APPENDIX A – SITE PLAN

IMPERVIOUS 5,300m²

IMPERVIOUS 18070m²

PERVIOUS 420m²

IMPERVIOUS 1810m²

EXISTING 150 m2
BIO-RETENTION SWALE

NEW 422m3 DETENTION POND

1% OVERLAND FLOW PATH

GAS

GAS

GAS

GAS

6ty°

hazellbros

CONTROLLED DOCUMENT

ASPHALT BATCHING PLANT
1 / 13 CROOKED BILLET DRIVE
BRIDGEWATER
HAZELL BROS GROUP PTY LTD

OVERALL SITE PLAN

PAG

1:250

24.140 C30

APPENDIX B – ONSITE DETENTION CALCULATIONS

STORMWATER DETENTION V5.05

Flussig Engineers

Location: **Bridgewater TAS**
Site: **25600m² with tc = 10 and tcs = 5 mins.**
PSD: **AEP of 1%, Custom specified PSD = 294.72L/s**
Storage: **AEP of 1%, Above ground volume = 422m³**

Design Criteria

(Custom AEP IFD data used)

Location = Bridgewater TAS
Method = E (A)RI 2001,A(E)P 2019

PSD annual exceedance probabiliy (APE) = 1 %
Storage annual exceedance probabiliy (APE) = 1 %

Storage method = C (A)bove,(P)ipe,(U)nderground,(C)ustom
Permissible site discharge (Qu=Custom) = 294.72 L/s

Site Geometry

Site area (As) = 25600 m² = 2.56 Ha
Pre-development coefficient (Cp) = 0.49
Post development coefficient (Cw) = 0.87

Total catchment (tc) = 10 minutes
Upstream catchment to site (tcs) = 5 minutes

Coefficient Calculations

Pre-development

Zone	Area (m²)	C	Area * C
Concrete	0	0.90	0
Roof	590	1.00	590
Gravel	22508	0.50	11254
Garden	2502	0.30	751
Total	25600 m²		12595

Cp = ΣArea*C/Total = 0.492

Post development

Zone	Area (m²)	C	Area * C
Concrete	23370	0.90	21033
Roof	590	1.00	590
Gravel	1220	0.50	610
Garden	420	0.30	126
Total	25600 m²		22359

Cw = ΣArea*C/Total = 0.873

Permissible Site Discharge (PSD) (AEP of 1%)

PSD Intensity (I) = 110.2 mm/hr For catchment tc = 10 mins.
Pre-development (Qp = Cp*I*As/0.36) = 385.41 L/s
Peak post development (Qa = 2*Cw*I*As/0.36) = 1367.73 L/s =(12.416 x I) Eq. 2.24

Storage method = C (A)bove,(P)ipe,(U)nderground,
Permissible site discharge (Qu = PSD) = (C)ustom 294.720 L/s

Above ground - Eq 3.8

$0 = PSD^2 - 2*Qa/tc*(0.667*tc*Qp/Qa + 0.75*tc+0.25*tcs)*PSD + 2*Qa*Qp$
Taking x as = PSD and solving
a = 1.0 b = -2907.7 c = 1054274.9
$PSD = -b \pm \sqrt{(b^2-4ac)}/(2a)$
PSD = 424.582 L/s

Below ground pipe - Eq 3.3

$Qp = PSD*[1.6*tcs/\{tc*(1-2*PSD/(3*Qa))\}-0.6*tcs^{2.67}/\{tc*(1-2*PSDp/(3*Qa))\}^{2.67}]$
= 385.41
PSD = 456.466 L/s

Below ground rectangular tank - Eq 3.4

$t = tcs/(tc*(1-2*PSD/(3*Qa)))$ = 0.640
$Qp = PSD*[0.005-0.455*t+5.228*t^2-1.045*t^3-7.199*t^4+4.519*t^5]$
= 385.41
PSD = 448.829 L/s

Design Storage Capacity (AEP of 1%)

Above ground (Vs) = [0.5*Qa*td-[(0.875*PSD*td)(1-0.917*PSD/Qa)+(0.427*td*PSD²/Qa)]]*60/10³ m³ Eq 4.23
Below ground pipe (Vs) = [(0.5*Qa-0.637*PSD+0.089*PSD²/Qa)*td]*60/10³ m³ Eq 4.8
Below ground rect. tank (Vs) = [(0.5*Qa-0.572*PSD+0.048*PSD²/Qa)*td]*60/10³ m³ Eq 4.13

td (mins)	I (mm/hr)	Qa (L/s)	Above Vs (m³)	Pipe Vs (m³)	B/G Vs (m³)
5	141.2	1752.8	215.36	227.16	230.61
9	115.3	1431.3	301.79	322.31	328.42
11	105.5	1309.5	329.24	353.87	361.28
13	97.2	1206.8	349.75	378.34	387.01
15	90.2	1119.5	365.05	397.44	407.37
16	87.0	1080.7	371.15	405.38	415.92
18	81.4	1010.9	380.84	418.63	430.39
20	76.5	950.3	387.78	428.99	441.94
22	72.3	897.1	392.55	437.03	451.16
24	68.5	850.0	395.58	443.18	458.46

Table 1 - Storage as function of time for AEP of 1%

Type	td (mins)	I (mm/hr)	Qa (L/s)	Vs (m³)
Above	14.4	92.2	1144.3	**421.95**
Pipe	17.3	83.3	1034.2	**434.19**
B/ground	19.1	78.7	976.6	**467.15**

Table 2 - Storage requirements for AEP of 1%

Frequency of operation of Above Ground storage

Qop2 = 0.75 Cl 2.4.5.1
Qp2 =Qop2*Qp1 (where Qp1=PSD) = 142.50 L/s at which time above ground storage occurs
I = 360*Qp2/(2*Cw*As*10³) = 11.5 mm/h Eq 4.24

Period of Storage

Time to Fill:

Above ground (tf) = td*(1-0.92*PSD/Qa) Eq 4.27
Below ground pipe (tf) = td*(1-2*PSD/(3*Qa)) Eq 3.2
Below ground rect. tank (tf) = td*(1-2*PSD/(3*Qa)) Eq 3.2

Time to empty:

Above ground (te) = (Vs+0.33*PSD²*td/Qa*60/10³)*(1.14/PSD)*(10³/60) Eq 4.28
Below ground pipe (te) = 1.464/PSD*(Vs+0.333*PSD²*td/Qa*60/10³)*(10³/60) Eq 4.32
Below ground rect. tank (te) = 2.653/PSD*(Vs+0.333*PSD²*td/Qa*60/10³)*(10³/60) Eq 4.36

Storage period (Ps = tf + te) Eq 4.26

Type	td (mins)	Qa (L/s)	Vs (L/s)	tf (mins)	te (mins)	Ps (mins)
Above	14.4	1144.3	360.9	12.2	37.0	49.2
Pipe	17.3	1034.2	414.4	15.2	54.8	69.9
B/ground	19.1	976.6	437.1	16.6	105.0	121.6

Table 3 - Period of Storage requirements for AEP of 1%

Orifice

Permissible site discharge (Qu=PSD) = 294.72 L/s (Custom PSD)
Orifice coefficient (CD) = 0.61 For sharp circular orifice
Gravitational acceration (g) = 9.81 m/s²
Maximum storage depth above orifice (H) = 700 mm
Orifice flow (Q) = CD*Ao*√(2*g*H)

Therefore:
Orifice area (Ao) = 130371 mm²
Orifice diameter (D = √(4*Ao/π)) = 407.4 mm

STORMWATER DETENTION V5.05

Flussig Engineers

Location: **Bridgewater TAS**
Site: **25600m² with tc = 10 and tcs = 5 mins.**
PSD: **AEP of 2%, Above ground PSD = 294.72L/s**
Storage: **AEP of 2%, Above ground volume = 145.82m³**

Design Criteria

(Custom AEP IFD data used)

Location = Bridgewater TAS
Method = E (A)RI 2001,A(E)P 2019

PSD annual exceedance probabiliy (APE) = 2 %
Storage annual exceedance probabiliy (APE) = 2 %

Storage method = A (A)bove,(P)ipe,(U)nderground,(C)ustom

Site Geometry

Site area (As) = 25600 m² = 2.56 Ha
Pre-development coefficient (Cp) = 0.49
Post development coefficient (Cw) = 0.87

Total catchment (tc) = 10 minutes
Upstream catchment to site (tcs) = 5 minutes

Coefficient Calculations

Pre-development

Zone	Area (m²)	C	Area * C
Concrete	0	0.90	0
Roof	590	1.00	590
Gravel	22508	0.50	11254
Garden	2502	0.30	751
Total	25600 m²		12595

Cp = ΣArea*C/Total = 0.492

Post development

Zone	Area (m²)	C	Area * C
Concrete	23370	0.90	21033
Roof	590	1.00	590
Gravel	1220	0.50	610
Garden	420	0.30	126
Total	25600 m²		22359

Cw = ΣArea*C/Total = 0.873

Permissible Site Discharge (PSD) (AEP of 2%)

PSD Intensity (I) = 76.7 mm/hr For catchment tc = 10 mins.
Pre-development (Qp = Cp*I*As/0.36) = 295.21 L/s
Peak post development (Qa = 2*Cw*I*As/0.36) = 952.61 L/s =(12.416 x I) Eq. 2.24

Storage method = A (A)bove,(P)ipe,(U)nderground,
Permissible site discharge (Qu = PSD) = (C)ustom 294.720 L/s

Above ground - Eq 3.8

$0 = PSD^2 - 2*Qa/tc*(0.667*tc*Qp/Qa + 0.75*tc+0.25*tcs)*PSD + 2*Qa*Qp$

Taking x as = PSD and solving

a = 1.0 b = -2025.2 c = 511422.4

$PSD = -b \pm \sqrt{(b^2-4ac)}/(2a)$

PSD = 294.720 L/s

Below ground pipe - Eq 3.3

$Qp = PSD*[1.6*tcs/\{tc*(1-2*PSD/(3*Qa))\}-0.6*tcs^{2.67}/\{tc*(1-2*PSDp/(3*Qa))\}^{2.67}]$

= 295.21

PSD = 317.922 L/s

Below ground rectangular tank - Eq 3.4

t =tcs/(tc*(1-2*PSD/(3*Qa))) = 0.640

$Qp = PSD*[0.005-0.455*t+5.228*t^2-1.045*t^3-7.199*t^4+4.519*t^5]$

= 295.21

PSD = 312.603 L/s

Design Storage Capacity (AEP of 2%)

Above ground (Vs) = [0.5*Qa*td-[(0.875*PSD*td)(1-0.917*PSD/Qa)+(0.427*td*PSD²/Qa)]]*60/10³ m³ Eq 4.23
Below ground pipe (Vs) = [(0.5*Qa-0.637*PSD+0.089*PSD²/Qa)*td]*60/10³ m³ Eq 4.8
Below ground rect. tank (Vs) = [(0.5*Qa-0.572*PSD+0.048*PSD²/Qa)*td]*60/10³ m³ Eq 4.13

td (mins)	I (mm/hr)	Qa (L/s)	Above Vs (m³)	Pipe Vs (m³)	B/G Vs (m³)
5	100.1	1242.7	116.71		
6	94.3	1170.2	127.59		
7	89.1	1106.3	136.11		
7	89.1	1106.3	136.11		
8	84.5	1049.5	142.68		
9	80.4	998.5	147.62		
9	80.4	998.5	147.62		
10	76.7	952.6	151.21		
10	76.7	952.6	151.21		
11	73.4	911.1	153.65		

Table 1 - Storage as function of time for AEP of 2%

Type	td (mins)	I (mm/hr)	Qa (L/s)	Vs (m³)
Above	8.6	82.0	1018.2	**145.82**
Pipe				
B/ground				

Table 2 - Storage requirements for AEP of 2%

Frequency of operation of Above Ground storage

Qop2 = 0.75 Cl 2.4.5.1
Qp2 =Qop2*Qp1 (where Qp1=PSD) = 221.79 L/s at which time above ground storage occurs
I = 360*Qp2/(2*Cw*As*10³) = 17.9 mm/h Eq 4.24

Period of Storage

Time to Fill:

Above ground (tf) = td*(1-0.92*PSD/Qa) Eq 4.27
Below ground pipe (tf) = td*(1-2*PSD/(3*Qa)) Eq 3.2
Below ground rect. tank (tf) = td*(1-2*PSD/(3*Qa)) Eq 3.2

Time to empty:

Above ground (te) = (Vs+0.33*PSD²*td/Qa*60/10³)*(1.14/PSD)*(10³/60) Eq 4.28
Below ground pipe (te) = 1.464/PSD*(Vs+0.333*PSD²*td/Qa*60/10³)*(10³/60) Eq 4.32
Below ground rect. tank (te) = 2.653/PSD*(Vs+0.333*PSD²*td/Qa*60/10³)*(10³/60) Eq 4.36

Storage period (Ps = tf + te) Eq 4.26

Type	td (mins)	Qa (L/s)	Vs (L/s)	tf (mins)	te (mins)	Ps (mins)
Above	8.6	1018.2	145.8	6.3	10.3	16.6
Pipe						
B/ground						

Table 3 - Period of Storage requirements for AEP of 2%

Orifice

Permissible site discharge (Qu=PSD) = 294.72 L/s (Above ground storage)
Orifice coefficient (CD) = 0.61 For sharp circular orifice
Gravitational acceration (g) = 9.81 m/s²
Maximum storage depth above orifice (H) = 700 mm
Orifice flow (Q) = CD*Ao*√(2*g*H)

Therefore:
Orifice area (Ao) = 130371 mm²
Orifice diameter (D = √(4*Ao/π)) = 407.4 mm

APPENDIX C – ONSITE DETENTION SYSTEM MAITENANCE PLAN

Stormwater Asset Maintenance Details Plan

1. Asset Overview

1.1. Bio-Retention Swale (150 m^2)

- **Type:** Vegetated bio-retention swale with underdrain and filter media
- **Area:** 150 m^2
- **Function:** Removes sediments, nutrients, and hydrocarbons through vegetative filtering and soil media infiltration
- **Hydraulic Role:** Treats the first 50 mm of runoff from upstream impervious areas before discharging into the stormwater network

1.2. Detention Pond (422 m^3)

- **Type**: Offline detention basin with controlled outlet structure
- **Volume:** 422 m^3 (at design high-water level)
- **Function:** Temporarily stores stormwater runoff, reducing post-development discharge rates to near pre-development conditions
- **Hydraulic Role:** Attenuates peak flow from the development during the 2 % and 1 % AEP events before discharging downstream

2. General Maintenance Objectives

- Maintain full design capacity and function of both systems
- Prevent blockages and sediment build-up in inlets, outlets, and underdrains
- Maintain vegetation health and coverage within the swale and pond embankments
- Ensure erosion control measures and side slopes remain stable
- Maintain safe public access and structural integrity of all components

Table 2-1. Maintenance Schedule

Maintenance Activity	Frequency	Responsible Party	Key Actions / Notes
Visual Inspection	Monthly (Year 1), then Quarterly	Site manager / Council	Check for litter, erosion, standing water, sediment accumulation, vegetation health
Litter & Debris Removal	Monthly or after >20 mm rainfall	Maintenance contractor	Remove litter, branches, and blockages at inlets/outlets
Sediment Removal (Swale)	Every 6 months or >50 mm build-up	Maintenance contractor	Remove accumulated sediment from surface and forebay zones
Vegetation Management (Swale)	Monthly during growth period	Landscape contractor	Mow to 75–150 mm height, replant bare areas, remove weeds
Filter Media Inspection	Annually	Stormwater technician	Inspect infiltration rate (should not exceed 48 hours drainage time)
Underdrain & Pipe Inspection	Annually	Hydraulic maintenance team	Flush underdrain if blockages suspected, check outlet structure integrity
Sediment Removal (Detention Pond)	Every 2 years or >10 % storage loss	Maintenance contractor	Desilt base and inlets, dispose of sediment per EPA guidelines
Embankment & Batter Stability	Annually or after major storm	Site engineer	Inspect for cracking, scouring, or animal burrows; re-compact or re-grass if needed
Outlet Structure & Orifice Inspection	Quarterly	Site engineer / Council	Check for clogging, corrosion, or damage; clear and repair as needed
Safety & Fencing Check	Quarterly	Site manager	Ensure fencing, signage, and access remain compliant and secure
Comprehensive Condition Audit	Every 5 years	Qualified stormwater engineer	Full functional assessment including survey of capacity, infiltration, and hydraulic efficiency

3. Performance Monitoring

- Review pond drain-down time after major storm events (should empty within 48 hours)
- Maintain at least 85 % vegetation cover across the swale
- Confirm no prolonged surface ponding (>72 hours)
- Regularly compare sediment depth against original design levels

4. Safety and Environmental Considerations

- Follow Work Health and Safety Act 2012 (Tas)
- Avoid maintenance during or after rainfall events
- Dispose sediment per EPA Tasmania Waste Guidelines
- Maintain native, non-invasive vegetation
- Avoid herbicide/ fertiliser near inlets

5. Records and Reporting

- Maintain Maintenance Logbook with dates, observations, and actions
- Include photo evidence of works
- Report structural or erosion issues immediately
- Submit annual summary report to Council (if required)

6. Long-Term Rehabilitation

- Replace bio-retention filter media every 10–15 years
- Desilt and re-grade detention pond every 10 years or if storage reduced by >25 %
- Replant when vegetation cover drops below 70 %
- Replace orifices/valves as needed every 15 years

7. Summary of Responsibilities

Person Responsible	Requirements
Owner	Overall responsibility for maintenance and required activities
Maintenance Contractor	Routine maintenance and debris removal
Site Engineer	Audit and performance review
Local Council	Oversight and compliance with discharge conditions

Contact Project Manager: **Max Möller**

flüssig Engineers

P: 03 6288 7704
M: 0431 080 279
E: max@flussig.com.au
W: www.flussig.com.au
A: Level 4, 116 Bathurst Street
Hobart TAS 7000

Our Ref: 24.140
Your Ref: DA2025-095

Measured form and function

6ty Pty Ltd
ABN 27 014 609 900

Postal Address
PO Box 63
Riverside
Tasmania 7250
W 6ty.com.au
E admin@6ty.com.au

Tamar Suite 103
The Charles
287 Charles Street
Launceston 7250
P (03) 6332 3300

27th November 2025

Mr L Wighton
Manager – Development Engineering
Brighton Council
Via email: leigh.wighton@brighton.tas.gov.au

Dear Leigh,

HAZELL BROS – STORMWATER DETENTION
1 CROOKED BILLET DRIVE, BRIGHTON

I refer to our recent discussions regarding the above and provide the following details.

The pre-development impervious areas have been taken from the 2011 site imagery of the old saleyards. The total area used was 23,098m^2, comprising of gravel, concrete and compacted dirt. It can be seen in the 2022 image, when Hazell Brothers took over the site, an additional 760m^2 of gravel area was added to the site.

The existing site currently has 25,180m^2 of gravel and concrete. We have used the 2011 imagery areas for the pre-development flow rate calculations with conservative run-off coefficients. This ensures the site does not produce more stormwater than when it was the saleyard, as the design of the detention system is to suit the 2011 site permeability.

If you have any queries, please do not hesitate to contact me.

Yours faithfully
6ty Pty Ltd

Thomas Cotton
Building Services Engineer

TJC.TJT

Google Earth Image 2011

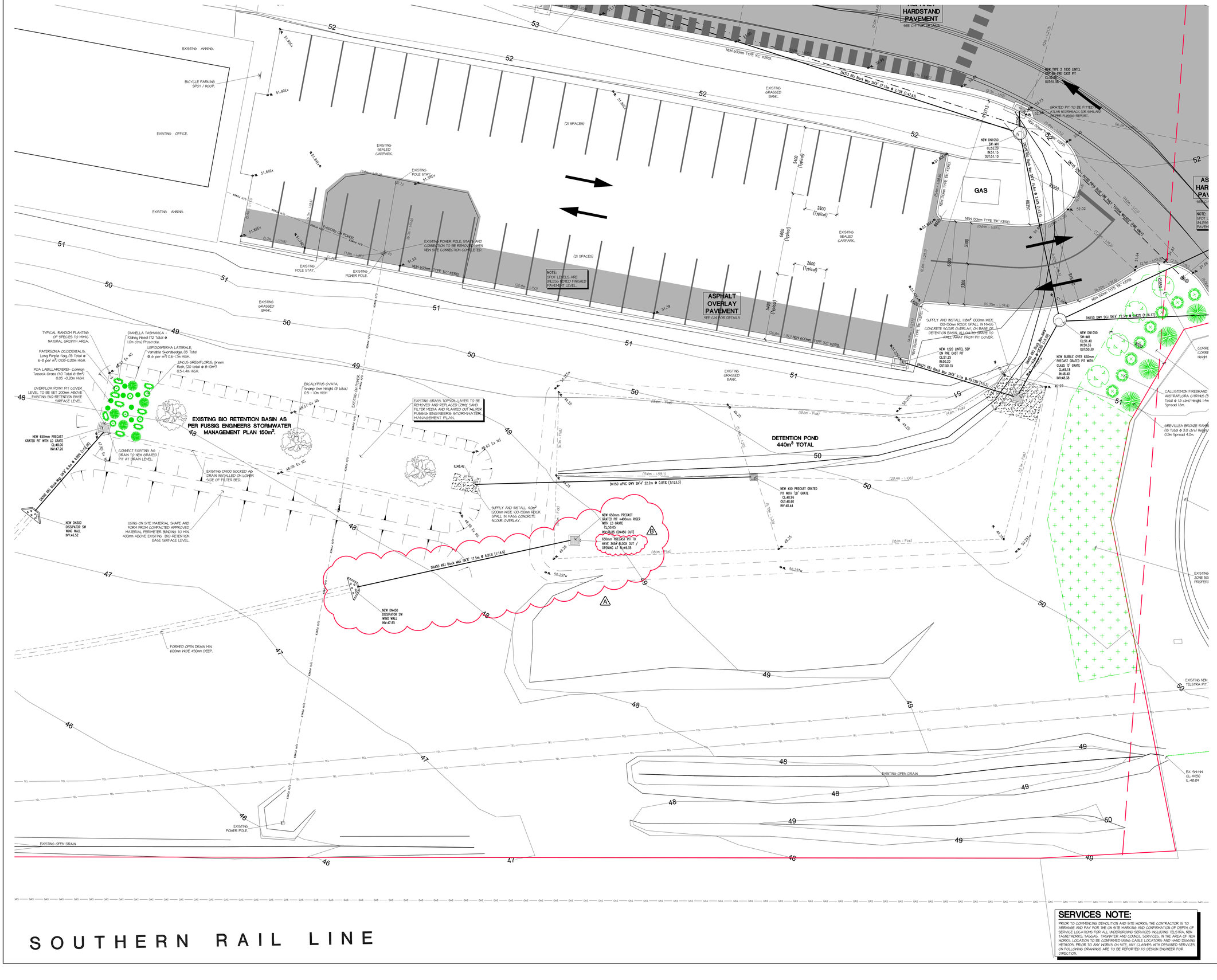
Site Impervious Area: 23,098m2

Google Earth Image 2022

Site Impervious Area: 23,858m2

Google Earth Image 2025

Site Impervious Area: 25,180m2



6ty°

Postal Address
PO Box 63
Riverside
Tasmania 7250
W 6ty.com.au
E admin@6ty.com.au

Tamar Suite 103
The Charles
287 Charles Street
Launceston Tasmania
P (03) 6332 3300

57 Best Street
Devonport Tasmania
P (03) 6424 7161

6ty Pty Ltd
ABN 27 014 609 900

Architectural
ABP No. CC4874f
Structural / Civil
ABP No. CC1633i

ISO 9001 Quality

hazellbros

CONTROLLED DOCUMENT

ISSUE	DATE	ISSUED FOR	REV.
01	05.03.25	REVISED LAYOUT	
02	23.09.25	PLANNING APPROVAL	
03	14.11.25	SW DETENTION OUTLET PIPEWORK REVISED	A
04	18.11.25	RLs AND GRADES ADDED	
05	27.11.25	DETENTION ORIFICE OUTLET REVISED	B

DIMENSIONS ARE IN MILLIMETRES. DO NOT SCALE. CHECK AND VERIFY ALL DIMENSIONS ON SITE. REFER DISCREPANCIES TO THE SUPERINTENDENT. ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH: BUILDING CODE OF AUSTRALIA, APPLICABLE AUSTRALIAN STANDARDS & LOCAL AUTHORITY REQUIREMENTS.

PROJECT: ASPHALT BATCHING PLANT
AT: 1 / 13 CROOKED BILLET DRIVE BRIDGEWATER
FOR: HAZELL BROS GROUP PTY LTD

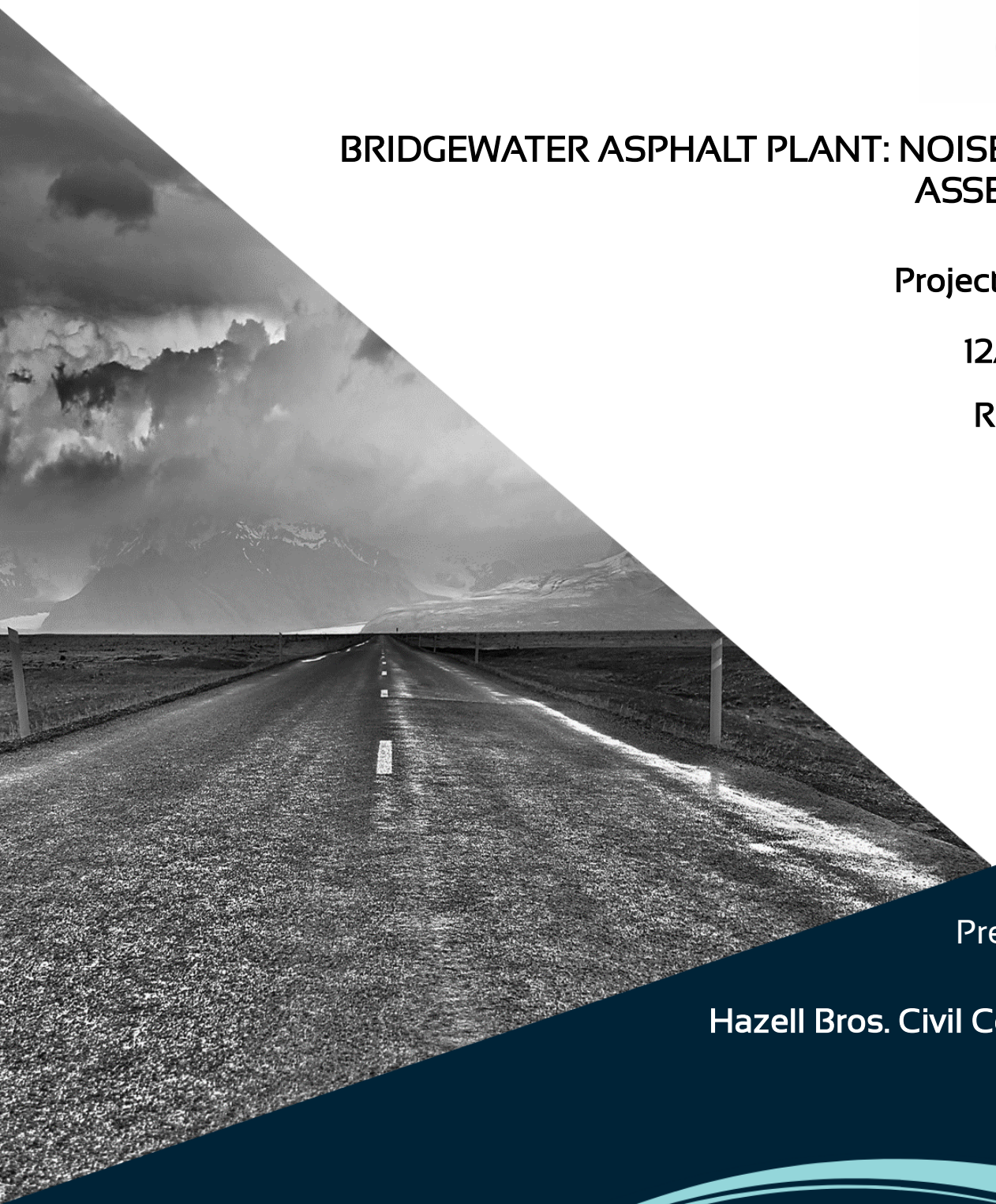
DRAWING: CIVIL WORKS
DETAILED SITE PLAN
SHEET 2.

DESIGNED: CGB DRAWN: PAS CHECKED:
SCALES: 1:100 AT A0 SIZE DRAWING SHEET

PROJECT No. 24.140 DRAWING No. Cp04 REV. B

SERVICES NOTE:
PRIOR TO COMMENCING DEMOLITION AND SITE WORKS, THE CONTRACTOR IS TO ARRANGE AND PAY FOR THE ON SITE MARKING AND CONFIRMATION OF DEPTH OF SERVICE LOCATIONS FOR ALL UNDERGROUND SERVICES INCLUDING TELSTRA, NBN, TASNETWORKS, TASGAS, TASWATER AND COUNCIL SERVICES. IN THE AREA OF NEW WORKS. LOCATION TO BE CONFIRMED USING CABLE LOCATORS AND HAND DIGGING METHODS. PRIOR TO ANY WORKS ON SITE, ANY CLASHES WITH DESIGNED SERVICES ON FOLLOWING DRAWINGS ARE TO BE REPORTED TO DESIGN ENGINEER FOR DIRECTION.

Appendix 4 Noise impact assessment



BRIDGEWATER ASPHALT PLANT: NOISE IMPACT ASSESSMENT

Project ID: 16586

12/06/2025

Release: R3

Prepared For:

Hazell Bros. Civil Contracting

Assured Environmental

DOCUMENT CONTROL PAGE

Project Title: BRIDGEWATER ASPHALT PLANT: NOISE IMPACT ASSESSMENT

Project Reference ID: 16586

Report Prepared by:

Assured Environmental
Unit 17, 538 Gardeners Road
Alexandria, NSW, 2015

Report Prepared for:

Hazell Bros. Civil Contracting
14 Farley Street,
Glenorchy, TAS, 7010

Author: Luke McPherson

Reviewer: Michelle Clifton

Table 1: History of Revisions

Revision	Date	Issued to	Changes
R0	24/02/2025	I. Standaloft	Initial Release
R1	21/03/2025	I. Standaloft	Client Comments
R2	15/04/2025	I. Standaloft	Minor Updates
R3	12/06/2025	I. Standaloft	Minor Updates

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

GLOSSARY

A-Weighting	A response provided by an electronic circuit which modifies sound in such a way that the resulting level is like that perceived by the human ear.
Background Noise	Noise level at a given location and time measured in the absence of any alleged noise nuisance sources. Typically, represented by the L_{A90} noise statistic.
RBL	Rating background noise level – the overall single-figure background level representing each assessment period (day/evening/night) over the whole monitoring period.
Calibrator	An instrument used to carry out 'field calibrations' before and after monitoring to ensure the sound level meter does not drift.
CONCAWE	Conservation of Clean Air and Water in Europe. Refers to the noise prediction algorithm used, which categorises the meteorological conditions into six discrete categories that indicate varying stability, thus allowing the consideration of neutral or noise-enhancing meteorological conditions within the model.
dB (decibel)	This is the scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and the reference pressure (0.00002 N/m^2).
dB(A) or dBA	This is a measure of the overall noise level of sound across the audible spectrum with a frequency weighting (i.e., 'A' weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.
Fast Time Weighting	Frequency the sound level meters records noise levels. Fast time weighting is every 125 ms.
Free-field	Refers to a sound pressure level determined at a point away from reflective surfaces other than the ground with no significant contribution due to sound from other reflective surfaces; generally, as measured outside and away from buildings.
L_{Aeq}	This is the equivalent steady sound level in dB(A) containing the same acoustic energy as the actual fluctuating sound level over the given period. Noise levels often fluctuate over a wide range with time. Therefore, when a noise varies over time, the L_{Aeq} is the equivalent continuous sound which would contain the same sound energy as the time varying sound. Many studies show that human reaction to level-varying sounds tends to relate closer to the L_{Aeq} noise level than any other descriptor.
L_{Amax}	The A-weighted, maximum, sound level. It should be noted that maximum noise levels are not peak levels.
L_{Amin}	The A-weighted, minimum, sound level.
L_{An}	The A-weighted, sound level exceeded for n% of the measurement period with A-weighted, calculated by statistical analysis - where n is between 0.01% and 99.99%. L_{A10} is representative of traffic noise. L_{A90} is representative of background noise.

ABBREVIATIONS

AHD	Australian Height Datum
AML	Attended Monitoring Location
BoM	Bureau of Meteorology
CRTN	Calculation of Road Traffic Noise
DCNG	Draft Construction Noise Guideline
EIS	Environmental Impact Statement
FEL	Front-end Loader
NATA	National Association of Testing Authorities
NIA	Noise Impact Assessment
RAP	Reclaimed Asphalt Pavement
RNP	Road Noise Policy
SLM	Sound Level Meter
tpa	tonnes per annum
TPS	Tasmanian Planning Scheme
UML	Unattended Monitoring Location

1 INTRODUCTION

1.1 Background

Hazell Bros. Civil Contracting Pty Ltd (herein referred to 'Hazell Bros.') intends to construct and operate an asphalt plant and reclaimed asphalt pavement (RAP) processing facility at 1 Crooked Billet Drive, Bridgewater, TAS, 7030 (the 'Subject Site').

As part of the proposal, the Subject Site will produce approximately 50,000 tonnes per annum (tpa) of asphalt, and approximately 5,000 tpa of RAP would be received and processed onsite. This will be a Level 2 Activity under Schedule 2 of the Environmental Management and Pollution Control Act 1994.

Hazell Bros. currently operates both wet and dry concrete batching plants on the Subject Site. The wet concrete batching plant is to be decommissioned and removed in mid-2025, whilst the dry concrete batching plant will be relocated to a different position on site as part of the works occurring during the construction of the asphalt plant.

AE has previously prepared a Noise Impact Assessment (NIA) for the Subject Site[a] for the construction of the new asphalt plant and the cumulative operations of the wet and dry concrete plants with the asphalt plant (hereafter the 'previous NIA'). As a result of changed Subject Site layouts, a revised NIA is to be prepared.

1.2 Scope of Assessment

Assured Environmental (AE) was appointed by Hazell Bros. to undertake a noise impact assessment of the proposed development to meet the requirements of the project specific guidelines issued by the EPA Tasmania in July 2024. The NIA will be undertaken in accordance with the following documents:

- Environmental Impact Statement Guidelines - Hazell Bros Civil Contracting Pty Ltd - Asphalt and Reclaimed Asphalt Pavement (RAP) Processing Plant;
- Tasmanian Noise Measurement Procedures Manual;
- Tasmanian Planning Scheme;
- Brighton Planning Scheme; and
- Environmental Protection Policy (Noise) 2009.

In accordance with the requirements of the above guidelines, computational modelling have been undertaken to assess the potential for acoustic impacts as a result of the proposed development.

[a] *Bridgewater Asphalt Plant: Noise Impact Assessment*, prepared by Assured Environmental, Project ID: 15466, dated 03/09/2024, revision R1

1.3 Project Specific Guidelines

This assessment has been prepared in accordance with the Environmental Impact Statement (EIS) Guidelines for *Hazell Bros Civil Contracting Pty Ltd Asphalt and Reclaimed Asphalt Pavement (RAP) Processing Plant, 1 Crooked Billet Drive, Bridgewater*, dated July 2024. The required information relating to the noise impact assessment and the corresponding location of information within the report are listed in Table 2.

Table 2: EIS Project Guidelines

Item	Terms of Reference Requirements	Section in Report
5.4.1	**Existing Environment**	
	Provide a site plan showing the location of all operational sources of noise (fixed and mobile) and the location of any proposed noise screens/enclosures.	9.2
	Identify all noise sensitive premises that can potentially be impacted by the proposed development.	2.2
5.4.2	**Assessment**	
	Describe all noise sources, including associated ○ Sizes and sound power ratings; ○ 1/3 octave source noise data (linear/C-weighted and A-weighted) to assess for low frequency and tonal noise; ○ Noise attenuation features; and ○ Hours of operation.	9.2, Appendix B
	Evaluate the existing background noise levels at the proposal site and at noise sensitive premises, using the results of a minimum of 7 days of noise monitoring. All methods of measurement should be in accordance with the *Tasmanian Noise Measurement Procedures Manual*.	4
	Provide noise contour map/s and discuss assumptions made to predict noise impacts at the surrounding noise sensitive premises.	8, 9, Appendix C
	Provide the results of a noise model for the proposal undertaken by a suitably qualified person. Evaluate the potential for noise emissions (during both construction and operational phases) to cause nuisance for nearby land users, and taking into consideration the following; ○ Distance to nearest residences and other noise sensitive premises; ○ Hours of operation; ○ Topography; ○ Site layout showing locations of activities (refer to the Site Plan); ○ Worst-case weather conditions (e.g. temperature inversions and downwind; and ○ L_{Amax} noise emissions, to assess for sleep disturbance during the night-time period.	6, 8, 9
	Discuss noise-related environmental impacts associated with current and altered traffic flows including truck movements on other road users and on residences adjacent to roads.	7
5.4.3	**Avoidance and mitigation measures**	
	Describe attenuation measures that will/have be implemented to address the following: ○ Measures must be sufficient to protect the existing acoustic amenity at noise sensitive premises.	9.5

Item	Terms of Reference Requirements	Section in Report
	○ All continuous, fixed, mechanical noise sources should be enclosed or acoustically screened from the surrounding sensitive premises. ○ Measures must ensure that continuous-type noise emissions from fixed plant and equipment are lower than the existing background noise levels (L_{A90}) at noise sensitive premises. ○ Noise emissions from the site should not contain excessive energy in the low frequency range when measured/observed at any sensitive receivers. ○ Consider investigating best management practices to reduce noise emissions by the extent that is reasonable and practical.	
	Demonstrate that the proposal is consistent with environmental performance requirements, including any identified in the *Environment Protection Policy (Noise) 2009*.	9.3

1.4 Tasmania EPA October 2024 EIS Table of Issues

In December 2024, the EPA Tasmania released the final Table of Issues requiring resolution in relation to the initial EIS submitted for the Subject Site. AE has reviewed the issues relevant to the previous NIA and prepared updates to the assessment accordingly. A summary of these is provided in Table 3.

Table 3: EIS Table of Issues

Issue No.	Issue for Resolution	AE Response
31	RBL values should only be calculated from long term noise logging. Please confirm how long the attended measurements were. Consider removing the RBL column from the attended measurement table.	RBLs have been revised to only be based on data from long-term noise logging. Further detail on derived RBLs and attended measurements is provided in Section 4.2.
32	The Management Levels are derived from RBLs derived from short term attended measurements. Please use the long-term logging RBL and L_{A90} values from location UML as a representative scenario.	The Management Levels have been updated to reflect RBLs based only on long-term logging. The updated Management Levels are provided in Section 6.
33	Dominant/intrusive penalties appear to be applied to the sound power levels for each piece of equipment. These should be applied at the receiver, not at the source. Please update table and modelling outputs accordingly.	The noise model has been reviewed to determine any warranted penalties based on receptor noise levels. Revised penalties for each specific receptor are presented in Table 23 and Table 24 in Section 9.
34	Adopted criteria are derived from attended measurements. All criteria should be established from long term logging, not from shorter attended measurements. Please use the RBL and L_{A90} from long-term logging at location UML to establish criteria. If need be, a justification can still be written arguing not all receiver locations will have such low background noise.	Revised criteria have been derived based solely on the RBLs determined by long-term logging. Some discussion regarding this and the relative difference in background levels from attended locations is provided in Section 9.

1.5 This Report

This report summarises the methodology, results, and conclusions of the noise impact assessment with the revised site layout.

2 DESCRIPTION OF ENVIRONMENTAL VALUES

2.1 Location

The current Subject Site covers the land of 1 and 13 Crooked Billet Drive, Bridgewater, TAS, 7030. The existing land is identified as property ID 3017836, Title Reference 158010/1 and property ID 3017801, Title Reference 158009/7, with an existing area of 10.31 hectares. The potential future boundary would be created after a subdivision and be known as 1 Crooked Billet Drive, with an area of 8.42 hectares. These lots are located within a General Industrial zone and are shown in Figure 1.

The surrounding land uses primarily comprise industrial activities with a recreation area to the south and residential (rural living) to the south and south west of the Subject Site. The land use, as defined in the Tasmanian Planning Scheme is shown in Figure 1.

2.2 Receptors

Table 4 and Figure 1 present the nearest sensitive receptors to the Subject Site based on a review of aerial mapping and a site visit verifying the surrounding receptors. It should be noted that the receptor assessment locations are located on the boundary of their property closest to the Facility.

Table 4: Receptors

ID	Location (EPSG:32755)		Distance to Site Boundary	Land Use
	X	Y		
R01	519473	5269487	263 m	Residential [a)]
R02	519259	5269136	337 m	Residential
R03	519273	5269022	451 m	Residential
R04	519177	5268972	492 m	Residential
R05	519217	5268941	523 m	Residential
R06	518739	5269295	374 m	Residential
R07	518756	5269234	407 m	Residential
R08	518726	5269115	524 m	Residential
R09	518589	5269410	444 m	Residential
R10	518566	5269482	450 m	Residential
R11	518618	5269248	498 m	Residential
R12	518545	5269337	511 m	Residential
R13	518500	5269393	534 m	Residential
R14	518506	5269547	503 m	Residential
R15	518397	5269667	616 m	Residential
R16	518301	5269550	710 m	Residential
R17	518379	5269490	634 m	Residential
R18	518440	5269444	580 m	Residential
R19	518286	5269385	743 m	Residential
R20	518321	5269366	713 m	Residential
R21	518361	5269333	684 m	Residential
R22	518393	5269295	670 m	Residential

ID	Location (EPSG:32755)		Distance to Site Boundary	Land Use
	X	Y		
R23	518422	5269245	664 m	Residential
R24	518445	5269186	675 m	Residential
R25	518594	5269138	588 m	Residential
R26	518683	5268965	674 m	Residential
R27	518765	5268923	672 m	Residential
R28	518372	5269130	766 m	School

a) *Owned by Boral Construction but was observed to be used as a residential dwelling during AE's surveys in July 2024*

2.3 Terrain

Figure 2 illustrates the local topography relative to the Australian Height Datum (AHD), as obtained from Elvis LiDAR data at 1 m resolution. The topography of the Subject Site is from 62 m falling from northwest to southeast to a height of 47 m in the southeast corner. Beyond the Subject Site, the area features hills and gullies with elevations ranging to 81 m above sea level.

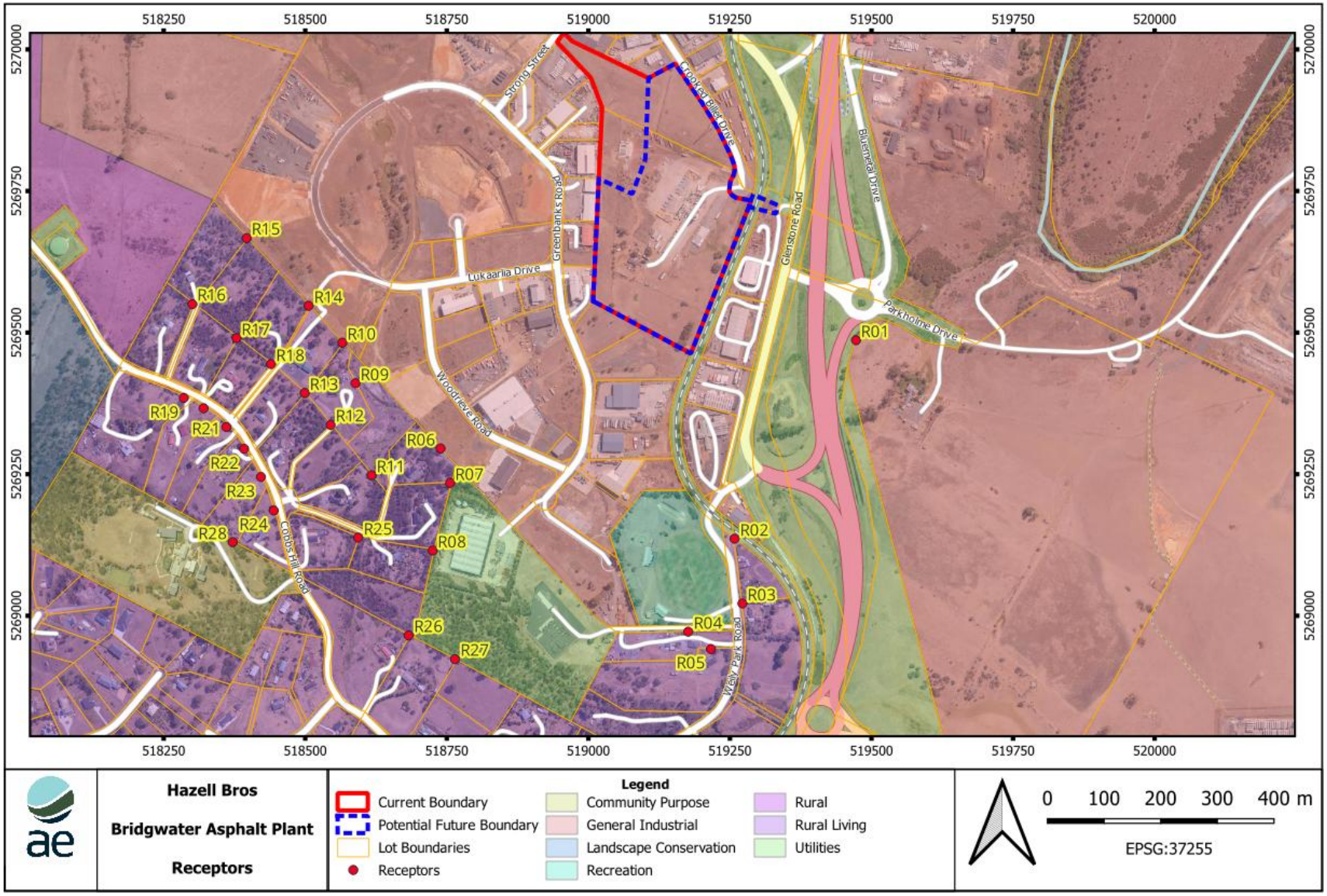


Figure 1: Site Location, Tasmanian Planning Scheme Zones & Sensitive Receptors

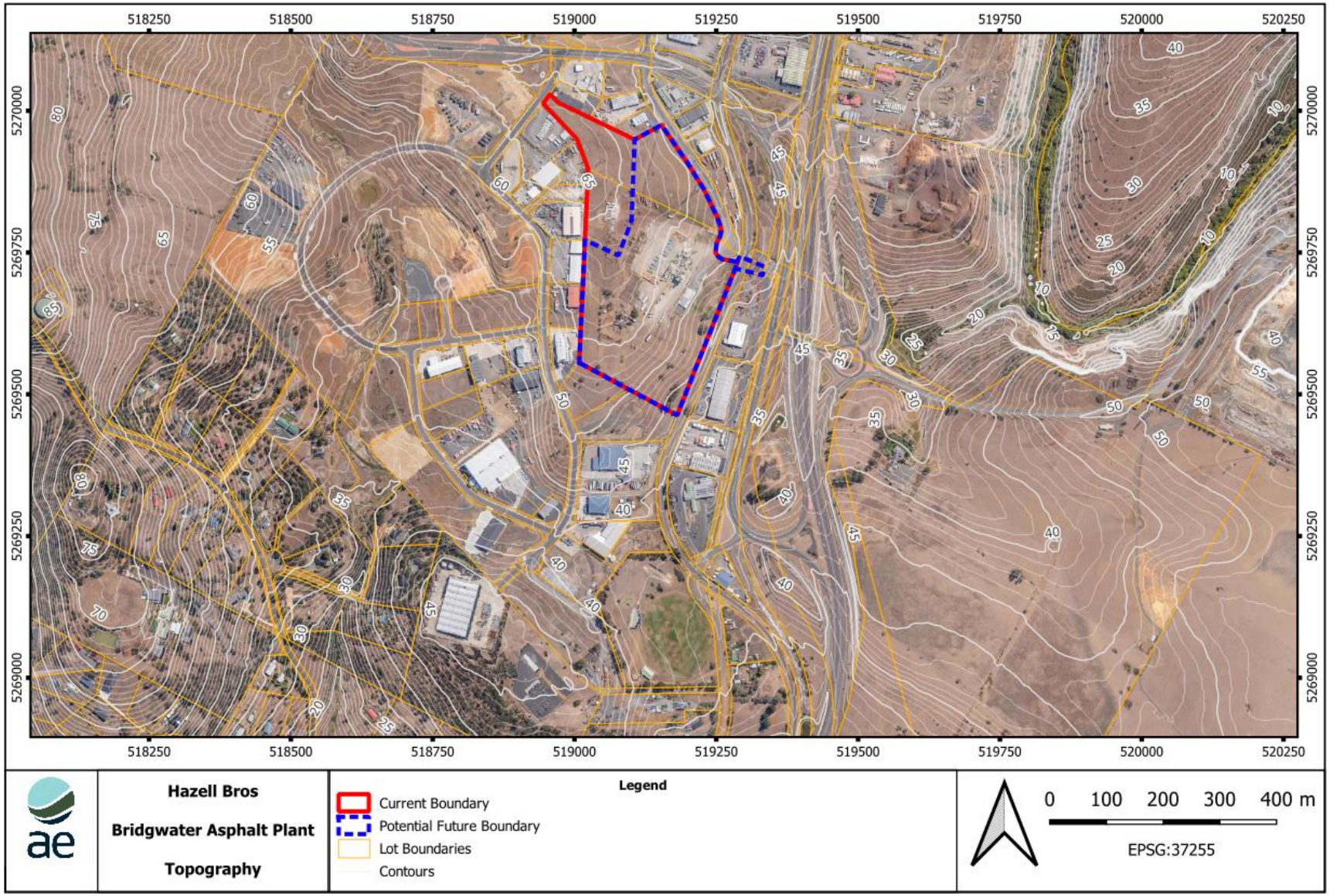


Figure 2: Topography (m AHD, sourced from Elvis LiDAR)

3 BRIDGEWATER OPERATIONS

3.1 Site Infrastructure

A summary of the existing and proposed Subject Site infrastructure is provided in Table 5.

Table 5: Existing and Proposed Site Infrastructure

Process	Existing	Proposed
Concrete batching plant: wet	Yes	No
Concrete batching plant: dry	Yes	Yes, existing plant relocated
Asphalt plant	No	Yes

3.2 Concrete Batching Plant

Hazell Bros. currently owns and operates a concrete batching plant on the northern portion of the Subject Site. This includes both a wet and a dry batch plant and supporting infrastructure for each, namely:

- Raw material stockpiles;
- Front end loaders;
- In-feed bins;
- Belt conveyors;
- Storage silos (with attached dust filters);
- Mixing chambers;
- Loading areas; and
- Washing areas.

Both the wet and dry ends of the existing concrete batch plant operate with similar processes as follows:

- Raw materials (sand, aggregates, etc.) are loaded from stockpiles into in-feed bins using a front-end loader.
- The material is deposited onto a belt conveyor by a hopper.
- The belt conveyor transports the raw materials into a mixing chamber where they are combined with other inputs such as water, cement, and fly ash.
- The mixed material is then loaded into trucks via another hopper.

AE has been advised that the existing concrete batch plant has an existing consent that permits the operation of the facility 24/7.

3.3 Asphalt Plant

The primary infrastructure associated with the plant is presented in a process flow diagram in Figure 3.

Virgin Material Feeders/Hoppers

Cold feeders bulk-feed virgin aggregates and sand into the Asphalt plant via front-end loaders. The loaders transport materials to labelled hoppers, which must remain more than half full during operation. The hoppers discharge material at varying rates based on the Asphalt recipe.

Materials typically include sand and various aggregates (5mm, 7mm, 10mm, 14mm, 20mm). Each hopper's conveyor belt is calibrated for material density and moisture, delivering the combined materials to the Rotary Dryer.

Rotary Dryer

The Rotary Dryer is a rotating, inclined drum that uses internal flights and lifters to lift and veil incoming virgin materials. A controlled burner flame heats the materials, drying moisture and superheating the material to 160-240°C, depending on the asphalt product. The burner can run on either Natural Gas or XLS-Diesel. After exiting the dryer at the desired temperature, the material is elevated by a virgin bucket elevator, which uses rotating buckets to transport the material to the top of the plant. The material is then discharged into the screen deck.

Baghouse Dust Extractor

The Baghouse dust extractor filters exhaust air from the rotary dryer. Suction from an exhaust air fan provides oxygen for combustion while extracting fine particles from the drying process. The air passes through high-temperature Nomex filter bags, capturing particulates before clean air and steam are released through the plant exhaust stack. The captured particulates are stored in a sealed silo and metered back into the asphalt mix as part of the recipe.

Hot Screen

Heated virgin materials are re-screened into refined fractions at the top of the asphalt plant before being stored in the hot aggregate silos. The materials are screened into the following fractions:

- Fines: 0-3.5mm
- 7mm: 3.6mm-7mm
- 10mm: 7mm-10mm
- 14mm: 10mm-14mm
- 20mm: 14mm-20mm
- Oversize: Foreign or oversize material is rejected and sent to a separate disposal chute.

Hot Aggregate Storage Silo

The hot aggregate storage silos are individual units where hot, dry material is stored before the next stage of the process. Up until this point, the entire process is continuous, with material being constantly fed, conveyed, dried, elevated, and stored.

Mineral Scale

The Mineral Scale is a calibrated weigh hopper used to weigh hot stored materials according to the selected mix design. A full batch, typically 2 tonnes, is created by weighing materials such as fines, 7mm, and 10mm aggregates until the desired weights are achieved. In parallel, other materials are weighed, including Bitumen Weigh Scale, Mineral Filler Scale, RAP Weigh Belt Scale and Granular Additive Weigh Scale. Once all components are weighed to the required recipe, they are discharged into the pug mill mixer.

Pug Mill Mixer

The Pug Mill Mixer is a twin shaft counter rotating mixing chamber where all materials in the recipe are combined to produce a homogeneous asphalt product. The mixing cycle typically

lasts between 45 to 60 seconds. Once mixed, the finished asphalt is discharged into one of three designated hot asphalt storage silos, ready for loading.

Hot Asphalt Storage - Load Out

The hot asphalt storage system consists of two 50-tonne silos and one 6-tonne silo, allowing different mixes or quantities to be stored for loading into customer vehicles. The large silos are designed to hold enough asphalt to fully load a truck and trailer, with the ability to store the mix for several hours without temperature loss. Upon truck arrival, it is weighed on an inground weighbridge. The truck is then inspected and temperature-checked at the laboratory sampling stand before departure.

Bitumen Storage Tanks Overview

The Bitumen Storage system consists of four 60m³ vertical tanks, insulated and cladded with electrical base heating, located within a concrete bund area. Bitumen is received by road tanker (25,000 litres per load) and pumped into the tanks, where it is stored at 165°C. The bitumen is then fed to the batching plant through heated and insulated pipework, weighed, and incorporated into the asphalt recipe. Since bitumen is pumpable only above 150°C, the tanks feature a breather pipe to vent air, connected to an activated carbon filter to capture vapors and odours before being released into the atmosphere.

Imported Filler Silo

Imported filler, typically hydrated lime, is received by road pneumatic tanker and pumped into a 60m³ vertical silo for storage. The filler is then elevated by a bucket elevator to a small holding hopper, where it is augered to the filler weigh scale. The weigh scale, controlled by the batching computer, measures the filler as part of the asphalt recipe.

Reclaimed Filler

Reclaimed filler consists of fine particulates captured by the baghouse filter system. These fines are elevated via an enclosed bucket elevator into a small enclosed holding hopper, where they are augered to the filler weigh scale as needed, based on the batching computer, as part of the asphalt recipe.

Granular Additives Addition Hopper

Granular additives, such as cellulose fiber (used in SMA mixes) and crumb rubber (from recycled truck tires), are added in small quantities to specific asphalt mixes. These materials are elevated by a bucket elevator to a small holding hopper, where they are augered and weighed using the additive weigh scale. Typically, only one additive is used per mix design. The additives are introduced cold into the pug mill mixer, where they mix with the heated virgin materials to form the final asphalt mix.

RAP Feeder Hopper

Reclaimed Asphalt Pavement (RAP) is processed from old asphalt pavements and waste asphalt, screened to create fractionated RAP with known particle size and binder content. The processed RAP is fed into a hopper by a front-end loader, metered via a conveyor belt, and elevated to a holding hopper using a bucket elevator. When needed, RAP is metered directly into the pug mill mixer via a weigh belt to meet the recipe requirements. The plant can handle up to 30% RAP in the mix.

The RAP processing facility is capable of receiving and processing up to 5,000 tpa of RAP. However, the actual intake may fluctuate based on project-specific requirements, such as the type of pavement being milled. RAP is typically obtained from deep lift type pavements, which allows for better material quality due to reduced contamination from base and sub-base layers.

The area designated for RAP stockpiles allows for up to 5,000 tonnes of material, with an average stockpile height of 3 m and a material density of 2.4 tonnes per m^3. The stockpiling area includes a boundary buffer to manage site constraints and ensure compliance with environmental regulations.

The facility plans to conduct two processing campaigns per annum. This approach ensures that RAP material is processed efficiently, while minimising the time spent on-site, reducing potential environmental impacts.

Process Oil

The process oil system uses a liquid dosing pump to add an oxidizing agent (Recosol 185) to the bitumen weigh scale when producing Cold Mixed Asphalt. This type of asphalt is made at lower temperatures than standard hot mix asphalt. The additive slows the oxidizing process of the binder, extending the asphalt's usability in smaller quantities for applications like potholes and temporary trench reinstatements.

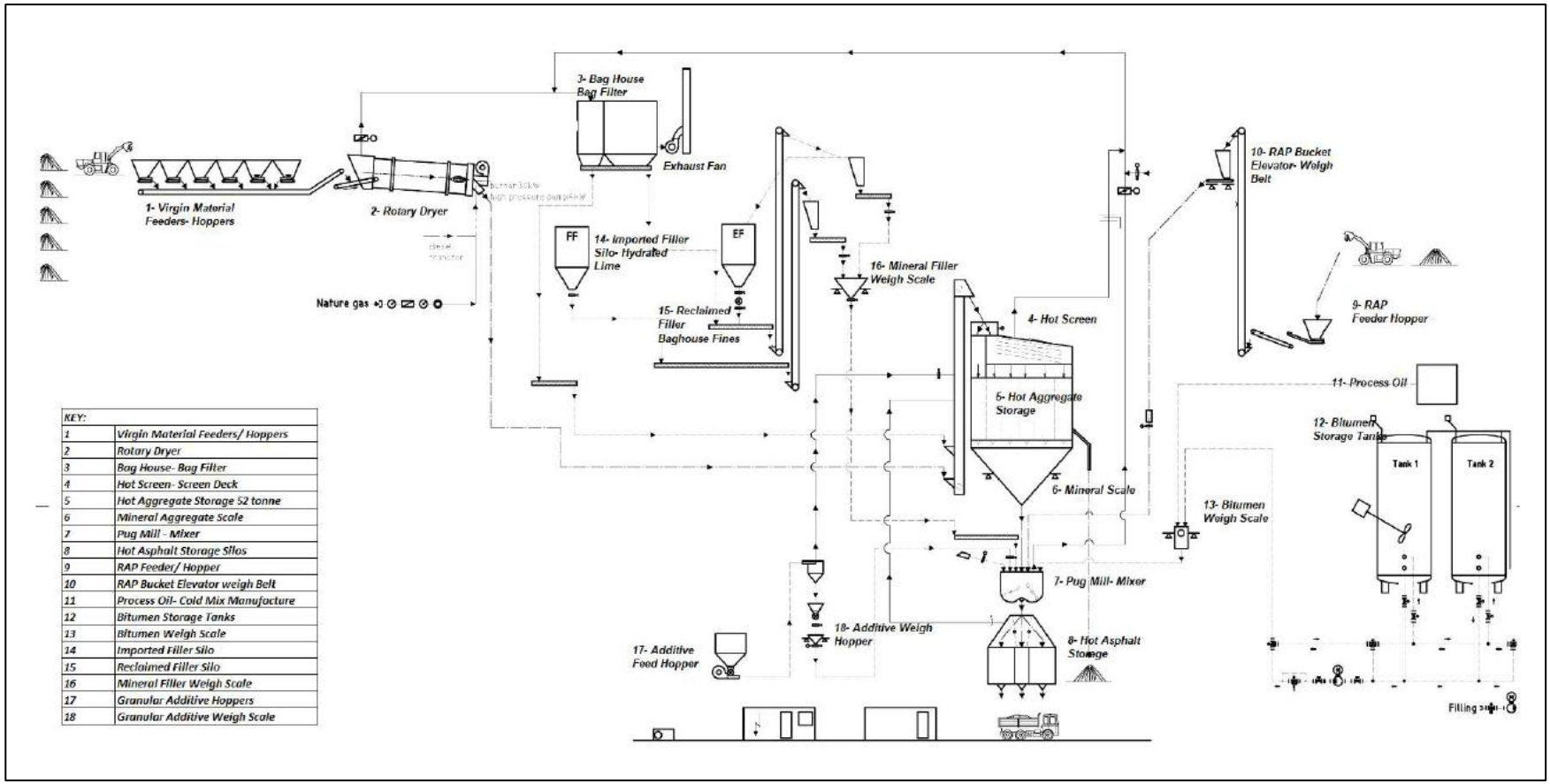


Figure 3: Process Flow Diagram Asphalt Plant

4 EXISTING NOISE ENVIRONMENT

4.1 Unattended Monitoring

Background noise monitoring was undertaken from 23 July to 1 August 2024 in order to quantify the existing background noise levels receptors near surrounding receptors. The noise logger location was selected based on gaining access to install within a similar noise environment to the majority of surrounding receptors, and supplementary attended measurements were conducted at locations representative of additional residential receptors (see Section 4.2 for further details).

Unattended Monitoring Location 1 (UML1 - see Figure 4), located within the grounds of Northern Christian School, was therefore used in this assessment to establish representative long-term background noise levels. It is noted that this location was relatively well-shielded from play areas within the school, and any influence from children playing or pick-ups/drop-offs would be of sufficiently short duration that they do not influence the overall measured L_{A90} used to derive the assessment criteria. Furthermore, industrial noise (including that from the existing Hazell Bros. concrete batch plant) was inaudible at this location.

Noise measurements were undertaken in accordance with the requirements of Australian Standard AS 1055-2018 *Acoustics – Description and measurement of environmental noise* using a Norsonic Nor139 Type 1 environmental noise logger. Field calibrations before and after the survey revealed no significant system drift occurred. The logger was located in free field conditions. An averaging time of 10 minutes was adopted for the monitoring. The microphone was positioned at a height of 1.2 metres above ground level and fitted with a windshield throughout the measurements.

Noise monitoring has the potential to be affected by rainfall and wind speeds above 5 m/s. As such a weather station was co-located at UML1 throughout the noise monitoring period. An equipment fault meant that no data was recorded by this station, thus AE has substituted weather data from the Bureau of Meteorology (BoM) Hobart Airport Station (no. 094250), which is located roughly 26 km to the southeast of the Subject Site. A concurrent review of the BoM data and noise level trends indicates several periods of elevated by winds (>5 m/s), and these periods were removed from the monitoring data.

Table 6 below provides a summary of noise levels of each period for a variety of statistical noise parameters with affected data removed.

Table 6: Summary of Noise Monitoring Results

Location	Period	Noise Level (dB(A))					
		L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	RBL
UML1	Day (07:00-18:00)	85	52	46	40	46	38
	Evening (18:00-22:00)	72	48	43	38	43	35
	Night (22:00-07:00)	82	43	39	33	39	29

The serial number and calibration information for the instrument used is presented in Appendix A, along with detailed noise monitoring analysis.

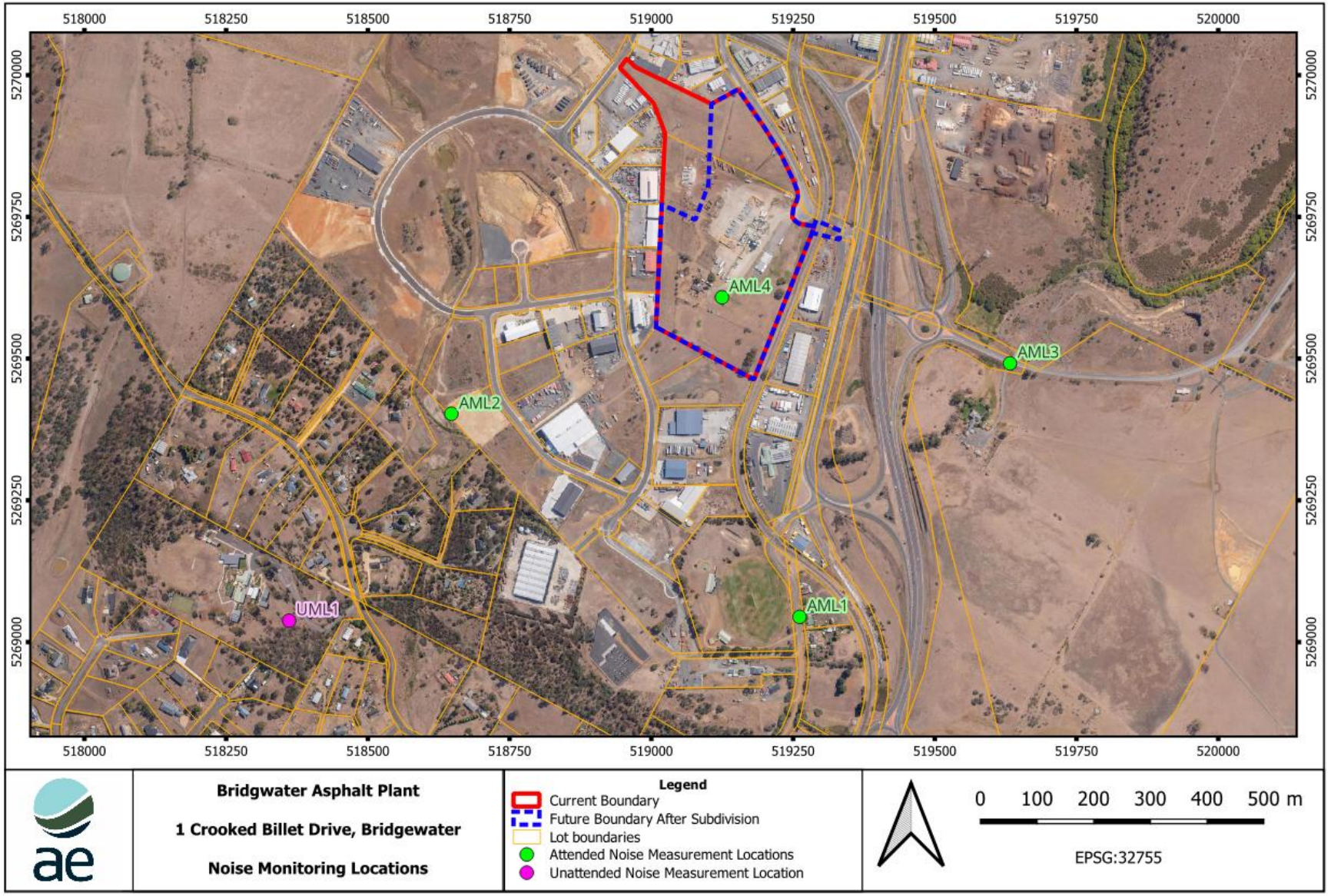


Figure 4: Noise Monitoring Locations

4.2 Attended Monitoring

As noted previously, UML1 was located within a noise environment of similar characteristics to the majority of surrounding receptors (i.e. where traffic noise from the Midland Highway tends to set the underlying background noise level). However, the specific noise levels at surrounding receptors may not necessarily be identical to those recorded by the logger given that receptors are located at different distances to sources of environmental noise. The measured noise levels in other surrounding areas are therefore valuable in developing a deeper understanding of the noise environment surrounding the Subject Site.

As such, AE conducted supplementary attended measurements during each of the day, evening, and night at three critical locations deemed representative of surrounding residential receptors, and a further one location within the boundary of the Subject Site. Each survey was conducted for 10 minutes and was conducted simultaneously with the unattended survey so the results could be directly compared over each 10-minute period. From this, the relative difference between the attended and unattended locations could be understood.

The four Attended Monitoring Locations (AMLs) were as follows:

- AML1: Kerb in front of 4 Weily Park Road;
- AML2: Rear of lots along Woodrieve Road, near the dwelling at 34 Cobbs Hill Road;
- AML3: At the driveway of the 'Parkholm' estate along Parkholm Drive; and
- AML4: On the southern portion of the Subject Site near the turning circle.

Measurement locations are shown in Figure 4. The measurements were conducted on the 23 July 2024 using a NATA calibrated class 1 SLM (Larson Davis 831, S/N 0001178, calibration due 26 September 2024). The SLM was calibrated before and after the measurements with no calibration drift observed across the monitoring periods. Weather during the surveys was noted to be fine with no rainfall and winds less than 5 m/s as confirmed with a handheld anemometer.

The attended noise monitoring survey results are presented in Table 7.

Table 7: Summary of Attended Monitoring Survey Results

Location	Period	Start Time	Measured Noise Levels (10 minutes, dB(A))							
			L_{Aeq}	L_{Amax}	L_{A1}	L_{A10}	L_{A50}	L_{A90}	L_{A99}	L_{Amin}
AML1	Day	12:20	57.5	90.5	66.2	54.8	51.3	48.6	47.0	45.2
	Evening	20:36	48.8	69.2	57.8	49.3	45.5	40.9	37.3	35.9
	Night	22:20	42.5	54.1	50.1	45.9	40.4	34.2	32.5	31.8
AML2	Day	12:43	44.6	67.2	50.9	47.0	42.9	40.4	39.6	38.4
	Evening	21:18	36.6	52.8	46.5	38.9	33.8	31.0	29.1	27.7
	Night	22:57	34.3	58.3	43.2	32.7	30.2	28.9	28.2	27.3
AML3	Day	15:03	66.1	90.8	74.4	64.0	61.1	58.4	56.7	55.3
	Evening	20:20	56.2	69.7	63.9	59.3	54.6	47.3	42.6	41.3
	Night	22:05	51.0	70.9	58.7	54.2	47.8	37.2	33.9	32.9
AML4	Day	13:50	56.0	66.0	63.4	59.0	53.8	51.8	51.0	50.1
	Evening	20:55	47.2	59.1	56.7	49.3	44.7	40.7	38.4	37.4
	Night	22:37	41.9	60.1	50.0	45.2	39.3	36.1	35.1	34.2

The above $L_{A90,10min}$ measurement data was then compared to the noise logger $L_{A90,10min}$ data during matching periods. The differences in background noise levels between each

measurement location and the noise logger location are presented in Table 8, to quantify the typical difference in noise levels at the two locations.

Table 8: Summary of Relative Differences in Background Noise Levels

Location	Period	Start Time	Measured $L_{A90,10mins}$ (dB)		Difference (dB(A))
			At Location	At Logger (UML1)	
AML1	Day	12:20	48.6	40.2	+8.4
	Evening	20:36	40.9	31.6	+9.3
	Night	22:20	34.2	29.2	+5.0
AML2	Day	12:43	40.4	42.8	-2.4
	Evening	21:18	31.0	30.8	+0.2
	Night	22:57	28.9	28.4	+0.5
AML3	Day	15:03	58.4	42.0	+16.4
	Evening	20:20	47.3	32.0	+15.3
	Night	22:05	37.2	29.4	+7.8
AML4	Day	13:50	51.8	41.4	+10.4
	Evening	20:55	40.7	32.1	+8.6
	Night	22:37	36.1	30.7	+5.4

Whilst the final project noise criteria derived from the existing background levels must rely on the long-terms RBLs established at UML1, the above comparisons help contextualise the relative noise levels in other locations exposed to different levels of noise.

From these, it is apparent that AML1, AML3, and AML4 were environments exposed to a higher level of noise (at least 5 dB) through all periods. This corresponds to an increased exposure to the Midland Highway and the industrial precinct.

In contrast, AML2 was shown to have relatively similar background noise levels to UML1 during the same periods, even being slightly lower during the day. This is a result of it being in a more shielded location, further from the Midland Highway in particular.

5 NOISE MODELLING METHODOLOGY

5.1 Calculation Protocols

For the purposes of predicting impacts associated with noise emissions from the Subject Site upon sensitive receptors, predictive noise modelling was undertaken using the proprietary software CadnaA (version 2024 build 203.5403) developed by DataKustik.

CadnaA incorporates the influence of meteorology, terrain, ground type and air absorption in addition to source characteristics to predict noise impacts at receptor locations. All predictions have been undertaken in accordance with the CONCAWE method.

The model is utilised to assess the potential noise emissions from the site under a range of operating scenarios and meteorological conditions. The noise modelling also allows investigation of possible noise management solutions if non-compliance with the assessment criterion is predicted.

5.2 Meteorology

The following standard meteorological parameters were used in the noise model for the CONCAWE propagation methodology.

Table 9: Model Meteorology

Parameter	Day	Evening	Night
Temperature	5°C	5°C	5°C
Relative Humidity	70%	70%	70%
Pasquill-Gifford Stability Class	D	D	F
Wind Direction	Source to Receptor	Source to Receptor	Source to Receptor
Wind Speed (m/s)	3 m/s	3 m/s	2 m/s

5.3 Model Configuration

Table 10 summarises the standard model configuration used for the modelling.

Table 10: Model Configuration

Parameter	Approach
Standards	CONCAWE
Time Periods	Day (07:00 - 18:00 hours) Evening (18:00 - 22:00 hours) Night (22:00 - 07:00 hours)
Digital Terrain	LiDAR data at 5 m intervals.
Ground Absorption	Default absorption for soft surface. Aerial mapping used to include hard ground around Subject Site.

6 CONSTRUCTION NOISE ASSESSMENT

6.1 Construction Assessment Criteria

The EPA does not currently provide guidelines on construction noise emission limits. Restrictions on the hours of use for mobile machinery, forklifts, trucks, and portable equipment are provided in the *Environmental Management and Pollution Control (Noise) Regulations 2016* and are reproduced in Table 11.

Table 11. Prohibited Hours of Use for Construction Equipment

Days	Prohibited Hours of Use
Monday to Friday	Before 7 am and after 6 pm
Saturday	Before 8 am and after 6 pm
Sunday or public holiday	Before 10 am and after 6 pm

Guidance on construction noise limits is sought from the *Draft Construction Noise Guideline 2020* (DCNG) published by the NSW EPA.

The main objectives of the Guideline are to:

- Promote a clear understanding of ways to identify and minimise noise from construction works;
- Focus on applying all 'feasible' and 'reasonable' work practices to minimise construction noise impacts;
- Encourage construction to be undertaken only during the recommended standard hours, unless approval is given for works that cannot be undertaken during these hours;
- Streamline the assessment and approval stages and reduce time spent dealing with complaints at the project implementation stage;
- Provide flexibility in selecting site-specific feasible and reasonable work practices in order to minimise noise impacts; and
- Provide guidelines for assessing noise generated during the construction phase of developments.

In achieving these objectives, the guideline provides a framework for the qualitative and quantitative assessment of potential construction noise impacts noting that, for major projects, a quantitative assessment is the preferred approach. Table 12 presents construction noise criteria outlined in the guideline.

Table 12: NSW EPA Construction Noise Criteria - Residential Receivers

Time of Day	Management Level (Free-field)	How to Apply
Recommended standard hours: Monday to Friday, 7 am to 6 pm	Noise affected RBL + 10 dB	Where the predicted or measured $L_{Aeq\ (15\ min)}$ is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. As a matter of good practice, noise should be reduced as far as reasonably practicable.

Time of Day	Management Level (Free-field)	How to Apply
Saturday 8 am to 1 pm No work on Sundays or public holidays		The proponent should also inform all potentially impacted residents.
	Highly noise affected (HNAL) 75 dB(A)	Where noise is above the highly noise affected management level, all feasible and reasonable mitigation shall be applied as well as engagement with the consent authority or regulator to identify other measures to manage noise impacts. Where appropriate, engagement with the community is encouraged to determine the preferred mitigation approach, such as: ▪ negotiated agreements and/or respite periods to restrict work activity ▪ identification of times when the community is less sensitive to noise, including options for longer periods of construction in exchange for restrictions on construction times.
Outside recommended standard hours	Noise affected RBL + 5 dB	A strong justification would typically be required for works outside the recommended standard hours. The proponent shall apply all feasible and reasonable work practices to meet the noise affected management level. Where this cannot be met, residual impacts should be quantified, and potentially impacted residents notified. The supplementary mitigation described in Table 5 of the DCNG must also be considered.
	Highly noise affected (HNAL) 65 dB(A)	The highly noise affected management level represents the point above which the supplementary mitigation described in Table 5 of the DCNG. must be considered, subject to the application notes in section 5.4 of the DCNG. The proponent must justify the selection of feasible and reasonable mitigation, including the supplementary mitigation, with emphasis on consultation with the community and the consent authority or regulator, and community views on work scheduling and respite periods, as described in section 5.4 of the DCNG.

Where nearby sensitive uses are predicted to be noise affected, the proponent of the project is required to apply reasonable and feasible noise mitigation measures noting that a noise mitigation measure is feasible if it is capable of being put into practice and is practical to build given the project constraints.

Selecting reasonable mitigation measures from those that are feasible involves making a judgement to determine whether the overall noise benefit outweighs the overall social, economic, and environmental effects.

The majority of construction activities are expected to take place during standard hours, though AE has been advised that Saturday works may occur until approximately 3 pm, which is outside of standard hours. The construction noise criteria is derived as shown in Table 13:

Table 13: Construction Noise Assessment Criteria

Receptors	Standard Hours, dB(A)		Outside Standard Hours, dB(A)	
	Management Level (RBL + 10)	HNAL	Management Level (RBL + 5)	HNAL
Residential (R01 - R27)	38 + 10 = 48	75	38 + 5 = 43	65

The management level for schools (Receptor R28) is 45 dB(A) internally, which can be taken as 55 dB(A) externally assuming a 10 dB reduction through open windows. The management levels for commercial and industrial receptors are 70 dB(A) and 75 dB(A) respectively. In all instances a $L_{Aeq,15mins}$ noise metric is used.

6.2 Construction Works

The construction of the expansion is expected to involve a number of different activities undertaken in conjunction with each other. The primary stages are divided into:

- Concrete plant removal/relocation: dismantling the wet batching plant and relocating the dry batching plant;
- Civil works: including site clearing/levelling, and establishment of foundations; and
- Asphalt plant erection: including construction of structural frame and asphalt plant.

The assessment has therefore considered the potential for adverse amenity impacts associated with the above stages during both standard and outside of standard hours.

6.3 Construction Noise Sources

It is noted that construction works are expected to progress across the site such that plant and equipment would only be in a single area for a short period of time. Given this, the potential for adverse impacts at any one receptor is expected to only occur for a short period of time.

Table 14 below presents a summary of the plant and equipment likely to be required to complete the on-site construction works. The sound power levels presented have been sourced from published noise emission datasets and the library of source noise levels maintained by AE.

Table 14: Construction Noise Sources

Construction Stage	Plant Item	Number Required	Sound Power Level, dB(A)	Acoustical Usage Factor, % [a)]
Concrete plant removal / relocation	Trucks	4	107	40
	Crane	2	113	16
	Power Tools	4	100	40
Civil works	Trucks	6	107	40
	Excavator	2	108	40
	Dozer	1	109	40
	Grader	1	113	40
	Concrete pump/truck	2	101	20
	Piling rig	1	116	20
Asphalt plant erection	Trucks	4	107	40
	Crane	2	113	16

Construction Stage	Plant Item	Number Required	Sound Power Level, dB(A)	Acoustical Usage Factor, % [a)]
	Power Tools	5	100	40
	Roller	1	109	40
	Generator	1	91	50

a) The 'Acoustical Usage Factor' represents the percentage of time that a particular item of equipment is assumed to be running at full power while working on site. Construction plant used intermittently as required. Continuous use not expected.

6.4 Assessment of Impacts

For the purposes of predicting impacts associated with noise emissions from the Subject Site on nearby sensitive receptors, calculations of the noise impacts from construction activities have been undertaken using CadnaA.

Table 15 presents predicted receptor noise levels taking into consideration the following assumptions:

- All equipment and plant are located in the expected work area and are assumed to be operating simultaneously. This is considered to be a hypothetical worst-case scenario and unlikely to occur;
- The number of plant at this stage of development are estimates; and
- Source heights are typically set at 2 metres above ground level.

It can be seen from Table 15, that the predicted noise levels at all receptors comply with both the management level and the highly noise affected level during all hours.

Table 15: Construction Noise Results

Receptor	Standard Hours, dB(A)		Outside Standard Hours, dB(A)		Concrete Plant Removal / Relocation	Civil Works	Asphalt Plant Erection
	Mgmt. Level	HNAL	Mgmt. Level	HNAL			
R01	48	75	43	65	27	29	29
R02	48	75	43	65	20	23	21
R03	48	75	43	65	21	26	23
R04	48	75	43	65	22	27	25
R05	48	75	43	65	22	28	24
R06	48	75	43	65	16	19	17
R07	48	75	43	65	20	23	21
R08	48	75	43	65	22	26	23
R09	48	75	43	65	17	21	19
R10	48	75	43	65	18	21	19
R11	48	75	43	65	16	19	16
R12	48	75	43	65	15	19	17
R13	48	75	43	65	17	21	19
R14	48	75	43	65	17	21	19
R15	48	75	43	65	18	22	20

Receptor	Standard Hours, dB(A)		Outside Standard Hours, dB(A)		Concrete Plant Removal / Relocation	Civil Works	Asphalt Plant Erection
	Mgmt. Level	HNAL	Mgmt. Level	HNAL			
R16	48	75	43	65	18	23	19
R17	48	75	43	65	17	20	18
R18	48	75	43	65	17	20	18
R19	48	75	43	65	19	23	20
R20	48	75	43	65	19	22	20
R21	48	75	43	65	19	23	20
R22	48	75	43	65	18	23	20
R23	48	75	43	65	14	19	16
R24	48	75	43	65	14	18	15
R25	48	75	43	65	13	16	14
R26	48	75	43	65	7	10	9
R27	48	75	43	65	15	18	16
R28	55	75	43	65	14	18	15

6.5 Mitigation of Construction Noise Levels

The findings of the construction noise assessment suggest that no specific mitigation measures are warranted. Potential controls available to the construction contractor to minimise potential impacts for construction works could include:

- Limiting the type and scale of concurrent activities undertaken close to sensitive receptors where possible;
- Using broad band reversing alarms on all mobile plant and equipment;
- Examine different types of machines that perform the same function and compare the noise level data to select the least noisy machine;
- Operating plant in a quiet and efficient manner;
- Reduce throttle setting and turn off equipment when not being used;
- Regularly inspect and maintain equipment to ensure it is in good working order including checking the condition of mufflers; and
- Conduct community consultation to discuss the timing of works and potential respite periods.

7 ROAD TRAFFIC NOISE ASSESSMENT

7.1 Assessment Criteria

The EPA does not currently provide guidelines on noise limits for impacts associated with vehicle trips on public roads as a result of new developments. Reference is made to the noise criteria provided in the NSW Road Noise Policy (RNP). Based on the type of roadway, Table 16 presents the applicable road traffic noise criteria for existing residences affected by traffic on existing roadways generated by land use developments.

Table 16: Applicable Road Traffic Noise Criteria

Road Category	Type of Project & Land Use	Assessment Criteria
Freeways or motorways/ arterial roads	Existing residences affected by additional traffic on existing freeways/arterial/sub-arterial roads generated by land use developments	Day: $L_{Aeq,15\ hour}$ 60 dB(A) Night: $L_{Aeq,9\ hour}$ 55 dB(A) (external)
Local roads	Existing residences affected by additional traffic on existing local roads generated by land use developments	Day: $L_{Aeq,1\ hour}$ 55 dB(A) Night: $L_{Aeq,1\ hour}$ 50 dB(A) (external)

Heavy vehicles are expected to arrive to and depart from the site via Glenstone Road to the Midland Highway. AE is of the opinion that Glenstone Road would best be classified as a local road, and the Midland Highway would best be classified as a freeway/arterial road.

7.2 Existing Traffic Volumes

Existing traffic volumes are sourced from the Department of State Growth's traffic count website, and the latest data from relevant traffic stations is shown in Table 17.

Table 17: Existing Traffic Volumes

Location	Station ID	2023 AADT	Heavy Vehicle %	AM Peak Hourly Volume	PM Peak Hourly Volume
Glenstone Road	A1105100	3,847	41.1	387	410
Midland Highway	A0087201	22,052	17.2	2,041	2,313

It is noted that the above counts would include vehicles associated with the existing concrete batch plant located on the Subject Site.

7.3 Vehicle Trip Generation

The total light and heavy vehicle trips associated with the passage of staff and the intake/offtake of material are provided in Table 18 for both the existing and the proposed development. It is noted that a trip includes the total path of the vehicle (i.e. arrival and departure). These volumes are based on information provided within the Traffic Impact

Statement[b] that was referenced during the preparation of the previous NIA, and advice from Hazell Bros that the volumes are to remain the same.

Table 18: Net Traffic Volumes

Type of Vehicle	Vehicles per Day	
	Concrete Batch Plant	Asphalt Plant
Peak Hourly Volumes		
Heavy vehicle	5	4
Daily Volumes		
Heavy vehicle	42	26
Light Vehicle (staff movements)	8	10
Total	**50**	**36**

7.4 Assessment of Impacts

Traffic Impact Statement states that the *'estimated compound annual traffic growth on Crooked Billet Drive is 0%'* thus no noise impacts associated with traffic flows from the development are expected.

In fact, given the removal of wet concrete batching plant is proposed, future traffic volumes associated with the concrete batching plant are likely to reduce.

[b] *Traffic Impact Statement for Proposed Asphalt and Reclaimed Asphalt Pavement Plant at 1 Crooked Billet Drive, Bridgewater*, prepared by Traffic & Civil Services and dated 24/08/2024.

8 OPERATIONAL NOISE ASSESSMENT METHODOLOGY

8.1 Assessment Criteria

8.1.1 Tasmanian Planning Scheme

The Tasmanian Planning Scheme (TPS) is a single state-wide planning scheme endorsed in 2017. Table C9.1 of the Tasmanian Planning Scheme presents the attenuation distances from industrial uses which may cause environmental nuisance and sensitive receptors.

This activity will be a Level 2 Activity under Schedule 2 of the Environmental Management and Pollution Control Act 1994. The attenuation distances for Level 2 facility is 1,000 m as presented in Table 19.

Table 19: Tasmanian Planning Scheme Attenuation Distances

Activity	Level 1	Level 2
Pre-mix bitumen plant		
Works in which crushed or ground rock aggregates are mixed with bituminous or asphaltic materials for the purpose of producing road-building mixtures– emissions such as odour and noise.	500 m	1,000 m

Review of the attenuation distance and the sensitive receptors in Figure 1 identify that all receptors are within this attenuation distance, thus warranting further consideration of the noise impacts.

It is noted that a review of the TPS and the Brighton Local Provisions Schedule shows no quantitative noise criteria apply for the General Industrial zone, nor from the applicable overlays/codes listed below:

- Attenuation Code;
- Bushfire-prone Areas Code;
- Bridgewater Quarry Specific Area Plan; and
- Brighton Industrial Hub Specific Area Plan.

8.1.2 Environment Protection Policy (Noise) 2009

The Environment Protection Policy (Noise) 2009, sets a strategic framework for noise management in Tasmania by focussing on objectives and principles for noise control, with human health as a value to be protected. The environmental values to be protected under the Noise EPP are the qualities of the acoustic environment that are conducive to:

- the wellbeing of the community or a part of the community, including its social and economic amenity; or
- the wellbeing of an individual, including the individual's –
  - health; and
  - opportunity to work and study and to have sleep, relaxation and conversation without unreasonable interference from noise.

Table 20 of the Noise EPP provides the acoustic environment indicator levels.

Table 20: Acoustic Environment Indicator Levels

Specific Environment	Critical Health Effects	L_{Aeq} (dB(A))	Time base (hours)	L_{Amax} fast (dB)
Outdoor living area	Serious annoyance, daytime, and evening	55	16	-
	Moderate annoyance, daytime, and evening	50	16	-
Dwelling, indoors	Speech intelligibility & moderate annoyance, daytime & evening	35	16	-
Inside bedrooms	Sleep disturbance, night-time	30	8	45
Outside bedrooms	Sleep disturbance, window open (outdoor values)	45	8	60

The above levels are noted to be indicative, not mandatory noise limits.

The Noise EPP also places emphasis on reducing the dominant or intrusive noise characteristics of noise emissions from an activity in order to retain a reserve capacity in the acoustic environment at a particular location, allowing for other reasonable emissions of noise in the vicinity. Whilst it does not provide any further quantitative criteria for assessing these requirements, it is widely understood that a noise would not be considered intrusive where it emits noise no greater than 5 dB above the existing background noise levels. Such an approach has been widely used for assessing intrusive noise throughout Australia as a whole and Tasmania specifically, including in EIS for other approved asphalt plants[c].

8.1.3 Project EIS Guidelines

The EIS Guidelines for *Hazell Bros Civil Contracting Pty Ltd Asphalt and Reclaimed Asphalt Pavement (RAP) Processing Plant, 1 Crooked Billet Drive, Bridgewater*, outline the requirement for continuous-type noise emissions from fixed plant and equipment to be lower than the existing background noise levels (L_{A90}) at noise sensitive premises.

[c] For example, the EIS prepared by ES&D for the site at 59 Remount Road, Mowbray for Downer EDI Works Pty Ltd (Project No. 7698, dated January 2022).

8.1.4 Consolidation of Criteria

The relevant assessment criteria are consolidated and presented in Table 21.

Table 21: Applicable Noise Criteria at Sensitive Receptors

Item	Noise Metric	All surrounding sensitive receptors		
		Day	Evening	Night
Noise EPP				
External - moderate annoyance	$L_{Aeq,16hrs}$	50	50	-
External - sleep disturbance	$L_{Aeq,8hrs}$	-	-	45
	L_{Amax}	-	-	60
Intrusive noise (RBL + 5)	$L_{Aeq,10mins}$	43	40	34
Project EIS Guidelines				
Continuous sources only (RBL + 0)	$L_{Aeq,10mins}$	38	35	29

The Noise EPP moderate annoyance criteria is generally higher than the other identified criteria, thus compliance with the other criteria would imply compliance with these criteria.

As such, AE has not considered the moderate annoyance criteria as a strict assessment criteria in this report, though discussion on how predicted noise levels compare to it is made in Section 9.3. A similar approach is taken for the L_{Aeq} sleep disturbance criteria. The L_{Amax} sleep disturbance criteria is adopted within this assessment.

9 OPERATIONAL NOISE ASSESSMENT

9.1 Scenario Assessed

Operational noise emissions are assessed during the day, evening, and night. The assessment considers continuous sources of noise against the applicable criteria per Table 21, and considers all sources of noise against the background + 5 criteria in the same table.

9.2 Noise Sources

Table 22 provides a summary of the noise sources adopted for this assessment. Sound power levels for each source were obtained based on surveys of the existing Subject Site by AE, published literature and manufacturer information. All sources may operate at any hours of the day unless otherwise specified.

Noise source locations are shown in Figure 5f per observations made on-site and indicative layouts for the proposed asphalt plant.

9.3 Predicted Receptor Noise Levels

Predicted noise levels at sensitive receptors during normal operations of the Subject Site are presented in Table 23 and Table 24.

Applicable dominant / intrusive penalties were determined at each receptor during the day, evening, and night following the analysis procedure within Section 6 of the Tasmanian Noise Measurement Procedures Manual. They are applied to the predicted results prior to evaluating their compliance with the limiting noise criteria.

These results are also dependent on the inclusion of the recommendations detailed within Section 9.5.

Appendix C presents noise contours for both scenarios.

Compliance with the noise criteria is shown to be achieved at all receptors during all periods for the continuous noise sources only. For all the noise sources combined together (i.e. continuous and variable), a 4 dB exceedance is predicted during the night at R01 and a 3 dB exceedance is predicted during the night at R03. The predicted results are achieved following the implementation of mitigation measures as detailed in Section 9.5.

Table 22: Source Sound Power Levels

Noise Source	Type	Qty	Sound Power Level		Acoustical Usage Factor [b)]
			L_{Aeq} dB(A)	L_{Amax}	
Concrete Batch Plant					
Screw conveyor motor	Variable	3	95	109	10%
Belt conveyor	Variable	1	95	95	20%
Front end loader	Variable	1	94	106	40%
Truck mixing/washing	Variable	1	113	118	40%
Truck idling/loading	Variable	1	100	102	50%
Truck movement	Variable	4/hr	73/m	78/m	100%
Asphalt Plant					
Bucket elevator (filler silo) - top	Continuous	1	89	89	100%
Bucket elevator (filler silo) - bottom	Continuous	1	91	91	100%
Bucket elevator (main) - top	Continuous	1	88	88	100%
Bucket elevator (main) - bottom	Continuous	1	94	94	100%
Burner fan	Continuous	1	92	92	100%
Exhaust stack	Continuous	1	97	97	100%
Dryer drum	Continuous	1	93	99	100%
Vibrator	Continuous	1	86	86	100%
Pug mill	Continuous	1	87	96	100%
RAP mobile processing plant	Continuous	1	104	109	100% (day only)
Transformer (2MVA)	Continuous	1	70	70	100%
Front end loader	Variable	2	94	106	40%
Truck idling/loading	Variable	1	100	104	50%
Truck idling	Variable	2	100	104	50%
Belt conveyor	Variable	3	81	81	20%
Truck movement	Variable	5/hr	73/m	78/m	100%

a) Acoustical usage factor represents the duration of a time period where equipment emits noise at this level. The indicated factors are based on observations on-site, discussions with equipment operators, and the table of published factors provided by the US Department of Transportation Roadway Construction Noise Model User Guide.

b) 1/3 octave source data is presented in Appendix B.

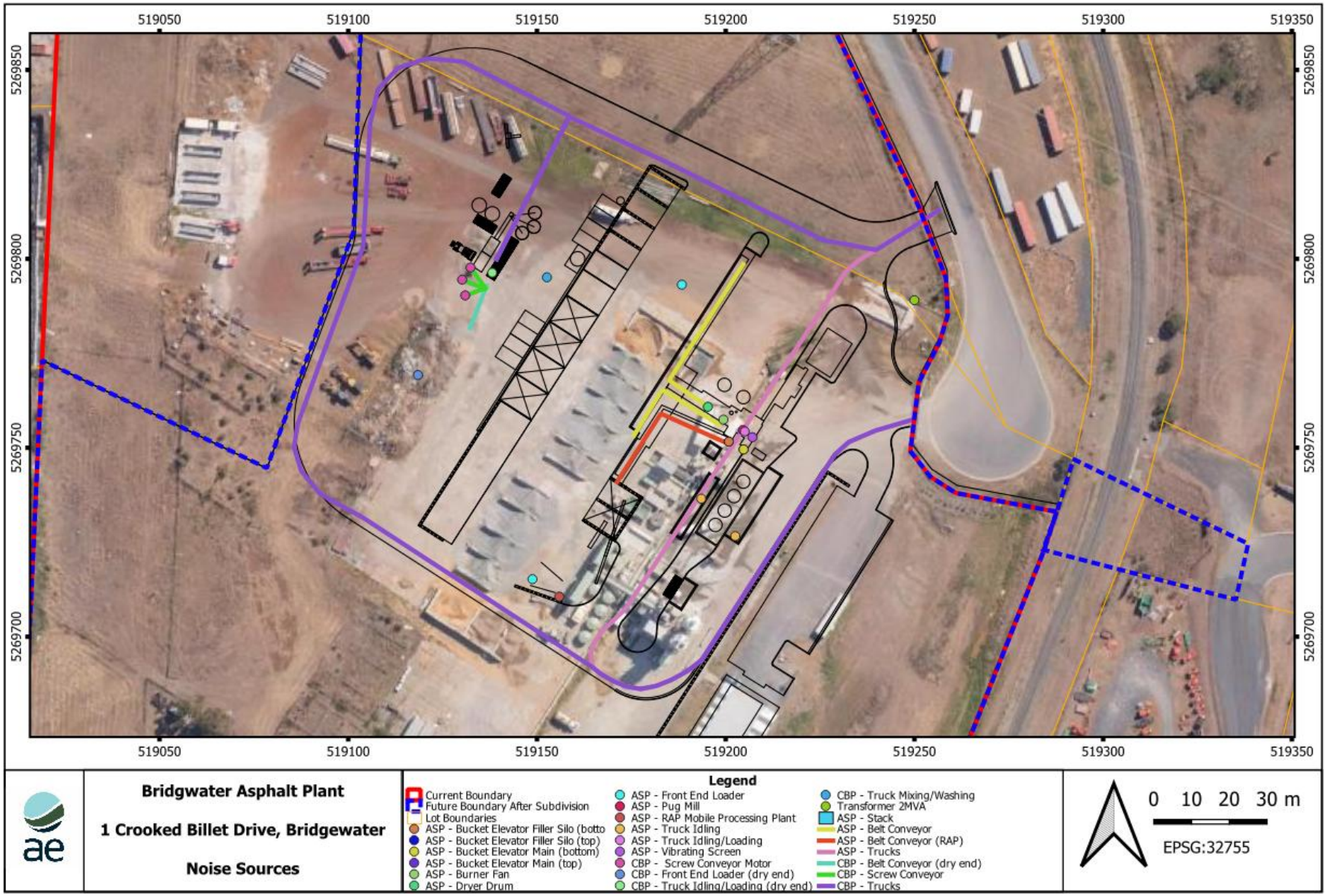


Figure 5: Modelled Noise Source Locations

Table 23: Predicted Noise Levels - Continuous Sources

Receptor	Intrusive / Dominant Penalties (D / E / N), dB			Predicted Noise Level (dB(A))			Criteria (dB(A))			Compliance
	Tonality	Low Freq. (L_{Ceq} - L_{Aeq})	Intermittent (L_{Ieq} - L_{Feq})	Day	Eve	Night	Day	Eve	Night	D / E / N
R01	0 / 0 / 0	0 / 5 / 0	0 / 0 / 0	30	33	28	38	35	29	Y / Y / Y
R02	0 / 0 / 0	0 / 5 / 0	0 / 0 / 0	23	21	16	38	35	29	Y / Y / Y
R03	0 / 0 / 0	0 / 0 / 0	0 / 0 / 0	28	19	19	38	35	29	Y / Y / Y
R04	0 / 0 / 0	0 / 0 / 0	0 / 0 / 0	32	20	20	38	35	29	Y / Y / Y
R05	3 / 0 / 0	0 / 0 / 0	0 / 0 / 0	34	19	19	38	35	29	Y / Y / Y
R06	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	24	20	20	38	35	29	Y / Y / Y
R07	0 / 0 / 0	0 / 5 / 0	0 / 0 / 0	24	25	20	38	35	29	Y / Y / Y
R08	0 / 0 / 0	0 / 0 / 0	0 / 0 / 0	28	22	22	38	35	29	Y / Y / Y
R09	0 / 0 / 0	0 / 5 / 0	0 / 0 / 0	24	25	20	38	35	29	Y / Y / Y
R10	0 / 0 / 0	0 / 5 / 0	0 / 0 / 0	24	25	20	38	35	29	Y / Y / Y
R11	0 / 0 / 0	5 / 5 / 0	0 / 0 / 0	24	22	17	38	35	29	Y / Y / Y
R12	0 / 0 / 0	5 / 5 / 0	0 / 0 / 0	25	23	18	38	35	29	Y / Y / Y
R13	0 / 0 / 0	0 / 0 / 0	0 / 0 / 0	24	20	20	38	35	29	Y / Y / Y
R14	0 / 0 / 0	0 / 0 / 0	0 / 0 / 0	23	21	21	38	35	29	Y / Y / Y
R15	0 / 0 / 0	0 / 0 / 0	0 / 0 / 0	24	21	21	38	35	29	Y / Y / Y
R16	0 / 0 / 0	0 / 0 / 0	0 / 0 / 0	24	19	19	38	35	29	Y / Y / Y
R17	0 / 0 / 0	0 / 5 / 0	0 / 0 / 0	21	22	17	38	35	29	Y / Y / Y
R18	0 / 0 / 0	0 / 0 / 0	0 / 0 / 0	22	20	20	38	35	29	Y / Y / Y
R19	0 / 0 / 0	0 / 0 / 0	0 / 0 / 0	24	19	19	38	35	29	Y / Y / Y
R20	0 / 0 / 0	0 / 0 / 0	0 / 0 / 0	25	19	19	38	35	29	Y / Y / Y
R21	0 / 0 / 0	0 / 0 / 0	0 / 0 / 0	26	19	19	38	35	29	Y / Y / Y
R22	0 / 0 / 0	0 / 0 / 0	0 / 0 / 0	25	20	20	38	35	29	Y / Y / Y
R23	0 / 0 / 0	0 / 5 / 0	0 / 0 / 0	20	23	18	38	35	29	Y / Y / Y

Receptor	Intrusive / Dominant Penalties (D / E / N), dB			Predicted Noise Level (dB(A))			Criteria (dB(A))			Compliance
	Tonality	Low Freq. (L_{Ceq} - L_{Aeq})	Intermittent (L_{Ieq} - L_{Feq})	Day	Eve	Night	Day	Eve	Night	D / E / N
R24	0 / 0 / 0	0 / 5 / 0	0 / 0 / 0	19	21	16	38	35	29	Y / Y / Y
R25	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	22	18	18	38	35	29	Y / Y / Y
R26	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	15	10	10	38	35	29	Y / Y / Y
R27	0 / 0 / 0	5 / 5 / 0	0 / 0 / 0	24	19	14	38	35	29	Y / Y / Y
R28	0 / 0 / 0	0 / 0 / 0	0 / 0 / 0	20	16	16	38	35	29	Y / Y / Y

Table 24: Predicted Noise Levels - All Sources

Receptor	Intrusive / Dominant Penalties (D / E / N), dB			Predicted Noise Level (dB(A))			Criteria (dB(A))			Compliance
	Tonality	Low Freq. (L_{Ceq} - L_{Aeq})	Intermittent (L_{Ieq} - L_{Feq})	Day	Eve	Night	Day	Eve	Night	All periods
R01	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	37	35	36	43	40	34	Y / Y / N
R02	1 / 2 / 3	5 / 5 / 5	0 / 0 / 0	32	31	33	43	40	34	Y / Y / Y
R03	0 / 0 / 2	5 / 5 / 5	0 / 0 / 0	35	32	35	43	40	34	Y / Y / N
R04	0 / 1 / 2	5 / 5 / 5	0 / 0 / 0	38	34	35	43	40	34	Y / Y / N
R05	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	37	32	33	43	40	34	Y / Y / Y
R06	1 / 1 / 2	5 / 5 / 5	0 / 0 / 0	30	29	30	43	40	34	Y / Y / Y
R07	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	32	31	31	43	40	34	Y / Y / Y
R08	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	35	32	33	43	40	34	Y / Y / Y
R09	1 / 2 / 2	5 / 5 / 5	0 / 0 / 0	33	32	32	43	40	34	Y / Y / Y
R10	0 / 0 / 1	5 / 5 / 5	0 / 0 / 0	32	30	31	43	40	34	Y / Y / Y
R11	1 / 1 / 2	5 / 5 / 5	0 / 0 / 0	29	29	30	43	40	34	Y / Y / Y
R12	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	29	28	29	43	40	34	Y / Y / Y
R13	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	32	30	30	43	40	34	Y / Y / Y
R14	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	32	31	31	43	40	34	Y / Y / Y
R15	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	32	31	32	43	40	34	Y / Y / Y
R16	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	32	30	31	43	40	34	Y / Y / Y
R17	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	30	29	29	43	40	34	Y / Y / Y
R18	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	30	29	30	43	40	34	Y / Y / Y
R19	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	32	30	30	43	40	34	Y / Y / Y
R20	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	33	30	30	43	40	34	Y / Y / Y
R21	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	33	30	31	43	40	34	Y / Y / Y
R22	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	33	30	31	43	40	34	Y / Y / Y
R23	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	29	28	28	43	40	34	Y / Y / Y

Receptor	Intrusive / Dominant Penalties (D / E / N), dB			Predicted Noise Level (dB(A))			Criteria (dB(A))			Compliance
	Tonality	Low Freq. (L_{Ceq} - L_{Aeq})	Intermittent (L_{Ieq} - L_{Feq})	Day	Eve	Night	Day	Eve	Night	All periods
R24	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	28	27	28	43	40	34	Y / Y / Y
R25	1 / 2 / 2	5 / 5 / 5	0 / 0 / 0	27	27	27	43	40	34	Y / Y / Y
R26	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	20	19	20	43	40	34	Y / Y / Y
R27	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	28	26	27	43	40	34	Y / Y / Y
R28	0 / 0 / 0	5 / 5 / 5	0 / 0 / 0	29	28	28	43	40	34	Y / Y / Y

At R01 an exceedance of 2 dB is predicted during the night only with all sources operating. AE refers to Section 4.2, where it was demonstrated via attended monitoring that the background noise levels at AML3 (the location corresponding to receptor R01) during the night were elevated compared to the long-term noise logging location which was used to set the assessment criteria. The difference was measured to be about 8 dB during the attended monitoring when compared to the same period as the long-term unattended logger (UML1). This was observed to be due to increased exposure to the Midland Highway and the industrial precinct.

In a similar manner, at R03 and R04 an exceedance of 1 dB is predicted during the night only with all sources operating. The attended monitoring at AML1 (the location corresponding to receptors R03 and R04) during the night showed elevated background noise levels compared to the long-term noise logging location which was used to set the assessment criteria. The difference was measured to be 5 dB. Again, the increased exposure to the Midland Highway and the industrial precinct is the explanation for this difference.

It is evident that the noise from the Midland Highway and the industrial precinct elevates the background noise levels at those receptors where exceeding noise levels are technically predicted. Based on the attended monitoring results and their elevated level compared to the unattended noise logger, in all cases the exceeding noise levels are expected to be below the actual background noise levels at the receptor locations.

The audibility of the Subject Site at these receptors is in question to an extent, given its emitted noise levels at these receptors are below the measured short-term background noise levels. Importantly, these predicted noise levels are inclusive of a + 5 dB low frequency penalty. The penalty is intended to account for the effects one might experience when observing an unbalanced spectrum, thus it is expected that a penalty would only be warranted where the Subject Site is actually audible above the prevailing ambient noise. As such, it is likely that the inclusion of the low frequency penalty is a conservative measure.

Lastly, a review of the predicted noise levels shows that compliance with the 'moderate annoyance' and 'sleep disturbance' L_{Aeq} criteria from the Noise EPP is achieved at all receptors.

With consideration of the above, AE is satisfied that an acceptable outcome is reached.

9.4 Sleep Disturbance

Predictions of the L_{Amax} were also conducted in the noise modelling. It was found that the predicted L_{Amax} was no greater than 37 dB at any receptor, which is well below the criteria of 60 dB. As such, no impacts associated with sleep disturbance are expected.

Predicted L_{Amax} contours are presented in Appendix C.

9.5 Recommendations

The following recommendations are made in order to achieve compliance with the applicable criteria:

- The front-end loader(s) servicing the asphalt plant should be fitted with broadband reversing alarms.
- The exhaust stack is to be fitted with an acoustic silencer achieving an insertion loss of 10 dB.

- The bucket elevators servicing the asphalt plant are to be attenuated such that a minimum 6 dB reduction is achieved compared to the sound power level previously shown in Table 22. This may be achieved by screening the equipment, installing motors within acoustic enclosures, or selecting quieter models.

ASTEC have confirmed in writing that the exhaust stack and bucket elevators mitigation measures can be implemented and that the controls will reduce noise at the *'by approximately 10-20 dB at equipment site perimeter'.*

10 CONCLUSIONS

This report presents a review of the potential for acoustic impacts on surrounding sensitive receptors as a result of the proposed asphalt plant. Where relevant, reference has been made to background and attended monitoring related to the Subject Site to guide the preparation of a noise model suitable for assessing any impacts.

The impact assessment has considered the potential for adverse impacts resulting from noise (construction and operational) emissions on nearby residential uses.

The assessment of potential noise impacts has considered construction both inside and outside of standard work hours. The predictions show construction noise levels to be below the adopted criteria, meaning that the likelihood of adverse amenity impacts during the construction phase of the project is low. General guidance is provided on measures that can assist in managing noise during construction works to lessen the impact on surrounding receptors.

For the operational phase of the project, adverse amenity impacts are considered unlikely and compliance with applicable criterion is generally achieved where the mitigation measures identified within this report are implemented. A minor exceedance was predicted at R01, R03 and R04, though it is noted that the ambient noise environment at these receptor is elevated compared to the monitoring location used to determine the assessment criteria, thus in AE's professional opinion the result is acceptable.

Hence, from an acoustic perspective, the proposal is considered acceptable.

APPENDIX A: BACKGROUND NOISE MONITORING RESULTS

Table 25. UML1 - Site Details

Site Details: NML 1	
Coordinates	(EPSG:7856) 518362,5269038
Start / End Date	23 July 2024 at 11:20 hours to 1 August 2024 at 08:50 hours
Logger Details	Norsonic 139 (serial number – 1392970) Next Calibration: 30 October 2025
Calibration Details	Norsonic 1256 Acoustic Calibrator (serial number 125626741) Start / End Calibration Level: 94.0 dB / 94.0 dB Next Calibration: 26 September 2025
Measurement Details	Fast/ A-weighting / 15-min duration / 1.2 m microphone height / Free field position
Weather Details	Equipment fault with onsite weather station. BOM Hobart Airport indicated several periods with wind speeds > 5m/s.
On-site Observations	Located in front grassed area of the Northern Christian School. Dominant noise sources were road traffic along the Midland Highway.

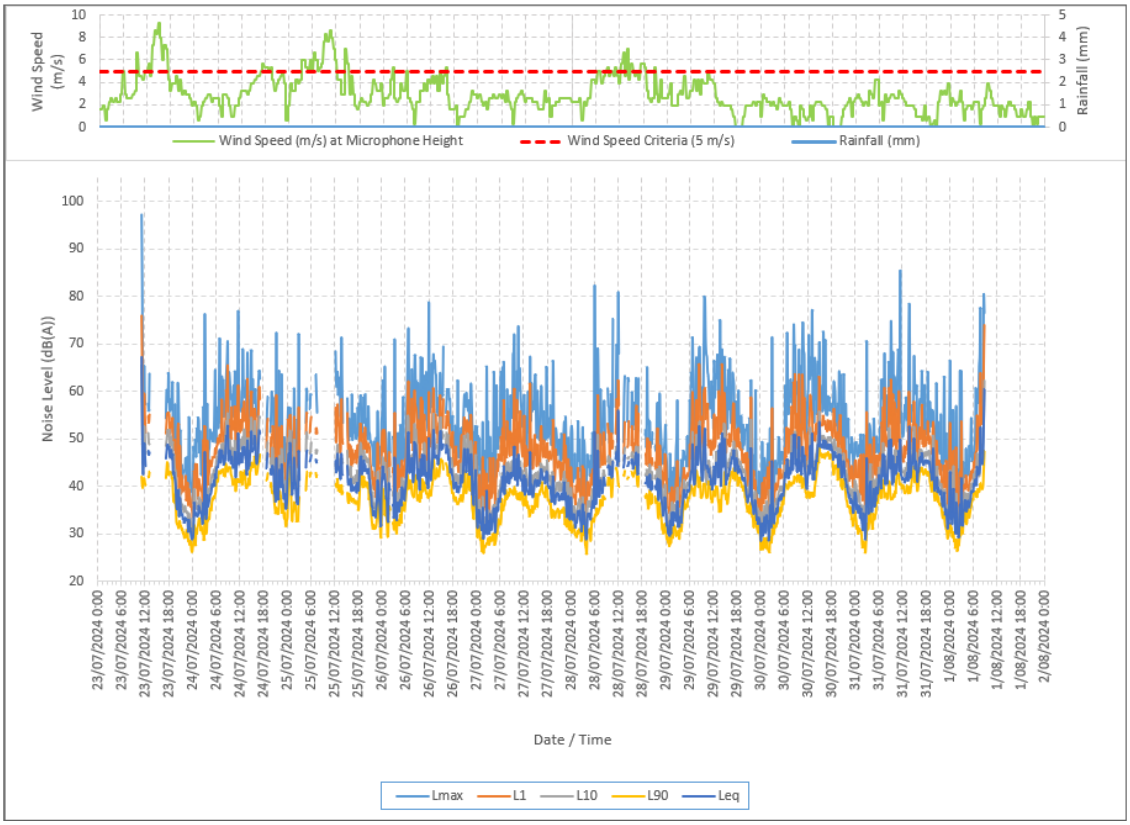


Table 26: NML 1 - Noise Monitoring Results

Date	Period	L_{max}	L_1	L_{10}	L_{90}	L_{eq}	min $L_{90,\ 1\text{-hour}}$	median $L_{eq,\ 1\text{-hour}}$
23/07/2024	Evening	63.8	47.3	42.1	35.8	42.9	30.9	40.1
	Night	75.7	42.4	37.9	32.6	38.8	28.0	34.6
24/07/2024	Day	76.9	53.8	48.7	42.6	47.4	41.1	46.7
	Evening	72.3	48.2	43.6	37.9	42.9	34.8	43.3
	Night	72.0	48.6	44.5	36.9	43.4	33.8	43.9
25/07/2024	Day	Weather Affected						
	Evening	59.3	47.8	44.0	38.3	42.7	34.1	43.4
	Night	72.9	44.7	40.3	34.3	41.0	31.7	38.3
26/07/2024	Day	78.7	52.5	47.1	40.8	46.1	38.6	45.1
	Evening	62.3	48.2	44.4	38.2	43.0	36.7	41.6
	Night	65.2	42.8	37.4	31.8	38.6	27.6	34.7
27/07/2024	Day	73.7	48.8	42.9	37.5	42.0	35.2	41.8
	Evening	66.4	45.6	40.7	35.1	39.0	34.1	38.5
	Night	81.5	41.3	36.9	31.4	38.5	29.6	34.7
28/07/2024	Day	80.7	50.3	45.0	40.4	45.3	37.2	44.7
	Evening	65.0	46.5	42.4	37.3	40.5	37.0	40.6
	Night	71.3	41.8	37.8	32.8	38.1	29.1	35.8
29/07/2024	Day	79.9	53.0	45.6	39.4	45.7	38.3	45.7
	Evening	62.3	47.0	43.0	38.4	42.2	35.2	42.1
	Night	72.3	40.7	36.7	31.8	37.2	27.6	35.8
30/07/2024	Day	77.0	53.0	47.1	42.2	47.0	38.4	46.1
	Evening	63.9	50.2	46.6	42.3	45.4	39.7	45.4
	Night	70.5	43.8	38.9	33.2	38.2	28.3	37.9
31/07/2024	Day	85.4	51.3	45.5	40.3	45.1	39.1	45.3
	Evening	64.1	47.6	44.0	39.5	43.1	36.6	42.8
	Night	65.9	41.8	37.5	32.4	36.9	28.6	36.8

APPENDIX B: SOURCE NOISE DATA

	1/3 Octave Sound Power Level dB(A)																											
	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	Total
Concrete Batch Plant																												
Screw conveyor motor	40.0	42.6	47.8	63.2	65.8	70.6	69.0	78.7	73.7	73.8	76.3	76.5	84.7	81.9	80.3	83.2	82.5	88.0	82.8	82.4	83.2	84.4	83.4	81.3	78.7	75.7	73.1	95.0
Belt conveyor (dry end)	40.3	44.9	46.9	60.8	52.9	63.2	65.2	67.2	74.5	75.5	75.3	76.8	77.8	84.5	81.2	82.3	82.9	82.9	83.3	84.4	85.3	86.7	85.5	82.7	79.7	75.8	69.7	95.0
Front end loader	42.3	50.7	76.6	68.6	74.2	78.5	77.2	78.4	77.8	79.6	82.1	79.5	77.2	81.3	80.7	81.6	80.4	87.2	80.1	80.5	80.7	79.4	78.8	79.0	78.6	78.7	77.5	94.0
Truck mixing/washing	58.8	62.7	66.2	73.7	72.1	76.4	83.5	88.6	89.3	88.1	88.4	94.6	94.7	106.4	93.3	95.5	105.4	103.2	100.6	99.4	102.4	102.9	101.4	99.3	94.8	93.4	87.9	113.0
Truck idling/loading (dry end)	38.3	42.7	59.0	63.9	63.8	67.8	70.4	75.5	76.9	77.5	77.3	87.3	88.3	87.0	86.6	86.9	90.9	88.8	87.5	88.7	90.2	91.3	89.0	85.8	82.4	78.5	73.2	100.0
Truck movement	39.3	44.6	50.4	55.8	60.8	66.5	72.9	79.9	81.6	79.1	79.4	82.4	85.2	87.8	90.1	92.2	92.0	95.6	97.0	100.7	98.3	93.2	83.0	81.5	79.9	76.9	74.5	105.5
Asphalt Plant																												
Bucket elevator (filler silo) - top	43.0	47.8	51.6	55.9	62.4	62.5	65.5	69.7	70.8	72.5	76.1	75.9	77.6	75.5	81.1	79.2	79.1	78.3	78.0	77.1	75.6	73.8	72.2	73.1	66.7	61.7	59.7	89.0
Bucket elevator (filler silo) - bottom	45.0	49.8	53.6	57.9	64.4	64.5	67.5	71.7	72.8	74.5	78.1	77.9	79.6	77.5	83.1	81.2	81.1	80.3	80.0	79.1	77.6	75.8	74.2	75.1	68.7	63.7	61.7	91.0
Bucket elevator (main) - top	42.0	46.8	50.6	54.9	61.4	61.5	64.5	68.7	69.8	71.5	75.1	74.9	76.6	74.5	80.1	78.2	78.1	77.3	77.0	76.1	74.6	72.8	71.2	72.1	65.7	60.7	58.7	88.0
Bucket elevator (main) - bottom	48.0	52.8	56.6	60.9	67.4	67.5	70.5	74.7	75.8	77.5	81.1	80.9	82.6	80.5	86.1	84.2	84.1	83.3	83.0	82.1	80.6	78.8	77.2	78.1	71.7	66.7	64.7	94.0
Burner fan	45.9	50.4	56.1	60.8	60.8	67.2	70.8	71.6	74.6	73.9	77.1	81.1	83.1	83.4	82.1	80.5	78.8	79.8	81.8	78.6	78.2	77.1	76.7	76.0	73.5	67.6	63.5	92.0
Exhaust stack	33.0	43.3	49.1	55.5	59.5	64.2	70.6	75.6	78.3	81.8	85.1	84.1	83.9	86.5	85.8	85.9	88.7	87.3	84.7	86.9	84.0	81.9	79.7	78.2	76.6	71.6	66.2	97.0
Dryer drum	46.1	58.5	59.0	63.2	63.9	68.3	73.3	75.5	73.1	73.5	76.6	78.2	77.2	82.4	80.2	80.9	81.7	80.8	81.7	84.2	81.8	81.4	80.0	80.0	80.0	75.6	73.0	93.0
Vibrator	-1.3	9.0	18.8	24.2	28.2	32.9	37.3	44.3	49.0	52.5	55.8	58.8	61.6	65.2	67.5	68.6	70.4	72.0	73.4	73.6	75.7	77.6	78.4	77.9	75.3	75.3	69.9	86.0
Pug mill	39.1	46.1	48.7	51.9	56.3	57.3	70.0	71.1	73.5	70.9	66.4	70.0	71.5	74.8	76.8	74.4	78.6	77.3	75.2	75.4	73.6	72.8	74.2	73.5	69.6	69.9	68.0	87.0
RAP mobile processing plant	44.0	51.3	57.1	62.5	65.5	71.2	73.6	76.6	81.3	84.8	89.0	89.1	85.9	91.4	93.8	95.9	94.7	94.3	93.7	93.4	91.0	88.9	89.7	88.2	85.6	85.6	82.2	104.0
Transformer (2MVA)	-13.0	-13.0	-13.0	43.0	47.0	47.0	67.0	47.0	43.0	62.6	49.0	60.0	61.0	55.0	52.0	46.0	45.0	44.0	38.0	35.0	34.0	32.0	29.0	30.0	32.0	30.0	30.0	70.0
Front end loader	42.3	50.7	76.6	68.6	74.2	78.5	77.2	78.4	77.8	79.6	82.1	79.5	77.2	81.3	80.7	81.6	80.4	87.2	80.1	80.5	80.7	79.4	78.8	79.0	78.6	78.7	77.5	94.0
Truck idling/loading	42.9	44.5	49.8	62.9	67.1	67.3	71.9	74.5	81.2	78.6	80.6	86.9	82.6	87.2	87.9	88.5	87.9	87.2	87.7	89.2	89.7	89.3	88.6	89.3	88.2	85.4	78.7	100.0
Truck idling	42.9	44.5	49.8	62.9	67.1	67.3	71.9	74.5	81.2	78.6	80.6	86.9	82.6	87.2	87.9	88.5	87.9	87.2	87.7	89.2	89.7	89.3	88.6	89.3	88.2	85.4	78.7	100.0
Belt conveyor	37.1	38.3	42.7	48.2	47.1	55.0	58.9	58.3	64.6	62.9	65.8	65.2	67.4	67.6	70.1	70.6	70.3	71.0	71.2	70.0	69.5	67.4	70.6	64.3	62.7	63.7	55.0	81.0
Truck movement	47.3	54.6	59.4	64.8	70.8	74.5	78.9	81.9	83.6	89.1	90.4	88.4	91.2	95.8	98.1	96.2	96.0	94.6	94.0	93.2	91.3	92.2	89.0	87.5	84.9	81.9	78.5	105.5

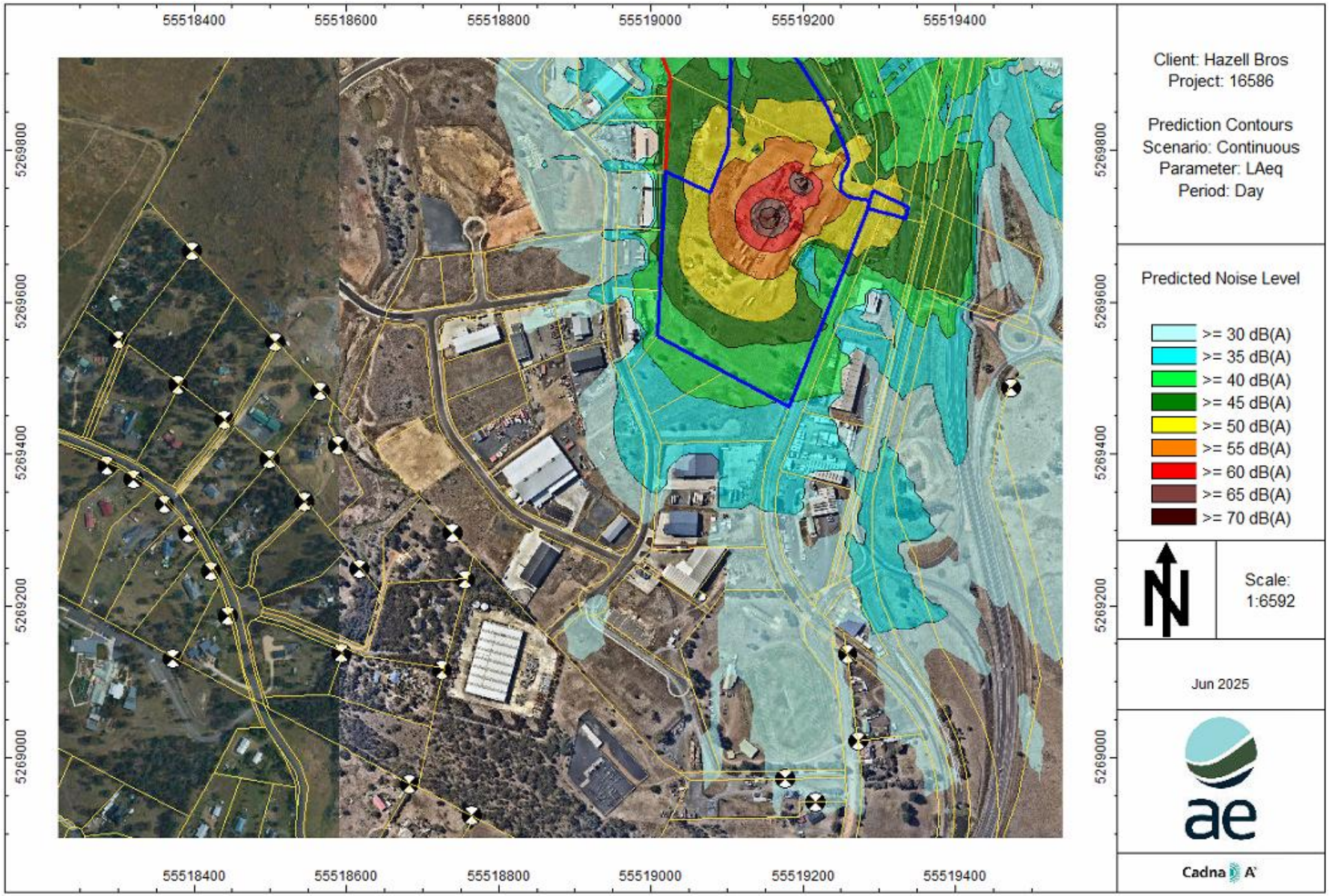
	1/3 Octave Sound Power Level dB(Z)																											
	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	Total
Concrete Batch Plant																												
Screw conveyor motor	84.7	82.0	82.4	93.4	92.0	93.1	88.1	94.8	87.1	84.7	84.9	83.1	89.5	85.1	82.2	84.0	82.5	87.4	81.8	81.2	81.9	83.2	82.4	80.8	78.8	76.8	75.6	101.8
Belt conveyor (dry end)	85.0	84.3	81.5	91.0	79.1	85.7	84.3	83.3	87.9	86.4	83.9	83.4	82.6	87.7	83.1	83.1	82.9	82.3	82.3	83.2	84.0	85.5	84.5	82.2	79.8	76.9	72.2	98.8
Front end loader	87.0	90.1	111.2	98.8	100.4	101.0	96.3	94.5	91.2	90.5	90.7	86.1	82.0	84.5	82.6	82.4	80.4	86.6	79.1	79.3	79.4	78.2	77.8	78.5	78.7	79.8	80.0	112.5
Truck mixing/washing	103.5	102.1	100.8	103.9	98.3	98.9	102.6	104.7	102.7	99.0	97.0	101.2	99.5	109.6	95.2	96.3	105.4	102.6	99.6	98.2	101.1	101.7	100.4	98.8	94.9	94.5	90.4	116.2
Truck idling/loading (dry end)	83.0	82.1	93.6	94.1	90.0	90.3	89.5	91.6	90.3	88.4	85.9	93.9	93.1	90.2	88.5	87.7	90.9	88.2	86.5	87.5	88.9	90.1	88.0	85.3	82.5	79.6	75.7	103.9
Truck movement	84.0	84.0	85.0	86.0	87.0	89.0	92.0	96.0	95.0	90.0	88.0	89.0	90.0	91.0	92.0	93.0	92.0	95.0	96.0	99.5	97.0	92.0	82.0	81.0	80.0	78.0	77.0	106.4
Asphalt Plant																												
Bucket elevator (filler silo) - top	87.7	87.2	86.2	86.1	88.6	85.0	84.6	85.8	84.2	83.4	84.7	82.5	82.4	78.7	83.0	80.0	79.1	77.7	77.0	75.9	74.3	72.6	71.2	72.6	66.8	62.8	62.2	97.3
Bucket elevator (filler silo) - bottom	89.7	89.2	88.2	88.1	90.6	87.0	86.6	87.8	86.2	85.4	86.7	84.5	84.4	80.7	85.0	82.0	81.1	79.7	79.0	77.9	76.3	74.6	73.2	74.6	68.8	64.8	64.2	99.3
Bucket elevator (main) - top	86.7	86.2	85.2	85.1	87.6	84.0	83.6	84.8	83.2	82.4	83.7	81.5	81.4	77.7	82.0	79.0	78.1	76.7	76.0	74.9	73.3	71.6	70.2	71.6	65.8	61.8	61.2	96.3
Bucket elevator (main) - bottom	92.7	92.2	91.2	91.1	93.6	90.0	89.6	90.8	89.2	88.4	89.7	87.5	87.4	83.7	88.0	85.0	84.1	82.7	82.0	80.9	79.3	77.6	76.2	77.6	71.8	67.8	67.2	102.3
Burner fan	90.6	89.8	90.7	91.0	87.0	89.7	89.9	87.7	88.0	84.8	85.7	87.7	87.9	86.6	84.0	81.3	78.8	79.2	80.8	77.4	76.9	75.9	75.7	75.5	73.6	68.7	66.0	100.5
Exhaust stack	77.7	82.7	83.7	85.7	85.7	86.7	89.7	91.7	91.7	92.7	93.7	90.7	88.7	89.7	87.7	86.7	88.7	86.7	83.7	85.7	82.7	80.7	78.7	77.7	76.7	72.7	68.7	102.1
Dryer drum	90.8	97.9	93.6	93.4	90.1	90.8	92.4	91.6	86.5	84.4	85.2	84.8	82.0	85.6	82.1	81.7	81.7	80.2	80.7	83.0	80.5	80.2	79.0	79.5	80.1	76.7	75.5	103.1
Vibrator	43.4	48.4	53.4	54.4	54.4	55.4	56.4	60.4	62.4	63.4	64.4	65.4	66.4	68.4	69.4	69.4	70.4	71.4	72.4	72.4	74.4	76.4	77.4	77.4	75.4	76.4	72.4	85.8
Pug mill	83.8	85.5	83.3	82.1	82.5	79.8	89.1	87.2	86.9	81.8	75.0	76.6	76.3	78.0	78.7	75.2	78.6	76.7	74.2	74.2	72.3	71.6	73.2	73.0	69.7	71.0	70.5	95.8
RAP mobile processing plant	88.7	90.7	91.7	92.7	91.7	93.7	92.7	92.7	94.7	95.7	97.6	95.7	90.7	94.6	95.7	96.7	94.7	93.7	92.7	92.2	89.7	87.7	88.7	87.7	85.7	86.7	84.7	107.4
Transformer (2MVA)	31.7	26.4	21.6	73.2	73.2	69.5	86.1	63.1	56.4	73.5	57.6	66.6	65.8	58.2	53.9	46.8	45.0	43.4	37.0	33.8	32.7	30.8	28.0	29.5	32.1	31.1	32.5	86.9
Front end loader	87.0	90.1	111.2	98.8	100.4	101.0	96.3	94.5	91.2	90.5	90.7	86.1	82.0	84.5	82.6	82.4	80.4	86.6	79.1	79.3	79.4	78.2	77.8	78.5	78.7	79.8	80.0	112.5
Truck idling/loading	87.6	83.9	84.4	93.1	93.3	89.8	91.0	90.6	94.6	89.5	89.2	93.5	87.4	90.4	89.8	89.3	87.9	86.6	86.7	88.0	88.4	88.1	87.6	88.8	88.3	86.5	81.2	104.0
Truck idling	87.6	83.9	84.4	93.1	93.3	89.8	91.0	90.6	94.6	89.5	89.2	93.5	87.4	90.4	89.8	89.3	87.9	86.6	86.7	88.0	88.4	88.1	87.6	88.8	88.3	86.5	81.2	104.0
Belt conveyor	81.8	77.7	77.3	78.4	73.3	77.5	78.0	74.4	78.0	73.8	74.4	71.8	72.2	70.8	72.0	71.4	70.3	70.4	70.2	68.8	68.2	66.2	69.6	63.8	62.8	64.8	57.5	88.8
Truck movement	92.0	94.0	94.0	95.0	97.0	97.0	98.0	98.0	97.0	100.0	99.0	95.0	96.0	99.0	100.0	97.0	96.0	94.0	93.0	92.0	90.0	91.0	88.0	87.0	85.0	83.0	81.0	110.0

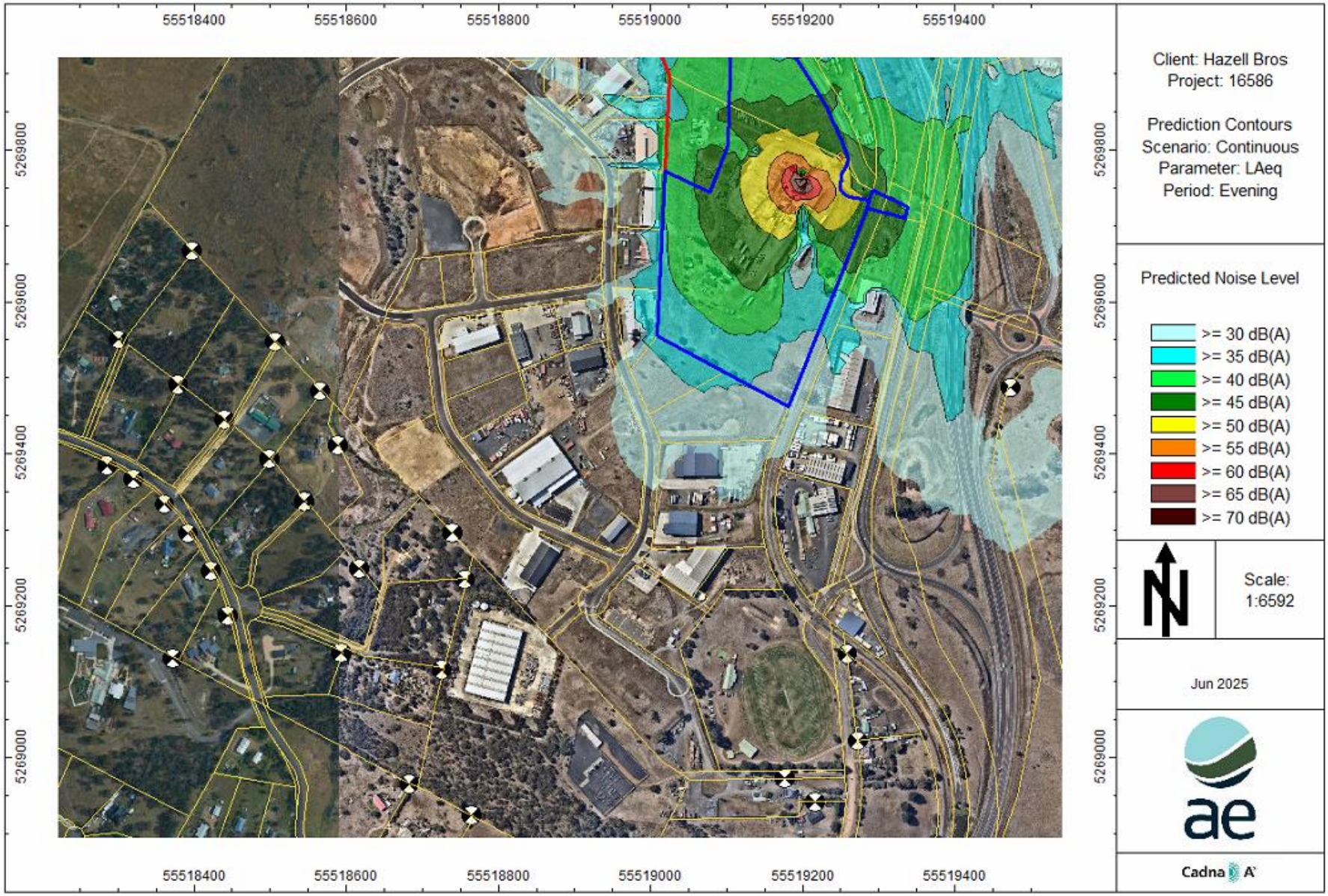
	1/3 Octave Sound Power Level dB(C)																										
	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	Total
Concrete Batch Plant																												
Screw conveyor motor	80.3	79.0	80.4	92.1	91.2	92.6	87.8	94.6	87.0	84.7	84.9	83.1	89.5	85.1	82.2	84.0	82.5	87.4	81.7	81.0	81.6	82.7	81.6	79.5	76.8	73.8	71.2	101.2
Belt conveyor (dry end)	80.6	81.3	79.5	89.7	78.3	85.2	84.0	83.1	87.8	86.4	83.9	83.4	82.6	87.7	83.1	83.1	82.9	82.3	82.2	83.0	83.7	85.0	83.7	80.9	77.8	73.9	67.8	98.1
Front end loader	82.6	87.1	109.2	97.5	99.6	100.5	96.0	94.3	91.1	90.5	90.7	86.1	82.0	84.5	82.6	82.4	80.4	86.6	79.0	79.1	79.1	77.7	77.0	77.2	76.7	76.8	75.6	110.8
Truck mixing/washing	99.1	99.1	98.8	102.6	97.5	98.4	102.3	104.5	102.6	99.0	97.0	101.2	99.5	109.6	95.2	96.3	105.4	102.6	99.5	98.0	100.8	101.2	99.6	97.5	92.9	91.5	86.0	115.6
Truck idling/loading (dry end)	78.6	79.1	91.6	92.8	89.2	89.8	89.2	91.4	90.2	88.4	85.9	93.9	93.1	90.2	88.5	87.7	90.9	88.2	86.4	87.3	88.6	89.6	87.2	84.0	80.5	76.6	71.3	103.4
Truck movement	79.6	81.0	83.0	84.7	86.2	88.5	91.7	95.8	94.9	90.0	88.0	89.0	90.0	91.0	92.0	93.0	92.0	95.0	95.9	99.3	96.7	91.5	81.2	79.7	78.0	75.0	72.6	106.2
Asphalt Plant																												
Bucket elevator (filler silo) - top	83.3	84.2	84.2	84.8	87.8	84.5	84.3	85.6	84.1	83.4	84.7	82.5	82.4	78.7	83.0	80.0	79.1	77.7	76.9	75.7	74.0	72.1	70.4	71.3	64.8	59.8	57.8	96.4
Bucket elevator (filler silo) - bottom	85.3	86.2	86.2	86.8	89.8	86.5	86.3	87.6	86.1	85.4	86.7	84.5	84.4	80.7	85.0	82.0	81.1	79.7	78.9	77.7	76.0	74.1	72.4	73.3	66.8	61.8	59.8	98.4
Bucket elevator (main) - top	82.3	83.2	83.2	83.8	86.8	83.5	83.3	84.6	83.1	82.4	83.7	81.5	81.4	77.7	82.0	79.0	78.1	76.7	75.9	74.7	73.0	71.1	69.4	70.3	63.8	58.8	56.8	95.4
Bucket elevator (main) - bottom	88.3	89.2	89.2	89.8	92.8	89.5	89.3	90.6	89.1	88.4	89.7	87.5	87.4	83.7	88.0	85.0	84.1	82.7	81.9	80.7	79.0	77.1	75.4	76.3	69.8	64.8	62.8	101.4
Burner fan	86.2	86.8	88.7	89.7	86.2	89.2	89.6	87.5	87.9	84.8	85.7	87.7	87.9	86.6	84.0	81.3	78.8	79.2	80.7	77.2	76.6	75.4	74.9	74.2	71.6	65.7	61.6	99.6
Exhaust stack	73.3	79.7	81.7	84.4	84.9	86.2	89.4	91.5	91.6	92.7	93.7	90.7	88.7	89.7	87.7	86.7	88.7	86.7	83.6	85.5	82.4	80.2	77.9	76.4	74.7	69.7	64.3	101.9
Dryer drum	86.4	94.9	91.6	92.1	89.3	90.3	92.1	91.4	86.4	84.4	85.2	84.8	82.0	85.6	82.1	81.7	81.7	80.2	80.6	82.8	80.2	79.7	78.2	78.2	78.1	73.7	71.1	101.7
Vibrator	39.0	45.4	51.4	53.1	53.6	54.9	56.1	60.2	62.3	63.4	64.4	65.4	66.4	68.4	69.4	69.4	70.4	71.4	72.3	72.2	74.1	75.9	76.6	76.1	73.4	73.4	68.0	84.8
Pug mill	79.4	82.5	81.3	80.8	81.7	79.3	88.8	87.0	86.8	81.8	75.0	76.6	76.3	78.0	78.7	75.2	78.6	76.7	74.1	74.0	72.0	71.1	72.4	71.7	67.7	68.0	66.1	95.0
RAP mobile processing plant	84.3	87.7	89.7	91.4	90.9	93.2	92.4	92.5	94.6	95.7	97.6	95.7	90.7	94.6	95.7	96.7	94.7	93.7	92.6	92.0	89.4	87.2	87.9	86.4	83.7	83.7	80.3	107.1
Transformer (2MVA)	27.3	23.4	19.6	71.9	72.4	69.0	85.8	62.9	56.3	73.5	57.6	66.6	65.8	58.2	53.9	46.8	45.0	43.4	36.9	33.6	32.4	30.3	27.2	28.2	30.1	28.1	28.1	86.6
Front end loader	82.6	87.1	109.2	97.5	99.6	100.5	96.0	94.3	91.1	90.5	90.7	86.1	82.0	84.5	82.6	82.4	80.4	86.6	79.0	79.1	79.1	77.7	77.0	77.2	76.7	76.8	75.6	110.8
Truck idling/loading	83.2	80.9	82.4	91.8	92.5	89.3	90.7	90.4	94.5	89.5	89.2	93.5	87.4	90.4	89.8	89.3	87.9	86.6	86.6	87.8	88.1	87.6	86.8	87.5	86.3	83.5	76.8	103.5
Truck idling	83.2	80.9	82.4	91.8	92.5	89.3	90.7	90.4	94.5	89.5	89.2	93.5	87.4	90.4	89.8	89.3	87.9	86.6	86.6	87.8	88.1	87.6	86.8	87.5	86.3	83.5	76.8	103.5
Belt conveyor	77.4	74.7	75.3	77.1	72.5	77.0	77.7	74.2	77.9	73.8	74.4	71.8	72.2	70.8	72.0	71.4	70.3	70.4	70.1	68.6	67.9	65.7	68.8	62.5	60.8	61.8	53.1	87.5
Truck movement	87.6	91.0	92.0	93.7	96.2	96.5	97.7	97.8	96.9	100.0	99.0	95.0	96.0	99.0	100.0	97.0	96.0	94.0	92.9	91.8	89.7	90.5	87.2	85.7	83.0	80.0	76.6	109.7

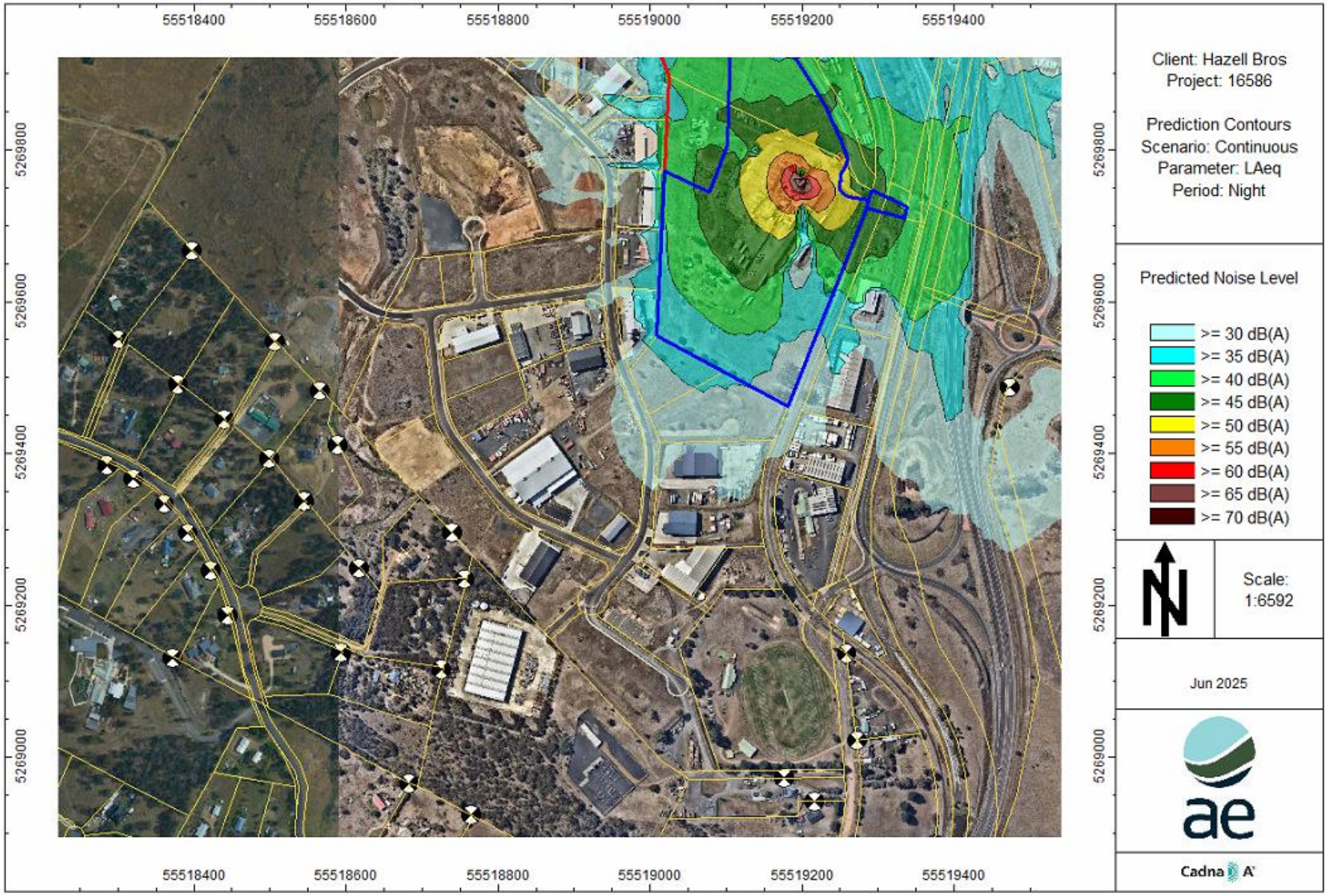
APPENDIX C: NOISE CONTOURS

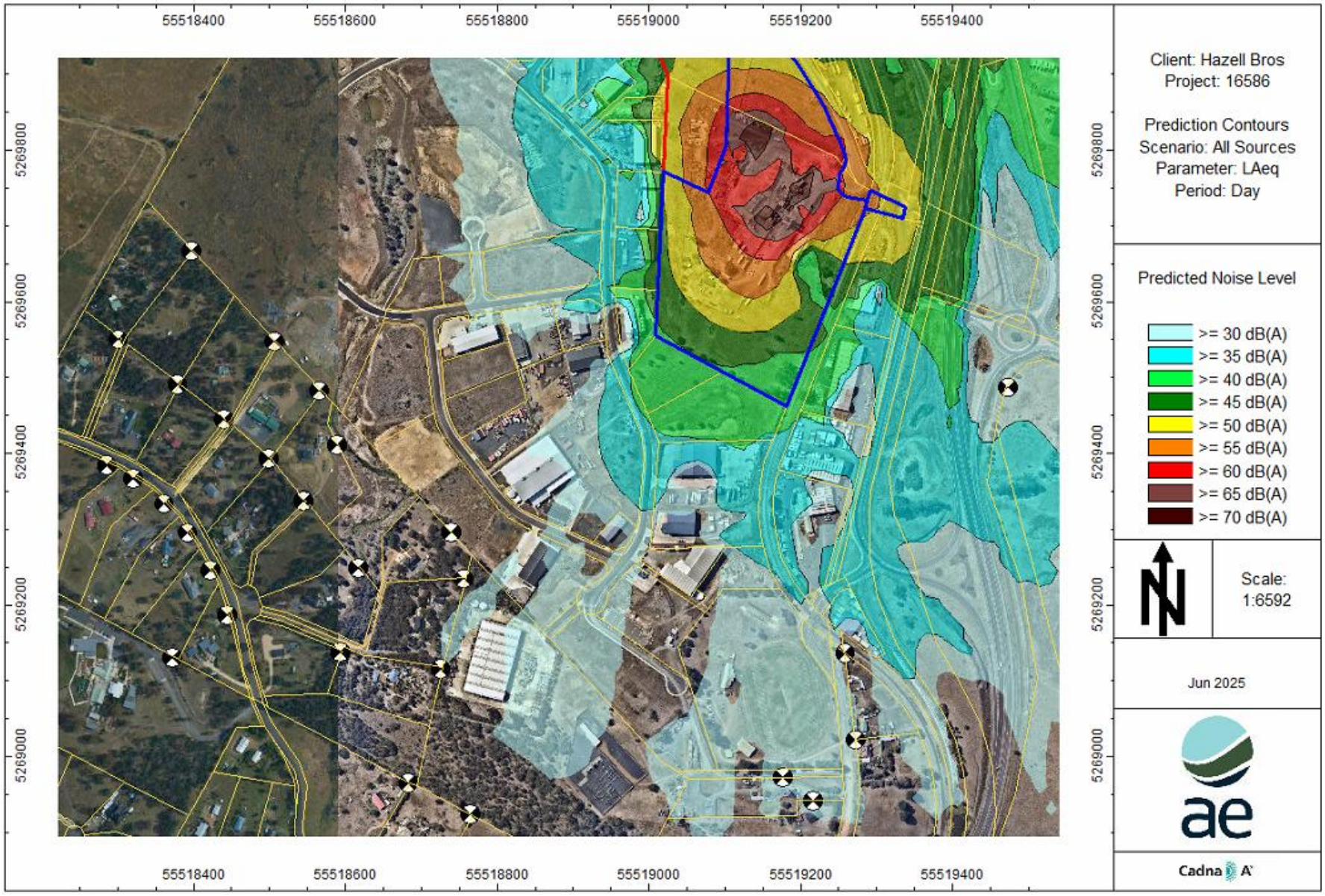
Contour plots illustrate the spatial distribution of ground-level (1.5 m) noise levels across the modelling domain for each time period of interest. However, this process of interpolation causes a smoothing of the base data that can lead to minor differences between the contours and receptor model predictions.

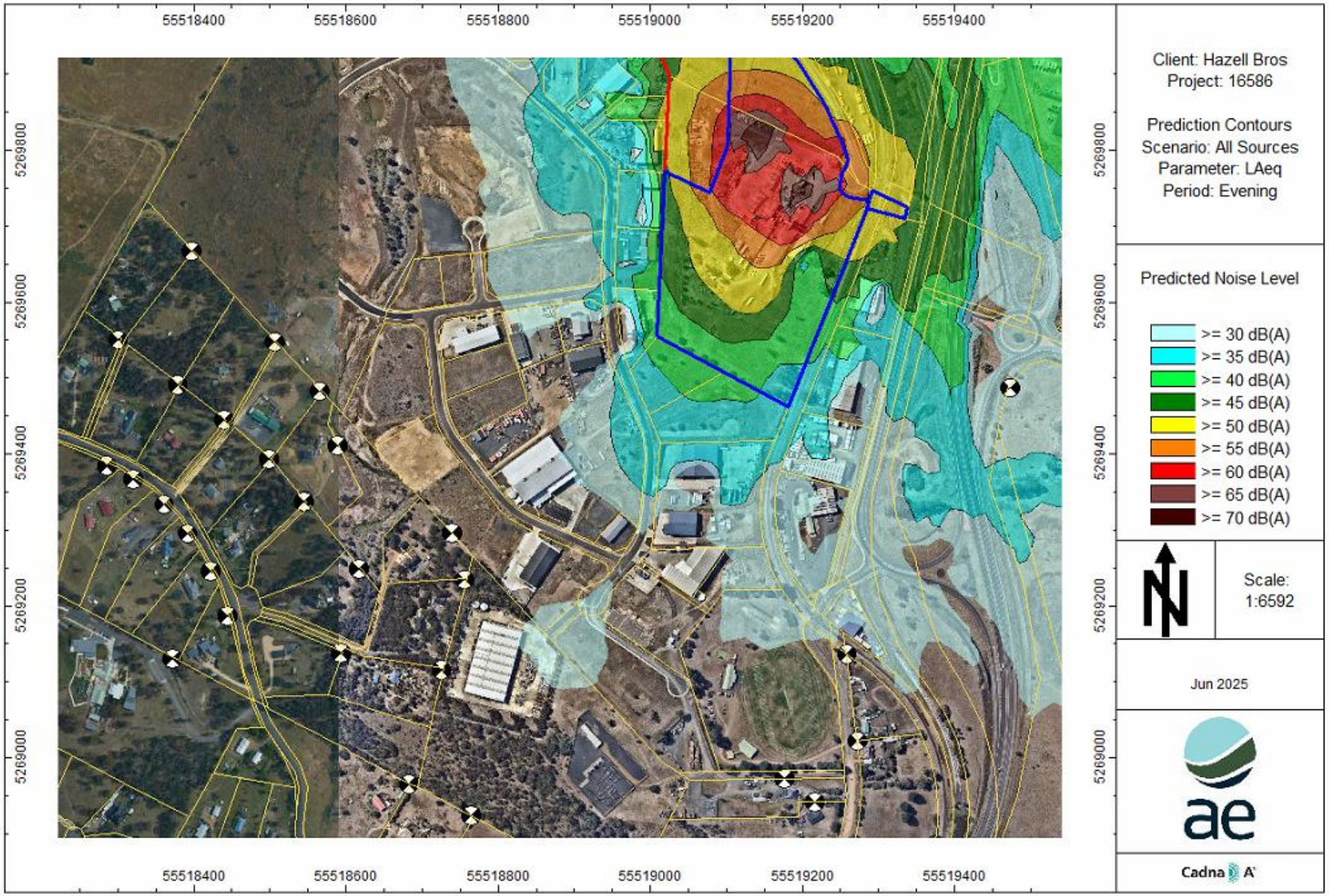
AE notes that the dominant / intrusive penalties detailed in Table 23 and Table 24 are applied to each receptor based on a review of the predicted noise levels at that receptor. These penalties were applied in post-processing, thus are not reflected in the predicted noise contours.

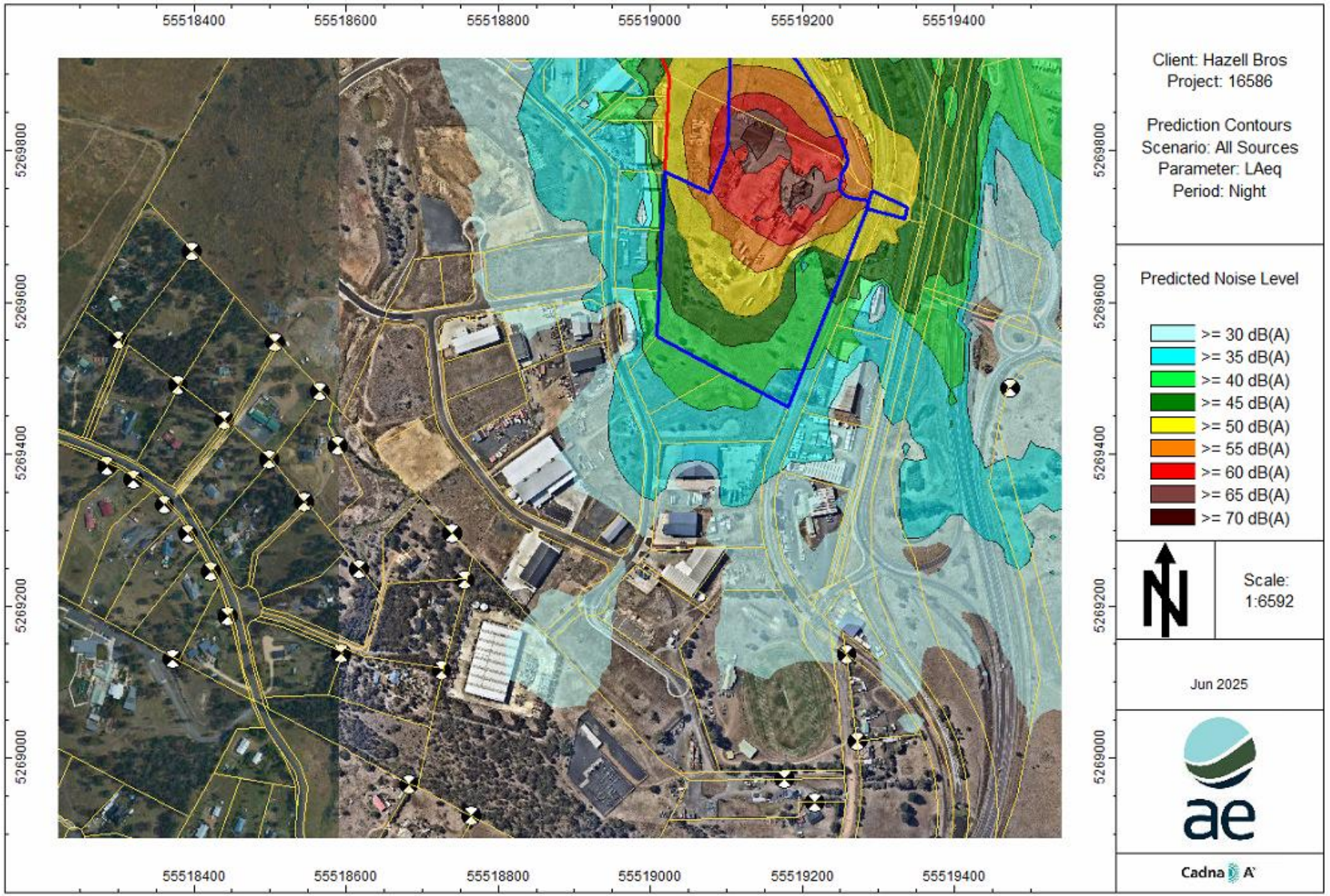

55518400
55518600
55518800
55519000
55519200
55519400
5269800
5269600
5269400
5269200
5269000
Client: Hazell Bros
Project: 16586
Prediction Contours
Scenario: Continuous
Parameter: LAeq
Period: Day
Predicted Noise Level
>= 30 dB(A)
>= 35 dB(A)
>= 40 dB(A)
>= 45 dB(A)
>= 50 dB(A)
>= 55 dB(A)
>= 60 dB(A)
>= 65 dB(A)
>= 70 dB(A)
Scale:
1:6592
Jun 2025
Cadna A

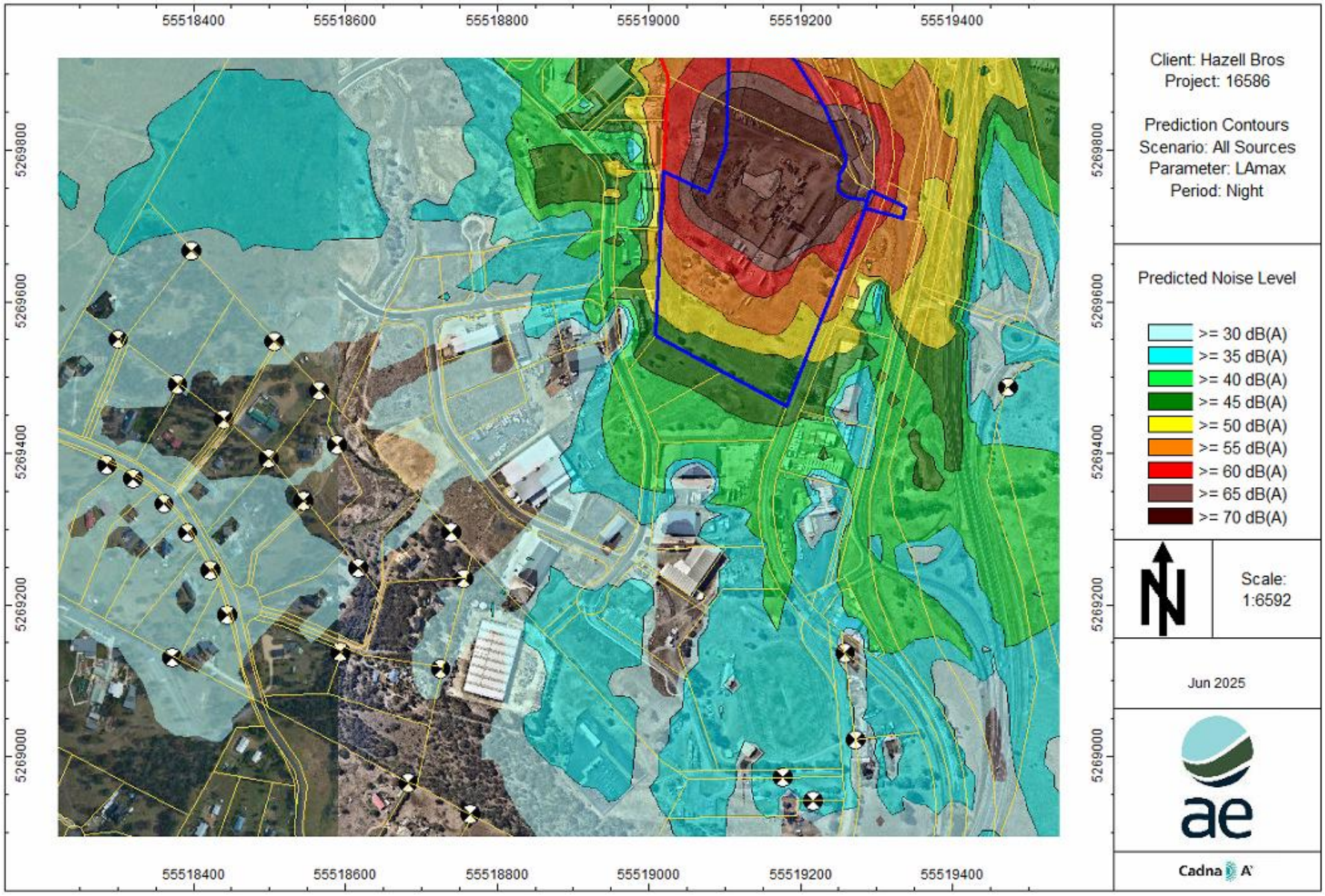

55518400
55518600
55518800
55519000
55519200
55519400
5269800
5269600
5269400
5269200
5269000
Client: Hazell Bros
Project: 16586
Prediction Contours
Scenario: Continuous
Parameter: LAeq
Period: Evening
Predicted Noise Level
>= 30 dB(A)
>= 35 dB(A)
>= 40 dB(A)
>= 45 dB(A)
>= 50 dB(A)
>= 55 dB(A)
>= 60 dB(A)
>= 65 dB(A)
>= 70 dB(A)
N
Scale:
1:6592
Jun 2025
Cadna A


55518400
55518600
55518800
55519000
55519200
55519400
5269800
5269600
5269400
5269200
5269000
Client: Hazell Bros
Project: 16586
Prediction Contours
Scenario: Continuous
Parameter: LAeq
Period: Night
Predicted Noise Level
>= 30 dB(A)
>= 35 dB(A)
>= 40 dB(A)
>= 45 dB(A)
>= 50 dB(A)
>= 55 dB(A)
>= 60 dB(A)
>= 65 dB(A)
>= 70 dB(A)
N
Scale:
1:6592
Jun 2025
Cadna A


55518400
55518600
55518800
55519000
55519200
55519400
5269800
5269600
5269400
5269200
5269000
Client: Hazell Bros
Project: 16586
Prediction Contours
Scenario: All Sources
Parameter: LAeq
Period: Day
Predicted Noise Level
>= 30 dB(A)
>= 35 dB(A)
>= 40 dB(A)
>= 45 dB(A)
>= 50 dB(A)
>= 55 dB(A)
>= 60 dB(A)
>= 65 dB(A)
>= 70 dB(A)
Scale:
1:6592
Jun 2025
Cadna A


55518400
55518600
55518800
55519000
55519200
55519400
5269800
5269600
5269400
5269200
5269000
Client: Hazell Bros
Project: 16586
Prediction Contours
Scenario: All Sources
Parameter: LAeq
Period: Evening
Predicted Noise Level
>= 30 dB(A)
>= 35 dB(A)
>= 40 dB(A)
>= 45 dB(A)
>= 50 dB(A)
>= 55 dB(A)
>= 60 dB(A)
>= 65 dB(A)
>= 70 dB(A)
N
Scale:
1:6592
Jun 2025
Cadna A


55518400
55518600
55518800
55519000
55519200
55519400
5269800
5269600
5269400
5269200
5269000
Client: Hazell Bros
Project: 16586
Prediction Contours
Scenario: All Sources
Parameter: LAeq
Period: Night
Predicted Noise Level
>= 30 dB(A)
>= 35 dB(A)
>= 40 dB(A)
>= 45 dB(A)
>= 50 dB(A)
>= 55 dB(A)
>= 60 dB(A)
>= 65 dB(A)
>= 70 dB(A)
N
Scale:
1:6592
Jun 2025
Cadna A


55518400
55518600
55518800
55519000
55519200
55519400
5269800
5269600
5269400
5269200
5269000
Client: Hazell Bros
Project: 16586
Prediction Contours
Scenario: All Sources
Parameter: LAmax
Period: Night
Predicted Noise Level
>= 30 dB(A)
>= 35 dB(A)
>= 40 dB(A)
>= 45 dB(A)
>= 50 dB(A)
>= 55 dB(A)
>= 60 dB(A)
>= 65 dB(A)
>= 70 dB(A)
Scale:
1:6592
Jun 2025
Cadna A

Appendix 5 Natural values assessment

NATURAL VALUES ASSESSMENT

Hazell Bros Civil Contracting Pty Ltd

New Asphalt Batch Plant, Bridgewater

June 2025

pinion ADVISORY

ABN 87 648 234 975

1300 746 466
hello@pinionadvisory.com
pinionadvisory.com

Office locations

SA	TAS	VIC	QLD	NSW
Adelaide	Devonport	Bright	Beenleigh	Dubbo
Clare	Hobart	Mildura	Wondai	Sydney
Freeling	Launceston			
Naracoorte				

Author

Wade Bone
Ryan Francis

Project team

Water & Environment

Document status

Version 3.0

Date	Status/issue	Reason for revision	Reviewed by	Authorised by
01/10/2024	Draft - Version 1.0	Review	RF, CE	RF, CE
23/10/2024	Version 1.1	Client review	IS	IS, WB, CE
6/06/2025	Version 2.0	Review	RF	WB
30/06/2025	Version 3.0	Figure updates	CE	CE

Contents

TABLES INDEX

FIGURES INDEX

APPENDICES

1 Introduction

1.1 BACKGROUND

Hazell Bros Civil Contracting Pty Ltd (Hazell Bros) is proposing to construct and operate a new asphalt plant and reclaimed asphalt pavement (RAP) processing facility, located at 1 Crooked Billet Drive, Bridgewater, Tasmania. It is proposed that 50,000 tonnes per annum (tpa) of asphalt will be produced and approximately 5,000tpa of RAP will be received and processed onsite

The project is deemed a level 2 activity as defined under Schedule 2, clause 7 (d) of the *Environmental Management and Pollution Control Act 1994* (EMPC Act). This is based on an annual production volume of more than 1,000 tonnes. The Board of the Environment Protection Authority, Tasmania (EPA) will assess the environmental impact of the project as a class 2B assessment under the EMPC Act.

This natural values assessment (NVA) has been prepared to address the requirements of the project specific guidelines (Environmental Impact Statement Guidelines - Hazell Bros Civil Contracting Pty Ltd Asphalt and Reclaimed Asphalt Pavement Processing Plant, July 2024) to ensure that natural values are identified and appropriately considered during the project planning and approval process.

Initial surveys revealed significant natural values within the project area, including a population of Basalt guineaflower (*Hibbertia basaltica*) and a patch of native grassland that could serve as habitat for native fauna including the tussock skink (*Pseudemoia pagenstecheri*) and the Eastern barred bandicoot (*Paremeles gunnii*). To minimise potential impacts to the Basalt guineaflower and threatened fauna species, the project site was entirely redesigned and relocated to a different part of the property. This updated project footprint completely avoids significant natural values identified in initial surveys, with this report detailing an assessment of the proposed site layout as of April 2025.

1.2 SCOPE OF WORK

The scope of this report is to undertake a natural values assessment (NVA) for the project area, commencing with desktop assessment to identify any state or nationally listed threatened species or vegetation communities, and any declared weeds or biosecurity risks, that occur or are likely to occur within the project area. A field assessment was undertaken in accordance with Guidelines for Natural Values Surveys - Terrestrial Development Proposals (Natural and Cultural Heritage Division, 2015a), which included identification of flora and fauna species within the project area, as well as any significant fauna habitat.

With potential for future development at the site, a boundary adjustment is planned to subdivide the property into two lots. This report specifically addresses the required assessment of natural values relevant to the proposed new asphalt plant footprint, with property title boundaries shown for reference only. Any future development in areas outside of the new asphalt plant footprint will require additional assessment.

1.3 METHOD

Field surveys were conducted by Wade Bone on 13 August 2024, 7 November 2024, and 12 February 2025. Surveys were completed utilising a random meander search (Cropper, 1993), targeting the development footprint of two proposed site layouts and immediate surrounds. The surveyed area was traversed via meandering transects to capture variations in slope, aspect and site conditions present within the property boundary (Figure 1). Surveys were conducted in accordance with the Department of Natural Resources and Environment Tasmania (NRE) Guidelines for Natural Values Surveys (2015a).

The meandering survey path was assessed on foot, with a focus on identifying presence of, or suitable habitat for, threatened species and vegetation communities identified within 5000m in the natural values report (NVR) (Appendix 3) and EPBC Act protected matters report (Appendix 4), with consideration to other threatened species with potential to be present. Flora and fauna species were identified in the field and using photographs to avoid the need to take specimens.

Figure 1 Regional location of proposed new asphalt batch plant at 1 and 13 Crooked Billet Drive, Bridgewater

Figure 2 Proposed project footprint (yellow line)

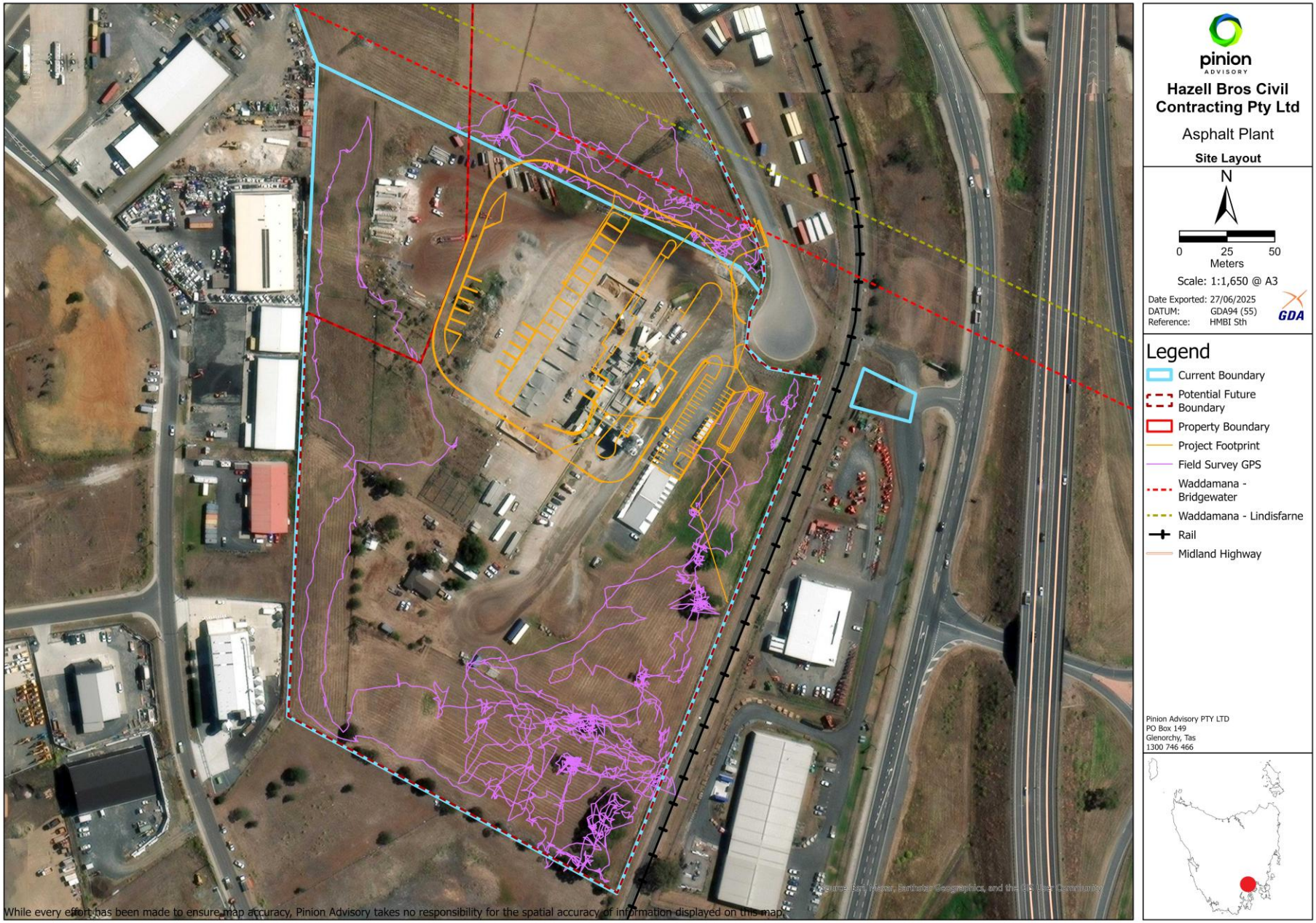


Figure 3 Recorded field survey path

2 Assessment results

2.1 DESKTOP ASSESSMENT

A Natural Values Atlas Report (Appendix 3) was consulted for records of threatened species and vegetation communities within a 5000m buffer of the property boundary. In addition, an EPBC Act Protected Matters Report (Appendix 4) was consulted to identify matters of national environmental significance that may occur within 5000m of the property boundary. The suitability of habitat for threatened species within the property boundary was assessed to determine potential presence.

2.1.1 Vegetation communities

The property is mapped under TasVeg 4.0 vegetation mapping unit (FUR) Urban areas. The development footprint does not include any mapped native vegetation communities.

2.1.2 Threatened flora

Verified records of seven threatened flora species were identified within 500m of the property boundary. Verified records of 53 threatened flora species were identified within 5000m of the property boundary (Table 1). All species are listed under the Tasmanian *Threatened Species Protection Act 1995* (TSP Act), with nine species also listed federally under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Table 1 Listed flora species with verified records within 5000m of the project site

Species	TSP Act	EPBC Act	Results of site inspection	Habitat required	Presence of suitable habitat
Prickly woodruff (*Asperula scoparia subsp. scoparia*)	r	-	Not observed	Grassy woodland and tall eucalypt forest.	No
Double jointed speargrass (*Austrostipa bigeniculata*)	r	-	Not observed (Survey period mid November- mid April)	In Tasmania the species is found mainly in the southeast and Midlands in open woodlands and grasslands, where it is often associated with *Austrostipa nodosa*.	Unlikely
Crested speargrass (*Austrostipa blackii*)	r	-	Not observed (Survey period December-March)	In Tasmania, *Austrostipa blackii* occurs in open woodlands up to an altitude of 100 metres.	No
Sea clubsedge (*Bolboschoenus caldwellii*)	r	-	Not observed	In Tasmania, *Bolboschoenus caldwellii* is widespread in shallow, standing, sometimes brackish water, rooted in heavy black mud.	No
Cutleaf daisy (*Brachyscome rigidula*)	v	-	Not observed	In Tasmania, *Brachyscome rigidula* is found in dry rocky hills and flats, pastures, grassland and grassy woodland in the Midlands, East Coast and in	Yes

Species	TSP Act	EPBC Act	Results of site inspection	Habitat required	Presence of suitable habitat
				parts of the eastern Central Highlands of Tasmania.	
Blacktip spider-orchid (*Caladenia anthracina*)	e	CR	Not observed (Survey period mid September-early November)	The species occurs in low rainfall areas in grassy woodland with silver wattle and bracken on well-drained sandy soil.	No
Tailed spider-orchid (*Caladenia caudata*)	v	VU	Not observed (Survey period September-early November)	The species occurs in heathy and open eucalypt forest and woodland, often with sheoaks, and in heathland on sandy and loamy soils. It is most often found on sunny north-facing sites.	No
Daddy longlegs (*Caladenia filamentosa*)	r	-	Not observed (Survey period September-early November)	The species occurs in lowland heathy and sedgy open eucalypt forest and woodland on sandy soils.	No
Lemon beautyheads (*Calocephalus citreus*)	r	-	Not observed	*Calocephalus citreus* inhabits disturbed dry grasslands, and in Tasmania is found from a few locations in the south-east of the State.	Unlikely
Milky beautyheads (*Calocephalus lacteus*)	r	-	Not observed	In Tasmania, *Calocephalus lacteus* is found in open grassland situations.	Unlikely
Mountain sedge (*Carex gunniana*)	r	-	Not observed (Survey period November-April)	In Tasmania, *Carex gunniana* grows in wet eucalypt forest and sandy heathlands, by the sides of streams, littoral sands and shingle with seepage.	No
Grassland cupflower (*Colobanthus curtisiae*)	r	VU	Not observed	It is a grassland to grassy woodland plant, often found on rocky knolls, and can be found in areas subject to a wide variety of environmental conditions. The species responds to some disturbance.	Yes
Swamp everlasting (*Coronidium gunnianum*)	e	-	Not observed	This species generally occurs in grasslands on heavy soils, or riverine woodlands on soils that are prone to inundation. It mostly occurs at low elevations under 100 m asl, but some mainland populations occur above 700 m asl.	No
Pretty pearlflower (*Cryptandra amara*)	e	-	Not observed	In Tasmania *Cryptandra amara* grows in some of the driest areas of the State and is typically associated with fertile rocky substrates, its	Yes

Species	TSP Act	EPBC Act	Results of site inspection	Habitat required	Presence of suitable habitat
				habitat ranging from near-riparian rockplates to grasslands or grassy woodlands.	
Slender ticktrefoil (*Desmodium varians*)	e	-	Not observed	In Tasmania, *Desmodium varians* occurs in the east of the State, growing in native grassland, or open grassy shrubland or woodland, *Themeda triandra* and *Poa labillardierei* being the most prominent grasses it is associated with.	No
Grassland flaxlily (*Dianella amoena*)	r	EN	Not observed (Survey period late October – January)	In Tasmania, the species occurs mainly in the Midlands, where it grows in native grasslands and grassy woodlands.	No
Swamp doubletail (*Diuris palustris*)	e	-	Not observed	In Tasmania, the species occurs in coastal areas in grassy open eucalypt forest, sedgy grassland and heathland with tea-tree and paperbark on poorly- to moderately-drained sandy peat and loams, usually in sites that are wet in winter.	No
Blue devil (*Eryngium ovinum*)	v	-	Not observed	In Tasmania, *Eryngium ovinum* occurs in gullies, roadsides, *Themeda* grassland and open grassy woodlands, often in damp clays in the south east of the State.	No
Risdon peppermint (*Eucalyptus risdonii*)	r	-	Not observed	This species is restricted to the greater Hobart area and Mangalore where it occurs on Permian mudstone from sea level to 150 metres. Habitat includes low open forest on very sunny ridges and north-west facing upper slopes.	No
Clover glycine (*Glycine latrobeana*)	v	VU	Not observed	In Tasmania, *Glycine latrobeana* occurs in dry sclerophyll forest, native grassland and woodland, usually on flat sites with loose, sandy soil.	No
Hairy brooklime (*Gratiola pubescens*)	r	-	Not observed	In Tasmania the species is most commonly located in permanently or seasonally damp or swampy ground, including the margins of farm dams.	No
Rough raspwort	v	-	Not observed	In Tasmania, *Haloragis aspera* occurs in wet areas	No

Species	TSP Act	EPBC Act	Results of site inspection	Habitat required	Presence of suitable habitat
(*Haloragis aspera*)				in the eastern part of the State.	
Variable raspwort (*Haloragis heterophylla*)	r	-	Not observed (Survey period October-May)	In Tasmania, *Haloragis heterophylla* is known from damp *Themeda* grassland and grassy woodland in the Midlands and across to the East Coast.	No
Basalt guineaflower (*Hibbertia basaltica*)	e	EN	Yes. Identified population at edge of native grassland patch in SE property corner. Not present within new asphalt plant footprint.	*Hibbertia basaltica* is restricted to areas of basalt between Pontville and Bridgewater in southern Tasmania where it occurs on slopes along the lower reaches of the Jordan River and one of its tributaries in native grassland dominated by kangaroo grass (*Themeda triandra*) and spear grasses (*Austrostipa* species) with the occasional prickly box (*Bursaria spinosa*). Rock cover is high, while soils are shallow clay loams. Slopes vary from 0 to 15 degrees and altitude 15 to 45 m above sea level.	Yes
Grass cushion (*Isoetopsis graminifolia*)	v	-	Not observed (Survey period late August-December)	In Tasmania, *Isoetopsis graminifolia* occurs in the northern and southern Midlands in gaps between tussocks in native grasslands dominated by *Themeda triandra* (kangaroo grass) and on rockplates. It has been recorded at altitudes of 20 to 360 m above sea level.	Yes, in SE property corner. Not within project footprint.
Tall blowngrass (*Lachnagrostis robusta*)	r	-	Not observed	In Tasmania, *Lachnagrostis robusta* is known from marshy, estuarine habitat and moist sandy flats, predominantly around the north-east and on the East Coast.	No
Soft peppercress (*Lepidium hyssopifolium*)	e	EN	Not observed	In Tasmania, the species is now found primarily under large exotic trees on roadsides and home yards on farms. It occurs in the eastern part of Tasmania at an altitude of 40 to 500 metres in dry, warm and fertile areas on flat ground on weakly acid to alkaline soils derived from a range of rock types.	Yes
Spreading watermat	r	-	Not observed	In Tasmania, *Lepilaena patentifolia* inhabits coastal lagoons, creeks, inlets and	No

Species	TSP Act	EPBC Act	Results of site inspection	Habitat required	Presence of suitable habitat
(*Lepilaena patentifolia*)				estuaries and brackish inland lagoons.	
Purple loosestrife (*Lythrum salicaria*)	v	-	Not observed	In Tasmania, *Lythrum salicaria* inhabits swamps, stream banks and rivers mainly in the north and north-east of the State. It can also occur between gaps in *Melaleuca ericifolia* forest.	No
Hotrock fern (*Pellaea calidirupium*)	r	-	Not observed	In Tasmania *Pellaea calidirupium* is found in inland, rocky habitats in areas of low to moderate rainfall. It grows in crevices and on ledges on exposed or semi-exposed rock outcrops.	No
Grassland greenhood (*Pterostylis ziegeleri*)	v	VU	Not observed (Survey period late September-November)	In coastal areas, the species occurs on the slopes of low stabilised sand dunes and in grassy dune swales, while in the Midlands it grows in native grassland or grassy woodland on well-drained clay loams derived from basalt.	Yes, in SE property corner. Not within project footprint.
Silky bushpea (*Pultenaea prostrata*)	v	-	Not observed	In Tasmania the species has been recorded from the Northern and Southern Midlands, where it grows within grassy woodlands or grasslands, mostly on Tertiary basalt or Quaternary alluvium.	Yes, in SE property corner. Not within project footprint.
Ferny buttercup (*Ranunculus pumilio var. pumilio*)	r	-	Not observed (Survey period September-October)	In Tasmania, *Ranunculus pumilio var. pumilio* occurs mostly in wet places from sea level to altitudes of 800- 900 metres.	No
Mud dock (*Rumex bidens*)	v	-	Not observed (Survey period November-March)	Aquatic to semi-aquatic species found in wetlands and waterways.	No
Largefruit seatassel (*Ruppia megacarpa*)	r	-	Not observed	In Tasmania it is found growing in estuaries and lagoons along the east and southeast coasts, and brackish lagoons in the Midlands; there is also an historic record from the Tamar estuary in the States' north.	No
River clubsedge (*Schoenoplectus tabernaemontani*)	r	-	Not observed	In Tasmania, *Schoenoplectus tabernaemontani* inhabits the margins of lagoons and on some riverbanks.	No
Tufted knawel	v	-	Not observed	In Tasmania, *Scleranthus diander* is found from the	No

Species	TSP Act	EPBC Act	Results of site inspection	Habitat required	Presence of suitable habitat
(*Scleranthus diander*)				Central Midlands area to Hobart with most of the records from the Ross and Tunbridge areas. This species inhabits grassy woodland and is associated with dolerite and basalt substrates.	
Spreading knawel (*Scleranthus fasciculatus*)	v	-	Not observed	In Tasmania, *Scleranthus fasciculatus* is only recorded from a few locations in the Midlands and south-east. The vegetation at most of the sites is silver tussock grassland/grassy woodland. It appears to need gaps between the tussock spaces for its survival and both fire and stock grazing maintain the openness it requires.	No
Leafy fireweed (*Senecio squarrosus*)	r	-	Not observed (Survey period October-May)	*Senecio squarrosus* occurs in a wide variety of habitats. One form occurs predominantly in lowland damp tussock grasslands. The more widespread and common form occurs mainly in dry forests (often grassy) but extends to wet forests and other vegetation types.	No
Grassland candles (*Stackhousia subterranea*)	e	-	Not observed (Survey period September-November)	*Stackhousia subterranea* grows within *Themeda triandra* grassland, or grassy woodland dominated by *Eucalyptus pauciflora*, *Eucalyptus rodwayi* or *Eucalyptus ovata*.	Yes, in SE property corner. Not within project footprint.
Fennel pondweed (*Stuckenia pectinata*)	r	-	Not observed	In Tasmania, *Stuckenia pectinata* is found in fresh to brackish/saline waters in rivers, estuaries and inland lakes. It forms dense stands or mats, particularly in slow-flowing or static water. The species grows in water of various depths, from a few centimetres to 4 metres deep.	No
Southern toadflax (*Thesium australe*)	ex	VU	Not observed	In Tasmania, *Thesium australe* is known only from an 1804 collection from the Derwent River Valley. Suitable habitat for this species includes grassland and grassy woodland.	Yes, in SE property corner. Not within project footprint.

Species	TSP Act	EPBC Act	Results of site inspection	Habitat required	Presence of suitable habitat
Dwarf sunray (*Triptilodiscus pygmaeus*)	v	-	Not observed (Survey period September-November)	*Triptilodiscus pygmaeus* grows within grasslands, grassy woodlands or rockplates, the underlying substrate being mostly Tertiary basalt or Jurassic dolerite. The elevation range of recorded sites in Tasmania is 30 to 470 m above sea level, with an annual rainfall of about 450 to 600 mm. The species occurs within native grassland dominated by *Themeda triandra* (kangaroo grass).	Yes, in SE property corner. Not within project footprint.
River ribbons (*Vallisneria australis*)	r	-	Not observed	In Tasmania it is found in riparian situations in the north, northeast, midlands and southeast.	No
Spur velleia (*Velleia paradoxa*)	V*	-	Not observed (Survey period October-May)	In Tasmania, *Velleia paradoxa* is known from the Hobart and Launceston areas, the Midlands and the Derwent Valley, where it occurs in grassy woodlands or grasslands on dry sites. It has been recorded from altitudes up to 550m, at sites with an annual rainfall range of 450 to 750mm.	Yes, in SE property corner. Not within project footprint.
Smooth new-holland-daisy (*Vittadinia burbidgeae*)	r	-	Not observed	In Tasmania, this species is known from the driest and most fertile soils in the Hobart area and extending up into the Midlands.	Yes
Fuzzy new-holland-daisy (*Vittadinia cuneata var. cuneata*)	r	-	Not observed	In Tasmania, *Vittadinia cuneata var. cuneata* occurs in areas of low precipitation on both fertile and infertile soils. Predominantly found in dry sclerophyll forest around Hobart, into the midlands and extending up into the north-east.	Potential, in SE property corner. Not within project footprint.
Woolly new-holland-daisy (*Vittadinia gracilis*)	r	-	Not observed	In Tasmania, *Vittadinia gracilis* is known from dry sites on dolerite and basalt. It is predominantly found in dry sclerophyll forest around Hobart, into the Midlands and extending up into the north-east.	Potential, in SE property corner. Not within project footprint.
Narrowleaf new-holland-daisy (*Vittadinia muelleri*)	r	-	Not observed	In Tasmania, this species is known from the driest and most fertile soils in the Hobart area and extending up into the Midlands.	Potential, in SE property corner. Not within project footprint.

Species	TSP Act	EPBC Act	Results of site inspection	Habitat required	Presence of suitable habitat
Xanthoparmelia amphixantha	e	-	Not observed	In Tasmania, this species occurs in the Southern Midlands on stony shallow soils in native grassland.	No
Xanthoparmelia molliuscula	e	-	Not observed	In Tasmania, this species occurs on basalt in the Midlands on shallow, stony soils in native grassland.	No
Xanthoparmelia vicariella	r	-	Not observed	This species is known only from the Southern Midlands where it occurs on dolerite and basalt boulders in dry sclerophyll woodland and native grassland.	No
*r, v, e, ex – rare, vulnerable, endangered and extinct under the Tasmanian TSP Act. VU, EN, PEN – vulnerable, endangered and pending listing under the EPBC Act.					

2.1.3 Threatened fauna

Verified records of one threatened fauna species was identified within 500m of the project area, with an additional 13 species based on range boundaries. Verified records of 21 threatened terrestrial fauna species were identified within 5000m of the project area (Appendix 3). Threatened marine fauna which will not be impacted by the proposed development, and duplicate species/subspecies listings were filtered from discussion for clarity, with habitat suitability for potential fauna species presented in Table 2Table 1.

Table 2 Listed fauna species with verified records within 5000m of the project area

Species	TSP Act	EPBC Act	Results of site inspection	Habitat required	Presence of suitable habitat
Grey goshawk (*Accipter novaehollandiae*)	e	-	Not observed	The species nests in mature wet forest, usually in the vicinity of a watercourse. However, birds can also be seen in more open woodland and around urban fringes.	No
Tasmanian azure kingfisher (*Ceyx azureus subsp. Diemenensis*)	e	EN	Not observed	The subspecies is found in shady and overhanging forest vegetation along the forested margins of major rivers on the south, west, north and northwest coasts, with other occurrences in the northeast, east, centre and Bass Strait islands.	No
Tasmanian wedge-tailed eagle (*Aquila audax subsp. fleayi*)	e	EN	Not observed	Feeds across a wide range of habitats from coastal to highlands, breeds in mature forests.	Foraging habitat only
Australasian bittern (*Botaurus poiciloptilus*)	-	EN	Not observed	Found in shallow and vegetated freshwater or brackish swamps.	No
Spotted-tail quoll (*Dasyurus maculatus subsp. Maculatus*)	r	VU	Not observed	Large patches of forest with adequate den sites and mammalian prey.	No
Eastern quoll (*Dasyurus viverrinus*)	e	EN	Not observed	Found in a range of vegetation types including open grassland (including farmland), tussock grassland, grassy woodland, dry eucalypt forest, coastal scrub and alpine heathland, but is typically absent from large tracts of wet eucalypt forest and rainforest	Foraging habitat only
Latham's snipe (*Gallinago hardwickii*)	-	VU	Not observed	Migrates to Australia for the non-breeding season (August-February), where it is generally observed in vegetation around shallow freshwater wetlands.	No

Species	TSP Act	EPBC Act	Results of site inspection	Habitat required	Presence of suitable habitat
White-bellied sea-eagle (*Haliaeetus leucogaster*)	v	-	Not observed	In Tasmania, the species occurs around the coast, and inland along larger rivers, lakes and dams.	Foraging habitat only
White-throated needletail (*Hirundapus caudacutus*)	-	VU	Not observed	Mostly aerial, although they occur over most types of habitats. The species roosts in trees amongst dense foliage in the canopy or in hollows.	No
Swift parrot (*Lathamus discolor*)	e	CR	Not observed	Habitat for Swift Parrot during the breeding season broadly includes the following elements: flowering Tasmanian blue gum and black gums (foraging habitat) and any eucalypt forest containing hollow-bearing trees (nesting habitat). Hollow-bearing trees are typically large and old with dead limbs or branches and at least some visible hollows. Note that the importance of breeding habitat in any one year varies depending on its location in relation to foraging habitat (i.e. blue gums or black gums in flower).	Very minimal foraging habitat only. Six Tasmanian blue gum trees located outside of the proposed project footprint, in the south eastern corner of the property
Forty-spotted pardalote (*Pardalotus quadragintus*)	e	EN	Not observed	It now occurs in only a few small areas of dry forest that contain *Eucalyptus viminalis* (white gum) trees, on which it is exclusively dependent. Core habitat includes any White Gum forest within 3 km of the east coast from St Helens to Southport. Potential habitat is any white gum forest 3-5 km from the east coast from St Helens to Southport and including the Furneaux group.	No
Blue-winged parrot (*Neophema chrystoma*)	-	VU	Not observed	A range of habitats including coastal, sub-coastal and inland areas. Tend to favour grasslands and grassy woodlands and are often found near wetlands. Habitat can include modified land including golf courses, airfields and agricultural land.	Yes
Eastern barred bandicoot (*Paremeles gunnii*)	-	VU	Yes. Carcass identified near internal boundary fence	Originally occurred in native grasslands and grassy woodlands, but habitat loss has resulting in expansion into mosaic habitats of pasture and remnant native forest,	Small area of potential low-quality foraging habitat within

Species	TSP Act	EPBC Act	Results of site inspection	Habitat required	Presence of suitable habitat
			south of existing site infrastructure.	often with a significant amount of cover provided by weeds such as gorse and blackberry	project footprint.
Great crested grebe (*Podiceps cristatus*)	v	-	Not observed	The great crested grebe lives on rivers, lakes and estuaries but in Tasmania, are thought to breed only on Lake Dulverton near Oatlands.	No
Australian grayling (*Proctotes maraena*)	v	VU	Not observed	Coastal rivers and streams	No
Tussock skink (*Pseudemoia pagenstecheri*)	v	-	Not observed	In Tasmania, the Tussock Skink (*Pseudemoia pagenstecheri*), a ground-dwelling lizard, occurs in grassland and grassy woodland habitats at a range of elevations.	No
Tasmanian devil (*Sarcophilus harrisii*)	e	EN	Not observed	Habitat includes the following elements contained across an area of several square kilometres: denning habitat for daytime shelter (e.g. dense vegetation, hollow logs, burrows or caves); hunting habitat (open understorey mixed with patches of dense vegetation); breeding den habitat (areas of burrowable, well-drained soil or sheltered overhangs such as cliffs, rocky outcrops, knolls, caves and earth banks, free from risk of flooding; windrows and log piles may also be used).	Potential foraging habitat only
Chequered blue (*Theclinesthes serpentatus lavara*)	r	-	Not observed	Coastal habitats in proximity to saltbush food source.	No
Masked owl (*Tyto novaehollandiae subsp. castanops*)	e	VU	Not observed	Mature forest and woodlands below 600m asl, also in areas with a mosaic of grasslands and woodlands.	Foraging habitat only
*__r, v, e, ex__ – rare, vulnerable, endangered and extinct under the Tasmanian TSP Act; VU, EN, CR, PEN – vulnerable, endangered, critically endangered and pending listing under the EPBC Act.					

2.1.4 Raptor nests

No raptor nests are recorded within relevant proximity to the proposed development. The site and immediate surrounds do not provide potential nesting habitat, with potential low-quality foraging habitat present.

The construction and operation of the proposed asphalt plant will not result in a significant negative impact to any raptor population.

2.1.5 Swift parrot

The project site at 1 Crooked Billet Drive and 13 Crooked Billet Drive is located within the swift parrot core range, though natural values with potential to be impacted at the site present no reasonable habitat value for the species. No native vegetation communities or significant food resources are present within the proposed project footprint. Six Tasmanian blue gum trees were identified in the south eastern corner of the property (1 Crooked Billet Drive). The trees are not located in the new project footprint and will not be impacted by the proposed project.

2.2 FIELD ASSESSMENT RESULTS

2.2.1 Vegetation communities

The development footprint is situated within an industrial zone developed on degraded farmland. Remnants of farming infrastructure (fencing, yards etc.) are present at the property, but the mapped (FUR) Urban areas overlay is appropriate for the site given current land use. A small patch of (GTL) Lowland *Themeda triandra* grassland was identified in initial surveys at the southeastern corner of the property, outside of the updated proposed development footprint.

No native vegetation communities are present within the proposed development area.

Figure 4 Weedy pasture within the proposed development footprint

2.2.2 Threatened flora

No threatened flora species was observed within the proposed development footprint. The development footprint consists exclusively of modified land, either within the footprint of existing industrial operations, or modified improved pasture within a high voltage transmission corridor. Historical and current land use at the site has modified the vegetation present such that little habitat potential for threatened flora species is present within the proposed development footprint.

The majority of the proposed development footprint covers the existing concrete batching plant operating at the site, with the addition of an access road corridor along the northern property boundary, consisting of degraded modified improved pasture within the high voltage transmission line corridor. Land within the existing concrete batching plant has been extensively modified and does not provide suitable habitat for any native flora species.

Suitable habitat and threatened flora species presence was identified near the southeastern corner of the property, which informed an updated site layout to avoid potential impacts to significant natural values. Following confirmation of a Basalt guineaflower (*Hibbertia basaltica*) population in a small patch of remnant native grassland (Figure 6), the site layout was updated to the currently proposed location near the northern property boundary. The updated project footprint consists exclusively of modified land with little potential for threatened species occurrence. Subsequent field surveys did not identify any threatened species or likely habitat within the new proposed footprint.

Figure 5 Weedy pasture within transmission corridor in foreground with existing industrial land use in background

Figure 6 Ground-truthed vegetation mapping including observed Basalt guineaflower population

2.2.3 Threatened fauna

Native fauna species presence was confirmed within the 1 Crooked Billet Drive property boundary, south of the proposed new project footprint. One Eastern barred bandicoot (*Perameles gunnii*) carcass and a collection of wombat (*Vombatus ursinus tasmaniensis*) scats were identified near an internal paddock fence south of existing operations and proposed footprint. The wombat scats were found around a scrap pile located in the southern area of the property (near the basalt guinea flower population) and may provide potential above-ground denning or day shelter habitat for fauna. The scrap pile is located outside the project footprint and will not be impacted by the proposed project.

The Eastern barred bandicoot is listed as vulnerable under the EPBC Act. No significant native fauna habitat was observed within the proposed project footprint.

Low-quality foraging habitat is present in degraded grazing pasture within the proposed project footprint, though the existing maintained high voltage transmission corridor through degraded pasture and the existing concrete batching plant does not constitute significant habitat for any threatened fauna species. The proposed asphalt plant footprint is located primarily within the existing cleared industrial site, surrounded by existing built infrastructure. The presence of surrounding roads, Midland Highway, railway line, fences and buildings create physical barriers that impede wildlife movements. Very few scats and minimal grazing pressure apparent in unmaintained areas suggest that native wildlife abundance across the property is very low. No evidence of dasyurid or other threatened fauna species presence was observed at the site.

Figure 7 Existing concrete batching plant consisting entirely of modified land

Figure 8 Degraded pasture within maintained easement corridor at north of proposed project footprint

2.2.4 Weed assessment

Several declared weed species were identified at the property, both within and adjacent to the proposed project footprint.

Weeds observed include declared weed species likely introduced to the site from historic land use or site landscaping. Signs of recent works near the existing car park area include establishment of drains, leveling uneven ground and movement of topsoil for ground cover or vegetative buffers. Measures should be implemented to prevent proliferation of weed species at this site and prevent transportation by machinery or vehicles. Declared weed species identified within the surveyed area include:

- African boxthorn (*Lycium ferocissimum*) is a declared weed in Tasmania and was identified at multiple sites on the property. This species is a Weed of National Significance (WONS).
- Boneseed (*Chrysanthemoides monilifera ssp. Monilifera*) was observed south of the project footprint. This species is a declared weed in Tasmania, and a Weed of National Significance (WONS).
- Blackberry (*Rubus fruticosus agg.*) is widespread, including much of the western property boundary fence. Blackberry is a declared weed in Tasmania, and also a Weed of National Significance (WONS).
- Fennel (*Foeniculum vulgar*) is a declared weed in Tasmania and was identified near the project footprint.
- Hairy fiddle-neck (*Amsinckia calycina*) is a declared weed in Tasmania and was identified within the project footprint.
- One willow tree (*Salix sp*.) is present south of the project footprint. Willows are declared weeds in Tasmania, and a Weed of National Significance (WONS).
- White horehound (*Marrubium vulgare*) was observed at several points. This species is a declared weed in Tasmania.

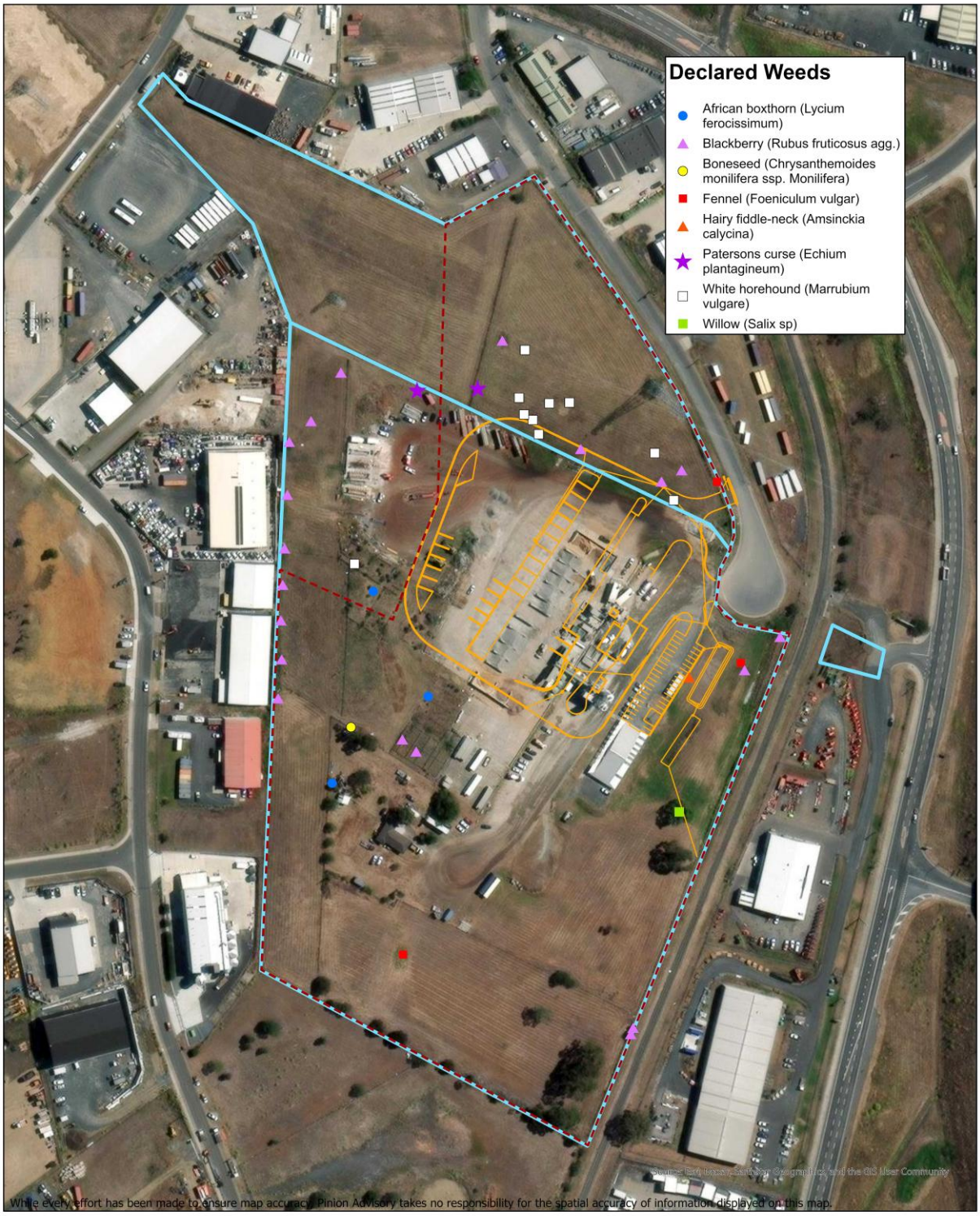


Figure 9 Declared weeds identified near proposed project footprint

3 Assessment of impacts to natural values and mitigation strategies

3.1 VEGETATION COMMUNITIES

No threatened native vegetation communities (TNVC) are present within the proposed project footprint.

Initial surveys identified a small patch of (GTL) Lowland *Themeda triandra* grassland near the southeastern corner of the property, though at <1ha this patch does not qualify for as the EPBC Act listed ecological community Lowland *Themeda triandra* (Kangaroo grass) grassland. The updated project footprint completely avoids impact to this patch (Figure 6).

The remainder of the property, including the entire project footprint, consists of TasVeg 4.0 mapping unit (FUR) Urban areas, which is not a native vegetation community and is not a listed TNVC.

3.2 THREATENED FLORA

No threatened flora species or likely habitat were identified within the project footprint.

Initial surveys identified a small patch of (GTL) Lowland *Themeda triandra* grassland near the southeastern corner of the property, which was flagged as having potential to support threatened flora species known to occur nearby. A subsequent targeted flora assessment identified a population of Basalt guineaflower (*Hibbertia basaltica*), which is listed as endangered under both the TSP Act and EPBC Act. The entire project footprint was moved to completely avoid the identified threatened flora population and native grassland habitat (Figure 6).

No threatened flora species or likely habitat was identified in modified land, which covers the remainder of the property and includes the entirety of the updated project footprint. Development within the mapped project footprint will not result in negative impacts to any threatened flora species.

3.3 THREATENED FAUNA

The site likely provides low-quality foraging habitat for native species occurring at very low density in the area. Habitat quality within the proposed project footprint is considered low due to the existing industrial land use and poor habitat connectivity, with minimal remnant native vegetation or features suitable for denning or day shelter.

No forest or woodland vegetation communities are present at the property, with the site primarily covered by modified land, except for a small patch of native grassland. Native trees present within or adjacent to the project footprint did not support visible hollows and are unlikely to provide significant habitat or foraging potential for threatened fauna species.

Habitat value present within the proposed project footprint is limited to potential foraging habitat only. Initial field surveys found evidence of Wombat (scats) presence near the native grassland patch south of the proposed project footprint. The scats were identified near a scrap pile (with above-ground denning potential) in the southern area of 1 Crooked Billet Drive property. The scrap pile is located outside the project footprint and will not be impacted by the proposed project.

No significant habitat or evidence of presence was observed within the proposed project footprint.

An Eastern barred bandicoot (*Perameles gunnii*) carcass was identified near a dwelling located on the property south of existing industrial infrastructure, outside of the proposed new project footprint. The proposed project footprint provides a small area of low-quality foraging habitat, bordering existing industrial activity, with no cover provided by native vegetation or thicket-forming weeds. Proposed development impacting <1ha of transmission line easement maintained with regular slashing does not constitute a significant loss of habitat and will not result in a significant negative impact to local population of Eastern barred bandicoot.

3.4 VEHICLE MOVEMENTS

Potential impacts resulting from increased vehicular movements during construction and operation of the proposed development are expected to be very low, given the existing high traffic volumes present on adjacent roads and the industrial land use of the surrounding area. The proposed development will result in an increase in vehicle movements to and from the site, including overnight vehicle movements between dusk and dawn, though this is not expected to result in a significant increase in roadkill risk to native fauna. Road infrastructure in the immediate vicinity of the site supports a high level of vehicular activity at all hours of the day and night, with increased volumes directly resulting from the construction and operation of the proposed development insignificant in proportion to baseline traffic volumes.

The Midland Highway is situated approximately 100m east of the project footprint, separated by Glenstone Road and a rail corridor. Potential fauna habitat is highly fragmented by existing infrastructure on all sides of the site boundary, with little habitat connectivity.

Based on the field assessment of potential habitat and review of roadkill records at the site and surrounds, it is expected that native fauna potentially present would be at a very low abundance and unlikely to be significantly impacted by expected increases to vehicular movements at the site.

4 Legislative requirements

4.1 ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

An assessment of the impact of the proposed works on threatened species, populations and ecological communities as listed under the EPBC Act is presented below.

4.1.1 Critically endangered and endangered species

An action is likely to have a significant impact on a critically endangered or endangered species if it does, will, or is likely to:

- lead to a long-term decrease in the size of a population;
- reduce the area of occupancy of the species;
- fragment an existing population into two or more populations;
- adversely affect habitat critical to the survival of a species;
- disrupt the breeding cycle of a population;
- modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline;
- result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species´ habitat; or
- interfere with the recovery of the species.

The project site is located within the Brighton locality, which is part of the mapped core breeding range of the Swift parrot. No potential nesting or foraging habitat was observed within the proposed project footprint. No significant negative impact to this species will result from the proposed project.

The Lowland *Themeda triandra* (GTL) grassland present at the southeastern property corner covers approximately 0.5ha, which at <1ha does not qualify for the EPBC Act listed ecological community Lowland *Themeda triandra* (Kangaroo grass) grassland. Therefore, No EPBC Act threatened vegetation communities are present at the property. The identified GTL patch is situated outside of the updated proposed project footprint and will not be impacted.

Following identification of a population of Basalt guineaflower (*Hibbertia basaltica*), located near the southeastern property corner, the entire project footprint was relocated to avoid potential negative impacts. This species is listed as endangered under the TSP Act and EPBC Act. The updated proposed project footprint is situated to completely avoid the identified Basalt guineaflower population and will not result in any negative impact to this species. A scrap pile located in the southern area of the property (near the basalt guinea flower population) may provide potential above-ground denning or day shelter habitat for fauna, however the scrap pile is located outside the project footprint (in the southern area of the property) and will not be impacted by the proposed project.

Following the initial natural values assessment, the proposed project footprint was relocated to completely avoid identified natural values. The updated proposed development is situated entirely within existing modified land and will not impact any native vegetation community or significant habitat. Development within the existing concrete batching plant industrial site and <1ha of degraded grazing pasture, within an urban area containing minimal remnant native vegetation, will not result in any of the above points.

4.1.2 Vulnerable species

An action has, will have, or is likely to have a significant impact on a vulnerable species if it does, will, or is likely to:

- lead to a long-term decrease in the size of an important population of a species;
- reduce the area of occupancy of an important population;
- fragment an existing important population into two or more populations;
- adversely affect habitat critical to the survival of a species;
- disrupt the breeding cycle of an important population;
- modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline;
- result in invasive species that are harmful a vulnerable species becoming established in the vulnerable species habitat; or
- interferes substantially with the recovery of the species.

An important population is one that is necessary for a species' long-term survival and recovery. This may include populations that are:

- key source populations either for breeding or dispersal;
- populations that are necessary for maintaining genetic diversity; and/or
- populations that are near the limit of the species' range.

The proposed development footprint includes a small area (<1ha) of foraging habitat that may be utilised by threatened fauna species including the Eastern barred bandicoot (*Perameles gunnii*), listed as vulnerable under the EPBC Act. Evidence of species presence was recorded with an Eastern barred bandicoot carcass observed during the site survey, located south of existing operations and outside of the proposed project footprint. The proposed project footprint provides a small area of low-quality foraging habitat, bordering existing industrial activity, with no cover provided by native vegetation or thicket-forming weeds. Proposed development impacting <1ha of transmission line easement, lacking sheltering vegetation and maintained with regular slashing, does not constitute a significant negative impact to local populations of Eastern barred bandicoot and does not require referral.

Targeted field surveys did not record any threatened flora species within the proposed project footprint.

The proposed project footprint was completely redesigned to avoid native vegetation identified in initial natural values surveys. The updated proposed development is situated entirely within existing modified land. Development within the existing concrete batching plant industrial site and <1ha of degraded grazing pasture, within an urban area containing minimal remnant native vegetation, will not result in any of the above points.

4.2 FOREST PRACTICES ACT 1985

No forest vegetation, or TNVC listed non-forest community is present at the site. A forest practices plan is not required for the proposed development.

4.3 NATURE CONSERVATION ACT 2002

No Threatened Native Vegetation Community listed under Schedule 3A of the *Nature Conservation Act 2002* is present within the proposed project footprint. The project footprint consists entirely of existing modified land.

4.4 THREATENED SPECIES PROTECTION ACT 1995

Offences relating to threatened species of both flora and fauna are addressed under section 51 of the Tasmanian *Threatened Species Protection Act 1995*:

51. Offences relating to listed taxa

(1) Subject to subsections (2) and (3), a person must not knowingly, without a permit –

(a) take, keep, trade in or process any specimen of a listed taxon of flora or fauna; or

(b) disturb any specimen of a listed taxon of flora or fauna found on land subject to an interim protection order; or

(c) disturb any specimen of a listed taxon of flora or fauna contrary to a land management agreement; or

(d) disturb any specimen of a listed taxon of flora or fauna that is subject to a conservation covenant entered into under Part 5 of the *Nature Conservation Act 2002*; or

(e) abandon or release any specimen of a listed taxon of flora or fauna into the wild.

Penalty: Fine not exceeding 629 penalty units or imprisonment for a term not exceeding 12 months, or both, and a further fine not exceeding 126 penalty units for each day during which the offence continues after conviction.

(2) A person may take, keep or process, without a permit, a specimen of a listed taxon of flora in a domestic garden.

(3) A person acting in accordance with a certified forest practices plan or a public authority management agreement may take, without a permit, a specimen of a listed taxon of flora or fauna, unless the Secretary, by notice in writing, requires the person to obtain a permit.

(4) A person undertaking dam works in accordance with a Division 3 permit issued under the *Water Management Act 1999* may take, without a permit, a specimen of a listed taxon of flora or fauna.

Any specimen knowingly taken must be done so under a formal permit issued through the Conservation Assessments branch of the Department of Natural Resources and Environment Tasmania (NRE).

Field surveys conducted by Pinion Advisory did not identify any threatened flora species present within the proposed project footprint.

Impacts to native vegetation are expected to be minimal, with the proposed project footprint consisting entirely of existing modified land.

Disturbance of the observed potential foraging habitat, including that for threatened fauna, does not require a formal permit issued by NRE. The field assessment concluded that a formal permit to take or disturb a threatened species will not be required under the TSP Act for the proposed works.

4.5 BIOSECURITY ACT 2019

Declared weeds present at the project site must be managed as required by obligations under the *Biosecurity Act 2019*.

Locations of declared weed species are mapped in Figure 9.

4.6 PLANNING SCHEME

The alignment is situated within the Brighton City Council area and as such falls under the Tasmanian Planning Scheme – Brighton Local Provisions Schedule.

The project site is zoned as General Industrial. No Tasmanian Planning Scheme natural values code overlays apply to the site.

5 Conclusion and recommendations

Hazell Bros Civil Contracting Pty Ltd (Hazell Bros) is proposing to construct and operate a new asphalt plant and reclaimed asphalt pavement (RAP) processing facility, located at 1 Crooked Billet Drive, Bridgewater, Tasmania.

The works require no clearing or conversion of native vegetation communities, with the proposed project footprint consisting entirely of existing modified land within an industrial zone. Natural values within the project footprint were determined to be minimal, providing little habitat value to native species.

Following an assessment of natural values present at the site, recommendations are provided below.

5.1 VEGETATION

The project footprint was found to consist entirely of modified land, categorised under TasVeg 4.0 mapping unit Urban areas (FUR). A small (0.5ha) patch of (GTL) Lowland *Themeda triandra* grassland was identified at the southeastern corner of the property outside of the project footprint and will not be impacted.

Identified losses to natural values from the proposed development are minimal and will not result in a significant negative impact to any threatened flora species or native vegetation community.

- Construction impacts should be confined to existing modified land within the mapped project footprint.
- Exclusion zones should be established around the identified Basalt guineaflower (*Hibbertia basaltica*) population to prevent accidental damage or losses.

5.2 FAUNA

The modified land within the proposed project footprint presents little habitat value to native species, with degraded agricultural land or existing industrial land present across the majority of the property and surrounds. Modified land within the proposed project footprint supports a small area of potential low-quality foraging habitat only.

Degraded pasture within the maintained transmission corridor supports low-quality foraging habitat that may be utilised by native fauna, though the loss of <1 ha of low-quality potential foraging habitat within an existing industrial zone will not result in a significant negative impact to any native fauna species.

5.3 WEED MANAGEMENT

Declared weeds present at the project site must be managed as required by obligations under the *Biosecurity Act 2019*. Several declared and non-declared weed species were observed within the project footprint and across the surrounding property.

Observations of declared weed species are mapped in Figure 9. Non-declared weeds were not included in the weed mapping, as presence throughout the degraded agricultural land and fence lines across the site was near ubiquitous.

The following mitigation measures are provided:

- A weed management plan should be developed for the site to control identified weed species and prevent transport of pathogens during construction and operation.
- The weed management plan should be developed in accordance with the Weed and Disease Planning and Hygiene Guidelines (DPIPWE, 2015).
- Areas where soil will be disturbed during construction should be monitored for weeds post excavation, with machinery hygiene measures designed to prevent the spread and proliferation of weed species.

6 References

Avenza Systems Inc. (2022). Avenza maps app.

Biosecurity Act (2019)

Cropper, S.C. (1993) Management of Endangered Plants. CSIRO Australia, Melbourne. Department of Natural Resources and Environment Tasmania (2024) Natural Values Atlas Report. Department of Natural Resources and Environment Tasmania, Hobart, Tasmania.

Department of Primary Industries, Parks, Water and Environment (2015) Weed and Disease Planning and Hygiene Guidelines. Department of Primary Industries, Parks, Water and Environment, Hobart, Tasmania.

Environment Protection Authority (EPA) 2024. EIS Guidelines – Hazell Bros, Asphalt and RAP Processing Plant, Bridgewater.

Environment Protection and Biodiversity Conservation Act (1999)

Forest Practices Regulations (2017)

Natural and Cultural Heritage Division (2015a) Guidelines for Natural Values Surveys - Terrestrial Development Proposals. Department of Primary Industries, Parks, Water and Environment.

Natural and Cultural Heritage Division (2015b) Survey Guidelines and Management Advice for Development Proposals that may impact on the Tasmanian Devil (Sarcophilus harrisii). Department of Primary Industries, Parks, Water and Environment.

Nature Conservation Act (2002)

Tasmanian Planning Scheme (2023)

Tasmanian Threatened Species Protection Act (1995)

Appendix 1 Site photos

Figure 10 Weedy modified land near NE property corner

Figure 11 View south across modified land within the project footprint

Figure 12 Mowed grassland near SE property corner with planted Eucalyptus row

Figure 13 Shallow rocky soils found throughout much of the project site

Figure 14 Degraded agricultural land west of the project footprint

Figure 15 Degraded agricultural land with blackberry infestation along western boundary

Appendix 2 Field survey species list

Table 3 Flora species identified during the surveys

Common name	Species name
Cootamundra wattle	*Acacia baileyana*
Silver wattle	*Acacia dealbata*
Black wattle	*Acacia mearnsii*
Sheep's burr	*Acaena echinata*
Browntop bent	*Agrostis capillaris*
Drooping sheoak	*Allocasuarina verticillata*
Hairy fiddle-neck	*Amsinckia calycina*
Sweet vernal	*Anthoxanthum odoratum*
Field mustard	*Brassica rapa*
Brome grass	*Bromus sp.*
Prickly box	*Bursaria spinosa*
Saltbush	*Chenopodium nutans*
Boneseed	*Chrysanthemoides monilifera ssp. Monilifera*
Cocksfoot	*Dactylis glomerata*
Long hair plume grass	*Dichelachne crinita*
Storks bill	*Erodium moschatum*
Tasmanian bluegum	*Eucalyptus globulus*
Fennel	*Foeniculum vulgare*
Cleavers	*Galium aparine*
Grassland cranesbill	*Geranium retrorsum*
Smooth cats ear	*Hypochaeris glabra*
Flatweed	*Hypochaeris radicata*
Ryegrass	*Lolium sp.*

African boxthorn	*Lycium ferocissimum*
Tall mallow	*Malva sylvestris*
White horehound	*Marrubium vulgare*
Daffodil	*Narcissus sp.*
Wood-sorrel	*Oxalis sp.*
Harding grass	*Phalaris aquatica*
Buck's-horn plantain	*Plantago coronopus*
Ribwort plantain	*Plantago lanceolata*
Common tussock-grass	*Poa labillardierei*
Velvet tussock	*Poa rodwayi*
Weld	*Reseda luteola*
Onion grass	*Romulea rosea*
Sweet briar	*Rosa rubiginosa*
Blackberry	*Rubus fruticosus agg.*
Broad-leaved dock	*Rumex obtusifolius*
Willow	*Salix sp.*
Hedge mustard	*Sisymbrium officinale*
Common sow-thistle	*Sonchus oleraceus*
Kangaroo grass	*Themeda triandra*
Clover	*Trifolium sp*
Subterranean clover	*Trifolium subterraneum*
White cudweed	*Vellereophyton dealbatum*
Common vetch	*Vicia sativa*

Table 4 Fauna species identified during the surveys

Common name	Species name
European hare	*Lepus europaeus*
House sparrow	*Passer domesticus*
Common wombat	*Vombatus ursinus tasmaniensis*

Appendix 3 Natural Values Report

Natural Values Atlas Report

Authoritative, comprehensive information on Tasmania's natural values.

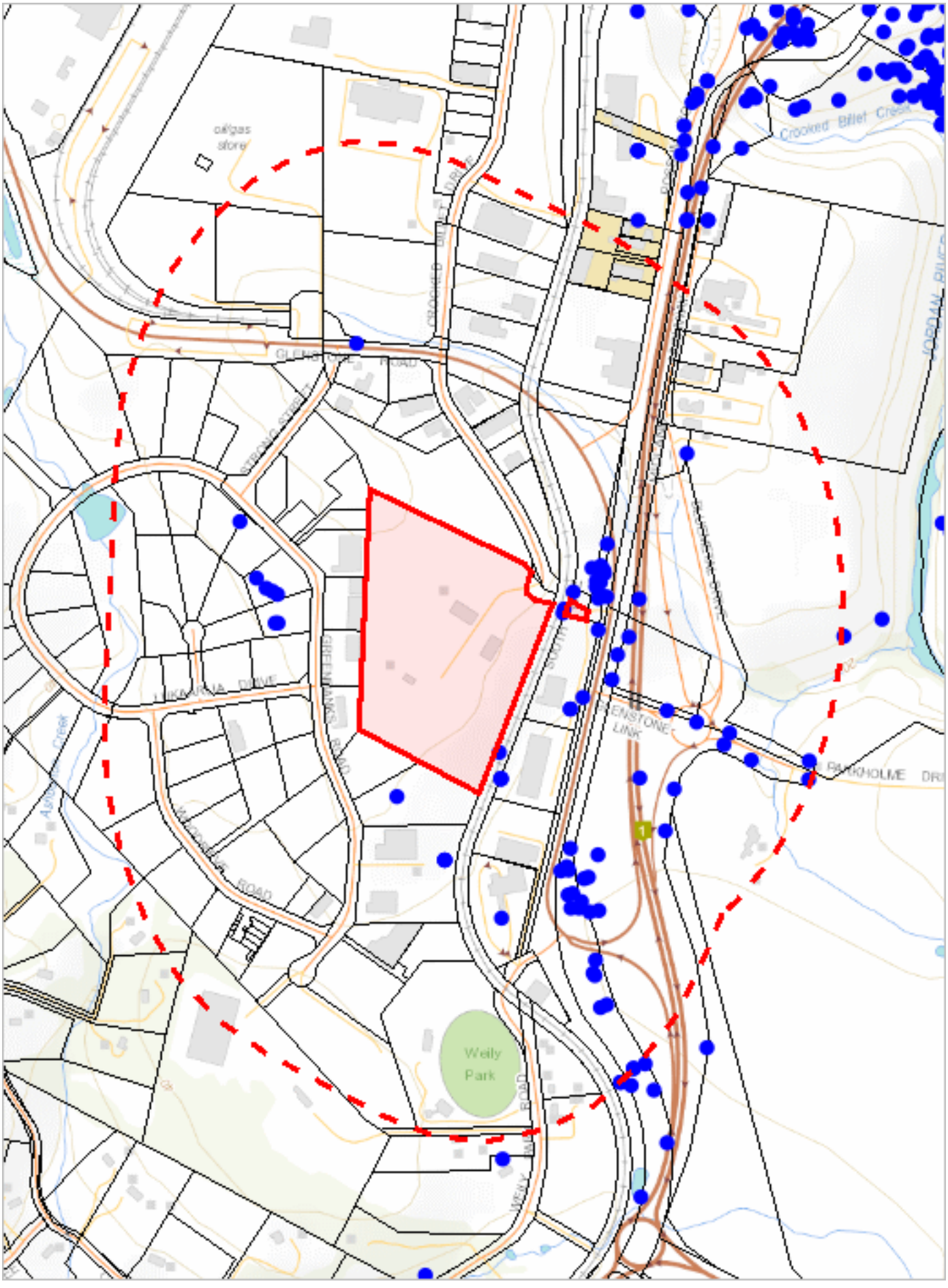
Reference:	Hzl Bros
Requested For:	
Report Type:	Summary Report
Timestamp:	11:56:17 AM Tuesday 09 July 2024
Threatened Flora:	buffers Min: 500m Max: 5000m
Threatened Fauna:	buffers Min: 500m Max: 5000m
Raptors:	buffers Min: 500m Max: 5000m
Tasmanian Weed Management Act Weeds:	buffers Min: 500m Max: 5000m
Priority Weeds:	buffers Min: 500m Max: 5000m
Geoconservation:	buffer 1000m
Acid Sulfate Soils:	buffer 1000m
TASVEG:	buffer 1000m
Threatened Communities:	buffer 1000m
Fire History:	buffer 1000m
Tasmanian Reserve Estate:	buffer 1000m
Biosecurity Risks:	buffer 1000m

The centroid for this query GDA94: 519130.0, 5269680.0 falls within:

Property: 3017836

Threatened flora within 500 metres

519856, 5270597



518492, 5268762

Please note that some layers may not display at all requested map scales

Threatened flora within 500 metres

Legend: Verified and Unverified observations

- Point Verified
- Point Unverified
- Line Verified
- Line Unverified
- Polygon Verified
- Polygon Unverified

Legend: Cadastral Parcels

Threatened flora within 500 metres

Verified Records

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
Austrostipa bigeniculata	doublejointed speargrass	r		n	35	04-Jul-2020
Austrostipa blackii	crested speargrass	r		n	2	07-Jan-2004
Dianella amoena	grassland flaxlily	r	EN	n	29	21-Dec-2010
Hibbertia basaltica	basalt guineaflower	e	EN	e	2	27-Oct-2004
Isoetopsis graminifolia	grass cushion	v		n	1	20-Oct-2009
Vittadinia gracilis	woolly new-holland-daisy	r		n	2	14-Apr-2008
Vittadinia muelleri	narrowleaf new-holland-daisy	r		n	7	08-Apr-2020
Vittadinia muelleri (broad sense)	narrow leaf new holland daisy	p		n	3	01-Jan-1993

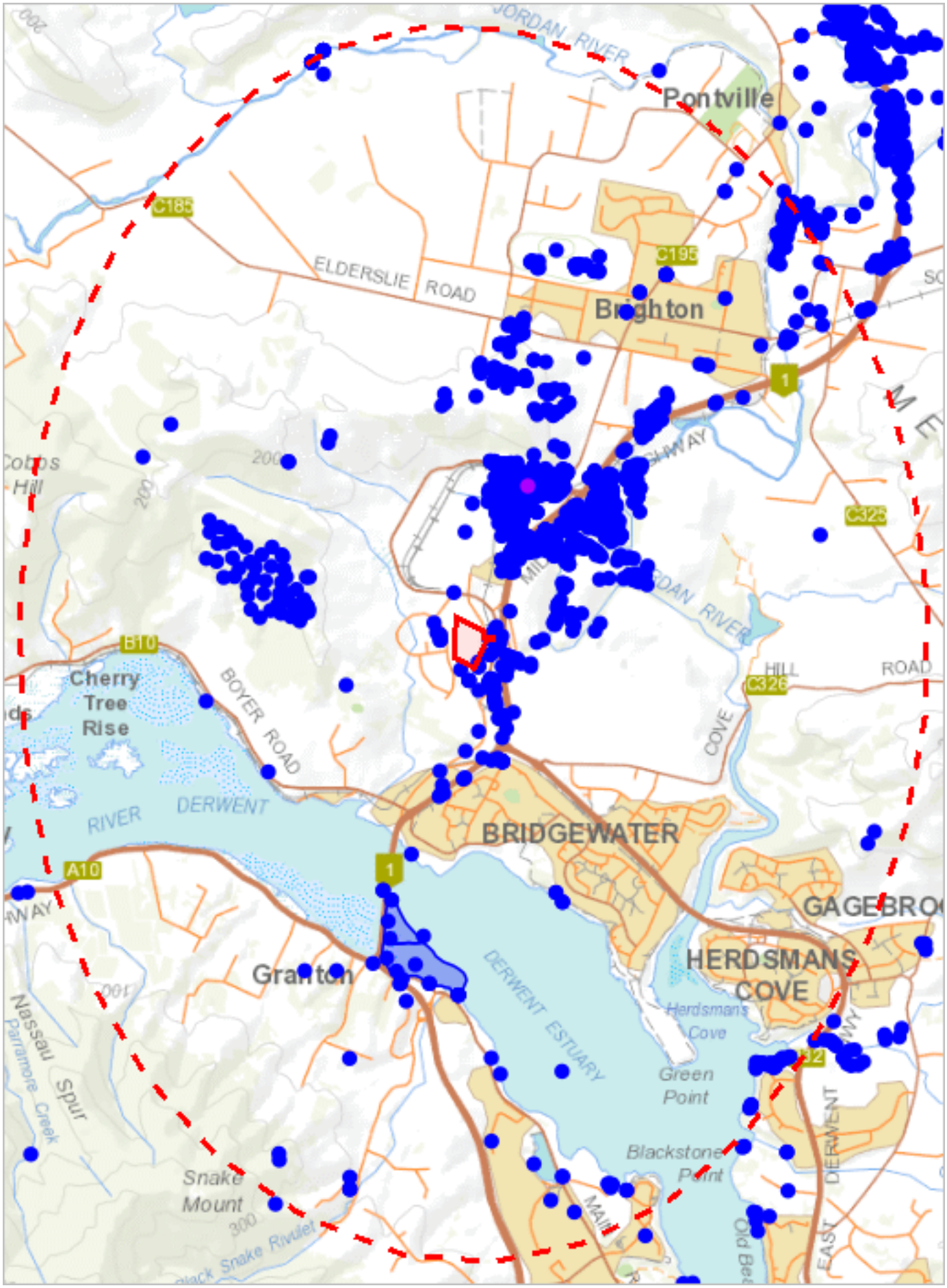
Unverified Records

No unverified records were found!

For more information about threatened species, please contact Threatened Species Enquiries.
Telephone: 1300 368 550
Email: ThreatenedSpecies.Enquiries@nre.tas.gov.au
Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

Threatened flora within 5000 metres

523182, 5275092



515172, 5264257

Please note that some layers may not display at all requested map scales

Threatened flora within 5000 metres

Legend: Verified and Unverified observations

- Point Verified
- Point Unverified
- Line Verified
- Line Unverified
- Polygon Verified
- Polygon Unverified

Legend: Cadastral Parcels

Threatened flora within 5000 metres

Verified Records

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
Asperula scoparia subsp. scoparia	prickly woodruff	r		n	3	27-Jul-2016
Austrostipa bigeniculata	doublejointed speargrass	r		n	132	11-Feb-2022
Austrostipa blackii	crested speargrass	r		n	2	07-Jan-2004
Bolboschoenus caldwellii	sea clubsedge	r		n	28	01-Jun-2017
Brachyscome rigidula	cutleaf daisy	v		n	1	01-Jan-1985
Caladenia anthracina	blacktip spider-orchid	e	CR	e	1	01-Nov-1842
Caladenia caudata	tailed spider-orchid	v	VU	e	3	22-Sep-1969
Caladenia filamentosa	daddy longlegs	r		n	1	22-Oct-1947
Calocephalus citreus	lemon beautyheads	r		n	58	10-Feb-2020
Calocephalus lacteus	milky beautyheads	r		n	9	01-Dec-1992
Carex gunniana	mountain sedge	r		n	2	01-Nov-1984
Colobanthus curtisiae	grassland cupflower	r	VU	n	1	01-Jan-1877
Coronidium gunnianum	swamp everlasting	?e		n	1	01-Jan-1900
Cryptandra amara	pretty pearlflower	e		n	20	16-Sep-2020
Desmodium varians	slender ticktrefoil	e		n	4	09-Jan-2016
Dianella amoena	grassland flaxlily	r	EN	n	463	24-Feb-2022
Diuris palustris	swamp doubletail	e		n	1	01-Oct-1977
Eryngium ovinum	blue devil	v		n	1	06-Dec-2004
Eucalyptus risdonii	risdon peppermint	r		e	63	10-Apr-2015
Glycine latrobeana	clover glycine	v	VU	n	3	21-Nov-2008
Gratiola pubescens	hairy brooklime	r		n	1	01-Feb-1892
Haloragis aspera	rough raspwort	v		n	1	05-Mar-1945
Haloragis heterophylla	variable raspwort	r		n	36	23-Nov-2021
Hibbertia basaltica	basalt guineaflower	e	EN	e	139	12-Jan-2022
Isoetopsis graminifolia	grass cushion	v		n	144	13-Jan-2022
Lachnagrostis robusta	tall blowngrass	r		n	1	23-Dec-1943
Lepidium hyssopifolium	soft peppercress	e	EN	n	11	01-Jun-2006
Lepilaena patentifolia	spreading watermat	r		n	1	27-Feb-1976
Lythrum salicaria	purple loosestrife	v		n	1	01-Mar-1894
Pellaea calidirupium	hotrock fern	r		n	5	12-Jan-2022
Pterostylis ziegeleri	grassland greenhood	v	VU	e	27	04-Nov-2016
Pultenaea prostrata	silky bushpea	v		n	26	16-Nov-2017
Ranunculus pumilio var. pumilio	ferny buttercup	r		n	1	27-Sep-1993
Rumex bidens	mud dock	v		n	1	01-Jan-1875
Ruppia megacarpa	largefruit seatassel	r		n	12	10-Mar-2021
Schoenoplectus tabernaemontani	river clubsedge	r		n	3	08-Apr-2020
Scleranthus diander	tufted knawel	v		n	2	09-Nov-2021
Scleranthus fasciculatus	spreading knawel	v		n	6	01-May-2024
Senecio squarrosus	leafy fireweed	r		n	18	02-Dec-2021
Stackhousia subterranea	grassland candles	e		n	7	02-Nov-2021
Stuckenia pectinata	fennel pondweed	r		n	2	01-Dec-1891
Thesium australe	southern toadflax	x	VU	n	1	01-Jan-1804
Triptilodiscus pygmaeus	dwarf sunray	v		n	61	09-Nov-2021
Vallisneria australis	river ribbons	r		n	19	16-Mar-2001
Velleia paradoxa	spur velleia	v		n	3	01-Jan-1995
Vittadinia burbidgeae	smooth new-holland-daisy	r		e	3	01-Oct-2008
Vittadinia cuneata var. cuneata	fuzzy new-holland-daisy	r		n	2	05-Jan-1991
Vittadinia gracilis	woolly new-holland-daisy	r		n	80	04-Nov-2020
Vittadinia muelleri	narrowleaf new-holland-daisy	r		n	299	01-Feb-2022
Vittadinia muelleri (broad sense)	narrow leaf new holland daisy	p		n	39	05-Jan-2005
Xanthoparmelia amphixantha		e		n	11	01-Oct-2008
Xanthoparmelia molliuscula		e		n	4	28-Mar-2004
Xanthoparmelia vicariella		r		e	5	02-Dec-2021

Unverified Records

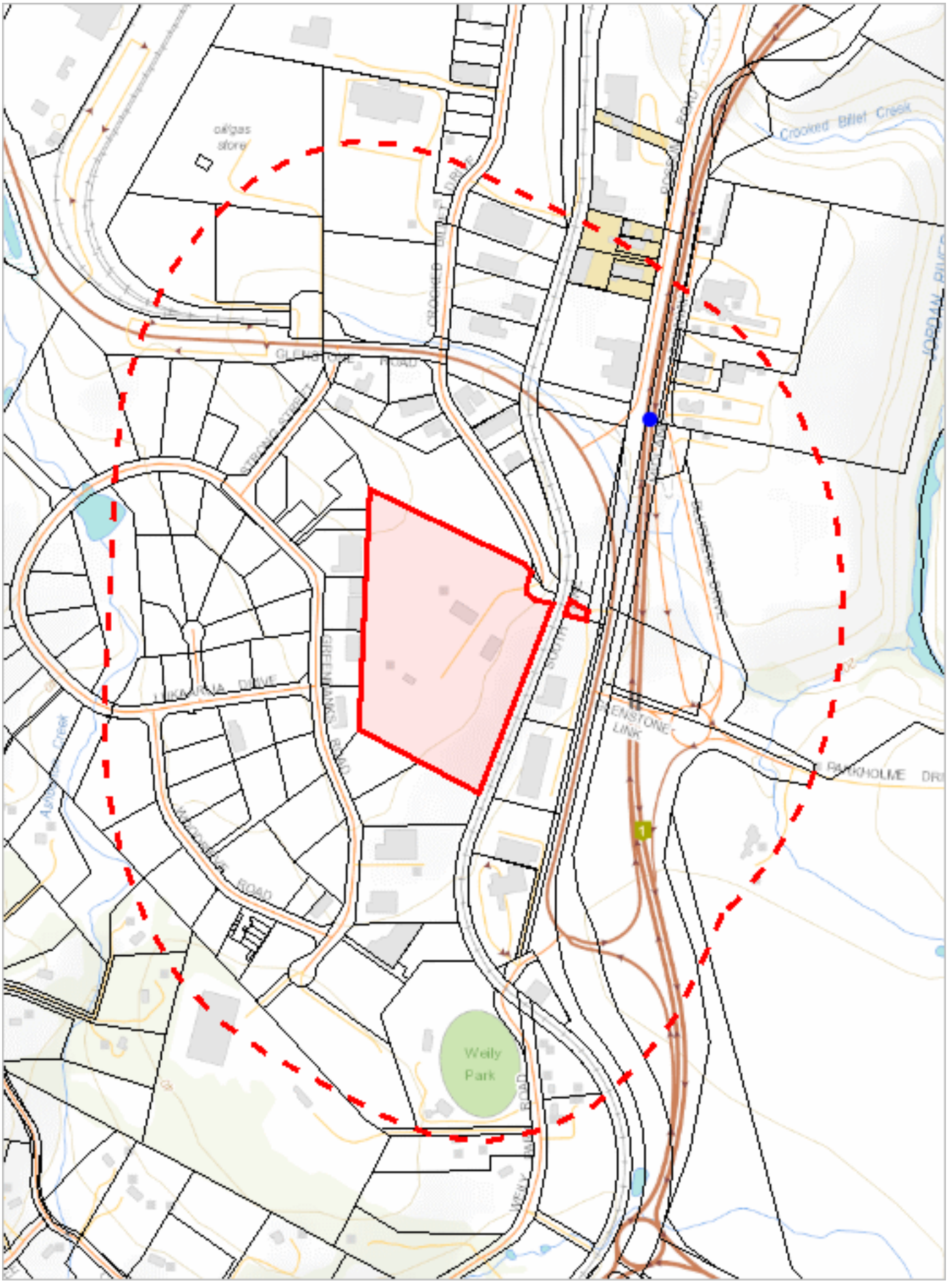
Species	Common Name	SS	NS	Bio	Observation Count
Dianella amoena	grassland flaxlily	r	EN	n	1

Threatened flora within 5000 metres

Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

Threatened fauna within 500 metres

519856, 5270597



518492, 5268762

Please note that some layers may not display at all requested map scales

Threatened fauna within 500 metres

Legend: Verified and Unverified observations

- Point Verified
- Point Unverified
- Line Verified
- Line Unverified
- Polygon Verified
- Polygon Unverified

Legend: Cadastral Parcels

Threatened fauna within 500 metres

Verified Records

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
Perameles gunnii	eastern barred bandicoot		VU	n	1	04-Jan-1993

Unverified Records

No unverified records were found!

Threatened fauna within 500 metres

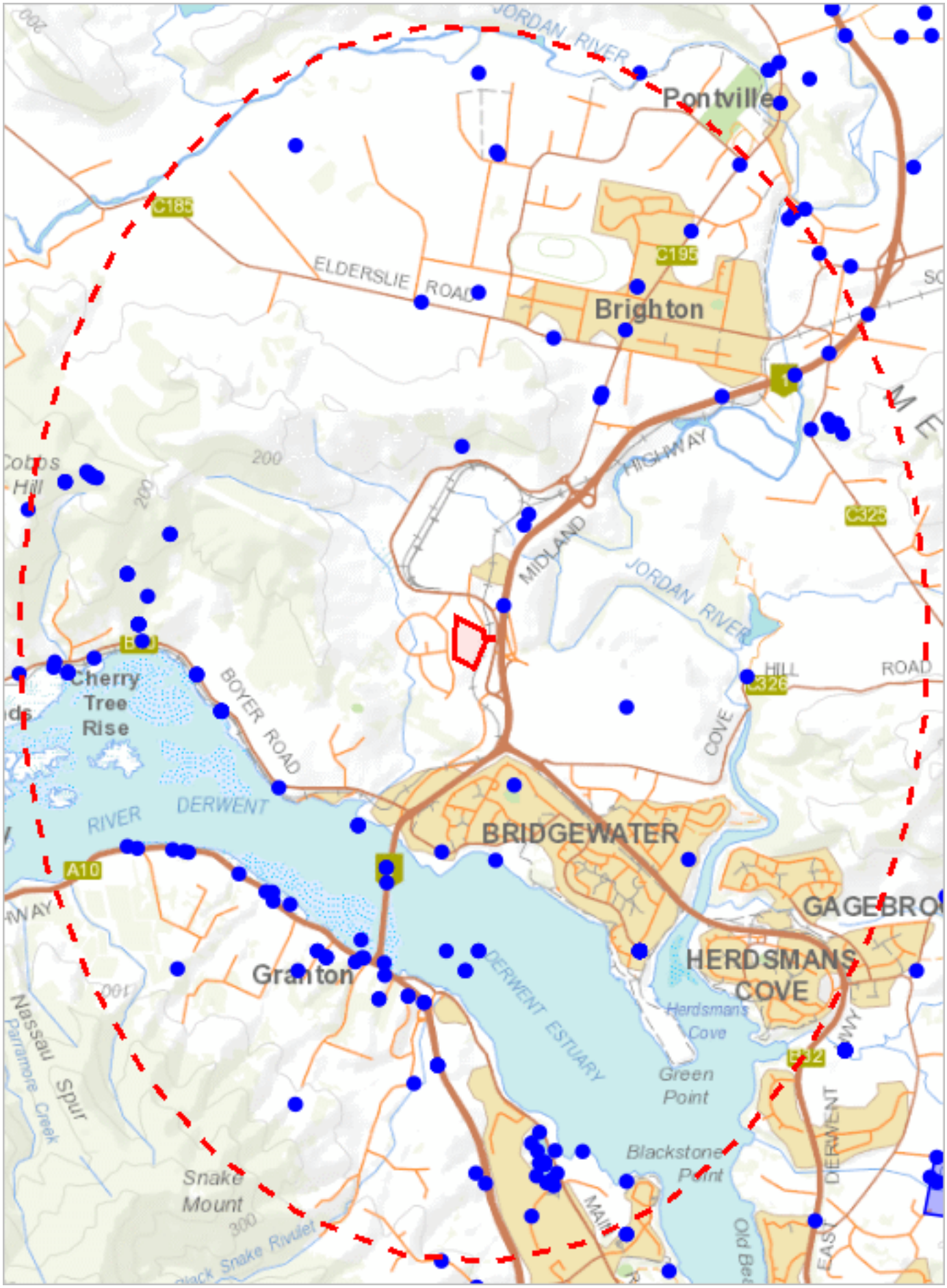
(based on Range Boundaries)

Species	Common Name	SS	NS	BO	Potential	Known	Core
Litoria raniformis	green and gold frog	v	VU	n	1	0	1
Lathamus discolor	swift parrot	e	CR	mbe	1	0	1
Prototroctes maraena	australian grayling	v	VU	ae	1	0	0
Antipodia chaostola	chaostola skipper	e	EN	ae	1	0	0
Pseudemoia pagenstecheri	tussock skink	v		n	1	0	0
Haliaeetus leucogaster	white-bellied sea-eagle	v		n	2	0	0
Tyto novaehollandiae subsp. castanops	masked owl (Tasmanian)	e	VU	e	1	0	1
Dasyurus maculatus subsp. maculatus	spotted-tailed quoll	r	VU	n	1	0	0
Accipiter novaehollandiae	grey goshawk	e		n	1	0	0
Sarcophilus harrisii	tasmanian devil	e	EN	e	1	0	0
Pardalotus quadragintus	forty-spotted pardalote	e	EN	e	1	0	0
Perameles gunnii	eastern barred bandicoot		VU	n	1	0	1
Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	e	EN	e	1	0	0
Dasyurus viverrinus	eastern quoll		EN	n	0	0	1

For more information about threatened species, please contact Threatened Species Enquiries.
Telephone: 1300 368 550
Email: ThreatenedSpecies.Enquiries@nre.tas.gov.au
Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

Threatened fauna within 5000 metres

523182, 5275092



515172, 5264257

Please note that some layers may not display at all requested map scales

Threatened fauna within 5000 metres

Legend: Verified and Unverified observations

- Point Verified
- Point Unverified
- Line Verified
- Line Unverified
- Polygon Verified
- Polygon Unverified

Legend: Cadastral Parcels

Threatened fauna within 5000 metres

Verified Records

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
Accipiter novaehollandiae	grey goshawk	e		n	14	23-Feb-2023
Alcedo azurea subsp. diemenensis	azure kingfisher or azure kingfisher (tasmanian)	e	EN	e	1	01-Jan-1900
Aquila audax	wedge-tailed eagle	pe	PEN	n	29	12-Jun-2023
Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	e	EN	e	8	25-Mar-2024
Botaurus poiciloptilus	australasian bittern		EN	n	9	17-Dec-2021
Dasyurus maculatus	spotted-tailed quoll	r	VU	n	4	12-Feb-2023
Dasyurus maculatus subsp. maculatus	spotted-tailed quoll	r	VU	n	1	16-Feb-2024
Dasyurus viverrinus	eastern quoll		EN	n	6	09-Dec-2019
Eagle sp.	Eagle	e	EN	n	2	07-May-2020
Gallinago hardwickii	lathams snipe		VU	n	145	14-Mar-2023
Haliaeetus leucogaster	white-bellied sea-eagle	v		n	54	24-Jun-2023
Hirundapus caudacutus	white-throated needletail		VU	n	2	31-Dec-1980
Lathamus discolor	swift parrot	e	CR	mbe	19	03-Nov-2022
Neophema chrysostoma	blue-winged parrot		VU	n	7	09-Feb-2019
Pardalotus quadragintus	forty-spotted pardalote	e	EN	e	2	14-Oct-1920
Perameles gunnii	eastern barred bandicoot		VU	n	31	25-Dec-2023
Perameles gunnii subsp. gunnii	eastern barred bandicoot		VU		3	20-Aug-2021
Podiceps cristatus	great crested grebe	v		n	11	30-Nov-2020
Poliocephalus cristatus subsp. australis	great crested grebe	pv			1	07-Dec-1981
Prototroctes maraena	australian grayling	v	VU	ae	4	28-Oct-1987
Pseudemoia pagenstecheri	tussock skink	v		n	1	01-Dec-2009
Sarcophilus harrisii	tasmanian devil	e	EN	e	25	14-Feb-2024
Thalassarche cauta	shy albatross	v	EN	ae	1	23-Nov-1884
Theclinesthes serpentatus	chequered blue	pr		n	1	22-Feb-2023
Tyto novaehollandiae	masked owl	pe	PVU	n	8	13-Feb-2019

Unverified Records

No unverified records were found!

Threatened fauna within 5000 metres

(based on Range Boundaries)

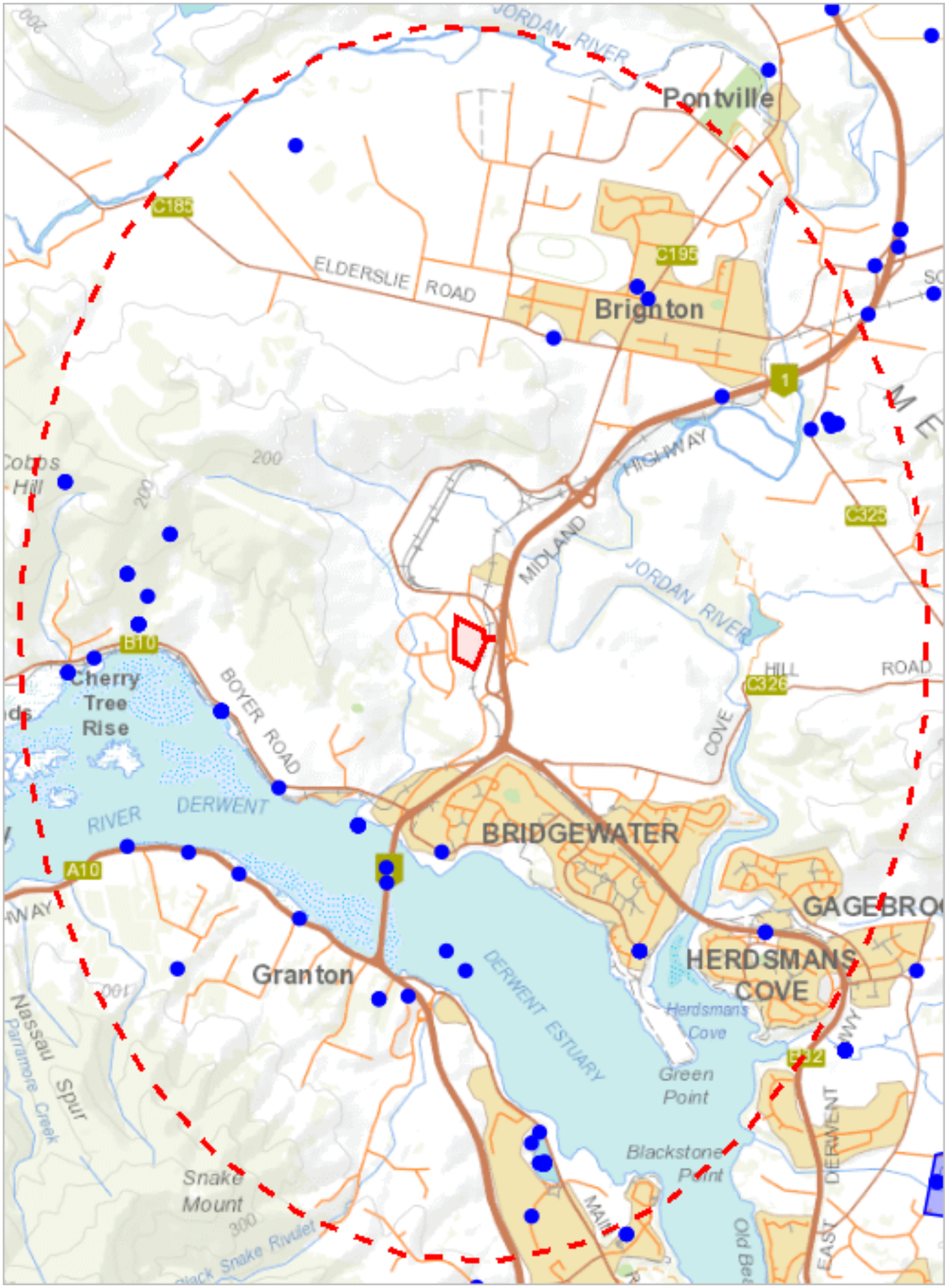
Species	Common Name	SS	NS	BO	Potential	Known	Core
Litoria raniformis	green and gold frog	v	VU	n	1	0	1
Lathamus discolor	swift parrot	e	CR	mbe	1	0	1
Prototroctes maraena	australian grayling	v	VU	ae	1	0	0
Discocharopa vigens	Ammonite Pinwheel Snail	e	CR		2	0	0
Antipodia chaostola	chaostola skipper	e	EN	ae	1	0	0
Pseudemoia pagenstecheri	tussock skink	v		n	1	0	1
Haliaeetus leucogaster	white-bellied sea-eagle	v		n	3	0	0
Tyto novaehollandiae subsp. castanops	masked owl (Tasmanian)	e	VU	e	1	0	1
Dasyurus maculatus subsp. maculatus	spotted-tailed quoll	r	VU	n	1	0	0
Accipiter novaehollandiae	grey goshawk	e		n	1	0	0
Sarcophilus harrisii	tasmanian devil	e	EN	e	1	0	0
Pardalotus quadragintus	forty-spotted pardalote	e	EN	e	1	0	0
Perameles gunnii	eastern barred bandicoot		VU	n	1	0	1
Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	e	EN	e	1	0	0
Dasyurus viverrinus	eastern quoll		EN	n	0	0	1

For more information about threatened species, please contact Threatened Species Enquiries.
Telephone: 1300 368 550
Email: ThreatenedSpecies.Enquiries@nre.tas.gov.au
Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

*** No Raptor nests or sightings found within 500 metres. ***

Raptor nests and sightings within 5000 metres

523182, 5275092



515172, 5264257

Please note that some layers may not display at all requested map scales

Raptor nests and sightings within 5000 metres

Legend: Verified and Unverified observations

- Point Verified
- Point Unverified
- Line Verified
- Line Unverified
- Polygon Verified
- Polygon Unverified

Legend: Cadastral Parcels

Raptor nests and sightings within 5000 metres

Verified Records

Nest Id/Location Foreign Id	Species	Common Name	Obs Type	Observation Count	Last Recorded
1778	Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	Nest	1	21-Feb-2024
1778	Haliaeetus leucogaster	white-bellied sea-eagle	Nest	4	07-May-2020
2927	Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	Nest	1	21-Feb-2024
2927	Eagle sp.	Eagle	Nest	1	07-May-2020
2928	Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	Nest	2	21-Feb-2024
2928	Eagle sp.	Eagle	Nest	1	07-May-2020
494	Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	Nest	1	21-Feb-2024
494	Haliaeetus leucogaster	white-bellied sea-eagle	Nest	2	07-May-2020
	Accipiter novaehollandiae	grey goshawk	Not Recorded	8	01-Apr-2017
	Accipiter novaehollandiae	grey goshawk	Sighting	6	23-Feb-2023
	Aquila audax	wedge-tailed eagle	Not Recorded	16	10-Mar-2018
	Aquila audax	wedge-tailed eagle	Sighting	13	12-Jun-2023
	Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	Carcass	2	19-May-2018
	Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	Radio Tracker Signal	1	25-Mar-2024
	Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	Sighting	2	24-Sep-1981
	Falco cenchroides	nankeen kestrel	Not Recorded	4	15-Jun-2014
	Falco cenchroides	nankeen kestrel	Sighting	1	16-Mar-1904
	Falco longipennis	australian hobby	Sighting	9	07-Jan-2023
	Falco peregrinus	peregrine falcon	Not Recorded	16	25-Jun-2018
	Falco peregrinus	peregrine falcon	Sighting	17	30-Jan-2023
	Haliaeetus leucogaster	white-bellied sea-eagle	Not Recorded	14	07-Nov-2017
	Haliaeetus leucogaster	white-bellied sea-eagle	Sighting	34	24-Jun-2023
	Tyto novaehollandiae	masked owl	Carcass	1	13-Feb-2019
	Tyto novaehollandiae	masked owl	Not Recorded	1	06-Sep-1979
	Tyto novaehollandiae	masked owl	Sighting	6	13-Jun-2007

Unverified Records

No unverified records were found!

Raptor nests and sightings within 5000 metres

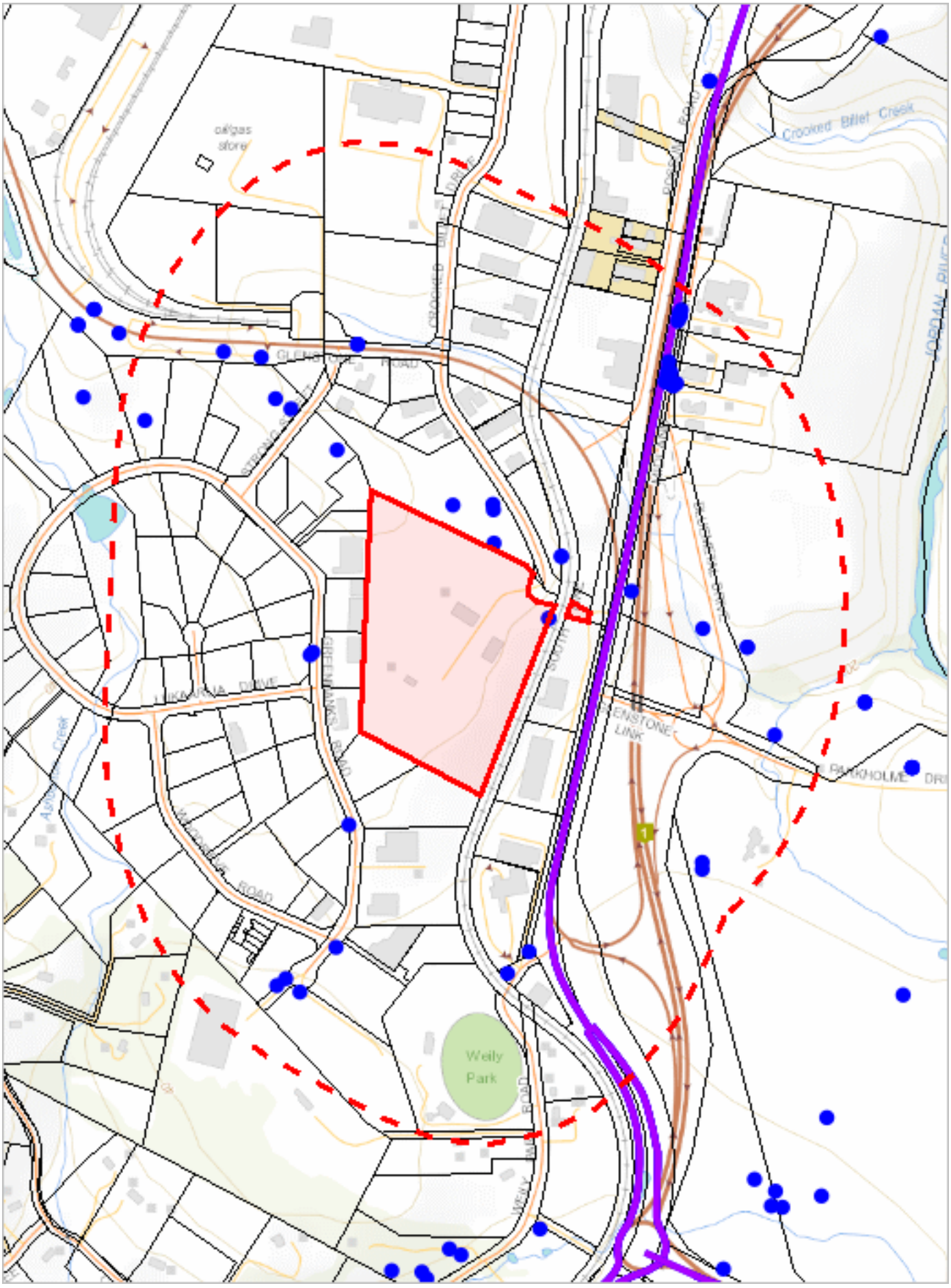
(based on Range Boundaries)

Species	Common Name	SS	NS	Potential	Known	Core
Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	e	EN	1	0	0
Accipiter novaehollandiae	grey goshawk	e		1	0	0
Haliaeetus leucogaster	white-bellied sea-eagle	v		3	0	0

For more information about raptor nests, please contact Threatened Species Enquiries.
Telephone: 1300 368 550
Email: ThreatenedSpecies.Enquiries@nre.tas.gov.au
Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

Tas Management Act Weeds within 500 m

519856, 5270597



518492, 5268762

Please note that some layers may not display at all requested map scales

Tas Management Act Weeds within 500 m

Legend: Verified and Unverified observations

- Point Verified
- Point Unverified
- Line Verified
- Line Unverified
- Polygon Verified
- Polygon Unverified

Legend: Cadastral Parcels

Tas Management Act Weeds within 500 m

Verified Records

Species	Common Name	Observation Count	Last Recorded
Amelichloa caudata	espartillo	2	03-Nov-2022
Carduus nutans	nodding thistle	1	07-Jan-2004
Carduus pycnocephalus	slender thistle	2	16-May-2006
Carduus tenuiflorus	winged thistle	1	08-Nov-1995
Eragrostis curvula	african lovegrass	18	01-Jan-2021
Foeniculum vulgare	fennel	7	18-Nov-2021
Lepidium draba	hoary cress	2	18-Nov-2021
Lycium ferocissimum	african boxthorn	10	31-May-2021
Marrubium vulgare	white horehound	4	16-May-2006
Nassella trichotoma	serrated tussock	2	01-Jan-2022
Rubus fruticosus	blackberry	13	14-Aug-2013
Ulex europaeus	gorse	1	11-Apr-2008

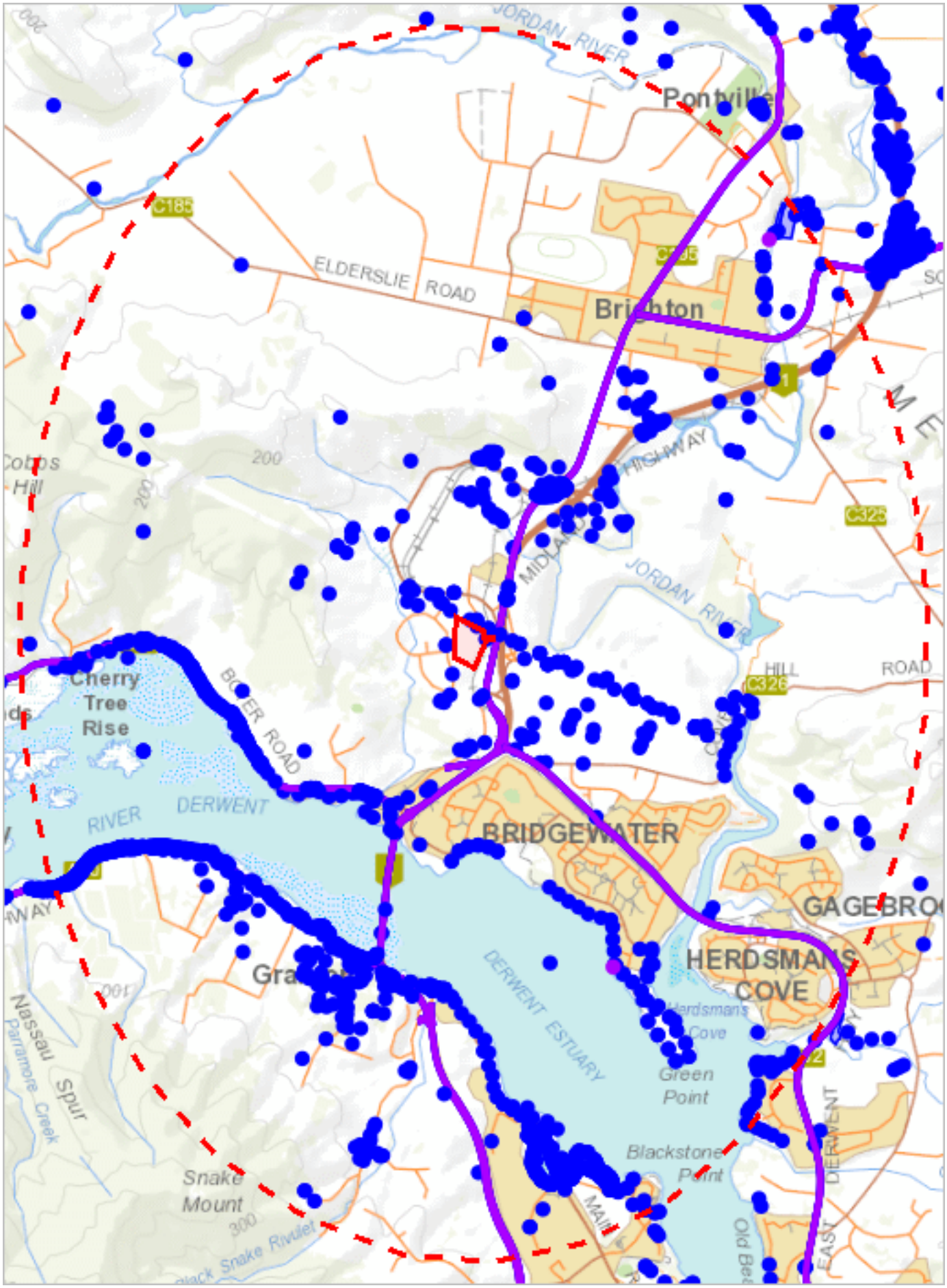
Unverified Records

For more information about introduced weed species, please visit the following URL for contact details in your area:

https://www.nre.tas.gov.au/invasive-species/weeds

Tas Management Act Weeds within 5000 m

523182, 5275092



515172, 5264257

Please note that some layers may not display at all requested map scales

Tas Management Act Weeds within 5000 m

Legend: Verified and Unverified observations

- Point Verified
- Point Unverified
- Line Verified
- Line Unverified
- Polygon Verified
- Polygon Unverified

Legend: Cadastral Parcels

Tas Management Act Weeds within 5000 m

Verified Records

Species	Common Name	Observation Count	Last Recorded
Amaranthus albus	tumble pigweed	2	28-Jun-1998
Amelichloa caudata	espartillo	20	03-Nov-2022
Asparagus asparagoides	bridal creeper	90	18-May-2023
Asphodelus fistulosus	onion weed	3	02-Sep-1943
Carduus nutans	nodding thistle	1	07-Jan-2004
Carduus pycnocephalus	slender thistle	28	15-Dec-2022
Carduus tenuiflorus	winged thistle	8	30-Nov-2021
Chrysanthemoides monilifera subsp. monilifera	boneseed	283	15-Dec-2022
Cirsium arvense var. arvense	creeping thistle	57	30-Nov-2021
Cortaderia selloana	silver pampasgrass	2	06-Apr-2018
Cortaderia sp.	pampas grass	8	02-Nov-2021
Cylindropuntia sp.	chollas	1	29-Sep-2017
Cytisus scoparius	english broom	8	30-Nov-2021
Echium plantagineum	patersons curse	10	22-Sep-2021
Elodea canadensis	canadian pondweed	3	09-Jun-1994
Eragrostis curvula	african lovegrass	22	18-Mar-2022
Foeniculum vulgare	fennel	504	18-May-2023
Genista monspessulana	montpellier broom or canary broom	46	15-Dec-2022
Hypericum perforatum	perforated st johns-wort	18	02-Nov-2020
Hypericum perforatum subsp. veronense	perforated st johns-wort	3	15-Jan-1944
Lepidium draba	hoary cress	158	18-May-2023
Lycium ferocissimum	african boxthorn	567	01-May-2024
Marrubium vulgare	white horehound	27	13-Jan-2022
Nassella neesiana	chilean needlegrass	423	12-Jan-2023
Nassella trichotoma	serrated tussock	3	01-Jan-2022
Onopordum acanthium	scotch thistle	1	01-Jan-1900
Rubus anglocandicans	blackberry	2	20-Aug-2019
Rubus fruticosus	blackberry	484	18-May-2023
Salix x fragilis nothovar. fragilis	crack willow	9	18-Nov-2021
Ulex europaeus	gorse	72	01-May-2024
Urospermum dalechampii	false dandelion	2	12-Nov-2013

Unverified Records

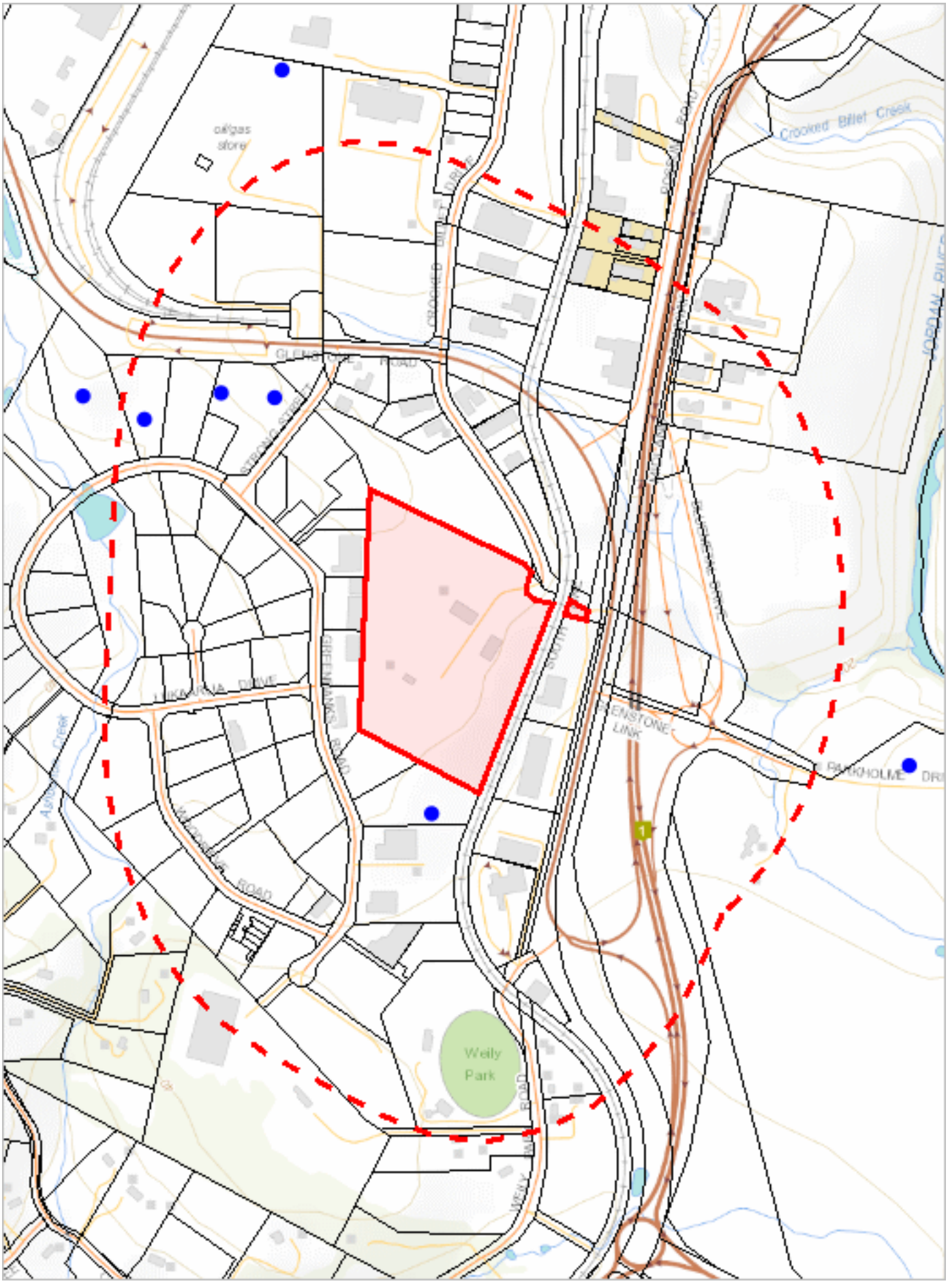
Species	Common Name	Observation Count
Chrysanthemoides monilifera subsp. monilifera	boneseed	1
Lycium ferocissimum	african boxthorn	1

For more information about introduced weed species, please visit the following URL for contact details in your area:

https://www.nre.tas.gov.au/invasive-species/weeds

Priority Weeds within 500 m

519856, 5270597



518492, 5268762

Please note that some layers may not display at all requested map scales

Priority Weeds within 500 m

Legend: Verified and Unverified observations

- Point Verified
- Point Unverified
- Line Verified
- Line Unverified
- Polygon Verified
- Polygon Unverified

Legend: Cadastral Parcels

Priority Weeds within 500 m

Verified Records

Species	Common Name	Observation Count	Last Recorded
Reseda luteola	weld	5	16-May-2006

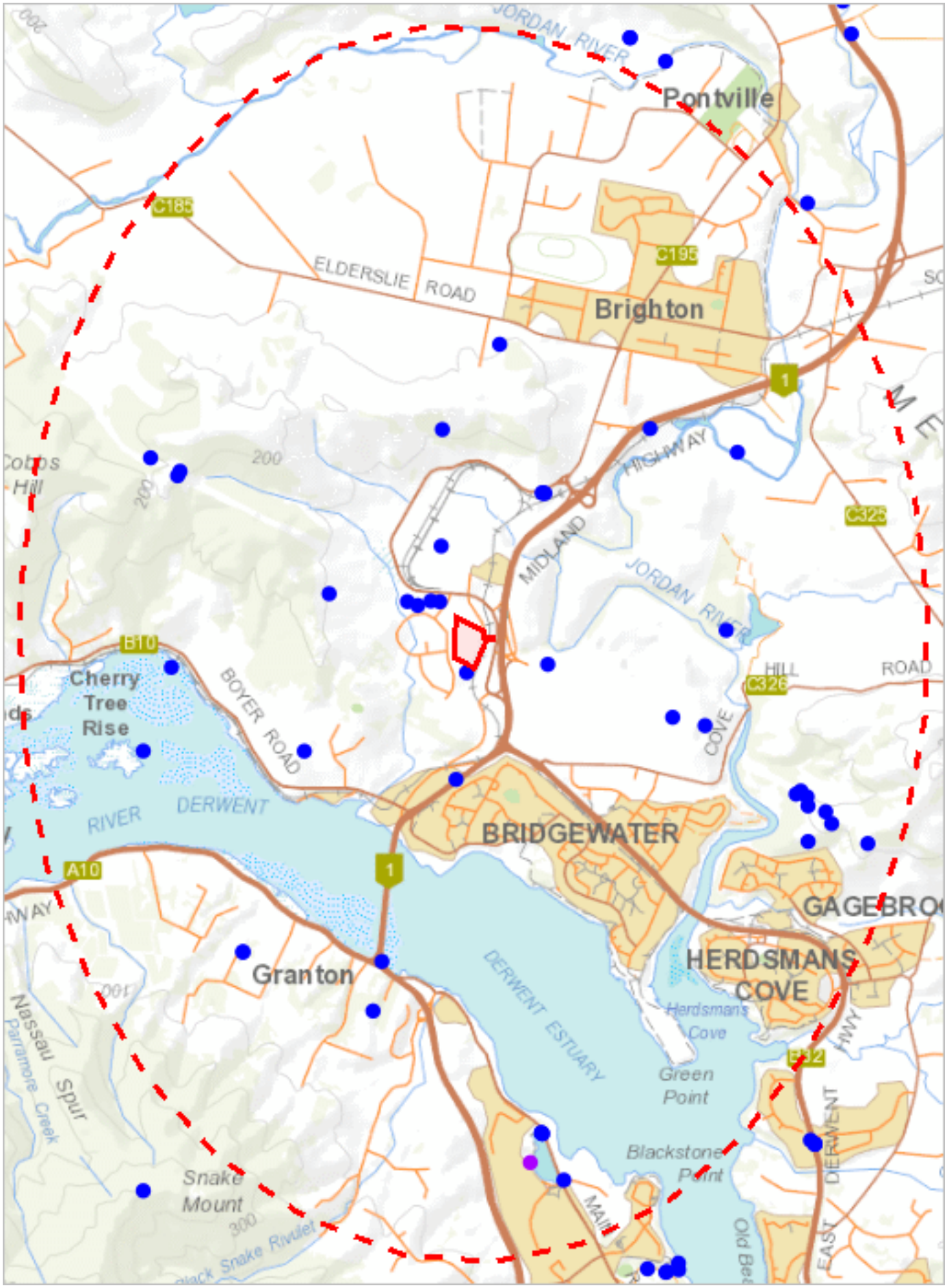
Unverified Records

For more information about introduced weed species, please visit the following URL for contact details in your area:

https://www.nre.tas.gov.au/invasive-species/weeds

Priority Weeds within 5000 m

523182, 5275092



515172, 5264257

Please note that some layers may not display at all requested map scales

Priority Weeds within 5000 m

Legend: Verified and Unverified observations

- Point Verified
- Point Unverified
- Line Verified
- Line Unverified
- Polygon Verified
- Polygon Unverified

Legend: Cadastral Parcels

Priority Weeds within 5000 m

Verified Records

Species	Common Name	Observation Count	Last Recorded
Acacia baileyana	cootamundra wattle	1	17-Jun-2004
Achillea millefolium	yarrow	3	30-Nov-2021
Billardiera heterophylla	bluebell creeper	2	22-May-2018
Dipsacus fullonum	wild teasel	6	30-Nov-2021
Echium candicans	pride-of-madeira	1	01-Dec-2020
Reseda luteola	weld	26	11-Apr-2008
Retama raetam	weeping white broom	1	29-Oct-2013
Rumex obtusifolius	broadleaf dock	1	14-May-1997
Salix x pendulina var. pendulina	weeping willow	1	01-Jan-1993
Sporobolus anglicus	common cordgrass	2	15-Feb-1976
Watsonia meriana var. bulbillifera	bulbil watsonia	4	02-Feb-2011

Unverified Records

Species	Common Name	Observation Count
Echium candicans	pride-of-madeira	1

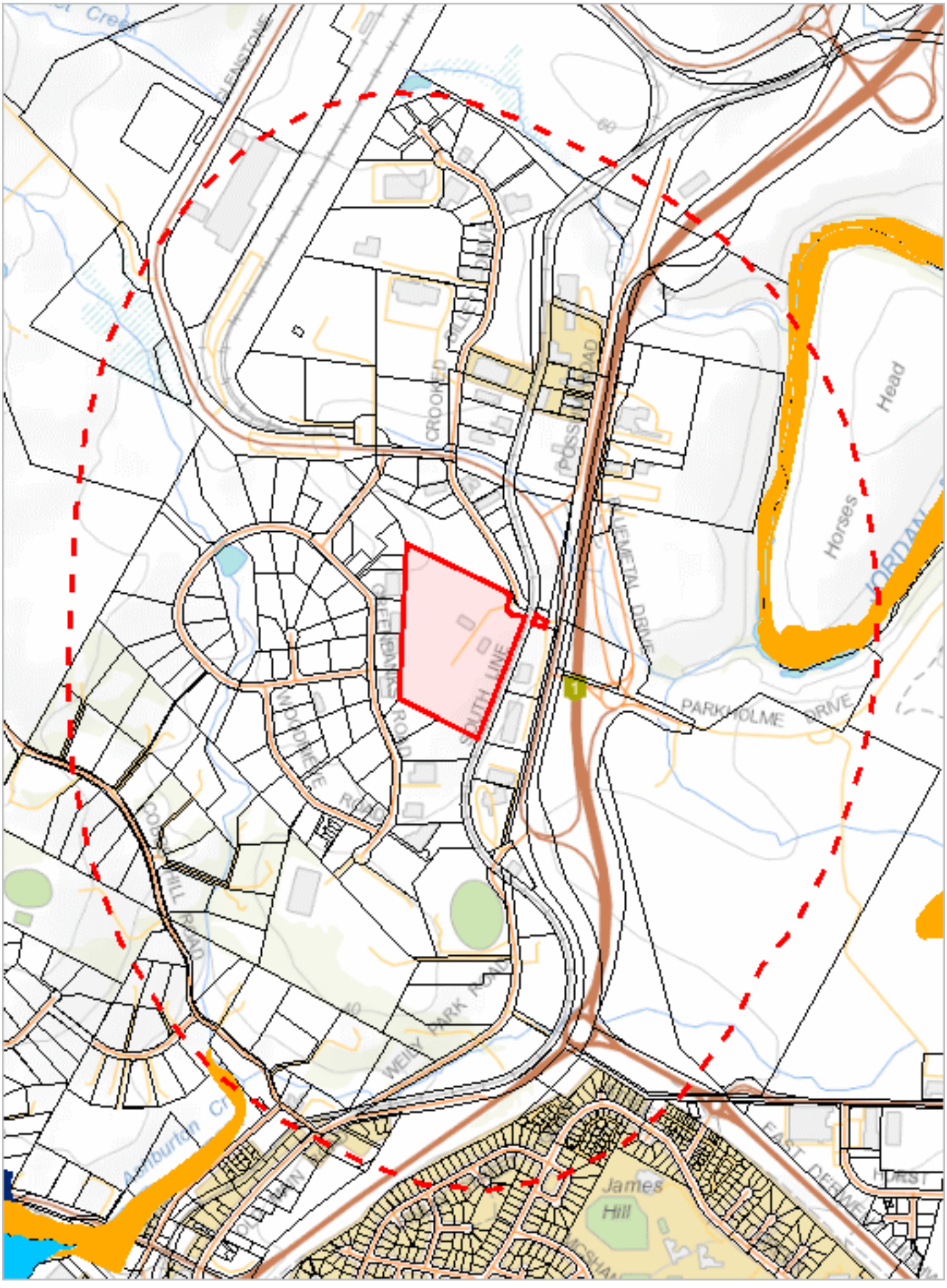
For more information about introduced weed species, please visit the following URL for contact details in your area:

https://www.nre.tas.gov.au/invasive-species/weeds

*** No Geoconservation sites found within 1000 metres. ***

Acid Sulfate Soils within 1000 metres

520225, 5271097



518123, 5268261

Please note that some layers may not display at all requested map scales

Acid Sulfate Soils within 1000 metres

Legend: Coastal Acid Sulfate Soils (0 - 20m AHD)

High | Low | Extremely Low

Legend: Inland Acid Sulfate Soils (>20m AHD)

High | Low | Extremely Low

Legend: Marine Subaqueous/Intertidal Acid Sulfate Soil

High (Intertidal) | High (Subtidal)

Legend: Cadastral Parcels

Acid Sulfate Soils within 1000 metres

Dataset Name	Acid Sulfate Soil Probability	Acid Sulfate Soil Atlas	Description
Coastal Acid Sulfate Soils	Low	Bg(p3)	Low probability of occurance (6-70% chance of occurrence in mapping unit). Floodplains >4m AHD, ASS generally below 3m from the surface.generally forests. Includes plains and levees. Potential acid sulfate soil (PASS) = sulfidic material (Isbell 1996 p.122). No necessary analytical data are available but confidence is fair, based on a knowledge of similar soils in similar environments.

For more information about Acid Sulfate Soils, please contact Land Management Enquiries.

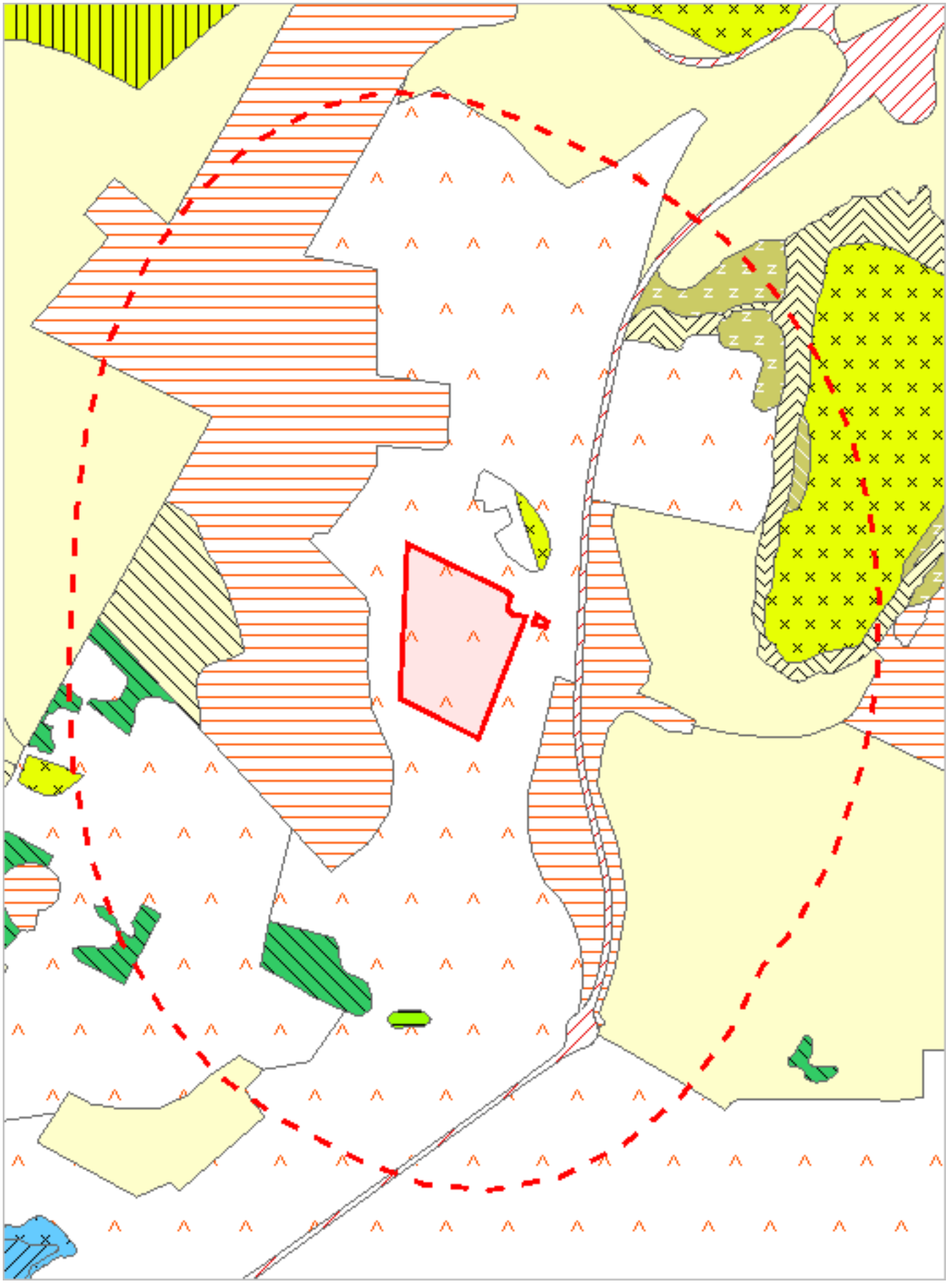
Telephone: (03) 6777 2227

Email: LandManagement.Enquiries@nre.tas.gov.au

Address: 171 Westbury Road, Prospect, Tasmania, Australia, 7250

TASVEG 4.0 Communities within 1000 metres

520225, 5271097



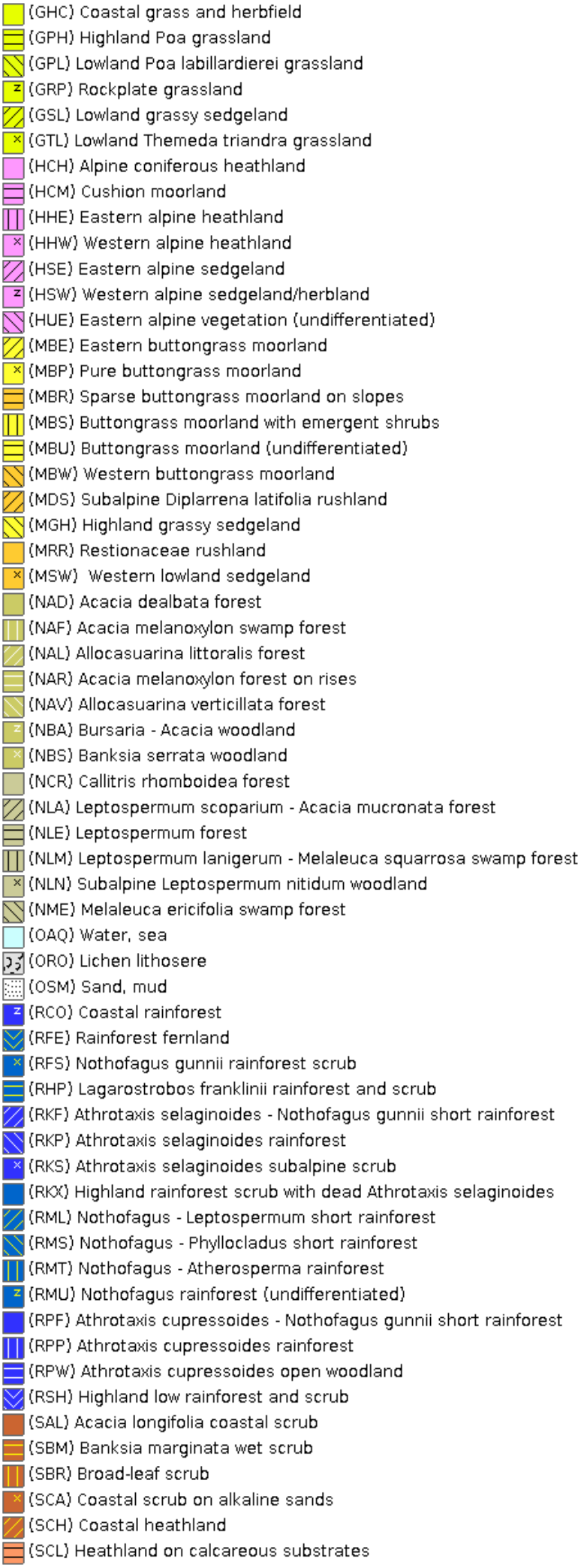
518123, 5268261

Please note that some layers may not display at all requested map scales

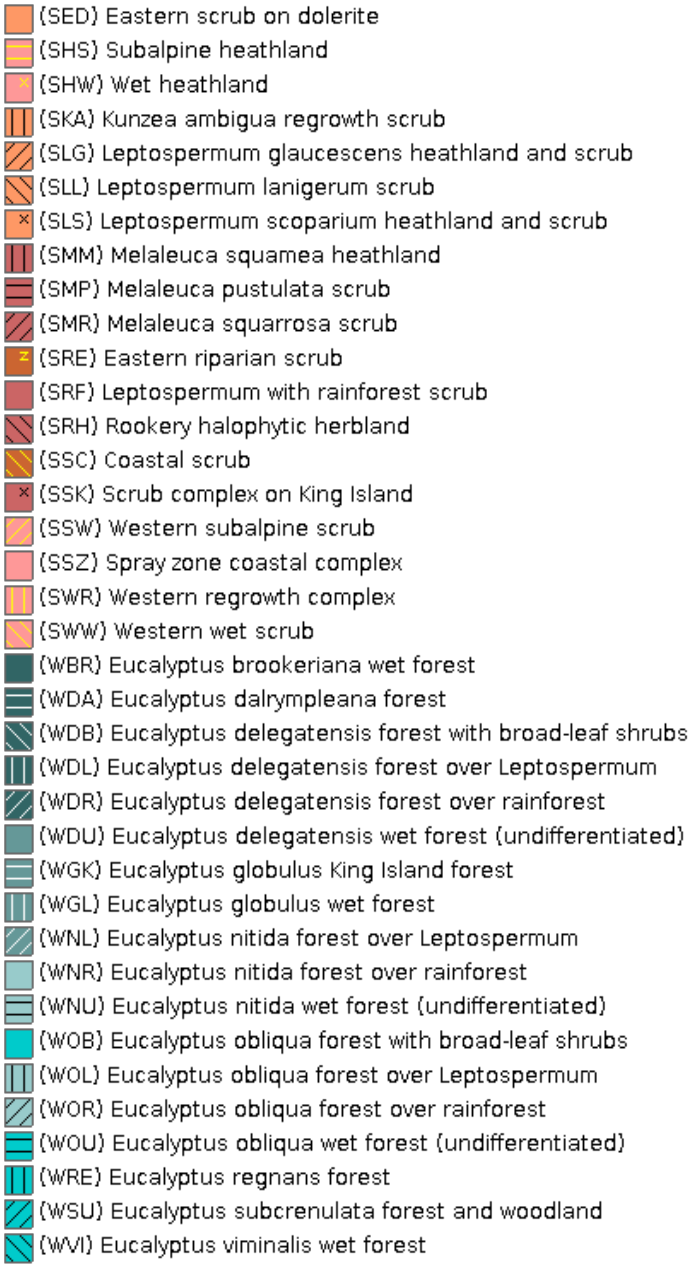
TASVEG 4.0 Communities within 1000 metres

Legend: TASVEG 4.0

TASVEG 4.0 Communities within 1000 metres



TASVEG 4.0 Communities within 1000 metres



Legend: Cadastral Parcels

TASVEG 4.0 Communities within 1000 metres

Code	Community	Canopy Tree
DAD	(DAD) Eucalyptus amygdalina forest and woodland on dolerite	
DVG	(DVG) Eucalyptus viminalis grassy forest and woodland	
FAG	(FAG) Agricultural land	EV
FAG	(FAG) Agricultural land	
FPE	(FPE) Permanent easements	
FRG	(FRG) Regenerating cleared land	EV
FUM	(FUM) Extra-urban miscellaneous	EV
FUM	(FUM) Extra-urban miscellaneous	
FUR	(FUR) Urban areas	
FWU	(FWU) Weed infestation	
GTL	(GTL) Lowland Themeda triandra grassland	
NAV	(NAV) Allocasuarina verticillata forest	
NBA	(NBA) Bursaria - Acacia woodland	

For more information contact: Coordinator, Tasmanian Vegetation Monitoring and Mapping Program.
Telephone: (03) 6165 4320
Email: TVMMPSupport@nre.tas.gov.au
Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

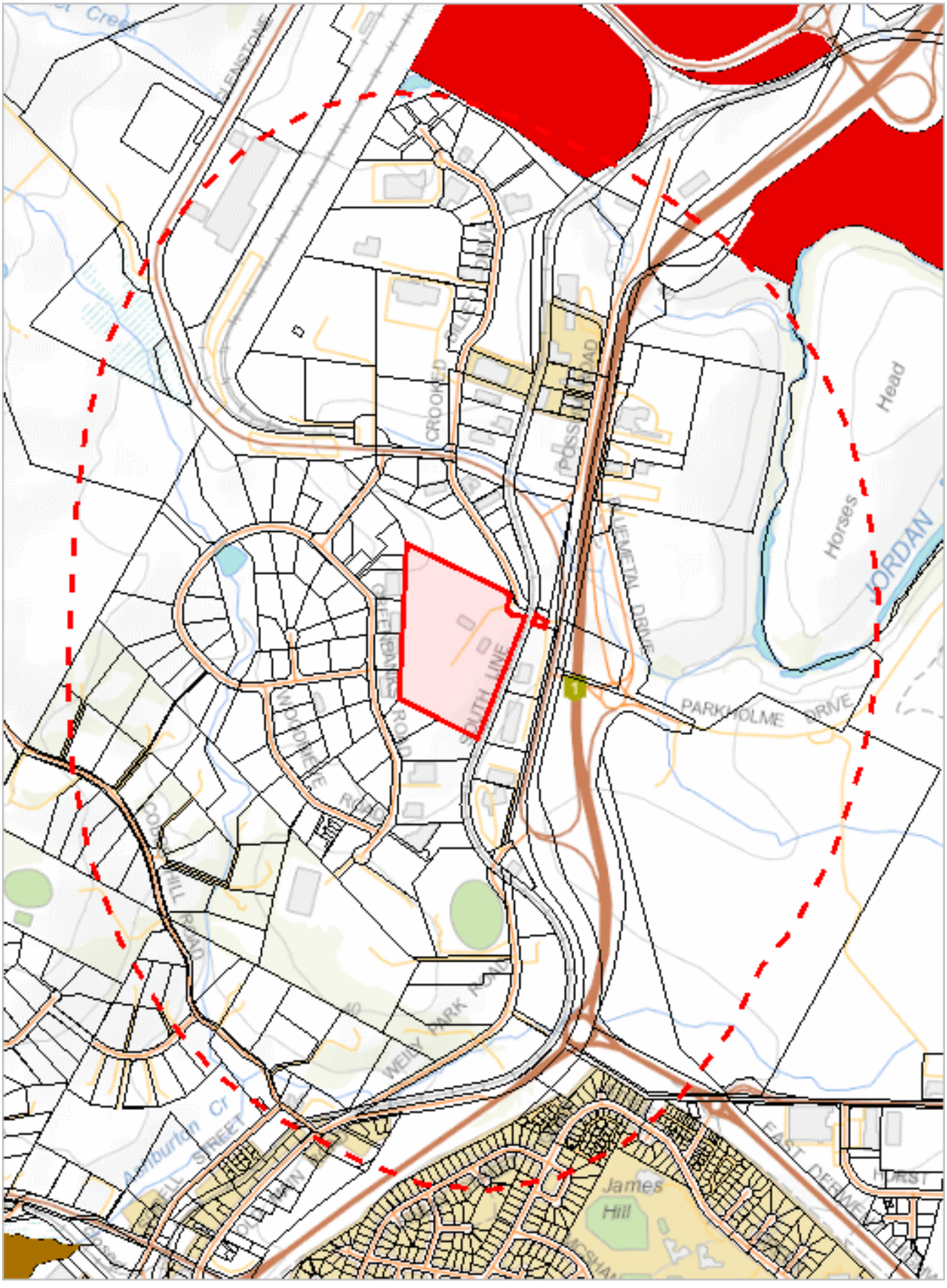
*** No threatened Communities (TNVC 2020) found within 1000 metres ***

*** No Fire History (All) found within 1000 metres ***

*** No Fire History (Last Burnt) found within 1000 metres ***

Reserves within 1000 metres

520225, 5271097



518123, 5268261

Please note that some layers may not display at all requested map scales

Reserves within 1000 metres

Legend: Tasmanian Reserve Estate

- Conservation Area
- Conservation Area and Conservation Covenant (NCA)
- Game Reserve
- Historic Site
- Indigenous Protected Area
- National Park
- Nature Reserve
- Nature Recreation Area
- Regional Reserve
- State Reserve
- Wellington Park
- Public authority land within WHA
- Future Potential Production Forest
- Informal Reserve on Permanent Timber Production Zone Land or STT managed land
- Informal Reserve on other public land
- Roadside Conservation Site
- Conservation Covenant (NCA)
- Private Nature Reserve and Conservation Covenant (NCA)
- Private Sanctuary and Conservation Covenant (NCA)
- Private Sanctuary
- Private land within WHA
- Management Agreement
- Stewardship Agreement
- Part 5 Agreement (Meander Dam Offset)
- Other Private Reserve

Legend: Cadastral Parcels

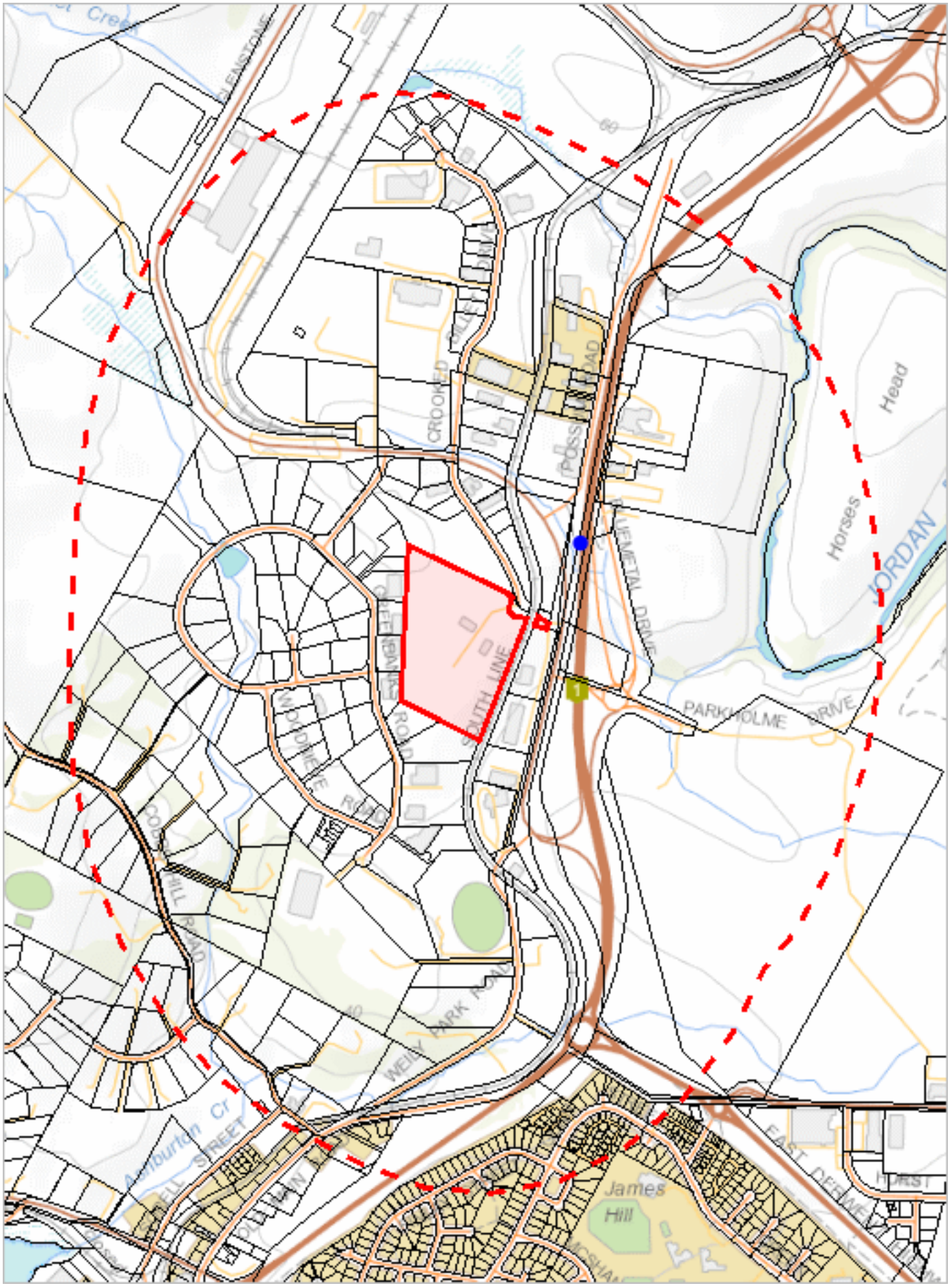
Reserves within 1000 metres

Name	Classification	Status	Area (HA)
	Roadside Conservation Site	Informal Reserve	14.65554972
	Roadside Conservation Site	Informal Reserve	22.87239125

For more information about the Tasmanian Reserve Estate, please contact the Natural Values Science Services Branch.
Email: LandManagement.Enquiries@nre.tas.gov.au
Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

Known biosecurity risks within 1000 meters

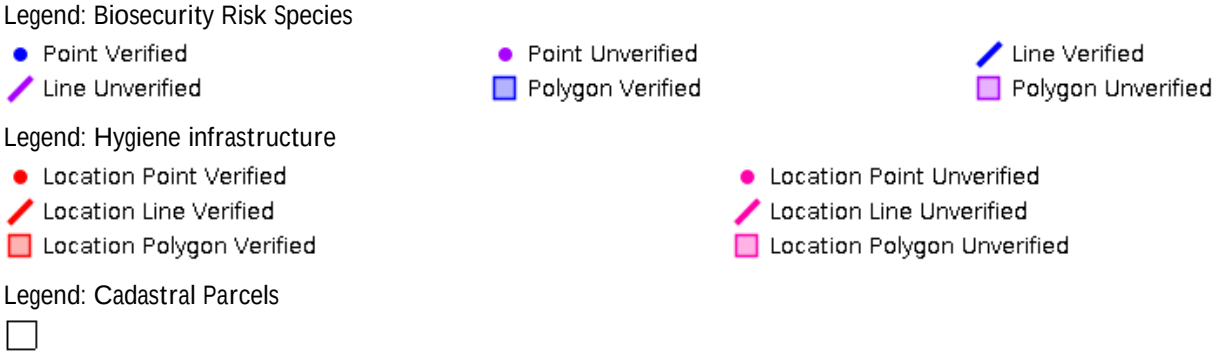
520225, 5271097



518123, 5268261

Please note that some layers may not display at all requested map scales

Known biosecurity risks within 1000 meters



Known biosecurity risks within 1000 meters

Verified Species of biosecurity risk

Species Name	Common Name	Prescription	Observation Count	Last Recorded
Rattus rattus	black rat		1	23-Oct-1991

Unverified Species of biosecurity risk

No unverified species of biosecurity risk found within 1000 metres

Generic Biosecurity Guidelines

The level and type of hygiene protocols required will vary depending on the tenure, activity and land use of the area. In all cases adhere to the land manager's biosecurity (hygiene) protocols. As a minimum always Check / Clean / Dry (Disinfect) clothing and equipment before trips and between sites within a trip as needed https://www.nre.tas.gov.au/invasive-species/weeds/weed-hygiene/keeping-it-clean-a-tasmanian-field-hygiene-manual

On Reserved land, the more remote, infrequently visited and undisturbed areas require tighter biosecurity measures.

In addition, where susceptible species and communities are known to occur, tighter biosecurity measures are required.

Apply controls relevant to the area / activity:

- Don't access sites infested with pathogen or weed species unless absolutely necessary. If it is necessary to visit, adopt high level hygiene protocols.
- Consider not accessing non-infested sites containing known susceptible species / communities. If it is necessary to visit, adopt high level hygiene protocols.
- Don't undertake activities that might spread pest / pathogen / weed species such as deliberately moving soil or water between areas.
- Modify / restrict activities to reduce the chance of spreading pest / pathogen / weed species e.g. avoid periods when weeds are seeding, avoid clothing/equipment that excessively collects soil and plant material e.g. Velcro, excessive tread on boots.
- Plan routes to visit clean (uninfested) sites prior to dirty (infested) sites. Do not travel through infested areas when moving between sites.
- Minimise the movement of soil, water, plant material and hitchhiking wildlife between areas by using the Check / Clean / Dry (Disinfect when drying is not possible) procedure for all clothing, footwear, equipment, hand tools and vehicles https://www.nre.tas.gov.au/invasive-species/weeds/weed-hygiene
- Neoprene and netting can take 48 hours to dry, use non-porous gear wherever possible.
- Use walking track boot wash stations where available.
- Keep a hygiene kit in the vehicle that includes a scrubbing brush, boot pick, and disinfectant https://www.nre.tas.gov.au/invasive-species/weeds/weed-hygiene/keeping-it-clean-a-tasmanian-field-hygiene-manual
- Dispose of all freshwater away from natural water bodies e.g. do not empty water into streams or ponds.
- Dispose of used disinfectant ideally in town though a treatment or septic system. Always keep disinfectant well away from natural water systems.
- Securely contain any high risk pest / pathogen / weed species that must be collected and moved e.g. biological samples.

Hygiene Infrastructure

No known hygiene infrastructure found within 1000 metres

Appendix 4 EPBC Act Protected Matters Report

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 06-Sep-2024

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	54
Listed Migratory Species:	29

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	36
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	1
Regional Forest Agreements:	1
Nationally Important Wetlands:	1
EPBC Act Referrals:	7
Key Ecological Features (Marine):	None
Biologically Important Areas:	5
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Lowland Native Grasslands of Tasmania	Critically Endangered	Community likely to occur within area	In feature area
Tasmanian Forests and Woodlands dominated by black gum or Brookers gum (Eucalyptus ovata / E. brookeriana)	Critically Endangered	Community likely to occur within area	In feature area
Tasmanian white gum (Eucalyptus viminalis) wet forest	Critically Endangered	Community may occur within area	In feature area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Aquila audax fleayi Tasmanian Wedge-tailed Eagle, Wedge-tailed Eagle (Tasmanian) [64435]	Endangered	Species or species habitat likely to occur within area	In feature area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Ceyx azureus diemenensis Tasmanian Azure Kingfisher [25977]	Endangered	Species or species habitat may occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Breeding known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pardalotus quadragintus Forty-spotted Pardalote [418]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche bulleri platei			
Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche cauta			
Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche chrysostoma			
Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area	In buffer area only
Thalassarche impavida			
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche melanophris			
Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche salvini			
Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi			
White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Tringa nebularia			
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In feature area
Tyto novaehollandiae castanops (Tasmanian population)			
Masked Owl (Tasmanian) [67051]	Vulnerable	Breeding known to occur within area	In feature area
FISH			
Prototroctes maraena			
Australian Grayling [26179]	Vulnerable	Species or species habitat known to occur within area	In feature area
FROG			

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Litoria raniformis](#)			
Southern Bell Frog,, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat likely to occur within area	In feature area
INSECT			
[Antipodia chaostola leucophaea](#)			
Tasmanian Chaostola Skipper, Heath-sand Skipper [77672]	Endangered	Species or species habitat may occur within area	In buffer area only
MAMMAL			
[Dasyurus maculatus maculatus (Tasmanian population)](#)			
Spotted-tail Quoll, Spot-tailed Quoll, Tiger Quoll (Tasmanian population) [75183]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Dasyurus viverrinus](#)			
Eastern Quoll, Luaner [333]	Endangered	Species or species habitat likely to occur within area	In feature area
[Perameles gunnii gunnii](#)			
Eastern Barred Bandicoot (Tasmania) [66651]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Sarcophilus harrisii](#)			
Tasmanian Devil [299]	Endangered	Species or species habitat likely to occur within area	In feature area
PLANT			
[Barbarea australis](#)			
Native Wintercress, Riverbed Wintercress [12540]	Endangered	Species or species habitat likely to occur within area	In feature area
[Caladenia caudata](#)			
Tailed Spider-orchid [17067]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Colobanthus curtisiae](#)			
Curtis' Colobanth [23961]	Vulnerable	Species or species habitat may occur within area	In feature area
[Dianella amoena](#)			
Matted Flax-lily [64886]	Endangered	Species or species habitat known to occur within area	In feature area
[Epacris virgata](#)			
Pretty Heath, Dan Hill Heath [20375]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Glycine latrobeana			
Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat known to occur within area	In feature area
Hibbertia basaltica			
Basalt Guinea-flower [81675]	Endangered	Species or species habitat known to occur within area	In feature area
Lepidium hyssopifolium			
Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed [16542]	Endangered	Species or species habitat likely to occur within area	In feature area
Leucochrysum albicans subsp. tricolor			
Hoary Sunray, Grassland Paper-daisy [89104]	Endangered	Species or species habitat may occur within area	In feature area
Prasophyllum apoxychilum			
Tapered Leek-orchid [64947]	Endangered	Species or species habitat may occur within area	In buffer area only
Pterostylis commutata			
Midland Greenhood [64535]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
Pterostylis ziegeleri			
Grassland Greenhood, Cape Portland Greenhood [64971]	Vulnerable	Species or species habitat known to occur within area	In feature area
Xerochrysum palustre			
Swamp Everlasting, Swamp Paper Daisy [76215]	Vulnerable	Species or species habitat likely to occur within area	In feature area
SNAIL			
Ammoniropa vigens			
Ammonite Pinwheel Snail [90200]	Critically Endangered	Species or species habitat likely to occur within area	In feature area

Listed Migratory Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche impavida			
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche melanophris			
Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche salvini			
Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi			
White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Migratory Marine Species			
Lamna nasus			
Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area	In buffer area only
Migratory Terrestrial Species			
Hirundapus caudacutus			
White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Myiagra cyanoleuca			
Satin Flycatcher [612]		Species or species habitat known to occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat likely to occur within area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
[Calidris ruficollis](#) Red-necked Stint [860]		Species or species habitat likely to occur within area	In buffer area only
[Charadrius bicinctus](#) Double-banded Plover [895]		Species or species habitat likely to occur within area	In buffer area only
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Limosa lapponica](#) Bar-tailed Godwit [844]		Species or species habitat may occur within area	In feature area
[Numenius madagascariensis](#) Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
[Pluvialis fulva](#) Pacific Golden Plover [25545]		Species or species habitat likely to occur within area	In buffer area only
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Unknown		
Commonwealth Land - [60238]	TAS	In buffer area only

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris ruficollis Red-necked Stint [860]		Species or species habitat likely to occur within area overfly marine area	In buffer area only
Charadrius bicinctus Double-banded Plover [895]		Species or species habitat likely to occur within area overfly marine area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea antipodensis gibsoni as Diomedea gibsoni			
Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea epomophora			
Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea exulans			
Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi			
Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Gallinago hardwickii			
Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
Haliaeetus leucogaster			
White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus			
White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
Lathamus discolor			
Swift Parrot [744]	Critically Endangered	Breeding known to occur within area overfly marine area	In feature area
Limosa lapponica			
Bar-tailed Godwit [844]		Species or species habitat may occur within area	In feature area
Macronectes giganteus			
Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area	In feature area
Pluvialis fulva Pacific Golden Plover [25545]		Species or species habitat likely to occur within area	In buffer area only
Sterna striata White-fronted Tern [799]		Migration route may occur within area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche bulleri platei as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
River Derwent	Marine Conservation Area	TAS	In buffer area only

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name	State	Buffer Status
Tasmania RFA	Tasmania	In feature area

Nationally Important Wetlands [Resource Information]

Wetland Name	State	Buffer Status

Wetland Name	State	Buffer Status
River Derwent	TAS	In buffer area only

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Brighton Bypass, Northern Project	2009/4762	Controlled Action	Post-Approval	In buffer area only
Brighton Bypass Southern Project - Upgrade of the Midland Highway	2009/4757	Controlled Action	Post-Approval	In feature area
Tasmania Natural Gas Project - Stage 3	2001/212	Controlled Action	Post-Approval	In feature area
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
Brighton Transport Hub, road and rail line construction	2008/4537	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
South East Irrigation Scheme	2013/6843	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Referral decision				
New Bridgewater Bridge	2021/9114	Referral Decision	Referral Publication	In buffer area only

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence	Buffer Status
Seabirds			
Ardenna grisea Sooty Shearwater [82651]	Foraging	Known to occur	In buffer area only
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Known to occur	In buffer area only
Pelecanoides urinatrix Common Diving-petrel [1018]	Foraging	Known to occur	In buffer area only
Pterodroma mollis Soft-plumaged Petrel [1036]	Foraging	Known to occur	In buffer area only

Scientific Name	Behaviour	Presence	Buffer Status
Thalassarche cauta cauta			
Shy Albatross [82345]	Foraging likely	Likely to occur	In buffer area only

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

Department of Climate Change, Energy, the Environment and Water
GPO Box 3090
Canberra ACT 2601 Australia
+61 2 6274 1111

Appendix 6 Weed management plan

WEED MANAGEMENT PLAN

Hazell Bros Civil Contracting Pty Ltd

New Asphalt Batch Plant, Bridgewater

JUNE 2025

pinion
ADVISORY

ABN 87 648 234 975

1300 746 466
hello@pinionadvisory.com
pinionadvisory.com

Author
Cameron Everard

Document status
Version 1.3

Date	Status/issue	Reason for revision	Reviewed by	Authorised by
23/10/2024	Version 1.0	Internal review	WB	CE
24/10/2024	Version 1.1	Client review	IS	IS, CE
03/04/2025	Version 1.2	Plan updates	CE	CE
19/06/2025	Version 1.3	Plan updates	SJ	CE

Cover image: Current property boundary including 1 Crooked Billet Drive (blue line) and 13 Crooked Billet Drive, Bridgewater (red line).

Contents

TABLES INDEX

FIGURES INDEX

APPENDICES

1. Introduction

Hazell Bros Civil Contracting Pty Ltd (Hazell Bros, the proponent) is proposing to construct and operate a new asphalt plant and reclaimed asphalt pavement (RAP) processing facility, located at 1 and 13 Crooked Billet Drive, Bridgewater, Tasmania (Figure 1). It is proposed that 50,000 tonnes per annum (tpa) of asphalt will be produced and approximately 5,000tpa of RAP will be received and processed onsite. The project is located in an area zoned as general industrial under the Tasmanian Planning Scheme.

A natural values assessment was undertaken for the project by Pinion Advisory (2025). Field surveys were conducted by Pinion Advisory on 13 August 2024, 7 November 2024, and 12 February 2025 and targeted the project site and immediate surrounds. Weed species were identified and mapped within the project site as part of this process.

This weed management plan (WMP) has been prepared for the project to control and prevent the establishment and spread of weeds and disease from the site. The WMP has been developed in accordance with the Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania (DPIPWE, 2015).

The specific objectives of the WMP are to:

- Identify and map weed species present at the site
- Identify statutory requirements
- Provide control methods, timing and prioritisation
- Establish vehicle and machinery hygiene protocols
- Monitoring and maintenance requirements.

Acronyms used in this weed management plan are as follows.

Abbreviation	Definition
DPIPWE (NRE)	Department of Primary Industries, Parks, Water and Environment (Tas), now Department of Natural Resources and the Environment Tasmania
WONs	Weeds of National Environmental Significance
NVA	Natural values assessment
WMP	Weed Management Plan

Figure 1. Regional location of the proposed asphalt plant

2. Site assessment

2.1 FIELD SURVEY

Surveys conducted by Pinion Advisory (2025) identified several declared weed species at the property, both within and adjacent to the proposed project footprint. Weeds were likely to have been brought to site over many decades of use, prior to ownership by the proponent.

Specifically, the northern and western areas were observed to contain several weed species, including declared weed species likely introduced to the site from historic land use or landscaping. Signs of recent works in this area include establishment of drains, leveling ground for a parking area, and introduction of topsoil for ground cover or vegetative buffers.

2.2 DECLARED WEEDS

Declared weed species (as defined under the *Biosecurity Act 2019*, formerly the *Weed Management Act 1999*) identified within the property boundary:

- African boxthorn (*Lycium ferocissimum*) is a declared weed in Tasmania and was identified at multiple sites on the property. This species is a Weed of National Significance (WONS)
- Boneseed (*Chrysanthemoides monilifera ssp. Monilifera*) was observed south of the project footprint. This species is a declared weed in Tasmania, and a WONS
- Blackberry (*Rubus fruticosus agg.*) is widespread, including much of the western property boundary fence. Blackberry is a declared weed in Tasmania and a WONS
- Fennel (*Foeniculum vulgar*) is a declared weed in Tasmania and was identified near the project footprint
- Hairy fiddle-neck (*Amsinckia calycina*) is a declared weed in Tasmania and was identified within the project footprint
- One willow tree (*Salix sp*.) is present south of the project footprint. Willows are declared weeds in Tasmania and a WONS.
- White horehound (*Marrubium vulgare*) was observed at several points. This species is a declared weed in Tasmania.

Declared weed species recorded inside the property boundary and project footprint are presented in Figure 2 and listed in Table 1. Non-declared weeds were not included in the weed mapping, as presence of pasture weeds throughout the degraded agricultural land and fence lines across the site was near ubiquitous.

Non-declared weeds (e.g. sweet briar, dock, cat's ear, onion grass and common sow-thistle) are not listed under the *Biosecurity Act 2019* but can still have the potential to negatively impact environmental and agricultural values. Where appropriate these weeds should be managed as a part of the overall weed strategy.

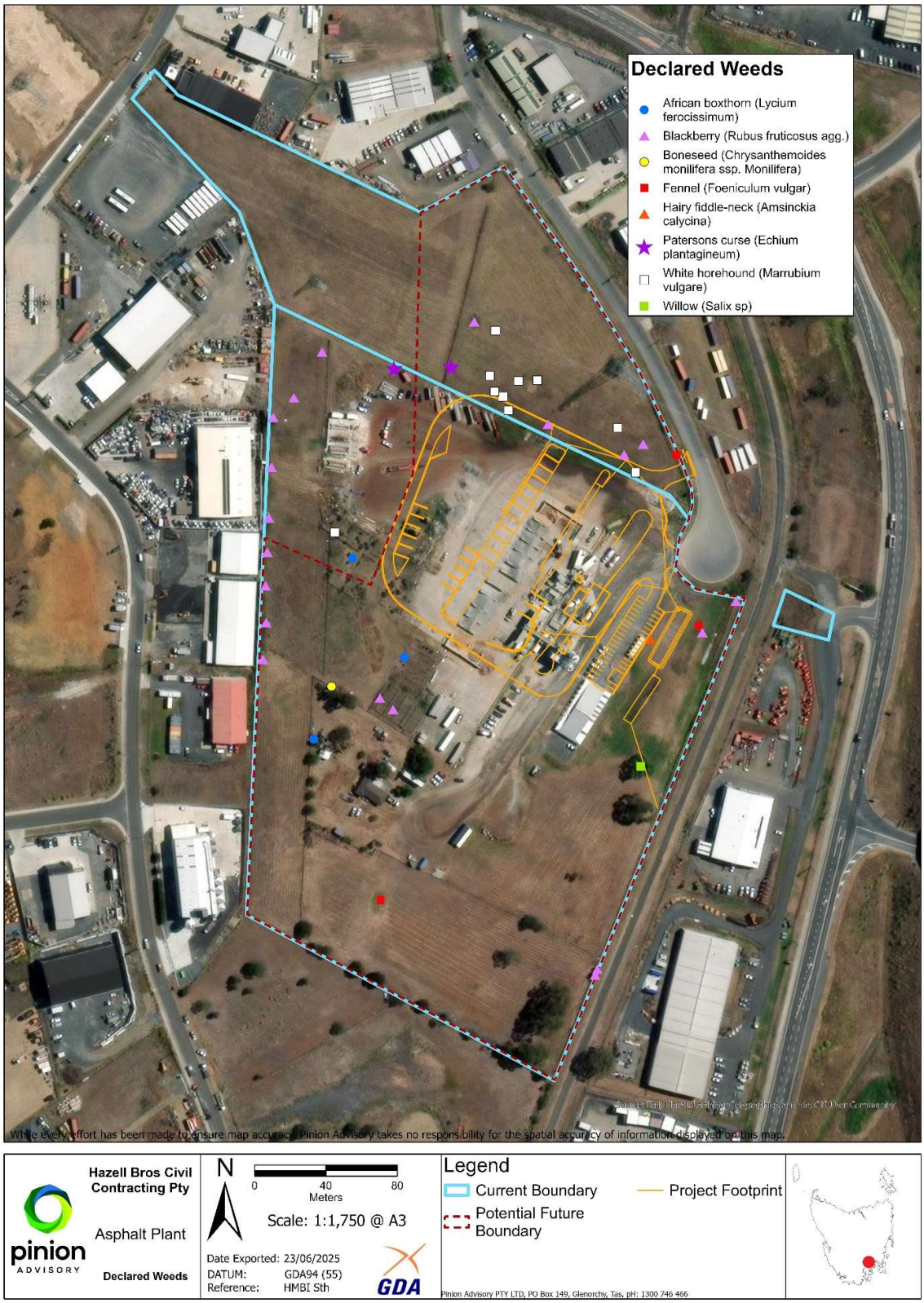


Figure 2. Declared weeds identified within the property boundary and project footprint

2.3 STATUTORY REQUIREMENTS

Declared weeds identified at the project site will be managed in accordance with the *Biosecurity Act 2019*. All declared weeds in Tasmania are subject to statutory weed management plans (now referred to as Government biosecurity programs under the *Biosecurity Act 2019*). Weeds are designated into one of two management zones (Zones A and B) across each of the Tasmanian municipal areas.

Six declared weeds recorded on the site are classified as Zone B weeds within the Brighton municipality.

1. African boxthorn
2. Blackberry
3. Fennel
4. Hairy fiddle-neck
5. Willow
6. White horehound.

Containment of declared weeds is the key management objective under each Government biosecurity program. Whilst these weeds have been identified as problematic, they are generally unable to be eradicated due to the lack of resources.

Within the Brighton municipality, Boneseed is categorised as a Zone A weed and as a result, the objective is to eradicate the weed species to maintain total absence in the municipality.

Government biosecurity programs for declared weeds recorded at the site include:

- African boxthorn: https://nre.tas.gov.au/Documents/African-BoxthornWeed-Management-Plan.pdf
- Boneseed: https://nre.tas.gov.au/Documents/Boneseed_WMP_2011.pdf
- Blackberry: https://nre.tas.gov.au/Documents/Blackberry_WMP_2011.pdf
- Fennel: https://nre.tas.gov.au/Documents/Fennel_WMP_2011.pdf
- Hairy fiddle-neck: https://nre.tas.gov.au/Documents/Amsinckia-Weed-Management-Plan.pdf
- Willow: https://nre.tas.gov.au/Documents/willow_WMP_2011.pdf
- White horehound: https://nre.tas.gov.au/Documents/Horehound_WMP_2011.pdf

Table 1. Summary of declared weeds recorded within the property boundary and project footprint

Common name (scientific name)	Status (Declared/WONS*)	Statutory weed management plan zone	Infestation details/ status	Key mode of spread	Control actions
African boxthorn (*Lycium ferocissimum*)	Declared, WONS	Zone B – containment, widespread infestations	Isolated plants located in the degraded agricultural areas to the west and south of project footprint	Birds, machinery and root fragments	Spot spray plants with herbicide and monitor
Boneseed (*Chrysanthemoides monilifera ssp. Monilifera*)	Declared, WONS	Zone A – eradication, localised infestations	Isolated plant located in the degraded agricultural areas to the south west of project footprint	Birds, animals, water and machinery	**High priority** Spot spray with herbicide as soon as possible and monitor
Blackberry (*Rubus fruticosus agg.*)	Declared, WONS	Zone B - containment	Multiple plants recorded along the property boundary and west, southwest and north of the project footprint	Birds, and water, can also sucker. Has the potential to cover large areas if not managed, likely to spread slowly	**High priority** Spot spray plants with herbicide as soon as possible and monitor
Fennel (*Foeniculum vulgar*)	Declared	Zone B – containment, widespread infestations	Isolated plants located north, east and south of the project footprint	Seeds near parent plant, machinery, birds, water and root fragments	If recorded within the property boundary and/or project footprint, spot spray plants with herbicide, monitor and repeat if required
Hairy fiddle-neck / yellow burrweed (*Amsinckia calycina*)	Declared	Zone B - containment	Isolated plants located in the eastern area of the project footprint	Machinery, equipment animals and birds	If recorded within the property boundary and/or project footprint, spot spray plants with herbicide, monitor and repeat if required
Willow (*Salix* species)	Declared, WONS	Zone B – containment, widespread infestations	Single tree located on the eastern boundary of the project footprint	Spreads by seeds and twigs/branches	For large trees (>2m in height), cut to ground level and treat with herbicide. Remove material from site. For small trees (<2m in height), foliar spray with herbicide and leave
White horehound (*Marrubium vulgare*)	Declared	Zone B - containment	Isolated plant located in the degraded agricultural area outside and east of the project footprint, near the eastern boundary of the property	Seed, water and animals	Spot spray plants with herbicide and monitor

*WONS: weed of national significance

2.4 PHYTOPHTHORA CINNAMOMI

Phytophthora cinnamomi (PC) is a soil borne pathogen (water mould) that causes death in a wide range of native plant species often leading to floristic and structural changes in susceptible plant communities (Rudman, 2005)

PC is spread to new areas by the movement of contaminated gravel, soil or plant material on vehicles, equipment, people or animals and is transported by water percolating through the soil or in creeks (DPIPWE, 2010).

The pathogen attacks the root systems of susceptible plant species, leading to the yellowing of leaves and death. PC can be present in resistant species without any visible signs of the disease.

As the proposed project is in a highly disturbed industrial area with no significant areas of native vegetation it is unlikely that PC is active in the area. Therefore, no specific management measures are proposed for PC other than standard hygiene measures for managing weeds at the site.

3. Management controls

3.1 WEED SPRAYING

The area around the plant will be monitored and reviewed each year by Hazell Bros to identify the presence/absence of weed species. If required, Hazell Bros will contract a suitably qualified weed spraying contractor to undertake a spraying program. This may occur at any time of the year and will be determined by the best time to treat the target species.

Maintenance spraying will occur as and when required to ensure declared weeds such as blackberry, willow and boneseed do not re-establish at the site.

The spraying and maintenance program will be the responsibility of the site manager. All spraying activities will be electronically recorded in Hazell Bros weed management register.

3.2 MACHINERY HYGIENE

To prevent the spread of weeds and disease, all vehicles, trucks and heavy machinery accessing the site should follow the management controls identified in this WDMP and the Weed and Disease Planning and Hygiene Guidelines (DPIPWE, 2015).

General management measures include:

1. Vehicles and trucks brought to the site must be in a clean condition with no dirt or vegetation caught in the wheels or underside.
2. All vehicles should be restricted to hardened roads and hardstand areas as much as possible.
3. All trucks will be loaded and unloaded on hardened areas.
4. Vehicles should not drive in areas of disturbed soil which may contain weed seed and should remain on hardened roads and areas whenever possible.
5. Vehicle access to the site should be restricted to essential vehicles and machinery only, to reduce the opportunity for transporting weeds to and from the site.

6. All site personnel and contractors that enter the site are to be informed (through the site induction process) of the vehicle hygiene protocols in place to reduce the spread of weed seeds.

Washdown protocols for vehicles and heavy machinery are provided in the Weed and Disease Planning and Hygiene Guidelines (DPIPWE, 2015) and Washdown Guidelines for Weed and Disease Control (DPIPWE, 2004) and include:

1. Locate an appropriate washdown area and if required construct bunding.
2. Safely park the vehicle free of any hazards e.g. electrical sources.
3. Check the vehicle, inside and out, for where dirt, plant material including seeds are lodged. Pay attention to the underside, radiators, spare tyres, foot wells and bumper bars.
4. Knock off (or brush off) large clods of mud, use a crow bar (or brush) if required and sweep out the cabin.
5. Clean down with a high pressure hose and stiff brush/crowbar. Use only freshwater, preferably from a treated source.
6. Start with the underside of the vehicle, wheel arches, wheels (including spare). Next do the sides, radiator, tray, bumper bars etc and finally upper body.
7. Clean any associated implements, e.g. buckets.
8. Check there is no loose soil or plant material that could be readily dislodged or removed.
9. Wash effluent away from vehicle. Do not drive through wash effluent.
10. Effluent should be captured to prevent runoff.

4 Monitoring and review

Areas where soil will be disturbed during the construction phase should be monitored for weeds post excavation, with machinery hygiene measures implemented to prevent the spread of weed species.

During operations, regular weed monitoring should be undertaken at the project site to identify existing weed infestations, and if any follow-up controls or treatments are required. This should coincide with the period of peak weed growth (i.e. late spring) allowing early identification of weed species before they reach the flowering stage. However, if not possible, then this could occur at any time of the year.

Routine monitoring and follow-up spraying programmes will ensure that weed species are significantly minimised at the site. Weed management strategies and monitoring programs will be regularly reviewed and updated on an as needs basis (i.e. if a significant weed outbreak is identified).

5 References

Department of Primary Industries, Parks, Water and Environment (DPIPWE) (2004). Tasmanian Washdown Guidelines for Weed and Disease Control - Machinery, Vehicles and Equipment Edition 1. Department of Primary Industries, Parks, Water and Environment, Hobart, Tasmania.

Department of Primary Industries, Parks, Water and Environment (DPIPWE) (2010). Keeping it clean - A Tasmanian field hygiene manual to prevent the spread of freshwater pests and pathogens. (Eds.) Kaylene Allan, Simon Gartenstein. Published by NRM South. Department of Primary Industries, Parks, Water and Environment, Hobart, Tasmania.

Department of Primary Industries, Parks, Water and Environment (DPIPWE) (2015). Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania. (Eds.) Karen Stewart and Michael Askey-Doran. Department of Primary Industries, Parks, Water and Environment, Hobart, Tasmania.

Pinion Advisory (2025). Natural values assessment. Hazell Bros Civil Contracting Pty Ltd. New Asphalt Batch Plant, Bridgewater, June 2025.

Rudman, T. (2005). Interim *Phytophthora cinnamomi* Management Guidelines. Nature Conservation Report 05/7, Biodiversity Conservation Branch, Department of Primary Industries, Water and Environment, Hobart

Appendix 1 Photographs of declared weeds

Declared weeds recorded at the site.

Photo 1. African boxthorn (*Lycium ferocissimum*)

Photo 2. Boneseed (*Chrysanthemoides monilifera ssp. Monilifera*)

Photo 3. Blackberry (*Rubus fruticosus agg.*)

Photo 4. Fennel (*Foeniculum vulgar*)

Photo 5. Hairy fiddle-neck (*Amsinckia calycina*)

Photo 6. Willow (*Salix* species)

Photo 7. White horehound (*Marrubium vulgare*)

pinion
ADVISORY

agribusiness, water & environment

1300 746 466
hello@pinionadvisory.com
pinionadvisory.com