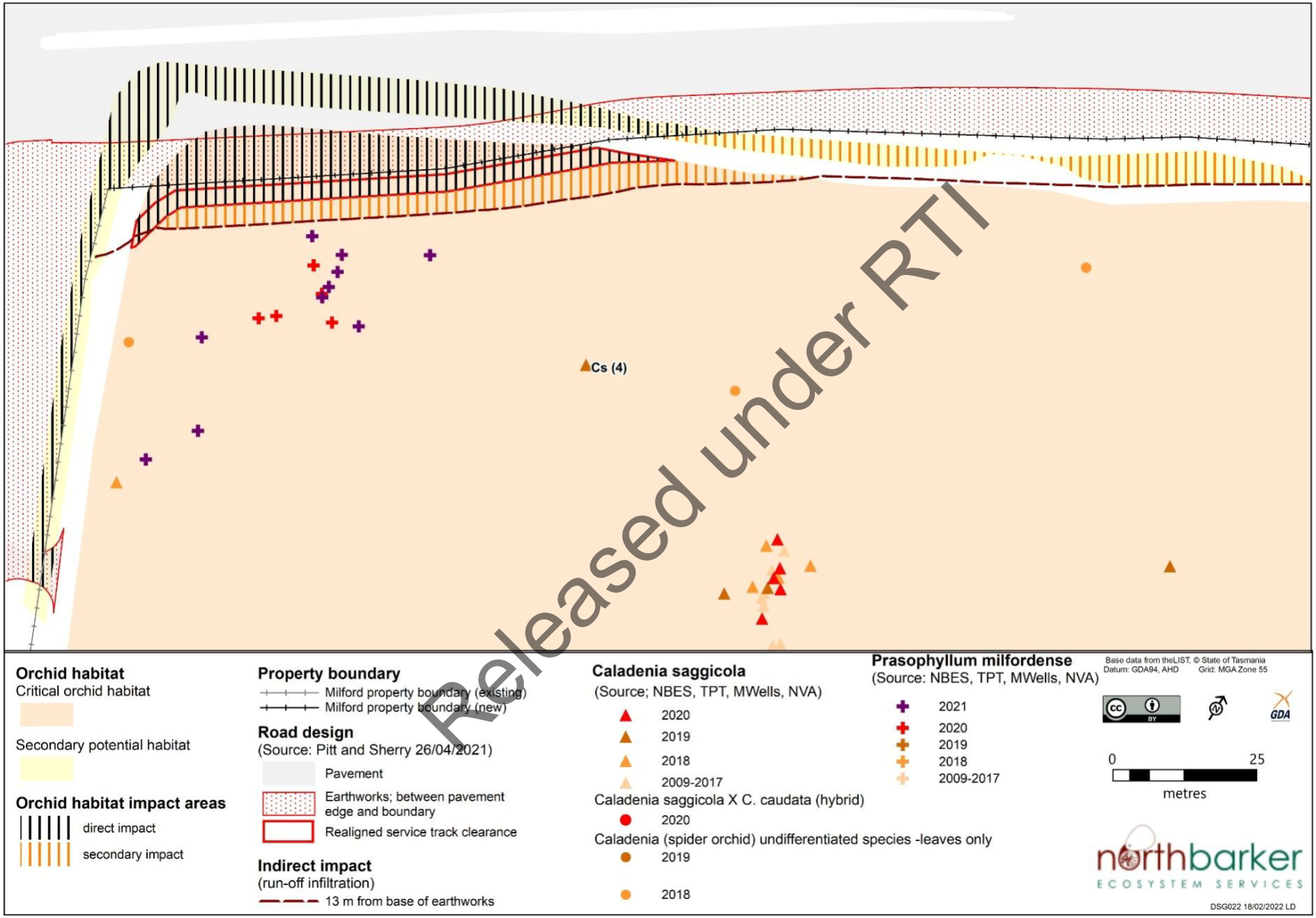


Figure 11: Impacts to Orchid habitat - west

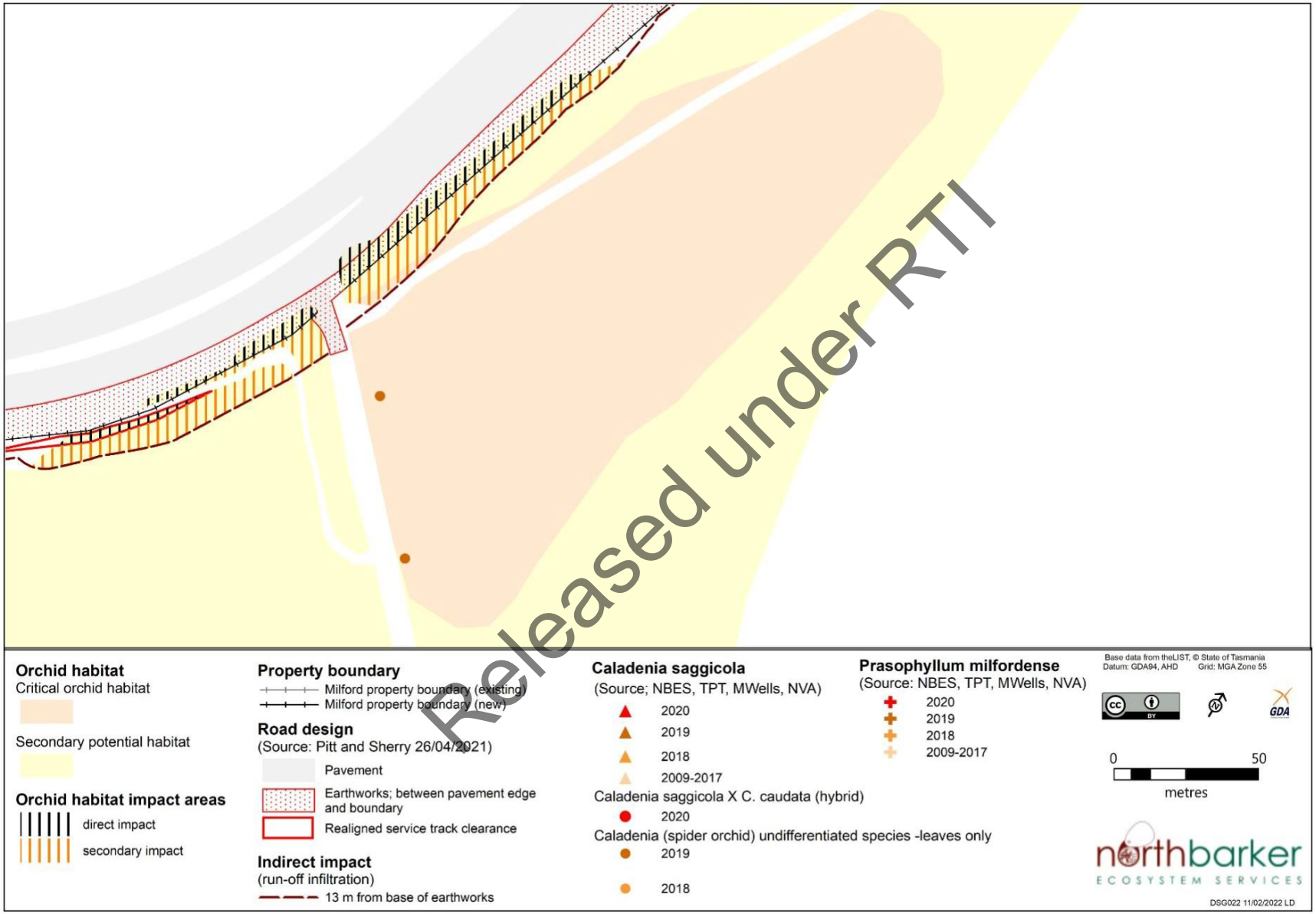


Figure 12: Impacts to Orchid habitat - east

7.3 Indirect impacts

The proposed action involves the widening of the existing highway and this in itself will not result in additional volumes of traffic. The realignment of the service track will also not result in any additional uses or activities on site. This is a private track and the level of use by the landowner will not alter nor will the related impacts. No additional access to the area containing the habitat is proposed and no level of usage of the site will alter.

Potential changes to habitat suitability as a result of the works, through alterations to hydrology or vegetation structure, or ongoing land management changes, require consideration to determine the significance of impacts.

7.3.1 Stormwater Discharge

A detailed Stormwater Discharge Assessment was undertaken (Appendix J) to determine the distribution of stormwater discharged from the increased road surface area. The Stormwater Management Plan at Appendix K considers impacts from a minor (5% Annual Exceedance Probability or AEP) and a major (1% AEP) storm event. The detailed assessment in Appendix J includes an assessment based on small rainfall events. This type of assessment considers the typical rainfall over a long duration (i.e. one year).

The existing drainage regime comprises roadside open drains which direct stormwater to cross road pipe culverts. Primary discharge locations have been identified. There is no defined receiving waterbody or watercourse from the road reserve but rather a flat area with several depressed bowls. Figure 13 shows the existing stormwater discharge points and where stormwater is generally directed, noting that existing roadside drains and berms generally retain flows in Pittwater Road, with overflow leaving Pittwater Road from a low point opposite Infiltration area B on Figure 13. The contours presented are derived from a LiDAR survey and represent 0.2 m intervals (Figure 13).

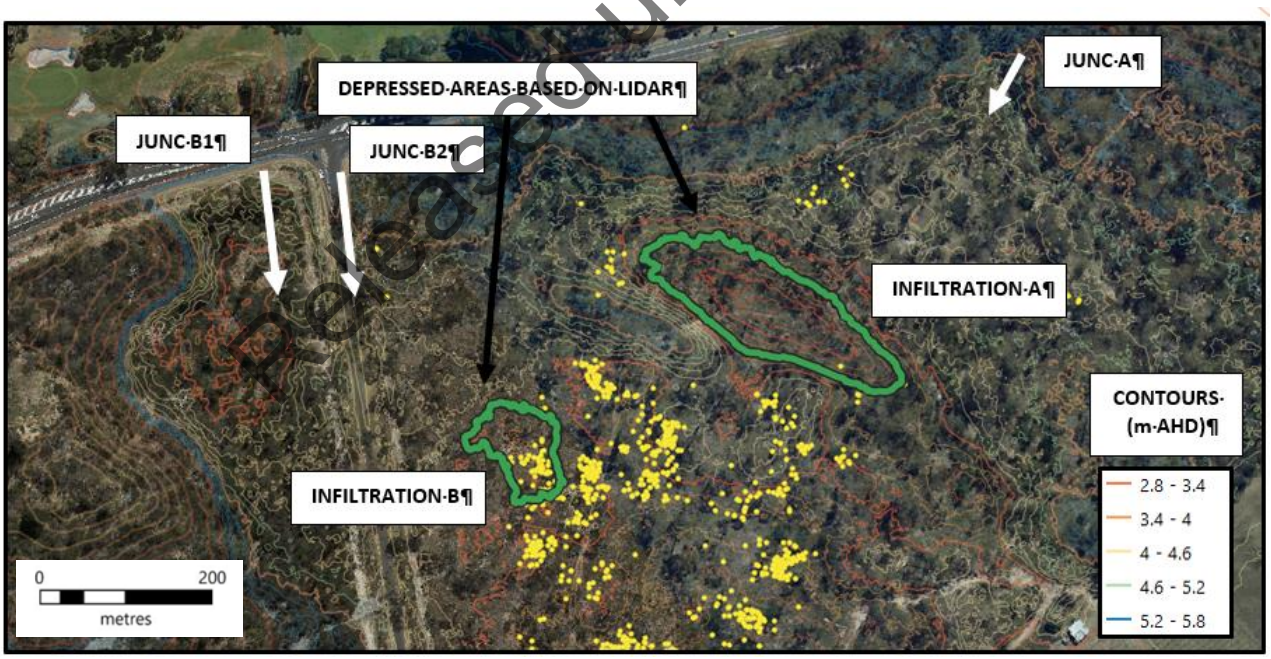


Figure 13 Existing stormwater discharge and depressions (Orchids identified during previous surveys shown in yellow)

The geology of the area downstream of the proposed action was reviewed to determine if an impact is likely. Test borehole logs from a geotechnical assessment show sand at a depth of at least 2 m at boreholes within the Milford property close to the proposed works locations and along Pitt Water Road. Based on this information, the receiving area potentially has high infiltration.

The contributing catchments were identified as part of the detailed analysis and are shown on Figure 14.

Figure 14: Catchments within the project area

The volume of current and post-development stormwater flows from the highway are presented in Table 6. Junction A and Junction B represent flows from the highway from their respective catchments before they enter the flat land receiving land.

Table 6: Annual discharge volumes

Location	Pre-Development	Post Development	Increase
Junction A	14.5 ML/year	18.3 ML/year	3.8 ML/year (26%)
Junction B	9.4 ML/year	11.5 ML/year	2.1 ML/year (22%)

After the discharge from the highway, water will be directed to the flat receiving area where water would be expected to pool. The two primary ponding areas identified by the LiDAR survey (Figure 13) are separated from the highway by a sandy access track and typically sandy soils. The detailed stormwater discharge assessment (Appendix J, Section 3.4) indicates that it is possible that all water generated from the highway and upstream areas will infiltrate into the soil before reaching these two depressions. Infiltration Area B contains orchid records, suggesting that either the species are tolerant of stormwater, or that any stormwater has infiltrated into the soils before reaching this area. The modelled infiltration rates (Appendix J, Table 4, page 11) are very high which supports the second scenario.

The assessment concluded (Appendix J, Section 3.4, page 12) that as the distance away from the highway increases, the change in hydrologic regime decreases as more area becomes available for water to soak into. It would be expected that the change to hydrologic regime downstream of the two defined infiltration areas would be minor.

Observations of likely flow paths (as demonstrated by weed incursions and ground conditions) by NBES (Appendix I, Section 1.6.1, Figure 6) supports the modelling outcomes of high permeability and limited extension of flows on to the site. NBES also recommended (Appendix I, page 12) provision of a table drain and removal of an impervious hardstand along Pittwater Road (approximately 110 m from the junction) and reinstatement of sandy substrate to improve infiltration at this point and reduce overland flow onto the Milford property. This measure will be incorporated into the road and drainage design.

7.3.2 Stormwater Quality

The stormwater design is demonstrated in the detailed plans for the proposed roadworks at Appendix A and will convey stormwater runoff by gravity to existing points of discharge. The existing points of discharge include the following:

- Two western culverts discharging to a table drain along Pittwater Road. From there it pools in a shallow, hardened roadside pull over approximately 100m down Pittwater Road. This overflows partially into the adjacent Milford property; and
- Two eastern culverts discharging into the southern roadside from where water percolates into the adjoining bushland.

The locations of the new culvert discharge points are comparable to the current ones. A Stormwater Management Plan has been prepared and is located at Appendix K of this report. The construction of the highway widening works will require upgrades or reconstruction of the existing drainage. The proposed drainage upgrades reflect best practice Water Sensitive Urban Design Principles and will not adversely impact the quality of stormwater leaving the Site.

No individual species or core habitat will be impacted by changes in hydrology or nutrient levels, based on the assessments below. Increased water runoff from the enlarged road surface is anticipated to infiltrate into the soil before reaching orchid habitat. Soil contaminants and nutrients are not expected to extend into the orchid habitat.

The proposed stormwater design includes drainage swales which will be planted with a mix of grass species, that does not include any weed species. The grass-lined drains will mitigate pollution and improve stormwater quality prior to discharging into Barilla Bay or onto vegetated areas. Treatment is provided by the grass in the table drains and by infiltration into the subsoils.

Preliminary stormwater quality modelling, using the program MUSIC, has indicated that all stormwater discharge meets the water quality targets outlined in the planning scheme and the State Policy on Water Quality Management 1997

In addition to modelling for stormwater volumes and discharge targets, field assessment was undertaken to determine if there was any effect on soil quality as a result of contamination by stormwater. Soil samples were taken along 50 m long transects extending perpendicular to the highway, from the road edge. Soils were sampled from the top 0.5 – 1.0 m of the profile. The results of this assessment are provided in Appendix L.

The samples were tested for metals and hydrocarbons, which are associated with road traffic, and nutrients, which are associated with the neighbouring golf course and their use of recycled water. The mapped catchments, identified on Figure 14, indicate that there is limited potential for recycled water used on the golf course to impact the results (other than spray drift which is unlikely given the extent of vegetation present).

Arsenic, cadmium and mercury concentrations were below the limit of reporting in all samples. Polycyclic aromatic hydrocarbons (PAH) and benzene, toluene, ethylbenzene and xylene (BTEX) concentrations were also below the limit of reporting in all samples. Most of the metals tested for, and the total recoverable hydrocarbons, were within acceptable levels at most sites under the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (amended 2013) for areas of ecological significance. The strictest levels were considered as there was no other soil specific characterisation undertaken as part of the assessment. Based on these assumptions, the results are considered highly conservative. Those metals which exceeded the acceptable levels (copper and zinc) all decreased to acceptable limits within 10 m of the road. Total recoverable hydrocarbons exceedances dropped below limits of reporting within 10 m (Appendix L).

The results indicate an overall drop in contaminants to background levels within 5-10 m from the road edge, regardless of whether stormwater drainage was through a culvert under the road or via surface sheet flow over land. This indicates that the run-off from the road in the investigation area is relatively uniform under present conditions. Factoring in a modelled post-development increase in stormwater of 22 - 26% at discharge points, a conservative buffer of 13 m can be applied to the edge of the new road works to determine the extent of potential impacts. The spike in levels associated with the service track could be expected to be replicated adjacent the new section of track, however, this is not sealed and there seems to be limited evidence of any contaminants or nutrients more than 8 m from the track edge. This result supports the conclusions above that most stormwater runoff infiltrates the soil adjacent the road, well upstream of the infiltration areas (Appendix L).

7.3.3 Weeds

The potential for impacts associated with weeds are discussed in the Orchid Impact Assessment and Mitigation Plan (Appendix I, Section 1.6.3). The assessment concluded:

- Weed infestation within the project area (where potential orchid habitat is found) is generally confined to the section between the highway and the existing fence, although to a lesser extent, these weeds are present in most sections up to the edge of the existing service track. The track forms a discernible boundary to the weed infestation extent.
- The project will create new areas of earthworks with potential for weed colonisation.
- The management of the new roadside during and following completion of works will be critical to the scale of consequential weed infestations.
- These works also provide an opportunity to improve weed management as a significant portion of the current weed infested vegetation will be removed as part of the construction works.
- All recorded weeds are recognised environmental weeds which potentially threaten the integrity of the orchid habitat in the medium to long term

Weed management measures are included in Section 8 of this preliminary documentation.

7.3.4 Summary

Impacts to habitat as a result of indirect impacts is presented in Table 7. The impact areas for each type of habitat are based on the areas mapped in Figure 8 to Figure 10.

Table 7: Indirect impact to orchid habitat

Species	Critical Habitat	Impact	Secondary potential habitat	Impact
P. milfordense	19.25 ha	0.04 ha	12.03 ha	0.21 ha
C. saggicola	21.10 ha	0.05 ha	10.22 ha	0.21 ha
C. caudata	21.07 ha	0.05 ha	10.22 ha	0.21 ha

The proportionate indirect impact to critical habitat of *Prasophyllum milfordense* is 0.31 %

The proportionate indirect impact to critical habitat of *Caladenia saggicola* and *C. caudata* is 0.24 %

The indirect impact to secondary potential habitat is 1.8 % for *Prasophyllum milfordense* and 2.1 % for *Caladenia saggicola* and *C. caudata*.

7.4 Facilitated impacts

7.4.1 Vegetation clearance/exposure

A dense shrub layer exists in the north-west corner of the site which, in some sections, provides a screen to the highway and potentially reduces wind exposure. Slashing of part of this area has opened the ground layer creating conditions suited to orchid growth with new records in this area in 2020 (Appendix I, Section 2.3.5). This shrub layer, in part, be cleared as a result of the works, however, there is no information to confirm whether removal of this screening would impact on adjacent potential habitat. There are no additional impacts that will be facilitated by the proposed road upgrade.

7.5 Cumulative impacts

The works proposed are part of the SETS projects. None of the other segments include habitat for these threatened orchids and so do not constitute impacts that are cumulative to those outlined in this report.

7.6 Duration of impacts

Construction, and associated direct impacts, will occur over an 18 month period. Indirect impacts associated with the continued use of the road (stormwater, weed incursion) will be ongoing.

7.7 Recurrence of impacts

Ongoing weed management is proposed as well as maintenance of the service track and drainage infrastructure. Weed management will benefit the project area and is aimed at protection of potential and core habitat values. No additional clearance of native vegetation or earthworks will be required. Roadside maintenance works will be constrained to operational safety matters relating to the maintenance of the road shoulder, and roadside furniture such as guideposts and culvert outfalls. Maintenance of drainage infrastructure is necessary to ensure runoff patterns are not altered from those intended and that there is limited change to hydrology as a consequence of the project overall.

7.8 Unknown or unpredictable impacts and consequences

Impacts of road construction are very well understood, as this is not a new type of development and the site does not have any unusual or unpredictable characteristics. The site is not prone to flooding or landslip or other hazards that would make it difficult to predict the outcomes of the works. The habitat areas have been well identified and the extent of survey over a long period of time offers a good degree of certainty as to the location of orchids across the site and their habitat requirements. It is considered that the impacts can be well considered and that appropriate avoidance and mitigation measures can be developed with a high degree of certainty.

7.9 Significant impact assessment

The significant impact assessment (Appendix H) submitted as part of the referral for the proposed action is supplemented by the more detailed assessment provided in the Orchid Impact Assessment and Mitigation Plan (Appendix I, Section 1.8). This assessment concluded that:

- There will be no direct impacts to individuals of any threatened orchids
- Impact to critical threatened orchids through habitat loss is insignificant; and
- Indirect impact to threatened orchid habitat is minor and not significant.

8. Proposed avoidance and mitigation measures

8.1 Avoidance

The alignment avoids direct impacts on individual orchids. Very small areas of critical habitat and secondary potential habitat will be disturbed. The Orchid Impact Assessment and Mitigation Plan (Appendix I, page 23) concluded that impacts to the threatened orchids through the loss of these areas of habitat will be insignificant, consistent with the findings of the previous Significant Impact Assessment (Appendix H). These impacts are further discussed in Section 7.2 and 7.3.

Prior to construction, fencing will be installed to prevent any access by construction vehicles and avoid accidental destruction of plants. An Orchid Habitat Management Plan is provided at Appendix M.

Options for the proposed action to avoid any impact to orchid habitat are constrained by the location of the existing road, the need to protect orchid habitats, and the obligations to the wider community to maintain an active golf course on land on the northern side of the road. Both properties are impacted and through long-term engagement and process of compromise, the solution presented in the proposed action was reached.

8.2 Mitigation

8.2.1 Construction management

A Construction Environmental Management Plan (CEMP) will be prepared by the contractor which will incorporate, as a minimum, the following measures:

- Environmental awareness training for persons on site, including subcontractors
- Identification of all relevant boundaries (by survey) and the installation of fencing (temporary or permanent) to clearly define work areas and exclusion zones
- Fencing to clearly identify exclusion and other areas
- Weed management prior to construction to minimise risk of incursion
- Preparation of an erosion and sedimentation plan and the implementation of construction stormwater management measures prior to commencement of works; and
- Details of monitoring and inspections and the timeframes for these during construction.

This CEMP is to be prepared in accordance with the State Growth Specification, Standard Section 176 (Environmental Management)[13]. The contractor will also incorporate the measures summarised in the Management Plan (Appendix M).

[13] Available at https://www.transport.tas.gov.au/__data/assets/word_doc/0003/138486/Sec176.doc

8.2.2 Orchid habitat management plan

An Orchid Habitat Management Plan (Appendix M) has been prepared for the proposed action which includes actions for pre-construction, during construction and post-construction. The objectives of the plan are to:

- Protect orchid habitat outside the footprint of works
- Provide for long term management of roadside areas to protect habitat
- Protect and enhance orchid habitat condition; and
- Document timeframes and reporting obligations for the plan.

A management report will be prepared within 12 months of approval and will describe the species present, identify relevant threats, outline land management practices (existing and proposed) and provide a baseline for future reporting. Threatened species and weeds will be mapped to assist with monitoring of the success of weed eradication and habitat enhancement programs (as evidenced by any new occurrences of orchid species). The plan incorporates vegetation management requirements during construction, roadside management work specifications, weed management (within the road reserve and on Milford) and monitoring of aspects raised in this assessment (stormwater runoff quality and volumes).

Works will be conducted by the proponent and their contactors, including qualified bushland management contractors for post-construction works and those outside the project footprint. All works will be undertaken in accordance with a construction environmental management plan or the Orchid Habitat Management Plan (Appendix M). The cost of meeting avoidance and mitigation obligations will be borne by the proponent.

8.2.3 Milford Orchids Roadside Conservation Site

To protect values around the proposed action in the longer term, a Roadside Conservation Site will be established under the DSG's Roadside Conservation Sites Program (called "Milford Orchids"). The land will be managed to limit indirect impacts on orchid habitat and enhance habitat suitability. Management of land extending 50 m into the Milford property will be co-ordinated with the management on the Milford Orchids RCS, by consultation and agreement with the Milford landowner.

8.2.4 Planting on Milford property

As part of the landowner engagement process, it has been agreed that an area of compensatory planting will be provided on the Milford property. This is to be located in the north west corner of the cleared portion of the site, to the east of the mapped orchid habitat. This is not a formal offset but will involve the planting of approximately 1 ha of land with species representative of the native vegetation in the locality, including:

- Collection of local provenance seed and propagation (to be completed by the end of October)
- A massed planting of *Rhagodia candolleana* (Coastal Saltbush) to rapidly convert the land from pasture
- The saltbush will be over-planted with *Eucalyptus viminalis* subsp *viminalis* (White Gum) and *Eucalyptus viminalis* subsp *pryoriana* (Coastal Manna Gum) – white gum being a key component of the *Eucalyptus viminalis – E. globulus* Coastal Forest present on and adjacent the site of the
- An assortment of local shrub species.

This will not constitute part of the formal habitat management and enhancement area outlined in the Orchid Habitat Management Plan (Appendix M), but will supplement habitat improvements across the locality, buffer some of the orchid habitat and may in the long term extend the area of potential habitat. This area will be managed twice yearly for five years with additional attendance as required for watering, loss replacement, etc.

This planting area, and the land to be managed under the Roadside Conservation Site and the Orchid Habitat Management Plan (Appendix M), is shown on Figure 15.

8.2.5 Drainage

To reduce the potential for additional overland flows into orchid habitat, a table drain will be reinstated and an impervious hardstand along Pittwater Road (approximately 110 m from the junction) will be removed and sandy substrate reinstated to improve infiltration at this point. The physical separation between the works and the nearest habitat areas and individuals will ensure that sufficient separation exists between any potential nutrients or contaminants carried by runoff.

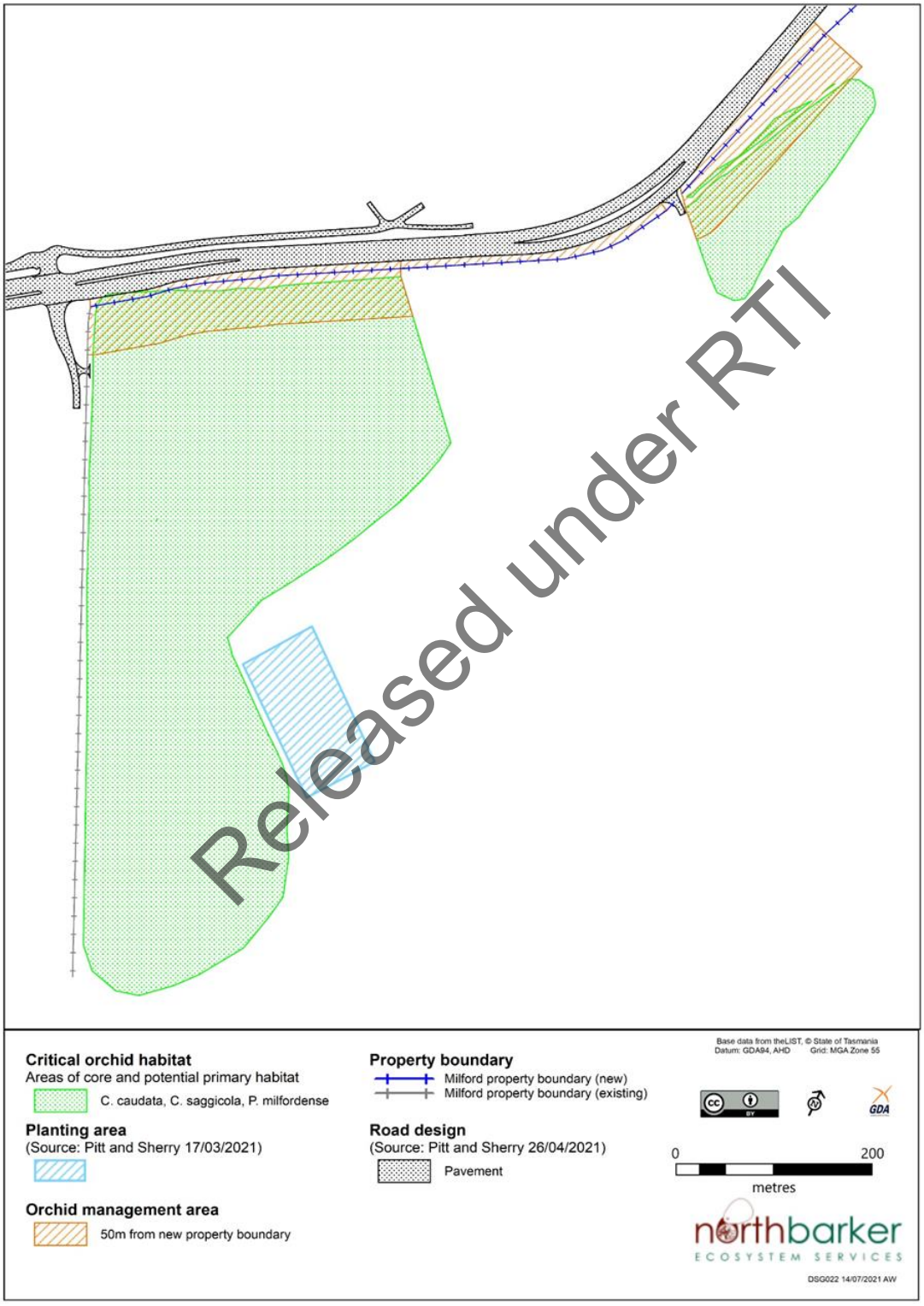


Figure 15: Orchid mitigation management areas

9. Residual impacts

No individuals for any orchid species will be lost during construction of the proposed action. The proposed action will result in the loss of 2% of the potential habitat[14] for *P. milfordense* and *C, caudata* and 2.3% of potential habitat for *C. saggicola* within the road reserve and on the Milford property.

Management during construction will prevent degradation of the remaining habitats. Implementation of the Orchid Habitat Management Plan (Appendix M) will result in improved management of potential habitat to prevent ongoing impacts and enhance habitat condition. This will occur not only immediately adjacent the proposed works but over a wider portion of the Milford property, resulting in a much greater benefit to potential habitat than negative impact. The establishment of a roadside conservation site under the DSG's Roadside Conservation Sites Program provides dedicated resources for the management and enhancement of potential habitat. The extension of these resources on to the Milford property will also ensure ongoing management, monitoring and reporting in the long term.

In light of the absence of direct impacts, the small area and lower quality of potential habitat that will be impacted, and the proposed enhancement of habitat through improved management and monitoring, no formal offsets are considered necessary. The long-term protection and enhancement afforded through the Roadside Conservation Program will secure habitat areas immediately adjoining the footprint of the proposed action and on a significant area of land on the adjacent private land. This outcome has been negotiated with the landowner to ensure mutually agreed outcomes for orchid habitat can be realised through appropriate resourcing, supported by monitoring and adaptive management.

[14] Includes both critical habitat and secondary potential habitat.

10. Other approvals and conditions

10.1 Approvals process

All environmental and land management legislation in Tasmania is underpinned by the Resource Management and Planning System (RMPS). This was introduced in 1993 and provides common objectives which are included as a schedule in each relevant act. These objectives are:

- To promote the sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity
- To provide for the fair, orderly and sustainable use and development of air, land, and water
- To encourage public involvement in resource management and planning
- To facilitate economic development in accordance with the objectives set out in the above paragraphs; and
- To promote the sharing of responsibility for resource management and planning between the different spheres of government, the community and industry in the State.

The RPMS includes:

- The *Land Use Planning and Approvals Act 1993* (LUPAA)
- The *Environmental Management and Pollution Control Act 1994* (EMPCA)
- The *Water Management Act 1999* (WMA); and
- The *State Policy and Projects Act 1993* and the National Environmental Protection Measures (NEPMs).

The proposed action is considered a Utilities land use under the Clarence Interim Planning Scheme 2015 and planning permission is required for the proposed use and development. This approval for the proposed action is administered through LUPAA which is the key article of legislation determining process and timeframes. Other relevant legislation which may influence the matters assessed and which can introduce assessment criteria are outlined in Table 8.

Table 8: Potential legislative matters for consideration

Matter	Context	Legislative trigger
Biodiversity and Natural Values	Impacts on flora and fauna and geoconservation Weeds and pathogens	*Nature Conservation Act 2002* (Threatened Native Vegetation Communities) *Threatened Species Protection Act 1995* (threatened flora and fauna and their habitats) *Weed Management Act 1999* (declared weeds)
Historic heritage	The Milford property is listed as a place of heritage significance: • Place No. RA 1431 under the Clarence Interim Planning Scheme 2015; and • Place ID 1033 on the Tasmanian Heritage Register. The Tasmanian Heritage Council have provided exemptions for the proposed works on Milford.	*Historic Cultural Heritage Act 1995* (works impacting the edge of the property but not the listed fabric)
Water Quality (Surface and Discharge)	Surface water emissions and quality (including stormwater management from hard stands, parking and buildings)	*State Policy on Water Quality Management 1997* State Stormwater Strategy 2010 (called up under the State Policy and establishes water quality targets)
Aboriginal heritage	An Aboriginal Heritage Assessment, was prepared for the overall SETS alignment and there are no recorded Aboriginal Heritage Sites in the proposed action area.	*Aboriginal Heritage Act 1975* Should Aboriginal relics be uncovered during the development, DSG's contractor will implement an Unanticipated Discovery Plan

10.2 Timeframe for assessment

The key steps in the approval process are outlined in Table 9.

Table 9: Approval process – key steps

Step	Timeframe
DA submitted to Clarence Council	Completed
Preliminary assessment by Council and request for further information if required	Completed
DA placed on exhibition by council for public submissions	Completed
Assessment and determination by council	Completed
Council issues permit with council and EPA conditions	Completed
Appeal period	Appeal heard by Resource Management and Planning Appeals Tribunal in December 2021.
Secondary approvals	Any Permit to Take may be subject to seasonal occupation by a fauna species.[15]
Validity of consent	Two years from the date of issue.
Extension of consent	Two extensions of two years each may be requested.

[15] As the proposed action does not directly impact any records of threatened flora species (including the orchids discussed in this document), a Permit to Take under the *Threatened Species Protection Act 1995* is not required for these species.

11. Social and economic considerations

11.1 Details of public consultation activities and their outcomes

A public consultation process was carried out in May 2019 for the three SETS projects and included the following activities:

- Initial consultation with 18 landowners/key stakeholders prior to going out to broader community consultation.
- A four-week public engagement period
- The project comprising SETS were posted on the Department's website and its Facebook page and this was further shared by Sorell Council and Clarence City Council
- A Social Pinpoint on-line feedback page was established, and this was live during the engagement period
- Posters outlining the projects were setup at Tasmania Golf Club, Ingham's Chickens and the Sorell Council Chambers
- Five drop-in engagement sessions of 2 to 3 hours duration were held at various location in Midway Point, Sorell and Dodges Ferry; and
- A presentation to the Tasmania Golf Club.

Congestion along the existing Tasman Highway was a major concern for many respondents and the overwhelming view was that upgrading of the highway was necessary.

Options that were investigated for the Airport to Midway Point Causeway project are summarised below.

- **Option 1 – 100 km/h design, southern alignment**

  This option avoided any impact on the Tasmania Golf Club but had a significant impact on the historic Milford property which contains a number of rare and threatened native orchid species (listed as Critically Endangered under the EPBC Act; and

- **Option 2 – 100 km/h design, northern alignment**

  This option avoided any impact on the Milford property but totally consumed the 16th fairway of the Golf Course and, with limited options to reconfigure the course layout, had the potential to affect the viability of the course.

Initial feedback from directly affected stakeholders and the wider community indicated that neither Option 1 nor Option 2 were viewed as acceptable. Further options were considered, as discussed below:

- **Option 3 – 80 km/h design, northern alignment**

  This option avoided impact on the Milford property but still encroached onto the Golf Course to an extent that was of serious concern to the Golf Club

- **Option 4 – 80 km/h design southern alignment**

  This option avoided impact on the Golf Club and encroached into the Milford property by approximately 40 metres. This resulted in a lower impact on the threatened orchid species than Option 1 but still resulted in a significant impact to the habitat supporting those species; and

- **Option 5 – 80 km/h design minimising impact on both Milford and the Golf Club**

  This option acquires land from the Golf Club (including realignment two fairways, reconfiguration of the practice area and modifications to one green and one tee). The encroachment into the Milford property is approximately 20 m but has minimised impact on threatened species, by largely avoiding impact on habitat for these species.

  Option 5 (as with Option 1 and Option 4) is located partly on Hobart Airport land which is under Commonwealth Government jurisdiction. This will require a suitable arrangement between the Tasmanian and Commonwealth governments. These negotiations have been ongoing for approximately 18 months and finalisation remains a work in progress.

Option 5 became the preferred design and has been progressed to the extent indicated in this Preliminary Documentation. This Option was selected following two workshops with the directly affected stakeholders (Hobart International Airport, Tasmania Golf Club, Barilla Oysters and the Milford property) as the only option that was acceptable to these stakeholders and met the Department's objectives of reducing congestion and improving travel time reliability.

11.2 Projected costs and benefits of the proposed action including the basis for their estimation

The SETS projects will benefit the Tasmanian community with:

- Reduced travel times
- Lower vehicle operating costs
- Lower accident rates
- Lower greenhouse gas emissions
- Increased cycling access – delivering health benefit
- Higher business productivity; and
- Enhanced connectivity within the Sorell region and with Greater Hobart, the East Coast and the Tasman Peninsula.

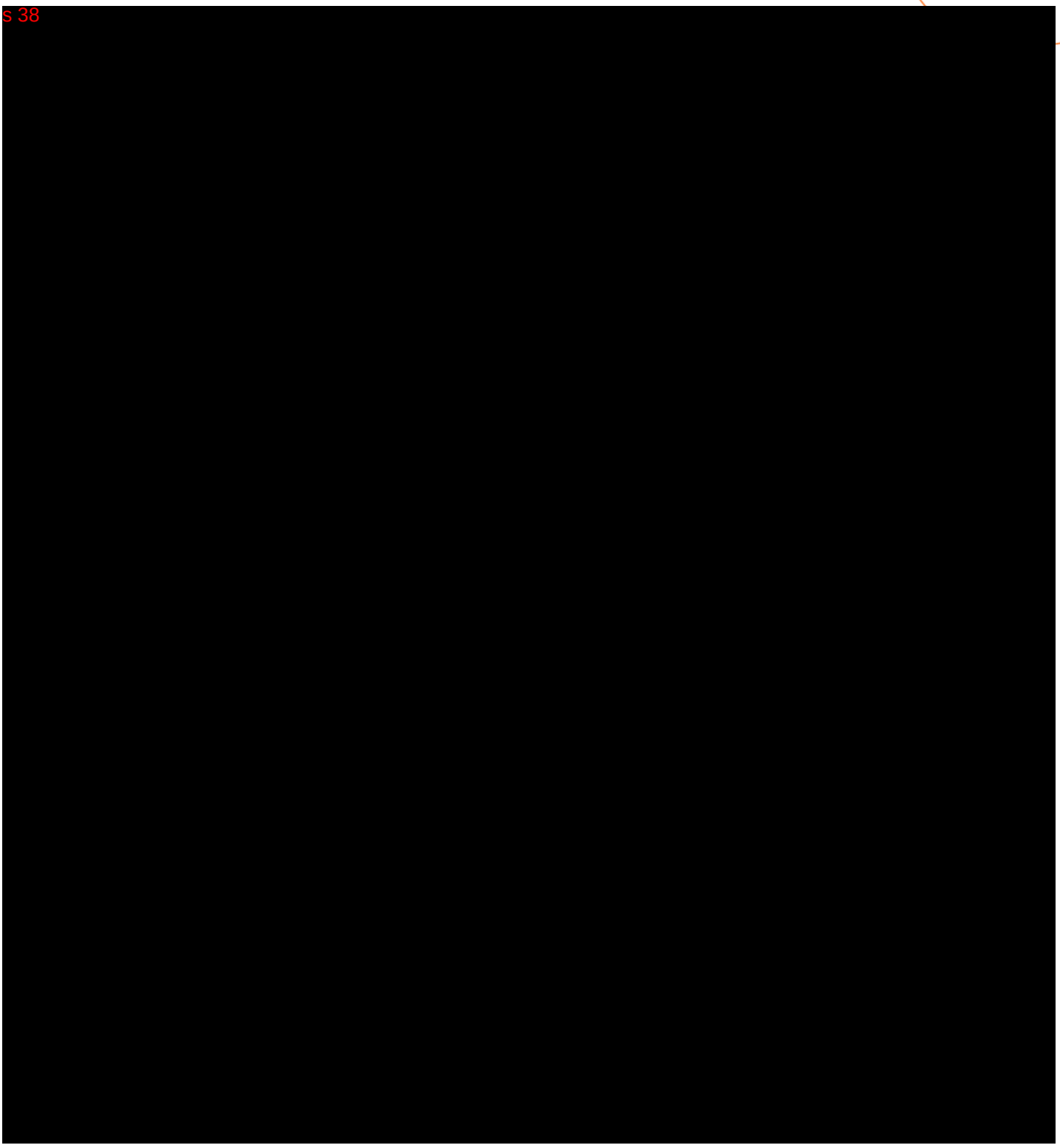
Travel time, vehicle cost and greenhouse gas emissions savings, along with connectivity improvements will be delivered with sections of new dual carriageway and a new bypass.

Safety improvements will be delivered by new flexible safety barrier (including separation of opposing traffic streams), consolidated highway access points, improved traffic management infrastructure at key intersections, separated cycle paths, enhanced streetlighting and removal or treatment of roadside hazards.

A total of 4 km of new cycleway will provide new access for commuting and recreational cyclists – leading to increased cycling activity which brings improved health to participants and lowers health costs.

There is also wider economic benefit which flows from the ability of business and freight users of SETS to increase output due to time and vehicle cost savings.

Summary cost benefit ratios for the overall SETS program are provided in Table 10 and Table 11. The P50 and P90 cost estimates for the Airport to Midway Point Causeway project are $27.3 million (m) and $28.8 m respectively and the benefit cost ratios are consistent with the overall project benefit cost ratios.


s 38

Specific benefits of the overall SETS projects are summarized in Table 12 with benefits attributable to the Airport to Midway Causeway project approximately 30% of the nominated values.

Table 12: Benefits of SETS projects overall

Benefit area	**Benefit indicator and units**	**Value**
Reliability/ amenity	Public Transport reliability (standard deviation hours per annum)	n/a
	Journey time reliability (standard deviation hours per annum)	n/a
Safety	Number of avoided accidents (average annual)	7.0
	Number of avoided serious injuries (average annual)	0.4
	Number of avoided fatalities (average annual)	0.0
Active transport benefits	Additional kilometres of walk and cycle paths (kilometres)	8
	Increased cycling trips annual	32,850
	Increased cycling distance annual km	153,147
Commuter time savings (daily commute to work)	Minutes saved by commuters on their daily commute to work based on a sample of OD commutes along the relevant corridor (average annual)	9.3
	Average number of commuter trip (annual)	4,242,906
Leisure time savings	Average time savings for people on trips for leisure activities (minutes)	9.3
	Average number of leisure trips (annual)	606,129
Freight / business time savings	Average time savings for business trips, including freight (minutes)	9.3
	Average number of business and freight trips (annual)	2,727,583
s 38 [redacted]		
Construction jobs	Number of jobs supported by the Project during the construction phase of the Project (average per annum FTE)	70
Operations jobs	Number of jobs supported by the Project during the operational phase of the Project (average per annum FTE)	N/A

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12. Environmental record of person proposing to take the action

12.1 Details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment and sustainable use of natural resources

DSG has not been subject to any proceedings commenced under any Commonwealth or State environmental laws.

DSG has a proven track record of applying best management practices on environmental issues. The following projects are a testimony to DSG practice:

- Bass Highway, Ulverstone to Penguin Stages 1 and 2
- Construction of McGees Bridge at Sorell, including management of issues related to wetlands of international significance (Ramsar)
- Bass Highway, Westbury-Hagley Bypass
- Brighton Bypass and Transport Hub
- Tarkine Forest Drive Road Upgrade; and
- Rokeby Main Road Upgrade.

DSG maintains a road information database (RIMS), which identifies the location of significant environmental sites. Significant sites include threatened species populations, native vegetation remnants and fauna habitat. It also administers the roadside conservation areas program which provides for the management of offsets and regeneration areas associated with road projects. This is managed under a recurring budget of over $100,000 per annum. Many of the sites under this management regime are linked to a general roadside maintenance permit under the *Threatened Species Protection Act 1995* provided by DPIPWE which ensures independent oversight.

12.2 Proponent's Environmental policy and framework

In working to meet the transport needs of Tasmania, DSG strives to achieve contemporary community environmental goals and meet appropriate State and National environmental standards. DSG takes responsibility for sustainable management of biodiversity, land, soil and water resources in Tasmanian transport corridors. DSG policy highlights are:

- Performance based specification adopting best practice environmental management outcomes that are consistent with principles adopted by other state road authorities
- Conform to appropriate State and Federal environmental legislation
- Improving the integration of land use and transport planning, support public transport, cycling and multiple occupancy vehicles
- Maintain the integrity of our natural, Aboriginal and historic heritage
- Meet community needs in landscaping of transport facilities
- Improve management and disposal of materials
- Reduce the environmental impacts of construction and maintenance of transport infrastructure
- Protection of threatened flora and fauna
- Control the spread of weeds and soil pathogens in transport corridors
- Reduce the environmental impacts of emergencies and accidents; and
- Reduce the environmental impacts of vehicle noise.

13. Conclusion

Compliance with the principles of Ecologically Sustainable Development (ESD), and the objects and requirements of the EPBC Act are demonstrated in Table 13 and Table 14.

Table 13: Principles of Ecologically Sustainable Development

Principle	Comment
(a) decision-making processes should effectively integrate both long-term and short-term economic, environmental, social, and equitable considerations;	The proposed action is one component of a range of road upgrade projects aimed at improving liveability in the fastest growing region of southern Tasmania. The project involved consultation with the community and all levels of government and included a socio-economic impact and analysis assessment. The project is aimed at meeting long term traffic objectives and offers long term security and enhancement potential for the orchid habitat in the locality.
(b) if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation;	There will be no significant impact on any of the nominated MNES addressed in this documentation. This is supported by a number of recent, comprehensive assessments and there is no lack of scientific certainty.
(c) the principle of inter-generational equity--that the present generation should ensure that the health, diversity, and productivity of the environment is maintained or enhanced for the benefit of future generations;	The proposed action provides for the long term needs of the community through the provision of suitable infrastructure. The proposed action will also enable the longer term, publicly funded protection of threatened species habitat and will contribute to the survival of the species.
(d) the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making;	The consistency of the proposed action with the objects of the EPBC Act are outlined in Table 14. The objectives of the RMPS include the sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity, and the fair, orderly and sustainable use and development of land. These principles are shaped the legislation (e.g. LUPAA) against which the proposed action has been assessed as being compliant with.
(e) improved valuation, pricing and incentive mechanisms should be promoted.	Placing an appropriate value on ecological features allows the consideration of all impacts of a proposed action (social, environmental and economic). The assessments submitted indicate the range of habitat quality across the site and the value of the site for these orchid species. This value is to be promoted through the provision of significant funding for its enhancement and future monitoring. The significance of the proposed action to each was determined and the potential for impacts assessed using the Commonwealth guidelines.

Table 14: Objects of the EPBC Act

Object	Comment
(a) to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance	The assessments prepared have identified all ecological values within and adjoining the project area and considered these in the context of regional and state populations. The significance of MNES matters was considered and the three orchid species nominated in this documentation were subject to additional scrutiny. It is considered that the proposed action will not have a significant impact.
(b) to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources	The project overall involves a small area of clearing of native vegetation. No threatened individuals will be impacted. Some critical habitat will be impacted, however, the loss of these areas is considered insignificant, particularly in light of areas that will be protected and enhanced on adjoining land as part of the proposed mitigation strategies proposed. The principles of ESD are discussed in Table 13.
(c) to promote the conservation of biodiversity	No species or communities will be significantly impacted and there will be no loss of habitats or species diversity as a consequence of the project.
(ca) to provide for the protection and conservation of heritage	No heritage matters will be adversely impacted by the proposed action.
(d) to promote a co-operative approach to the protection and management of the environment involving governments, the community, land-holders and indigenous peoples	The proponent has engaged with landowners, the community land regulators to ensure the most appropriate outcome for the development and the wider community.
(e) to assist in the co-operative implementation of Australia's international environmental responsibilities	The proposed action represents part of a long term project which balances community needs, future infrastructure obligations and environmental values. The commitment to habitat protection and enhancement is consistent with national obligations to protect threatened species.
(f) to recognise the role of indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity; and	The project does not impact any identified sites of Aboriginal cultural heritage significance. Protocols will be implemented in the event of any unanticipated discovery.
(g) to promote the use of indigenous peoples' knowledge of biodiversity with the involvement of, and in co-operation with, the owners of the knowledge.	As part of the Aboriginal heritage assessment process for the proposed action, the relevant traditional owner groups are consulted to provide input to the process and assessment.

The assessment against the Significant Impact Criteria in the Significant Impact Guidelines 1.1 – Matters of National Environmental Significance determined there would be not significant impact on these species.

It is considered that the application can be approved, subject to the avoidance and mitigation measures outlined in this document and its attachments.

14. Information sources

This preliminary documentation was prepared using a range of information sources. In addition to general references the key documents in Table 15 have been prepared specifically to assess ecological values within the project area.

Table 15: Key documents used in preparation of preliminary documentation

Title	Author/Date	Reliability	Uncertainties
Tasman Highway Holyman Avenue to Pittwater Bluff Natural Values Assessment	NBES 30 September 2020	High Supported by multiple targeted surveys	This assessment was prepared prior to the late 2020 targeted orchid surveys and may not reflect all known records. More recent information has been used from more recent reports where required to reduce uncertainty in the Preliminary Documentation.
Significant Impact Assessment 2020	NBES 27 July 2020	High Addresses all MNES listed in Protected Matters Search Tool	This assessment was prepared prior to the late 2020 targeted orchid surveys and may not reflect all known records. The likelihood of significant impact is unlikely to change as a result of additional records and more recent data has been used where required to reduce uncertainty in the Preliminary Documentation.
Targeted Spring/Summer Orchid Survey 14th September and 19th November 2020 Hobart International Airport	NBES 10 December 2020	High Describes extent of survey coverage on Commonwealth land	Uncertainties relate to individual plants being overlooked. This is a survey of the adjacent land and provides contextual data.
Orchid habitat impact assessment and mitigation plan	NBES 24 February 2022	High Considers all risk to MNES orchids and includes a plan to address any existing and potential future threats.	None. The site has been extensively surveyed. The report represents a compilation of all available survey data and assesses the project impacts against relevant policies and guidelines. Conclusions relate to the most recent accumulated data form surveys and site habitat assessment. The findings of reports related to stormwater discharge and the potential for contamination from road pavements have been used to inform the report.
Stormwater Discharge Analysis	pitt&sherry 15 October 2021	High	The analysis outlines the current and predicted outcomes and provides justification for the modelling inputs and scenarios used. This report does not introduce any uncertainty to the Preliminary Documentation or orchid habitat management conclusions.

Field assessment of potential contaminants	pitt&sherry 14 April 2021	High	The assessment concludes that background levels are represented by the sample results obtained in the furthest extent of the transect. It recommends that additional background samples be undertaken as part of the soil and water monitoring programs. These results will inform the adaptive management measures contained in the Orchid Habitat Management Plan (Appendix M). This will address any uncertainty relating to background levels.

Plan of proposed action

Appendix A

Referral submitted by pitt&sherry in October 2020

Appendix B

Response to Request for information 12 November 2020

Appendix C

Response to Request for information 1 February 2021

Appendix D

Matters prescribed by DAWE for inclusion in Preliminary Documentation

Appendix E

Natural Values Assessment
July 2020

Appendix F

Protected Matters Search Results July 2021

Appendix G

Significant Impact Assessment 2020

Appendix H

Orchid habitat impact assessment and mitigation plan

Appendix I

Stormwater Discharge Analysis

Appendix J

Stormwater Management Plan

Appendix K

Field assessment of potential contaminants

Appendix L

Orchid Habitat Management Plan

Appendix M

pitt&sherry

pitt&sherry

EPBC Act Referral 2020/8805 – REQUEST FOR ADDITIONAL INFORMATION

ASSESSMENT BY PRELIMINARY DOCUMENTATION

Tasman Highway Upgrade Hobart Airport to Sorell Causeway

Pitt & Sherry (Operations) Pty Ltd
ABN 67 140 184 309

Phone 1300 748 874
info@pittsh.com.au
pittsh.com.au

Located nationally —
Melbourne
Sydney
Brisbane
Hobart
Launceston
Newcastle
Devonport

From: s 36
To: [redacted]
Subject: FW: New small roadwork job
Date: Wednesday, 12 April 2023 4:59:22 PM
Attachments: T-P.19.0406-DRN-MEM-002-Milford Access Road-Rev00.pdf
s 36 [redacted]
Distribution-Overhead-Design-Standard-Clearances.pdf

Hi [redacted]

My Response to the matters raised by s 36 and JMG.

Drainage

Has s 36 been provided with the report we prepared on the drainage (copy attached). s 36 and JMG would gain some insight into the drainage issues and design intent by reading this. The report describes the existing conditions and the conditions after construction of the new access road. In particular it states *"During normal rainfall events, water will likely pond and then evaporate and/or infiltrate into the ground across much of the catchment including areas adjacent to the proposed access. Surface flows are likely only during prolonged heavy rainfall. The sags and ridges in the paddocks make it difficult for water to easily flow."* (paragraph 3 page 1)
And
"Culverts are proposed where existing features suggest flows would migrate. There will be many less obvious locations where ponding currently occurs and would continue to occur" (paragraph 4 page 3)

I did flag this issue also in my email to you of 1/11/2022. *"We have provided 225 mm diameter culverts along the driveway (450 mm at the entrance). The 225s need about 400 mm cover so we have had to lift the road by about 600 mm at the culvert locations. Is that what Robyn wants? If not - then no culverts, road is at ground level and all water goes over the road and we could put a concrete spoon drain at the existing shallow drain crossings*." This particular scenario would result in water over the road during rain events. To solve this problem we set the design levels of the new road marginally above natural ground level (typically about 50 mm) to keep water off the road and also limit the potential for water to build up behind the road. Lifting the road higher and providing many more culverts (ie a causeway scenario) would add considerably to cost and potentially lead to water ponding to a depth equal to the height of the road in heavy rainfall events.

Coastal Refugia Planning Overlay

According to our Planner, the Future Coastal Refugia should not pose any concerns. Refer second attachment.

Powerline clearance

The powerline clearance has also been discussed before extensively .
At ch 770 its 5.78 metres, at ch 880 it is 5.99m.
The Tasnetwork Overhead Distribution Design Manual (extract attached) advises a clearance of 5.5 metres for private driveways (except service stations and farms) with farms to be determined following a risk assessment. Based on current use on Milford, 5.78 metres would seem to be sufficient, which is probably why the lines are the heights that they are. As stated in the Tasnetworks clearance table a risk assessment needs to be done to determine if there is a case

for raising the lines based on conductor type and current use and equipment. If the case for raising the lines is only dictated by a future use then you will have to decide whether this is something you are prepared to fund. Then of course if you take this to its logical conclusion the increased clearance, if applicable, won't just apply to the sections of line over the new road! s 39 [redacted]

Regards

s 36 [redacted]

Principal Engineer

s 36 [redacted]

Hobart Office — Level 1, Surrey House, 199 Macquarie Street
PO Box 94 Hobart Tasmania 7001 | Phone s 36 [redacted]

pittsh.com.au

From: [redacted]@stategrowth.tas.gov.au>
Sent: Thursday, 6 April 2023 11:44 AM
To: s 36 [redacted]@pittsh.com.au>
Subject: FW: New small roadwork job

Hi s 36 [redacted]

Out of scope [redacted] Are the planning team aware of the planning scheme change mentioned below?

Thanks,

[redacted]
Programming and Delivery | Department of State Growth
4 Salamanca Place, Hobart TAS 7000 | GPO Box 536, Hobart TAS 7001
[redacted] | s 36 [redacted]
www.stategrowth.tas.gov.au

Courage to make a difference through
TEAMWORK | INTEGRITY | RESPECT | EXCELLENCE

In recognition of the deep history and culture of this island, I acknowledge and pay my respects to all Tasmanian Aboriginal people; the past, and present custodians of the Land.

Please note I do not work Fridays.

Out of scope [redacted]

Attachment 1

pitt&sherry

Specialist Knowledge.
Practical Solutions.

Memo

To s 36

From s 36

Date 2 November 2022

RE **Milford Access Road Drainage Assessment**

A drainage review has been undertaken for the proposed property access road at Milford (1431 Tasman Highway, Cambridge). The new access is proposed off Pittwater Road and will run through the site and join the existing driveway at Milford precinct.

Existing Site and Catchment

The existing terrain in the vicinity of the new access road is flat, with sags covering significant areas where water ponds. There are no clearly defined natural flow paths. The broader catchment can be characterised as bushland surrounds transitioning into open paddock farmland with sparse vegetation. Several minor drainage channels cross the road alignment, however there appears to be little positive grade available in these drains. Internal access tracks are present with LiDAR suggesting they generally sit marginally above the flat land (approximately 100-150mm).

The total catchment area that could reasonably migrate to the proposed access is in the order of 75-hectares. However, significant depressions are present in the natural landform with large areas comprising sandy soils.

During normal rainfall events, water will likely pond and then evaporate and/or infiltrate into the ground across much of the catchment including the areas adjacent to the proposed access. Surface flows are likely only during prolonged heavy rainfall. The sags and ridges in the paddocks make it difficult for water to easily flow. Figure 2 shows significant ponding on the site following a sustained rain event in 2009.

During a sustained and heavy rainfall event, overland flow originating from above and around the Tasman Highway and Pittwater Road may migrate through bushland to the open paddocks at the site. Much of this water will be impeded by sandy depressions in the land. Flows that migrate to the paddock would then pond in the flat portion of the site designated by the yellow color in Figure 1. Approximately 12-hectares of land sits at approximately 1.5m AHD +/- 100mm. Internal tracks are marginally elevated and some minor drainage lines are present. If a sufficiently large volume of rainfall fell, the water would eventually migrate in an easterly direction to 5 Mile beach.

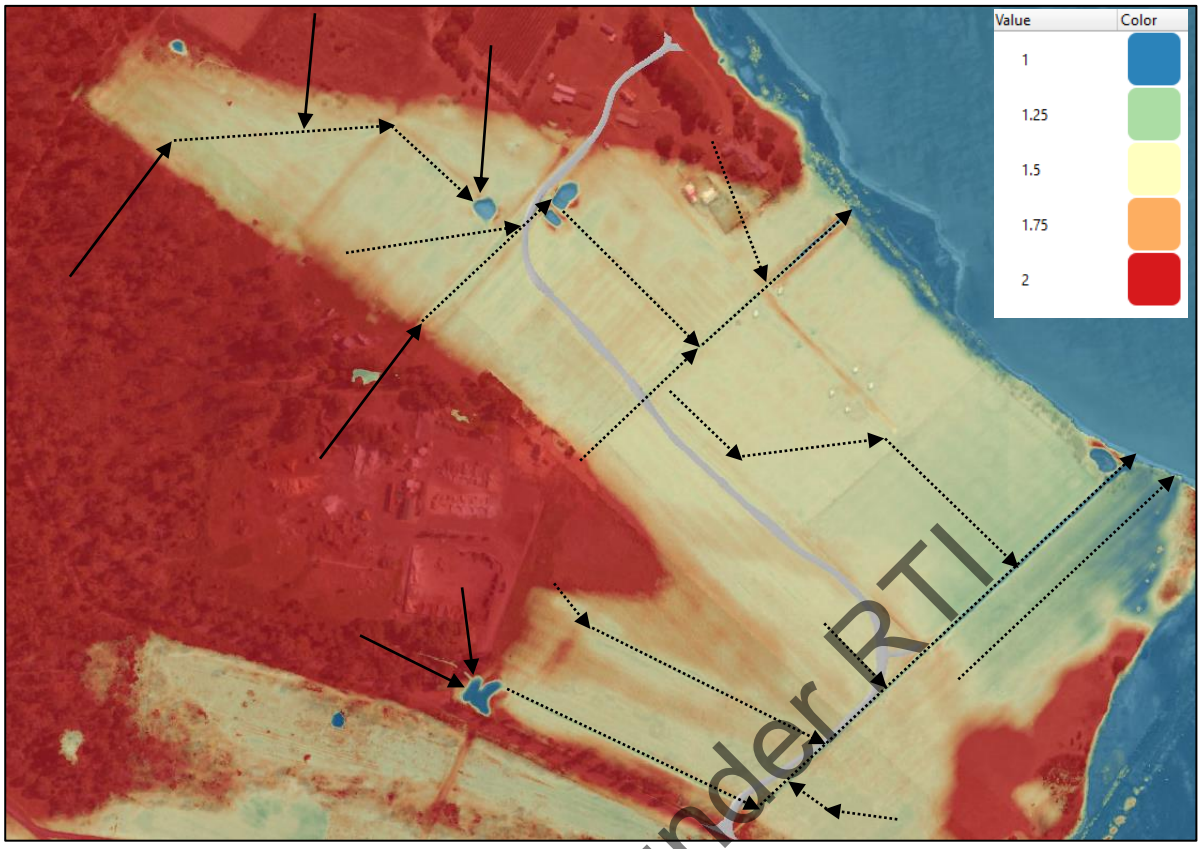

Figure 1: General direction of existing surface flows/drainage paths with proposed access road superimposed on terrain profile (m AHD)

Figure 2: Site After Heavy Rainfall 2009 (Source: Google Earth Pro)

Developed conditions

The proposed new access road alignment will intercept surface flows migrating through the site. The extent of catchment that could flow across the access road is depicted in Figure 3.

The following features are proposed:

- The vertical alignment of the road is proposed to generally sit at the existing ground level
- Where culverts are proposed, the road will be locally elevated to allow for a culvert pipe with adequate cover. As the land is flat, ponding may be exacerbated locally by the new road formation
- Localised shaping of the ground near to culverts is proposed to promote flow towards them; and
- A new access culvert near Pittwater Road is proposed along the existing road drain alignment.

The following constraints are present:

- Culverts will be susceptible to siltation because there is generally no positive grade available. Regular maintenance will be necessary
- Culverts are proposed where existing features suggest flows would migrate. There will be many less obvious locations where ponding currently occurs and would continue to occur. The most probable areas of exacerbated ponding are depicted in Figure 4. Ponding along the side of the new access road will be present regardless
- Although road drains are proposed, they will generally not improve drainage adjacent to it as there is insufficient surface grade to allow for suitable flow; and
- In a major sustained rainfall event, the access road may locally increase ponding behind the culverts in which water backs up behind the road formation. With the proposed vertical alignment, the flow would migrate laterally and spill to areas where the road crest is lower.

Figure 3: Extent of catchment that could flow across new access road at Milford (hectares)

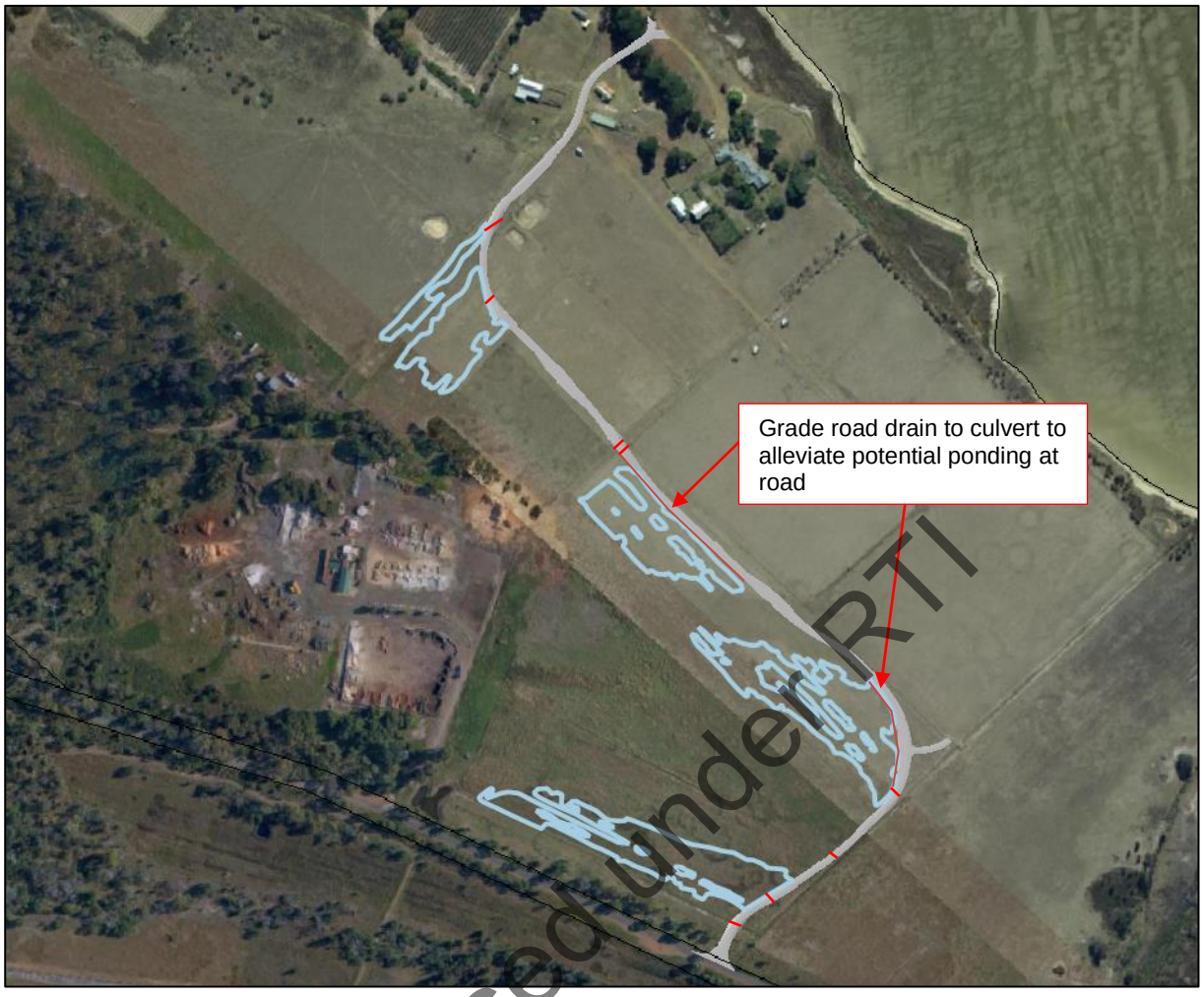

Figure 4: Most obvious areas of potential ponding behind the new access road and recommended culvert locations

Yours sincerely

s 36

Civil/Hydraulic Engineer

Attachment 2

From: s 36
To: s 36
Subject: RE: Milford - New Access - P.19.0406.013
Date: Thursday, 6 April 2023 2:19:49 PM
Attachments: image003.png
Out of scope

Hi s

Good to know your still around but hope you can close this one out soon so you can fully enjoy your retirement!

As the proposed access is categorised as 'works', P2.1 and P2.2 of Clause C7.6.1 of the Natural Assets Code will apply (see table below).

If the access avoids significant natural assets (wetlands, habitats, native veg etc):

- it should be relatively easy to demonstrate compliance
- Council are unlikely to request a Natural Values Assessment - the code does not specifically require one.

Out of scope

C7.6.1 Buildings and works within a waterway and coastal protection area or a future coastal refugia area

Objective: That buildings and works within a waterway and coastal protection area or future coastal refugia area will not have an unnecessary or unacceptable impact on natural assets.

Acceptable Solution	Performance Criteria
A2 Buildings and works within a future coastal refugia area must be located within a building area on a sealed plan approved under this planning scheme.	P2.1 Buildings and works within a future coastal refugia area must allow for natural coastal processes to continue to occur and avoid or minimise adverse impacts on natural assets, having regard to: (a) allowing for the landward transgression of sand dunes and the landward colonisation of wetlands, saltmarshes and other coastal habitats from adjacent areas; (b) avoiding the creation of barriers or drainage networks that would prevent future tidal inundation; (c) allowing the coastal processes of sand deposition or erosion to continue to occur; (d) the need to group new facilities with existing facilities, where reasonably practical; (e) the impacts on native vegetation; (f) minimising cut and fill; (g) building design that responds to the particular size, shape, contours or slope of the land; (h) the impacts of sea-level rise on natural coastal processes and coastal habitat; (i) the environmental best practice guidelines in the Wetlands and Waterways Works Manual; and (j) guidelines in the Tasmanian Coastal Works Manual. P2.2 Buildings and works within a future coastal refugia area must be for a use that relies upon a coastal location to fulfil its purpose, having regard to: (a) the need to access a specific resource in a coastal location; (b) the need to operate a marine farming shore facility; (c) the need to access infrastructure available in a coastal location; (d) the need to service a marine or coastal related activity; (e) provision of essential utility or marine infrastructure; and (f) provision of open space or for marine-related educational, research, or recreational facilities.

Kind regards
s

s 36

Associate Planning and Economic Development Consultant
BSc (Hons), DURP, MPSL
Member Economic Development Australia
Member Royal Town Planning Institute

s 36

Launceston Office — Level 4, 113 Cimitiere Street
PO Box 1409 Launceston Tasmania 7250 | s 36
pittsh.com.au

From: s 36 @pittsh.com.au>
Sent: Thursday, 6 April 2023 12:34 PM
To: s 36 @pittsh.com.au>
Subject: Milford - New Access

Hi s
Yes, I'm still around and inching forward on finalising this project. Could you please advise on the implications, if any, on construction of the new access through the recently introduced Future Coastal Refugio Overlay. Out of scope

Regards
s

Sent from my iPhone

Begin forwarded message:

From: '[redacted]@stategrowth.tas.gov.au>
Date: 6 April 2023 at 11:44:37 AEST
To: s 36 [redacted]@pittsh.com.au>
Subject: FW: New small roadwork job

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi[redacted]

Out of scope [redacted]. Are the planning team aware of the planning scheme change mentioned below?

Thanks,

[redacted]
Programming and Delivery | Department of State Growth
4 Salamanca Place, Hobart TAS 7000 | GPO Box 536, Hobart TAS 7001
[redacted] | s 36 [redacted]
www.stategrowth.tas.gov.au

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In recognition of the deep history and culture of this island, I acknowledge and pay my respects to all Tasmanian Aboriginal people, the past, and present custodians of the Land.

Out of scope [redacted]

10.1 DISTRIBUTION MAINS CLEARANCES FROM GROUND AND STRUCTURES

10.1.1 Summary Table

Clearance Type		Location Description	Dimension Code (see 10.1.3)	Direction	LV		HV 1kV – 33kV			HV >33kV, <132kV
					ABC	BARE	Bare & Covered Conductor	Insulated without Earth Screen	Insulated with Earth Screen	Bare & Covered Conductor
Ground	Roads	Over the carriageway	A	Vertically	5.5m	5.5m	6.7m	6.0m	5.5m	6.7m
		Over roadway other than the carriageway	B	Vertically	5.5m	5.5m	5.5m	5.5m	5.5m	6.7m
	Other	Private driveways and land traversable by vehicles more than 3m in height (except service stations and farms)	C	Vertically	5.5m	5.5m	5.5m	5.5m	5.5m	6.7m
		Areas not normally accessible to vehicles more than 3m in height (e.g. swampy areas, gradient > 1:1)	C1	Vertically	4.5 m	4.5m	4.5 m	4.5m	4.5m	5.5m
		Cuttings, embankments and easement boundaries		Horizontally	1.5m	1.5m	2.1m	2.1m	1.5m	5.5m
Structures / Buildings		Unroofed terraces, balconies, sun decks, paved areas etc. that are subject to pedestrian traffic only	E	Vertically (Note 1)	2.7m	3.7m	4.5m	3.7m	2.7m	5.0m
			F	In any other direction	1.0m	1.5m	2.1m	1.5m	1.5m	3.0m
		Roofs or similar structure not normally accessible to persons but on which a person may stand	G	Vertically (Note 1)	2.0m	2.7m	3.7m	2.7m	2.7m	4.5m
			H	In any other direction	1.0m	1.5m	2.1m	1.5m	1.5m	3.0m
		Covered places such as verandahs, balconies and windows which can be opened	I	In any direction	1.0m	1.5m	2.1m	1.5m	1.5m	3.0m
		Parts of any structure not normally accessible to persons, incl. blank walls and windows that cannot be opened	K	Vertically (Note 1)	0.6m	2.7m	3.7m	2.7m	2.7m	4.5m
			L	Horizontally	0.1m	0.6m	1.5m	0.6m	0.1m	2.5m
Other High-Risk Situations		Service Poles in the vicinity of OH conductors (refer 10.2.4)		Vertically	1.5m	1.5m	1.65m	1.65m	1.5m	3.0m
				Horizontally	1.0m	2.0m	2.2m	1.5m	1.5m	3.0m
		Overdimension high load transport routes		Vertically	6.7m minimum for all conductors (incl. stay wires and services)					
		Temporary structures including scaffolding		Vertically	Not permitted					
				Horizontally	1.0m	1.5m	2.1m	2.1m	2.1m	3.0m
		Quarries, mines, farms etc. where activities will be in close proximity to power lines (Note 3)			Subject to risk assessment					
		Farms utilising irrigation		Vertically	5.5m	7.5m	7.5m	7.5m	7.5m	7.5m
				Horizontally	7.9m	7.9m	8.5m	8.5m	7.9m	13.0m

See notes on next sheet

Notes regarding Distribution Mains Ground and Structure Clearances table:

1. This should not be taken as meaning only the literal vertical. The actual clearance may also extend outwards in an arc until it interacts with the relevant intersecting dimension.
2. Minimum clearance values are for the following conductor conditions:
    a. Maximum conductor temperature of:
        i. 75ºC for LVABC
        ii. 50ºC for bare open LV,11kV, 12.7kV & 22kV mains
        iii. 50ºC for HVABC
        iv. 50ºC for bare open 33kV mains
    b. Worst condition of conductor swing - 15ºC and 500Pa Wind load
    c. Allowance to be made for inelastic stretch of conductors following installation.
3. The above clearances are a minimum and at times a higher clearance may be warranted. For high-risk locations where machinery and plant are likely to operate in close proximity to power lines a risk assessment should be conducted to determine the most appropriate solution to minimise the risk of contact. Examples of potential high-risk locations include quarries, mines, farms with a need to transport tall centre pivots or grain augers. Possible solutions to be considered include:
    a. relocation of power line to an alternate location
    b. increasing clearances
    c. use of an insulated conductor type
    d. use of an underground cable
    e. installing powerline markers or insulated barriers/covers.
4. The clearances in the above table are for vehicles with a maximum height of 4.6m. Vehicles exceeding 4.6m require a permit from the Government and as part of the permit approval process TasNetworks may be required to survey the intended route.

From: s 36
To: [redacted]
Subject: RE: Tasman Highway Upgrade - Airport Interchange to Midway Point Causeway [SEC=UNOFFICIAL]
Date: Wednesday, 5 April 2023 6:45:58 AM
Attachments: image001.png
Out of scope [redacted]
Milford Orchid Impact Offset Review 3 - 02022023.pdf

Hi [redacted]

North Barker advise that they are unable to attend Milford on either 24-26 April or 8-10 May which puts us back to 22-24 May (Refer attached).
Regarding the habitat assessment methodology, which I have also attached, I don't see why this can't be provided in its current from to s 36 under the proviso that there may be some changes to it (eg s 36 is considering changing the size of the quadrats). This methodology is for s 36 information so that she understands the activities that will be carried out on her property, not for her review and comment on its scientific rigour. I can try for the 10 th May with DCCEEW. I sent off a request last week for the 16th May meeting but have not had a reply yet.

Regards

s 36 [redacted]

Principal Engineer

s 36 [redacted]

Hobart Office — Level 1, Surrey House, 199 Macquarie Street
PO Box 94 Hobart Tasmania 7001 | Phone s 36 [redacted]

pittsh.com.au

From: [redacted]@stategrowth.tas.gov.au>
Sent: Tuesday, 4 April 2023 5:42 PM
To: s 36 [redacted]@pittsh.com.au>
Cc: [redacted]@stategrowth.tas.gov.au>
Subject: RE: Tasman Highway Upgrade - Airport Interchange to Midway Point Causeway [SEC=UNOFFICIAL]

Wide Distribution

Hi s 36 [redacted]

I'm concerned we don't have enough time to complete these tasks as NBES are not going to update the methodology before s 36 gets back. Dates as I understand them:

- 8 May – s 36 returns

16 May – hoping to have DCCEEW meeting

- 16-17 May– documentation with DCCEEW comments (assuming nothing major to come out of the meeting)
- 18 May – Provide to s36 to review ahead of site visit
- 22-24 May – site visit

This doesn't leave enough time between giving s36 time to review the documentation before the site meeting which won't get confirmed until s36 has review the documentation.

To make this work either we hold the DCCEEW meeting on 10 May and bring things forward 6 days or NBES update the methodology in s36 absence and we hold the meeting with DCCEEW in April/May.

Can you let me know which option is achievable?

Thanks,

[redacted]
Programming and Delivery | Department of State Growth
4 Salamanca Place, Hobart TAS 7000 | GPO Box 536, Hobart TAS 7001
[redacted] s 36 [redacted]
www.stategrowth.tas.gov.au

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In recognition of the deep history and culture of this island, I acknowledge and pay my respects to all Tasmanian Aboriginal people; the past, and present custodians of the Land.

Please note I do not work Fridays.

Out of scope
[redacted]

Out of scope

[redacted]

Sent from my iPhone

Begin forwarded message:

From: '[redacted]@stategrowth.tas.gov.au>
Date: 4 April 2023 at 15:08:31 AEST
To: s 36 [redacted]@pittsh.com.au>
Subject: RE: North Baker Habitat Assessment

Wide Distribution

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi s 36 [redacted]

s 36 [redacted] has advised she is no longer available over Easter as s36 [redacted] told her 22-24

May is the next visit – s 39 [redacted]. I've asked her to hold the 22-24 for a secondary visit and allow us to visit on the 24-26 April (a date she previously advised was available). Can you please book NB in for **24-26 April**. Before s 36 will let us onto Milford she requires a copy of North Barker's Monitoring Proposal, can you please send that through?

I've attached the latest correspondence with s 36. FYI she know and a specialist EPBC lawyer assisting her, paid by the department.

Will NB update the methodology in s 36 absence or only making notes for his consideration and s36 updates it when he gets back?

Will there be a requirement for soil testing? The below concerns from s 36 around soil testing.

> ***Soil testing concerns me (and I presume DCCEEW) and we will need to know in advance***
>
> 1. ***where any soil tests are intended to be conducted?***
> 2. ***to what depth?***
> 3. ***how is it planned to avoid orchid sites? eg if they are planning sampling on a grid system (and thus could potentially damage or destroy orchid tubers, as they are largely invisible now) and***
> 4. ***has the potential impact of this testing been assessed? No-one is permitted to dig up anything in this habitat, due to the potential risks, so this needs to be assessed first.***
> 5. ***copy of DCCEEW approval for any such samples to be taken"***

In addition to the information s 36 requires for a site visit, she's increased that list to include:

> 1. ***what equipment is being brought onto the site? (including but not limited to soil testing equipment, other implements, wildlife cameras, song meters, or anything that has potential to contaminate the site)***
> 1. ***how and where will sanitisation of equipment occur (this is usually done off site just prior to entering)***
> 2. ***if tree branches or foliage are to be sampled, how will this to be done?***

Can you please discuss with NBES and respond.

Thanks,

[redacted]
Programming and Delivery | Department of State Growth

4 Salamanca Place, Hobart TAS 7000 | GPO Box 536, Hobart TAS 7001
[redacted] | s 36 [redacted]
www.stategrowth.tas.gov.au

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Please note I do not work Fridays.

From: s 36 [redacted] @pittsh.com.au>
Sent: Tuesday, 4 April 2023 1:36 PM
To: [redacted] @stategrowth.tas.gov.au>
Subject: FW: North Baker Habitat Assessment

Hi [redacted]

Refer below details for the 10th – 12th site visit. Please forward this information to s 36 [redacted] ASAP, noting that we need confirmation by 12 noon on Thursday.

Regards

s 36 [redacted]

Principal Engineer

s 36 [redacted] | [redacted] | [redacted]

Hobart Office — Level 1, Surrey House, 199 Macquarie Street
PO Box 94 Hobart Tasmania 7001 | Phone s 36 [redacted]

pittsh.com.au

From: s 36 [redacted] @northbarker.com.au>
Sent: Tuesday, 4 April 2023 10:09 AM
To: s 36 [redacted] pittsh.com.au>
Subject: RE: North Baker Habitat Assessment

Hi s 36 [redacted]

No worries, I've reviewed the commitments from s 36 [redacted] below whilst at the same time reviewing the comments from the feds and the method in general.
I've attached the register of comments from DCEEW and made some brief notes against each dot point. Those in red are pending further detailed consideration before the May meeting with DCEEW but do not really need to be addressed now as they don't impact initial data collection on the ground (e.g. they might be about

PO Box 94 Hobart Tasmania 7001 | s 36

pittsh.com.au

From: s 36 @northbarker.com.au>
Sent: Tuesday, 14 March 2023 4:53 PM
To: @stategrowth.tas.gov.au>; s 36 @pittsh.com.au>
Subject: RE: North Baker Habitat Assessment

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi

As I am on leave until May, I suggest postponing any work in this area until that time. This will also ensure we can accommodate any feedback from DCCEEW regarding our methodology. I'm reluctant to bring in someone else from North Barker at this stage.

I suggest for s 36 benefit that she should be provided with a copy of my Orchid Impact Offset Review. This may alleviate her concerns regarding soil sampling , which does not form part of the exercise. Attached is an updated version where I have modified the cut off quantum for scoring impact from animal digging from 5% to 25 %. This version also has a modified Figure 1 that correctly shows the orchid habitat directly impacted (minor mapping error).
The sampling sites for the orchid management area are identified in a georeferenced pdf.
Data to be collected will be taken from 5 x 5 m quadrats and include observed cover densities following an adapted Braun-Blanquet cover class . No plant material will be taken.

Regards s 36

s 36
Director / Principal Ecologist

s 36

313 Macquarie St, Hobart, TAS. 7000
www.northbarker.com.au

We pay our respects to the muwinina people, on whose unceded land we work. We acknowledge all palawa people across lutrawitta / Tasmania, their elders past, present and emerging, and their continuing history of sustainable land management.

From: @stategrowth.tas.gov.au>

Sent: Tuesday, March 14, 2023 2:06 PM
To: s 36 @northbarker.com.au>; s 36 @pittsh.com.au>
Subject: FW: North Baker Habitat Assessment
Importance: High

Hi s 36

s 36 just advised that the habitat surveying will need to be postponed, I've let s 36 know (through her lawyer). '

s 36 mentioned that Canberra had changes to our methodology, are you able to completed the sections in yellow below or do you need to wait for Canberra's feedback?

Can we organise a site visit for 11 & 12 April? I know s 36 is away although I'm sure there is another resource that can assist in the interim.

Thanks,

Programming and Delivery | Department of State Growth
4 Salamanca Place, Hobart TAS 7000 | GPO Box 536, Hobart TAS 7001
| s 36
www.stategrowth.tas.gov.au

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Please note I do not work Fridays.

Out of scope

Tasman Highway Upgrade

Hobart Airport to Pittwater Bluff

EPBC 2020/8805

Offset Appraisal

2 February 2023

The purpose of this document is to seek the Department of Climate Change, Energy, the Environment and Water (DCCEEW) endorsement of the methodology for assessing the impact area and offset area. It also provides a method for monitoring the condition of the offset area over time. Once endorsed the impact and offset areas can be scored a condition (Habitat Quality) score. The information included in this appraisal will be incorporated along with the data from assessment into the Orchid Offset Area Management Plan.

NB The Orchid Offset Area Management Plan will describe ongoing management of the Orchid Offset Management Area on Milford. That document is to be distinguished from the Roadside Conservation Site Management Plan on State Growth land and the orchid management prescriptions in the Construction Management Plan.

The assessment by Department of Agriculture, Water and the Environment (DAWE), now Department of Climate Change, Energy, the Environment and Water (DCCEEW), subsequently referred to as the Department, has determined [1] there to be residual significant impacts to two critically endangered orchids (MNES) as summarized in Table 1. The area of known range has been taken from mapped area of critical habitat for each species from the *Orchid Impact Assessment and Mitigation Plan* (North Barker 02-02-2022).

Table 1: Impact to known range of orchids

Species	Direct Impact	Indirect Impact
Milford leek-orchid (*Prasophyllum milfordense)*	0.08 ha (0.40%)	0.04 ha (0.31%)
Sagg Spider-orchid (*Caladenia saggicola*)	0.08 ha (0.37 %)	0.05 ha (0.24%)

The Department has also determined that without avoidance of impacts, the residual significant impacts will require offsetting.

Following review of an earlier draft of this document and subsequent meeting on 22 November 2022 between the consultants, DCCEEW and Department of State Growth (State Growth) the methodology has been adapted to provide greater rigor to scoring habitat quality for use within the offset calculator but also for future condition monitoring.

[1] (email from s 36 [redacted] (16/3/2022)

Offset Area

The Orchid Habitat Offset Management Area incorporates 5.5 ha of critical orchid habitat (the offset) immediately adjoining the impact area (0.13 ha) (Figure 1). The Orchid Habitat Offset Management Area (6.1 ha) is bounded by the new Milford property boundary with the Tasman Highway to the north, Pittwater Road to the west and an existing management track to the south and east (Figure 2). It incorporates over 30 % of the critical orchid habitat capturing significant areas of orchid locations for both species (Figure 3).

The location for the Orchid Habitat Offset Management Area has been selected as it incorporates areas of orchid habitat most likely impacted by secondary effects from the existing and potentially any consequential disturbance from the proposed road upgrade. It corresponds to Milford Forest Management Unit 4 in the Milford Fire Management Plan 2008.

The offset area will be secured within a covenant on title.

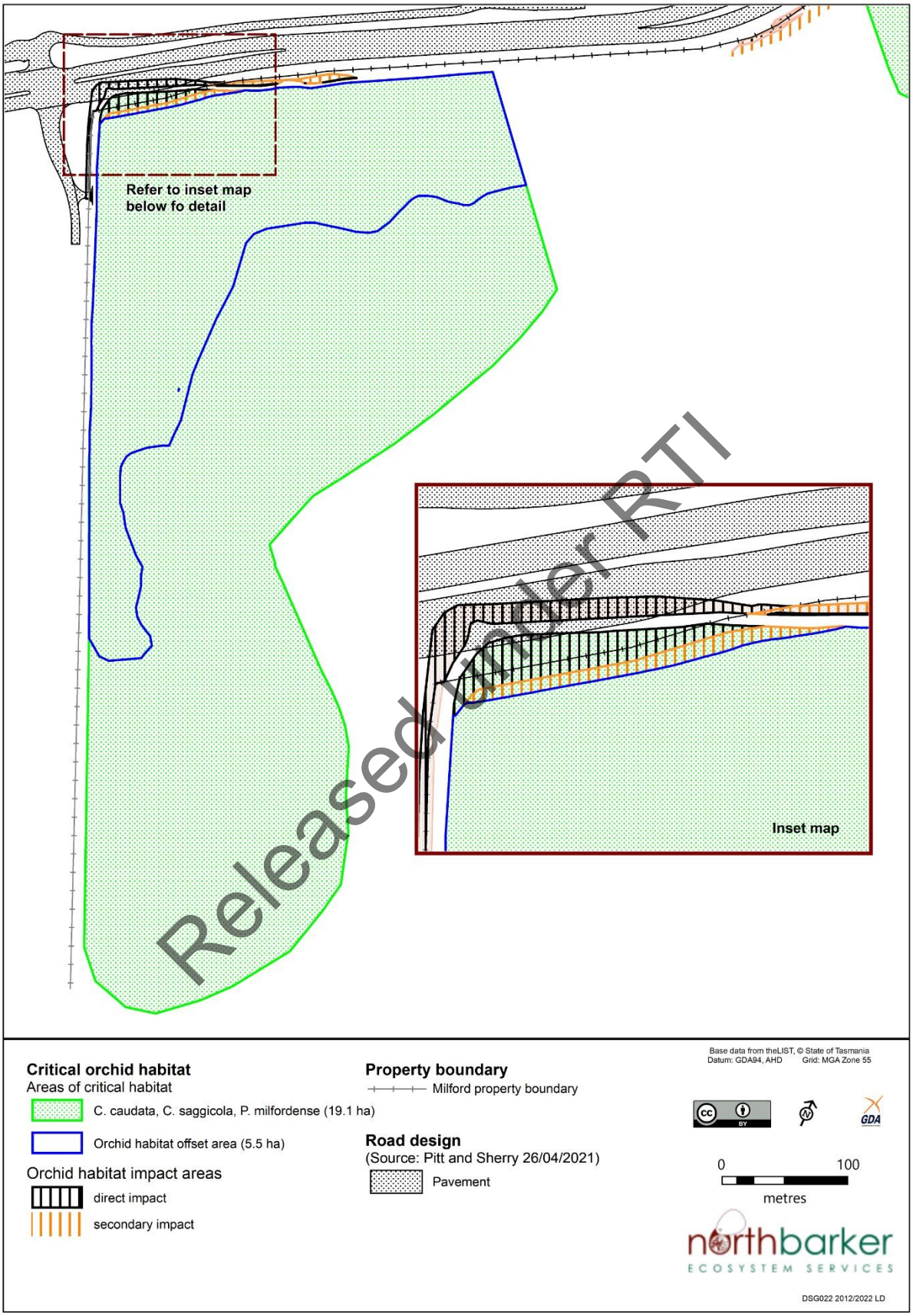


Figure1: Critical Orchid Impact and Offset Areas

s 36 [redacted]@northbarker.com.au) 20230202

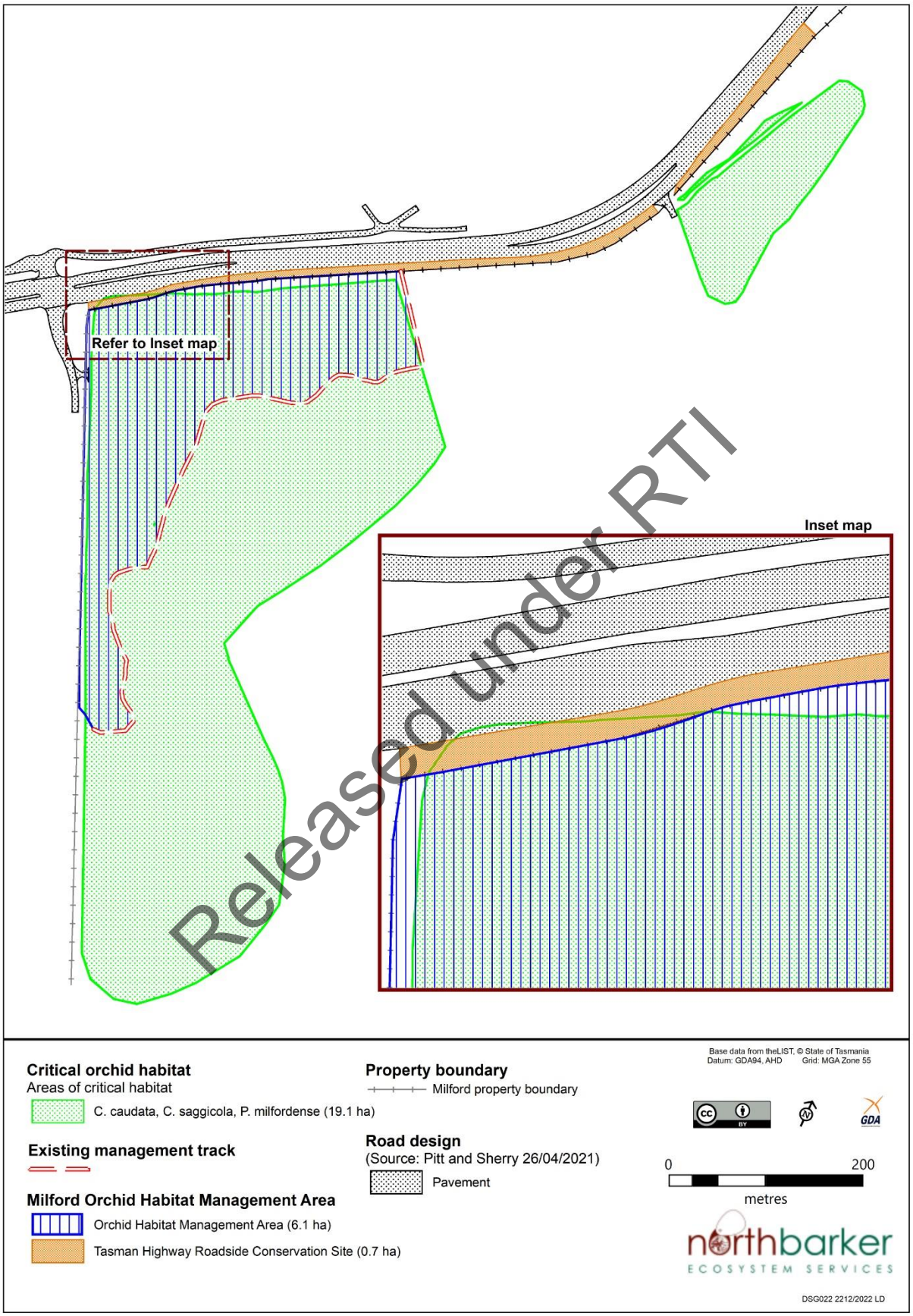


Figure 2: Orchid Management Area

s 36 @northbarker.com.au) 20230202

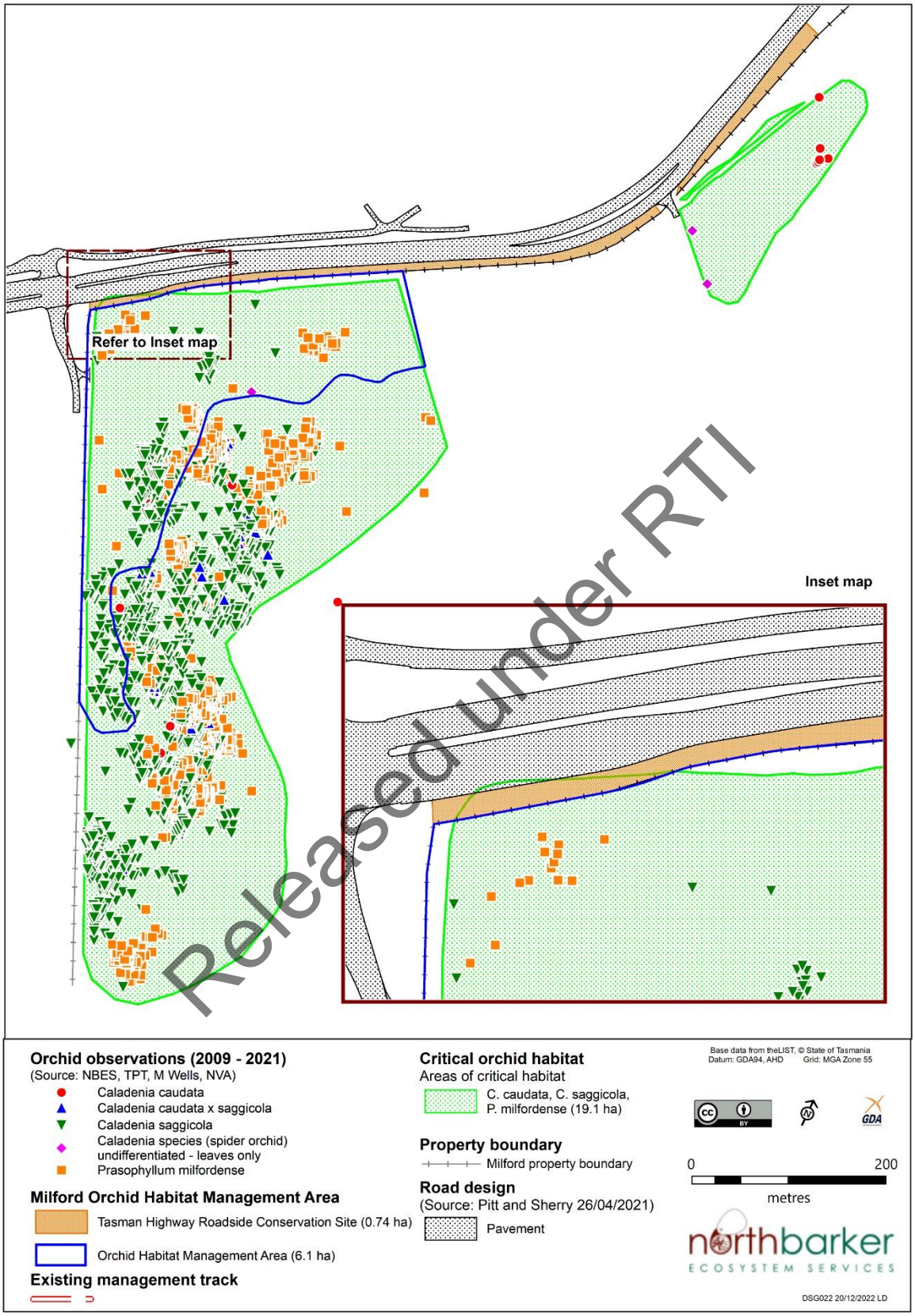


Figure 3: Orchid records and Orchid Management Area

Offset calculator

The Offset calculator takes into account the area of offset and management actions required to form the offset for the direct and indirect impacts.

The areas of impact and offset used in the calculations incorporates habitat for both species and so can be assessed concurrently. Both species are categorized as critically endangered which means the annual probability of extinction used by the calculator for both species is the same.

In the calculator we have taken a conservative approach and accumulated the areas of direct impact to 0.16 ha (0.08+0.08).

It is unclear how the direct and indirect offsets can be calculated on a single calculator. The offset calculator also doesn't appear to be able to take into account different offset area to impact area when considering indirect impacts that will not result in total loss but instead affect habitat quality.

A conservative approach has therefore been taken for indirect impacts by assuming total loss of habitat and quantifying the impact area as an accumulation of the two species – 0.09 ha (0.05 + 0.04). The area affected by indirect impacts is very likely to retain some habitat values for orchids.

For the purposes of the calculator total Impact Area = 0.25 ha

Habitat Quality

The Calculator relies on a Habitat Quality measure for the habitat to be scored between 1-10.

The Habitat Quality score is utilized to apply the Offset calculator. The Guidelines indicate quality to be made up of three components: site condition, site context and species stocking rates. "The weighting given to each component is dependent of the ecological requirements of the impacted species".

In this case we are considering habitat for three threatened orchid species. These are all terrestrial species.

Site condition. Variable habitat quality factors most applicable to the edaphic requirements of these species relate to the level of competition in the ground layer. Overdeveloped biomass can inhibit the vigor of orchids through competition for light and also within the rootzone. At Milford competition from introduced weeds, and native vegetation, notably bracken and understory shrubs, are the most significant variables affecting orchid habitat suitability. These deserve a heavy weighting. Other factors that can influence suitability for orchids are animal diggings from non-native species including rabbits and feral chickens. The digging can damage orchid tubers.

Other features that could potentially impact on site condition for orchids can include soil type, mycorrhizae presence, and access to pollinating insects. The impact area and offset area are part of the same site and adjoining one another within the same portion of the vegetation community that has already been identified as critical habitat for these species. Soil type is the same. It is assumed with a high level of confidence that pollinators are present and can access all parts of the critical habitat. The mycorrhizae will exist where the orchids are growing being mutually dependent.

Site context. The proximity to habitat edge is relevant to habitat quality. Vegetation within this edge is more prone to disturbances from roadside activities and other edge effects. To avoid doubling up this should not include consequential impacts of weed infestation covered under site condition elsewhere, so it is given less weighting than site condition. Proximity to pavement edge is included recognizing that habitat <13m may be affected by infiltration (NBES 2022).

Stocking rates. There can be no better way of confirming habitat quality for orchids than to have plants present. The very best habitat for the orchids support plants at high stocking rates. To attain the highest score for habitat quality plants would need to be present in good numbers.

Table 2: Habitat Quality Metric

Habitat Component	Measure	Scores	Maximum Score
Site Condition	Invasive shrubby weeds	<5% - 2 5-25% - 1 >25% - 0	2
	Invasive ground cover herbs and grassy weeds	<5% - 3 5-25% - 2 25-50%- 1 >50% - 0	3
	Native competition: bracken and tall shrubs	< 50% - 1 >50% - 0	1
	Feral animal digging	<5% - 1 >5% - 0	1
Site context	Proximity to earthworks	>13m - 1 <13m - 0	1
Stocking rates	Orchids in area	>1/10sqm - 2 <1 / 10sqm - 1 0 - 0	2
Total maximum			10

The Habitat Quality Score will also be applied to monitor the condition of the offset area over time.

To create a reliable and repeatable habitat quality score there will be multiple sampling points. The impact area is small and can be scored as single site. The offset area will be subdivided into 32 of 50 m x 50 m grids (up to 0.25 ha if entirely within the offset area) (Figure 4).

Sampling will be taken at the centre of each grid using a 5 m x 5 m quadrat. 32 samples represent 1.45 % of the total area.

s 36 [redacted]@northbarker.com.au) 20230202

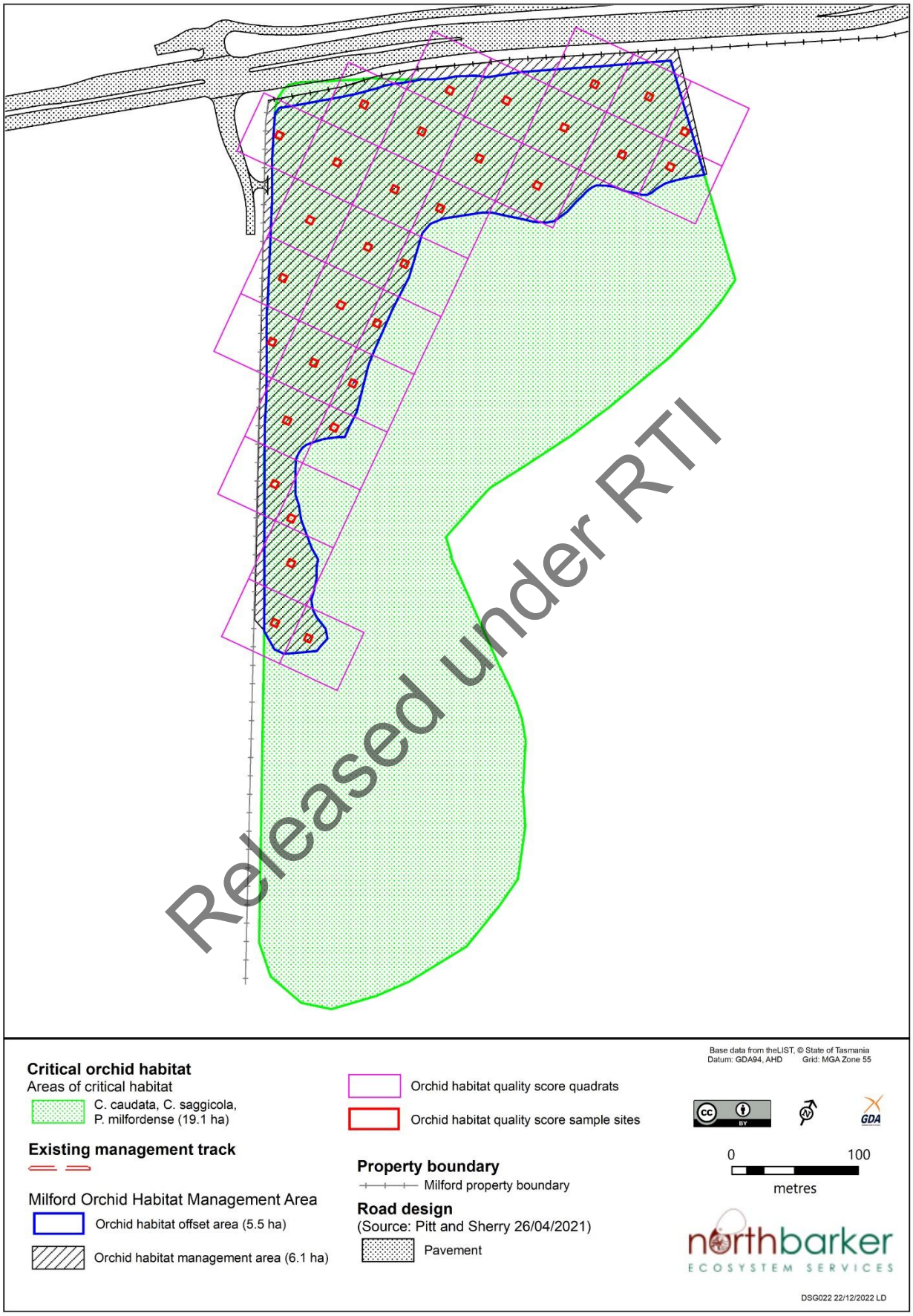


Figure 4: Orchid habitat quality sampling points

The following features require a score in the Offset Calculator:

Time over which loss is averted

The intention is for ongoing management subject to ongoing agreement with the landowner. 20 years is the maximum number allowed in the calculator.

Time until ecological benefit

The main management activity that affects habitat quality will be the removal and control of weed infestations. This has been put at three years for the completion of all primary weed management. Further ecological benefit will be achieved as follow up weed treatment is undertaken

Start Area (ha)

The Offset Area occupies 5.5 ha of critical orchid habitat.

Start Quality

The method for scoring this is discussed above under Habitat Quality. It will require further assessment of the impact and offset areas in line with the criteria provided in the Habitat Quality metric (Table 2).

Future Quality Score without offset

The habitat, even 50 m from the boundary edge, is being impacted by colonisation of weeds. The landowner has been successful at controlling woody weeds but is unlikely to have the resources to control the further spread of herbaceous weeds such as freesia and panic veldt grass which are more challenging but pernicious species that could degrade habitat suitability for orchids across the entire habitat area. The Habitat Quality in the offset management area is likely to worsen and so will be given a score of 0 under the criterion for *Invasive ground cover herbs and grassy weeds*.

Future Quality Score with offset

It is anticipated that the weed management will ensure the existing weed threat is reduced thus increasing the condition score above its current rating. The Habitat Quality in the offset management area is likely to improve and so will be given a score of 3 under the criterion for *Invasive ground cover herbs and grassy weeds*.

Risk of loss.

The Offset Guide states that risk of loss "describes the chance that the habitat on the proposed offset site will be completely lost (i.e. no longer hold any value for the protected matter of concern) over the foreseeable future." This will be given a score of 0 without offset. DCCEEW have advised that "risk of loss does not include loss that requires an assessment and offset under any legislation. As the offset area includes two critically endangered EPBC Act protected species any potential cause of loss would require assessment and offset under the EPBC Act."

Confidence in result

"This describes the level of certainty about the success of the proposed offset". Managing weeds is a tangible task with an achievable outcome. To achieve the benefit does not require total elimination weeds just control to prevent weeds adversely impacting on the orchids now and into the future. A confidence level of 75% is cautionary and conservative. The Orchid Management Plan will include clear commitments that prescribe weed

management works to tackle the herbaceous weeds and monitor other sources of competition.

% of Impact Offset

This needs to exceed the minimum of 90% direct offset requirement.

From: [redacted]
To: [redacted]
Subject: RE: REVISED LOCATION OF MILFOIRD PERIMETER ACCESS TRACK
Date: Wednesday, 5 April 2023 7:22:11 AM
Attachments: image001.png
image002.png
image003.png
image004.png
301593 Milford Access Track Tree Locations R1.pdf

Hi [redacted]

I have marked up slashed track roughly and the tie in to the existing – refer attached. That area is in "potential habitat". We will review the implications of all that. Please confirm that my marked location is correct.

At the other end the proposed changes look ok. We did keep the access track where it was so that it remained over the top of the watermain easement. If we move the track as requested we may need to widen the easement in this location so Taswater have legal rights of access over the proposed new location of the track.

Regards

s 36
Principal Engineer
s 36 | [redacted] | [redacted]
Hobart Office — Level 1, Surrey House, 199 Macquarie Street
PO Box 94 Hobart Tasmania 7001 | Phone s 36
pittsh.com.au

From: [redacted]@stategrowth.tas.gov.au>
Sent: Tuesday, 4 April 2023 5:22 PM
To: s 36 [redacted] @pittsh.com.au>
Subject: RE: REVISED LOCATION OF MILFOIRD PERIMETER ACCESS TRACK

Wide Distribution

Hi [redacted]

In summary, does [redacted] slashed track have an adverse impact on the EPBC assessment/calculator?

Thanks,

[redacted]
Programming and Delivery | Department of State Growth
4 Salamanca Place, Hobart TAS 7000 | GPO Box 536, Hobart TAS 7001
[redacted] s 36 [redacted]
www.stategrowth.tas.gov.au

Courage to make a difference through
TEAMWORK | INTEGRITY | RESPECT | EXCELLENCE

In recognition of the deep history and culture of this island, I acknowledge and pay my respects to all Tasmanian Aboriginal people; the past, and present custodians of the Land.

Please note I do not work Fridays.

From: [redacted]
Sent: Tuesday, 4 April 2023 5:22 PM
To: s 36 [redacted] @pittsh.com.au>
Subject: RE: REVISED LOCATION OF MILFOIRD PERIMETER ACCESS TRACK

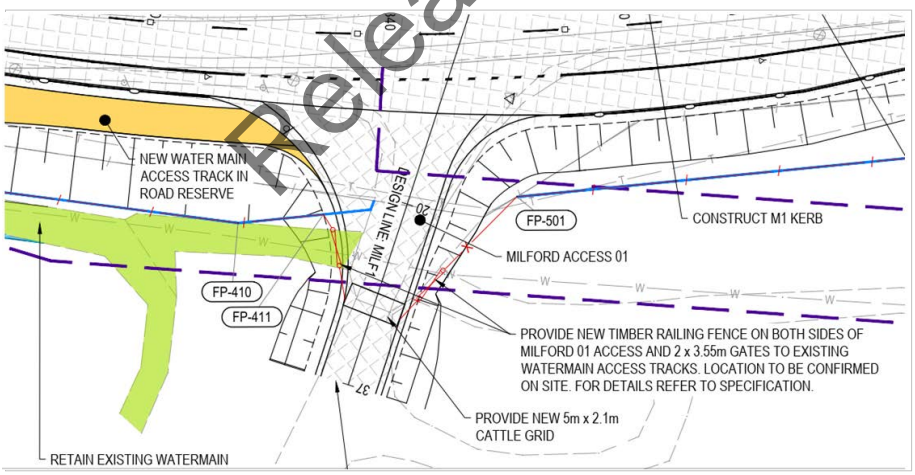
Hi [redacted]

Waypoints 9 – 36 are missing, I assume that's the existing track that's not modified?

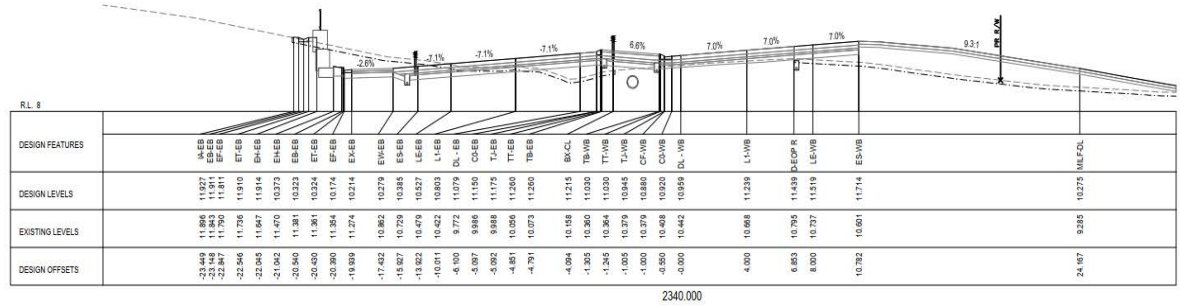
The key points are:

- realign the entry point to avoid the gum near WA01.
- Follow the slashed line until WA07
- There should be a slashed line surveyed between WA07 and the access track.
- Depending on the outcome of the below – what we spoke about on the phone (the increased gradient of the Milford main driveway increasing the grade of access track approach grade)
  - Option 1, if the gradient is suitable can we follow the slashed line and cut back to the existing track at GS0045 (GS0045 likely to be removed)
  - Option 2, if the gradient is unsuitable, follow the slash line to the Milford driveway? Does this impact the new gate position?

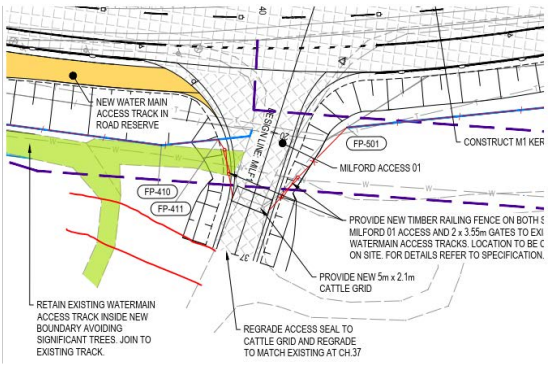
The snippet from sheet 1112 below reads to me like we're not providing a gate to the Milford driveway, only new 3.55m gates to each access track. Does the note below need to be updated to provide a gate on the Milford fence driveway?



The photo attached is of the current access track to Milford driveway tie in. Looking at the cross section, the new driveway is over 1m higher than current one in sections before it ties into the existing. At what point along the cross section does the access track meet the new driveway (can you put a mark on the snippet below)? Are we planning on building up the access tracks on either side of the new driveway to offset the higher driveway [redacted] concerns, which I would agree with seeing the cross section, is the increased gradient for the decent from the driveway onto the access track and increasing roll over opportunities.



In the survey you send there was a 'slashed line' that would put the access track in line with the access track on the other side on the drive, example below. Would it be simpler to put the access track as pe[redacted] slashed track and move the gate to suit the new alignment?



Thanks,

[redacted]
Programming and Delivery | Department of State Growth
4 Salamanca Place, Hobart TAS 7000 | GPO Box 536, Hobart TAS 7001
[redacted] s.36 [redacted]
www.stategrowth.tas.gov.au

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In recognition of the deep history and culture of this island, I acknowledge and pay my respects to all Tasmanian Aboriginal people; the past, and present custodians of the Land.

Please note I do not work Fridays.

From: s.36 [redacted] @pittsh.com.au>
Sent: Tuesday, 4 April 2023 1:41 PM
To: [redacted] @stategrowth.tas.gov.au>
Subject: REVISED LOCATION OF MILFOIRD PERIMETER ACCESS TRACK

Hi [redacted]

Can you please markup where the revised access track should go on the attached, or call me and we can discuss. s.36 [redacted] can look further into this next week when NB do the field assessment, but do need to know how far south it is going.

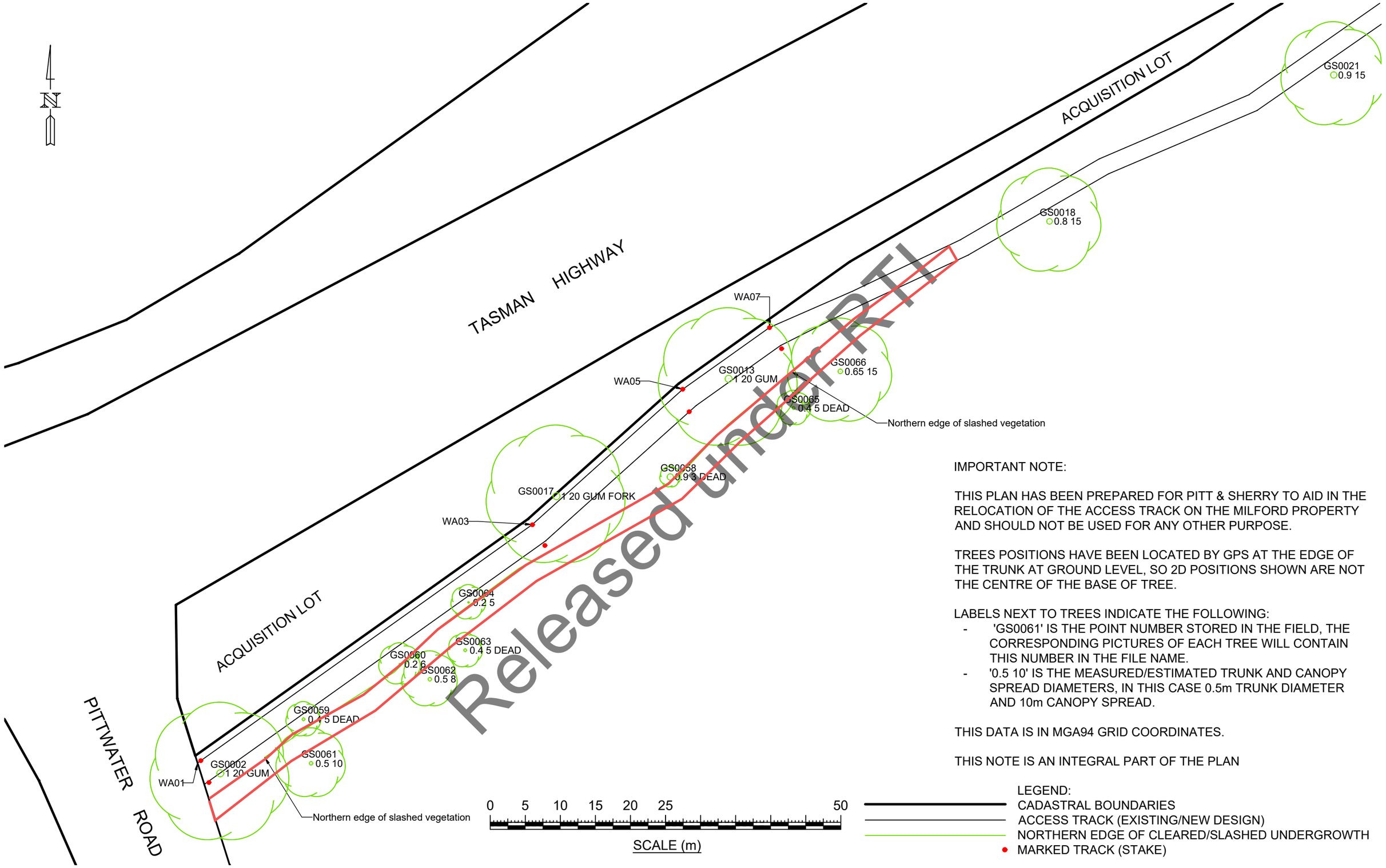
Regards

[redacted]

s.36 [redacted]
Principal Engineer

s.36 [redacted]
Hobart Office — Level 1, Surrey House, 199 Macquarie Street
PO Box 94 Hobart Tasmania 7001 | Phone s.36 [redacted]
pittsh.com.au

Attachment 1



IMPORTANT NOTE:

THIS PLAN HAS BEEN PREPARED FOR PITT & SHERRY TO AID IN THE RELOCATION OF THE ACCESS TRACK ON THE MILFORD PROPERTY AND SHOULD NOT BE USED FOR ANY OTHER PURPOSE.

TREES POSITIONS HAVE BEEN LOCATED BY GPS AT THE EDGE OF THE TRUNK AT GROUND LEVEL, SO 2D POSITIONS SHOWN ARE NOT THE CENTRE OF THE BASE OF TREE.

LABELS NEXT TO TREES INDICATE THE FOLLOWING:

- 'GS0061' IS THE POINT NUMBER STORED IN THE FIELD, THE CORRESPONDING PICTURES OF EACH TREE WILL CONTAIN THIS NUMBER IN THE FILE NAME.
- '0.5 10' IS THE MEASURED/ESTIMATED TRUNK AND CANOPY SPREAD DIAMETERS, IN THIS CASE 0.5m TRUNK DIAMETER AND 10m CANOPY SPREAD.

THIS DATA IS IN MGA94 GRID COORDINATES.

THIS NOTE IS AN INTEGRAL PART OF THE PLAN

LEGEND:
- CADASTRAL BOUNDARIES
- ACCESS TRACK (EXISTING/NEW DESIGN)
- NORTHERN EDGE OF CLEARED/SLASHED UNDERGROWTH
- MARKED TRACK (STAKE)

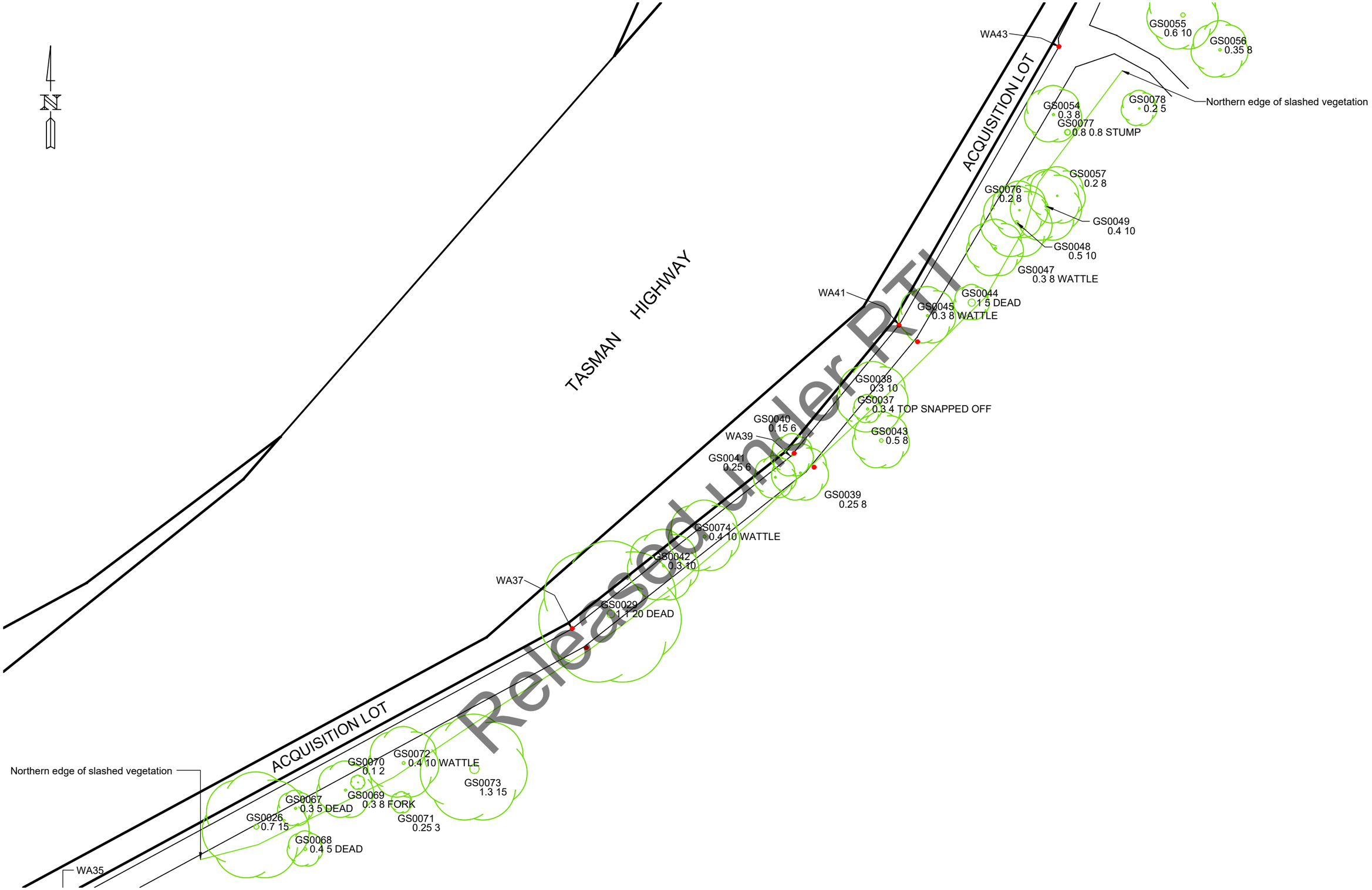
veris
Suite 1 Level 3 "Kirksway House"
2-8 Kirksway Place
Battery Point TAS 7004
03 6232 0400
hobart@veris.com.au
veris.com.au
ABN 25 098 991 210

NO	DATE	DRN	CHKD	DESCRIPTION
1	16/03/23	JM	JM	FIRST ISSUE

This plan is not intended for attachment to sale contract documents

OUR REF:	301593 Milford Access Track Tree Locations R1.dwg
CONTOUR INTERVAL:	N/A
DATUM:	MGA94 GRID
SCALE:	1:500 ORIGINAL SHEET SIZE: A3
DATE OF SURVEY:	15/03/2023 JM
DRAWING No:	REV 1 SHEET No: 1 OF 2

PITT & SHERRY
MILFORD TREE LOCATIONS
TASMAN HIGHWAY CAMBRIDGE



veris
Suite 1 Level 3 "Kirksway House"
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hobart@veris.com.au
veris.com.au
ABN 25 098 991 210

NO	DATE	DRN	CHKD	DESCRIPTION
1	16/03/23	JM	JM	FIRST ISSUE

This plan is not intended for attachment to sale contract documents

OUR REF: 301593 Milford Access Track Tree Locations R1.dwg		
CONTOUR INTERVAL: N/A		
DATUM: MGA94 GRID		
SCALE: 1:500	ORIGINAL SHEET SIZE: A3	
DATE OF SURVEY: 15/03/2023	JM	
DRAWING No:	REV 1	SHEET No: 2 OF 2

PITT & SHERRY
MILFORD TREE LOCATIONS
TASMAN HIGHWAY
CAMBRIDGE

From: s 36
To:
Subject: Re: North Baker Habitat Assessment
Date: Tuesday, 4 April 2023 4:32:40 PM

That will be in the offset management plan and until we've done the full habitat assessment it would be premature to provide anything to s 36 which might later change. s 36 will get full input when the independent review is done.
Regards
s 36

Sent from my iPhone

On 4 Apr 2023, at 16:09, @stategrowth.tas.gov.au> wrote:

Wide Distribution

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi s 36

Thank attachment was s 36 comments against DCCEEW's habitat assessment, s 39 . I assume the monitoring proposal would be how the orchids will be monitored during the department's offset period.

Thanks,

Programming and Delivery | Department of State Growth
4 Salamanca Place, Hobart TAS 7000 | GPO Box 536, Hobart TAS 7001
| s 36
www.stategrowth.tas.gov.au

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In recognition of the deep history and culture of this island, I acknowledge and pay my respects to all Tasmanian Aboriginal people; the past, and present custodians of the Land.

Please note I do not work Fridays.

From: s 36 @pittsh.com.au>
Sent: Tuesday, 4 April 2023 3:51 PM
To: @stategrowth.tas.gov.au>
Subject: Re: North Baker Habitat Assessment

Hi [redacted]
Monitoring proposal is attached to my 13.36 pm email today

Sent from my iPhone

On 4 Apr 2023, at 15:08, [redacted]
<[redacted]@stategrowth.tas.gov.au> wrote:

Wide Distribution

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi s 36

s 36 has advised she is no longer available over Easter as s 36 told her 22-24 May is the next visit – s 39 [redacted] I've asked her to hold the 22-24 for a secondary visit and allow us to visit on the 24-26 April (a date she previously advised was available). Can you please book NB in for **24-26 April**. Before s 36 will let us onto Milford she requires a copy of North Barker's Monitoring Proposal, can you please send that through?

I've attached the latest correspondence with s 36 . FYI she know and a specialist EPBC lawyer assisting her, paid by the department.

Will NB update the methodology in s 36 absence or only making notes for his consideration and s 36 updates it when he gets back?

Will there be a requirement for soil testing? The below concerns from s 36 around soil testing.

> ***Soil testing concerns me (and I presume DCCEEW) and we will need to know in advance***
> <!--[if !supportLists]-->1. <!--[endif]-->***where any soil tests are intended to be conducted?***
> <!--[if !supportLists]-->2. <!--[endif]-->***to what depth?***
> <!--[if !supportLists]-->3. <!--[endif]-->***how is it planned to avoid orchid sites? eg if they are planning sampling on a grid system (and thus could potentially damage or destroy orchid tubers, as they are largely invisible now) and***
> <!--[if !supportLists]-->4. <!--[endif]-->***has the***

potential impact of this testing been assessed? No-one is permitted to dig up anything in this habitat, due to the potential risks, so this needs to be assessed first.

<!--[if !supportLists]-->5. <!--[endif]-->***copy of DCCEEW approval for any such samples to be taken"***

In addition to the information s 36 requires for a site visit, she's increased that list to include:

<!--[if !supportLists]-->1. <!--[endif]-->***what equipment is being brought onto the site? (including but not limited to soil testing equipment, other implements, wildlife cameras, song meters, or anything that has potential to contaminate the site)***

<!--[if !supportLists]-->1. <!--[endif]-->***how and where will sanitisation of equipment occur (this is usually done off site just prior to entering)***

<!--[if !supportLists]-->2. <!--[endif]-->***if tree branches or foliage are to be sampled, how will this to be done?***

Can you please discuss with NBES and respond.

Thanks,

[redacted]
Programming and Delivery | Department of State Growth
4 Salamanca Place, Hobart TAS 7000 | GPO Box 536, Hobart TAS 7001
[redacted] s 36 [redacted]
www.stategrowth.tas.gov.au

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Please note I do not work Fridays.

From: s 36 [redacted] @pittsh.com.au>
Sent: Tuesday, 4 April 2023 1:36 PM
To: [redacted] @stategrowth.tas.gov.au>
Subject: FW: North Baker Habitat Assessment

class . No plant material will be taken.

Regards s 36

s 36
Director / Principal Ecologist
<image002.png>

s 36

313 Macquarie St, Hobart, TAS. 7000
www.northbarker.com.au

We pay our respects to the muwinina people, on whose unceded land we work. We acknowledge all palawa people across lutrawitta / Tasmania, their elders past, present and emerging, and their continuing history of sustainable land management.

From: @stategrowth.tas.gov.au>
Sent: Tuesday, March 14, 2023 2:06 PM
To: s 36 @northbarker.com.au>; s 36 @pittsh.com.au>
Subject: FW: North Baker Habitat Assessment
Importance: High

Hi s 36

s 36 just advised that the habitat surveying will need to be postponed, I've let s 36 know (through her lawyer). '

s 36 mentioned that Canberra had changes to our methodology, are you able to completed the sections in yellow below or do you need to wait for Canberra's feedback?

Can we organise a site visit for 11 & 12 April? I know s 36 is away although I'm sure there is another resource that can assist in the interim.

Thanks,

Programming and Delivery | Department of State Growth
4 Salamanca Place, Hobart TAS 7000 | GPO Box 536, Hobart TAS 7001
s 36
www.stategrowth.tas.gov.au

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TEAMWORK | INTEGRITY | RESPECT | EXCELLENCE

In recognition of the deep history and culture of this island, I acknowledge and pay my

From: s 36
To: [redacted]
Subject: MILFOED EPBC TIMEFRAME
Date: Friday, 31 March 2023 12:25:16 PM
Attachments: image001.png
EPBC timeframe 29 March 2023.docx

Hi [redacted]

Here's the latest.

Regards

[redacted]

s 36

Principal Engineer

s 36 [redacted]

Hobart Office — Level 1, Surrey House, 199 Macquarie Street
PO Box 94 Hobart Tasmania 7001 | Phone s 36

pittsh.com.au

Attachment 1

Activity	Estimated time	Target completion date
DCCEEW approve offset assessment methodology	2 weeks	14 February 2023
Field assessment of Offset	4 weeks	22 – 31 May 2023
Amend Impact Assessment and prepare Offset Management Plan, revise Orchid Management Plan(s)	4 weeks	30 June 2023
Independent review of Impact assessment and orchid management plans	4 weeks	31 July 2023
Complete Preliminary Documentation	3 weeks	21 August 2023
DAWE approve preliminary documentation and direct to publish	3 weeks	13 September 2023
Publish	1 week	20 September 2023
Advertising period	4 weeks	17 October 2023
Deal with comments	4 weeks	14 November 2023
Amend Documentation and advertise	2 weeks	30 November 2023
DAWE makes recommendation to Minister and Minister's decision	8 weeks	31 January 2023