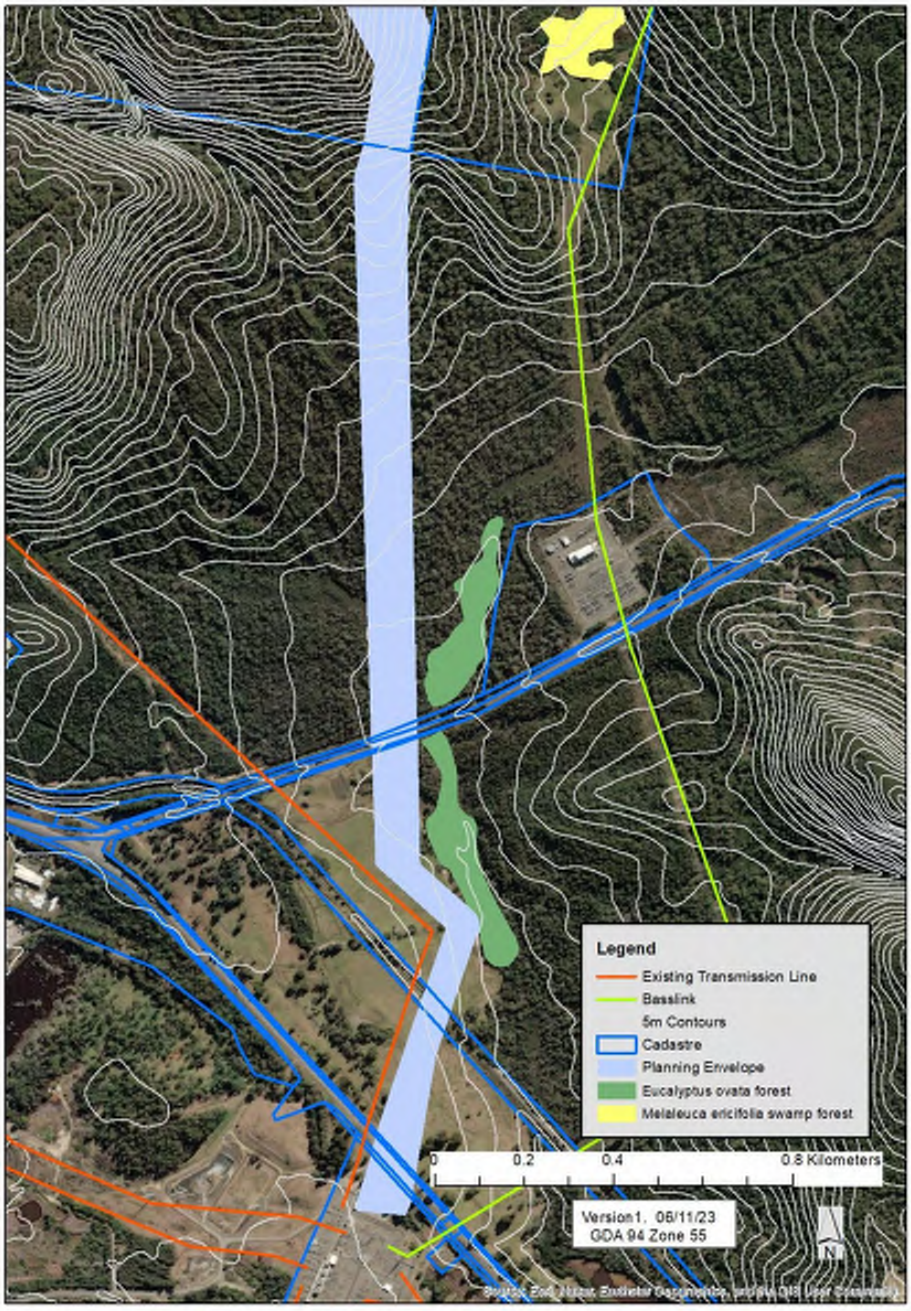
Figure 59. Location of Eucalyptus ovata forest and woodland



8 Summary of mitigation and management measures

A summary of all mitigation and management measures is provided below:

Planning

Reference	Mitigation Measure
P1	Cimitiere Creek and associated riparian vegetation will not form part of the panel array as shown in Figure 13.
P2	Waterway crossing on the project will be constructed in accordance with the *Wetlands and Waterways Works Manual* and the *Forest Practices Code 2020*. Where possible, construction will occur when flows are low (ie summer and autumn).
P3	If the cables cannot be trenched across Cimitiere Creek with acceptable impacts, the cables will be horizontally direct drilled under the creek or a short section of overhead line will be used (this is not the preferred option).
P4	An erosion and sediment control plan (ESCP) will be developed as part of the construction environmental management plan (CEMP) for the project. The measure implemented will be in accordance with Managing Urban Stormwater: Soils & Construction (Landcom 2004). Given the large area over which construction activities will be conducted, measures should focus on limiting disturbance to vegetation cover wherever possible and re-establishing vegetation cover progressively and as soon as possible.
P5	Roads will be constructed in accordance with the *Forest Practices Code 2020*.
P6	The ground base signs erected at the access points will meet the following Sign Standards as specified in Table C1.6 of the SPP. *Ground base signs must:* *(a) be limited to 1 ground base sign for each 20m of frontage or part thereof;* *(b) not be higher than 2.4m above the ground; and* *(c) have a supportive structure that does not project above the sign face, unless it forms a feature or is incorporated in the sign design.*
P7	The construction of any permanent parking areas will comply with the following requirements: *All parking, access ways, manoeuvring and circulation spaces must:* *(a) be constructed with a durable all weather pavement;* *(b) be drained to the public stormwater system, or contain stormwater on the site; and* *(c) excluding all uses in the Rural Zone, Agriculture Zone, Landscape Conservation Zone, Environmental Management Zone, Recreation Zone and Open Space Zone, be surfaced by a spray seal, asphalt, concrete, pavers or equivalent material to restrict abrasion from traffic and minimise entry of water to the pavement.*
P8	The design and layout of any permanent parking areas will comply with the following requirements: *Parking, access ways, manoeuvring and circulation spaces must either:* *(a) comply with the following:*

	(i) have a gradient in accordance with Australian Standard AS 2890 - Parking facilities, Parts 1-6; *(ii) provide for vehicles to enter and exit the site in a forward direction where providing for more than 4 parking spaces;* *(iii) have an access width not less than the requirements in Table C2.2;* *(iv) have car parking space dimensions which satisfy the requirements in Table C2.3;* *(v) have a combined access and manoeuvring width adjacent to parking spaces not less than the requirements in Table C2.3 where there are 3 or more car parking spaces;* *(vi) have a vertical clearance of not less than 2.1m above the parking surface level; and* *(vii) excluding a single dwelling, be delineated by line marking or other clear physical means; or* *(b) comply with Australian Standard AS 2890- Parking facilities, Parts 1-6.* *Parking spaces provided for use by persons with a disability must satisfy the following:* *(a) be located as close as practicable to the main entry point to the building;* *(b) be incorporated into the overall car park design; and* *(c) be designed and constructed in accordance with Australian/New Zealand Standard AS/NZS 2890.6:2009 Parking facilities, Off-street parking for people with disabilities.*

Aboriginal cultural heritage

Reference	Mitigation Measure
ACH1	The location of all Aboriginal heritage sites within the planning envelope and AH14260 are to be plotted on the design plans for the Cimitiere Plains Solar Farm Project.
ACH2	For site AH14118, prior to construction commencing, temporary high visibility protective barricading will be erected around the identified boundaries of the site with a 5m radial buffer applied. The barricading will remain in place for the duration of construction.
ACH3	For sites AH14120, AH14121, AH14122 and AH10399, prior to construction commencing, temporary high visibility protective barricading will be erected around the identified boundaries of the site with a 2m radial buffer applied. The barricading will remain in place for the duration of construction.
ACH4	Construction contractors will be informed of the location of all sites within the planning envelope and AH14260 and informed that these sites are not to be impacted.
ACH5	No soil disturbance works are to be carried out within the site boundaries, or within the barricaded zone of the site.
ACH6	Barricading will be removed on completion of construction works.
ACH7	If, during the course of the proposed works, previously undetected archaeological sites or objects are located, the processes outlined in the Unanticipated Discovery Plan should be followed (see Appendix C). A copy of the Unanticipated Discovery Plan will be kept on site during all ground disturbance and construction work. All construction personnel will be made aware of the Unanticipated Discovery Plan and their obligations under the *Aboriginal Heritage Act 1975* (the Act).

Historic heritage

Reference	Mitigation Measure
HH1	If, during the course of the proposed works, previously undetected heritage sites or objects are located, the processes outlined in the Unanticipated Discovery Plan should be followed (see Section 8 of Appendix E)

Biodiversity

Reference	Mitigation Measure
B1	The *Melaleuca ericifolia* swamp forest (NME) within the solar farm will not be impacted by the development. Fencing or signage will be installed so that inadvertent damage cannot occur.
B2	The *Eucalyptus ovata* forest (DOV) within the transmission line planning corridor will not be impacted by the development. Fencing or signage will be installed so that inadvertent damage cannot occur.
B3	The small area of *Gratiola pubescens* in the transmission line planning corridor will not be impacted by the development. An exclusion zone (fencing and signage) will be established around these plants.
B4	An eagle nest survey will be conducted prior to construction if determined necessary in consultation with NRE. If any new eagle nests are detected within 500 m or 1 km line of sight of the development proposal, an assessment of potential impacts of works on these nests will be undertaken.
B5	If works, including vehicle movements, are planned to take place within 500m of an eagle nest (or 1 km line of sight) during the breeding season (July to January inclusive), a nest activity assessment shall be carried out between mid-Oct and the end of December (see FPA Eagle Tech Note 1). Nest activity checks may only be performed by suitably qualified and experienced persons as approved by NRE Tasmania. No works will be permitted between 1st July and the nest activity assessment in October within 500m of the eagle nest (or 1 km line of sight). If the nest is found to be inactive in any given year by an eagle nest activity assessment, then works can take place within the eagle residency period. If nest activity is confirmed, no works are permitted within 1000 m if there is line of sight, or within 500 m if there is no line of sight during the breeding season. Alternatively, if works are proposed within the active nest eagle residency period, then a works program should be submitted for approval to the Conservation Assessments Section (Department of Natural Resources and Environment).
B6	The routine maintenance of easements and infrastructure that is within 500 m or 1000 m line of sight of known eagle nests (as per Natural Values Atlas records) will be undertaken outside the eagle residency period. Similarly, overhead line inspections using helicopters or drones will be conducted outside the eagle residency period (July to January inclusive). If drones are to be used to inspect poles/conductors within 3 km of an eagle nest, this work should only be performed in accordance with the FPA Eagle Tech Note 1 which includes guidelines for conducting unmanned aerial vehicle (UAV) work near eagle nests.
B7	Large habitat trees will be retained where practicable.
B8	If any dens are identified during construction, all work within 50 m will cease immediately. A qualified ecologist will be consulted in regard to management of the den before works resume.
B9	Weed and disease hygiene will be undertaken in accordance with the document *Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania* (DPIPWE, Stewart and Askey-Doran, 2015).
B10	Vegetation clearance for the transmission line will be restricted to the easement and required access tracks. Clearance and disturbance of vegetation will be minimised as much as possible.

B11	Sand, gravel or any other similar material will be from a source that is weed and disease free.
B12	Works within waterways will follow guidelines in the NRE Wetlands and Waterways Works Manual.

Visual

Reference	Mitigation Measure
V1	Vegetation screening will be planted along Soldier Settlement Rd as shown in Figure 45 to help screen views to the solar farm where the panels are in close proximity to the road. This will be a single line of trees planted at relatively close density to a height of 4m.
V2	A vegetation screen will also be planted at residence R1 as shown in Figure 46. This will be a single line of trees along the driveway that will eventually grow to a height of 6 m or more.
V3	Vegetation screens will be planted as soon as the season permits once construction has commenced. They will be watered and maintained until they are fully established. Trees that die will be replaced.
V4	If galvanised poles are used for the transmission line the galvanising will be treated to “dull” the reflectivity of the poles.
V5	Pole locations will be set back from the East Tamar Highway and Bridport Road as much as reasonably practicable.

Noise

Reference	Mitigation Measure
N1	All significant noise generating construction activities will be limited to the following construction hours. • Monday to Friday 7 am to 6 pm • Saturday 8 am to 6 pm • Sunday and Public Holidays 10 am to 6 pm
N2	Where low intensity construction activities are required to be undertaken outside standard construction hours, such as cabling (not trenching), minor assembly, use of hand tools etc, they will be managed such that they are not audible at any residential receivers.
N3	A construction noise management protocol will be developed to minimise noise emissions, manage out of hours (minor) works and to respond to potential concerns from the community.
N4	Plant will be operated in a conservative manner (no over-revving) and shutdown when not in use.
N5	Where practicable, the simultaneous use of noisy machinery will be minimised, particularly in the vicinity of R05.
N6	Broadband reverse alarms will be used in lieu of the traditional high frequency type reverse alarms.
N7	To minimise road traffic noise: • schedule heavy vehicle deliveries to avoid bunching of vehicles which may cause short term elevated noise levels; • where feasible use minibuses or similar to transport construction personnel to and from the site to avoid excessive noise from light vehicle movements.
N8	Construction traffic will not use the section of Musk Vale Road between the junction with Soldier Settlement Rd and access point MVR1. Any exception to this must be approved in writing by the site environmental officer.
N9	Training and education will be provided to construction workers so they are aware of the location of noise sensitive receivers and are cognisant of any noise generating activities.
N10	Signage will be placed at the three main entrances to the solar farm advising truck drivers of their requirement to minimise noise both on and off-site.

Traffic

Reference	Mitigation Measure
T1	Prior to construction, a pre-condition survey of North Street and Soldiers Settlement Road will be undertaken, in consultation with Council. During construction these roads will be monitored and maintained to ensure continued safe use by all road users, and any faults attributed to construction of the solar farm will be rectified. At the end of construction, a post- condition survey will be undertaken and the necessary works made to ensure these roads are left in a condition that is consistent with the condition at the start of construction.
T2	Construction traffic will not use the section of Musk Vale Rd from Soldiers Settlement Road to MVR1 unless required for OSOM vehicles or some other special purpose.
T3	Construction traffic will use the transport routes shown in Figure 52. Construction vehicles travelling through George Town will only use East Tamar Highway / Goulburn St / Low Head Rd and North Street. Construction traffic will not use Agnes St and Arnold Street unless required for OSOM vehicles or some other special purpose.
T4	The section of Musk Vale Road to the southeast of MVR1 will be upgraded with a combination of passing bays and road widening to 5.5 metres where necessary.
T5	A construction traffic management plan will be prepared prior to construction. It will include the following elements and commitments: • All loading and unloading of vehicles will occur within the site. No street or roads will be used for material storage at any time. • All vehicles will enter and exit the site in a forward direction. • Establishment of a Driver Code of Conduct including using only the designated transport routes. • Induction process for vehicle operators and regular toolbox meetings. • Neighbours of the solar farm be consulted and notified regarding the timing of major deliveries which may require additional traffic control and disrupt access. • A complaint resolution procedure.
T6	Shuttle buses that will be provided to reduce the need for private vehicle use.
T7	The North Street intersection with East Tamar Highway will be upgraded to better accommodate 19.0m semi-trailer vehicles.

Flood

Reference	Mitigation Measure
F1	All sensitive equipment such as the PCUs and substation equipment will be constructed so that they are above 1% AEP event flood height.
F2	Solar panels will be excluded from areas where the hydraulic hazard is level H4 (unsafe for people and vehicles) or greater.
F3	Where the security fence crosses the Cimitiere Creek, the fence shall be design to let water flow freely in the event of a flood.

Agriculture

Reference	Mitigation Measure
A1	The area of the solar farm will continue to be used for agriculture, predominantly sheep grazing.
A2	A single axis tracking system will be utilised. The single axis tracking system will not use arms between rows that are part of the tracking system and block access to the row.
A3	There will be progressive rehabilitation. As soon as construction has been fully completed in a section of the solar farm, that area will be rehabilitated so that sheep grazing can recommence.
A4	Declared weeds will be controlled for the life of the project.
A5	When the solar farm is decommissioned, all the infrastructure is removed and the land can be returned to the same state as prior to the construction of the solar farm.

Hazards and risks

Reference	Mitigation Measure
HM1	The HV transformer at the substation will have an oil containment system.
HM2	The quantity of diesel stored on site will be less than 100,000 L.
HM3	The storage of diesel on site will comply with *AS1940 The storage and handling of flammable and combustible liquids* and will not be stored with other flammable liquids.
HM4	Any hydrocarbons stored on site will be in bunded containers.
EH1	The solar farm and substation will be enclosed by a security fence.
EH2	All electrical equipment will be designed, constructed and implemented according to relevant international and Australian standards and best codes of practice.
BF1	A 10 metre asset protection zone (APZ) will be established around the perimeter of all PV arrays and the substation. Grass within the APZ will be kept at a height of less than 100 mm during the fire permit season. Leaf material and other debris will be removed.
BF2	Visual screens will be planted using species suitable for the environment that have low fire spotting characteristics (such as smooth bark or evergreen species) and are not high flammability species. Visual screens, where practicable, will be planted as a continuous windbreak with no breaks of sufficient size to allow winds to funnel through. Screen plantings will be placed on the outer side of the APZ (away from the asset). Routine maintenance will be conducted prior each fire season to reduce dead materials, dead plant growth and leaf litter from within the APZ.
BF3	During the fire permit season, pastures within the solar farm will be maintained with minimal fuel load (<150 mm grass height).
BF4	During construction while the fire permit season is in place, the following measures will be implemented to control the risk of fire ignitions: • Establish and implement a fire prevention and emergency response strategy for staff, contractors and machinery operators;

	• All plant, vehicles and earth moving machinery are cleaned of any accumulated flammable material (e.g. vegetation); • Where possible, ensure machinery is free from faults and mechanical defects; • Drive on tracks and park in cleared areas to prevent fires starting from hot exhausts; • Vehicles will have access to a mobile phone or UHF radio; • A suitable firefighting appliance is present on site with at least two personnel trained in bushfire fighting; • All heavy and light vehicles working on site will have a fire extinguisher; • Stationary machinery or engines will have a 3m cleared area or have someone remain with the equipment while running; • Monitor fire information and advice through TasALERT (www.alert.tas.gov.au) • Monitor weather information and warnings from the Bureau of Meteorology. • A hot works permitting system is in place; and • All operations involving earth moving equipment, vehicles, slashers and hot works (e.g. grinders, welders) cease while the Grassland Fire Danger Index is or forecast to be 35 or greater

BF5	Prior to operation, a bushfire management plan will be prepared that addresses the mitigation measures listed in this section (6.10.5.3). It should also include: • storage of any flammable materials, • training for onsite personnel, • responses to an emergency alert being issued by fire authorities, and • incident management and control arrangements.
BF6	To minimise the risk of grass fire ignitions, all operations on the Site involving vehicles and slashers or other works that could start a fire will cease while the GFDI is or forecast to be 35 or greater.
BF7	An Emergency Response Plan (ERP) will be prepared for the solar farm that provides the following: • Addresses foreseeable on-site and off-site fire events; • Clearly states work health safety risks and procedures to be followed by fire-fighters, including: o personal protective clothing; o minimum level of respiratory protection; o minimum evacuation zone distances; o a safe method of shutting down and isolating the PV system (or noting if this is not possible for safe internal access); o any other risk control measures required to be followed by fire-fighters; • Evacuation triggers and protocols; and • Suppression response strategies and tactics, including aerial suppression options/management.
BF8	Two 20,000 litre tanks will be installed for firefighting purposes.
ASS1	When cable locations are known, soil samples will be taken at the depth of the cable trench over the area mapped in Figure 57 by a suitably qualified soils professional prior to construction. If sulfides are found at a level that may cause environmental harm, an ASS management plan will be developed in accordance with the Tasmanian Acid Sulfate Soil Management Guidelines (DPIPWE 2009) prior to the commencement of trenching

Socio-economic

Reference	Mitigation Measure
SE1	Employment will be sourced from the local area where appropriate skills and expertise exist.
SE2	The local community will be provided with information regarding the timing of the project, the opportunities for employment and the need for services from local businesses.

Waste

Reference	Mitigation Measure
W1	Prior to construction commencing, a waste management plan (WMP) for construction will be developed. Those developing the plan will consult with the George Town Council and commercial waste management companies to explore options for waste reuse and recycling. The WMP will include: • Measures to manage, reuse, recycle and safely dispose of waste generated by the project • Procedures for storage, transport and disposal of waste • Monitoring, record keeping and tracking including demonstration of lawful disposal of contaminated products, wastes or residues generated by the project.
W2	Waste management plans, procedures and mitigation measures will be communicated to all employees and contractors during site induction, prior to commencing works at the Site.
W3	Waste PV panels will be recycled.
W4	Waste metal from mounting frames, perimeter fence, cables and other equipment such as PCUs will be recycled wherever possible

9 References

Allianz Risk Consulting 2012. *Understanding the Fire Hazards of Photovoltaic Systems.* Allianz Global Corporate & Specialty.

Andrew, A. (2020). Lamb growth and pasture production in agrivoltaic production system. Honours Thesis. Oregon State University, Oregon.

Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), 2019a, *Extremely low frequency electric and magnetic fields,* accessed online, viewed 5/10/2019, https://www.arpansa.gov.au/understanding-radiation/what-is-radiation/non-ionising-radiation/low-frequency-electric-magnetic-fields

Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), 2019b, *Electricity and Health,* accessed online, viewed 5/10/2019, < https://www.arpansa.gov.au/understanding-radiation/radiation-sources/more-radiation-sources/electricity>

Backstrom R. and Dinni D.A. 2011. *Firefighter Safety and Photovoltaic Installations Research Project*. Underwriters Laboratories Inc., Northbrook, USA.

Cheney N.P., Sullivan, A.L. 2008. *Grassfires: Fuel weather and fire behaviour.* CSIRO Publishing 2nd Edition, Collingwood, Vic.

Department of Primary Industries, Parks, Water and Environment (2009). Tasmanian Acid Sulfate Soil Management Guidelines. Accessed online, viewed 01/10/23, https://nre.tas.gov.au/Documents/ASS-Guidelines-FINAL.pdf

Evan Riley and Scott Olson, "*A Study of the Hazardous Glare Potential to Aviators from Utility-Scale Flat-Plate Photovoltaic Systems*," ISRN Renewable Energy, vol. 2011, Article ID 651857, 6 pages, 2011.

Federal Aviation Administration (FAA) 2018. *Technical Guidance for Evaluating Selected Solar Technologies on Airports*. Federal Aviation Administration (FAA) website, date: 04/2018, accessed on: 08/12/2021.

Lazard (2023). *Lazard's Levelized Cost of Energy Analysis—Version 16.0*. Accessed online, viewed 11/06/23, https://www.lazard.com/research-insights/2023-levelized-cost-of-energyplus/

Appendix A
Newsletter

Cimitiere Plains Solar Farm

Newsletter Edition 1 | February 2023

Cimitiere Plains Solar Farm

ib vogt

At a glance

Project capacity
288 megawatts (MWs) – enough to power 100,000 homes

Site size
Approximately 420 hectares

Site location
About 5 kilometres north-east of George Town, either side of Soldier Settlement Road

Number of panels
Approximately 613,000

Connection
George Town substation

Employment
· 300 people at the peak of construction
· About 10 permanent jobs once operational

Construction duration
12-18 months

Local Government Authority
George Town Council

Project status
Proposed, studies underway

Assessment timeline
- **March 2023:** Community Open Days
- **May 2023:** Submit Development Application to the George Town Council
- **November 2023:** Development Approval decision
- **End 2025:** If approved, commence construction of solar farm

Project overview

Hello and welcome to the first newsletter of the Cimitiere Plains Solar Farm, proposed for five kilometres north-east of George Town.

If approved, the 288-MW solar farm will be on predominantly cleared agricultural land either side of Soldier Settlement Road.

We are ib vogt, experienced global solar farm developers with seven operational solar farms in Australia, which you can read more about in the Introducing ib vogt story on page two.

The proposed Cimitiere Plains Solar Farm will include two solar arrays made up of about 613,00 panels, approximately 80 inverters, an on-site substation and about six kilometres of overhead 110 kV powerline, which will connect the project to the existing George Town substation in Bell Bay.

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

The project is going through an Environmental Impact Assessment process, designed to minimise environmental impacts from development.

As part of this, ib vogt is undertaking a variety of studies including:

- Biodiversity,
- Aboriginal cultural heritage and historic heritage,
- Traffic,
- Noise, and
- Visual impact (including reflection, glare etc).

These factors have all been considered in the design of the project.

For example, all threatened vegetation communities and cultural heritage sites were avoided in the selection of the transmission line route. More information on these studies will be available at the community open days (which you can read more about on page two of this newsletter).

Access to the solar farm will be from Soldier Settlement Road and Musk Vale Road. A security fence will surround the panels and the substation. Sheep will be grazed underneath the panels and the agricultural productivity of the land will be similar to its current levels.

The project will employ up to 300 people at the peak of construction, with many of these from the local area and Launceston.

Construction will take about 12 to 18 months and 10 permanent jobs will be created when the solar farm is operational.

The solar farm will be able to power about 100,000 homes.

Newsletter Edition 1 | February 2023

Project benefits

- Will power about 100,000 homes
- 10 permanent jobs
- Up to 300 people during construction
- Inexpensive source of renewable power for Tasmanian homes and industry
- Will support Tasmania's excellent hydropower resources

Introducing ib vogt

ib vogt is a German company that specialises in developing solar farms. Headquartered in Berlin, we have been operating in Europe since 2002 and opened our Australian operations in 2016.

We employ more than 600 people throughout Africa, Europe, Asia and America and have built more than three gigawatts (GWs) of solar farms to date.

In Australia, we have five employees and are based in Sydney. We are experienced in the Australian renewable energy sector and have so far completed the development of seven solar farms in Australia:

New South Wales:
- Sebastopol Solar Farm – 90 MW AC
- Yanco Solar Farm – 60 MW AC
- Dunedoo Solar Farm – 55 MW AC

Australian Capital Territory:
- Williamsdale Solar Farm – 11 MW AC

Victoria:
- Wunghnu Solar Farm – 75 MW AC
- Carisbrook Solar Farm – 74 MW AC
- Kerang Solar Farm – 30 MW AC

At each of our project locations we have worked with the community throughout the development phases and provided sponsorship and support to chosen local groups and initiatives.

For more information, please see our website: **www.ibvogt.com**

ib vogt

Solar energy

Solar is now one of the least expensive forms of new energy, with improvements in solar cell technology and manufacturing over the last decade meaning there have been enormous decreases in production costs.

Solar farms typically have a lifespan of 30 years and agricultural operations, such as sheep grazing, are able to continue while the farm is operational.

Electricity generated by solar can be backed up by Tasmania's excellent hydropower resources to provide an inexpensive source of renewable power for Tasmanian homes and industry. This affordable, renewable energy is critical to maintain existing industry and attract new industries to the area.

Community open days

Ib vogt would like to invite you to our community information sessions in March.

When:
Friday 17 March - 10am - 2pm
Saturday 18 March - 10am - 2pm

Where:
York Cove Holiday Hotel
Conference Room
(near The Crazy Duck)

Project information will be on hand and ib vogt staff will be available to discuss the project. Your feedback is important and will be fed into the environmental assessment process.

Contact Us
If you would like further information about the Cimitiere Plains Solar Farm please contact us:

Thomas Strobel
Development Manager
ib vogt
Level 6, 201 Kent Street,
Sydney NSW 2000

Tel: 0405 695 643
Email: info@cimitiereplainssolarfarm.com.au

www.ibvogt.com

Appendix B
Community Feedback Form

Cimitiere Plains Solar Farm

COMMUNITY FEEDBACK FORM - CIMITIERE PLAINS SOLAR FARM

Your feedback is important to develop a solar farm project that best suits the local area and community.

Your feedback will ensure local concerns are understood by the developers and the environmental assessment team.

Your name: (Only if you would like to provide it. It will not be printed or published anywhere)

……

Please circle your responses

Q1. Which best describes where you live (please see the map attached on the back of the second page):

1. Less than 1 kilometre from the proposed project
2. Between 1 and 2 kilometres from the proposed project
3. Between 2 and 3 kilometres from the proposed project
4. Between 3 and 4 kilometres from the proposed project
5. Between 4 and 5 kilometres from the proposed project
6. More than 5 kilometres from the proposed project
7. Not within the George Town post code.

Q2. Did you find the session informative?

1. Very informative
2. Informative
3. Somewhat informative
4. Not informative

Q3. Did you find out all the information you were looking for?

1. Yes
2. Mostly
3. No

If you didn't find out all the information you were looking for, what information was missing? Write you answer in the space below.

Q4. Now that you have attended a community consultation session, how do you feel about the proposed project?

1. Very positive
2. Positive
3. Neutral
4. Negative
5. Very negative

Q5. If you have concerns about the project, what are those concerns? Circle as many as you like and add more information below if you wish.

1. Visual
2. Traffic
3. Noise
4. Biodiversity
5. Aboriginal cultural heritage
6. Impacts on land use
7. Impacts on land values
8. Other

Q6. What do you think are the main positives about the project? Circle as many as you like and add more information below if you wish.

1. Renewable energy generation
2. Construction and operation employment opportunities
3. Provision of clean, cheap energy to maintain existing industries and attract new industries
4. Economic stimulus to the local community (provision of accommodation, food and services to workers)
5. Diversification of land use / income streams
6. Other (please comment below).

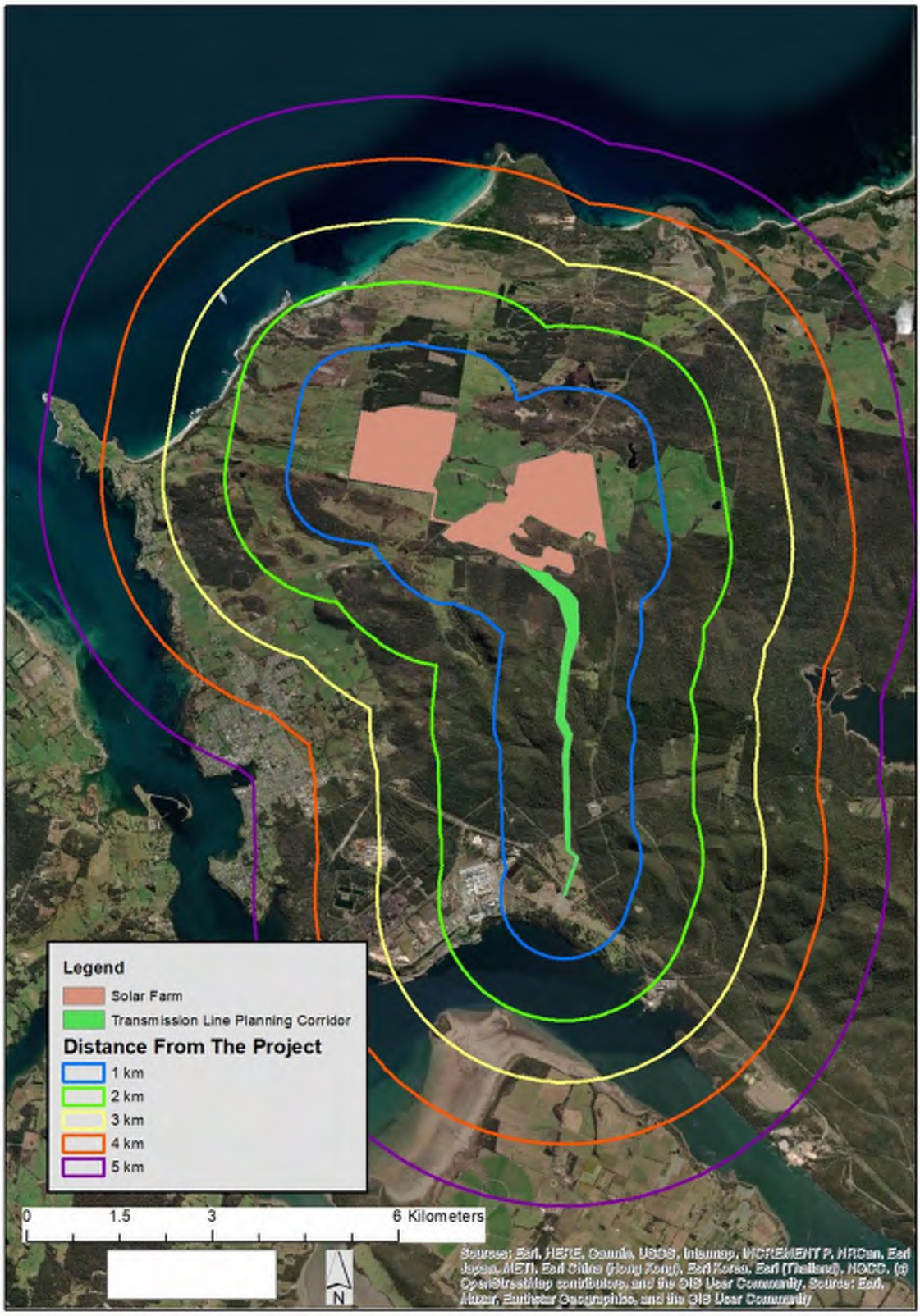
Q7. Is there anything else you would like to let us know?

If you would like somebody from Ib Vogt to contact you to discuss the project further, please provide your name and phone number at the best time to ring you.

Name:

Phone number:

Best time to call:


Legend
Solar Farm
Transmission Line Planning Corridor
Distance From The Project
1 km
2 km
3 km
4 km
5 km
0
1.5
3
6 Kilometers
N

ib vogt

Appendix C
Aboriginal Heritage Assessment

Cimitiere Plains Solar Farm

envoca
ENVIRONMENTAL CONSULTANCY

Cimitiere Plains Solar Farm Project

Aboriginal Heritage Assessment

Final Version 3

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

CLIENT: Envoca

12.12.2023

CULTURAL HERITAGE MANAGEMENT AUSTRALIA

Report Version Control

Report version	Report distribution	Date of Distribution
Draft Report V1	Zoe Smith (CHMA internal review)	3/5/2023
Draft Report V1	Proponent for Review	4/5/2023
Draft Report V2	Proponent for Review	26/5/2023
Final Draft Report V2	Aboriginal Heritage Tasmania	3/10/2023
Final Report V3	Aboriginal Heritage Tasmania	12/12/2023

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Executive Summary

Introduction

Sunspot 9 Pty Ltd, the proponent, is seeking development approval to establish a 288MW solar farm on private land, 5km northeast of George Town, Tasmania. The solar farm will be connected to the George Town substation to the southeast by 6km of double circuit transmission line on poles. The solar farm will be situated on approximately 454ha of rural land that is currently used for dryland agriculture, predominantly grazing.

The proposed solar farm site is located adjacent to Soldiers Settlement Road and the transmission lines are located adjacent to Musk Vale Road and Bridport Road, Bell Bay in the Northern Region of Tasmania (see Figures 1-2). The transmission line will be accessed via two existing access roads; Musk Vale Road which leads into a junction on the northern side of unnamed access tracks that exist throughout the proposed transmission line corridors and a private access track on the northern side of Bridport Road around 1.5km to the east of the East Tamar Highway/Bridport Road junction.

The transmission line will traverse approximately 5km of forest (and regenerating forest) and 1km of cleared land that is currently used for recreation and as part of the buffer area for the Bell Bay aluminium smelter. Poles will support two circuits that will operate at a voltage of up to 110kV. The easement for the transmission line will be up to 50m wide.

CHMA Pty Ltd and Vernon Graham (SAHO) have been engaged by the proponent to undertake an Aboriginal heritage assessment for the proposed Cimitiere Plains Solar Farm Project (the study area), to identify any potential Aboriginal heritage constraints. This report presents the findings of the Aboriginal heritage assessment. It should be noted that following the completion of the investigations, the proposed development footprint has been amended, partially in an effort to avoid Aboriginal heritage values that were identified during the Aboriginal heritage assessment. The Aboriginal heritage management recommendations presented in this report are based on this revised Project development footprint.

AHR Search Results

As part of Stage 1 of the present assessment, a search was carried out on Aboriginal Heritage Register (AHR) to determine the extent of registered Aboriginal heritage sites within and in the general vicinity of the Cimitiere Plains Solar Farm Project study area.

The search shows that there are a total of 33 registered Aboriginal sites that are situated within an approximate 12km radius of the study area (search results provided by Claire Keating from AHT on 10-12-2021). 18 of these sites are classified as artefact scatters, 11 sites are classified as isolated artefacts, two sites are classified as shell midden/artefact scatters, one is a shell midden/isolated artefact and one shell midden.

Based on the available information, there are six registered Aboriginal sites that appear to be situated within or in the immediate vicinity of the study area (sites AH9366, AH9354, AH9336, AH9346, AH10399 and AH10606). The detailed AHR search results are presented in section 4.3 of this report.

Summary of Survey Results

Four Aboriginal heritage sites were identified and recorded during the field survey inspection of the proposed Cimitiere Plains Solar Farm study area. One of these sites is an Artefact scatter (AH14118), with the other three sites classified as Isolated artefacts (AH14120, AH14121 and AH14122). All of these are new site recordings that do not correlate with any registered Aboriginal sites. Table i provides the summary details for the four identified and recorded sites, with Figure i showing the site locations. The detailed site descriptions are presented in Appendix 2.

A sub-surface test pitting program was undertaken across the area of Potential Archaeological Sensitivity (PAS) associated with site AH14118. A total of 15 test pits were excavated across the PAS area. A total of three stone artefacts were recovered from three separate test pits (pits 3, 8 and 14). The details of these artefacts are provided in Appendix 3. The identification of the three stone artefacts has extended the AH14118 site dimensions 62m southeast and 28m northeast. Figure 12 shows the revised spatial boundaries for site AH14118, based on the findings of the test pitting program. The test pitting confirmed the presence of low density artefact deposits associated with site AH14118. The artefacts appear to be confined to the top 15-20cm of the soil horizon. The detailed test pitting results are presented in section 7.3.

As noted previously, a search of the AHR shows that there are six other registered Aboriginal sites (AH9366, AH9354, AH9336, AH9346, AH10399 and AH10606) within the Cimitiere Plains Solar Farm Project study area. None of the artefacts associated with these sites were identified during the current survey. The details of these sites are presented in Section 7.2 of this report.

The field survey was able to confirm that there are no stone resources identified within the study area that would be suitable for stone artefact manufacturing. Nor are there any sizeable rock outcrops occurring within the study area, and therefore there is no potential for Aboriginal rock shelters to be present.

As discussed in Section 6, surface visibility across the study area was variable, ranging between <10% to 80%. Given these constraints, it cannot be stated with certainty that there are no undetected Aboriginal heritage sites present in the proposed Cimitiere Plains Solar Farm study area. With this acknowledged, the survey assessment still did achieve effective coverage of an estimated 119,410.5m^2. This level of effective coverage is certainly sufficient to provide a reasonable indication as to the potential extent, nature and distribution of Aboriginal cultural heritage sites in the study area.

The survey results strongly indicate that site and artefact densities across the study area are likely to be low. If undetected sites are present, they are most likely to be isolated artefacts or small artefact scatters, representing sporadic Aboriginal activity. Given that soil deposits across much of the study area were generally shallow to skeletal, there is a very limited potential for sub-surface artefact deposits to be present.

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

Table i: Summary details for Aboriginal sites AH14118, AH14120, AH14121 and AH14122.

Site Name	Grid Reference	Site Type	Site Description
AH14118	[redacted]	Artefact Scatter	Five white quartz flakes and a white quartz scraper are located on 5° slopes on both sides of a drainage ditch associated with an adjacent dam. The site has a low to medium potential for additional surface or sub-surface artefacts to be present. Sub-surface investigations have been implemented at site area, with a further three artefacts identified. The site has been heavily disturbed through farming.
AH14120	[redacted]	Isolated Artefact	A broken quartzite flake located on an erosion scald (bull pit) on a 5° slope amongst pasture land facing Cimitiere Creek which is 288m north. The site has a very low to low potential for additional surface or sub-surface artefacts to be present. This site has been heavily disturbed
AH14121	[redacted]	Isolated Artefact	A white quartz flake, located on an access track located 253m south of Cimitiere Creek. Immediately bordered by native vegetation. The site has a low to very low potential for additional surface or sub-surface artefacts to be present. This site has been heavily disturbed.
AH14122	[redacted]	Isolated Artefact	a white quartz flake located on the 15° slope of a light grey sandy soil pile associated with the construction of a nearby dam 200m south of Cimitiere Creek. The site has a low to very low potential for additional surface or sub-surface artefacts to be present. This site has been heavily disturbed.

Significance Assessments

AH14118, AH14120, AH14121 and AH14122 (recorded during the current assessment) have been assessed and allocated a rating of significance. A five-tiered rating system has been adopted for the significance assessment; low, low-medium, medium, medium-high and high. Table ii provides the summary details for significance ratings for AH14118, AH14120, AH14121 and AH14122. A more detailed explanation of the assessment ratings is presented in section 8. Section 9 of this report presents a statement of social significance provided by Vernon Graham for sites AH14118, AH14120, AH14121 and AH14122, and the study area as a whole.

Table ii: Summary significance ratings for Aboriginal heritage sites AH14118, AH14120, AH14121 and AH14122.

AH Number	Site Type	Scientific Significance	Aesthetic Significance	Historic Significance	Social Significance
AH14118	Artefact Scatter	Low-Medium	Low	N/A	Medium-High
AH14120	Isolated Artefact	Low	Low	N/A	Medium-High
AH14121	Isolated Artefact	Low	Low	N/A	Medium-High
AH14122	Isolated Artefact	Low	Low	N/A	Medium-High

Management Recommendations

Heritage management options and recommendations provided in this report are made based on the following criteria.

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

As noted above, following the completion of the Aboriginal heritage investigations, the proposed development footprint for this project has been amended, partially in an effort to avoid Aboriginal heritage values that were identified during the Aboriginal heritage assessment. The following recommendations are based on the revised Project Footprint.

Recommendation 1 (AH14118)

Site AH14118 has been confirmed through surface and sub-surface investigations to be a low density artefact scatter. The site is located in the northern portion of the Project Footprint (see Figure i). The following grid references define the boundaries of this site.

[redacted]

The preferred management option is for the project to avoid any impacts to this site and for the site to protected and conserved in-situ. To this end, the following measures should be put in place.

- The location of the site is to be plotted on the design plans for the Cimitiere Plains Solar Farm Project footprint.
- Prior to construction commencing in these areas, temporary high visibility protective barricading is to be erected around the identified boundaries of the site with a 5m buffer applied to the entire polygon of the site boundary. Barricading is to remain in place for the duration of construction.

- Construction contractors should be informed of the location of the site and informed that the site is not to be impacted.
- No soil disturbance works are to be carried out within the site boundaries, or within the barricaded zone of the site.
- Barricading is to be removed on completion of construction works.

As specified in section 10.1 of this report, all Aboriginal relics are protected under the Aboriginal Heritage Act 1975 (The Act). It is illegal to destroy, damage, deface, conceal or otherwise interfere with a relic, unless in accordance with the terms of a permit granted by the Minister. Therefore, if it appears that site AH14118 may be impacted by construction or other works, then the proponent, Sunspot 9 Pty Ltd will need to apply for and obtain a Permit to impact the site, prior to any works commencing.

Recommendation 2 (AH14120, AH14121 and AH14122)

Three isolated artefact Aboriginal heritage sites were identified during the field survey inspection of the proposed Cimitiere Plains Solar Farm Project footprint (sites AH14120, AH14121 and AH14122). All three of these sites are located in the northern portion of the Project Footprint (see Figure i). The preferred management strategy is to avoid any impacts on these three sites and to protect the sites in situ. The following recommendations apply to these three sites.

- The location of the sites is to be plotted on the design plans for the Cimitiere Plains Solar Farm Project footprint.
- Prior to construction commencing in these areas, temporary high visibility protective barricading is to be erected around the identified boundaries of the three sites with a 2m radial buffer applied. Barricading is to remain in place for the duration of construction.
- Construction contractors should be informed of the location of the sites and informed that the sites are not to be impacted.
- No soil disturbance works are to be carried out within the site boundaries, or within the barricaded zones of the sites.
- Barricading is to be removed on completion of construction works.

As specified in section 10.1 of this report, all Aboriginal relics are protected under the *Aboriginal Heritage Act 1975* (The Act). It is illegal to destroy, damage, deface, conceal or otherwise interfere with a relic, unless in accordance with the terms of a permit granted by the Minister. Therefore, if it appears that sites AH14120, AH14121 and AH14122 may be impacted by construction works, then the proponent, Sunspot 9 Pty Ltd will need to apply for and obtain a Permit to impact the sites, prior to any works commencing.

Recommendation 3 (Site AH10399)

Sites AH10399 is an Isolated artefact that is reported to be located at grid reference [redacted] Despite an extensive search, this site could not be relocated during the current survey program. The site is likely to remain in situ but covered by vegetation. Based on the grid reference provided on the AHR, this site is located in the Project Footprint (see Figure ii). The preferred management strategy is to avoid any impacts on this site and to protect the site in situ. The following recommendations apply to this site.

- The location of the site is to be plotted on the design plans for the Cimitiere Plains Solar Farm Project footprint.
- Prior to any future works commencing in the identified areas, temporary high visibility protective barricading is to be erected around the identified boundaries of the site with a 2m radial buffer applied. Barricading is to remain in place for the duration of construction.
- Construction or other works contractors should be informed of the location of the site and informed that the site is not to be impacted.
- No soil disturbance works are to be carried out within the site boundaries, or within the barricaded zone of the site.
- Barricading is to be removed on completion of construction works.

As specified in section 10.1 of this report, all Aboriginal relics are protected under the *Aboriginal Heritage Act 1975* (The Act). It is illegal to destroy, damage, deface, conceal or otherwise interfere with a relic, unless in accordance with the terms of a permit granted by the Minister. Therefore, if it appears that site AH10399 may be impacted by construction or other works, then Sunspot 9 Pty Ltd will need to apply for and obtain a Permit to impact the site, prior to any works commencing.

Recommendation 4 (Sites AH9366, AH9354, AH9336, AH9346, and AH10606)

Sites AH9366, AH9354, AH9336, AH9346, and AH10606 have been previously identified as being located within the Cimitiere Plains Solar Farm Project study area. Despite an extensive search, these sites could not be relocated during the current survey program. The sites are likely to remain in situ but covered by vegetation. These sites are now confirmed as being situated outside the revised Project Footprint (see Figure ii). The following recommendations apply to these sites.

- The location of these sites is to be plotted on the design plans for the Cimitiere Plains Solar Farm Project footprint and it noted that the site areas are to be avoided.

Recommendation 5 (Unanticipated Discovery Plan)

It is assessed that there is generally a low potential for additional undetected Aboriginal heritage sites to occur within the Cimitiere Plains Solar Farm Project footprint. However, if, during the course of the proposed works, previously undetected archaeological sites or objects are located, the processes outlined in the Unanticipated Discovery Plan should be followed (see Appendix 3). A copy of the Unanticipated Discovery Plan should be kept on-site during all ground disturbance and construction work. All construction personnel should be made aware of the Unanticipated Discovery Plan and their obligations under the *Aboriginal Heritage Act 1975* (the Act).

Recommendation 6 (Provision of Reports)

Copies of this report should be submitted to Aboriginal Heritage Tasmania (AHT) for review and comment.

Figure i: Aerial image showing the location of Aboriginal sites AH14118, AH14120, AH14121 and AH14122 in relation to the revised Project Footprint

Figure ii: Aerial image showing the location of AH10399 and closer registered sites in relation to the revised project footprint

1.0 Project Outline

1.1 Project Details

Sunspot 9 Pty Ltd, the proponent, is seeking development approval to establish a 288MW solar farm on private land, 5km northeast of George Town, Tasmania (see Figure 1). The project is known as the Cimitiere Plains Solar Farm Project. The solar farm will be connected to the George Town substation by 6km of double circuit transmission line on poles. The solar farm will be situated on approximately 454ha of rural land that is currently used for dryland agriculture, predominantly grazing. The proposed infrastructure includes:

- Photovoltaic (PV) solar panels mounted on single-axis tracker frames
- Inverters to transform the direct current (DC) from the solar panels to alternating current (AC)
- On-site substation
- Security fence around the panels and the substation.
- Internal access tracks
- Electrical cables
- Site office and parking

The transmission line will traverse approximately 5km of forest (and regenerating forest) and 1km of cleared land that is currently used for recreation and as part of the buffer area for the Bell Bay aluminium smelter. Poles will support two circuits that will operate at a voltage of up to 110kV. The easement for the transmission line will be up to 50m wide.

The proposed solar farm site is located adjacent to Soldiers Settlement Road and the transmission lines are located adjacent to Musk Vale Road and Bridport Road, Bell Bay in the Northern Region of Tasmania. The transmission line will be accessed via two existing access roads; Musk Vale Road which leads into a junction on the northern side of unnamed access tracks that exist throughout the proposed transmission line corridors and a private access track on the northern side of Bridport Road around 1.5km to the east of the East Tamar Highway/Bridport Road junction. Figure 2 shows the solar farm footprint and associated infrastructure that was the focus of this assessment (the study area).

CHMA Pty Ltd and Vernon Graham Senior Aboriginal Heritage Officer (SAHO) have been engaged by the proponent to undertake an Aboriginal heritage assessment for the proposed Cimitiere Plains Solar Farm Project (the study area), to identify any potential Aboriginal heritage constraints. This report presents the findings of the Aboriginal heritage assessment. It should be noted that following the completion of the investigations, the proposed development footprint has been amended, partially in an effort to avoid Aboriginal heritage values that were identified during the Aboriginal heritage assessment. The Aboriginal heritage management recommendations presented in section 11 of this report are based on this revised Project development footprint.

1.2 Aims of the Investigation

The principal aims of the current Aboriginal Heritage assessment are as follows.

- To undertake an Aboriginal cultural heritage assessment for the proposed Cimitiere Plains Solar Farm Project study area, as shown in Figures 1 and 2. The assessment is to be compliant with both State and Commonwealth legislative regimes, in particular the intent of the *Aboriginal Heritage Act 1975* and the associated *Aboriginal Heritage Standards and Procedures (June 2023).*

- Search the Aboriginal Heritage Register (AHR) to identify previously registered Aboriginal heritage sites within and in the general vicinity of the study area.
- Undertake relevant archaeological, environmental and ethnohistorical background research to develop an understanding of site patterning within the study area.
- To locate, document and assess any Aboriginal heritage sites located within the study area.
- To assess the archaeological and cultural sensitivity of the study area.
- To assess the scientific and Aboriginal cultural values of any identified Aboriginal cultural heritage sites located within the study area.
- Consult with (or ensure the Aboriginal community representative consults with) Aboriginal organisation(s) and/or people(s) with an interest in the study area in order to obtain their views regarding the cultural heritage of the area.
- To develop a set of management recommendations aimed at minimising the impact of the proposed Cimitiere Plains Solar Farm Project on any identified Aboriginal heritage values.
- Prepare a report that documents the findings of the Aboriginal heritage assessment and meets the standards and requirements of the current *Aboriginal Heritage Standards and Procedures* prepared by AHT.

1.3 Project Methodology

A three-stage project methodology was implemented for this assessment.

Stage 1 (Pre-Fieldwork Background Work)

Before fieldwork was undertaken, the following tasks were completed by CHMA staff.

Consultation with Aboriginal Heritage Tasmania

Aboriginal Heritage Tasmania (AHT) was contacted and informed that CHMA had been engaged to undertake an Aboriginal heritage assessment for the Cimitiere Plains Solar Farm Project. As part of this initial contact, a search request of the Aboriginal Heritage Register (AHR) was submitted to AHT in order to ascertain the presence of any previously registered sites in the vicinity of the study area (search request submitted on 2-12-2021).

The collation of relevant documentation for the project

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

- The collation of information pertaining to any registered heritage sites located within the general vicinity of the study area.
- Mapping information showing the proposed footprint of the Cimitiere Plains Solar Farm Project.
- Relevant reports documenting the outcomes of previous Aboriginal heritage studies in the vicinity of the study area.
- Ethno-historic literature for the region.
- References to the land-use history of the study area.
- GIS Information relating to landscape units present in the study area;
- Geotechnical information for the study area, including soil and geology data.

Consultation with Aboriginal Heritage Officer

Vernon Graham is the Senior Aboriginal Heritage Officer for this project. As part of Stage 1 works, Stuart Huys and Shay Hannah (CHMA archaeologists) were in regular contact with Vernon Graham. The main purpose of this contact was to discuss the scope of the present investigations, ratify the proposed methodology for the investigations and coordinate the timeframes for implementing fieldwork.

Stage 2 (Field Work)

Stage 2 entailed the fieldwork component of the assessment. The field survey was undertaken by Shay Hannah (CHMA archaeologist), Vernon Graham (Senior Aboriginal Heritage Officer) and Kieran Graham (Trainee Aboriginal Heritage Officer), over a period of six days (31-8-2022 – 9-9-2022).

The field team walked a total of 44.073km of survey transects across the proposed Cimitiere Plains Solar Farm footprint, with the average width of each transect being 10m. As part of the field survey program, additional transects were walked in areas where there was improved surface visibility, in order to gain a better insight as to the potential presence or absence of Aboriginal sites across the study area. Section 6 provides further details as to the survey coverage achieved within the study area.

For any Aboriginal sites identified by the field team, the following details were recorded.

- The spatial extent of the site (polygon coordinates).
- The nature of Aboriginal heritage deposits and features associated with the site.
- Any intra-site variations that occur.
- The condition of the site, and any notable impacts to the site.
- Photos and site maps.
- Proposed management recommendations (as discussed between the archaeologist and AHO).

Aboriginal Heritage Register (AHR) forms for all located Aboriginal sites have been completed and submitted as part of the process.

The results of the field investigation were discussed between Vernon Graham and Shay Hannah (CHMA Archaeologist). This included the potential cultural and archaeological sensitivity of the study area and possible management options.

Stage 3 (Sub-Surface Investigation)

One location was selected for sub-surface investigation within the Cimitiere Plains Solar Farm Project study area, in the form of a test pitting program (the PAS of 130m x 30m area that encompasses site AH14118). This location was selected on the basis that it was assessed that there was an elevated potential for sub-surface Aboriginal cultural heritage deposits to be present. No other locations within the study area were assessed as having the sufficient potential to warrant test pitting. The identified 130m x 30m PAS is located on a discrete rise within the proposed footprint of the Cimitiere Plains Solar Farm Project.

The aim of the initial test pitting program was simply to determine the potential presence/absence of Aboriginal heritage deposits and features within the nominated footprint within the AH14118 site and the identified PAS. This information would then be used to inform any further Aboriginal heritage investigations or mitigation strategies at the AH14118 site and the identified 130m x 30m PAS.

To meet these aims, a total of 15 test pits were excavated within the identified 130m x 30m PAS, with each pit measuring 50cm x 50cm. As a general guide, the pits were spaced in a grid formation across the identified PAS footprint, with each pit being spaced at a distance of approximately 8m apart. The exact positioning of the pits was determined in the field by the project archaeologist and AHOs, with the pits being placed in areas of reduced disturbance, where there was an elevated potential for sub-surface deposits to be present.

The test pitting was focused in areas outside the identified boundaries of site AH14118. This meant that a Permit was not required to undertake the initial test pitting program. However, if Aboriginal heritage cultural deposits or suspected features were identified during the test pitting program then the excavation of the test pit in question would cease and AHT would be notified of the find.

Test pitting has been completed at the selected PAS location. At the completion of the test pitting program, the CHMA excavation Director (Stuart Huys) met with the proponent to discuss the findings of the test pitting works, and to ratify whether the site area could be avoided by the development footprint.

Stage 4 (Report Preparation)

Stage four of the project involves the production of a Draft and Final Report that includes an analysis of the data obtained from the field survey, an assessment of archaeological sensitivity and management recommendations. The report has been prepared by Stuart Huys and Shay Hannah, in consultation with Vernon Graham.

A draft copy (electronic PDF version) of the report was submitted to the proponent for review. Any comments that were received have been incorporated into the final draft report. One electronic copy (PDF version) of the final draft report has been provided to Aboriginal Heritage Tasmania (AHT) for review and comment. In addition, CHMA has provided AHT and the proponent with all site spatial data files, and mapping associated with the project (in ESRI shape file format (GDA94). A copy of the report has been provided to Vernon Graham, to assist in the Aboriginal community consultation process. The report has been sent out to a range of Tasmanian Aboriginal organisations for review and comment. The outcomes of the consultation is provided in Appendix 6.

1.4 Project Limitations

Most archaeological investigations are subject to limitations that may affect the reliability of the results. The main constraint to the present investigation was restricted surface visibility due primarily to vegetation cover. At the time of the field survey, surface visibility across the proposed Cimitiere Plains Solar Farm footprint ranged between <10% and 80%, with the estimated average being 20%. Throughout the study area, there was a network of previously graded vehicle tracks that provided transects of improved surface visibility. There were also numerous areas where erosion scalds were present that provided locates of improved visibility. To offset constrained surface visibility, any areas of improved visibility were inspected in detail. The constraints in surface visibility limited the effectiveness of the survey assessment to some extent. The issue of surface visibility is further discussed in Section 6 of this report.

Figure 1: Topographic map showing the location of the study area near George Town in the Northern Region of Tasmania.

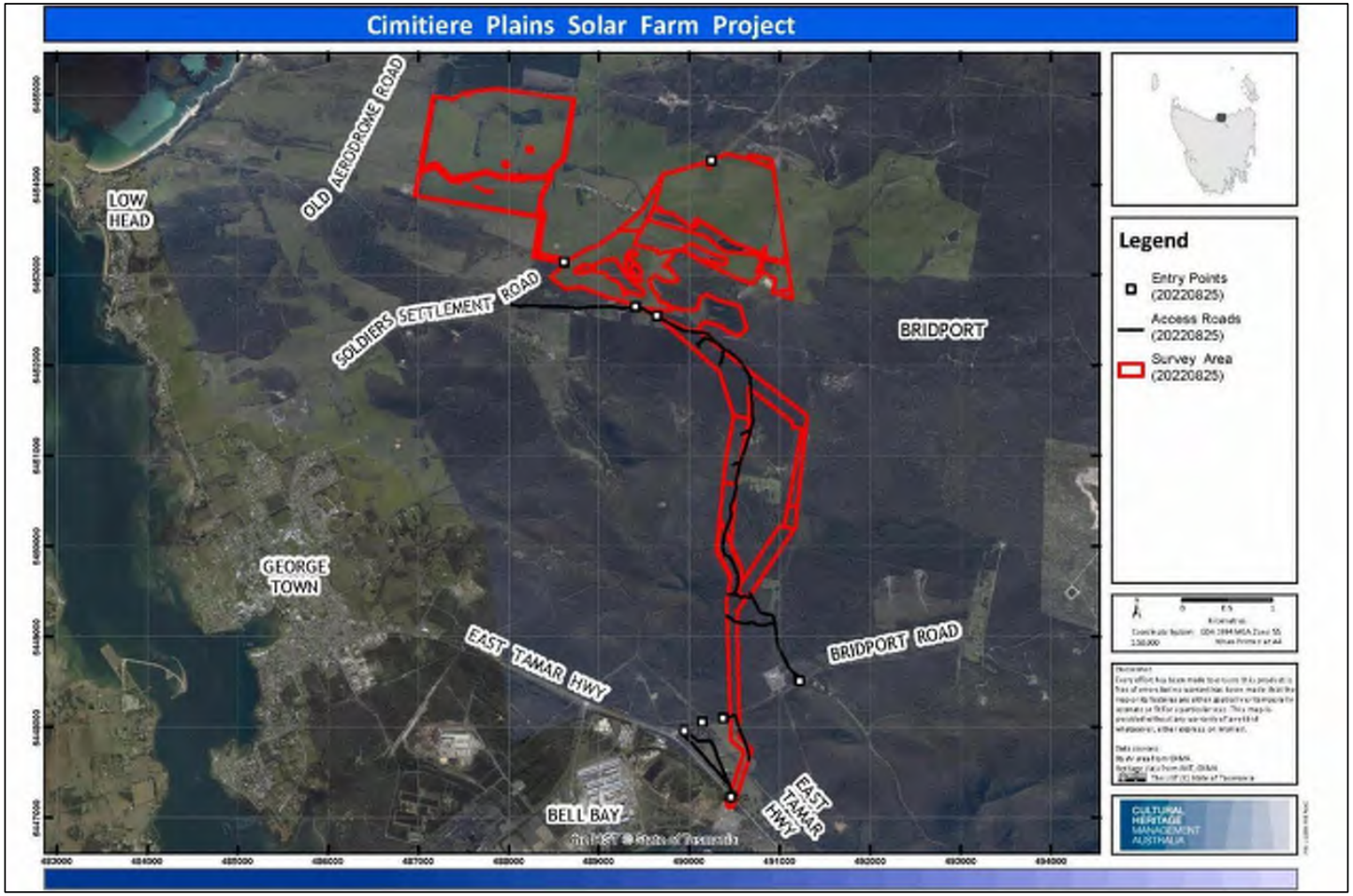

Figure 2: Aerial image showing the study area footprint.

2.0 Environmental Setting of the Study Area

2.1 Introduction

Prior to undertaking an archaeological survey of the study area, it is necessary to characterise the landscape. This includes considering environmental factors such as topography, geology, climate, vegetation and past and current landscape use. An assessment of the environmental setting helps to develop an understanding of the nature of Aboriginal occupation and site patterning that might be expected to occur across the study area. In addition, it must be remembered that in Aboriginal society, the landscape extends beyond economic and technological behaviour to incorporate social geography and the embodiment of Ancestral Beings.

The archaeological context is generally only able to record the most basic aspects of Aboriginal behaviour as they relate to artefact manufacture and use and other subsistence-related activities undertaken across the landscape such as raw material procurement and resource exploitation. The distribution of these natural resources occurs intermittently across the landscape and as such, Aboriginal occupation and associated archaeological manifestations occur intermittently across space. However, the dependence of Aboriginal populations on specific resources means that an understanding of the environmental resources of an area accordingly provides valuable information for predicting the type and nature of archaeological sites that might be expected to occur within an area.
The primary environmental factors known to affect archaeological patterning include the presence or absence of water, both permanent and ephemeral, animal and plant resources, stone artefact resources and terrain.

Additionally, the effects of post-depositional processes of both natural and human agencies must also be taken into consideration. These processes have a dramatic effect on archaeological site visibility and conservation. Geomorphological processes such as soil deposition and erosion can result in the movement of archaeological sites as well as their burial or exposure. Heavily vegetated areas can restrict or prevent the detection of sites, while areas subject to high levels of disturbance may no longer retain artefacts or stratified deposits.

The following sections provide information regarding the landscape context of the study area including topography, geology, soils and vegetation.

2.2 Landscape Setting of the Study Area

The proposed Cimitiere Plains Solar Farm Project area (the study area) covers approximately 454ha. The northern sections of the study area are situated 4.12km to the northeast of George Town, while the southern sections of the study area are situated 4.9km to the southeast of George Town, in the Northern Region of Tasmania. Subsequently, the landscape of the study area is divided. Within the northern sections of the study area, the terrain is characteristically flat to moderately undulating pastureland, with some sections of lowland floodplains surrounding Cimitiere Creek (see Plates 1). The more gentle slope gradients occur throughout the northeast and northwest sections of the study area, where gradients range between 5º to 10º (see Plate 1 and Plate 3). In the southeast and southwest sections of the northern sections of the study area, the slope gradients increase to between

10º to 30º, with the steepest slopes present along the southern borders facing toward the Tippogoree Hills (see Plate 2).

The southern sections of the Cimitiere Plains Solar Farm Project study area are located to the east and at the base of the south-eastern end of the Tippogoree Hills. The Tippogoree Hills are a prominent series of ranges that fringe the eastern margins of the River Tamar. The terrain across the study area is characteristically flat to moderately undulating, with some sections of lowland floodplains (see Plate 9). The more gentle slope gradients occur across the far west portion of the study area at the base of Tippogoree Hills, where gradients range between 5º to 10º (see Plate 6). On the side slopes of the ridge lines, slope gradients increase to between 10º to 40º, with the steepest slopes being the northern side slopes of the ridges, running down towards watercourses such as Four Mile Creek (see Plate 5).

The underlying geology of the study area is a variable patchwork. The northern sections of the study area are Cenozoic cover sequences which consist of windblown and locally derived sand, Cenozoic cover sequences consisting of silt with rounded clasts of granite, schist, quartzite, conglomerate, derived from Permian strata and Palaeozoic Lower Parmeener Supergroup consisting of mudstone, sandstone, minor limestone, coal measures, Tasmanite oil shale, and basal tillite, diamictites, rhythmic clay stones (List 2022; Australian Stratigraphic Units Database 2022). Soils in the northern sections of the study area consist of light to dark grey sandy loam that are shallow to skeletal in depth (see Plate 3).

The underlying geology of the southern section of the study area is Cenozoic cover sequences which consist of windblown and locally derived sand, Jurassic dolerite and Upper Parmeener Supergroup consisting of cross-bedded quartz sandstone, feldspathic sandstone and shale (List 2022). Soils across the study area are regolith clays that have been derived through the decomposition of the parent bedrock. Soil depth is typically shallow to skeletal, with the underlying dolerite bedrock exposed to the surface across most parts of the southern sections of the study area (see Plate 5 and Plate 6).

The southern sections of the study area are positioned just inland (east/northeast) of Bell Bay, on the lower reaches of the River Tamar, which is the largest major water course in this part of the Northern Region. This is a ‘ria’ or drowned river valley formed by coastal submergence about 6,000 years ago. The shoreline of the estuary in the surrounds of Bell Bay is a low-energy shoreline, with mudflats and shoals exposed at low tide. The intertidal zone hosts a range of estuarine shellfish species, dominated by mud oysters and mussels, which would have been an important component of the traditional Aboriginal diet. The northern sections of the study area are positioned just inland (south) of Bass Strait. The shoreline of the Bass Strait hosts a range of saltwater shellfish species such as blue mussels, scallops and oysters and potentially seals coming from Tenth Island (now a recognised breeding colony 7 km offshore) (Wildlife Services 2018).

The only named water course in the vicinity of the southern sections of the study area is Four Mile Creek. This is a semi-permanent watercourse that flows in an east-to-west direction, emptying into the Lauriston Reservoir. The creek is located around 600m to the east of the study area. A small tributary of this creek flows along the north-western border of the study area. In the northern sections, the only named watercourse in the vicinity is

Cimitiere Creek. This is a semi-permanent watercourse that flows in a northwest-to-southeast direction. The creek is located in the centre of the northern sections of the study area and numerous small tributaries and drains run off the creek throughout the northern sections (see Figure 2).

The vegetation structure across most of the northern sections of the study area is dominated by agricultural pastures made up of native and introduced grass species (see Plate 1). Amongst the pasture are sparse stands of *Eucalyptus amygdalina* coastal forest and woodland that consists of Bracken Fern (*Pteridium esculentum*), eucalypts, Sagg (*Lomandra longifolia*), She-oak and Black Wattle saplings (*Acacia mearnsii*) (see Plate 4). There are also sparse stands along the edges of Cimitiere Creek of coastal scrub and heathland with Common Teatree (*Leptospermum scoparium*) and Sagg being the most prevalent species present (see Plate 3). Significant clearing, pastoral activity and construction of dam infrastructure have taken place across the majority of the northern sections of the study area and have resulted in the presence of introduced grasses From an Aboriginal heritage perspective, any Aboriginal sites that are situated within these lesser disturbed sections of the sparse stands of native vegetation are likely to be reasonably intact.

The vegetation structure across most of the southern study area is dominated by *Eucalyptus amygdalina* forest and woodland scrub which is associated with the distribution of the dolerite bedrock (see Plate 5). Small patches of *Eucalyptus obliqua* dry forest and lowland grasses occur within the central-western portion of the study area. On the eastern boundary of the study area, there is also a small patch of Eucalyptus amygdalina - *Eucalyptus obliqua* damp sclerophyll forest. Selective logging has occurred across the majority of this native Eucalypt woodland. This logging activity has also resulted in dense undergrowth within the majority of the study area. The most prominent species present were Bracken Fern, Cutty Grass (*Gahnia grandis*), Sagg and Black Wattle saplings (see Plate 5, Plate 6 and Plate 7). Parts of the native forests, on the lower slopes of the ridges, have been more extensively cleared as part of past pastoral activities. From an Aboriginal heritage perspective, any Aboriginal sites that are situated within these lesser disturbed native forests are likely to be reasonably intact.

Parts of the study area have been more intensively disturbed. Within the southern sections of the study area, there have been access track extensions made with the main southern access road being covered in bitumen (see Plate 8). A network of previously graded and ungraded vehicle tracks occurs throughout the southern sections of the study area, particularly around the existing BassLink infrastructure, TasRail rail tracks and former plantation areas (see Plate 5 and Plate 8). Any Aboriginal sites that may be present within these more highly disturbed infrastructure areas will have been either destroyed or heavily impacted.

The study area has a cool, wet climate typical of northern Tasmania. Rainfall occurs throughout the year; with a mean annual rainfall of 589mm. Rainfall is highest in August and September (64mm – 71mm) and lower from January to February (28 – 31mm). The warmest months of the year are January and February when mean temperatures range from minimums of 10°C to maximums of about 23°C. Winter tends to be cold with mean annual temperatures in the coldest months of June and July ranging from 1.5°C mean minimum to maximum temperatures of about 11°C (BOM 2020).

Plate 1: View east showing Kieran Graham (Trainee Aboriginal Heritage Officer) on an undulation of 5°–10° and Cimitiere Creek present in the northern sections of the study area.

Plate 2: View southwest showing Vernon Graham (SAHO) a rise of 20° and one of the sparse stands of *Eucalyptus amygdalina* coastal forest and woodland present within the northern sections of the study area.

Plate 3: View northeast showing a tributary of Cimitiere Creek with light grey soils and stands of Common Teatree (*Leptospermum scoparium*) and Sagg.

Plate 4: View east showing one of the main graded access roads Musk Vale Road, George Town in the study area.

Plate 5: View east showing one of the graded access tracks in the southern sections of the study area and undulation of 35°.

Plate 6: View northeast showing *Eucalyptus amygdalina* forest and woodland scrub present within the southern sections of the study area.

Plate 7: View southwest showing the native regrowth vegetation present within the southern sections of the study area.

Plate 8: View west showing the partial bitumen-covered main access track in the southern sections of the study area.

Plate 9: View south showing one of the graded access tracks in the southern sections of the study area.

3.0 Ethno-historic Background

3.1 Aboriginal Social Organisation in Tasmania

Ryan (2012) explains that the terms 'nation' and 'clan' are the preferred terms used by the Tasmanian Aboriginal community in place of 'tribe' and 'band' respectively. This terminology has been adopted in the following discussion.

According to Jones (1974), the social organisation of Tasmanian Aboriginal society appears to have consisted of three social units, these being the hearth group, the band (clan) and the tribe (nation). The hearth group was the basic family unit and would generally have consisted of a man and woman, their children, aged relatives and sometimes friends and other relatives. The size of hearth groups would generally range from between 2-8 individuals (Jones 1974: Plomley 1983). Plomley (1983) provides a description made by Peron of a hearth group he encountered at Port Cygnet:

> *There were nine individuals in this family, and clearly they represented a hearth group, because Peron visited their campsite with its single hut. The group comprised an older man and wife, a younger man and wife, and five children, one a daughter (Oure-Oure) of the older man and wife, and the other four the children of the younger man and wife.* (Plomley 1983:168).

The clan appears to have been the basic social unit and was comprised of a number of hearth groups (Jones 1974). Jones (1974:324-325) suggests that the clan owned a territory and that the boundaries of this territory would coincide with well-marked geographic features such as rivers and lagoons. Whilst the clan often resided within its territory, it also foraged widely within the territories of other clans. Brown (1986:21) states that the band was led by a man, usually older than the others and who had a reputation as a formidable hunter and fighter. Brown also suggests that the clan (as well as the hearth group) was ideally exogamous, with the wife usually moving to her husband's band and hearth group.

Each clan was associated with a wider political unit, the nation. Jones (1974:328-329) defines the tribe (or nation) as being:

> *…that agglomeration of bands which lived in contiguous regions, spoke the same language or dialect, shared the same cultural traits, usually intermarried, had a similar pattern of seasonal movement, habitually met together for economic and other reasons, the pattern of whose peaceful relations were within the agglomeration and of whose enmities and military adventures were directed outside it. Such a tribe had a territory, consisting of the sum of the land owned by its constituent bands…The borders of a territory ranged from a sharp well defined line associated with a prominent geographic feature to a broad transition zone*. (Jones 1974:328-329)

According to Ryan (2012:11), the Aboriginal population of Tasmania was aligned within a broad framework of nine nations, with each nation comprised of between six and fifteen clans (Ryan 2012:14). The mean population of each nation is estimated to have been between 350 and 470 people, with overall population estimates being in the order of between seven to ten thousand people prior to European occupation (Ryan 2012:14).

The current study area is located within the boundaries of the North Midlands Nation (see Figure 3). The territory of the North Midlands Nation ran from approximately St Peters Pass to Quamby Bluff in the west, along the Western Tiers through the Deloraine district through to the west edge of the Tamar Valley, and along the north coast of Tasmania. From here it ran southeast along the Pipers River, through to Launceston, then eastwards along the South Esk River through to St Paul's Dome. In total, the North Midlands nation occupied an area of approximately 6,750km² and incorporated around 160km of coastline (Ryan 2012:29).

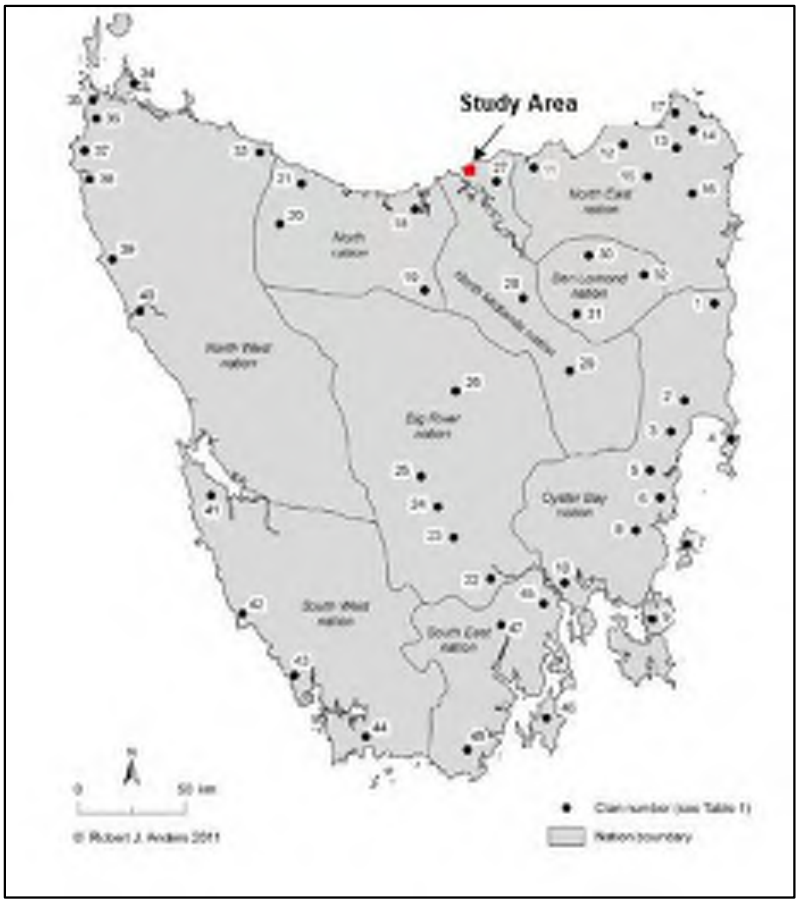

Figure 3: The Aboriginal Nations of Tasmania in relation to the study area (Ryan 2012:13).

The North Midlands Nation was comprised of at least three clans. These were the Leterremairrener (Port Dalrymple people) who were located around the east Tamar, the Panninher (Norfolk Plains people) located around the Norfolk Plains, and the Tyerrernotepanner (Stoney Creek or Campbell Town people) who were situated in the vicinity of Campbell Town. There was possibly a fourth clan around the York Town area, west of the Tamar, and a fifth around the Isis River (Ryan 2012:29). Each clan is thought to have been comprised of between 50 and 80 people, with the overall population of the North Midlands nation estimated at between 300 and 400 people (Ryan 2012:29). The clan most

likely to have occupied the area around George Town (including the current study area) was the Leterremairrener (Port Dalrymple people)

The nations were among the first to experience British invasion in northern Tasmania in 1804, and as such, insufficient information exists as to the exact location of each clan. However, the clan most likely to have had rights over the land within which the study area is located are the Panninher clan who extensively utilized the plains areas surrounding Perth (Ryan 2012).

The largest kangaroo hunting grounds in Tasmania lay in the heart of North Midland country at Campbell Town, Norfolk Plains and Launceston, together with the rich marine and bird life provided by the Tamar River. As such, the North Midland nation had extensive relations with neighbours of the North, North East, Big River, Ben Lomond and Oyster Bay nations (Ryan 2012:31). These connections in turn facilitated seasonal access of the North Midland nation to the east coast at Oyster Bay through negotiations with the Oyster Bay Nation (Ryan 2012:31) and the existence of other seasonal travel routes to the east venturing into the territory of the Ben Lomond Nation to exchange ochre (Ryan 2012:31). Other major ochre sources in Tasmania were in the Western Tiers, in the territory of the North Nation.
The Panninher (Norfolk Plains clan) are said to have spent the winter on the lower reaches of the west bank of the Tamar exploiting available shellfish and swan eggs, before returning to their own country to exploit the hunting grounds in spring (Ryan 2012:31). The seasonal movement to the Great Western Tiers to obtain ochre in autumn is also recorded (see Figure 4).

Very few available ethnohistoric accounts exist, that relate to aspects of the material culture of the North Midlands Nation. One description of the huts used by the Aboriginal people of the Midlands is provided by John Bass in 1799 at Port Dalrymple:

> *'Their huts, of which seven or eight were frequently found together like a little encampment, were constructed of bark torn in long strips from some neighbouring tree, after being divided transversely at the bottom, in such breadths as they judge their strength would be able to disengage from its adherence to the wood, and the connecting bark on each side. It is then broken in convenient lengths, and placed, slopingwise against the elbowing part of some dead branch that has fallen off from the distorted limbs of the gum tree; and a little grass is sometimes thrown over the top. But after all their labour, they have not ingenuity sufficient to place the slips of bark in such a manner as to preclude the free admission of rain'*
>
> (Collins 1971, as reported in Kee 1990:17).

In a diary entry dated 22/10/1831, Robinson provides a comparatively detailed description of the clothes and tool kits used by people of the North Midlands Nation:

> *'The costume of the native women is a mantle made of kangaroo skin. Their implements consist of a short stick eighteen inches long sharpened at the end similar to a chisel, and with this implement they bark the tree and use it in the same way a carpenter would use the same sort of tool. Instead of the mallet they use a stone. The wooden chisel is made to answer the purpose of a lever, hence we may call them mechanics. It is the business of the woman especially of the inland tribes to fetch wood for the fire. If the woman is married she carries her own and her husband's burden. Part of their luggage consists of a mull, a flat stone which the men*

> *use for the purpose of preparing the pomatum to dress their hair with. The woman also carried with her for this purpose a large quantity of ochre. It is the business of the women also to hunt and catch opossum and for this purpose they carry a rope which they make of the long cutting grass of the iris. They also hunt other small animals, look for eggs &c. They carry with them also a sharp stone with which the men make their spears and waddies. The men carry their spears and waddies, their only weapons except stones which they throw with great dexterity. It is the business of the men to hunt kangaroo. The men also wear a mantle of kangaroo skin'* (Plomley 1966:531).

In an earlier diary entry dated 20/9/1831, Robinson describes that tea trees were procured to provide relatively straight timber with which spears were manufactured (Plomley 1966:215).

Robinson also records a number of instances of Aboriginal people in the Midlands using ochre for hair and body decoration. In one account, Robinson observes:

> *'Previous to setting off the natives ochred or painted themselves. It might appear ludicrous to civilised society to see people daub their hair with a thick substance of ochre and grease, but I observe that my natives at Campbell Town procured some soft red brick which they pound into dust mixing it with grease to anoint their heads. I have not yet ascertained their particular motive for this custom and it is particular to only a few tribes'* (Plomley 1966:501).

In terms of food resources, Robinson provides a series of accounts in his diary entries of the range of foods eaten by the North Midlands Tribe. Birds and eggs appear to have formed a major component of the diet of the local inhabitants, with swans, ducks and red bills being some of the main species targeted (Plomley 1966: 217). A range of mammal species are also documented as having been hunted and eaten, including forester kangaroo, wallaby, kangaroo rat (possibly bandicoots), and possums (Plomley 1966). In a diary entry dated 22/10/1831, Robinson provides an interesting account of a kangaroo hunt undertaken by Aboriginal men:

> *'...when the natives hunt...they surround the animal, and hence it is driven from one position to another till at length it becomes exhausted, when they rush upon it and seize the prey'* (Plomley 1966:555-6).

Only a few plant foods are documented in the ethnohistoric accounts as having been eaten. This includes a bulbous plant known as 'native bread' and a plant that has the appearance of asparagus that was found by the roots of peppermint trees (Plomley 1966). It is very likely that many more plant foods were eaten by the local Aboriginal population.

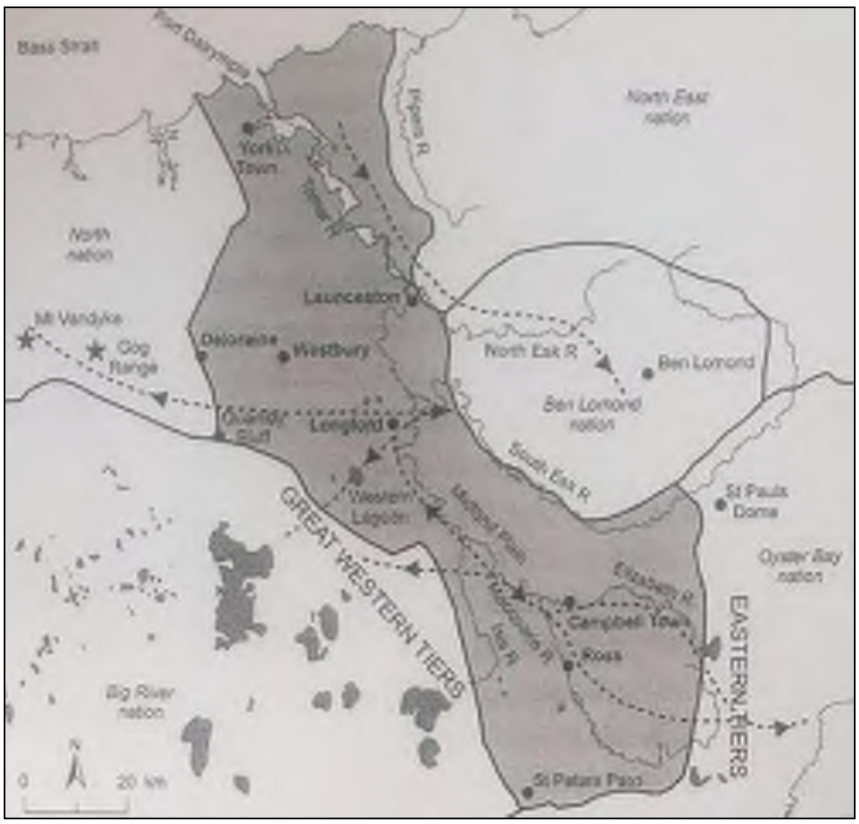

Figure 4: Settlement and movement patterns of the Midland Plain clans (Ryan 2012:30).

3.2 Culture Contact and Frontier Violence

The first recorded meeting between Europeans and the Aboriginal people of northeast Tasmania was in 1773 when Tobias Furneaux sailed into, and named, the Bay of Fires for the smoke he saw along the coast (Kee 1987:15). A quarter of a century later Jean-Baptiste-Louis Clarke Theodore also recorded smoke on the northeast coast (Plomley 1966, in Kee 1991:8). In 1800 Matthew Flinders observed smoke on the northern coast but noted that the Furneaux Islands appeared uninhabited (Kee 1987:15). Bass accompanied Flinders on further voyages later in 1800 and he observed that while smoke was often visible from ships, the people ran into the bush at the approach of Europeans (Kee 1987:15).

In 1804 Lieutenant Colonel William Patterson founded the European settlement at George Town. This camp was short-lived, with the party moving within a few weeks to the west bank of the River where they established York Town. The Port Dalrymple (Launceston) settlement was established in 1806. Hence, the study area was impacted from the very earliest phase of the European settlement of Tasmania. The Leterremairrener people would have been among those Aboriginal clans that bore the brunt of the contact period.

By the early nineteenth century sealers and whalers had established hunting grounds in the Bass Strait and inhabited islands and parts of the coast. In 1816 a sealer James Kelly met

up to 300 people at George Rocks. Kelly traded culled seals with the Aboriginal people of the coast in exchange for kangaroo (Kee 1987:19).

While there are some suggestions that initial contact between Aboriginal people and the whalers and sealers may have been friendly, Ryan's research on the North Midland nation indicates that 'at least 300 were probably killed outright by the settlers between 1820 and 1830' (Ryan 2012:19) and by the time George Augustus Robinson was moving through the area in 1830 – 1831, the sealers had instilled widespread terror among the Aboriginal people (Kee 1987:16). The sealers typically abducted women to be wives and to work on the sealers camps, and Robinson recorded that people along the northern coast referred to the murder of Aboriginal people at all the places where the sealers camped (Kee 1987:16).

This violent contact between Aboriginal people and Europeans, especially sealers, along the northeast coast had disastrous implications for the North Midlands nation. Apart from individual, emotional devastation, the loss of large numbers of women disrupted social organisation, as well as impacting on economic systems of gender-based division of labour (Kee 1987:16).

4.0 Background Archaeology

4.1 Previous Archaeological Investigations in the Region

The study area is located in the Northern Region of Tasmania. A number of regional archaeological investigations have been undertaken in the region over the past three decades. The most comprehensive, and pertinent investigations are those of Kee (1987, 1990 and 1991) and Moore (1997a and b). The following provides an overview of these studies.

Kee (1990)

In 1990 Kee implemented the Midlands Regional Aboriginal archaeological site investigation, which was funded through the National Estate Grants Program. The primary objectives of the study were primarily to establish (on the basis of literary and field research) a predictive model of site location for the Midlands Region, and secondly to carry out a limited archaeological excavation with the aim of providing a temporal context for the information generated for the study.

As part of the study, Kee (1990) surveyed 72km within the Midlands area. This survey resulted in the identification of 236 Aboriginal sites. This brought the total number of known Aboriginal sites in the Midlands to 350. The vast majority of these sites are classified as isolated artefacts or artefact scatters. The exception is the coastal fringes in the midlands where shell-midden sites tend to predominate. Stone quarries and suitable stone sources for procurement were identified in many locations throughout the Midlands, and a small number of rock shelters were also identified (Kee 1990).

As part of the analysis of the distribution of sites throughout the Midlands, Kee (1990) divided the Midlands into seven separate landscape divisions. These are Aeolian lunettes, coastal dunes and beaches, estuaries, lakes (uplands and lowlands), lowland hills and plains, upland hills and plains and rivers. The highest number of sites were identified in the Aeolian lunettes and coastal dunes, accounting for around 50% of the total number of sites recorded in the Midlands. Between 20 and 30 Aboriginal sites were recorded in each of the other five landscape divisions. Kee (1990) is of the opinion that the observed pattern of distribution accurately reflects true differences or variations in site densities throughout these different landscape divisions, and is not merely a product of skewed visibility or survey coverage.

Kee (1990) also noted a distinct difference in the distribution of site types within the Midlands Region, which she believes is also suggestive of differences in occupation patterns throughout the region. For example, the sites recorded around the margins of Lake Dulverton comprise mostly artefact scatters and rock shelters. Some of these sites are quite large (in terms of artefact numbers) and suggest intensive occupation. In contrast, the sites associated with the Aeolian lunettes were mostly small campsites located adjacent to lagoons, and are interpreted as being the product of short-term visitations to the area by small groups of people exploiting the resources of these lagoons and the associated hinterland areas.

One of the features of Kee's (1990) investigations is that the vast majority of sites identified as part of the field survey were recorded within ploughed farm paddocks, where the surface visibility is improved and the soils have been churned. This pattern of site location highlights the importance of good surface visibility in identifying sites during field surveys and demonstrates how varying conditions of surface visibility can potentially skew the results of survey investigations. Kee (1990) does not really adequately address this factor in her assessment. It is plausible that the factor of surface visibility variations could be a major contributor to the pattern of site distribution observed for the Midlands, with site densities being highest in the Aeolian dunes and coastal areas where surface visibility is improved and lowest in the Riverine and Uplands areas where surface visibility is poor. The only way to adequately determine how accurate the perceived pattern of site distribution is in the Midlands region would be through extensive sub-surface investigations within the various landscape divisions.

The summary interpretation provided by Kee (1990) for the observed archaeological record of the Midlands Region is that the areas with observed higher site and artefact densities correlate with areas where there is an increase in available resources, making these areas attractive for human habitation, and facilitating prolonged periods of occupation. Those areas with lower site and artefact densities also correlate with areas of decreased resource availability, resulting in shorter, less frequent occupation of these areas by small groups of people.

Taking into account historic records for the region, Kee (1990) presents a seasonal model of occupation for the Midlands Region. This model involves the movement of Aboriginal people around inland resource-rich zones such as lagoons and lakes in the spring and early summer months, with summertime spent on the north coast areas. It is suggested that the winter months may have been spent in the inland parts of the Uplands where there was good soil drainage.

Kee (1987, 1991)

Kee (1987, 1991) undertook the most comprehensive archaeological survey to date, of the North East Region of Tasmania. The early part of the study, including establishing the research aims and methodology, was carried out by Cosgrove and involved a regional investigation of the prehistoric archaeological resources in North East Tasmania. Kee subsequently took over the project, completing the aims of the research, which was to identify the selection criteria used in prehistoric settlement and determine the densities of sites in different environments. It was hoped that these results might give predictive capabilities to archaeological resources within the region.

The study area comprised 9 700km^2 in the North East of Tasmania and was bordered to the north and east by the coastline between Scamander and Stony Head, to the west by the watershed of the Pipers River, Tamar River and South Esk River and to the south by Fingal Bay. The investigation was based entirely upon a systematic survey (no sub-surface investigations were undertaken), which comprised just over 0.5% of the entire study area. Data was collected on the type, characteristics, artefact variability and location of sites across the landscape.

The study area was divided into major landforms, which were then stratified into two environments: coastal and inland. The line between coastal and inland was arbitrarily defined at 1km from the shore. Due to logistical issues, it was not possible to sample each landform proportionately given access, surface visibility, land use and so on. The hill landforms in particular were unable to be surveyed.

The following seven different landform divisions were made based on topography and environment:

- Coastal dunes;
- Coastal plains;
- Coastal low hills;
- Offshore Islands;
- Plains;
- Low hills;
- Hills.

A total of 230 sites are reported on in the study, only 189 of which were identified in the specific survey; previously recorded sites on the Register of the National Estate and the TASI site index were also included. Marked differences were clearly identified between the use of various landforms within the region and in particular between coastal and inland environments. The outcomes of the research and the predictive models generated are summarised by environment and landform below and in Table 1.

Inland environments were found to contrast with coastal areas in having considerably lower densities of sites but comprising larger assemblages and a wider range of artefact types present, dominated by heavily utilized and retouched classes. This may be the product of either proximity to raw materials causing raw material provisioning inland, or due to the need to perform a wider range of tasks in exploiting terrestrial resources inland, or both. The general sparsity of sites in inland areas is argued to be indicative of dispersed and short-term exploitation of a wide range of terrestrial resources (and hence the need for a more diversified toolkit). However significant differences were found to exist between landform types in inland environments; these are summarized below.

Table 1: Predicted site types, densities and composition for North East Tasmania (data based on Kee's 1991 survey results).

Landform	Predicted No of Sites per km^2	Types of Sites (in order of frequency)	Predicted no of artefacts per site	Raw Materials	Assemblage Composition (predominantly)
Coastal Dunes	6	Middens, Scatters	17.1	Quartz, volcanics, silcrete	Unretouched
Coastal Plains	30	Middens, Scatters	2.4	Quartz, cherty hornfels, quartzite	Unretouched
Coastal Low Hills	12.6	Middens, Scatters	2.4	Quartz, cherty hornfels	Unretouched, some retouched present

Offshore Islands	3.9	Scatters	26.6	Quartz, chalcedony	Unretouched and retouched
Plains	1.6	Isolated finds, Scatters	8.5	Quartz, cherty hornfels, quartzite	Unretouched and retouched
Low Hills	2.5	Scatters, isolated finds, middens	1.5	Quartz, cherty hornfels, quartzite	Retouched
Hills	0.2	Isolated finds, scatters	108*	Quartz	Retouched

* Based on Kee's data of only 5 assemblages.

Mark Moore, Aboriginal Archaeology of Dry Sclerophyll Forest Conservation Reserves in Eastern Tasmania, 1997

Mark Moore (1997a and b) undertook an archaeological assessment of a sample of dry sclerophyll forest in eastern Tasmania in an attempt to determine Recommended Areas for Protection (RAPs) in Tasmanian State Forest. The study involved a survey, site recording and lithic analysis for a range of sample sites. Over 380km of transects were surveyed within 34 forest blocks across eastern Tasmania (Moore 1997a:9). A total of 95 sites plus 5 'continuous' artefact scatters were recorded during the project (Moore 1997a:9).

The lithic analysis was based on technology, but no statistical analysis was attempted. Results were compared to experimental knapping studies (Moore 1997a:10). Moore identified duplex soils in particular as having the potential to conceal sites and therefore cautioned that in such environments surface survey alone may not be sufficient for site identification (Moore 1997a:13). Both small and large artefact scatters are identified by Moore as being of potential scientific significance when subject to lithic analysis (Moore 1997a:13).

Moore (1997a:13) suggests that 86% of the sites he identified in RAPs would have been located by following survey prescriptions outlined in the APZ guidelines. However, Moore (1997:13) adds that sites of high archaeological significance were found across all zones, not merely in zones predicted to be of High archaeological potential.

Ten of the 34 zones surveyed by Moore (1997a) are of particular relevance to the current study area. These zones are all in the region surrounding the study area, from Lefroy and Emu Ground in the north through to the mouth of the Tamar River (Moore 1997a:22). The two units closest to the study area are Lefroy and Den Ranges, and Moore (1997a:22) also surveyed a unit concentrated on the southern reaches of Pipers River.

In Moore's study, 40% of the recorded sites were isolated artefacts, while 26% of recorded sites were classified as small artefact scatters defined as 'several flakes from one or more reduction events scattered within a small area' (Moore 1997a:38, 40). 'Extended artefact scatters' that typically contained more artefacts and artefact types distributed across a broad area comprised 7% of the total number of recorded sites (Moore 1997a:41). 8% of sites were

recorded as quarries ('toolstone quarries') (Moore 1997a:42). Other site types recorded by Moore (1997a:43) were middens and rock shelters.

Moore (1997a:73) surveyed 27.5km in the Tippogoree Hills and recorded 4 artefact scatters and 2 isolated artefacts. 23.5km was surveyed at Lefroy with 2 artefact scatters and 1 isolated artefact identified. No sites were recorded from the 8.7km of survey transects walked at the Den Range, nor were any sites recorded at Emu Ground where 5km of survey transects were walked. The section surveyed by Moore (1997a:73) at Pipers River did not result in any sites being recorded, despite the 10.2km of survey transect. Four isolated artefacts were recorded in the parcel surveyed (26.4km total transects) at Prossers Forest, some 50km south of the Back Creek study area at the mouth of the Tamar estuary. Five isolated artefacts and 6 artefact scatters were recorded at Trevallyn, where Moore surveyed 9.2km, and 3 isolated artefacts and 4 artefact scatters were recorded at the Cliff Grounds Reserve near Launceston (from 10.5km of survey transects). No sites were recorded in the final survey parcel in the vicinity of Weavers Creek where 1.7km was surveyed (Moore 1997a:73). The importance of the Tamar estuary is indicated by these results, as is the predominance of isolated artefacts and artefact scatters in the site types for the region.

Moore (1997b:40) summarised research into Tasmanian stone tool production. He explains that the raw material was quarried from surface exposures and cores were 'roughed out' at the quarry site. The material was then 'exported' and carried by the clan for internal use or for trade. The clan carried cores as they travelled and struck flakes to modify into tools as required. As tools such as scrapers became blunt they were resharpened through 'rejuvenation' techniques. Moore claims from his review of recorded Tasmanian sites that cores were 'used up' for rapidly than formal tools, which were carried for extended periods. People, therefore, needed regular access to quarry sites. The wealth of stone resources available in Tasmania, however, meant that people did not need to undertake the recycling of materials or extensive reduction of tools (Moore 1997b:41).

Moore (1997b:41) identified ten quarries within the Dry Sclerophyll forest of the east coast. Moore (1997b:66) argues that in Tasmania there is evidence of a two-pronged method of stone tool procurement. The first was based on the opportunistic acquirement of cores from cobbles that would be carried long distances and heavily reduced. These sites ranged from the exploitation of beach cobbles and gravel to dolerite and hornfels exposures in the ranges.

Moore (1997b:63) concludes that the majority of artefacts located in Dry Sclerophyll forests in eastern Tasmania are unmodified flakes resulting from core reduction by people as needed during travel across the landscape. These cores were usually small and may have had some minimal reduction before being transported. Moore (1997b) argues that most raw material is derived from cobbles extracted from fluvial or colluvial gravel deposits (Moore 1997b:64). Reduction was usually by heavy percussion blows, and both unmodified flakes and cores were used as tools for cutting and scraping (Moore 1997b:64). At Waterhouse Point in the northeast, Moore (1997b:64) identified a bipolar quartz industry, as well as evidence of bipolar chert flakes.

The second method was the planned, 'logistical', visits to specialised quarry sites such as hornfels and dolerite exposures for the express purpose of acquiring material from which to

flake large scrapers (Moore 1997b:66). Production of large scrapers did not occur so haphazardly across the landscape, as it required specialised resources, in particular hornfels (Moore 1997b:64). The need to acquire these specialised stone resources (which were not as common as cobble deposits) required planning and ventures by the entire clan group for the purpose of acquiring the stone material. This archaeological interpretation fits with the ethnographic evidence discussed in Section 3.2.

This two-pronged system resulted in what Moore (1997b:71) terms a 'low cost, low-risk encounter procurement strategy.' Transported cores were frequently used and replaced opportunistically, while scrapers were heavily reduced as the raw material for scraper production was sourced only a few times a year. Thus, the tools were highly flexible, especially cores which could be used for multiple cutting tasks as well as to produce flakes (Moore 1997b:71). Scraper blanks were also fashioned into a range of tool types (Moore 1997b:84). Moore (1997b:85) argues that the procurement of specialised large scraper blanks began around 6000 years BP, around the time of Holocene population expansion and as an adaptation to maximising time available to spend on procuring food.

Moore (1997b:67) presents a picture of what the basic Tasmanian Aboriginal toolkit may have looked like at any one time:

> *The transported Aboriginal lithic toolkit probably included several scrapers in various states of resharpening, several small cores in various states of reduction, a small hammerstone for core reduction and scraper rejuvenation, several unmodified flakes which proved highly useful for cutting tasks, and perhaps a ballywine stone.*
>
> (Moore 1997b:67)

4.2 Investigations in the Vicinity of the Study Area

There have been a number of previous smaller scale archaeological investigations undertaken in the general vicinity of the Cimitiere Plains Solar Farm study area. These investigations have focused on specific infrastructure projects. Probably the most extensive and relevant to the current assessment are the investigations undertaken by CHMA (2013a and b) for the Low Head Wind Farm Project, which is located just to the north of the current study area.

The CHMA (2013a) assessment was focused on the proposed Wind Farm site area, which incorporated 12 proposed turbine locations and the network of access tracks and cable alignments that interconnected these turbines. The field survey resulted in the identification of eight Aboriginal heritage sites. Five of the recorded sites were classified as artefact scatters (sites AH11843, AH11846, AH11847, AH8749 and AH0653), with one of the sites (AH0653) also having a sparse scatter of shell midden material associated with the stone artefact scatter. Site AH0653 was also the largest of the recorded sites in terms of spatial extent and numbers of associated artefacts. The site comprised over 100 surface artefacts that were spread along a vehicle track and adjacent erosion scald areas on the foreshore margins of the coastal reserve at Green Bluff. The other four recorded artefact scatters each comprised between 3 and 12 surface artefacts. In each instance it was assessed that there was the potential for additional undetected artefact deposits to be associated with these sites. The remaining three recorded sites (AH11844, AH11845 and AH11848) were classified as isolated stone artefacts (CHMA 2013a:69).

In addition to the eight Aboriginal sites identified during the field survey investigations, CHMA (2013a:74-75) noted that were another 12 registered Aboriginal sites that were situated within 300m of the proposed footprint of the wind farm infrastructure layout. Three of these sites that appeared to be located within 100m of the proposed development footprint (AH9065, AH9960 and AH10038). The location of sites AH9960 and AH10038 were both re-identified, however, no artefacts or midden material could be found at these site locations. The two sites were confirmed as being around 100m north-east of the centre point location of Turbine 1, outside the project footprint. Site AH9065 was not relocated. CHMA (2013a:74) confirmed that the site had been incorrectly plotted and was in fact situated 150m to the south-west, on an access track.

Sites AH9955, AH9956, AH9957 and AH9714 were all noted by CHMA (2013a:74) to be situated within 200m of the centre point of Turbine locations 5 and 11, or the proposed access track alignment between these turbines. The sites were all recorded along an old access track that runs in a north-south direction from an electricity sub-station site. The sites are all situated on the crests of a series of low relief dunes traversed by the track. Despite an extensive search, CHMA (2013a:74) were not able to re-identify any of these sites.

The remaining five sites (AH8752, AH8754, AH9958, AH9959 and AH9064) were all reported to be situated over 200m away from the proposed infrastructure layout footprint (CHMA 2013a:75).

Based on the observations made during the field assessment, together with predictive modelling, CHMA (2013a:79-83) developed an Aboriginal sensitivity rating for the windfarm project footprint. Turbine locations 1, 3 and 10 were assessed as being potential of high sensitivity, based on the presence of Aboriginal heritage sites within or in the immediate vicinity of these turbines and the likelihood of sub-surface cultural deposits being present. The access tracks between turbines 3 and 4, 6 and 7 and 9 and 10 were also assessed as being of High or Medium high sensitivity. The remainder of the project footprint was rated between low and moderate sensitivity.

CHMA (2013a:95) advised that the preferred management strategy for sites that were located within the wind farm development footprint was to re-align the project footprint so as to avoid impacts to identified sites. Where this was not possible, it was recommended that sub-surface investigations should be undertaken at site areas in order to more accurately determine the extent and nature of artefact deposits present. This in turn would provide a greater level of information on which to base mitigation strategies.

CHMA (2013b) subsequently carried out the assessment of the proposed power corridor that extends between the George Town substation and the wind farm site. The assessment also included the following additional infrastructure at the wind farm site:

- 3.1km long section of proposed road upgrade;
- 800m section of proposed new road;
- 3.3km of additional power distribution lines;
- a 50m x 50m proposed laydown area.

Five Aboriginal heritage sites were recorded as part of the CHMA (2013b) assessment s (AH9345, AH9737, AH9741, AH11867, AH11868)). All five sites were located either within, or immediately adjacent to the proposed power corridor route.

Sites AH9345 and AH9741 were both situated within, or immediately adjacent to the proposed power corridor. These two registered sites had previously been recorded as small artefact scatters. However, during the CHMA (2013b) assessment, only a single isolated artefact could be re-located at each site location (CHMA 2013b:23).

Sites AH9737, AH11867 and AH11868 were all confirmed as being situated between 30-40m outside the bounds of the proposed power corridor. Site AH9737 was classified as an isolated artefact, and is located on the edge of a vehicle access track that runs under the existing Basslink power line. Site AH11867 was a discreet stone artefact scatter comprising 7 artefacts that was located on a series of erosion scalds, directly underneath the existing Basslink power line. Site AH11868 was a small artefact scatter, comprising 5 artefacts, that was located immediately north of Soldiers Settlement Road (CHMA 2013b:23).

CHMA (2013b:23) noted that there were an additional 15 registered Aboriginal sites that were situated within 100m-200m of the powerline corridor. All of these sites were confirmed as being outside the project footprint. CHMA (2013b:27) observed that the grid reference co-ordinates provided for four of these registered Aboriginal sites that were recorded in the vicinity of the Converter Station appeared to be incorrect (sites AH9335, AH9336, AH9346, AH9347). The descriptions presented in the site cards for these sites placed them within or immediately adjacent to the Converter Station. However, the grid references placed them some distance away.

4.3 Registered Aboriginal Sites in the Vicinity of the Study Area

As part of Stage 1 of the present assessment, a search was carried out on Aboriginal Heritage Register (AHR) to determine the extent of registered Aboriginal heritage sites within and in the general vicinity of the Cimitiere Plains Solar Farm Project study area.

The search shows that there are a total of 33 registered Aboriginal sites that are situated within an approximate 12km radius of the study area (search results provided by Claire Keating from AHT on 10-12-2021). Eighteen (18) of these sites are classified as artefact scatters, 11 sites are classified as isolated artefacts, two sites are classified as shell midden/artefact scatters, one is a shell midden/isolated artefact and one shell midden. Table 2 provides the summary details for these 33 registered Aboriginal sites, with Figures 5 and 6 showing the location of these sites in relation to the study area.

Based on the available information, there are six registered Aboriginal sites that appear to be situated within or in the immediate vicinity of the study area (sites AH9366, AH9354, AH9336, AH9346, AH10399 and AH10606). These sites are highlighted in red in Table 2. The following provides a summary overview of the information available for these six sites.

AH9366 was originally recorded by Vernon Graham in 2004 during a monitoring program for BassLink. AH9366 is described as being an isolated artefact with a white quartz flake located between two towers on the side of an access track associated with the BassLink Electrical Substation at George Town. The site is located 100m southeast of an unnamed tributary running of Cimitiere Creek on a flat hilltop. Surface visibility was originally recorded as very good (80%–100%). The original recording noted that the site had been highly disturbed, as much as 85%.

AH9354 was originally recorded by Vernon Graham in 2003 during a monitoring program for BassLink. AH9354 is described as being a 10m x 10m artefact scatter with one manuport,

one core and two debitage pieces. The materials present are cherty hornfels, quartz, and boned chert. The site was located within a wind row within plantation land with grass, heath, eucalypt and tea tree scrub vegetation on a gentle slope beside an access track. The site was located 500m northeast of Four Mile Creek with very good surface visibility (80%–100%). The current recording of AH9354 located the site on the western side of an existing graded access track within the Cimitiere Plains Solar Farm footprint. The site is located on a gravelly slope of 5° leading down to the access track. Vegetation on and surrounding the site consists of moss, grass, Sagg, eucalypts and a species of Melaleuca. The site and the immediate surroundings have been subject to high levels of disturbance from light and heavy vehicle activity, clearing and past logging activity.

AH9336 was originally recorded by Vernon Graham in 2003 during a monitoring program for BassLink. AH9336 is described as being an isolated artefact comprising two white quartz debitage artefacts. The site was located within a dry eucalypt forest on the eastern side of the BassLink Electrical Substation adjacent to a drain and gravel access track. The site was located 30m southeast of Four Mile Creek on flat terrain with very good surface visibility (80%–100%). The current recording of AH9336 is located on the western side of an existing graded access track within the Cimitiere Plains Solar Farm footprint. The site is located on a gravelly slope of 5° leading down to the access track. Vegetation on and surrounding the site consisted of Bracken Fern, Sagg, Blackwood and a species of Melaleuca. The site and the immediate surroundings have been subject to high levels of disturbance from light and heavy vehicle activity, clearing and past logging activity.

AH9346 was originally recorded by Vernon Graham in 2003 during a monitoring program for BassLink. AH9346 is described as an isolated artefact comprising one steep-edge scraper and one broken flake. The materials present are cherty hornfels and white quartz. The site was recorded as being located on a flat dry eucalypt plantation, with very good surface visibility (80%–100%), 150m south of Four Mile Creek.

AH10399 was originally recorded by Steve Stanton and Vanessa Edmonds in 2007 during a survey for the Tamar Valley Power Station – Phase 2 Environmental Studies project. AH10399 is described as an isolated artefact comprising of a white chert flake on gently sloping terrain within tea tree scrub 100m metres east of Four Mile Creek. Surface visibility at the time of the original recording was poor (11%–30%) and the site had been heavily disturbed (100%) due to light vehicle and agricultural activity.

AH10606 was originally recorded by Trent Graham and Vernon Graham in 2008 during a survey of the Alinta Energy (Tamar Valley) Waste Supply Pipeline project. AH10606 is described as a $10m^2$ artefact scatter consisting of a white quartz steep-edge scraper and a damaged cherty hornfels retouched flake on a highly disturbed site (95%) due to clearing for the installation of the pipeline, 200m west of Four Mile Creek. Surface visibility was originally recorded as very good (80%–100%).

Table 2: Registered Aboriginal sites in a 12km radius of the Cimitiere Plains Solar Farm Project study area (based on the results of the AHR search dated 10-12-2021).

AH Number	Site Type	Locality	Grid Reference Easting (GDA94)	Grid Reference Northing (GDA94)
10128	Shell Midden	Low Head		
10399	Isolated Artefact	Bell Bay	[redacted]	[redacted]
10606	Artefact Scatter	Bell Bay	[redacted]	[redacted]
10677	Artefact Scatter	Bell Bay		
10822	Artefact Scatter	Low Head		
10823	Isolated Artefact	Low Head		
10824	Artefact Scatter	Low Head		
11034	Isolated Artefact	George Town		
11867	Artefact Scatter	George Town		
11868	Artefact Scatter	George Town		
8750	Artefact Scatter	George Town		
8752	Artefact Scatter	George Town		
9308	Isolated Artefact	George Town		
9334	Artefact Scatter	George Town		
9335	Artefact Scatter	George Town		
9336	Isolated Artefact	George Town	[redacted]	[redacted]
9345	Artefact Scatter	George Town		
9346	Isolated Artefact		[redacted]	[redacted]
9347	Artefact Scatter			
9353	Isolated Artefact	George Town		
9354	Artefact Scatter	George Town	[redacted]	[redacted]
9366	Isolated Artefact	George Town	[redacted]	[redacted]
9673	Artefact Scatter	George Town		
9713	Isolated Artefact	Bell Bay		
9714	Artefact Scatter	Low Head		
9722	Isolated Artefact	George Town		
9737	Isolated Artefact	George Town		
9741	Artefact Scatter			
9955	Shell Midden, Artefact Scatter	Low Head		
9956	Shell Midden, Isolated Artefact	Low Head		
9957	Shell Midden, Artefact Scatter	Low Head		
13879	Artefact Scatter			
13905	Artefact Scatter			

Figure 5: Topographic map showing the location of registered Aboriginal sites located within a 12km radius of the study area (based on the results of the AHR search dated 10-12-2021).

Figure 6: Aerial map showing the location of registered Aboriginal sites located within a 12km radius of the study area (based on the results of the AHR search dated 10-12-2021).

5.0 Predictive Modelling

5.1 Introduction to Predictive Modelling

Predictive modelling, in an archaeological context, is a fairly straightforward concept and has been utilised by archaeologists in Australia for a number of years as a tool for undertaking research into Aboriginal heritage sites. In summary, predictive modelling involves the collation of information generated from previous archaeological research in a given region and using this information to establish patterns of Aboriginal site distributions within the landscape of that particular region. Based on perceived patterns of site distribution, archaeologists can then make predictive statements regarding the potential for various Aboriginal site types to occur within certain landscape settings and can make preliminary assessments regarding the potential archaeological sensitivity of landscape types within a given region.

5.2 Predictive Models; Strengths and Weaknesses

It should be acknowledged that most, if not all predictive models have a number of potential inherent weaknesses, which may serve to limit their value. These include, but may not be limited to the following:

1) The accuracy of a predictive model is directly influenced by the quality and quantity of available site data and information for a given region. The more data available and the greater the quality of that data, the more likely it is that an accurate predictive model can be developed.
2) Predictive modelling works very well for certain types, most particularly isolated artefacts and artefact scatters, and to a lesser extent scarred trees. For other site types, it is far more difficult to accurately establish distribution patterns and therefore make predictive modelling statements. Unfortunately, these site types are generally the rarer site types (in terms of frequency of occurrence) and are therefore generally the most significant sites.
3) Predictive modelling (unless it is very sophisticated and detailed) will generally not take into account micro-landscape features within a given area. These micro features may include (but are certainly not limited to) slight elevations in the landscape (such as small terraces) or small soaks or drainage depressions that may have held water. These micro features have been previously demonstrated to occasionally be focal points for Aboriginal activity.
4) Predictive modelling to a large extent is often predicated on the presence of watercourses. However, in some instances, the alignment of these watercourses has changed considerably over time. As a consequence, the present alignment of a given watercourse may be substantially different to its alignment in the past. The consequence of this for predictive modelling (if these ancient watercourses are not taken into account) is that predicted patterns of site distributions may be greatly skewed.

5.3 A Predictive Model of Site Type Distribution for the Study Area

The findings of previous archaeological investigations undertaken in the general vicinity of the study area, together with the results of the AHR search, indicate that by far the most likely site types that will be encountered during the current assessment will be artefact scatters and isolated artefacts. The following provides a definition for the site types likely to

be encountered in the study area and a general predictive statement for their distribution across the study area.

As discussed in section 4.1 of this report, other Aboriginal site types have been recorded in the Northern Tasmanian Region, in the general surrounds of the study area. These include shell midden sites, Aboriginal stone quarries and Aboriginal rock shelters. Shell middens are unlikely to occur within the study area due to the northern sections being located 3.5km southwest of the Bass Strait coastline and the southern sections, being located 2km northeast of the Tamar River. The underlying geology across the northern sections primarily consists of Cenozoic cover sequences consisting of silt with rounded clasts of granite, schist, quartzite and conglomerate. Tippogoree Hills, with Mount George and side slopes (including the study area), is dolerite. These stone materials present in both sections were generally not well suited for Aboriginal artefact manufacturing and as such it is highly unlikely that Aboriginal stone quarries will be present in the study area. Dolerite is also not conducive to the formation of rock overhangs and as such Aboriginal rock shelters are not likely to be present.

Artefact Scatters and Isolated artefacts

Definition

Isolated artefacts are defined as single-stone artefacts. Where isolated finds are closer than 50 linear metres to each other they should generally be recorded as an artefact scatter. Artefact scatters are usually identified as a scatter of stone artefacts lying on the ground surface. For the purposes of this project, artefact scatters are defined as at least 2 artefacts within 50 linear metres of each other. Artefacts spread beyond this can be best defined as isolated finds.

It is recognised that this definition, while useful in most instances, should not be strictly prescriptive. On some large landscape features, for example, sites may be defined more broadly. In other instances, only a single artefact may be visible, but there is a strong indication that others may be present in the nearby sediments. In such cases, it is best to define the site as an Isolated Find/Potential Archaeological Deposit (PAD).

Artefact scatters can vary in size from two artefacts to several thousand and may be representative of a range of activities, from sporadic foraging to intensive camping activity. In rare instances, campsites which were used over a long period of time may contain stratified deposits, where several layers of occupation are buried one on top of another.

Site Distribution Patterns:

Previous archaeological research in the region has identified the following pattern of distribution for this site type.

- The majority of artefact scatters are located in close proximity to a watercourse, on relatively level and well-drained ground.
- Larger open artefact scatters (representing more intensive activity, such as regular camp areas), tend to be located on level, elevated landscape features, close to (within 500m) major watercourses. The most common areas are the elevated basal slopes of hills, the level spines of spurs (around the termination point of the spur), or on elevated sand bodies.

- Sites in the Midlands are likely to occur at the intersection of the hilly country with the plains. Sheltered valleys at the base of ridgelines have been noted as having an increased likelihood of containing archaeological sites.
- Site and artefact densities on the lower-lying flood plains of watercourses tend to be comparatively lower. This may be reflective of the fact these low-lying areas were less favoured as camp locations, due to such factors as rising damp and vulnerability to flooding; and
- Site and artefact densities also tend to be comparatively lower in areas away from watercourses.
- Site and artefact densities are comparatively lower in moderate to steeply sloping terrain.
- Isolated artefacts may be found distributed across the landscape.

Predictive Statement:

The proposed Cimitiere Plains Solar Farm Project area is situated within the northern sections of the study area the terrain is characteristically flat to moderately undulating pastureland, with some sections of lowland floodplains surrounding Cimitiere Creek. The more gentle slope gradients occur throughout the northeast and northwest sections of the study area, where gradients range between 5º to 10º. In the southeast and southwest sections of the northern sections of the study area, the slope gradients increase to between 10º to 30º, with the steepest slopes present along the southern borders facing toward the Tippogoree Hills. The terrain across the study area is characteristically flat to moderately undulating. The more moderate slope gradients occur in the southern sections within the study area, closer to the base of Tippogoree Hills. Slope gradients increase between 5º to 20º, with the steeper slopes being the west side slopes of the ridges. The closest watercourse to the study area is 600m southwest of Four Mile Creek. This is a semi-permanent watercourse that flows in an east-to-west direction, emptying into the Lauriston Reservoir.

Applying the broad regional pattern of site distribution to the study area, it is anticipated that the density of sites (artefact scatters and isolated artefacts), and the density of artefacts associated with these sites would generally be expected to be low to medium. If sites are present in the study area, they are likely to be isolated artefacts or small artefact scatters, representing sporadic hunting and travelling through this landscape. These sites are most likely to be present in those parts of the study area where the slope gradient decreases to below 5º. Higher-density artefact scatters, representing more intensive activities such as interim campsites are unlikely to occur in the study area.

6.0 Survey Coverage of the Study Area

Survey Coverage and Surface Visibility

Survey coverage refers to the estimated portion of a study area that has been visually inspected during a field survey. Surface Visibility refers to the extent to which the actual soils of the ground surface are available for inspection. There are a number of factors that can affect surface visibility, including vegetation cover, surface water and the presence of introduced gravels or materials. Figure 7 provides a useful guide for estimating surface visibility.

The field survey was undertaken by Shay Hannah (CHMA archaeologist), Vernon Graham (Senior Aboriginal Heritage Officer) and Kieran Graham (Trainee Aboriginal Heritage Officer), over a period of 6 days (31-8-2022 – 9-9-2022). The field team walked a total of 44.073km of survey transects. In the solar farm, the average width of each transect was 10m. Within the powerline corridors and access tracks, the average width of each transect was 5m. Table 3 provides the total transects walked for each section and Figure 8 shows the alignment of the survey transects walked by the field team.

The survey transects were predominantly focused within the solar farm, power line corridors and access tracks within the Cimitiere Plains Solar Farm study area. Surface visibility within the solar farm ranged from between <10% and 80%, with the average being just 25%, which is in the low range. Surface visibility within the power line corridors ranged between <10% and 50%, with the average being 20%. Improved surface visibility was found along the access tracks which ranged from 50% and 100%, with the average being 70%. Vegetation cover was the main impediment to visibility.

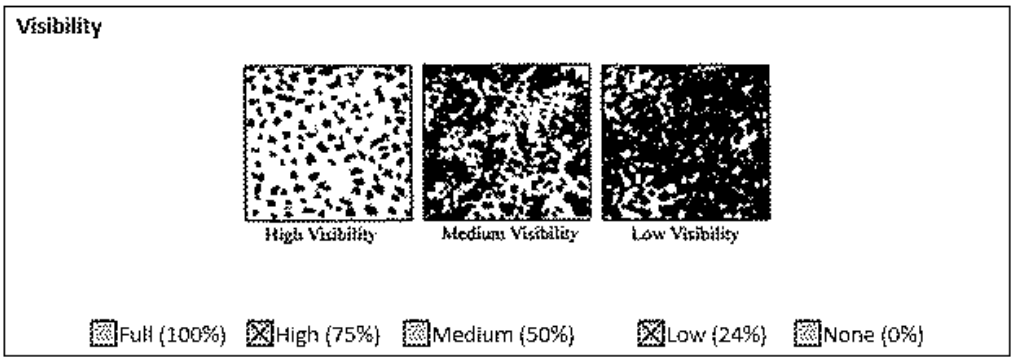

***Figure 7: Guidelines for the estimation of surface visibility*.**

Effective Coverage

Variations in both survey coverage and surface visibility have a direct bearing on the ability of a field team to detect Aboriginal heritage sites, particularly site types such as isolated artefacts and artefact scatters (which are the site types most likely to occur in the study area). The combination of survey coverage and surface visibility is referred to as effective survey coverage. Table 3 presents the estimated effective survey coverage achieved during the course of the survey assessment. The effective coverage is estimated to have been around 119,410.5m². This level of effective coverage is assessed as being adequate for the purposes of determining the potential extent, nature and distribution of Aboriginal cultural heritage sites in the study area.

Table 3: Effective Survey Coverage achieved across the surveyed areas.

Area Surveyed	Survey Transects	Estimated Surface Visibility	Effective Survey Coverage
Solar Farm	24,405m x 10m= 244,050m^2	25%	61,012m^2
Access Tracks	15,051m x 5m= 75,255m^2	70%	52,678.5m^2
Transmission Line Corridors	5720m x 5m= 28,600m^2	20%	5720m^2
Total	**347,905m^2**		**119,410.5m^2**

Plate 10: View east showing an erosion scald with 80% visibility surrounded by vegetation cover which reduced visibility to an average of 25%.

Plate 11: View northeast showing visibility along a tributary at 70%.

Plate 12: View southeast showing an ungraded access track within the study area where visibility was increased to 100%.

Plate 13: View northeast showing the average surface visibility of 20% within the southern sections of the study area.

Plate 14: View southwest showing surface visibility at <10% within the proposed transmission line corridors.

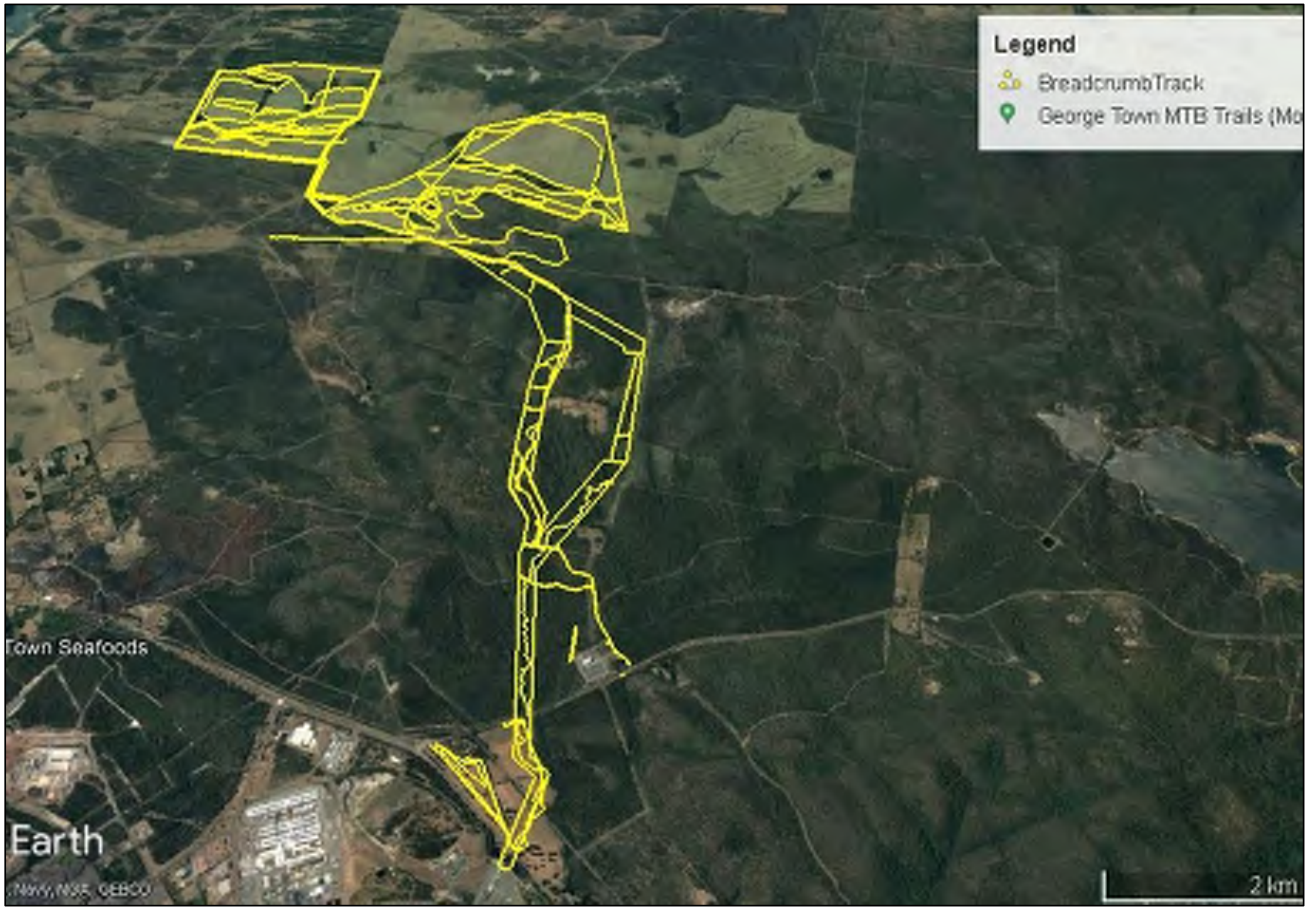

Figure 8: Aerial image showing survey transects walked by the field team across the study area.

7.0 Survey Results and Discussion

7.1 Summary Survey Results

The field survey assessment resulted in the identification and recording of four Aboriginal heritage sites. One of these sites is an Artefact scatter (AH14118), with the other three sites classified as Isolated artefacts (AH14120, AH14121 and AH14122). All of these are new site recordings that do not correlate with any registered Aboriginal sites. Table 4 provides the summary details for these four registered Aboriginal sites, with Figure 9 showing the location of these sites in relation to the study area. The following provides a brief description for each site. The detailed site descriptions are provided in Appendix 2.

AH14118 is a 20m x 15m low-density artefact scatter comprising six artefacts that are situated along the 5° slopes on both sides of a drainage ditch associated with an adjacent dam. The site is located 690m southwest of Cimitiere Creek. AH14118 is situated in a heavily disturbed context, with the site having been impacted by the construction of the dam and drainage ditch, clearing and ploughing of surrounding paddocks. Any additional undetected artefact deposits associated with the site are expected to have been impacted to some extent. Given some constraints in surface visibility (particularly outside the drainage ditch), it can't be stated with certainty that there are no additional undetected artefacts associated with site AH14118. Based on observed surface expressions, the indications are that artefact densities are likely to be low to medium and will most likely be restricted to the same general micro-landscape unit where the surface artefacts were identified. Given the potential for sub-surface deposits to be present, this area was selected for further sub-surface investigations (see section 7.3 for further details).

AH14120 is a broken pale pink quartzite flake artefact situated within an erosion scald (bull pit) measuring 1m x 1m on a 5° slope facing Cimitiere Creek which is 288m to the north. Despite surface visibility within the erosion scald being 100%, no other artefacts were identified. This was due to the presence of grass and vegetation cover immediately surrounding the erosion scald where the artefact was recorded. The vegetation covers restricted surface visibility to an average of 25% due to grass and vegetation cover. AH14120 is situated in a heavily disturbed context, with the site having been impacted by the clearing and ploughing of surrounding paddocks. Any additional undetected artefact deposits associated with the site are expected to have been impacted to some extent. Given some constraints in surface visibility (particularly outside the erosion scald), it can't be stated with certainty that there are no additional undetected artefacts associated with site AH14120. However, all indications are that artefact densities are likely to be low to very low.

Site AH14121 is a white quartz flake situated along an ungraded access track on a <5° slope 253m south of Cimitiere Creek. The field team walked the entire length of the ungraded access track, but no additional artefacts were identified. Off the access track, surface visibility was restricted to an average of 20% due to grass and vegetation cover. This is significantly less than the 100% surface visibility along the access track. AH14121 is situated in a heavily disturbed context, with the site having been impacted by the clearing and ploughing of surrounding paddocks. Any additional undetected artefact deposits associated with the site are expected to have been impacted to some extent. Given some constraints in surface visibility (particularly outside of the access track), it can't be stated with certainty that there are no additional undetected artefacts associated with site AH14121. However, all indications are that artefact densities are likely to be low to very low.

AH14122 is a white quartz flake situated on a 15° slope of soil pile associated with the construction of a nearby dam, 200m south of Cimitiere Creek. The field team walked

additional transects 15m around the site, but no additional artefacts were identified. Outside the slopes of the soil pile, surface visibility was restricted to an average of 20% due to grass and vegetation cover. This is significantly less than the 80% surface visibility on the slopes of the soil pile. AH14122 is situated in a heavily disturbed context, with the site having been impacted by the construction of the dam, and the clearing and ploughing of surrounding paddocks. Any additional undetected artefact deposits associated with the site are expected to have been impacted to some extent. Given some constraints in surface visibility (particularly outside of the soil pile), it can't be stated with certainty that there are no additional undetected artefacts associated with site AH14122. However, all indications are that artefact densities are likely to be low to very low.

Table 4: Summary details for Aboriginal sites AH14118, AH14120, AH14121 and AH14122.

Site Name	Grid Reference	Site Type	Site Description
AH14118	[redacted]	Artefact Scatter	Five white quartz flakes and a white quartz scraper are located on 5° slopes on both sides of a drainage ditch associated with an adjacent dam. The site has a low to medium potential for additional surface or sub-surface artefacts to be present. This site has been selected for further sub-surface investigations (see section 7.3).
AH14120	[redacted]	Isolated Artefact	A broken quartzite flake located on an erosion scald (bull pit) on a 5° slope amongst pasture land facing Cimitiere Creek which is 288m north. The site has a very low to low potential for additional surface or sub-surface artefacts to be present. This site has been heavily disturbed
AH14121	[redacted]	Isolated Artefact	A white quartz flake located on an access track located 253m south of Cimitiere Creek. Immediately bordered by native vegetation. The site has a low to very low potential for additional surface or sub-surface artefacts to be present. This site has been heavily disturbed.
AH14122	[redacted]	Isolated Artefact	A white quartz flake located on the 15° slope of a light grey sandy soil pile associated with the construction of a nearby dam 200m south of Cimitiere Creek. The site has a low to very low potential for additional surface or sub-surface artefacts to be present. This site has been heavily disturbed.

Figure 9: Aerial image showing the location of the four Aboriginal sites recorded during the survey assessment of the Study Area

7.2 Registered Aboriginal Sites not Relocated During the Assessment

As discussed previously in section 4.3, there are six previously registered Aboriginal heritage sites (AH9366, AH9354, AH9336, AH9346, AH10399 and AH10606) that are potentially situated within or in the immediate vicinity of the Cimitiere Plains Solar Farm study area. Figure 10 shows the location of these sites in relation to the study area. As part of the survey assessment the field team attempted to relocate and record these six sites. None of these sites could be relocated. The following provides a brief description for each site.

AH9366 was originally recorded by Vernon Graham in 2004 during a monitoring program for BassLink. AH9366 is described as being an isolated artefact with a white quartz flake located between two towers on the side of an access track associated with the BassLink Electrical Substation at George Town. The site is located 100m southeast of an unnamed tributary running of Cimitiere Creek on a flat hilltop. Surface visibility was originally recorded as very good (80%–100%). The original recording noted that the site had been highly disturbed, as much as 85%. This site was not identified during the current survey of the Cimitiere Plains Solar Farm Project. The field team walked a 20m radius around the site, however, no artefacts associated with the site were identified.

AH9354 was originally recorded by Vernon Graham in 2003 during a monitoring program for BassLink. AH9354 is described as being a 10m x 10m artefact scatter with very good surface visibility (80%–100%) with one manuport, one core and two debitage pieces. The materials present are cherty hornfels, quartz, and boned chert. The current recording of AH9354 located the site on the western side of an existing graded access track within the Cimitiere Plains Solar Farm footprint. Surface visibility was <10% due to vegetation cover, significantly less than that noted by Graham (2003) and has been heavily disturbed. The field team walked a 20m radius around the site, however, no artefacts associated with the site were identified due to vegetation cover and very poor surface visibility. Site AH9354 is situated in a heavily disturbed context, with the site having been impacted by the construction of the access tracks and drainage infrastructure. Any additional undetected artefact deposits associated with the site are expected to have been impacted to some extent.

AH9336 was originally recorded by Vernon Graham in 2003 during a monitoring program for BassLink. AH9336 is described as being an isolated artefact comprising two white quartz debitage artefacts with very good surface visibility (80%–100%). The current recording of AH9336 is located on the western side of an existing graded access track within the Cimitiere Plains Solar Farm footprint. Surface visibility was <10% due to vegetation cover, significantly less than that noted by Graham (2003) and has been heavily disturbed. The field team walked a 20m radius around the site, however, no artefacts associated with the site were identified due to vegetation cover and very poor surface visibility. CHMA (2013b) also was unable to relocate this site, and it was noted that the grid reference provided on the AHR was likely to be incorrect. The descriptions presented in the site card for the site placed it within or immediately adjacent to the Converter Station. However, the grid references places the site some distance away.

AH9346 was originally recorded by Vernon Graham in 2003 during a monitoring program for BassLink. AH9346 is described as an isolated artefact comprising one steep-edge scraper and one broken flake with very good surface visibility (80%–100%). The current recording of AH9346 places it on the western side of an existing graded access track within the Cimitiere Plains Solar Farm footprint. The site is situated within a flat bitumen access road intersection

leading to the BassLink converter station. Surface visibility was <10% due to vegetation cover, significantly less than that noted by Graham (2003) and has been heavily disturbed. The field team walked a 20m radius around the site, however, no artefacts associated with the site were identified. CHMA (2013b) also was unable to relocate this site, and it was noted that the grid reference provided on the AHR was likely to be incorrect. The descriptions presented in the site card for the site placed it within or immediately adjacent to the Converter Station. However, the grid references places the site some distance away

AH10399 was originally recorded by Steve Stanton and Vanessa Edmonds in 2007 during a survey for the Tamar Valley Power Station – Phase 2 Environmental Studies project. AH10399 is described as an isolated artefact comprising of a white chert flake with poor surface visibility (11%–30%) and the site had been heavily disturbed (100%) due to light vehicle and agricultural activity. The current recording AH10399 places the site approximately 3m south of the Bell Bay Line and along the eastern border of a power line corridor within the Cimitiere Plains Solar Farm footprint at Lauriston Park, Bell Bay. Surface visibility was <10% due to vegetation cover, significantly less than that noted by Graham (2003) and has been heavily disturbed. The field team walked a 20m radius around the site, however, no artefacts associated with the site were identified due to vegetation cover and very poor surface visibility.

AH10606 was originally recorded by Trent Graham and Vernon Graham in 2008 during a survey of the Alinta Energy (Tamar Valley) Waste Supply Pipeline project. AH10606 is described as a $10m^2$ artefact scatter consisting of a white quartz steep-edge scraper and a damaged cherty hornfels retouched flake on a highly disturbed site (95%) with very good surface visibility (80%–100%). The current recording of AH10606 places the site along an ungraded access track consisting of light grey sandy soil and introduced grasses in Lauriston Park, Bell Bay within the Cimitiere Plains Solar Farm footprint. Surface visibility within the bare soil patches was 100% by <10% due to vegetation cover in the immediate surroundings, significantly less than that noted by Graham (2003) and has been heavily disturbed. The field team walked a 20m radius around the site, however, no artefacts associated with the site were identified due to vegetation cover and very poor surface visibility.

Figure 10: Aerial image showing the location of the six registered Aboriginal sites within the study area.

7.3 Results of the Sub-surface Investigations

One location was selected for sub-surface investigation within the Cimitiere Plains Solar Farm Project study area, in the form of a test pitting program. This was an area of Potential Archaeological Sensitivity (PAS) associated with site AH14118, which measures around 130m x 30m. This location was selected on the basis that it was assessed that there was an elevated potential for sub-surface Aboriginal cultural heritage deposits to be present. No other locations within the study area were assessed as having the sufficient potential to warrant test pitting. The identified 130m x 30m PAS is located on a discrete rise within the proposed footprint of the Cimitiere Plains Solar Farm Project.

The aim of the initial test pitting program was simply to determine the potential presence/absence of Aboriginal heritage deposits and features within the nominated footprint within the AH14118 site and the identified PAS. This information would then be used to inform any further Aboriginal heritage investigations or mitigation strategies at the AH14118 site and the identified 130m x 30m PAS.

To meet these aims, a total of 15 test pits were excavated within the identified 130m x 30m PAS, with each pit measuring 50cm x 50cm. As a general guide, the pits were spaced in a grid formation across the identified PAS footprint, with each pit being spaced at a distance of approximately 8m apart. The exact positioning of the pits was determined in the field by the project archaeologist and AHOs, with the pits being placed in areas of reduced disturbance, where there was an elevated potential for sub-surface deposits to be present. Figure 11 shows the placement of these test pits in relation to the original site boundaries for site AH14118. Each pit was excavated in 5cm spits, with a square flat-bladed shovel until such time that bedrock or decomposed bedrock was encountered. All excavated soils were placed into buckets which were labelled according to provenance. These soils were then dry-sieved through 3mm screen mesh. At the completion of test pitting, each pit was in-filled.

A total of three stone artefacts were recovered from three separate test pits (pits 3, 8 and 14). The details of these artefacts are provided in Appendix 3. The artefacts from pits 3 and 14 were both recovered from the top 5cm of the soil horizon. The artefact from pit 8 was recovered from spit 3, at a depth of between 10cm to 15cm. In accordance with the agreed test pitting procedures, as soon as these artefacts were recovered, the excavation of these three test pits was terminated and the pits were infilled, with the artefacts placed back into these pits at the depth that they were recovered from. Table 5 provides the summary details for the test pitting results.

The identification of the three stone artefacts has extended the AH14118 site dimensions to 62m southeast and 28m northeast. The grid references below define the revised boundaries of the site. Figure 12 shows the revised spatial boundaries for site AH14118, based on the findings of the test pitting program.

[redacted]

The test pitting confirmed the presence of low density artefact deposits associated with site AH14118. The artefacts appear to be confined to the top 15-20cm of the soil horizon. This top soil horizon has been subject to quite high levels of land disturbances associated with

past land clearing and farming. This will have resulted in the artefacts having been moved up and down through the soil horizon and probably some level of horizontal displacement. There is very little potential for intact artefact deposits to be present. Based on the available evidence, it is likely that site AH14118 is representative of an interim camp site location that was used occasionally by people moving through the hinterland plains area.

It should be noted that the remainder of the PAS area associated with site AH14118, that sits outside of the redefined boundaries of the site, has been demonstrated through the test pitting program to be of low archaeological sensitivity. There are no further management requirements for the PAS areas outside the redefined boundaries of the site.

Plate 15: An excavated test pit at the identified 130m x 30m PAS.

Table 5: Summary details of the test pitting results at the identified 130m x 30m PAS location.

Pit Number	Grid Reference (GDA94) Easting	Grid Reference (GDA94) Northing	Spit 1 (0–5cm)	Spit 2 (5–10cm)	Spit 3 (10–15cm)	Spit 4 (15–20cm)	Spit 5 (20–25cm)
1	[redacted]	[redacted]	0	0	0	0	
2	[redacted]	[redacted]	0	0	0	0	
3	[redacted]	[redacted]	1 white quartz flake				
4	[redacted]	[redacted]	0	0	0	0	
5	[redacted]	[redacted]	0	0	0	0	
6	[redacted]	[redacted]	0	0	0		
7	[redacted]	[redacted]	0	0	0	0	
8	[redacted]	[redacted]	0	0	1 white quartz flake		
9	[redacted]	[redacted]	0	0	0	0	
10	[redacted]	[redacted]	0	0	0	0	0
11	[redacted]	[redacted]	0	0	0	0	
12	[redacted]	[redacted]	0	0	0	0	0
13	[redacted]	[redacted]	0	0	0	0	0
14	[redacted]	[redacted]	1 white quartz flake	0			
15	[redacted]	[redacted]	0	0	0	0	0

Figure 11: Aerial image showing the location of the test pitted tower locations.

Figure 12: Aerial image showing the revised extent of site AH14118.

7.4 Further Discussions

Besides the four abovementioned sites and their associated artefacts, no additional Aboriginal sites, suspected features or specific areas of elevated archaeological potential were identified during the survey assessment of the Cimitiere Plains Solar Farm study area. The field survey was also able to confirm that there are no stone resources identified within the study area that would be suitable for stone artefact manufacturing. Nor are there any sizeable rock outcrops occurring within the study area, and therefore there is no potential for Aboriginal rock shelters to be present.

As discussed in Section 6, surface visibility across the surveyed areas was variable, with averages ranging between 20% to 80%. Surface visibility across the surveyed areas was variable, with averages ranging between 20% to 80%. Whilst the survey coverage for the field program was an estimated 347,905m², effective coverage was decreased to around 119,410.5m². Given these constraints, it cannot be stated with certainty that there are no undetected Aboriginal heritage sites present across the surveyed areas. However, the survey results strongly indicate that site and artefact densities across the study area are likely to be low. If undetected sites are present, they are most likely to be isolated artefacts or small artefact scatters, representing sporadic Aboriginal activity. It should be noted that there are two specific landscape features present within the study area footprint, where there would be an elevated likelihood for sites or artefact densities may be present. These specific landscape features are Cimitiere Creek and Four Mile Creek, which are both semi-permanent watercourses, as well as their associated tributaries and finally the rises with slopes of 5° or more. These watercourses would not only be a source of fresh water during the settlement and movement patterns of the Leterremairrener (Port Dalrymple people) but also an area where food resources such as bush tucker, Wallaby and other game could be acquired. As noted in section 2, the northern sections of the study area are on a floodplain with rises in the landscape with slopes of 5° or more. The combined potential water and food resources, along with the natural rises that would provide a suitable area for short-term occupation mean that these areas are of elevated potential for the identification of Aboriginal sites. The southern sections, whilst more mountainous, are surrounded by floodplains and rises of 5° or above in those areas would provide the same benefits as those in the northern sections. Cimitiere Creek runs through the northern section of the proposed development footprint of the Solar Farm. The creek margins and surrounds was extensively surveyed as part of this assessment and a pattern of low density artefact scatters and isolated artefacts was identified along the slight rise areas bordering the creek (see recorded site details). These site areas have been addressed in the management recommendations. The immediate riparian margins of the creek will largely be excluded from the development footprint due to environmental factors. Four Mile Creek is only crossed by an existing access track to the transmission line corridor in the south of the project footprint. The remainder of the creek is outside the project footprint and will not be impacted.

The findings of this assessment and the interpretations of these findings are generally consistent with the observations made by Kee (1991) and Moore (1997) for the Northern and North-Eastern regions. The findings of previous regional archaeological investigations undertaken indicate that site densities are generally significantly lower compared with coastal regions. However, there does appear to be a distinct increase in site and artefact densities around the margins of the natural lakes and marshes in the region, particularly around the Tamar River, as well as along the coastline. The study area is situated away from these larger water bodies and therefore site densities would be expected to be lower away from the major resource zones, reflecting more sporadic activity.

8.0 Site Significance Assessments

The following provides an outline of the processes used to assess the significance of any cultural heritage sites that were identified during the course of the assessment.

8.1 Assessment Guidelines

There are several different ways of defining types of significance, and many practitioners have developed their own system of significance assessment. However, as Sullivan and Pearson (1995) point out, there seems to be a general advantage in using a set of criteria which is already widely accepted. In Australia, cultural significance is usually assessed against the Burra Charter guidelines and the Australian Heritage Commission guidelines (ICOMOS 1988, 1999).

8.2 The Burra Charter

Under the guidelines of the Burra Charter 'cultural significance' refers to the 'aesthetic, historic, scientific, social or spiritual value for past, present or future generations' of a 'place' (ICOMOS 1999:2). The guidelines to the Burra Charter comment:

"Although there are a variety of adjectives used in definitions of cultural significance in Australia, the adjectives 'aesthetic', 'historic', 'scientific' and social' ... can encompass all other values".

The following provides the descriptions given for each of these terms.

Aesthetic Value

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour, texture and materials of the fabric; the smells and sounds associated with the place and its use (Marquis-Kyle & Walker 1992).

Historic Value

A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase or activity. It may also have historic value as the site of an important event. For any given place the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment (Marquis-Kyle & Walker 1992).

Scientific Value

The scientific or research value of a place will depend upon the importance of the data involved or its rarity, quality or representativeness and on the degree to which the place may contribute further substantial information.

A site or a resource is said to be scientifically significant when its further study may be expected to help current research questions. That is, scientific significance is defined as research potential (Marquis-Kyle & Walker 1992).

Social Value

The social value of a place is perhaps the most difficult value for heritage professionals to substantiate (Johnston 1994). However, social value is broadly defined as 'the qualities for which a place has become a focus of spiritual, political, natural or other cultural sentimental to a majority or minority group' (ICOMOS 1988:30). In What is Social Value, Johnston (1994) has provided a clear definition of social value:

"Social value is about collective attachment to places that embody meaning important to a community, these places are usually community owned or publicly accessible or in some other way 'appropriated' into people's daily lives. Such meanings are in addition to other values, such as the evidence of valued aspects of history or beauty, and these meanings may not be apparent in the fabric of the place, and may not be apparent to the disinterested observer". (Johnston 1994:10)

Although encompassed within the criterion of social value, the spiritual value of a place is a new addition to the Burra Charter (ICOMOS 1999:1). Spiritual value is predominantly used to assess places of cultural significance to Indigenous Australians.

The degree to which a place is significant can vary. As Johnston (1994:3) has stated when trying to understand significance a 'variety of concepts [are] used from a geographical comparison ('national', 'state', 'local') to terms such as 'early', 'rare', or 'seminal''. Indeed, the Burra Charter clearly states that when assessing historic significance, one should note that for:

"any given place the significance will be greater where evidence of the association or event survives in situ, or where the setting are substantially intact, than where it has been changed or evidence does not survive". (ICOMOS 1988:29)

8.3 Significance Criteria Relevant to Indigenous Sites

Indigenous heritage sites and places may have educational, tourism and other values to groups in society. However, their two principal values are likely to be in terms of their cultural/social significance to Aboriginal people and their scientific/archaeological significance. These are the two criteria that are commonly used in establishing the significance of Aboriginal sites. The following provides an explanation of these criteria.

1) Aboriginal Cultural / Social Significance

This relates to the value placed upon a site or suite of sites by the local or regional Aboriginal community. The identification and assessment of those sites that are significant to Aboriginal people is a matter for Aboriginal people. This assessment can only be made by the appropriate Aboriginal representatives of the relevant communities.

2) Scientific (Archaeological) Significance

Archaeological significance values (or scientific values) generally are assessed on the potential of a site or place to generate knowledge through archaeological research or knowledge. Bowdler (1984) states that the scientific significance should be assessed according to timely and specific research questions (research potential) and site representativeness.

Research potential entails the potential of a site or suite of sites for scientific research and excavation. This is measured in terms of a site's ability to provide information on aspects of Aboriginal culture. In this respect, the contents of a site and their state of preservation are important considerations.

Representativeness takes account of how common a site type is (Bowdler 1984). That is, it allows sites to be evaluated with reference to the known archaeological record within the given region. The primary goal of cultural resource management is to afford the greatest protection to a representative sample of sites throughout a region. The corollary of a representative site is the notion of a rare or unique site. These sites may help to understand the patterning of more common sites in the surrounding area and are therefore often considered of archaeological significance. The concept of a rarity cannot be easily separated from that of representativeness. If a site is determined to be rare, then it will by definition be included as part of the representative sample of that site type.

The concepts of both research potential and representativeness are ever-changing variables. As research interests shift and archaeological methods and techniques change, then the criteria for assessing site significance are also re-evaluated. As a consequence, the sample of site types which are used to assess site significance must be large enough to account for the change in these variables.

8.4 Summary Significance Ratings for Recorded Sites

Sites AH14118, AH14120, AH14121 and AH14122 which were recorded during the survey assessment of the proposed Cimitiere Plains Solar Farm study area, have been assessed and allocated a rating of significance, based on the criteria presented in section 8.2. As discussed in section 8.2, Aboriginal sites are usually assessed in terms of their scientific and social significance. The concepts of Aesthetic significance and Historic significance are rarely applied in the assessment of Aboriginal sites unless there is direct evidence of European/Aboriginal contact activity at the site, or the site has specific and outstanding aesthetic values. However, based on advice received from AHT, aesthetic and historic significance values have also been taken into consideration as part of the assessment of these sites.

A five-tiered rating system has been adopted for the significance assessment; low, low-medium, medium, medium-high and high. Table 6 provides the summary details for the significance ratings of sites AH14118, AH14120, AH14121 and AH14122. A more detailed explanation of the assessment ratings is presented in sections 8.5 to 8.7. Section 8.8 provides an assessment of significance in relation to the *Aboriginal Heritage Act 1975* (the Act), Section 9 of this report presents a statement of social significance provided by Vernon Graham for these sites and the study area as a whole.

Table 6: Summary significance ratings for Aboriginal heritage sites AH14118, AH14120, AH14121 and AH14122.

AH Number	Site Type	Scientific Significance	Aesthetic Significance	Historic Significance	Social Significance
AH14118	Artefact Scatter	Low-Medium	Low	N/A	Medium-High
AH14120	Isolated Artefact	Low	Low	N/A	Medium-High
AH14121	Isolated Artefact	Low	Low	N/A	Medium-High
AH14122	Isolated Artefact	Low	Low	N/A	Medium-High

8.5 Scientific Significance for Recorded Sites

Archaeological (or scientific) significance values generally are assessed on the potential of a site or place to generate knowledge through archaeological research or knowledge. Bowdler (1984) states that the scientific significance should be assessed according to timely and specific research questions (research potential) and site representativeness. Research potential entails the potential of a site or suite of sites for scientific research and excavation. This is measured in terms of a site's ability to provide information on aspects of Aboriginal culture. In this respect, the contents of a site and their state of preservation are important considerations. Representativeness takes account of how common a site type is (Bowdler 1984).

Sites AH14120, AH14121 and AH14122 are classified as Isolated artefacts, with site AH14118 demonstrated to be a low density artefact scatter. Isolated artefacts and artefact scatters are two of the most common site types recorded in the Northern Region, and more broadly, the State of Tasmania (as demonstrated through the AHR search results for this project). As such, the scientific significance of artefact scatters and isolated artefacts usually relates primarily to their research potential as opposed to the rarity of the site type. The potential exception to this is where comparatively rare artefact types (either tool or stone material types) are represented in assemblages.

In this instance, sites AH14120, AH14121 and AH14122 are assessed as being of low scientific significance. Site AH14118 is assessed as being of Low-medium scientific significance. The rationale for this assessment is as follows.

1) Isolated artefacts and artefact scatters are common site types in the region and as such rarity is not a consideration.
2) The artefact assemblages associated with the four sites are comprised of stone material types (quartz and quartzite) and stone tool types (flakes) that are commonly represented in artefact assemblages across the region. As such, rarity is again not a consideration.
3) Sites AH14120, AH14121 and AH14122 are assessed as having a very limited potential to comprise additional undetected surface and sub-surface artefact deposits. These three sites are also situated in moderate to heavily disturbed contexts, being situated on ungraded vehicle tracks and dam sites in areas where the vegetation surrounding the vehicle tracks has also been cleared as part of past land uses. This means that there is very little potential for intact artefact deposits to be present, which reduces the research potential of the two sites.

4) Site AH14118 has been demonstrated to be a low density artefact scatter that comprises sub-surface artefact deposits. The site is assessed as having a medium-level potential to comprise additional undetected surface and sub-surface artefact deposits, however densities are likely to be consistently low and the artefact deposits are likely to be in a quite heavily disturbed context. This limits the research potential of the site.

8.6 Aesthetic Significance of Recorded Sites

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour, texture and materials of the fabric; the smells and sounds associated with the place and its use (Marquis-Kyle & Walker 1992).

Sites AH14118, AH14120, AH14121 and AH14122 are situated around the gentle to moderate undulations of pastureland within the northern sections of the study area. The sites are all quite heavily disturbed contexts, being situated on ungraded vehicle tracks and areas that have been subject to past land disturbances associated with clearing and other land practices. The aesthetics of the broader northern sections of the study area have been significantly disturbed. Therefore, the landscape setting of sites AH14118, AH14120, AH14121 and AH14122 are assessed as being of low aesthetic significance.

8.7 Historic Significance of Recorded Sites

A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase or activity. It may also have historic value as the site of an important event. For any given place the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment (Marquis-Kyle & Walker 1992).

Historic significance is not an attribute often considered when assessing the significance of Aboriginal sites unless there is direct evidence for some form of European/Aboriginal contact activity. In this instance, no such evidence exists for sites AH14118, AH14120, AH14121 and AH14122. As such the concept of historic significance is not applicable to these sites.

8.8 Significance Under the Aboriginal Heritage Act 1975

In Tasmania, the *Aboriginal Heritage Act 1975* (the Act) is the primary Act for the treatment of Aboriginal cultural heritage. Under Part 1, Section 2(8) of *the Aboriginal Heritage Act 1975*, Aboriginal tradition and significance is defined as follows.

Aboriginal tradition means –

(a) the body of traditions, knowledge, observances, customs and beliefs of Aboriginal people generally or of a particular community or group of Aboriginal people; and

(b) any such tradition, knowledge, observance, custom or belief relating to particular persons, areas, objects or relationships;

significance, of a relic, means significance in accordance with –

(a) the archaeological or scientific history of Aboriginal people; or

(b) the anthropological history of Aboriginal people; or

(c) the contemporary history of Aboriginal people; or

(d) Aboriginal tradition.

In accordance with the *Aboriginal Heritage Standards and Procedures 2018,* Aboriginal heritage assessments in Tasmania have addressed the issue of significance as per the Burra Charter 2013. This approach has been adopted for this assessment (see sections 8.1 to 8.7 above). However, AHT have now advised that in order to ensure compliance with the *Aboriginal Heritage Act 1975* (the Act), assessments are now also to consider significance and Aboriginal tradition as defined in the Act.

The Act came into effect in 1975, which is several decades before the Burra Charter Guidelines and protocols for determining significance were developed. To a large extent, the definitions of Aboriginal tradition and significance, as defined under Section 2(8) of the Act are covered by the Burra Charter, and have been addressed in this report.

The archaeological or scientific history of Aboriginal people (a) is covered under the concept of Scientific significance. This component of significance, as it relates to sites AH14118, AH14120, AH14121 and AH14122, have been addressed in detail in sections 8.2, 8.3 and 8.5 of this report.

Aboriginal cultural, social and spiritual significance under the Burra Charter relates to the value placed upon a site or suite of sites by the local or regional Aboriginal community (see sections 8.2 and 8.3 of this report). The definition of Aboriginal tradition, as provided in the Act, is broadly covered under this section of the Burra Charter. As is the anthropological history of Aboriginal people (b), the contemporary history of Aboriginal people (c) and Aboriginal tradition (d).

The notion of Aboriginal cultural, social and spiritual significance, and the assessment of these values is a matter for Aboriginal people and can only be made by the appropriate Aboriginal representatives of the relevant communities. Section 9 of this report presents a statement of cultural/social significance provided by Vernon Graham for the sites recorded during the current assessment, and the study area as a whole. Vernon Graham is an experienced Aboriginal Heritage Officer and a respected member of the Tasmanian Aboriginal community, and as such is well placed to provide this statement. In addition, the report has been sent out to a range of Aboriginal communities for review and comment. The results of the consultation program are presented in Appendix 6.

As described in section 3 of this report, the available ethnographic information indicates that the Cimitiere Plains Solar Farm Project study area is within land traditionally occupied by the Leterremairrener (Port Dalrymple people) of the Northern Midlands Nation.

Sites AH14118, AH14120, AH14121 and AH14122 are four of a number of Aboriginal sites that have been recorded within this northern region. These sites provide tangible evidence for the occupation of this area by the Leterremairrener people, and they retain a level of significance and importance to the present-day Tasmanian Aboriginal community (see section 9).

9.0 Consultation with Aboriginal Communities and Statement of Aboriginal Significance

The designated Aboriginal Heritage Officer (AHO) for this project is Vernon Graham. One of the primary roles of the Aboriginal Heritage Officer is to consult with Aboriginal community groups. The main purpose of this consultation process is:

- to advise Aboriginal community groups of the details of the project,
- to convey the findings of the Aboriginal heritage assessment,
- to document the Aboriginal social values attributed to Aboriginal heritage resources in the study area,
- to discuss potential management strategies for Aboriginal heritage sites, and
- to document the views and concerns expressed by the Aboriginal community representatives.

Aboriginal Heritage Tasmania (AHT) has advised that there have been some changes to the accepted approach to Aboriginal community consultation, based on recommendations made by the AHC on 28 April 2017. These changes relate to cases where the AHC consider it may be sufficient for a Consulting Archaeologist (CA) or Aboriginal Heritage Officer (AHO) to consult only with the Aboriginal Heritage Council.

The Council recommended that consultation with an Aboriginal community organisation is not required for a proposed project when:
There are less than 10 isolated artefacts that are not associated with any other nearby heritage; or
The impact of the project on Aboriginal heritage:

- is not significant; or
- will not destroy the heritage; or
- affects only part of the outer approximately 20% of a buffer around a registered site

The CA and AHO will need to demonstrate in Aboriginal heritage reports including map outputs:

- that the proposed impact on the Aboriginal heritage within the project area is not significant and why;
- that the project activity will not destroy the heritage;
- that the proposed impact on the site buffer is not adjacent to a significant component of the registered site polygon.

Four Aboriginal sites were identified during the field survey of the proposed Cimitiere Plains Solar Farm study area. Because of the recording of four Aboriginal sites in the study area, the decision has been made to distribute this report to a select range of Aboriginal community groups in the north of the State for review and comment. The report has also been provided to AHT for review.

Vernon Graham has provided a statement of the Aboriginal cultural values attributed to the study area as a whole. This statement is presented below.

Statement of Cultural/Social Significance by Vernon Graham

Aboriginal heritage/relics are not renewable. Hence any cultural heritage values provide a direct link to past occupation undertaken by traditional indigenous ancestors in the region of the project proposal. This provides a story or link for the Aboriginal community today and facilitates the connection to social-cultural heritage values, ethnohistory /story and the relationship pertaining to country. This is an integral part of regaining knowledge so it can be encapsulated and retained by both the individual Aboriginal people and for the Aboriginal community collectively.

We did identify four Aboriginal heritage sites, AH14118, AH14120, AH14121 and AH14122, during the survey of the proposed Cimitiere Plains Solar Farm Project area. These sites are important to the Tasmanian Aboriginal community as they provide a tangible material link to our ancestors. My conversations with the Aboriginal community organisations that have I have consulted for this project confirm that our people would like to see these four recorded Aboriginal sites protected and left in-situ if possible. I would also personally support this approach. If it is not possible to conserve and protect any of these sites, then the preferred option would be to salvage collect the artefacts and to relocate these artefacts to a safe location on Country.

No other Aboriginal heritage sites were identified during our investigations of the proposed solar farm study area. There were six other previously recorded Aboriginal heritage sites that are reported to be present within the southern part of the study area, around Lauriston Park and Bridport Road. I recorded most of these sites back around 2003 and 2004. Despite an extensive search, we couldn't find these sites again. Some of these sites such as AH9336 and AH9346 may in fact be plotted incorrectly and are likely to be around the Convertor station site. Although I don't have any exact recollections of this.

Based on the survey results, and my observations made during the field survey, I am satisfied that there is a low potential for other Aboriginal sites to be present in the study area. If care is taken to avoid sites AH14118, AH14120, AH14121 and AH14122, then I am satisfied that this proposal poses a minimal risk of impacting Aboriginal heritage values.

Even if the site of the project proposal contains no further evidence of Aboriginal heritage there are always the cultural resources (flora, fauna, aquaculture or any other resource values that the earth may offer) and the living landscape, which highlight the high significance to the Aboriginal cultural heritage values to the country. Parts of the study area, on the floodplains and forested areas, are lesser undisturbed, and there are bush tucker resources present in this area that I observed during the survey. This includes the native she-oak, tea tree and a range of ferns and native grasses. There is likely to be some impact on these bush tucker resources as part of the development of the Cimitiere Plains Solar Farm Project.

10.0 Statutory Controls and Legislative Requirements

The following provides an overview of the relevant State and Federal legislation that applies to Aboriginal heritage within the state of Tasmania.

10.1 State Legislation

In Tasmania, the *Aboriginal Heritage Act 1975* (the Act) is the primary Act for the treatment of Aboriginal cultural heritage. The Act is administered by the Minister for Aboriginal Affairs, through Aboriginal Heritage Tasmania (AHT) in the Department of Premier and Cabinet (DPAC). AHT is the regulating body for Aboriginal heritage in Tasmania and '[n]o fees apply for any application to AHT for advice, guidance, lodgement or permit application'.

The Act applies to 'relics' which are any object, place and/or site that is of significance to the Aboriginal people of Tasmania (as defined in section 2(3) of the Act). The Act defines what legally constitutes unacceptable impacts on relics and a process to approve impacts when there is no better option. Aboriginal relics are protected under the Act and it is illegal to destroy, damage, deface, conceal or otherwise interfere with a relic, unless in accordance with the terms of a permit granted by the Minister. It is illegal to sell or offer for sale a relic, or to cause or permit a relic to be taken out of Tasmania without a permit (section 2(4) qualifies and excludes 'objects made, or likely to have been made, for purposes of sale').

Section 10 of the Act sets out the duties and obligations for persons owning or finding an Aboriginal relic. Under section 10(3) of the Act, a person shall, as soon as practicable after finding a relic, inform the Director or an authorised officer of the find.

It should be noted that with regard to the discovery of suspected human skeletal remains, the *Coroners Act 1995* takes precedence. The *Coroners Act 1995* comes into effect initially upon the discovery of human remains, however once determined to be Aboriginal the *Aboriginal Relics Act* overrides the *Coroners Act.*

In August 2017, the Act was substantively amended and the title changed from the *Aboriginal Relics Act 1975*. As a result, the AHT *Guidelines to the Aboriginal Heritage Assessment Process* were replaced by the *Aboriginal Heritage Standards and Procedures*. The Standards and Procedures are named in the statutory *Guidelines* of the Act issued by the Minister under section 21A of the Act.
Other amendments include:

- An obligation to fully review the Act within three years.
- Increases in maximum penalties for unlawful interference or damage to an Aboriginal relic. For example, maximum penalties (for deliberate acts) are 10,000 penalty units (currently $1.57 million) for bodies corporate other than small business entities and 5,000 penalty units (currently $785,000) for individuals or small business entities; for reckless or negligent offences, the maximum penalties are 2,000 and 1,000 penalty units respectively (currently $314,000 and $157,000). Lesser offences are also defined in sections 10, 12, 17 and 18.
- Prosecution timeframes have been extended from six months to two years.
- The establishment of a statutory Aboriginal Heritage Council to advise the Minister.

Section 21(1) specifies the relevant defence as follows: “It is a defence to a prosecution for an offence under section 9 or 14 if, in relation to the section of the Act which the defendant is alleged to have contravened, it is proved … that, in so far as is practicable … the defendant complied with the guidelines”.

10.2 Commonwealth Legislation

There are also a number of Federal Legislative Acts that pertain to cultural heritage. The main Acts being; *The Australian Heritage Council Act 2003*, *The Aboriginal and Torres Strait Islander Heritage Protection Act 1984* and the *Environment Protection and Biodiversity Conservation Act 1999*

Australian Heritage Council Act 2003 (Comm)

The *Australian Heritage Council Act 2003* defines the heritage advisory boards and relevant lists, with the Act’s Consequential and Transitional Provisions repealing the Australian Heritage Commission Act 1975. The Australian Heritage Council Act, like the Australian Heritage Commission Act, does not provide legislative protection regarding the conservation of heritage items in Australia but has compiled a list of items recognised as possessing heritage significance to the Australian community.

The Aboriginal and Torres Strait Islander Heritage Protection Act 1984.

This Federal Act was passed to provide protection for the Aboriginal heritage, in circumstances where it could be demonstrated that such protection was not available at a state level. In certain instances, the Act overrides relevant state and territory provisions.

The major purpose of the Act is to preserve and protect from injury and desecration, areas and objects of significance to Aborigines and Islanders. The Act enables immediate and direct action for the protection of threatened areas and objects by a declaration from the Commonwealth Minister or authorised officers. The Act must be invoked by or on behalf of an Aboriginal or Torres Strait Islander or organisation.

Any Aboriginal or Torres Strait Islander person or organization may apply to the Commonwealth Minister for a temporary or permanent 'Stop Order' for the protection of threatened areas or objects of significant indigenous cultural heritage.

The Commonwealth Act 'overrides' State legislation if the Commonwealth Minister is of the opinion that the State legislation (or undertaken process) is insufficient to protect the threatened areas or objects. Thus, in the event that an application is made to the Commonwealth Minister for a Stop Order, the Commonwealth Minister will, as a matter of course, contact the relevant State Agency to ascertain what protection is being imposed by the State and/or what mitigation procedures have been proposed by the land user/developer.

In addition to the threat of a 'Stop Order' being imposed, the Act also provides for the following:

- If the Federal Court, on application from the Commonwealth Minister, is satisfied that a person has engaged or is proposing to engage in conduct that breaches the 'Stop Order', it may grant an injunction preventing or stopping such a breach (s.26). Penalties for breach of a Court Order can be substantial and may include a term of imprisonment;

- If a person contravenes a declaration in relation to a significant Aboriginal area, penalties for an individual are a fine of up to $10,000.00 and/or 5 years gaol and for a Corporation a fine up to $50,000.00 (s.22);
- If the contravention is in relation to a significant Aboriginal object, the penalties are $5,000.00 and/or 2 years gaol and $25,000.00 respectively (s.22);
- In addition, offences under s.22 are considered 'indictable' offences that also attract an individual fine of $2,000 and/or 12 months gaol or, for a Corporation, a fine of $10,000.00 (s.23). Section 23 also includes attempts, inciting, urging and/or being an accessory after the fact within the definition of 'indictable' offences in this regard.

The Commonwealth Act is presently under review by Parliament and it is generally accepted that any new Commonwealth Act will be even more restrictive than the current legislation.

Environment Protection and Biodiversity Conservation Act 1999 (Comm)
This Act was amended, through the Environment and Heritage Legislation Amendment Act (No1) 2003 to provide protection for cultural heritage sites, in addition to the existing aim of protecting environmental areas and sites of national significance. The Act also promotes the ecologically sustainable use of natural resources, biodiversity and the incorporation of community consultation and knowledge.

The 2003 amendments to the *Environment Protection and Biodiversity Conservation Act 1999* have resulted in the inclusion of indigenous and non-Indigenous heritage sites and areas. These heritage items are defined as:
'indigenous heritage value of a place means a heritage value of the place that is of significance to indigenous persons in accordance with their practices, observances, customs, traditions, beliefs or history;

Items identified under this legislation are given the same penalty as actions taken against environmentally sensitive sites. Specific to cultural heritage sites are §324A-324ZB.

Environment and Heritage Legislation Amendment Act (No1) 2003 (Comm)
In addition to the above amendments to the *Environment Protection and Biodiversity Conservation Act 1999* to include provisions for the protection and conservation of heritage, the Act also enables the identification and subsequent listing of items for the Commonwealth and National Heritage Lists. The Act establishes the *National Heritage List*, which enables the inclusion of all heritage, natural, Indigenous and non-Indigenous, and the *Commonwealth Heritage List*, which enables the listing of sites nationally and internationally that are significant and governed by Australia.

In addition to the *Aboriginal and Torres Strait Islander Heritage Protection Act 1987*, amendments made to the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)* enables the identification and subsequent listing of indigenous heritage values on the Commonwealth and/or National Heritage Lists (ss. 341D & 324D respectively). Substantial penalties (and, in some instances, gaol sentences) can be imposed on any person who damages items on the National or Commonwealth Heritage Lists (ss. 495 & 497) or provides false or misleading information in relation to certain matters under the Act (ss.488-490). In addition, the wrongdoer may be required to make good any loss or damage suffered due to their actions or omissions (s.500).

11.0 Aboriginal Cultural Heritage Management Plan

Heritage management options and recommendations provided in this report are made based on the following criteria.

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

As noted in section 1.1 of this report, following the completion of the Aboriginal heritage investigations, the proposed development footprint for this project has been amended, partially in an effort to avoid Aboriginal heritage values that were identified during the Aboriginal heritage assessment. The following recommendations are based on the revised Project Footprint.

Recommendation 1 (AH14118)
Site AH14118 has been confirmed through surface and sub-surface investigations to be a low density artefact scatter. The site is located in the northern portion of the Project Footprint (see Figure 13). The following grid references define the boundaries of this site.

[redacted]

The preferred management option is for the project to avoid any impacts to this site and for the site to protected and conserved in-situ. To this end, the following measures should be put in place.

- The location of the site is to be plotted on the design plans for the Cimitiere Plains Solar Farm Project footprint.
- Prior to construction commencing in these areas, temporary high visibility protective barricading is to be erected around the identified boundaries of the site with a 5m buffer applied to the entire polygon of the site boundary. Barricading is to remain in place for the duration of construction.
- Construction contractors should be informed of the location of the site and informed that the site is not to be impacted.
- No soil disturbance works are to be carried out within the site boundaries, or within the barricaded zone of the site.
- Barricading is to be removed on completion of construction works.

As specified in section 10.1 of this report, all Aboriginal relics are protected under the Aboriginal Heritage Act 1975 (The Act). It is illegal to destroy, damage, deface, conceal or otherwise interfere with a relic, unless in accordance with the terms of a permit granted by the Minister. Therefore, if it appears that site AH14118 may be impacted by construction or

other works, then the proponent, Sunspot 9 Pty Ltd will need to apply for and obtain a Permit to impact the site, prior to any works commencing.

Recommendation 2 (AH14120, AH14121 and AH14122)

Three isolated artefact Aboriginal heritage sites were identified during the field survey inspection of the proposed Cimitiere Plains Solar Farm Project footprint (sites AH14120, AH14121 and AH14122). All three of these sites are located in the northern portion of the Project Footprint (see Figure 13). The preferred management strategy is to avoid any impacts on these three sites and to protect the sites in situ. The following recommendations apply to these three sites.

- The location of the sites is to be plotted on the design plans for the Cimitiere Plains Solar Farm Project footprint.
- Prior to construction commencing in these areas, temporary high visibility protective barricading is to be erected around the identified boundaries of the three sites with a 2m radial buffer applied. Barricading is to remain in place for the duration of construction.
- Construction contractors should be informed of the location of the sites and informed that the sites are not to be impacted.
- No soil disturbance works are to be carried out within the site boundaries, or within the barricaded zones of the sites.
- Barricading is to be removed on completion of construction works.

As specified in section 10.1 of this report, all Aboriginal relics are protected under the *Aboriginal Heritage Act 1975* (The Act). It is illegal to destroy, damage, deface, conceal or otherwise interfere with a relic, unless in accordance with the terms of a permit granted by the Minister. Therefore, if it appears that sites AH14120, AH14121 and AH14122 may be impacted by construction works, then the proponent, Sunspot 9 Pty Ltd will need to apply for and obtain a Permit to impact the sites, prior to any works commencing.

Recommendation 3 (Site AH10399)

Sites AH10399 is an Isolated artefact that is reported to be located at grid reference [redacted] Despite an extensive search, this site could not be relocated during the current survey program. The site is likely to remain in situ but covered by vegetation. Based on the grid reference provided on the AHR, this site is located in the Project Footprint (see Figure 14). The preferred management strategy is to avoid any impacts on this site and to protect the site in situ. The following recommendations apply to this site.

- The location of the site is to be plotted on the design plans for the Cimitiere Plains Solar Farm Project footprint.
- Prior to any future works commencing in the identified areas, temporary high visibility protective barricading is to be erected around the identified boundaries of the site with a 2m radial buffer applied. Barricading is to remain in place for the duration of construction.
- Construction or other works contractors should be informed of the location of the site and informed that the site is not to be impacted.
- No soil disturbance works are to be carried out within the site boundaries, or within the barricaded zone of the site.

- Barricading is to be removed on completion of construction works.

As specified in section 10.1 of this report, all Aboriginal relics are protected under the *Aboriginal Heritage Act 1975* (The Act). It is illegal to destroy, damage, deface, conceal or otherwise interfere with a relic, unless in accordance with the terms of a permit granted by the Minister. Therefore, if it appears that site AH10399 may be impacted by construction or other works, then Sunspot 9 Pty Ltd will need to apply for and obtain a Permit to impact the site, prior to any works commencing.

Recommendation 4 (Sites AH9366, AH9354, AH9336, AH9346, and AH10606)

Sites AH9366, AH9354, AH9336, AH9346, and AH10606 have been previously identified as being located within the Cimitiere Plains Solar Farm Project study area. Despite an extensive search, these sites could not be relocated during the current survey program. The sites are likely to remain in situ but covered by vegetation. These sites are now confirmed as being situated outside the revised Project Footprint (see Figure 14). The following recommendations apply to these sites.

- The location of these sites is to be plotted on the design plans for the Cimitiere Plains Solar Farm Project footprint and it noted that the site areas are to be avoided.

Recommendation 5 (Unanticipated Discovery Plan)

It is assessed that there is generally a low potential for additional undetected Aboriginal heritage sites to occur within the Cimitiere Plains Solar Farm Project footprint. However, if, during the course of the proposed works, previously undetected archaeological sites or objects are located, the processes outlined in the Unanticipated Discovery Plan should be followed (see Appendix 3). A copy of the Unanticipated Discovery Plan should be kept on-site during all ground disturbance and construction work. All construction personnel should be made aware of the Unanticipated Discovery Plan and their obligations under the *Aboriginal Heritage Act 1975* (the Act).

Recommendation 6 (Provision of Reports)

Copies of this report should be submitted to Aboriginal Heritage Tasmania (AHT) for review and comment.

Figure 13: Aerial image showing the location of Aboriginal sites AH14118, AH14120, AH14121 and AH14122 in relation to the revised Project Footprint

Figure 14: Aerial image showing the location of AH10399 and closer registered sites in relation to the revised project footprint

References Cited

Australian ICOMOS. 1988. Guidelines to the Burra Charter.

Australian ICOMOS. 1999. The Burra Charter.

Australian Stratigraphic Units Database: Stratigraphic Unit Details Parmeener Supergroup, Lower. Accessed September 28 2022 from <https://asud.ga.gov.au/search-stratigraphic-units/results/73112>.

BOM. 2022 Bureau of Meteorology (BOM) website. Accessed May 2022 from <http://www.bom.gov.au/>.

CHMA 2013a. Low Head Wind Farm Development Proposal. Aboriginal Heritage Assessment. A report to GHD.

CHMA 2013b. Low Head Wind Farm Proposal. Phase 2 Works: Power Corridor Route and Additional Infrastructure Areas. A report to GHD.

Brown, S. 1986 Aboriginal Archaeological Resources in South East Tasmania. An Overview of the Nature and Management of Aboriginal Sites. National Parks and Wildlife Service, Tasmania. Occasional Paper No.12.

Collins, D. 1971. An Account of the English Colony in New South Wales Vol 2, London 1789-1802. 1971 Facsimile Edition, Adelaide Library Board, South Australia.

Jones, R. 1974. Tasmanian Tribes. Appendix in Tindale, N.B. *Aboriginal Tribes of Australia*. University of California Press.

Kee, S. 1987. *North East Tasmanian Archaeological Survey: A Regional Study*. A report to the Department of Lands, Parks and Wildlife and the Australian Heritage Commission.

Kee, S. 1990. *Midlands Aboriginal Archaeological Site Survey*. Occasional Paper No. 26. Department of Parks, Wildlife and Heritage Hobart, Tasmania.

Kee, S. 1991 *Aboriginal archaeological sites in northeast Tasmania*. Occasional Paper No. 28. Department of Parks, Wildlife and Heritage. Hobart, Tasmania.

Kelly, J. 1881 *Boat Expeditions Round Tasmania, 1815-16 and 1824*. Reports of the Tasmania House of Assembly No. 107.

Marquis-Kyle P, Walker M, & Australia ICOMOS 1992 The illustrated Burra Charter : making good decisions about the care of important places, Australia ICOMOS Inc. with the assistance of the Australian Heritage Commission, Sydney, N.S.W.

Moore, M. W. 1997a. Aboriginal Archaeology of Dry Sclerophyll Forest Conservation Reserves in Eastern Tasmania: a study of Tasmanian Lithic Technology, Vol. 1: Site Evaluations and Management Recommendations. Unpublished report prepared for Forestry Tasmania.

Moore, M. W. 1997b. Aboriginal Archaeology of Dry Sclerophyll Forest Conservation Reserves in Eastern Tasmania: a study of Tasmanian Lithic Technology, Vol. 2: Research Design and Results. Unpublished report prepared for Forestry Tasmania.

Plomley, N.J.B 1966. *Friendly Mission: The Journals of Augustus Robinson 1829-1834*. Tasmanian Historical Research Association, Hobart.

Plomley, N.J.B. 1983 (ed.). *The Baudin Expedition and the Tasmanian Aborigines 1802.* Blubberhead Press Hobart.

Ryan, L. 2012 *Tasmanian Aborigines: a History Since 1803*. Crow's Nest, NSW: Allen and Unwin.

Wildlife Services: Seal Watching Guidelines. Accessed 28 September 2022 from <https://nre.tas.gov.au/wildlife-management/caring-for-wildlife/seal-watching-guidelines>.

Glossary of Terms

Aboriginal Archaeological Site
A site is defined as any evidence (archaeological features and/or artefacts) indicating past Aboriginal activity, and occurring within a context or place relating to that activity. The criteria for formally identifying a site in Australia vary between States and Territories.

Artefact
A portable object that has been humanly made or modified (see also stone artefact).

Assemblage (lithic)
A collection of complete and fragmentary stone artefacts and manuports obtained from an archaeological site, either by collecting artefacts scattered on the ground surface or by controlled excavation.

Broken Flake
A flake with two or more breakages, but retaining its area of break initiation.

Chert
A highly siliceous rock type that is formed biogenically from the compaction and precipitation of the silica skeletons of diatoms. Normally there is a high percentage of cryptocrystalline quartz. Like chalcedony, chert was valued by Aboriginal people as a stone material for manufacturing stone tools. The rock type often breaks by conchoidal (shell-like) fracture, providing flakes that have hard, durable edges.

Cobble
Water-worn stones that have a diameter greater than 64mm (about the size of a tennis ball) and less than 256mm (the size of a basketball).

Core
A piece of stone, often a pebble or cobble, but also quarried stone, from which flakes have been struck for the purpose of making stone tools.

Core Fragments
A piece of core, without obvious evidence of being a large primary flake.

Cortex
The surface of a piece of stone that has been weathered by chemical and/or physical means.

Debitage
The commonly used term refers to the stone refuse discarded from knapping. The manufacturing of a single implement may result in the generation of a large number of pieces of debitage in an archaeological deposit.

Flake (general definition)
A piece of stone detached from a nucleus such as a core. A complete or substantially complete flake of lithic material usually shows evidence of hard indenter initiation or occasional bending initiation. The most common type of flake is the 'conchoidal flake'. The flake's primary fracture surface (the ventral or inside surface) exhibits features such as fracture initiation, bulb of force, and undulations and lances that indicate the direction of the fracture front.

Flake fragment
An artefact that does not have areas of fracture initiation, but which displays sufficient fracture surface attributes to allow identification as a stone artefact fragment.

Flake portion (broken flake)
The proximal portion of a flake retaining the area of flake initiation, or a distal portion of a flake that retains the flake termination point.

Flake scraper
A flake with retouch along at least one margin. The character of the retouch strongly suggests shaping or rejuvenation of a cutting edge.

Nodules
Regular or irregular cemented masses or nodules within the soil. Also referred to as concretions and buckshot gravel. Cementing agents may be iron and/or manganese oxides, calcium carbonate, gypsum etc. Normally formed in situ and commonly indicative of seasonal waterlogging or a fluctuating chemical environment in the soil such as; oxidation and reduction, or saturation and evaporation. Nodules can be redistributed by erosion. (See also 'concretion').

Pebble
By geological definition, a waterworn stone is less than 64 mm in diameter (about the size of a tennis ball). Archaeologists often refer to waterworn stones larger than this as pebbles though technically they are cobbles.

Quartz
A mineral composed of crystalline silica. Quartz is a very stable mineral that does not alter chemically during weathering or metamorphism. Quartz is abundantly common and was used by Aboriginal people throughout Australia to make light-duty cutting tools. Despite the often unpredictable nature of fracture in quartz, the flakes often have sharp cutting edges.

Quartzite
A hard silica-rich stone formed in sandstone that has been recrystallised by heat (metaquartzite) or strengthened by slow infilling of silica in the voids between the sand grains (Orthoquartzite).

Retouch (on stone tools)
An area of flake scars on an artefact resulting from intentional shaping, resharpening, or rejuvenation after breakage or blunting of a cutting edge. In resharpening a cutting edge the

retouch is invariably found only on one side (see also 'indeterminate retouched piece', retouch flake' etc).

Scraper
A general group of stone artefacts, usually flakes but also cores, with one or more retouched edges thought to have been used in a range of different cutting and scraping activities. A flake scraper is a flake with retouch along at least one margin, but not qualifying for attribution to a more specific implement category. Flake scrapers sometimes also exhibit use-wear on the retouched or another edge.

Silcrete
A hard, fine-grained siliceous stone with flaking properties similar to quartzite and chert. It is formed by the cementing and/or replacement of bedrock, weathering deposits, unconsolidated sediments, soil or other material, by a low-temperature Physico-chemical process. Silcrete is essentially composed of quartz grains cemented by microcrystalline silica. The clasts in silcrete are most often quartz grains but may be chert or chalcedony or some other hard mineral particle. The mechanical properties and texture of silcrete are equivalent to the range exhibited by chert at the fine-grained end of the scale and with quartzite at the coarse-grained end of the scale. Silcrete was used by Aboriginal people throughout Australia for making stone tools.

Site Integrity
The degree to which post-depositional disturbance of cultural material has occurred at a site.

Stone Artefact
A piece (or fragment) of stone showing evidence of intentional human modification.

Stone procurement site
A place where stone materials is obtained by Aboriginal people for the purpose of manufacturing stone artefacts. In Australia, stone procurement sites range on a continuum from pebble beds in watercourses (where there may be little or no evidence of human activity) to extensively quarried stone outcrops, with evidence of pits and concentrations of hammerstones and a thick layer of knapping debris.

Stone tool
A piece of flaked or ground stone used in an activity, or fashioned for use as a tool. A synonym for a stone tool is ‘implement’. This term is often used by archaeologists to describe a flake tool fashioned by delicate flaking (retouch).

Use wear
Macroscopic and microscopic damage to the surfaces of stone tools, resulting from its use. Major use-wear forms are edge fractures, use-polish and smoothing, abrasion, and edge rounding bevelling.

Appendix 1

Gazetteer of Recorded Sites

Summary Details for Artefact Scatter 1, Isolated Artefact 1, Isolated Artefact 2 and Isolated Artefact 3.

Site Name	Grid Reference	Site Type	Site Description
AH14118	[redacted]	Artefact Scatter	Five white quartz flakes and a white quartz scraper are located on 5° slopes on both sides of a drainage ditch associated with an adjacent dam. The site has a low to medium potential for additional surface or sub-surface artefacts to be present. This site has been heavily disturbed
AH14120	[redacted]	Isolated Artefact	A broken quartzite flake located on an erosion scald (bull pit) on a 5° slope amongst pasture land facing Cimitiere Creek which is 288m north. The site has a very low to low potential for additional surface or sub-surface artefacts to be present. This site has been heavily disturbed
AH14121	[redacted]	Isolated Artefact	A white quartz flake located on an access track located 253m south of Cimitiere Creek. Immediately bordered by native vegetation. The site has a low to very low potential for additional surface or sub-surface artefacts to be present. This site has been heavily disturbed.
AH14122	[redacted]	Isolated Artefact	a white quartz flake located on the 15° slope of a light grey sandy soil pile associated with the construction of a nearby dam 200m south of Cimitiere Creek. The site has a low to very low potential for additional surface or sub-surface artefacts to be present. This site has been heavily disturbed.

Appendix 2

Detailed Site Descriptions

Site Name: AH14118

Site Type: Artefact Scatter

Grid Reference:

— [redacted]

AH14118 is a 20m x 15m low-density scatter located on 5° slopes on both sides of a drainage ditch associated with an adjacent dam. The soils along the drainage ditch and immediate surrounds consist of light grey sandy loam soil. The greater surrounds of the site consist of gently to moderately undulating pasture land, with stands of native grasses, Sagg, bracken fern and eucalypts in various stages of growth. The site is located 690m southwest of Cimitiere Creek. Surface visibility along the drainage ditch slopes is 60% and surface visibility within the immediate surrounds of the drainage ditch is poor, averaging at 20%.

The artefact recorded at AH14118 consists of 5 white quartz flakes and 1 quartz scraper, located on the aforementioned drainage ditch. Besides the quartz artefacts noted above, no additional artefacts were identified.

Given some constraints in surface visibility (particularly outside the drainage ditch), it can't be stated with certainty that there are no additional undetected artefacts associated with site AH14118. However, all indications are that artefact densities are likely to be low to medium.

Artefact Details:

— White quartz flakes dimensions:

No. 1: 23mm x 28mm x 7mm

No. 2: 12mm x 10mm x 3mm

No. 3: 15mm x 7mm x 4mm

No. 4: 7mm x 10mm x 3mm

No. 5: 24mm x 10mm x 3mm

White Quartz Scraper: 39mm x 35mm x 9mm

Plate 16: View southeast showing white quartz flake no.1 associated with AH14118.

Plate 17: View southeast showing the location of white quartz flake no.1 on a 5° slope.

Plate 18: View northwest showing white quartz flake no.2 associated with AH14118.

Plate 19: View northwest showing white quartz flake no.3 associated with AH14118.

Plate 20: View west showing white quartz flakes no.4 and no.5 associated with AH14118.

Plate 21: View northwest showing the white quartz scraper associated with AH14118.

Plate 22: View north showing the location of AH14118 and the surrounding landscape.

Site Name: AH14120

Site Type: Isolated Artefact

Grid Reference:

— [redacted]

AH14120 is located in an erosion scald (bull pit) consisting of light red/brown soil on a 5° slope facing Cimitiere Creek which is 288m north. The site is immediately surrounded by flat to moderately undulating pastures. Surface visibility within the bull pit is 100% and surface visibility within the immediate surrounds of the erosion scald (bull pit) was poor, averaging 20%.

The artefact recorded at AH14120 consists of a pale pink broken quartzite flake. The artefact is located in a bull pit on a 5° slope where surface visibility is 100%. Besides the isolated quartzite artefact noted above, no additional artefacts were identified.

Given some constraints in surface visibility (particularly outside the bull pit), it can't be stated with certainty that there are no additional undetected artefacts associated with site AH14120. However, all indications are that artefact densities are likely to be low to very low.

Artefact Details:

— Pale pink quartzite broken flake dimensions: 25mm x 25mm x 16mm

Plate 22: View northeast showing the pale pink quartzite broken flake from AH14120.

Plate 23: View northeast showing the pale pink quartzite broken flake from AH14120.

Plate 24: View northeast showing the location of AH14120 on a 5° slope.

Site Name: AH14121

Site Type: Isolated Artefact

Grid Reference:

[redacted]

AH14121 is located on an ungraded access track consisting of light grey sandy loam soil on a slope of less than 5°. The greater surrounds of the site consist of gently to moderately undulating pasture land, with stands of native grasses, Sagg, bracken fern and eucalypts in various stages of growth. The site is located 253m south of Cimitiere Creek.

Surface visibility along the access track is 80% and surface visibility within the immediate surrounds of the access track is poor, averaging at 20%.

The artefact recorded at AH14121 consists of a white quartz flake, located on the aforementioned access track. Besides the isolated quartzite artefact noted above, no additional artefacts were identified.

Given some constraints in surface visibility (particularly outside the access track), it can't be stated with certainty that there are no additional undetected artefacts associated with site AH14121. However, all indications are that artefact densities are likely to be low to very low.

Artefact Details:

- White quartz flake dimensions: 16mm x 15mm x 15mm

Plate 25: View northeast showing the white quartz flake associated with AH14121.

Plate 26: View northeast showing the white quartz flake associated with AH14121.

Plate 27: View northeast showing the location of AH14121 on a slope of <5°.

Site Name: AH14122

Site Type: Isolated Artefact

Grid Reference:

[redacted]

AH14122 is located on the 15° slope of a light grey sandy loam soil pile associated with the construction of a nearby dam. The site is located 200m south of Cimitiere Creek. The site is immediately surrounded by flat to moderately undulating pasture land, covered with introduced grass species and stands of tea trees.

Surface visibility on the slope is 80% and surface visibility within the immediate surroundings of the slope is poor, averaging at 20%.

The artefact recorded at AH14122 consists of a white quartz flake, located on the aforementioned slope. Besides the isolated quartz artefact noted above, no additional artefacts were identified.

Given some constraints in surface visibility (particularly outside the access track), it can't be stated with certainty that there are no additional undetected artefacts associated with site AH14122. However, all indications are that artefact densities are likely to be low to very low.

Artefact Details:

- White quartz flake dimensions: 42mm x 45mm x 10mm

Plate 28: View northwest showing the white quartz flake associated with AH14122.

Plate 29: View northwest showing the white quartz flake associated with AH14122.

Plate 30: View southeast showing AH14122 on a 15 slope.

Appendix 3

Unanticipated Discovery Plan

Unanticipated Discovery Plan

Procedure for the management of unanticipated discoveries of Aboriginal relics in Tasmania

For the management of unanticipated discoveries of Aboriginal relics in accordance with the *Aboriginal Heritage Act 1975* and the *Coroners Act 1995*. The Unanticipated Discovery Plan is in two sections.

Discovery of Aboriginal Relics other than Skeletal Material

Step 1:
Any person who believes they have uncovered Aboriginal relics should notify all employees or contractors working in the immediate area that all earth disturbance works must cease immediately.

Step 2:
A temporary 'no-go' or buffer zone of at least 10m x 10m should be implemented to protect the suspected Aboriginal relics, where practicable. No unauthorised entry or works will be allowed within this 'no-go' zone until the suspected Aboriginal relics have been assessed by a consulting archaeologist, Aboriginal Heritage Officer or Aboriginal Heritage Tasmania staff member.

Step 3:
Contact Aboriginal Heritage Tasmania on **1300 487 045** as soon as possible and inform them of the discovery. Documentation of the find should be emailed to **aboriginalheritage@dpac.tas.gov.au** as soon as possible. Aboriginal Heritage Tasmania will then provide further advice in accordance with the *Aboriginal Heritage Act 1975*.

Discovery of Skeletal Material

Step 1:
Call the Police immediately. Under no circumstances should the suspected skeletal material be touched or disturbed. The area should be managed as a crime scene. It is a criminal offence to interfere with a crime scene.

Step 2:
Any person who believes they have uncovered skeletal material should notify all employees or contractors working in the immediate area that all earth disturbance works cease immediately.

Step 3:
A temporary 'no-go' or buffer zone of at least 50m x 50m should be implemented to protect the suspected skeletal material, where practicable. No unauthorised entry or works will be allowed within this 'no-go' zone until the suspected skeletal remains have been assessed by the Police and/or Coroner.

Step 4:
If it is suspected that the skeletal material is Aboriginal, Aboriginal Heritage Tasmania should be notified.

Step 5:
Should the skeletal material be determined to be Aboriginal, the Coroner will contact the Aboriginal organisation approved by the Attorney-General, as per the *Coroners Act 1995*.

Aboriginal Heritage Tasmania
Department of Premier and Cabinet

Tasmanian Government

Guide to Aboriginal site types

Stone Artefact Scatters

A stone artefact is any stone or rock fractured or modified by Aboriginal people to produce cutting, scraping or grinding implements. Stone artefacts are indicative of past Aboriginal living spaces, trade and movement throughout Tasmania. Aboriginal people used hornfels, chalcedony, spongelite, quartzite, chert and silcrete depending on stone quality and availability. Stone artefacts are typically recorded as being 'isolated' (single stone artefact) or as an 'artefact scatter' (multiple stone artefacts).

Shell Middens

Middens are distinct concentrations of discarded shell that have accumulated as a result of past Aboriginal camping and food processing activities. These sites are usually found near waterways and coastal areas, and range in size from large mounds to small scatters. Tasmanian Aboriginal middens commonly contain fragments of mature edible shellfish such as abalone, oyster, mussel, warrener and limpet, however they can also contain stone tools, animal bone and charcoal.

Rockshelters

An occupied rockshelter is a cave or overhang that contains evidence of past Aboriginal use and occupation, such as stone tools, middens and hearths, and in some cases, rock markings. Rockshelters are usually found in geological formations that are naturally prone to weathering, such as limestone, dolerite and sandstone

Quarries

An Aboriginal quarry is a place where stone or ochre has been extracted from a natural source by Aboriginal people. Quarries can be recognised by evidence of human manipulation such as battering of an outcrop, stone fracturing debris or ochre pits left behind from processing the raw material. Stone and ochre quarries can vary in terms of size, quality and the frequency of use.

Rock Marking

Rock marking is the term used in Tasmania to define markings on rocks which are the result of Aboriginal practices. Rock markings come in two forms; engraving and painting. Engravings are made by removing the surface of a rock through pecking, abrading or grinding, whilst paintings are made by adding pigment or ochre to the surface of a rock.

Burials

Aboriginal burial sites are highly sensitive and may be found in a variety of places, including sand dunes, shell middens and rock shelters. Despite few records of pre-contact practices, cremation appears to have been more common than burial. Family members carried bones or ashes of recently deceased relatives. The Aboriginal community has fought long campaigns for the return of the remains of ancestral Aboriginal people.

Further information on Aboriginal Heritage is available from:

Aboriginal Heritage Tasmania
Community Partnerships and Priorities
Department of Premier and Cabinet
GPO Box 123 Hobart TAS 7001

Telephone: 1**300 487 045**
Email: **aboriginalheritage@dpac.tas.gov.au**
Web: **www.aboriginalheritage.tas.gov.au**

Appendix 4

Photos of Artefacts Recovered from the Stage 1 Sub-surface Investigation

Plate 23: View northeast showing artefact no.1 – white quartz flake identified within test pit 3.

Plate 24: View northeast showing artefact no.1 – white quartz flake identified within test pit 3.

Plate 25: View southwest showing artefact no.2 – white quartz flake identified within test pit 8.

Plate 26: View southwest showing artefact no.2 – white quartz flake identified within test pit 8.

Plate 27: View northwest showing artefact no.3 – white quartz flake identified within test pit 14.

Plate 28: View northwest showing artefact no.3 – white quartz flake identified within test pit 14.

Appendix 5

Pit Profile Details and Photos

Square Number	Grid Reference (GDA94) Easting	Grid Reference (GDA94) Northing	Square Size	Pit Profile
1	[redacted]	[redacted]	50cm x 50cm	• 0–4cm Upper humic layer • 4–15cm Dark grey sand • 15–20cm Light grey sand • 20–37cm Light grey sand Note: Tree, grass and shrub roots throughout pit.
2	[redacted]	[redacted]	50cm x 50cm	• 0–4cm Upper humic layer • 4–20cm Light grey sand • 20–22cm Light grey sand with increasing clay content with depth. • 23cm Compact mottled yellow regolith clays and light grey sand.
3	[redacted]	[redacted]	50cm x 50cm	• 0–4cm Upper humic layer • 4–5cm Dark grey sand Note: Tree, grass and shrub roots throughout pit.
4	[redacted]	[redacted]	50cm x 50cm	• 0–3cm Upper humic layer • 3–17cm Mottled dark grey and light grey sand • 17–22cm Compact mottled yellow regolith clays and light grey sand. Note: Tree, grass and shrub roots throughout pit.
5	[redacted]	[redacted]	50cm x 50cm	• 0–4cm Upper humic layer • 4–15cm Dark grey sand • 15–22cm Light grey sand • 22cm Compact mottled yellow regolith clays and light grey sand. Note: Tree, grass and shrub roots throughout pit.
6	[redacted]	[redacted]	50cm x 50cm	• 0–5cm Upper humic layer • 5–12cm Dark grey sand • 12–20cm Light grey sand • 20cm Compact light grey sand with sparse mottled yellow regolith clays. Note: Tree, grass and shrub roots throughout pit.
7	[redacted]	[redacted]	50cm x 50cm	• 0–5cm Upper humic layer • 5–10cm Mottled dark grey and light grey sand • 10–24cm Light grey sand • 24cm Compact light grey sand with sparse mottled yellow regolith clays. Note: Tree, grass and shrub roots throughout pit.
8	[redacted]	[redacted]	50cm x 50cm	• 0–5cm Upper humic layer • 5–15cm Dark grey sand • 15cm Dark grey sand Note: Tree, grass and shrub roots throughout pit.

9	[redacted]	[redacted]	50cm x 50cm	• 0–3cm Upper humic layer • 3–14cm Light grey sand • 14–25cm Firm dark grey sand with mottled dark yellow regolith clays. Note: Tree, grass and shrub roots throughout pit.
10	[redacted]	[redacted]	50cm x 50cm	• 0–3cm Upper humic layer • 3–10cm Dark grey sand • 10–28cm Compact light grey sand with charcoal inclusions throughout. Note: Tree, grass and shrub roots throughout pit.
11	[redacted]	[redacted]	50cm x 50cm	• 0–3cm Upper humic layer • 3–20cm Mottled light and dark grey sand • 20–23cm Light grey sand, with thick tree routes present at 21–23cm. Note: Tree, grass and shrub roots throughout pit.
12	[redacted]	[redacted]	50cm x 50cm	• 0–3cm Upper humic layer • 3–10cm Dark grey sand • 10–30cm Light grey sand with sparse charcoal inclusions throughout. • 30cm Compact light grey sand. Note: Tree, grass and shrub roots throughout pit.
13	[redacted]	[redacted]	50cm x 50cm	• 0–3cm Upper humic layer • 3–11cm Dark grey sand • 11–30cm Light grey sand with sparse charcoal inclusions throughout. • 30cm Compact light grey sand. Note: Tree, grass and shrub roots throughout pit.
14	[redacted]	[redacted]	50cm x 50cm	• 0–3cm Upper humic layer • 3–5cm Dark grey sand Note: Tree, grass and shrub roots throughout pit.
15	[redacted]	[redacted]	50cm x 50cm	• 0–3cm upper humic layer • 3–20cm Mottled dark grey and light grey sand with sparse yellow regolith clays. • 20–31cm Loose light grey sand. Note: Tree, grass and shrub roots throughout pit.

Plate 29: View northwest showing the west wall of Pit 1.

Plate 30: View northwest showing the west wall of Pit 2.

Plate 31: View south showing the south wall of Pit 3.

Plate 32: View north showing the north wall of Pit 4.

Plate 33: View northwest showing the west wall of Pit 5.

Plate 34: View northwest showing the west wall of Pit 6.

Plate 35: View west showing the west wall of Pit 7

Plate 36: View west showing the west wall of Pit 8.

Plate 37: View northwest showing the west wall of Pit 9.

Plate 38: View northeast showing the north wall of Pit 10.

Plate 39: View northeast showing the north wall of Pit 11.

Plate 40: View northeast showing the north wall of Pit 12.

Plate 41: View northeast showing the northern wall of Pit 13.

Plate 42: View north showing the north wall of Pit 14.

Plate 43: View northeast showing the north wall of Pit 15.

Appendix 6

Aboriginal Community Consultation Outcomes

Palawa Consultancy; Cross Cultural Awareness Training, Arts Traditional Crafts
Name: Vernon Graham (*Senior Aboriginal Heritage Consultant*)
Email: vernon.graham@gmail.com
Mobile: 0417 378 031
21st September 2023

"Aboriginal Heritage Assessment of the Cimitiere Plains Solar Farm Project, via George Town Northern Tasmania."

Organisation	Information Letter Sent	Response To Letter	Meeting Date	Summary of Comments and Feedback
Aboriginal Elders Council of Tasmania (AECT), Launceston	10th Sept 2023 via email	Verbal in person	11th September in person	Had discussions with Rosemaria Brown, Admin Officer for the Elders Council, said "respect for the elders past and present, also acknowledge the traditional owners of the land on which we live. and the broader Aboriginal community continuing spiritual connection to the land / Mother Earth". In relation to the Solar Farm Project via George Town re; the assessment the elders, if possible, would like all Aboriginal heritage / cultural values to be protected and managed. However, we know that there was Aboriginal heritage located during the assessment and if the project goes ahead, we hope any Aboriginal heritage values can been avoided.
Hank Horton ("Kooparoona Niara Aboriginal Mob") of the Deloraine community,	10th Sept 2023 via email	Via phone	15th September via phone & text	The Kooparoona Niara (Mob) Aboriginal Association; The response from Hank over the phone, thanks for the report. **Responded via Text on the 15th Sept;** The Kooparoona Niara (Mob) have stated, yeah, we have a few issues in regard to tools /Aboriginal Cultura Heritage Values etc. If the project goes ahead and to avoid any impacts to Aboriginal relics (heritage) stone tools need to be relocated, where will they be relocated to if this happens, this evidence shows places where the ancestors " the old fellows" have been, the story of the place. Because of this we Kooparoona Niara Mob we have issues, again it just adds more damage which has already been done aye! This is just adding to the other impacts that have happened in the past as its ongoing aye such as housing roads etc. It just keeps on happening! From the Mob all good, however that all Aboriginal Cultural / Heritage values be respected, protected and ensure that good management is put in place.

Palawa Consultancy; Cross Cultural Awareness Training, Arts Traditional Crafts
Name: Vernon Graham (*Senior Aboriginal Heritage Consultant*)
Email: vernon.graham@gmail.com
Mobile: 0417 378 031

Aboriginal Land Council of Tasmania (ALCT), Launceston	10th Sept 2023 via email	Verbal in person	15th September in person	I've communicated with the Aboriginal Land Council of Tasmania (ALCT), Launceston, have stated no comments regarding the Proposal, however if ALCT need to make a point regarding any projects and or development proposals they would!
Tasmanian Aboriginal Centre, Launceston (TAC), Launceston	Not sent refer to comments	Verbal	31st August in person	I have communicated several occasions with Tasmanian Aboriginal Centre (TAC), Launceston, on the 31st September 2023 I tried again, they have stated again no comments and no more reports forwarded to L'ton TAC.
Melythina tiakana warrana (Heart of Country) Aboriginal Corporation (MTWAC), Northeast mob.	10th Sept 2023 via email	Via email	20th September via Email	The melythina tiakana warrana (Heart of Country) Aboriginal Corporation (MTWAC) have had a discussion regarding their boundaries which is the Northeast Coastal Plans Nation that MTWAC represents, from Pipers River to St Helens, this area includes Mount William ranges and extending to Ben Lomond regarding any assessments within the boundaries. However, if needed MTWAC board retains the opportunity to have an input concerning project proposals and developments. Comments from MTWAC as follows; Comments are that it would be nice for the planning of this development, and others, including the transmission lines corridors, to be mindful of all Aboriginal Heritage including Natural Values, as well as Aboriginal Heritage sites and the artifacts / relics.

ib vogt

Appendix D
Aboriginal Heritage Assessment - Addendum

Cimitiere Plains Solar Farm

envoca
ENVIRONMENTAL CONSULTANCY

Cimitiere Plains Solar Farm Project
Additional Planning Envelope Area
Aboriginal Heritage Assessment

Addendum Report
Final Draft Version 1

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

CLIENT: Envoca

10.9.2023

CULTURAL HERITAGE MANAGEMENT AUSTRALIA

Report Version Control

Report version	Report distribution	Date of Distribution
Draft Report V1	Zoe Smith (CHMA) for editing	10/9/2023
Draft Report V1	Proponent for Review	10/9/2023
Final Draft Report V1	Aboriginal Heritage Tasmania	
Final report V1	Aboriginal Heritage Tasmania	

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1.0 Project Details

Sunspot 9 Pty Ltd, the proponent, is seeking development approval to establish a 288MW solar farm on private land, 5km northeast of George Town, Tasmania. The solar farm will be connected to the George Town substation to the southeast by 6km of double circuit transmission line on poles. The solar farm will be situated on approximately 420ha of rural land that is currently used for dryland agriculture, predominantly grazing.

CHMA Pty Ltd and Vernon Graham (SAHO) have been engaged by the proponent to undertake an Aboriginal heritage assessment for the proposed Cimitiere Plains Solar Farm Project (the study area), to identify any potential Aboriginal heritage constraints. A report has been prepared by CHMA (2023) which presents the findings of the Aboriginal heritage assessment. This report has been submitted to Aboriginal Heritage Tasmania (AHT) for review and has been accepted.

Since the submission of the main report, the proponent has requested that an additional area of land be surveyed to inform the modification of the transmission line route as it approaches the George Town substation. The new study area is an approximately 11ha triangular section of land that is primarily situated within Lauriston Park, Bell Bay. The additional section also encompasses a portion of railway line infrastructure (see Figure 1).

CHMA Pty Ltd and Vernon Graham were engaged to undertake an assessment of this additional 11ha area. After the survey assessment was undertaken, the proponent has revised the planning corridor for the transmission line, taking into account the findings of surveys (Aboriginal Heritage and Biodiversity) and the requirements of the landowner. The revised planning corridor is significantly smaller than the 11ha area that was the focus of this assessment. This is reflected in the mapping presented in this addendum report and the Management recommendations presented in section 5. The original survey area and the revised planning corridor is shown in Figure 1.

This summary report presents the findings of the survey assessment of the study area and an assessment of the impacts of the revised planning corridor. The report acts as an addendum to the main report prepared by CHMA (2023).

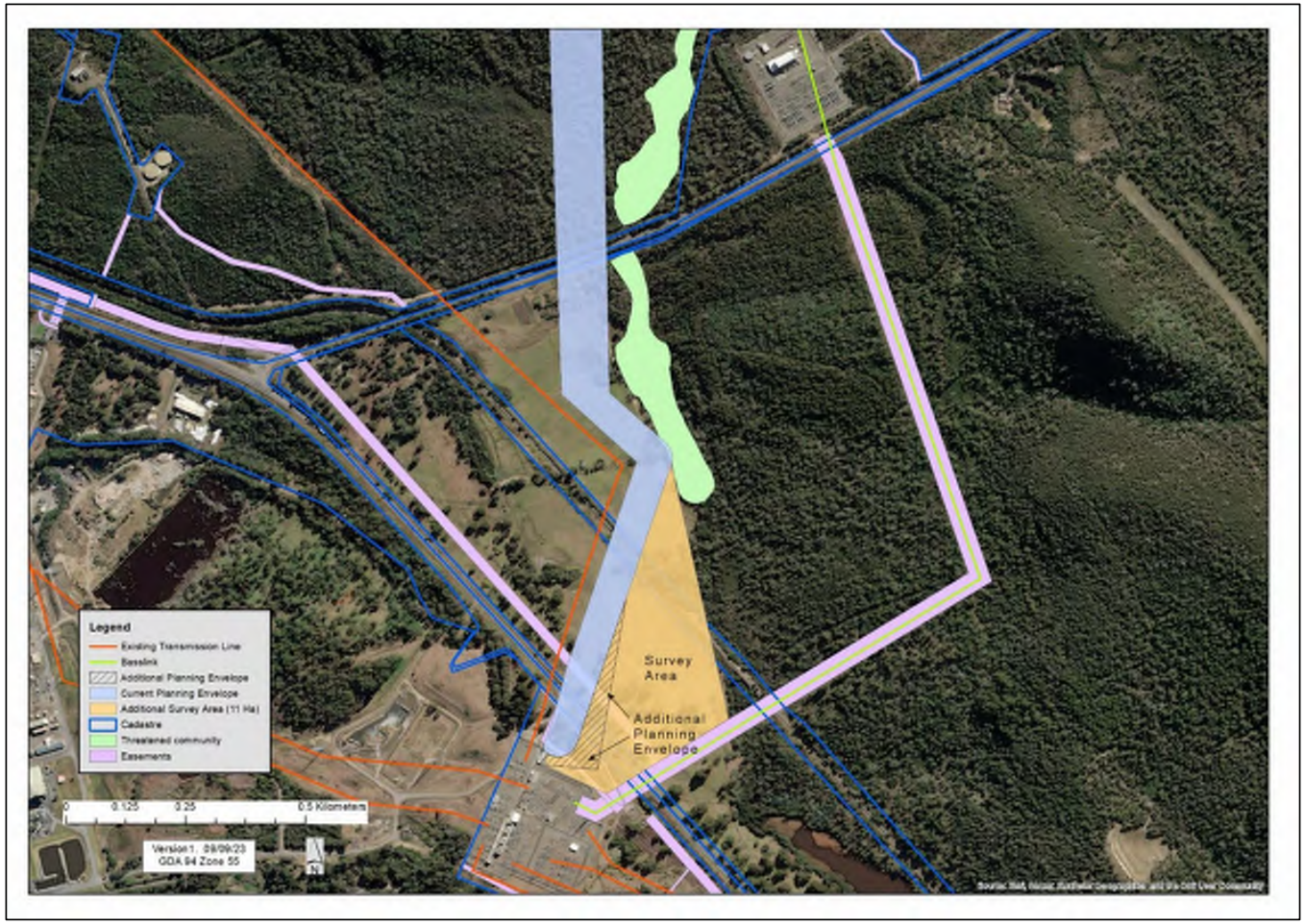

Figure 1: Aerial image showing the location of the 11ha area that is the focus of this addendum assessment

2.0 Survey Results and Discussions

The field survey of the additional 11ha area was undertaken by Shay Hannah (CHMA archaeologist), and Vernon Graham (Senior Aboriginal Heritage Officer) over a period of one day (4-07-2023). The field team walked a total of 1.566km of survey transects, with the average width of each transect being 5m. This equates to a survey coverage of 7830m^2. Surface visibility within the 11ha survey area was variable ranging between 20%–100%, averaging at 20%.

One Aboriginal heritage site, AH14260, was identified and recorded during the field survey inspection of the 11ha survey area. The site is not within the revised planning corridor. It lies approximately 95 m east of the revised planning corridor. AH14260 is a white quartz crystal flake which is situated within a cleared section above a drainage ditch consisting of light red/brown soil on a <5° slope facing the drainage ditch, approximately 95m southwest of Four Mile Creek. Despite surface visibility within the cleared drainage ditch being 100%, no other artefacts were identified. AH14260 is situated in a heavily disturbed context, with the site having been impacted by the clearing and construction of the drainage ditch. Given some constraints in surface visibility (particularly outside the drainage ditch), it can't be stated with certainty that there are no additional undetected artefacts associated with site Isolated AH14260. However, all indications are that artefact densities are likely to be low to very low. Table 1 provides the summary details for AH14260, with Figures 2 and 3 showing the site location in relation to the planning envelope. The detailed site description for AH14260 is presented in Appendix 2.

As noted in the previous report by CHMA (2023), a search of the AHR shows that there is one previously registered Aboriginal site (AH10399) situated on the northwest boundary of the proposed 11ha additional section (see Figure 3). AH10399 was originally recorded by Steve Stanton and Vanessa Edmonds in 2007 during a survey for the Tamar Valley Power Station and was described as an isolated artefact comprising of a white chert flake with poor surface visibility (11%–30%) and the site had been heavily disturbed (100%) due to light vehicle and agricultural activity. The current recording AH10399 places the site approximately 3m south of the Bell Bay Line and along the eastern border of a power line corridor within the Cimitiere Plains Solar Farm footprint at Lauriston Park, Bell Bay. Despite an extensive search, none of the artefacts associated with this site were identified during the current survey. Surface visibility was <10% due to vegetation cover, significantly less than that noted by Graham (2003) and has been heavily disturbed. The field team walked a 20m radius around the site. The field assessment carried out by CHMA (2023) also failed to relocate this site.

Besides AH14260 and AH10399 (discussed above), no additional Aboriginal sites, suspected features or specific areas of elevated archaeological potential were identified during the survey assessment of the proposed 11ha additional section of the Cimitiere Plains Solar Farm Project footprint. The field survey was also able to confirm that there are no stone resources identified within the study area that would be suitable for stone artefact manufacturing. Nor are there any sizeable rock outcrops occurring within the study area, and therefore there is no potential for Aboriginal rock shelters to be present. Given some constraints in surface visibility, it cannot be stated with certainty that there are no undetected Aboriginal heritage sites present in the proposed 11ha additional section. With this acknowledged, the survey assessment still did achieve effective coverage of an estimated 1566m^2. This level of effective coverage is certainly sufficient to provide a reasonable indication as to the potential extent, nature and distribution of Aboriginal cultural heritage sites in the study area. The survey results strongly indicate that site and artefact densities

across the study area are likely to be low to very low. If undetected sites are present, they are most likely to be isolated artefacts or small artefact scatters, representing sporadic Aboriginal activity. Given that soil deposits across much of the study area were generally shallow to skeletal, there is a very limited potential for sub-surface artefact deposits to be present.

Table 1: Summary details for Aboriginal site AH14260.

Site Name	Grid Reference	Site Type	Site Description
AH14260	[redacted]	Isolated Artefact	One white quartz crystal flake located on a >5° slope on a cleared section above a drainage ditch. The site has a very low to low potential for additional surface or sub-surface artefacts to be present. This site has been heavily disturbed.

Figure 2: Aerial image showing the location of Aboriginal site AH14260

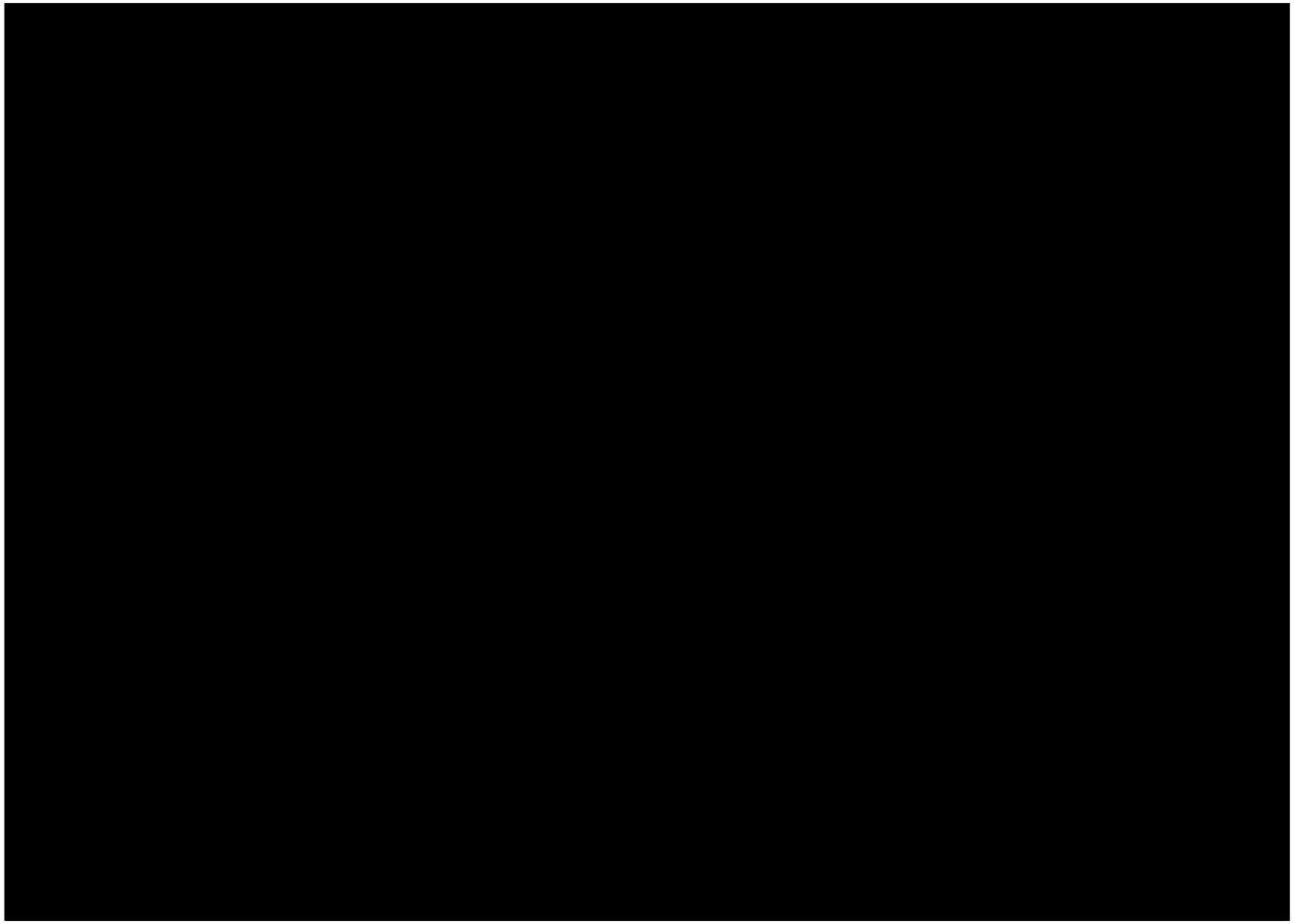

Figure 3: Aerial image showing the location of site AH14260 and other registered sites within and in the vicinity of the project footprint

3.0 Significance Assessments

The following provides an outline of the processes used to assess the significance of any cultural heritage sites that were identified during the course of the assessment.

3.1 Assessment Guidelines

There are several different ways of defining types of significance, and many practitioners have developed their own system of significance assessment. However, as Sullivan and Pearson (1995) point out, there seems to be a general advantage in using a set of criteria which is already widely accepted. In Australia, cultural significance is usually assessed against the Burra Charter guidelines and the Australian Heritage Commission guidelines (ICOMOS 1988, 1999).

3.2 The Burra Charter

Under the guidelines of the Burra Charter 'cultural significance' refers to the 'aesthetic, historic, scientific, social or spiritual value for past, present or future generations' of a 'place' (ICOMOS 1999:2). The guidelines to the Burra Charter comment:

"Although there are a variety of adjectives used in definitions of cultural significance in Australia, the adjectives 'aesthetic', 'historic', 'scientific' and social' ... can encompass all other values".

The following provides the descriptions given for each of these terms.

Aesthetic Value

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour, texture and materials of the fabric; the smells and sounds associated with the place and its use (Marquis-Kyle & Walker 1992).

Historic Value

A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase or activity. It may also have historic value as the site of an important event. For any given place the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment (Marquis-Kyle & Walker 1992).

Scientific Value

The scientific or research value of a place will depend upon the importance of the data involved or its rarity, quality or representativeness and on the degree to which the place may contribute further substantial information.

A site or a resource is said to be scientifically significant when its further study may be expected to help current research questions. That is, scientific significance is defined as research potential (Marquis-Kyle & Walker 1992).

Social Value

The social value of a place is perhaps the most difficult value for heritage professionals to substantiate (Johnston 1994). However, social value is broadly defined as 'the qualities for which a place has become a focus of spiritual, political, natural or other cultural sentimental to a majority or minority group' (ICOMOS 1988:30). In What is Social Value, Johnston (1994) has provided a clear definition of social value:

"Social value is about collective attachment to places that embody meaning important to a community, these places are usually community owned or publicly accessible or in some other way 'appropriated' into people's daily lives. Such meanings are in addition to other values, such as the evidence of valued aspects of history or beauty, and these meanings may not be apparent in the fabric of the place, and may not be apparent to the disinterested observer". (Johnston 1994:10)

Although encompassed within the criterion of social value, the spiritual value of a place is a new addition to the Burra Charter (ICOMOS 1999:1). Spiritual value is predominantly used to assess places of cultural significance to Indigenous Australians.

The degree to which a place is significant can vary. As Johnston (1994:3) has stated when trying to understand significance a 'variety of concepts [are] used from a geographical comparison ('national', 'state', 'local') to terms such as 'early', 'rare', or 'seminal''. Indeed, the Burra Charter clearly states that when assessing historic significance, one should note that for:

"any given place the significance will be greater where evidence of the association or event survives in situ, or where the setting are substantially intact, than where it has been changed or evidence does not survive". (ICOMOS 1988:29)

3.3 Significance Criteria Relevant to Indigenous Sites

Indigenous heritage sites and places may have educational, tourism and other values to groups in society. However, their two principal values are likely to be in terms of their cultural/social significance to Aboriginal people and their scientific/archaeological significance. These are the two criteria that are commonly used in establishing the significance of Aboriginal sites. The following provides an explanation of these criteria.

1) Aboriginal Cultural / Social Significance

This relates to the value placed upon a site or suite of sites by the local or regional Aboriginal community. The identification and assessment of those sites that are significant to Aboriginal people is a matter for Aboriginal people. This assessment can only be made by the appropriate Aboriginal representatives of the relevant communities.

2) Scientific (Archaeological) Significance

Archaeological significance values (or scientific values) generally are assessed on the potential of a site or place to generate knowledge through archaeological research or knowledge. Bowdler (1984) states that the scientific significance should be assessed according to timely and specific research questions (research potential) and site representativeness.

Research potential entails the potential of a site or suite of sites for scientific research and excavation. This is measured in terms of a site's ability to provide information on aspects of Aboriginal culture. In this respect, the contents of a site and their state of preservation are important considerations.

Representativeness takes account of how common a site type is (Bowdler 1984). That is, it allows sites to be evaluated with reference to the known archaeological record within the given region. The primary goal of cultural resource management is to afford the greatest protection to a representative sample of sites throughout a region. The corollary of a representative site is the notion of a rare or unique site. These sites may help to understand the patterning of more common sites in the surrounding area and are therefore often considered of archaeological significance. The concept of a rarity cannot be easily separated from that of representativeness. If a site is determined to be rare, then it will by definition be included as part of the representative sample of that site type.

The concepts of both research potential and representativeness are ever-changing variables. As research interests shift and archaeological methods and techniques change, then the criteria for assessing site significance are also re-evaluated. As a consequence, the sample of site types which are used to assess site significance must be large enough to account for the change in these variables.

3.4 Summary Significance Ratings for Recorded Sites

AH14260 (recorded during the current assessment) has been assessed and allocated a rating of significance. A five-tiered rating system has been adopted for the significance assessment; low, low-medium, medium, medium-high and high. Table 2 provides the summary details for significance ratings for AH14260. A more detailed explanation of the assessment ratings is presented in sections 3.5 to 3.7. Section 3.8 provides an assessment of significance in relation to the *Aboriginal Heritage Act 1975* (the Act), Section 4 of this report presents a statement of social significance provided by Vernon Graham for AH14260 and the study area as a whole.

Table 2: Summary significance ratings for Aboriginal heritage site AH14260.

AH Number	Site Type	Scientific Significance	Aesthetic Significance	Historic Significance	Social Significance
AH14260	Isolated Artefact	Low	Low	N/A	Medium-High

3.5 Scientific Significance for Recorded Sites

Archaeological (or scientific) significance values generally are assessed on the potential of a site or place to generate knowledge through archaeological research or knowledge. Bowdler (1984) states that the scientific significance should be assessed according to timely and specific research questions (research potential) and site representativeness. Research potential entails the potential of a site or suite of sites for scientific research and excavation. This is measured in terms of a site's ability to provide information on aspects of Aboriginal culture. In this respect, the contents of a site and their state of preservation are important considerations. Representativeness takes account of how common a site type is (Bowdler 1984).

Sites AH14260 is classified as an Isolated artefact. Isolated artefacts and artefact scatters are two of the most common site types recorded in the Northern Region, and more broadly, the State of Tasmania. As such, the scientific significance of artefact scatters and isolated artefacts usually relates primarily to their research potential as opposed to the rarity of the site type. The potential exception to this is where comparatively rare artefact types (either tool or stone material types) are represented in assemblages.

In this instance, sites AH14260 is assessed as being of low scientific significance. The rationale for this assessment is as follows.

1) Isolated artefacts and artefact scatters are common site types in the region and as such rarity is not a consideration.
2) The artefact associated with AH14260 is comprised of a stone material type (quartz) and stone tool types (flake) that is commonly represented in artefact assemblages across the region. As such, rarity is again not a consideration.
3) Sites AH14260 is assessed as having a very limited potential to comprise additional undetected surface and sub-surface artefact deposits. The site is also situated in moderate to heavily disturbed contexts. This means that there is very little potential for intact artefact deposits to be present, which reduces the research potential of the site.

3.6 Aesthetic Significance of Recorded Sites

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour, texture and materials of the fabric; the smells and sounds associated with the place and its use (Marquis-Kyle & Walker 1992).

Site AH14260 is situated in a quite heavily disturbed contexts, being located in an area that has been subject to past land disturbances associated with clearing and other land practices. The aesthetics of the broader northern sections of the study area have been significantly disturbed. Therefore, the landscape setting of sites AH14260 is assessed as being of low aesthetic significance.

3.7 Historic Significance of Recorded Sites

A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase or activity. It may also have historic value as the site of an important event. For any given place the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment (Marquis-Kyle & Walker 1992).

Historic significance is not an attribute often considered when assessing the significance of Aboriginal sites unless there is direct evidence for some form of European/Aboriginal contact activity. In this instance, no such evidence exists for site AH14260. As such the concept of historic significance is not applicable to this site.

3.8 Significance Under the Aboriginal Heritage Act 1975

In Tasmania, the *Aboriginal Heritage Act 1975* (the Act) is the primary Act for the treatment of Aboriginal cultural heritage. Under Part 1, Section 2(8) of *the Aboriginal Heritage Act 1975*, Aboriginal tradition and significance is defined as follows.

Aboriginal tradition means –

(a) the body of traditions, knowledge, observances, customs and beliefs of Aboriginal people generally or of a particular community or group of Aboriginal people; and

(b) any such tradition, knowledge, observance, custom or belief relating to particular persons, areas, objects or relationships;

significance, of a relic, means significance in accordance with –

(a) the archaeological or scientific history of Aboriginal people; or

(b) the anthropological history of Aboriginal people; or

(c) the contemporary history of Aboriginal people; or

(d) Aboriginal tradition.

In accordance with the *Aboriginal Heritage Standards and Procedures 2018,* Aboriginal heritage assessments in Tasmania have addressed the issue of significance as per the Burra Charter 2013. This approach has been adopted for this assessment (see sections 8.1 to 8.7 above). However, AHT have now advised that in order to ensure compliance with the *Aboriginal Heritage Act 1975* (the Act), assessments are now also to consider significance and Aboriginal tradition as defined in the Act.

The Act came into effect in 1975, which is several decades before the Burra Charter Guidelines and protocols for determining significance were developed. To a large extent, the definitions of Aboriginal tradition and significance, as defined under Section 2(8) of the Act are covered by the Burra Charter, and have been addressed in this report.

The archaeological or scientific history of Aboriginal people (a) is covered under the concept of Scientific significance. This component of significance, as it relates to site AH14260, has been addressed in detail in sections 3.2, 3.3 and 3.5 of this report.

Aboriginal cultural, social and spiritual significance under the Burra Charter relates to the value placed upon a site or suite of sites by the local or regional Aboriginal community (see sections 3.2 and 3.3 of this report). The definition of Aboriginal tradition, as provided in the Act, is broadly covered under this section of the Burra Charter. As is the anthropological history of Aboriginal people (b), the contemporary history of Aboriginal people (c) and Aboriginal tradition (d).

The notion of Aboriginal cultural, social and spiritual significance, and the assessment of these values is a matter for Aboriginal people and can only be made by the appropriate Aboriginal representatives of the relevant communities. Section 4 of this report presents a statement of cultural/social significance provided by Vernon Graham for the site AH14260, and the study area as a whole. Vernon Graham is an experienced Aboriginal Heritage Officer and a respected member of the Tasmanian Aboriginal community, and as such is well placed to provide this statement. In addition, the report has been sent out to a range of

Aboriginal communities for review and comment. The results of the consultation program are presented in Appendix 4.

The available ethnographic information indicates that the Cimitiere Plains Solar Farm Project study area is within land traditionally occupied by the Leterremairrener (Port Dalrymple people) of the Northern Midlands Nation.

Sites AH14260 is one of a number of Aboriginal sites that have been recorded within this northern region. These sites provide tangible evidence for the occupation of this area by the Leterremairrener people, and they retain a level of significance and importance to the present-day Tasmanian Aboriginal community (see section 4).

4.0 Consultation with Aboriginal Communities and Statement of Aboriginal Significance

The designated Aboriginal Heritage Officer (AHO) for this project is Vernon Graham. One of the primary roles of the Aboriginal Heritage Officer is to consult with Aboriginal community groups. The main purpose of this consultation process is:

- to advise Aboriginal community groups of the details of the project,
- to convey the findings of the Aboriginal heritage assessment,
- to document the Aboriginal social values attributed to Aboriginal heritage resources in the study area,
- to discuss potential management strategies for Aboriginal heritage sites, and
- to document the views and concerns expressed by the Aboriginal community representatives.

One Aboriginal site (AH14260) was identified during the field survey of the 11ha study area. A second site (AH10399) is located nearby just inside the planning corridor. This site was discussed in the main report prepared by CHMA (2023). Because of these Aboriginal sites the decision has been made to distribute this addendum report to a select range of Aboriginal community groups in the north of the State for information purposes. The addendum report has also been provided to AHT for review. Vernon Graham has provided a statement of the Aboriginal cultural values attributed to the study area as a whole. This statement is presented below.

Statement of Cultural/Social Significance by Vernon Graham

Aboriginal heritage/relics are not renewable. Hence any cultural heritage values provide a direct link to past occupation undertaken by traditional indigenous ancestors in the region of the project proposal. This provides a story or link for the Aboriginal community today and facilitates the connection to social-cultural heritage values, ethnohistory /story and the relationship pertaining to country. This is an integral part of regaining knowledge so it can be encapsulated and retained by both the individual Aboriginal people and for the Aboriginal community collectively.

We did identify one Aboriginal heritage site (AH14260 – an isolated artefact) during the survey of the additional 11ha area. This artefact will not be within the revised planning corridor and is therefore in an area that is not part of the proposed development and will not be impacted. There is another registered isolated artefact (site AH10399) that we could not relocate during the survey. It is likely that this site is within the planning corridor, but is currently obscured by vegetation.

These sites are important to the Tasmanian Aboriginal community as they provide a tangible material link to our ancestors. My conversations with the Aboriginal community organisations that have I have consulted for this project confirm that our people would like to see these two recorded Aboriginal sites protected and left in-situ if possible. I would also personally support this approach. If it is not possible to conserve and protect any of these sites, then the preferred option would be to salvage collect the artefacts and to relocate these artefacts to a safe location on Country.

No other Aboriginal heritage sites were identified during our investigations. Based on the survey results, and my observations made during the field survey, I am satisfied that there is a low potential for other Aboriginal sites to be present in the study area. If care is taken to avoid sites AH14260, AH10399, then I am satisfied that this proposal poses a minimal risk of impacting Aboriginal heritage values.

5.0 Management Recommendations

Heritage management options and recommendations provided in this report are made based on the following criteria.

- Consultation with Vernon Graham (Aboriginal Heritage Officer).
- The legal and procedural requirements as specified in the *Aboriginal Heritage Act 1975* (The Act).
- The results of the investigation as documented in this report.

As noted in section 1.1 of this report, following the completion of the Aboriginal heritage investigations, the proponent has revised the planning corridor for the transmission line, partially in an effort to avoid Aboriginal heritage values that were identified during the Aboriginal heritage assessment. The revised planning corridor is significantly smaller than the 11ha area that was the focus of this assessment. This reflected in the Management recommendations presented in section 5 of this addendum report. The following recommendations are based on the revised planning corridor.

Recommendation 1 (AH14260)

One Aboriginal heritage site was identified during the field survey inspection of the 11ha study area (site AH14260). This site is classified as an isolated artefact and is located in the southern portion of the study area (see Figure 4). This site will be at least 95m outside the revised planning corridor for the solar farm development. The preferred management strategy is to avoid any impacts on this site and to protect the site in situ. The following recommendations apply to this site.

- The location of this site is to be plotted on the design plans for the Cimitiere Plains Solar Farm Project footprint.
- Construction contractors should be informed of the location of the site and informed that the site is not to be impacted.

Recommendation 2 (AH10399)

Sites AH10399 is an Isolated artefact that is reported to be located at grid reference E490610 N5447494 (see Figure 4). Despite an extensive search, this site could not be relocated during the current survey program. The site is likely to remain in situ but covered by vegetation. Based on the grid reference provided on the AHR, this site is located in the planning envelope (see Figure 4). The preferred management strategy is to avoid any impacts on this site and to protect the site in situ. The following recommendations apply to this site.

- The location of the site is to be plotted on the design plans for the Cimitiere Plains Solar Farm Project footprint.
- Prior to any future works commencing in the identified areas, temporary high visibility protective barricading is to be erected around the identified boundaries of the site with a 2m radial buffer applied. Barricading is to remain in place for the duration of construction.
- Construction or other works contractors should be informed of the location of the site and informed that the site is not to be impacted.

- No soil disturbance works are to be carried out within the site boundaries, or within the barricaded zone of the site.
- Barricading is to be removed on completion of construction works.

As specified in section 10.1 of this report, all Aboriginal relics are protected under the *Aboriginal Heritage Act 1975* (The Act). It is illegal to destroy, damage, deface, conceal or otherwise interfere with a relic, unless in accordance with the terms of a permit granted by the Minister. Therefore, if it appears that site AH10399 may be impacted by construction or other works, then Sunspot 9 Pty Ltd will need to apply for and obtain a Permit to impact the site, prior to any works commencing.

Recommendation 3 (Unanticipated Discovery Plan)
It is assessed that there is generally a low to very low potential for additional undetected Aboriginal heritage sites to occur within the proposed 11ha additional section to the Cimitiere Plains Solar Farm Project footprint. However, if, during the course of the proposed works, previously undetected archaeological sites or objects are located, the processes outlined in the Unanticipated Discovery Plan should be followed (see Appendix 3). A copy of the Unanticipated Discovery Plan should be kept on-site during all ground disturbance and construction work. All construction personnel should be made aware of the Unanticipated Discovery Plan and their obligations under the *Aboriginal Heritage Act 1975* (the Act).

Recommendation 4 (CHMA 2023 Recommendations)
The management recommendations established by CHMA (2023) for the Cimitiere Plains Solar Farm Project apply for all other Aboriginal sites and areas not covered by this addendum report.

Recommendation 5 (Provision of Reports)
Copies of this report should be submitted to Aboriginal Heritage Tasmania (AHT) for review and comment.

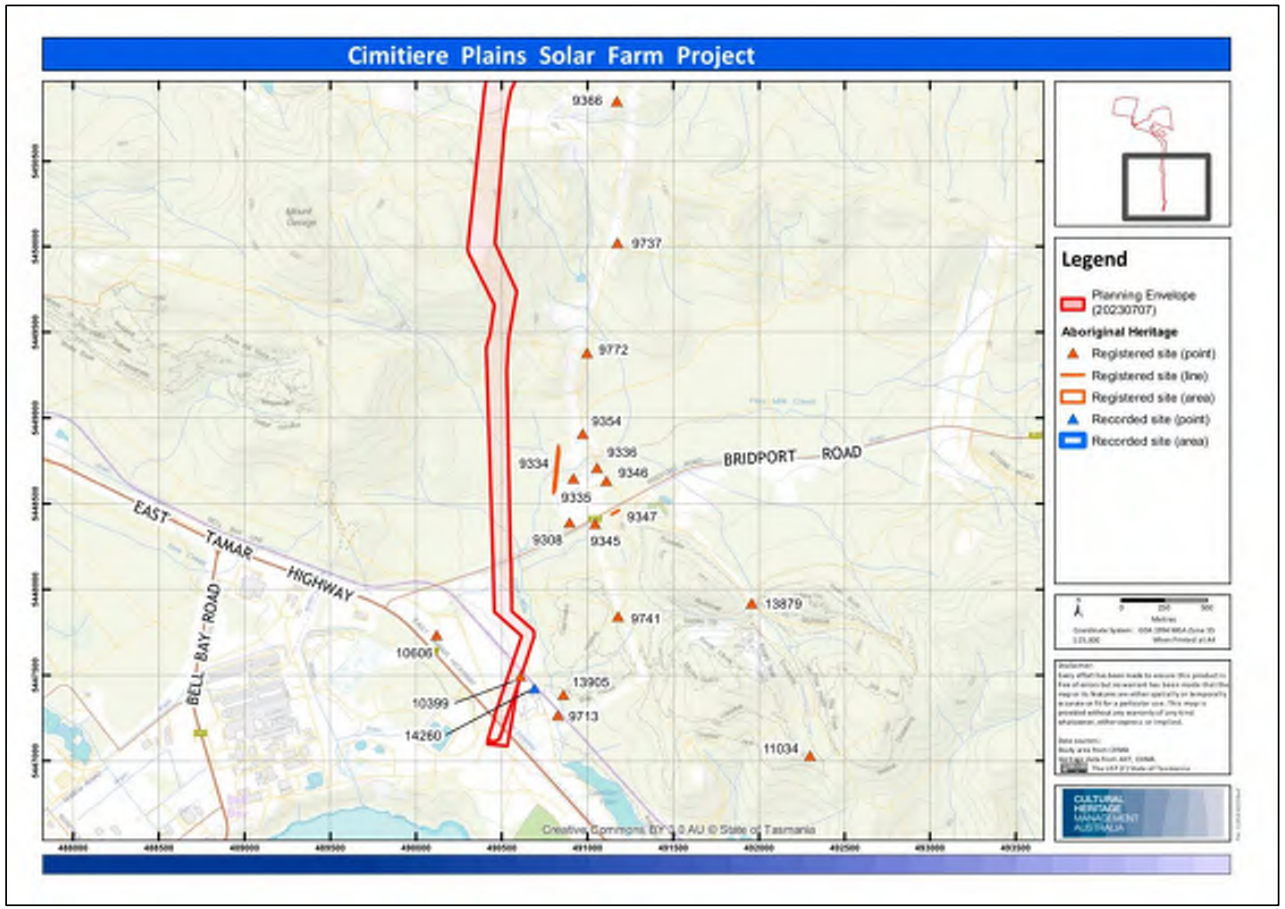

Figure 4: Topographic map showing the location of site AH14260 and other registered sites within and in the vicinity of the project footprint

References Cited

CHMA 2023 Cimitiere Plains Solar Farm Project, Aboriginal Heritage Assessment. Unpublished report prepared for Sunspot 9 Pty Ltd.

Appendix 1

Gazetteer of Recorded Sites

Site Name	Grid Reference (GDA94)	Site Type	Site Description
AH14260	E490690 N5447425	Isolated Artefact	One white quartz crystal flake located on a >5° slope on a cleared section above a drainage ditch. The site has a very low to low potential for additional surface or sub-surface artefacts to be present. This site has been heavily disturbed. **Artefact Details:** — White quartz crystal flake: 45mm x 23mm x 7mm

Appendix 2

Detailed Site Description

Site Name: AH14260

Site Type: Isolated Artefact

Grid Reference:

- **E 490690 N 5447425**

Site Description:

AH14260 is located in a cleared section above a drainage ditch consisting of light red/brown soil on a <5° slope facing the drainage ditch. The site is immediately surrounded by moderately to highly disturbed parkland and railway line infrastructure. AH14260 is located approximately 95m southwest of Four Mile Creek.

Surface visibility along the drainage ditch where the artefact was recorded and surface visibility was 100% and surface visibility outside of the site was restricted to an average of 20% due to grass and vegetation cover.

The artefact recorded at AH14260 comprises a white quartz crystal flake. Besides the artefact noted above, no additional artefacts were identified.

Given some constraints in surface visibility (particularly outside the cleared drainage ditch), it can't be stated with certainty that there are no additional undetected artefacts associated with site AH14260. However, all indications are that artefact densities are likely to be low to very low.

Artefact Details:

- White quartz crystal flake: 45mm x 23mm x 7mm

Plate 1: Showing the ventral surface of white quartz crystal flake associated with AH14260.

Plate 2: Showing the dorsal surface of the white quartz crystal flake associated with AH14260.

Plate 3: View northeast showing the location of AH14260.

Appendix 3

Unanticipated Discovery Plan

Unanticipated Discovery Plan

Procedure for the management of unanticipated discoveries of Aboriginal relics in Tasmania

For the management of unanticipated discoveries of Aboriginal relics in accordance with the *Aboriginal Heritage Act 1975* and the *Coroners Act 1995*. The Unanticipated Discovery Plan is in two sections.

Discovery of Aboriginal Relics other than Skeletal Material

Step 1:
Any person who believes they have uncovered Aboriginal relics should notify all employees or contractors working in the immediate area that all earth disturbance works must cease immediately.

Step 2:
A temporary 'no-go' or buffer zone of at least 10m x 10m should be implemented to protect the suspected Aboriginal relics, where practicable. No unauthorised entry or works will be allowed within this 'no-go' zone until the suspected Aboriginal relics have been assessed by a consulting archaeologist, Aboriginal Heritage Officer or Aboriginal Heritage Tasmania staff member.

Step 3:
Contact Aboriginal Heritage Tasmania on **1300 487 045** as soon as possible and inform them of the discovery. Documentation of the find should be emailed to **aboriginalheritage@dpac.tas.gov.au** as soon as possible. Aboriginal Heritage Tasmania will then provide further advice in accordance with the *Aboriginal Heritage Act 1975*.

Discovery of Skeletal Material

Step 1:
Call the Police immediately. Under no circumstances should the suspected skeletal material be touched or disturbed. The area should be managed as a crime scene. It is a criminal offence to interfere with a crime scene.

Step 2:
Any person who believes they have uncovered skeletal material should notify all employees or contractors working in the immediate area that all earth disturbance works cease immediately.

Step 3:
A temporary 'no-go' or buffer zone of at least 50m x 50m should be implemented to protect the suspected skeletal material, where practicable. No unauthorised entry or works will be allowed within this 'no-go' zone until the suspected skeletal remains have been assessed by the Police and/or Coroner.

Step 4:
If it is suspected that the skeletal material is Aboriginal, Aboriginal Heritage Tasmania should be notified.

Step 5:
Should the skeletal material be determined to be Aboriginal, the Coroner will contact the Aboriginal organisation approved by the Attorney-General, as per the *Coroners Act 1995*.

Aboriginal Heritage Tasmania
Department of Premier and Cabinet

Tasmanian Government

Guide to Aboriginal site types

Stone Artefact Scatters

A stone artefact is any stone or rock fractured or modified by Aboriginal people to produce cutting, scraping or grinding implements. Stone artefacts are indicative of past Aboriginal living spaces, trade and movement throughout Tasmania. Aboriginal people used hornfels, chalcedony, spongelite, quartzite, chert and silcrete depending on stone quality and availability. Stone artefacts are typically recorded as being 'isolated' (single stone artefact) or as an 'artefact scatter' (multiple stone artefacts).

Shell Middens

Middens are distinct concentrations of discarded shell that have accumulated as a result of past Aboriginal camping and food processing activities. These sites are usually found near waterways and coastal areas, and range in size from large mounds to small scatters. Tasmanian Aboriginal middens commonly contain fragments of mature edible shellfish such as abalone, oyster, mussel, warrener and limpet, however they can also contain stone tools, animal bone and charcoal.

Rockshelters

An occupied rockshelter is a cave or overhang that contains evidence of past Aboriginal use and occupation, such as stone tools, middens and hearths, and in some cases, rock markings. Rockshelters are usually found in geological formations that are naturally prone to weathering, such as limestone, dolerite and sandstone

Quarries

An Aboriginal quarry is a place where stone or ochre has been extracted from a natural source by Aboriginal people. Quarries can be recognised by evidence of human manipulation such as battering of an outcrop, stone fracturing debris or ochre pits left behind from processing the raw material. Stone and ochre quarries can vary in terms of size, quality and the frequency of use.

Rock Marking

Rock marking is the term used in Tasmania to define markings on rocks which are the result of Aboriginal practices. Rock markings come in two forms; engraving and painting. Engravings are made by removing the surface of a rock through pecking, abrading or grinding, whilst paintings are made by adding pigment or ochre to the surface of a rock.

Burials

Aboriginal burial sites are highly sensitive and may be found in a variety of places, including sand dunes, shell middens and rock shelters. Despite few records of pre-contact practices, cremation appears to have been more common than burial. Family members carried bones or ashes of recently deceased relatives. The Aboriginal community has fought long campaigns for the return of the remains of ancestral Aboriginal people.

Further information on Aboriginal Heritage is available from:

Aboriginal Heritage Tasmania
Community Partnerships and Priorities
Department of Premier and Cabinet
GPO Box 123 Hobart TAS 7001

Telephone: 1**300 487 045**
Email: **aboriginalheritage@dpac.tas.gov.au**
Web: **www.aboriginalheritage.tas.gov.au**

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Appendix E
Historic Heritage Assessment

Cimitiere Plains Solar Farm

envoca
ENVIRONMENTAL CONSULTANCY

Cimitiere Plains Solar Farm Project, Northern Region, Tasmania

Historic Heritage Assessment Report

AUTHOR: Shay Hannah
27 Apsley St, South Hobart TAS 7004

CLIENT:
Sunspot 9 Pty Ltd

15.11.2023

CULTURAL HERITAGE MANAGEMENT AUSTRALIA

Report Version Control

Report Versions	Report Distribution	Date of Distribution
Draft Report V1	Stuart Huys (CHMA for Internal Review)	9-10-2023
Draft Report V1	Proponent	10-10-2023
Final Report	Sunspot 9 Pty Ltd	15-11-2023

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Executive Summary

Introduction

Sunspot 9 Pty Ltd, the proponent, is seeking development approval to establish a 288MW solar farm on private land, 5km northeast of George Town, Tasmania. The solar farm will be connected to the George Town substation to the southeast by 6km of double circuit transmission line on poles. The solar farm will be situated on approximately 420ha of rural land that is currently used for dryland agriculture, predominantly grazing. The proposed infrastructure includes:

• Photovoltaic (PV) solar panels mounted on single-axis tracker frames

• Inverters to transform the direct current (DC) from the solar panels to alternating current (AC)

• On-site substation

• Security fence around the panels and the substation.

• Internal access tracks

• Electrical cables

• Site office and parking

The transmission line will traverse approximately 5km of forest (and regenerating forest) and 1km of cleared land that is currently used for recreation and as part of the buffer area for the Bell Bay aluminium smelter. Poles will support two circuits that will operate at a voltage of up to 110kV. The easement for the transmission line will be up to 50m wide.

The proposed solar farm site is located adjacent to Soldiers Settlement Road and the transmission lines are located adjacent to Musk Vale Road and Bridport Road, Bell Bay in the Northern Region of Tasmania (see Figures 1-2). The site will be accessed via two existing access roads into the site, Musk Vale Road which leads into a junction on the northern side of unnamed access tracks that exist throughout the proposed transmission line corridors and a private access track on the northern side of Bridport Road around 1.5km to the east of the East Tamar Highway/Bridport Road junction.

CHMA Pty Ltd has been engaged by the proponent to undertake a historic heritage assessment for the proposed Cimitiere Plains Solar Farm Project (the study area), to identify any potential heritage constraints. This report presents the findings of the historic heritage assessment.

Survey Results and Statement of Archaeological Potential

No historic heritage sites, suspected features, or areas of elevated archaeological potential were identified during the field survey assessment of the study area. A search of the various historic heritage registers (as listed in section 1.4 of this report) shows that there are no registered historic sites or features located within or in the immediate vicinity of the Cimitiere Plains Solar Farm Project study area. The closest heritage-listed features are located around George Town and Low Head, around 3–4km to the northwest and west of the study area (see Figure 7).

The search of the historic land title records shows that shows that the study area was part of many land grants throughout the nineteenth century. The archival evidence shows that there

were a few houses constructed within some sections of the study area during this early occupation period. However, the majority of the structures shown on maps from the era are classified as huts and barns, with stockyards also mentioned. Indeed, given the variable terrain encompassed within the study area, it is assessed as being unlikely that many other dwellings were established here. Despite this, the archaeological signature of this level of historic pastoral occupation is likely to be minimal.

The study area has more recently been utilised for industrial and agricultural purposes. Given the moderate levels of disturbances associated with the industrial and agricultural development within the study area, the majority of evidence for the earlier pastoral occupation of this area is likely to have been destroyed.

Based on the survey findings, the absence of registered historic sites and the low potential for undetected historic heritage sites to be present, the Cimitiere Plains Solar Farm Project study area is assessed as being of low historic heritage sensitivity. It is advised that there is a very low possibility that the proposed development will have any impact on historic heritage values.

Management Recommendations

Heritage management options and recommendations provided in this report are made based on the following criteria.

- The legal and procedural requirements as specified in section 6 of this report.
- The results of the investigation as documented in this report.
- The results of the Historic heritage registers search.

Recommendation 1

No historic heritage sites, suspected features, or areas of elevated archaeological potential were identified during the field survey assessment of the Cimitiere Plains Solar Farm Project study area. A search of the various historic heritage registers (as listed in section 1.4 of this report) shows that there are no registered historic sites located within or in the immediate vicinity of the study area. Archival research has not identified any evidence for historic structures or features being present. On this basis, it is advised that the proposed Cimitiere Plains Solar Farm Project will have no impacts on known historic heritage sites, and therefore there are no historic heritage constraints or legal impediments to the project proceeding.

Recommendation 2

It is assessed that there is a very low potential for undetected Historic heritage sites to occur within the study area. However, if, during the course of the proposed works, previously undetected heritage sites or objects are located, the processes outlined in the Unanticipated Discovery Plan should be followed (see section 8).

1.0 Project Outline

1.1 Project Details

Sunspot 9 Pty Ltd, the proponent, is seeking development approval to establish a 288MW solar farm on private land, 5km northeast of George Town, Tasmania. The solar farm will be connected to the George Town substation to the southeast by 6km of double circuit transmission line on poles. The solar farm will be situated on approximately 454ha of rural land that is currently used for dryland agriculture, predominantly grazing. The proposed infrastructure includes:

• Photovoltaic (PV) solar panels mounted on single-axis tracker frames

• Inverters to transform the direct current (DC) from the solar panels to alternating current (AC)

• On-site substation

• Security fence around the panels and the substation.

• Internal access tracks

• Electrical cables

• Site office and parking

The transmission line will traverse approximately 5km of forest (and regenerating forest) and 1km of cleared land that is currently used for recreation and as part of the buffer area for the Bell Bay aluminium smelter. Poles will support two circuits that will operate at a voltage of up to 110kV. The easement for the transmission line will be up to 50m wide.

The proposed solar farm site is located adjacent to Soldiers Settlement Road and the transmission lines are located adjacent to Musk Vale Road and Bridport Road, Bell Bay in the Northern Region of Tasmania (see Figures 1-2). The site will be accessed via two existing access roads into the site, Musk Vale Road which leads into a junction on the northern side of unnamed access tracks that exist throughout the proposed transmission line corridors and a private access track on the northern side of Bridport Road around 1.5km to the east of the East Tamar Highway/Bridport Road junction.

CHMA Pty Ltd has been engaged by the proponent to undertake a historic heritage assessment for the proposed Cimitiere Plains Solar Farm Project (the study area), to identify any potential heritage constraints. This report presents the findings of the historic heritage assessment.

1.2 Aims of the Investigation

The principal aims of this project are as follows.

- To undertake a historic heritage assessment for the study area, as shown in Figures 2 and 3. The assessment is to be compliant with both State and Commonwealth legislative regimes.
- To determine the extent of previously identified Historic heritage sites within and in the immediate vicinity of the Cimitiere Plains Solar Farm Project study area.
- To locate and document Historic heritage sites that may be present within the identified bounds of the Cimitiere Plains Solar Farm Project study area.

- To assess the archaeological potential of the Cimitiere Plains Solar Farm Project study area.
- To assess the significance values of identified historic heritage sites.
- To develop a set of management recommendations aimed at minimising the impact of the proposed Cimitiere Plains Solar Farm Project on any identified historic heritage values.
- Prepare a report that documents the findings of the historic heritage assessment.

1.3 Project Methodology

A three-stage project methodology was implemented for this assessment.

Stage 1 (Pre-Fieldwork Background Work)

Prior to fieldwork being undertaken, the following tasks were completed by CHMA staff.

Heritage Register Searches
A search was carried out of a number of historic registers and databases in order to determine the extent of historic sites and features in the vicinity of the study area. Agency databases searched included:

- The Australian Heritage Database (AHD)
- Tasmanian Heritage Register (THR)
- The Register of the National Estate (RNE)
- Australian Heritage Places Inventory (AHPI)
- The National Trust (NT)
- The Tasmanian Planning Scheme
- George Town Interim Planning Scheme 2013

Detailed historical research was also undertaken to understand the historical context of the area, its growth and development from early pioneer settlement and previous investigations in the area. Resources were utilised from:

- National Library of Australia
- Trove online collections
- Tasmanian Archives
- LINC Tasmania

The collation of relevant documentation for the Project
The following documentation was collated for this project.

- Maps of the study areas.
- References to the land use history of the study area.
- GIS Information relating to landscape units present in the study area.
- Geotechnical information for the study area, including soil and geology data.

Stage 2 (Field Work)

Stage 2 entailed the fieldwork component of the assessment. The main field survey was undertaken by Shay Hannah (CHMA archaeologist), Vernon Graham (Senior Aboriginal Heritage Officer) and Kierrin Graham (Heritage Field Assistant), over a period of 6 days (31-8-2022 – 9-9-2022).

The field team walked a total of 44.073km of survey transects across the proposed Cimitiere Plains Solar Farm footprint, with the average width of each transect being 10m. As part of the field survey program, additional transects were walked in areas where there was improved surface visibility, to gain a better insight as to the potential presence or absence of historic sites across the study area. Section 4 provides further details as to the survey coverage achieved within the study area.

Stage 3

Stage three of the project involves the production of a Draft and Final Report that includes an analysis of the data obtained from the field survey, an assessment of heritage sensitivity and management recommendations. The report has been prepared by Shay Hannah and Stuart Huys.

A draft copy (electronic PDF version) of the report was submitted to the proponent, for review. Any comments that were received have been incorporated into the final draft report.

1.4 Project Limitations

Most archaeological investigations are subject to limitations that may affect the reliability of the results. The main constraint to the present investigation was restricted surface visibility due primarily to vegetation cover. At the time of the field survey, surface visibility across the proposed Cimitiere Plains Solar Farm footprint ranged between <10% and 80%, with the estimated average being 20%. Throughout the study area, there was a network of previously graded vehicle tracks that provided transects of improved surface visibility. There were also numerous areas where erosion scalds were present that provided locates of improved visibility. To offset constrained surface visibility, any areas of improved visibility were inspected in detail. The constraints in surface visibility limited the effectiveness of the survey assessment to some extent. The issue of surface visibility is further discussed in Section 4 of this report.

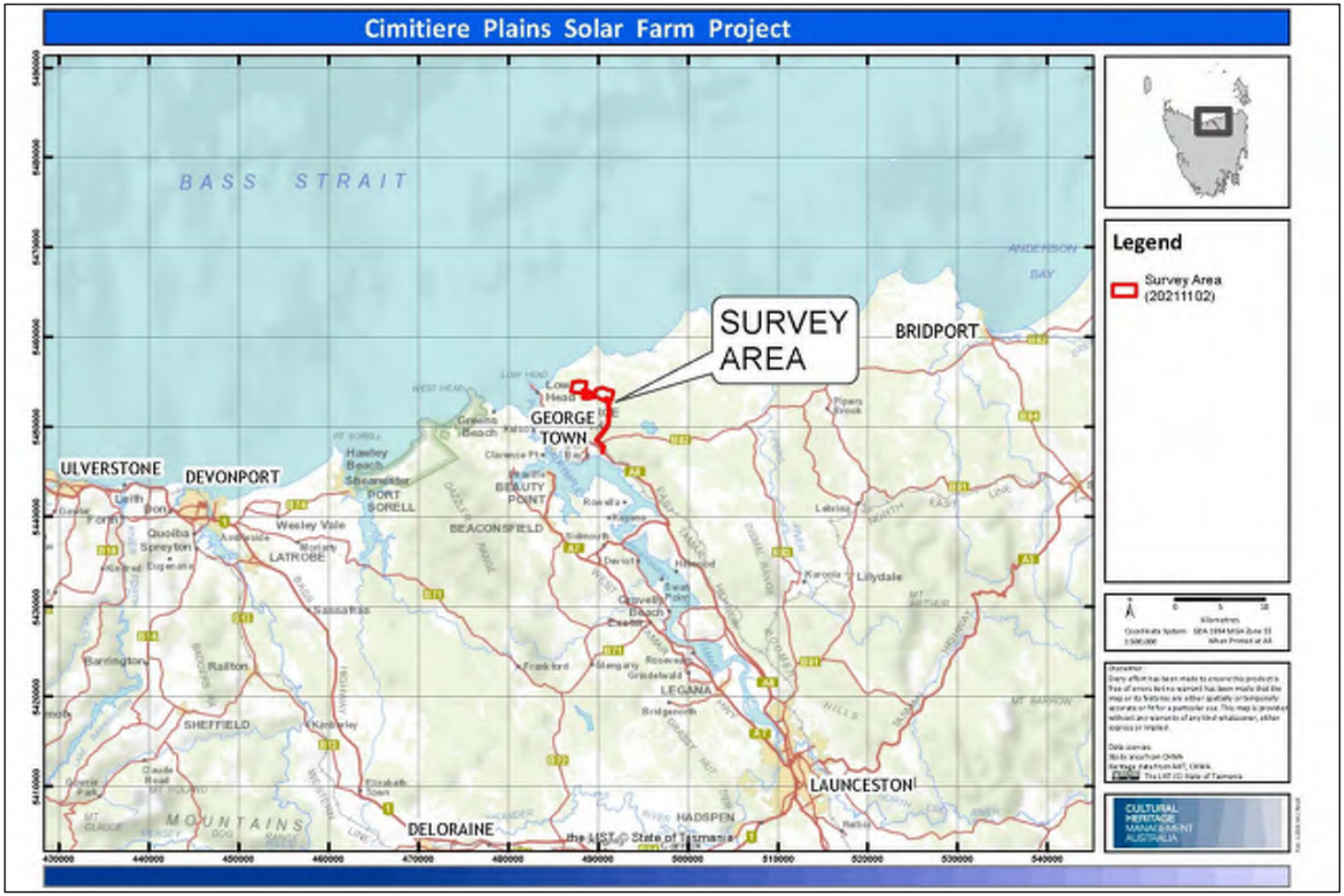

Figure 1: Topographic image showing the location of the study area at George Town in the Northern Region of Tasmania.

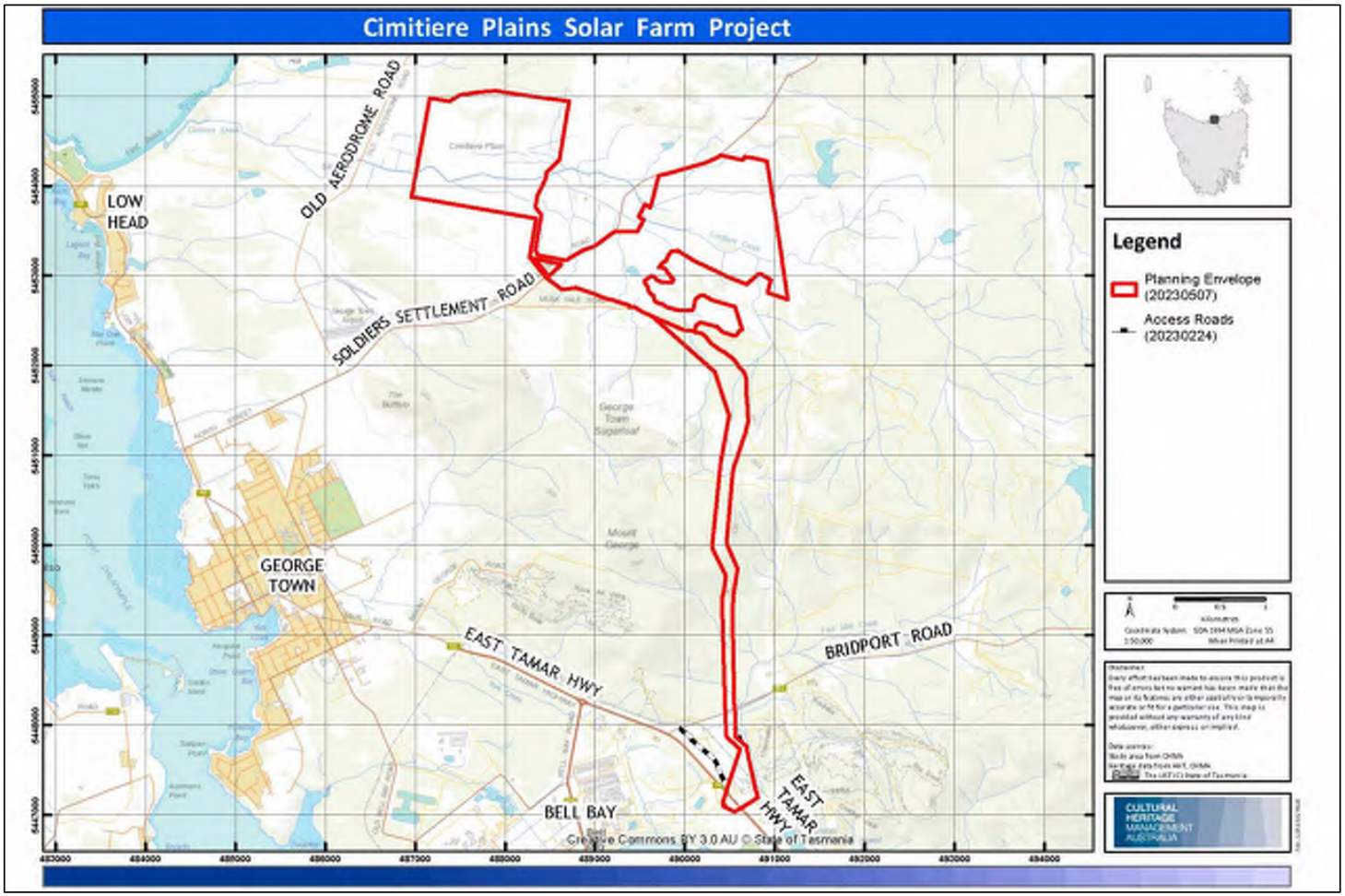

Figure 2: Topographic image showing the landscape setting of the Cimitiere Plains Solar Farm study area.

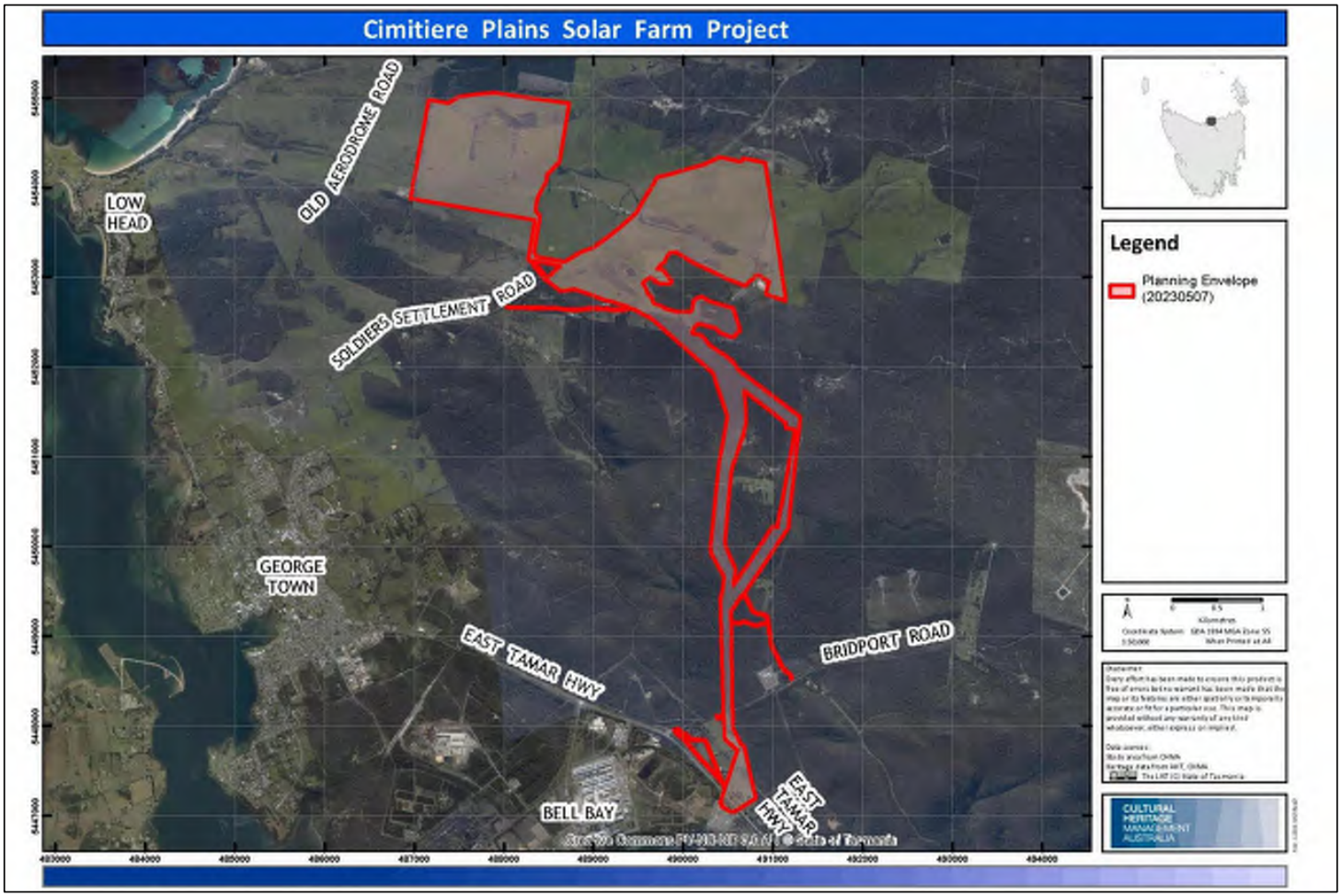

Figure 3: Aerial image showing the boundaries of the study area.

2.0 Environmental Setting of the Study Area

2.1 Landscape Setting of the Study Area

The proposed Cimitiere Plains Solar Farm Project area (the study area) covers approximately 454ha. The northern sections of the study area are situated 4.12km to the northeast of George Town, while the southern sections of the study area are situated 4.9km to the southeast of George Town, in the Northern Region of Tasmania. Subsequently, the landscape of the study area is divided. Within the northern sections of the study area, the terrain is characteristically flat to moderately undulating pastureland, with some sections of lowland floodplains surrounding Cimitiere Creek (see Plates 1). The more gentle slope gradients occur throughout the northeast and northwest sections of the study area, where gradients range between 5º to 10º (see Plate 1 and Plate 3). In the southeast and southwest sections of the northern sections of the study area, the slope gradients increase to between 10º to 30º, with the steepest slopes present along the southern borders facing toward the Tippogoree Hills (see Plate 2).

The southern sections of the Cimitiere Plains Solar Farm Project study area are located to the east and at the base of the southeastern end of the Tippogoree Hills. The Tippogoree Hills are a prominent series of ranges that fringe the eastern margins of the River Tamar. The terrain across the study area is characteristically flat to moderately undulating, with some sections of lowland floodplains (see Plate 9). The more gentle slope gradients occur across the far west portion of the study area at the base of Tippogoree Hills, where gradients range between 5º to 10º (see Plate 6). On the side slopes of the ridge lines, slope gradients increase to between 10º to 40º, with the steepest slopes being the northern side slopes of the ridges, running down towards watercourses such as Four Mile Creek (see Plate 5).

The underlying geology of the study area is a variable patchwork. The northern sections of the study area are Cenozoic cover sequences which consist of windblown and locally derived sand, Cenozoic cover sequences consisting of silt with rounded clasts of granite, schist, quartzite, conglomerate, derived from Permian strata and Palaeozoic Lower Parmeener Supergroup consisting of mudstone, sandstone, minor limestone, coal measures, Tasmanite oil shale, and basal tillite, diamictites, rhythmic clay stones (List 2023; Australian Stratigraphic Units Database 2022). Soils in the northern sections of the study area consist of light to dark grey sandy loam that is shallow to skeletal in depth (see Plate 3). The underlying geology of the southern section of the study area is Cenozoic cover sequences which consist of windblown and locally derived sand, Jurassic dolerite and Upper Parmeener Supergroup consisting of cross-bedded quartz sandstone, feldspathic sandstone and shale (List 2023). Soils across the study area are regolith clays that have been derived through the decomposition of the parent bedrock. Soil depth is typically shallow to skeletal, with the underlying dolerite bedrock exposed to the surface across most parts of the southern sections of the study area (see Plate 5 and Plate 6).

The southern sections of the study area are positioned just inland (east/northeast) of Bell Bay, on the lower reaches of the River Tamar, which is the largest major water course in this part of the Northern Region. This is a ‘ria’ or drowned river valley formed by coastal submergence about 6,000 years ago. The shoreline of the estuary in the surrounds of Bell Bay is a low-energy shoreline, with mudflats and shoals exposed at low tide. The intertidal

zone hosts a range of estuarine shellfish species, dominated by mud oysters and mussels. The northern sections of the study area are positioned just inland (south) of Bass Strait. The shoreline of the Bass Strait hosts a range of saltwater shellfish species such as blue mussels, scallops and oysters and potentially seals coming from Tenth Island (now a recognised breeding colony 7km offshore) (Wildlife Services 2018).

The only named water course in the vicinity of the southern sections of the study area is Four Mile Creek. This is a semi-permanent watercourse that flows in an east-to-west direction, emptying into the Lauriston Reservoir. The creek is located around 600m to the east of the study area. A small tributary of this creek flows along the north-western border of the study area. In the northern sections, the only named watercourse in the vicinity is Cimitiere Creek. This is a semi-permanent watercourse that flows in a northwest-to-southeast direction. The creek is located in the centre of the northern sections of the study area and numerous small tributaries and drains run off the creek throughout the northern sections (see Figure 2).

The vegetation structure across most of the northern sections of the study area is dominated by agricultural pastures made up of native and introduced grass species (see Plate 1). Amongst the pasture are sparse stands of *Eucalyptus amygdalina* coastal forest and woodland that consists of Bracken Fern (*Pteridium esculentum*), eucalypts, Sagg (*Lomandra longifolia*), She-oak and Black Wattle saplings (*Acacia mearnsii*) (see Plate 4). There are also sparse stands along the edges of Cimitiere Creek of coastal scrub and heathland with Common Teatree (*Leptospermum scoparium*) and Sagg being the most prevalent species present (see Plate 3). Significant clearing, pastoral activity and construction of dam infrastructure have taken place across the majority of the northern sections of the study area and have resulted in the presence of introduced grasses.

The vegetation structure across most of the southern study area is dominated by *Eucalyptus amygdalina* forest and woodland scrub which is associated with the distribution of the dolerite bedrock (see Plate 5). Small patches of *Eucalyptus obliqua* dry forest and lowland grasses occur within the central-western portion of the study area. On the eastern boundary of the study area, there is also a small patch of Eucalyptus amygdalina - *Eucalyptus obliqua* damp sclerophyll forest. Selective logging has occurred across the majority of this native Eucalypt woodland. This logging activity has also resulted in dense undergrowth within the majority of the study area. The most prominent species present were Bracken Fern, Cutty Grass (*Gahnia grandis*), Sagg and Black Wattle saplings (see Plate 5, Plate 6 and Plate 7). Parts of the native forests, on the lower slopes of the ridges, have been more extensively cleared as part of past pastoral activities.

Parts of the study area have been more intensively disturbed. Within the southern sections of the study area, there have been access track extensions made with the main southern access road being covered in bitumen (see Plate 8). A network of previously graded and ungraded vehicle tracks occurs throughout the southern sections of the study area, particularly around the existing BassLink infrastructure, TasRail rail tracks and former plantation areas (see Plate 5 and Plate 8).

The study area has a cool, wet climate typical of northern Tasmania. Rainfall occurs throughout the year; with a mean annual rainfall of 589mm. Rainfall is highest in August and

September (64mm – 71mm) and lower from January to February (28 – 31mm). The warmest months of the year are January and February when mean temperatures range from minimums of 10°C to maximums of about 23°C. Winter tends to be cold with mean annual temperatures in the coldest months of June and July ranging from 1.5°C mean minimum to maximum temperatures of about 11°C (BOM 2020).

Plate 1: View east showing Kierrin Graham (Heritage Field Assistant) on an undulation of 5°–10° and Cimitiere Creek present in the northern sections of the study area.

Plate 2: View southwest showing Vernon Graham (SAHO) a rise of 20° and one of the sparse stands of *Eucalyptus amygdalina* coastal forest and woodland present within the northern sections of the study area.

Plate 3: View northeast showing a tributary of Cimitiere Creek with light grey soils and stands of Common Teatree (*Leptospermum scoparium*) and Sagg.

Plate 4: View east showing one of the main graded access roads Musk Vale Road, George Town in the study area.

Plate 5: View east showing one of the graded access tracks in the southern sections of the study area and undulation of 35°.

Plate 6: View northeast showing *Eucalyptus amygdalina* forest and woodland scrub present within the southern sections of the study area.

Plate 7: View southwest showing the native regrowth vegetation present within the southern sections of the study area.

Plate 8: View west showing the partial bitumen-covered main access track in the southern sections of the study area.

Plate 9: View south showing one of the graded access tracks in the southern sections of the study area.

3.0 Historic Context of the Study Area

3.1 Historic Overview for the Northern Region

The first non-Aboriginal visitors to arrive in the Northern Region of Tasmania were George Bass and Mathew Flinders, who were sent to explore the possibility that there was a strait between Australia and Van Diemen's Land in 1798. They originally landed in Port Dalrymple, sheltering from bad weather at the mouth of the Tamar River, in the immediate vicinity of present-day George Town.

Significant settlement of the area, however, did not begin until the early 1800s. On 1 June 1804, the order came from London to reduce the population on Norfolk Island and move residents to Van Diemen's Land (Tasmania), and contemporaneously 'forestall French settlement' of the island (Robson 1983:43). On 15 October 1804, an expedition sailed from Port Jackson. It included HMS Buffalo, HM brig Lady Nelson and schooners Francis and Integrity. The 'invasion party' arrived in Outer Cove, subsequently the site of George Town, on 5 November 1804. Clergyman, Edward Main, was discharged from the Buffalo to 'perform divine service' (ibid). Six days later stores arrived and land clearing for settlement commenced. But the party leader, Lieutenant-Governor Paterson, grew 'dissatisfied with the site' and by 1805 most had moved to the western side of the Tamar to York town (Phillips 2005:157; Robson 1983:44). A year later (1806) the settlement was again shifted to the current position of Launceston. The settlement was initially known as Patersonia, however, was later changed by Paterson to Launceston in honour of the New South Wales Governor Captain Philip Diley King, who was born in Launceston, Cornwall. Administrative power was moved from York Town to Launceston in 1807, under the command of William Peterson. At the end of 1809, Paterson was recalled to Port Jackson, where he served as Lieutenant Governor of NSW (and Van Diemen's Land) until superseded by Governor Macquarie a year later.

In 1812 the Governor of New South Wales, Major General Lachlan Macquarie, toured Van Diemen's Land:

> *… he disapproved of the site fixed from Launceston and ordered that George Town be developed instead, on the basis that it would clearly be a superior port to Launceston because it was situated close to the open sea and not at the end of a tortuous estuary formed by the union of the two Esk Rivers* (Robson 1983:102).

In 1815 Macquarie moved the headquarters of the government to Outer Cove, renaming the site George Town (Phillips 2005:157). According to Robson, despite government intervention George Town failed to thrive—primarily because Launceston was agriculturally superior, there was 'continual personal conflict' between government personnel, and life there was generally 'precarious in the extreme' (Robson 1983:102-3).

Also opposing Macquarie's insistence that the settlement be relocated to George Town, were the settlers themselves. From 1815, the few convicts who completed their sentences settled not in and around the heavily-timbered country of George Town but instead chose the build their huts in the more open and fertile areas around Launceston and the Esk Rivers (Nyman 1996:12). The more fertile soil around Launceston also attracted the majority of free settlers, and by 1820, the entire population of the Tamar area, both convict and free men, numbered five hundred and forty three (Nyman 1996:12).

In 1820 Commissioner J.T. Bigge was sent out from London to inquire into the colonies of New South Wales and Van Diemen's Land. Bigge's conclusions on the settlement of George Town were scathing:

> *… he was not at all impressed with the stubbornness of Macquarie in insisting on the development of George Town. In eighteen months only one free inhabitant moved from Launceston to George Town, exclaimed the commissioner; the soil of George Town was not good, he judged…* (Robson 1983:104).

By the 1820s the perseverance of settlers in Launceston paid off, with the richer soils of the area pushing produce into high yields, turning production levels beyond the point of subsistence and into profits. In 1824, Commissioner Bigge made conclusive recommendations that Launceston be the centre for northern colonial administration, with the northern headquarters accordingly moved back to Launceston in that year.

Lieutenant-Governor of Van Diemen's Land, William Sorrell, was replaced by George Arthur in May 1824. Arthur inquired about the state of religion and education in the colony—this exchange revealed that there was a chaplain (replete with a 'spacious residence') in George Town but not in Launceston. Shortly after this, St John's Church was opened for worship in Launceston in December 1825, rapidly followed by churches of other denominations with their own churches; Scots Church in Lower Charles Street and Wesleyan Chapel in Paterson Street.

By 1827, the population of Launceston had increased to 2000 and the town had become an export centre, primarily servicing the colony's northern pastoral industry. Small hotels and breweries began to emerge in the 1820s, such as the Cornwell Hotel (c.1824) and Launceston Hotels, with more substantial hotels established by the c.1830s.

From 1825 a signalling system existed which advised Launceston of the movement of ships in the river. It was begun from Low Head by semaphore. Low Head signalled to George Town, George Town to Mount George, Mount George to Mount Direction and Mount Direction to Windmill Hill in Launceston.

In 1829, when the first issue of the Launceston Advertiser went on sale (under John Pascoe Fawkner), Fawkner recorded:

> *'Excepting about three months in summer, vessels drawing twelve feet can and do lie in a fresh-water stream (at Launceston; no boats are used, but goods are landed or shipped direct from the wharf…..Vessels of 500 to 600 tons burthen can come up within five or six miles of the town and lay in perfect safety, and vessels of 300 to 400 tons may come to the very verge of the town, that is to the bar which is at the entrance to the canal or North Esk as it is called'* (Cited in Bethell 1957:38).

By the 1830s, three industries thrived in the area; Whaling and Sealing in the Bass Strait produced good returns in oil, making men such as Henry Reed very wealthy. Agriculture had produced large grain stores, with the area supplying both the NSW and later Victorian settlements. The third industry became wool, which produced massive profits, coinciding with the advent of mechanized textile production in Britain which saw small-scale cottage industries transformed into mass production and mass profit (Green 2006).

Launceston's exports were booming, exceeding that of Hobart. It became a place of enterprise for free immigrants and not just a penal settlement. The riverfront was developed to maximize the new trades, with the introduction of wharves along the North Esk River by men such as Griffiths and Reibey (Green 2006). A brewery, tannery and flour mill were successively constructed.

As the export industries expanded, so did the transport industries, with the shipbuilding industry booming along the length of the Tamar Valley. So too did carriage makers, saddlers

and harness makers who no longer relied solely on repairing British gear, but instead began their own production. Economically and socially, the town began to boom, with the prices of property and livestock beginning to soar. This period of economic confidence inspired men such as John Batman and John Fawkner to look towards Port Phillip. In 1835 both made successful trips to establish the village of Melbourne. Though initially a financial drain on Launceston, the new settlement ultimately resulted in new trade, with the town supplying the new settlement with all its goods, including foodstuffs, clothing, timber, livestock and carts (Green 2006).

Come 1840, however, the boom was over and the colony's first major depression began. The three main sources of income failed due to declining whaling supplies, decreased value for wool in England and the collapse of the mainland market for foodstuffs as the drought ended in NSW and Port Phillip became self-sufficient (Green 2006). Employers became bankrupt and employees unemployed, with bounty emigrants also arriving in 1841 and further glutting the labour market (Green 2006).

The economy gradually improved, but finally received relief with the discovery of gold in NSW and Victoria. The resulting mass exodus of the male population to the goldfields provided a return to financial stability as huge quantities of goods were exported and the agricultural industry had a new lease of life. In 1853 Launceston was declared a municipality, with William Button appointed the town's first Mayor. In 1854, Henry Stoney visited the town, recording it as

> *'a large and busy town:- hundreds of vessels crowding the wharves; steamers and ships hastening to or hurrying from the port; - all is life and bustle, with crowded streets in all the turmoil of daily toil and traffic'* (Green 2006:37).

The money flowing into the township from the goldfields enabled Launceston's leaders to embark on several projects, including the advanced underground sewerage system and the St Patrick's River water scheme, which solved the ongoing problem of fresh water to the township. For the first time, the town had a permanent water supply.

Whilst Launceston had continued to expand and prosper throughout the mid-1800s, the evolution of George Town was less dynamic. In 1852 George Town was described as a summer holiday destination for residence of Launceston:

> *'It contains a small church, a school, three inns, and has a resident magistrate and post station. The population of the town and district is 601, the number of houses 115. There is a bush road to George Town down the eastern side of the Tamar, but communication is chiefly carried on by water'* (West 1981:541).

The town's population declined into the 1950s. This turned around with the development of the Comalco and the Tasmanian Electro Metallurgical Company (TEMCO) smelters at nearby Bell Bay. In 1955 the first aluminium smelter in the southern hemisphere commenced production at Bell Bay, near George Town (Tassell 2005:83). Originally the Comalco smelter was a Commonwealth and Tasmanian Government initiative, conceived in 1944 with the purpose of securing aluminium for defence purposes. By 1959, after slow production, the Commonwealth sought to close the smelter. To avoid this the Tasmanian Government expanded the smelter's capacity.

In 1960 Consolidated Zinc Pty Ltd, which had discovered the large bauxite deposits at Weipa, Queensland, acquired the commonwealth's interests through Comalco Industries Pty Ltd. Expansion of the plant has continued with annual production increasing from 15,000 tons in 1962 to more than 160,000 tons in 2003 (Tassell 2005:83)

TEMCO opened in 1962 (TEMCO 2005:360). The smelter was built by BHP Pty Ltd and is Australia's only manganese alloy smelter. At its peak, the smelter employed nearly 500 people. Today TEMCO ships iron ore from Groote Eylandt Mining Company, in the Northern Territory, to produce ferromanganese. Alloy is then sold in Australia, Asia, North America and New Zealand. South32 (spun out of BHP Billiton in 2015) operates the site.

3.2 First Historical Landowners and Land Grants

The Cimitiere Plains Solar Farm footprint encompasses large portions of Cimitiere Plains, Tippogoree Hills and a small section of Bell Bay, specifically Lauriston Park. Throughout the nineteenth century, these areas were divided into numerous land grants that were regularly re-granted or sold.

Cimitiere Plains

The earliest land grant identified within the Cimitiere Plains section of the study area is a grant of 500 acres to Joseph James (see Figure 5). The date of this initial land grant is unknown, but it was before 1838. From 1838 the 500-acre grant belongs to John Clark (TAHO AD956/1/1 pg.20). On a map from 1838 (see Figure 4), there are depictions of a hut, stockyard and barn on John Clark's grant, however, it is unclear as to whether John Clark commissioned these structures, or it was Joseph James (TAHO AF396/1/495).

Edith Archer is also listed as a landowner with a land grant of 607 acres, 3 perches and 26 roods. The date of this land grant is unknown and there is no reliable historical or archival documentation about this landowner. This is also true for the three other landowners within the Cimitiere Plains section of the study area. The first was Alec Edward Campbell had a land grant of 523 acres, 3 perches and 27 roods. Next was T H Davies who had a land grant of 599 acres, 3 perches and 19 roods and L. D Archer with a land grant of 168.5ha.

Tippogoree Hills

The best-documented land grant within the Tippogoree Hills section of the Cimitiere Plains Solar Farm footprint is that of Lawrence Quinn (see Figure 6). Quinn acquired his land grant of 100 acres in 1859 and was an active and respected member of the colonial George Town community, notably involving himself in local politics (TAHO AD956/1/1 pg.127; *The Cornwall Chronicle* Wednesday 10 September 1856:7).

R W B Turner is listed as a landowner with a 150-acre land grant. The date of this land grant is unknown and there is no reliable historical or archival documentation about this landowner. This is also true for the two other landowners within the Tippogoree Hills section of the Cimitiere Plains Solar Farm footprint. The first is William Edward Davidson who purchased a land parcel of 499 acres, 1 perch and 35 roods. Next is Henry Edward Davidson who owned two properties within the current study area. The overall total of land owned by Henry Edward Davidson was 598 acres and 11 roods.

Lauriston Park

The Lauriston Park section of the current study area was once part of a series of properties owned by William Effingham Lawrence. William Effingham Lawrence played a significant role in the development of the Tamar River region from 1832–1846 (Lawrence 2021:131). After the death of his father William, James Effingham Lawrence would divide the original land grant into three smaller farms; Point Effingham, Lauriston and Williams Creek (Lawrence 2021:131). Lauriston would later become part of what is now Lauriston Park, which is within the current study area. In 1871, the farm would be at the centre of a missing

person's case, when Mr E Lawrence (of Point Effingham) found the body of a Mr John Gaunt (his brother-in-law) in a creek on the estate (*Cornwall Advertiser* Friday 20 January 1871:2).

It would be Frank Archer who would acquire Point Effingham and Lauriston which once belonged to the Lawrence family. A second son of Frank Archer would preside at Lauriston (*Daily Telegraph* Wednesday 28 May 1902:5).

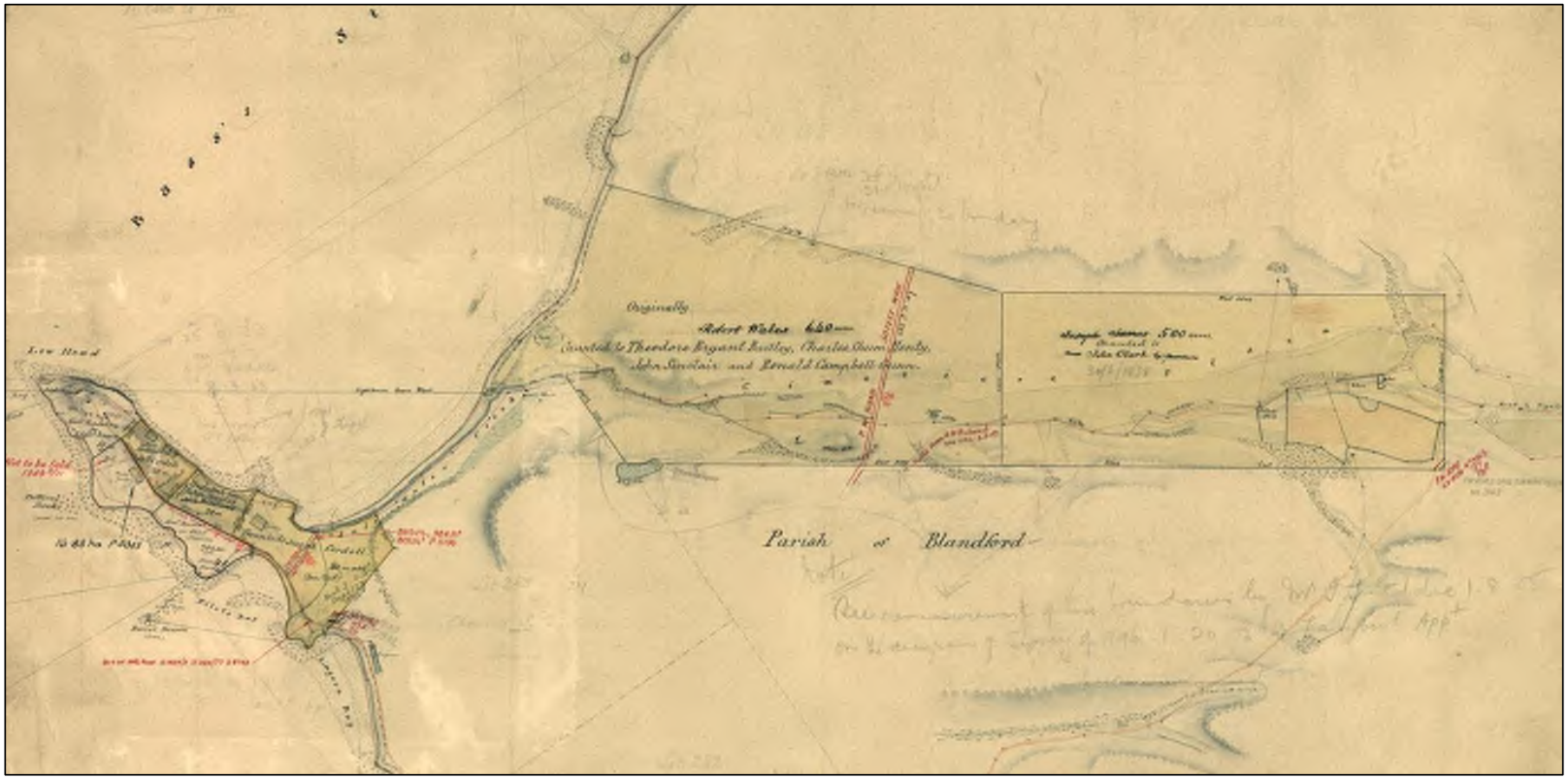

Figure 4: Map showing the historic land grants in the Cimitiere Plains section of the study area, including John Clark (centre right) (TAHO AF396/1/495).

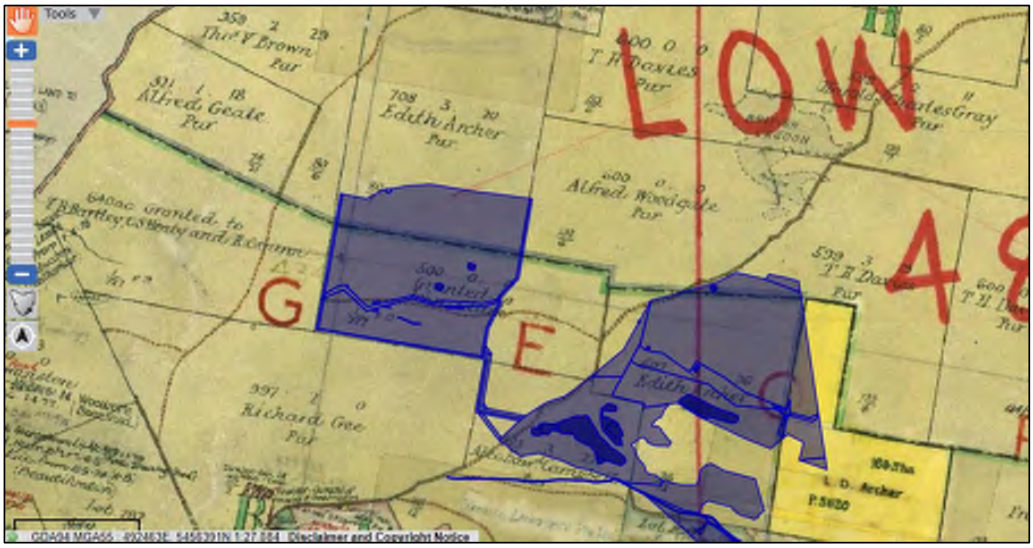

Figure 5: Historic Land Grants Chart overlayed with Cimitiere Plains Solar Farm Project footprint (shown in blue) for the Cimitiere Plains section (List 2023).

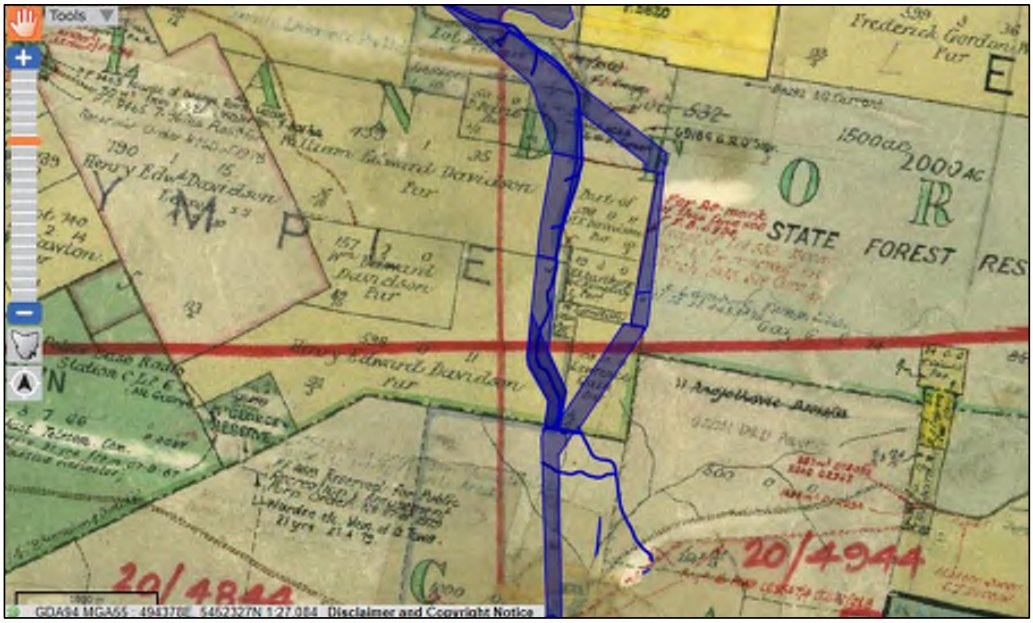

Figure 6: Historic Land Grants Chart overlayed with Cimitiere Plains Solar Farm Project footprint (shown in blue) for the Tippogoree Hills section (List 2023).

4.0 Survey Coverage of the Study Area

Survey Coverage and Surface Visibility

Survey coverage refers to the estimated portion of a study area that has been visually inspected during a field survey. Surface Visibility refers to the extent to which the actual soils of the ground surface are available for inspection. There are a number of factors that can affect surface visibility, including vegetation cover, surface water and the presence of introduced gravels or materials. Figure 7 provides a useful guide for estimating surface visibility.

The field survey was undertaken by Shay Hannah (CHMA archaeologist), Vernon Graham (Senior Aboriginal Heritage Officer) and Kierrin Graham (Heritage Field Assistant), over a period of 6 days (31-8-2022 – 9-9-2022). The field team walked a total of 44.073km of survey transects. In the solar farm, the average width of each transect was 10m. Within the powerline corridors and access tracks, the average width of each transect was 5m. Table 1 provides the total transects walked for each section and Figure 8 shows the alignment of the survey transects walked by the field team.

The survey transects were predominantly focused within the solar farm, power line corridors and access tracks within the Cimitiere Plains Solar Farm Project footprint. Surface visibility within the solar farm ranged from between >10% and 80%, with the average being just 25%, which is in the low range. Surface visibility within the power line corridors ranged between >10% and 50%, with the average being 20%. Improved surface visibility was found along the access tracks which ranged from 50% and 100%, with the average being 70%. Vegetation cover was the main impediment to visibility.

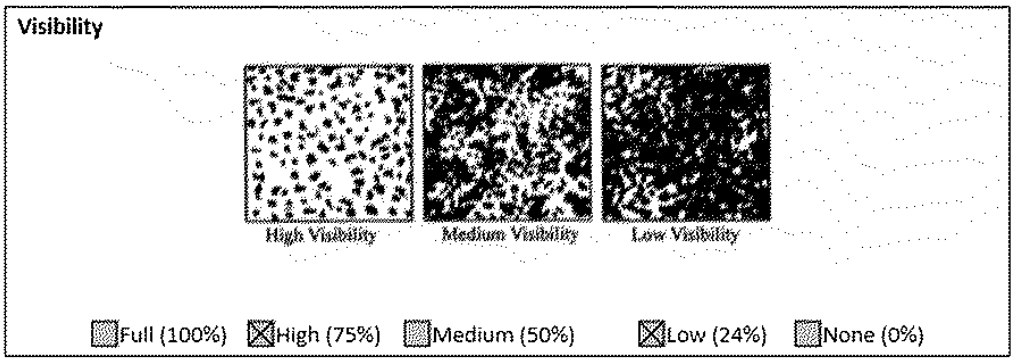

Figure 7: Guidelines for the estimation of surface visibility.

Effective Coverage

Variations in both survey coverage and surface visibility have a direct bearing on the ability of a field team to detect historic heritage sites, particularly site types such as isolated artefacts and artefact scatters (which are the site types most likely to occur in the study area). The combination of survey coverage and surface visibility is referred to as effective survey coverage. Table 1 presents the estimated effective survey coverage achieved during the course of the survey assessment. The effective coverage is estimated to have been around 119,410.5m². This level of effective coverage is assessed as being adequate for the purposes of determining the potential extent, nature and distribution of historic heritage sites in the study area.

Table 1: Effective Survey Coverage achieved across the surveyed areas.

Area Surveyed	Survey Transects	Estimated Surface Visibility	Effective Survey Coverage
Solar Farm	24,405m x 10m= 244,050m^2	25%	61,012m^2
Access Tracks	15,051m x 5m= 75,255m^2	70%	52,678.5m^2
Transmission Line Corridors	5720m x 5m= 28,600m^2	20%	5720m^2
Total	**347,905m^2**		**119,410.5m^2**

Plate 10: View east showing an erosion scald with 80% visibility surrounded by vegetation cover which reduced visibility to an average of 25%.

Plate 11: View northeast showing visibility along a tributary at 70%.

Plate 12: View southeast showing an ungraded access track within the study area where visibility was increased to 100%.

Plate 13: View northeast showing the average surface visibility of 20% within the southern sections of the study area.

Plate 14: View southwest showing surface visibility at >10% within the proposed transmission line corridors.

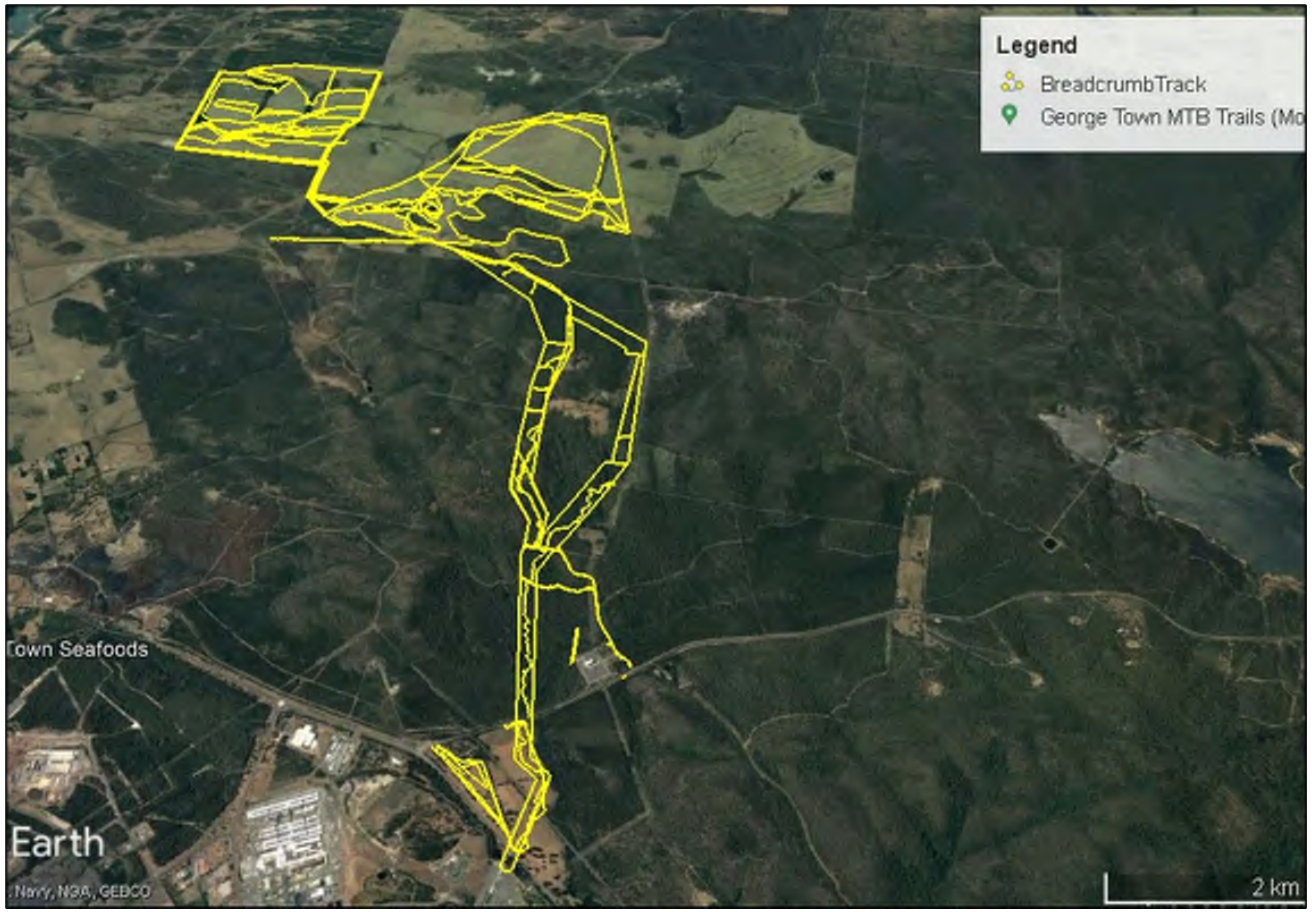

Figure 8: Aerial image showing survey transects walked by the field team across the study area.

5.0 Survey Results and Statement of Archaeological Potential

A search of the various historic heritage registers (as listed in section 1.4 of this report) shows that there are no registered historic sites or features located within or in the immediate vicinity of the study area. The closest heritage-listed features are located around George Town and Low Head, around 3–4km to the northwest and west of the study area (see Figure 9).

As discussed in section 3.2, throughout the nineteenth century, the large portions of Cimitiere Plains, Tippogoree Hills and a small section of Bell Bay, specifically Lauriston Park that make up the Cimitiere Plains Solar Farm Project footprint were divided into numerous land grants that were regularly re-granted or sold. There is generally a lack of reliable historical and archival information about the landowners of the nineteenth century, however, some background information is available for four landowners within the study area. The information gathered about the landowners and the reviewing of nineteenth-century builds provides an insight into the importance of pastoral activities in the establishment and society of colonial-era George Town and its immediate surrounds.

The overall lack of archival evidence and physical evidence of residential or early pastoral structures (such as stock yards or barns) identified during the current field survey is not surprising, as it is likely they would have been destroyed to allow for pastoral activities, the timber industry and industrial infrastructure. This is supported in the discussions within section 2, where it is noted that parts of the study area have been more intensively disturbed. Within the southern sections of the study area, there have been access track extensions made with the main southern access road being covered in bitumen. A network of previously graded and ungraded vehicle tracks occurs throughout the southern sections of the study area, particularly around the existing BassLink infrastructure, TasRail rail tracks and former plantation areas.

As discussed in section 4, surface visibility within the solar farm ranged from between <10% and 80%, with the average being just 25%, which is in the low range. Surface visibility within the power line corridors ranged between <10% and 50%, with the average being 20%. Improved surface visibility was found along the access tracks which ranged from 50% and 100%, with the average being 70%. Vegetation cover was the main impediment to visibility. Given these constraints, it cannot be stated with certainty that there are no undetected historical heritage sites present in the proposed Cimitiere Plains Solar Farm Project footprint. Whilst the estimated survey coverage was 347,905m^2, effective coverage was decreased to 119,410.5m^2. Although there is a lack of standing structures, it cannot be stated with certainty that there are no undetected historic heritage sites present across the surveyed area, as there is potential, albeit very low, for subsurface remains.

Based on the field survey findings, the absence of registered historic sites and the very low potential for undetected historic heritage sites to be present, the Cimitiere Plains Solar Farm Project study area is assessed as being of very low historic heritage sensitivity. It is advised that there is a very low possibility that the proposed development will have any impact on historic heritage values.

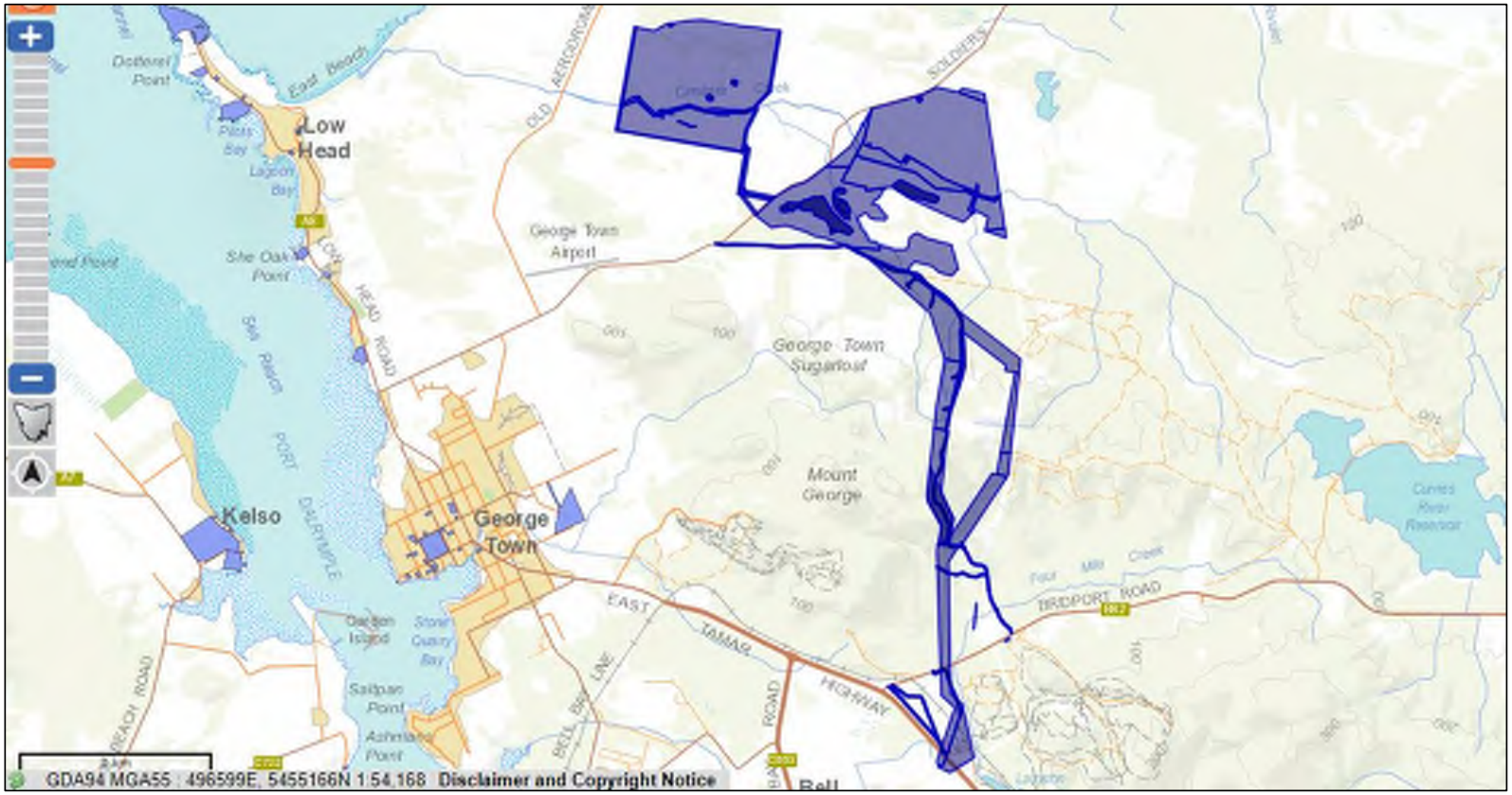

Figure 9: ***Topographic map showing the location of the study area (highlighted in dark blue) in relation to historic sites and features listed on the Tasmanian Heritage Register (depicted by light blue shading) (List 2023).***

6.0 Statutory Controls and Legislative Requirements

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

6.1 National Conventions

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

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

Environment Protection and Heritage Council of the Australian and State/Territory Governments 1998
In 1998, the National Heritage Convention proposed a set of common criteria to be used to better assess, understand and manage the heritage values of places.

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

a) *Importance to the course or pattern of our cultural or natural history.*
b) *Possession of uncommon, rare or endangered aspects of our cultural or natural history.*
c) *Potential to yield information that will contribute to an understanding of our cultural or natural history.*
d) *Importance in demonstrating the principal characteristics of a class of cultural or natural places or environments.*
e) *Importance in exhibiting particular aesthetic characteristics*

f) *Importance in demonstrating a high degree of creative or technical achievement at a particular period.*
g) *Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons. This includes the significance of a place to Indigenous peoples as part of their continuing and developing cultural traditions.*
h) *Special association with the life or works of a person, or group of persons, of importance in our history.*

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

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

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

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

6.2 Commonwealth Legislation

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

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

- *National Heritage List* - a list of places of natural, historic and indigenous places that are of outstanding national heritage value to the Australian nation
- *Commonwealth Heritage List* - a list of natural, historic and indigenous places of significance owned or controlled by the Australian Government.

- *List of Overseas Places of Historic Significance to Australia* – this list recognises symbolically sites of outstanding historic significance to Australia but not under Australian jurisdiction.

Australian Heritage Council Act 2003
The Australian Heritage Council is a body of heritage experts that replaced the Australian Heritage Commission as the Australian Government's independent expert advisory body on heritage matters when the new Commonwealth Heritage System was introduced in 2004 under amendments to the Environment Protection and Biodiversity and Conservation Act 1999.

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

Protection of Movable Cultural Heritage Act 1986
The PMCH Act regulates the export of cultural heritage objects from Australia. The purpose of the Act is to protect, for the benefit of the nation, objects which if exported would significantly diminish Australia's cultural heritage. Some Australian protected objects of Aboriginal, military heritage and historical significance cannot be granted a permit for export. Other Australian-protected objects may be exported provided a permit or certificate has been obtained.

6.3 State Legislation

Land Use Planning and Approvals Act 1993
This Act (LUPA) is the cornerstone of the State Resource Management and Planning System (RMPS). It establishes the legitimacy of local planning schemes and regulates land use planning and development across Tasmania. With regard to historic heritage, LUPAA requires that planning authorities will work to conserve those buildings, areas or other places which are of scientific, aesthetic, architectural or historical interest, or otherwise of special cultural value" [Schedule 1 Part 2(g)].

Resource Planning and Development Commission Act 1997
The Resource Planning and Development Commission (now referred to as the Tasmanian Planning Commission) is responsible for overseeing Tasmania’s planning system, approving planning schemes and amendments to schemes and assessing Projects of State Significance. In terms of heritage management, the TPC will consider the establishment of heritage overlays, precincts or areas as part of the creation of planning schemes.

Resource Management and Planning Appeal Tribunal Act 1993
The Resource Management and Planning Appeal Tribunal determine planning appeals and enforces the Acts within the RMPS. The Tribunal plays an important role in the management of heritage places through its determinations on proposed development on, or near to, places of heritage significance.

Historic Cultural Heritage Act 1995

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

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

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

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

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

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

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

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

HT has three core roles:

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

In 2013, *the Historic Cultural Heritage Act 1995* was amended, with the primary goal of streamlining the approvals process and better aligning the Heritage Act with the Planning Act. Under the Amendment, applicants need only lodge a single Development Application

(DA) (as opposed to both a Works Application and DA), which will be referred to the Heritage Council by the local planning authority. Heritage Council then has the opportunity to advise the planning authority whether or not it has an interest in the DA and may request further information under s57 of the LUPAA. If the Heritage Council does not have an interest in the DA, it reverts to the status it has under the Scheme or Planning Act. Where Heritage Council does have an interest in the DA, the Council decision must be incorporated into the final permit (or refusal) issued by the local planning authority.

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

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

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

If the Heritage Council has an interest in determining the application, a number of matters may be relevant to its decision. This includes the likely impact of the works on the significance of the place; any representations; and any regulations and works guidelines issued under the HCH Act. The Heritage Council may also consult with the planning authority when making a decision.
In making a decision, the Heritage Council will exercise one of three options: consent to the discretionary permit being granted; consent to the discretionary permit being granted subject to certain conditions; or advise the planning authority that the discretionary permit should be refused. The Heritage Council's decision is then forwarded to the planning authority, which will incorporate the decision into any planning permit.

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

6.4 Local Planning Schemes

The *Tasmanian Planning Scheme* came into effect on 22 July 2020 and replaced the former *George Town Interim Planning Scheme 2013*. The *Tasmanian Planning Scheme* provides a single planning scheme and a consistent set of rules and requirements in relation to the

manner in which all land in Tasmania may be used, developed, protected and conserved. It consists of two parts:

1. **State Planning Provisions** contain the mandatory common rules that are to apply in all municipal areas. For consistency in permit and compliance requirements that must be met by a proposed use or development.
2. **Local Provision Schedule** for each municipal area setting out how the State Planning Provisions are to apply.

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

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

This code applies to:
(a)development on land within any of the following, as defined in this code:
(i) a local heritage place;
(ii) a local heritage precinct;
(iii)a local historic landscape precinct; and
(iv) for excavation only, a place or precinct of archaeological potential; and
(b) the lopping, pruning, removal or destruction of a significant tree as defined in this code.

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

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

7.0 Historic Heritage Management Plan

Management Recommendations

Heritage management options and recommendations provided in this report are made based on the following criteria.

- The legal and procedural requirements as specified in section 6 of this report.
- The results of the investigation as documented in this report.
- The results of the Historic heritage registers search.

Recommendation 1

No historic heritage sites, suspected features, or areas of elevated archaeological potential were identified during the field survey assessment of the Cimitiere Plains Solar Farm Project study area. A search of the various historic heritage registers (as listed in section 1.4 of this report) shows that there are no registered historic sites located within or in the immediate vicinity of the study area. Archival research has not identified any evidence for historic structures or features being present. On this basis, it is advised that the proposed Cimitiere Plains Solar Farm Project will have no impacts on known Historic heritage sites, and therefore there are no historic heritage constraints or legal impediments to the project proceeding.

Recommendation 2

It is assessed that there is a very low potential for undetected Historic heritage sites to occur within the study area. However, if, during the course of the proposed works, previously undetected heritage sites or objects are located, the processes outlined in the Unanticipated Discovery Plan should be followed (see section 8).

8.0 Unanticipated Discovery Plan

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

Discovery of Heritage Objects or Features

Step 1

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

Step 2

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

Step 3

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

Step 4

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

Possible outcomes may necessitate:

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

Discovery of Skeletal Material

Step 1:
Call the Police immediately. Under no circumstances should the suspected skeletal material be touched or disturbed. The area should be managed as a crime scene. It is a criminal offence to interfere with a crime scene.

Step 2:
Any person who believes they have uncovered skeletal material should notify all employees or contractors working in the immediate area that all earth disturbance works cease immediately.

Step 3:
A temporary 'no-go' or buffer zone of at least 50m x 50m should be implemented to protect the suspected skeletal material, where practicable. No unauthorised entry or works will be allowed within this 'no-go' zone until the suspected skeletal remains have been assessed by the Police and/or Coroner.

Step 4:
If it is suspected that the skeletal material is Aboriginal, Aboriginal Heritage Tasmania should be notified.

Step 5:
Should the skeletal material be determined to be Aboriginal, the Coroner will contact the Aboriginal organisation approved by the Attorney-General, as per the *Coroners Act 1995*.

References Cited

BOM 2020 Bureau of Meteorology (BOM) website. Accessed 12 May 2020 from <http://www.bom.gov.au/>.

Cornwall Advertiser Friday 20 January 1871, pg.2.

Daily Telegraph Wednesday 28 May 1902, pg.5.

Green, A. 2006. Progress: but with Prudence of Perseverance? Launceston's growth and development during the nineteenth century. *The Examiner: John West Memorial Lecture, Symposium: It's a Busy Place Launceston from Settlement to City.* Launceston Historical Society 2006 Papers and Proceedings. pp21-28.

List 2023. Retrieved 2 October 2023 from <https://maps.thelist.tas.gov.au/listmap/app/list/map>.

Lawrence, E. 2021. *1823 – Before and After*. Kingston: Kol Sasson Press.

Nyman, L. 1996. *The West Tamar People: the story of the early settlement and its well established families*. Regal Publications, Launceston, Tasmania.

Pearson, M. and Sullivan, S. 1995. *Looking After Heritage Places*. Melbourne University Press.

Philips, D. 2005. *The Companion to Tasmanian History*. Edited by Alexander. A. Centre for Tasmanian Historical Studies, University of Tasmania. Hobart.

Robson, L. 1983. *A History of Tasmania: Volume 1 Van Diemen's Land from the Earliest Times to 1855*. Oxford University Press. Melbourne.

Tassell, C. 2005. *The Companion to Tasmanian History*. Edited by Alexander. A. Centre for Tasmanian Historical Studies, University of Tasmania. Hobart.

Tasmanian Archives and Heritage Office, Land, AD956/1/1 page 20, Name_Indexes: 1743344, Clark John, 1839 Dorset 500 acres.

Tasmanian Archives and Heritage Office, Land, AD956/1/1 page 127, Name_Indexes: 1756583, Quinn Lawrence, 1859 Dorset 100 acres.

Tasmanian Archives and Heritage Office, Lands and Surveys Department (TA69), County Maps (AF396), AF396/1/495, Map - Dorset 19 - parish of Blandford, showing Low Head and plan of George Town including various landholders, York Cove and Mount George landholders BARTLEY T B AND OTHERS, CORDELL J, DOUGLAS A, FRIEND M C.

The Cornwall Chronicle Wednesday 10 September 1856, pg.7.

Wildlife Services: Seal Watching Guidelines. Accessed 28 September 2022 from <https://nre.tas.gov.au/wildlife-management/caring-for-wildlife/seal-watching-guidelines>.

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Appendix F
Natural Values Assessment

Cimitiere Plains Solar Farm

envoca
ENVIRONMENTAL CONSULTANCY

enviro-dynamics
environmental solutions for a changing world

Natural Values Assessment

Cimitiere Plains Solar Farm

Client: Daryl Brown, Envoca
Prepared by: Fiona Walsh, Andy Welling & Nick Fitzgerald

April 2024 (v4)

Contents

1 Introduction

Enviro-dynamics has been contracted to undertake this natural values assessment by Envoca on behalf of the proponents, Sun Spot 9 Pty Ltd. This assessment identifies the natural values of the site including the type and extent of vegetation communities, presence of threatened species and threatened fauna habitat. It also provides maps of weed infestations and identifies other threats which are present. Any potential impacts to natural values posed by the development are then analysed against the requirements of the relevant legislation.

2 Background

2.1 Site Description

The study area covers approximately 550 ha and is located roughly 5 km east of George Town (Figure 1). The northern half of the site where the proposed solar farm will be located is predominantly agricultural land. The southern half, where the proposed transmission line is planned, is covered mostly by native vegetation.

The land is relatively flat in the northern part with moderate undulations occurring within the middle and southern parts. Elevations range from 30–200 m a.s.l. There is a mixed geology throughout the site including Jurassic dolerite, coastal sands, sandstones, and mudstones.

Located within the George Town municipality, zoning throughout the site includes Agriculture, Rural, General Industrial, Utilities and Open Space. Land tenure is predominantly private freehold, with the proposed transmission line crossing a section of Crown Land classified as Future Potential Production Land and terminating at a Conservation Area.

The following overlays under the Tasmanian Planning Scheme cover parts of the site:

- Priority Vegetation Area
- Scenic Road Corridor
- Scenic Protection Area
- Waterway and Coastal Protection Area.

The entire site is mapped as a Bushfire Prone Area.

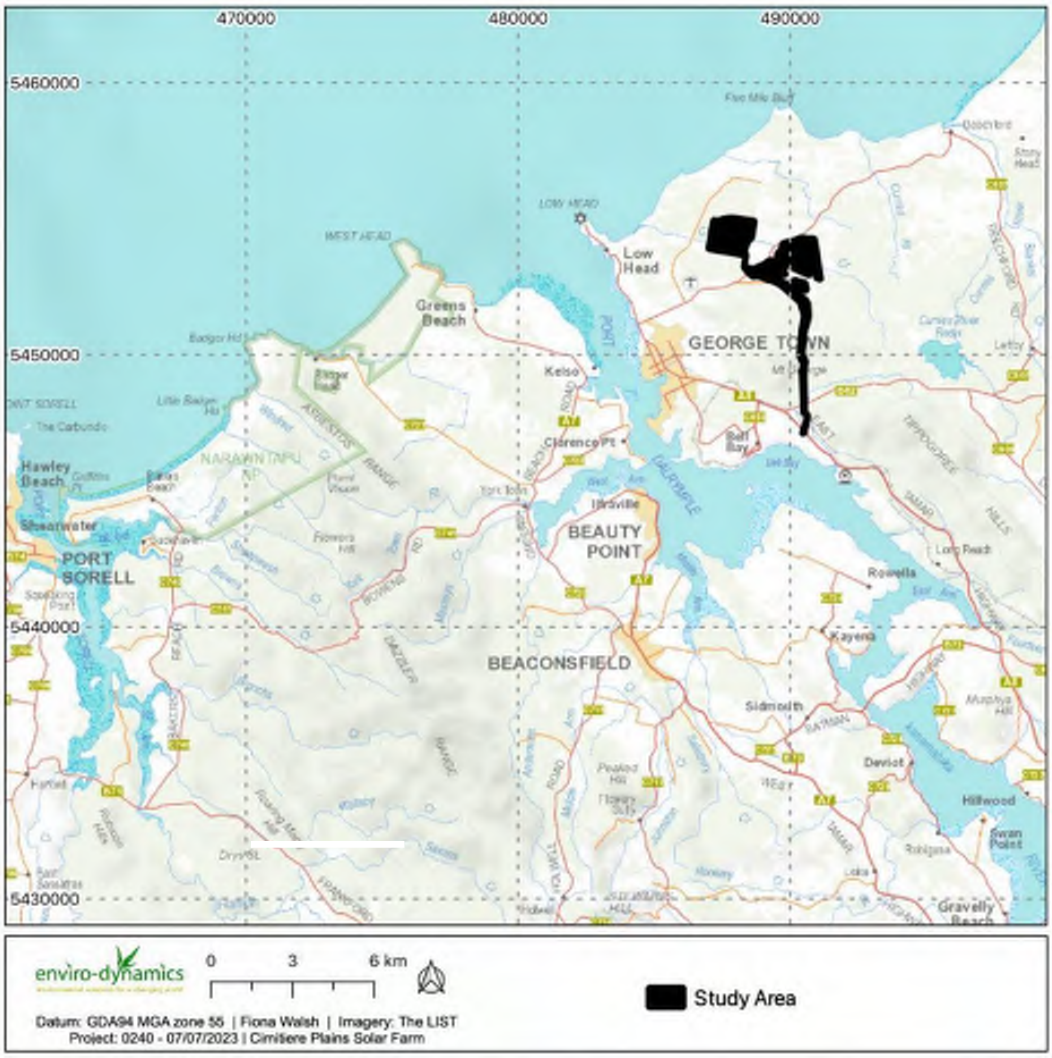

Figure 1: Site Location

2.2 Development Proposal

The development consists of a proposal for a solar farm and a transmission line corridor (Figure 2). The proposed solar farm is within agricultural land to the north of Musk Vale Road, with the proposed transmission line running south toward the East Tamar Highway and the George Town power substation. The location of the proposed transmission line planning corridor runs through predominantly native vegetation communities and varies in width between 100 and 300 m.

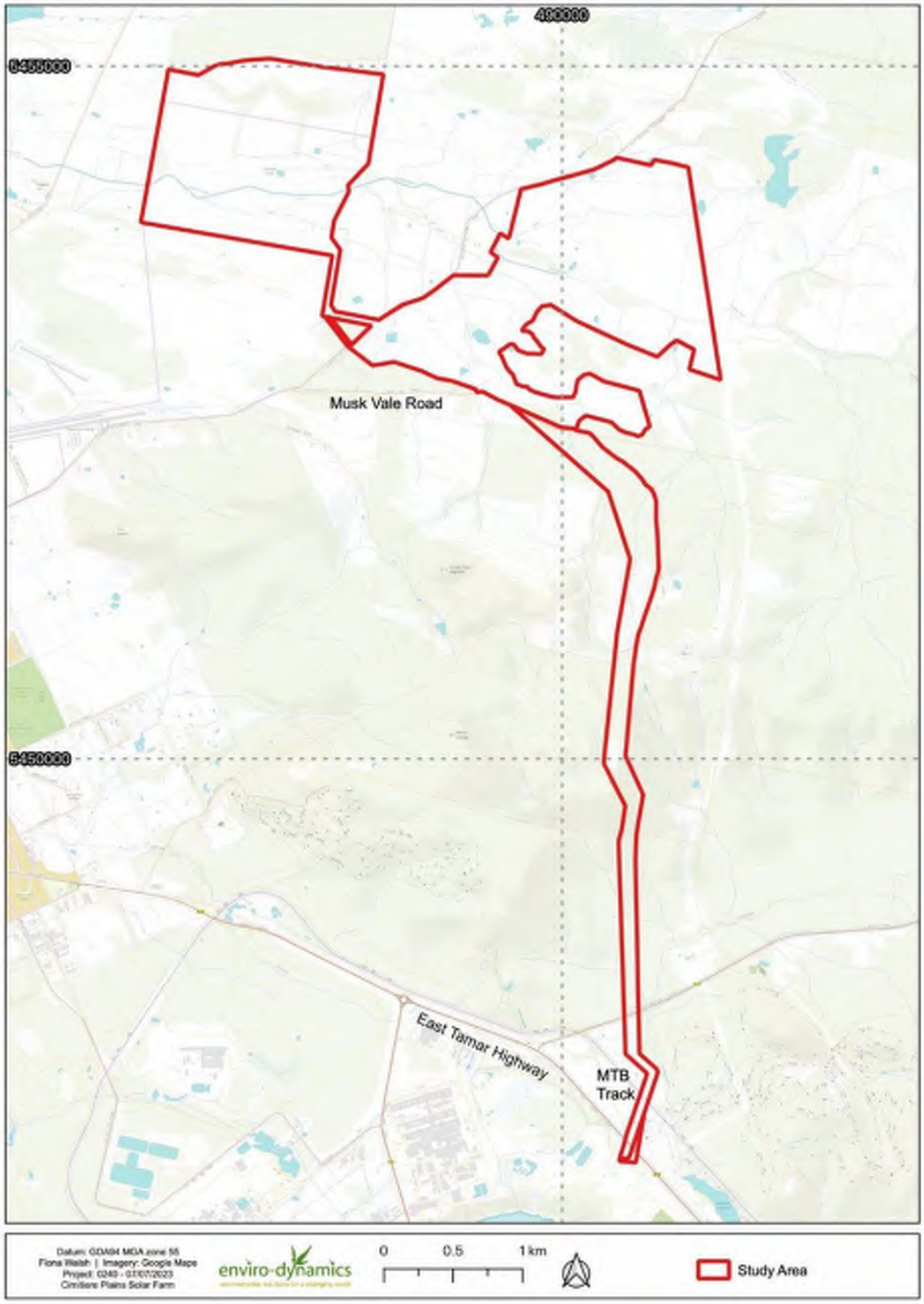

Figure 2: Study Area

2.3 Site selection

The transmission line route is constrained between the Basslink interconnector in the east and George Town in the west. Several potential routes were investigated with consideration of threatened vegetation communities, threatened species, visual impact, private landholders, and Aboriginal cultural heritage.

A route beside the existing Basslink transmission line (Figure 3) was investigated in the first instance, to mitigate environmental impacts such as edge effects and fragmentation. The impacts of this eastern route were determined to be greater than the route assessed by this report because it:

- was approximately 620 m longer thereby requiring additional 3.1 ha of vegetation clearing
- would impinge on a small private lifestyle property, and
- would likely require construction of more new access roads than the preferred route.

The easement width of this route would not be reduced since the two parallel easements cannot overlap and, the proposed extent of vegetation clearing would be greater due to the longer route. Finally, the two easements would be parallel for a distance of only 1.1 km in order to avoid three threatened vegetation communities:

- *Eucalyptus ovata* forest (NCA, EPBCA)
- *E. viminalis* wet forest (NCA, EPBCA)
- *Melaleuca ericifolia* forest (NCA)

Transmission line route selection is described in some more detail in the Development Application for the project but is not discussed further as the focus of this report is the preferred alignment. Vegetation mapping of alternative routes is shown in Figure 3.

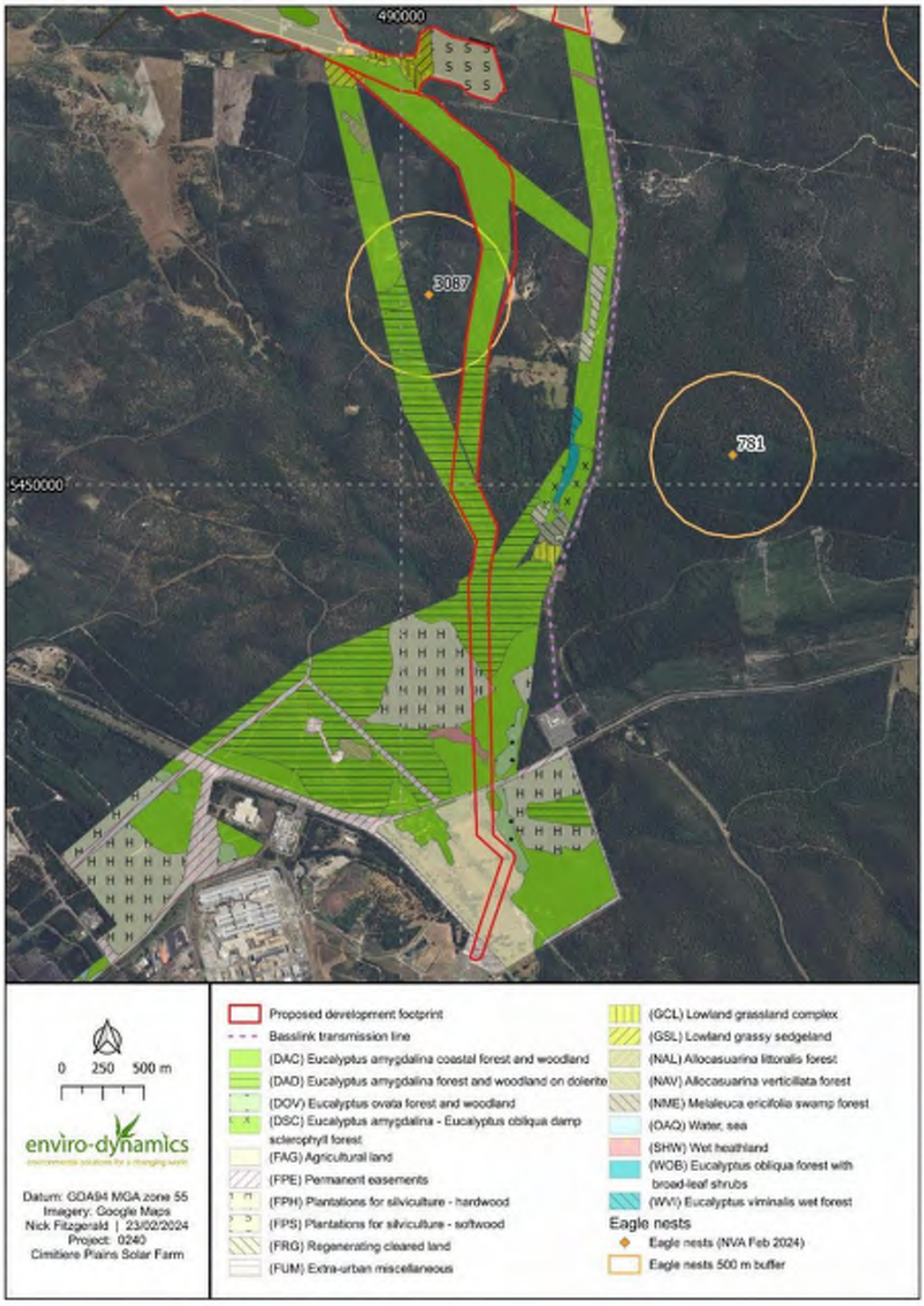

Figure 3: Field-verified vegetation mapping of alternative transmission line routes.

3 Methods

The natural values assessment was undertaken in two stages: desktop analysis, and field survey.

3.1 Desktop analysis

The desktop analysis involved extracting data from a variety of sources, including:

- Natural Values Atlas report, generated 15th July 2022 (NRE 2022)
- LISTmap

3.2 Field survey

Multiple field surveys were conducted by Enviro-dynamics staff:

- November 2020,
- July 2022,
- August 2022,
- November 2022,
- July 2023.

Earlier surveys investigated broader areas to inform final selection of the proposed solar farm footprint and transmission line alignment. An outline of the natural values, including mapping of threatened vegetation communities and threatened flora species, from these preliminary surveys was provided to the proponent to inform the design.

Vegetation communities on the site were assessed and classified according to TASVEG 4.0. Rare and threatened flora species were searched for, including potential habitat for these species. Searches for potential threatened fauna habitat e.g. tree hollows and den sites, and other evidence e.g. scats, diggings and tracks were also undertaken.

Locations of threatened flora, threatened fauna habitat and significant weeds were mapped with a handheld GPS and population data was captured e.g. numbers of individuals, area occupied etc. Geographic datum used was GDA94 Zone 55.

Taxonomic nomenclature for flora follows the latest Census of Vascular Plants of Tasmania (Baker & de Salas 2022). Classification of vegetation communities is in accordance with Kitchener and Harris (2013) and TASVEG 4.0.

3.3 Limitations of the surveys

Whilst every effort was made to detect species of significance with planned targeted surveys within the recommended time frames, it is unlikely to detect all species present. This is due to the unpredictable nature of flowering times or emergence of species such as annuals and ephemerals. Some plants cannot be identified to a species level and some species may have been overlooked due to their cryptic nature or a lack of fertile material.

4 Natural Values Assessment

This section outlines the findings of the desktop analysis and field survey, including a description of the vegetation communities, threatened flora, fauna habitat values and weeds.

4.1 Vegetation Communities

Eight native and seven modified vegetation communities were mapped within the study area, as per the TASVEG 4.0 classification system (Figures 4-6).

Native vegetation communities present within the study area include:

- DAC - *Eucalyptus amygdalina* coastal forest and woodland
- DAD - *Eucalyptus amygdalina* forest and woodland on dolerite
- DOV - *Eucalyptus ovata* forest and woodland **, ǂ
- GCL - Lowland grassland complex
- GSL - Lowland grassy sedgeland
- NBA - *Acacia-Bursaria* woodland and scrub
- NME – *Melaleuca ericifolia* swamp forest **
- SHW – Wet heathland

Modified vegetation communities include:

- FAG - Agriculture land
- FPE - Permanent easements
- FPF – *Pteridium esculentum* fernland
- FPH – Hardwood plantations for silviculture
- FPS – Softwood plantations for silviculture
- FRG - Regenerating cleared land
- FUM - Extra-urban miscellaneous

** Denotes vegetation communities listed as threatened under the *Nature Conservation Act 2005*

ǂ Has potential to correspond to a threatened vegetation community listed under the *Environment Protection and Biodiversity Conservation Act 1999,* if thresholds are met.

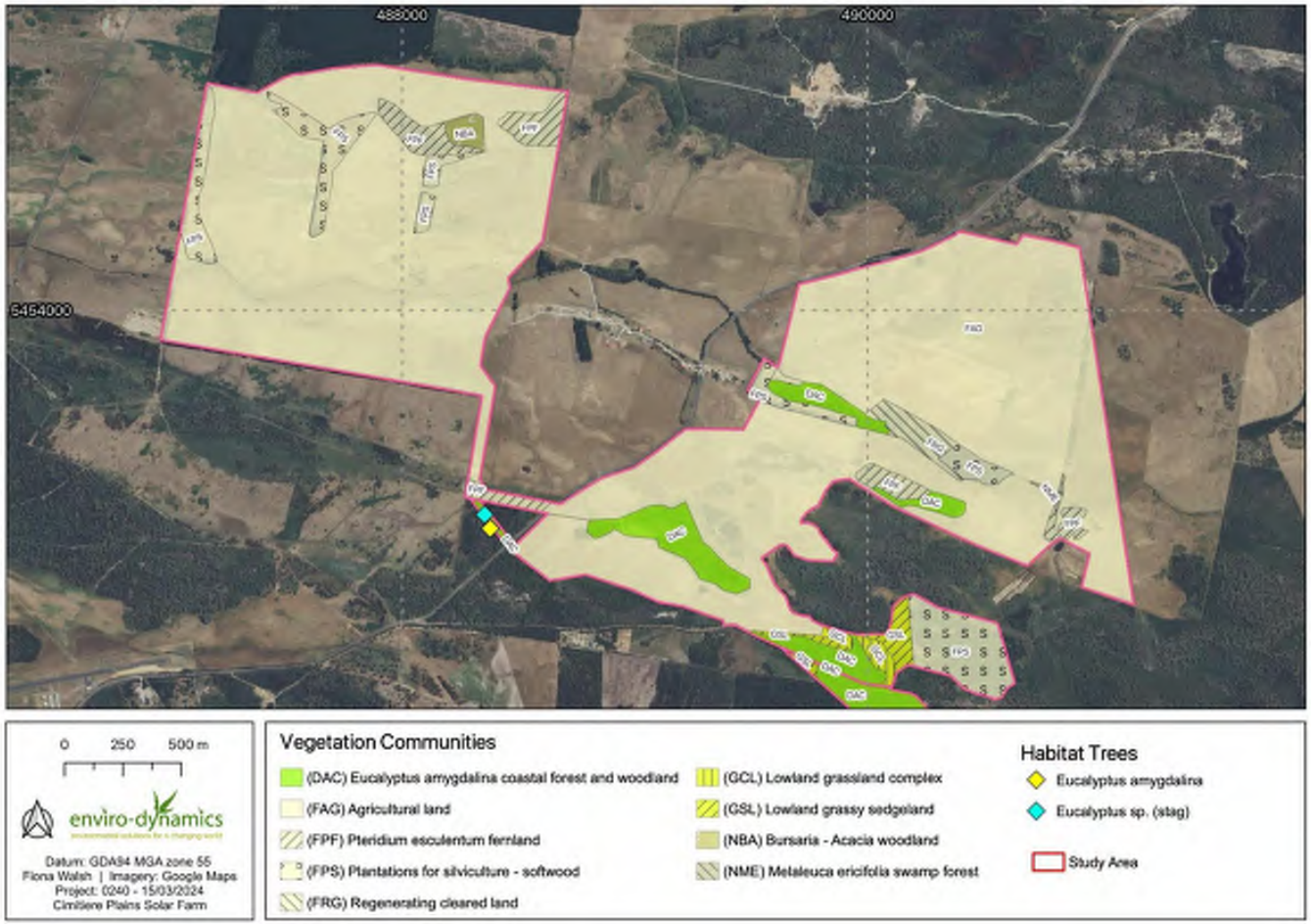

Figure 4: Vegetation communities within the proposed solar farm area

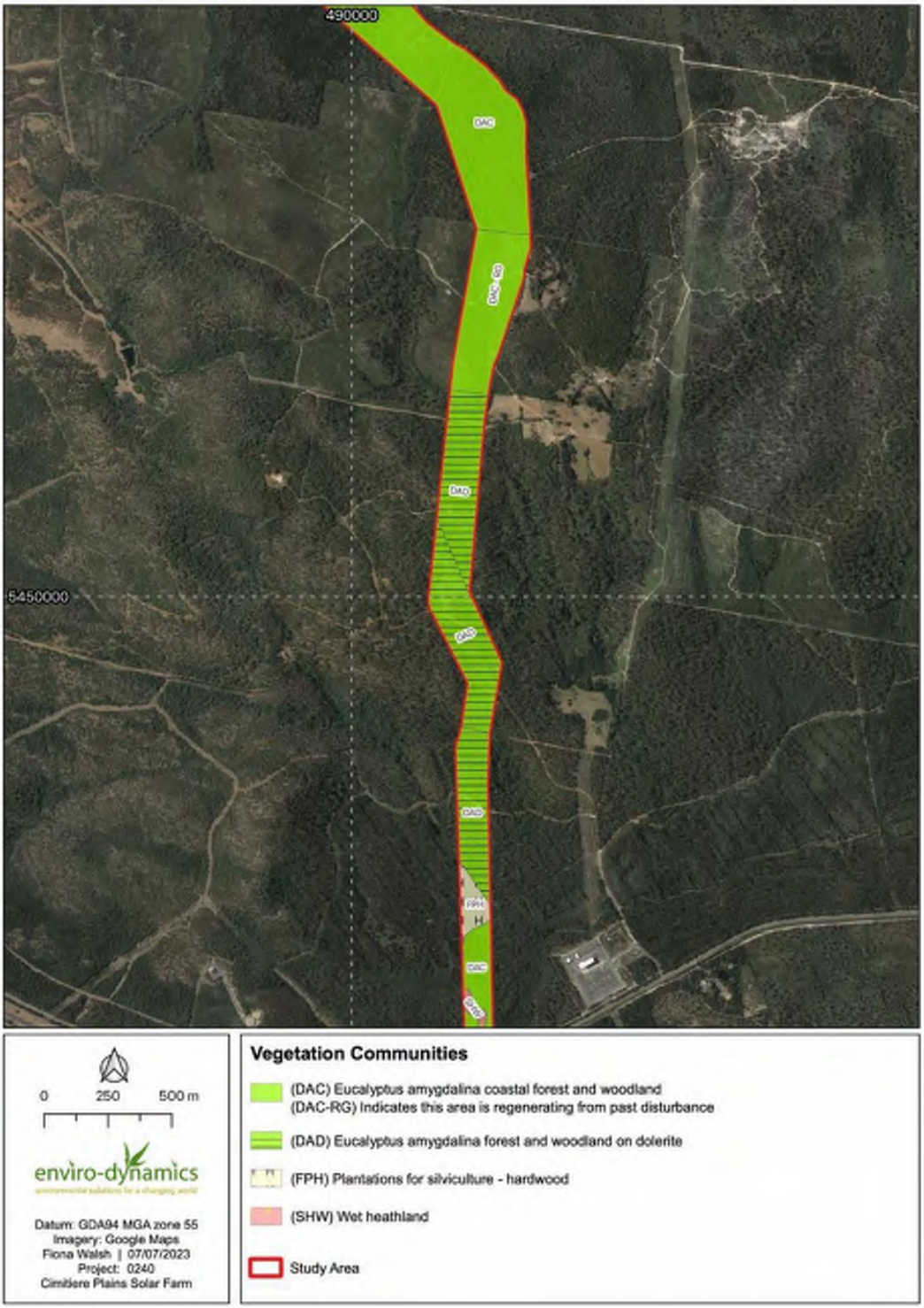

Figure 5: Vegetation communities within the northern portion of the proposed transmission easement

Figure 6: Vegetation communities within the southern portion of the proposed transmission easement

Eucalyptus amygdalina coastal forest and woodland (DAC)

Eucalyptus amygdalina coastal forests and woodlands are dry sclerophyll communities typically dominated by *E. amygdalina* (Plate 1). They vary from open forest to low open woodland. The community can form pure stands of scattered trees or mallee-form trees emerging from a heathy understorey. The trees rarely exceed 20 m in height and on many sites are less than 10 m tall (Harris and Kitchener, 2005).

DAC is found mainly within the northern and eastern parts of the study area within low-lying areas (Figures 4, 5 and 6). It is dominated by *E. amygdalina* with an understory comprising of *Banksia marginata*, *Melaleuca* species, *Olearia lirata* and *Allocasuarina* species. The ground layer is dominated by *Pteridium esculentum* and *Lepidosperma* species. There is roughly 57 ha of relatively intact forest and 12 ha regenerating from past clearance. Within the relatively intact sections of forest, there are signs of past disturbance in the form of old tracks and stumps.

The regenerating area (as indicated in Figure 5 by DAC - RG) is roughly 2 – 4 m high and containing dense regrowth dominated by *Eucalyptus amygdalina, E. obliqua, E. ovata, Pultenaea daphnoides*, *Leptospermum scoparium*, *Acacia verticillata*, *Olearia lirata*, *Goodenia ovata* and sedges such as *Gahnia grandis* and *Lepidosperma* species.

Plate 1: *Eucalyptus amygdalina* coastal forest and woodland (DAC)

Eucalyptus amygdalina forest and woodland on dolerite (DAD)

Eucalyptus amygdalina forests and woodlands on dolerite are dominated by uneven-aged *E. amygdalina* in an open forest structure with trees rarely exceeding 25 m. They are dry sclerophyll communities with variable understoreys ranging from grassy to shrubby. In some places, rock forms a cover (Harris and Kitchener, 2005).

DAD occurs mainly in the southern section of the study area and covers roughly 26 ha. There are quite a lot of tracks throughout the lower lying areas. There is evidence of selective wood harvesting throughout the area (Plate 2), including the areas up slope, however aside from this it is relatively intact with some healthy patches with diverse understorey.

Native species in this vegetation community include *Eucalyptus amygdalina, E. ovata, Notelaea ligustrina, Lomatia tinctoria, Pultenaea daphnoides* and *Acacia verticillata.* A lot of small herbs, ferns and grasses were also observed throughout, including *Lagenophora* species*, Veronica calycina, Acianthus* species*, Cheilanthes austrotenuifolia*, *Poa* and *Rytidosperm*a species.

Plate 2: *Eucalyptus amygdalina* forest and woodland on dolerite (DAD)

Eucalyptus ovata forest and woodland (DOV)

This community is listed as a threatened vegetation community under the *Nature Conservation Act 2005* (NCA) and the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBCA).

DOV is a community of *E. ovata* (and occasionally *E. viminalis*) dominated forest and woodland associated with drainage flats and moderate to poorly drained fertile soils. This community is most

typically characterised by shrubby or sedgy understoreys although grassy and even broad-leaved facies occur (Harris and Kitchener, 2005).

There is only one small patch of roughly 900 square metres occuring at the south end of the proposed transmission easement which is sufficient to be mapped as the threatened *Eucalyptus ovata* forest and woodland (DOV) Figure 6 and Plate 3. This patch meets the requirements of the threatened community under the NCA, although it does not meet the requirements to be classed as threatened under the EPBCA (see Section 5.1 for further details).

Eucalyptus ovata trees are also present within the *Eucalyptus amygdalina* forest throughout the site in places on damp ground but mostly do not occur in sufficient density or extent to be classified as a community within it's own right.

This patch will not be impacted by any works.

Plate 3: *Eucalyptus ovata* forest and woodland (DOV)

Lowland grassland complex (GCL) and Lowland grassy sedgeland (GSL)

The lowland grassland complex generally contains natural or disturbance-induced grasslands dominated by species of *Rytidosperma* or *Austrostipa*, but commonly also containing *Poa* species and *Themeda triandra*. Semi-improved pasture can revert to this community over time, especially where drought conditions favour the native species (Harris and Kitchener. 2005).

Within GSL, typically the ground layer is dominated by a sedgy sward of mainly *Lomandra longifolia*, *Diplarrena moraea* or *Lepidosperma* spp., with occasional patches of *Poa* spp. and *Themeda triandra*. The community may contain scattered eucalypts such as *Eucalyptus viminalis*, *E. pauciflora*, *E. ovata*, *E. rubida* and *E. amygdalina* with a density of < 5%. *Acacia dealbata, A. mearnsii, A. melanoxylon, Bursaria spinosa* and *Dodonaea viscosa* can form a scattered small-tree layer, especially on slopes (Harris and Kitchener. 2005).

GSL and GCL mapped within the site is present in a mosaic of roughly 8 ha within the solar farm study area north of Musk Vale Road and a small section of GSL to the south (Figure 4, Plate 4 and Plate 5). It is located between the softwood plantation and the agricultural paddocks to the west, with DAC surrounding it to the north and the south.

The GSL area is dominated by species such as *Lepidosperma filiforme, Lepidosperma longitudinale, Lomandra longifolia*, *Diplarrena moraea*, *Pteridium esculentum* and small herbs such as *Drosera* species.

GCL at the site is dominated by native grasses such as *Rytidosperma* and *Austrostipa* species.

Plate 4: Lowland grassy sedgeland (GSL) in the north

Plate 5: Lowland grassy sedgeland (GSL) and Lowland grassland complex (GCL) mosaic in the north

Acacia-Bursaria woodland and scrub (NBA)

This vegetation community is characterised by scattered small trees of prickly box (*Bursaria spinosa*), silver wattle (*Acacia dealbata*), black wattle (*Acacia mearnsi*i), blackwood (*Acacia melanoxylon*), drooping she oak (*Allocasuarina verticillata*) and other small trees and shrubs. They form a sparse to dense layer over a grassy understory dominated by kangaroo grass (*Themeda triandra*) or wallaby grasses (*Rytidosperma* sp.). Species composition can vary between sites (Harris and Kitchener. 2005).

There is roughly 2 ha of NBA which is located within agricultural land in the northern part of the site (Figure 4). It occurs within a small, degraded patch of vegetation containing remnant pine plantation and a patch of FPF (*Pteridium esculentum* fernland). It is dominated by *Bursaria spinosa* with an understory comprised of exotic grasses from the surrounding farmland.

Melaleuca ericifolia swamp forest (NME)

Listed as a threatened vegetation community under the *Nature Conservation Act 2005*.

The community typically occurs as pure or almost pure stands of *Melaleuca ericifolia* with trees generally 10 – 12 m in height (but reaching 20 m) forming a dense canopy over a simple, sedgy understorey. It includes all successional growth stages (Harris and Kitchener 2005).

NME occupies a very small area (less than 1 ha) in the eastern part of the solar farm study area (Figure 4). It is in an area surrounded by agricultural land. This vegetation community will not be impacted, and a commitment has been made to protect this area.

Wet heathland (SHW)

The community is a sclerophyllous and floristically diverse wet heathland generally 1–2 (–3) m often containing *Melaleuca* spp. with a dense sedgy ground cover of Restionaceous and Cyperaceous species. Scattered emergent *Eucalyptus rodwayi* or *E. ovata* trees can be common. SHW generally lacks a clear dominant shrub species (Harris and Kitchener 2005).

There are two small patched of less than 1 ha, both occurring within the south of the study area (Figure 5 and Figure 6). One patch, which extends into the area of the proposed transmission easement, is part of a larger patch to the west of the site. Another small patch occurs close to the railway lines near the mountain bike track. This borders a small patch of DOV and is infested with spanish heath and degraded.

Softwood and hardwood plantations (FPS and FPH)

These categories include tree farms on a variety of land tenures. Common species in softwood plantations are *Pinus radiata*, with eucalypts such as *E. nitens* and *E. globulus* the main species within hardwood plantations.

Softwood (pine) plantations are present within the northern half of the study area (Figure 4), mainly within the agricultural lands. There is a small section of hardwood plantation (eucalypt) toward the southern end of the proposed transmission easement (Figure 5).

Agriculture land (FAG)

Agricultural land (FAG) includes exotic grassland pastures and croplands. The pastures are dominated by mixtures of exotic temperate grasses and clovers. Crops range from common temperate vegetables and orchard fruits and nuts through to crops such as *Tanacetum cinerariifolium* (pyrethrum) and *Papaver somniferum* (opium poppy). FAG can include exotic grassland pastures with scattered trees (less than 5% crown cover) (Harris and Kitchener, 2005).

There is roughly 374 ha of FAG throughout the site (Figures 4 and 6 and Plate 6), and are spread throughout the study area.

Plate 6: Agriculture land (FAG)

Pteridium esculentum fernland (FPF)

This community occurs on well–drained sites over a wide range of rock types and altitudes. *Pteridium esculentum* commonly invades unimproved cleared land or degraded pasture and may form a dominant cover particularly at the edges of forest where bracken dominates the understorey (partly due to high fire frequency). *Pteridium esculentum* may also dominate and replace heathland and shrubland communities on coastal dunes subject to very high fire-frequencies (Harris and Kitchener 2005).

These dense patches of *Pteridium esculentum* cover about 15 ha and are located within the FAG in the north (Figure 4).

Regenerating cleared land (FRG)

FRG is used to map abandoned farmland or other degraded land (e.g. abandoned mines, quarries etc.) where there has been significant natural recolonisation by native species of rushes and shrubs. Native restoration plantings are also included within FRG (Harris and Kitchener 2005).

There is an area of approximately 4 ha of FRG in the northern part of the site (Figure 4). It is situated between a small patch of *Eucalyptus amygdalina* coastal forest and woodland (DAC) to the west, Softwood plantation (FPS) to the east, and Agricultural land (FRG) to the north and south.

4.2 Flora

4.2.1 Threatened Flora

A search of the Natural Values Atlas (NVA, 2023) revealed dozens of threatened flora species had been recorded within 5 km of the site, four of which have been found within 500 m of the proposed development area. These are addressed in Table 1. Species which are unlikely to occur at the site, as there is no suitable habitat present (e.g. marine species) are listed in Appendix 1.

One threatened flora species listed under the *Threatened Species Protection Act 1995* (TSPA) was recorded within the transmission easement study area. The location of which can be seen in Figure 8.

Gratiola pubescens

This erect to procumbent perennial herb can be identified from vegetative characteristics, though the presence of flowers may confirm identification and aid detection. All observations from Tasmania have been made from December to March. The species flowers in late spring and summer. In Tasmania, the species is most commonly located in permanently or seasonally damp or swampy ground, including the margins of farm dams (TSS, 2023) It is listed as rare under the TSPA.

One small patch of *Gratiola pubescens,* roughly 4 m^2 was recorded within a small boggy area in the proposed transmission corridor (Figure 8 and Plate 7). The area appeared to have been disturbed in the past and was quite wet with a reasonably thick cover of low growing scrub. Due to the growth habit of this species and its tendency to root at the nodes, estimating plant numbers can be difficult. Approximately 100 ramets (stems) were counted within the patch, which is likely to represent between 3 and 10 individuals.

Plate 7: *Gratiola pubescens* from within the proposed transmission easement

Additional species

Extensive preliminary surveys were conducted in the broader area to help inform the location for the proposed development, as well as targeted spring surveys for threatened flora species known from NVA observations which had suitable habitat. During these surveys several threatened flora species were identified outside of the area of the final proposed development (Figure 7 and Figure 8). These species will not be impacted.

Table 1: Threatened species observation within 5 km from the Natural Values Atlas (2023). (EPBCA) CR = Critically Endangered, EN = Endangered, VU = Vulnerable (TSPA) e = endangered, v = vulnerable, r= rare

Species	Status TSPA / EPBCA	Records within 500m / 5km	Comments
Records within 500 m			
Acacia ulicifolia juniper wattle	r / -	1 / 26	*Acacia ulicifolia* is found in sandy coastal heaths and open heathy forest and woodland in the north and east of Tasmania. Populations are often sparsely distributed, and most sites are near-coastal, but it can occasionally extend inland (up to 30 km). **Suitable habitat present, one plant was found outside of the final study area (Figure 8). No plants observed within.**
Caladenia patersonii Patersons spider-orchid	v / -	1 / 30	*Caladenia patersonii* favours coastal and near-coastal areas in northern Tasmania, growing in low shrubby heathland and heathy forest/woodland in moist to well-drained sandy and clay loam. **Suitable habitat present, however may have been overlooked due to the cryptic/small nature of species.**
Craspedia paludicola	r (unofficial)	1 / 4	A robust herb in the daisy family that grows in open wet swampy areas or at the edges of water bodies or courses. In Tasmania, the species is known from 12 locations scattered in mostly lowland areas in the eastern half of the State, and in montane areas in the Central Highlands. While rarely encountered, the

Species	Status TSPA / EPBCA	Records within 500m / 5km	Comments
			species can be abundant, but most occurrences are small. **Suitable habitat present although due to the distinctiveness of the species it is unlikely to have been overlooked.**
Veronica plebeia trailing speedwell	r/ -	1 / 17	*Veronica plebeia* typically occurs in dry to damp sclerophyll forest dominated by *Eucalyptus amygdalina* on dolerite or Tertiary sediments but can also occur in *Eucalyptus ovata* grassy woodland/forest and *Melaleuca ericifolia* swamp forest. **Suitable habitat present, however may have been overlooked due to the cryptic/small nature of species.**
Records within 5 km			
Aphelia gracilis slender fanwort	r / -	0 / 53	*Aphelia gracilis* inhabits damp sandy ground and wet places in the Midlands and north-east of the State. It may readily colonise sites after fire or other disturbance. **Suitable habitat present, and plants were found close to the study area, but none within. May have been overlooked due to the cryptic/small nature of species.**
Aphelia pumilio dwarf fanwort	r / -	0 / 28	*Aphelia pumilio* is found growing on damp flats, often with impeded drainage. The main vegetation types are lowland grassland (*Themeda triandra)* and dry sclerophyll forest and woodland dominated by *Eucalyptus viminalis*, *E. amygdalina* or *E. ovata*. **Suitable habitat present, however may have been overlooked due to the cryptic/small nature of species.**
Phyllangium distylis tiny mitrewort	r / -	0 / 21	*Phyllangium distylis* occurs in sandy humic heaths and open

Species	Status TSPA / EPBCA	Records within 500m / 5km	Comments
			shrublands, muddy soaks and the margins of ephemeral wetlands. **Suitable habitat present, and *P. divergens* was found close to the study area, but none within. May have been overlooked due to the cryptic/small nature of species.**
Phyllangium divergens wiry mitrewort	v / -	0 / 10	*Pyllangium divergens* occurs in a wide variety of near-coastal habitats on a range of substrates, a common feature usually being bare ground (e.g. tracks) and rock exposures (e.g. outcrops, coastal cliffs, etc.). **Suitable habitat present, and plants were found close to the study area, but none within. May have been overlooked due to the cryptic/small nature of species.**
Pimelea flava subsp. *flava* yellow riceflower	r / -	0 / 750	*Pimelea flava* subsp. *flava* occurs in wet and dry sclerophyll forest and woodland and extends into hardwood and softwood plantations. It often occurs abundantly on disturbed sites such as in logged forest, firebreaks, powerline easements and road batters. **Suitable habitat present, a few plants were found close to the study area, but none within. Large populations close by. Unlikely to be overlooked due to the distinctiveness of the species.**
Stylidium beaugleholei blushing triggerplant *Stylidium despectum* small triggerplant *Stylidium perpusillum* tiny triggerplant	r / -	0 / 3 0 / 48 0 / 3	Occurs in wet sandy heaths, moist depressions, soaks and hollows in similar environments to *Aphelia sp.* **Suitable habitat present, with NVA records close by. Large populations close by. May have been overlooked due to the cryptic/small nature of species.**

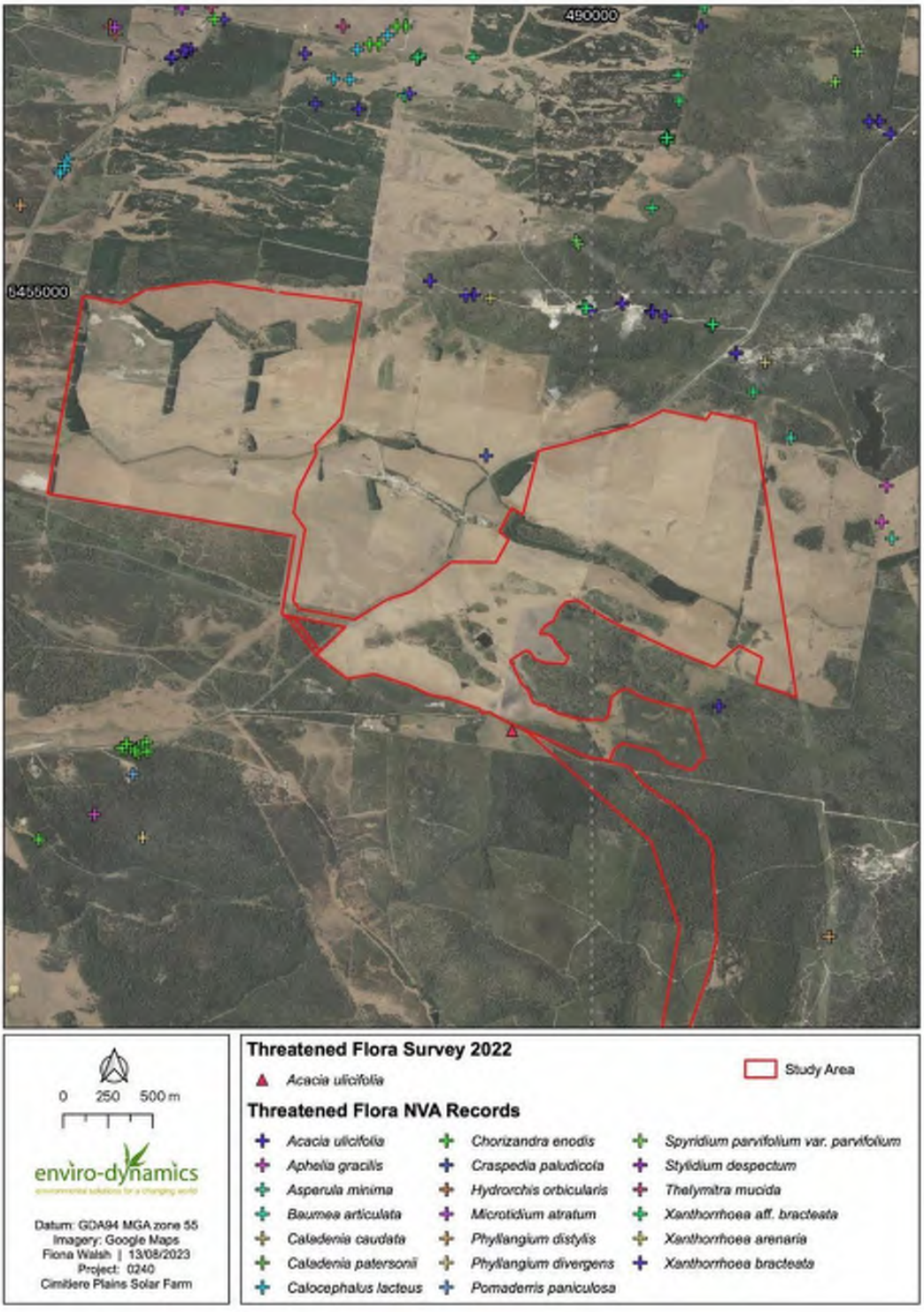

Figure 7: Threatened flora records from the broader area surrounding the proposed development, including NVA observations.

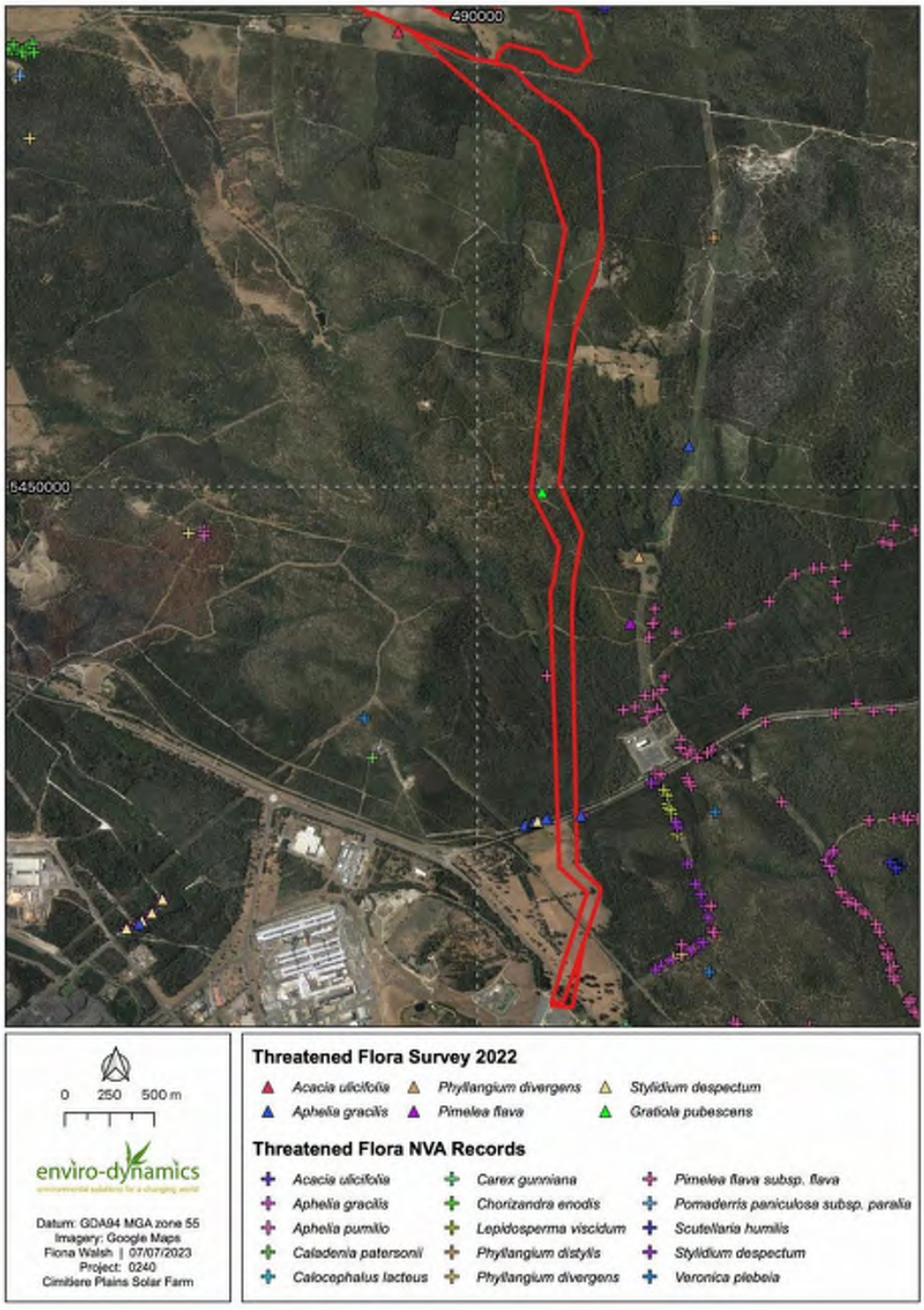

Figure 8: Threatened flora records from the broader area surrounding the proposed development, including NVA observations.

4.2.2 Habitat Trees

Two stags were recorded during the field surveys which have potential to contain hollows (Figure 4). They were found on the proposed solar farm in an area mapped as *Eucalyptus amygdalina* coastal forest (DAC) to the south and between the two large predominantly agricultural land (FAG) areas.

Due to the nature of the vegetation, there may be other large trees with hollows within the *Eucalyptus amygdalina* on dolerite (DAD) which have not been identified.

These potential hollow bearing trees can provide habitat for a range of fauna, and it is recommended to retain them if possible.

4.2.3 Weeds

A range of introduced species were recorded within the study area. None of these species are listed as declared pests under the *Biosecurity Act 2019 (BA)*.

Radiata pine (*Pinus radiata*) wildlings were recorded in one small section in the north of the site growing in an area of native vegetation. This species is considered to be an environmental weed as it germinates readily within the areas surrounding plantations. Although there are no legislative requirements to eradicate or control this species, it is recommended that they be removed.

The location of weeds observed in the study area are shown in Figure 9 and include observations of declared pests outside of the study area. Some weed observations are along roadsides, which highlights the importance of weed hygiene practices to reduce the risk of the proposed development spreading these species further within the site and surrounding areas.

Declared pests will need to be managed in accordance with the relevant Statutory Weed Management Plans following the best practice prescriptions outlined in the Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania (DPIPWE, Stewart and Askey-Doran, 2015).

Figure 9: Weeds located within and surrounding the study area

4.3 Fauna

4.3.1 Threatened fauna

No threatened fauna species listed under the *Threatened Species Protection Act 1995* or the *Environment Protection and Biodiversity Act 1999* were recorded during the study.

A search of the Natural Values Atlas (NVA, 2023) revealed that several threatened fauna species had been recorded within 5 km of the site. These are addressed in Table 2. Those with no suitable habitat and no conceivable chance are occurring (such as marine species) are listed in Appendix 1.

As no evidence of threatened fauna or significant habitat was found during the preliminary surveys, targeted surveys using acoustic monitors, camera traps or spotlighting are not warranted.

4.3.2 Threatened fauna habitat

There is wedge-tailed eagle (*Aquila audax* subsp. *fleayi)* habitat within the study area indicated by the presence of known nest sites within 1 km (Table 2). This species is listed as endangered under the TSPA and EPBCA.

There are historical records in the NVA (2009) of the eastern barred bandicoot within 500 m of the site (Table 2). This species is highly adaptable to modified landscapes. There is suitable habitat in the north, however there would be no impacts to the long-term survival of the species. This species is listed as threatened under the EPBCA.

Raptor nests

There are three known eagle nests within 1 km of the site. One is located 290 m west of the transmission easement (3087; Figure 11 and 11) with the other 950 m southwest of the northern solar farm area (3086, Figure 11 and 11). A third nest occurs close to nest 3118 and is 1,100 m from the northern solar farm area (3118, Figure 11 and 11).

Tasmanian wedge-tailed eagles are sensitive to disturbance, particularly during the breeding season. Eagle nest management in Tasmania focuses on limiting the proximity and timing of disturbance around known nest sites (FPA 2023).

Nest 3086, located in the north, is not within 500 m of the solar farm site boundary and although it is within 1 km of the boundary, it is not in line of sight from the project area. The nest is tucked behind a hill as illustrated by the 'Hillside Grey' basemap (Figure 10). Nest 3118 is on a low broad ridge with topographic features and trees preventing line of sight from the project area. Due to vegetation and topography visual disturbance from construction or operation of the proposed development is unlikely

and no specific management in relation to disturbance from the construction or maintenance of the solar farm is recommended.

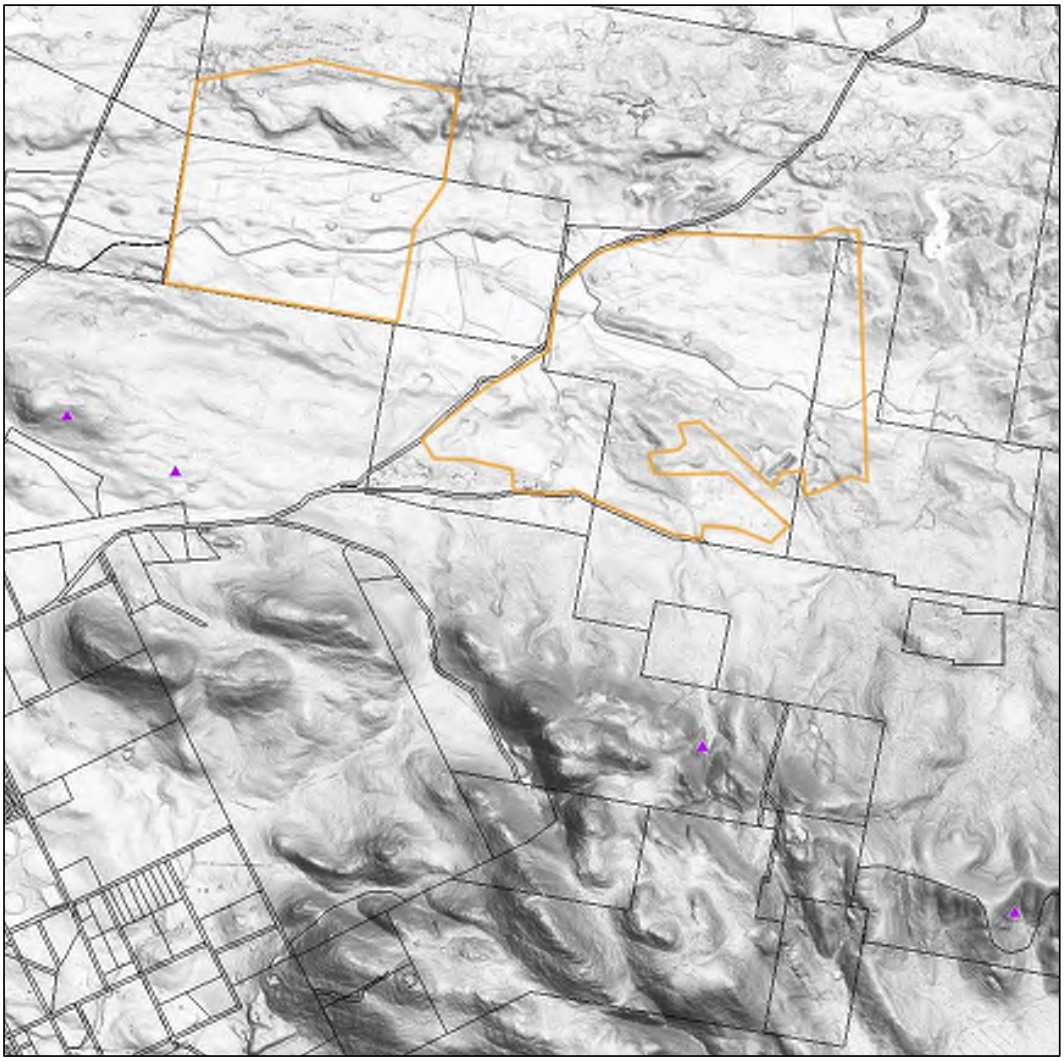

Figure 10: LISTmap 2024 extract showing hillside grey basemap, and raptor nests (purple triangles) within the vicinity of the solar farm (approximate orange outline) demonstrating nests are not within line of sight.

Figure 11: Raptor nests within the vicinity of the study area

The proposed transmission easement sits within the 500 m buffer for nest 3087 (Figure 11). This nest is listed in the NVA as an eagle nest. While the eagle species is not confirmed, the nest location suggests it

is likely to be wedge-tailed eagle and since both eagle species resident in Tasmania are listed under the TSPA the nest activity assessment and mitigation measures apply regardless of the species. If works including vehicle movements are planned to take place within the breeding season (July to January, inclusive) a nest activity assessment shall be carried out between mid-Oct and the end of December (see FPA Eagle Tech Note 1). Nest activity checks may only be performed by suitably qualified and experienced persons as approved by NRE Tasmania. No works will be permitted between 1st July and the nest activity assessment in October. If the nest is found to be inactive in any given year by an eagle nest activity assessment, then works can take place within the eagle residency period. If nest activity is confirmed, no works are permitted within 1000 m if there is line of sight, or within 500 m if there is no line of sight during the breeding season. Alternatively, if works are proposed within the active nest eagle residency period, then a works program should be submitted for approval to the Conservation Assessments Section (Department of Natural Resources and Environment).

Additional species

The following table summarises records of terrestrial threatened fauna records within 500 m and 5 km of the proposed development site and provides comment on the likelihood of the species using the site.

Table 2: Threatened fauna records within 500 m and 5 km

Species	Status TSPA / EPBCA	Records 500m / 5 km	Comment
Records within 500 m			
Eagle sp.	e / EN	1 / 3	One nest within 500 m of the site. Unidentified eagle species.
Perameles gunnii Eastern barred bandicoot	- / VU	1 /	Potential habitat for the eastern barred bandicoot is forests with a grassy understorey, native and exotic open vegetation types including woodlands and open grasslands, particularly in landscapes with a mosaic of agricultural land and remnant bushland. Species may utilise the site, as adapts well to modified landscapes and occurs within the vicinity of agricultural or native landscapes

Species	Status TSPA / EPBCA	Records 500m / 5 km	Comment
Sarcophilus harrisii tasmanian devil	e / EN	3 /	This species lives in a wide range of habitats across Tasmania, especially in landscapes with a mosaic of pasture and woodland. **No suitable denning habitat observed, the species may move through the site.**
Records within 5 km			
Aquila audax subsp. *fleayi* wedge-tailed eagle	e / EN	0 / 37	Nests in a range of old growth native forests and is dependent on forest for nesting. Territories can contain up to five alternate nests usually close to each other but may be up to 1 km apart where habitat is locally restricted. This eagle preys and scavenges on a wide variety of fauna including fish, reptiles, birds, and mammals. **Three nests within 2 km of the site. Two known as wedge-tailed eagle nests, and one is of an unidentified eagle species.**
Dasyurus maculatus subsp. *maculatus* spotted-tailed quoll	r / VU	0 / 20	Habitat for the spotted-tailed quoll is coastal scrub, riparian areas, rainforest, wet forest, damp forest, dry forest, and blackwood swamp forest (mature and regrowth), particularly where structurally complex areas are present, and includes remnant patches in cleared agricultural and or plantation areas. **No suitable denning habitat, the species may move through the site**
Dasyurus viverrinus eastern quoll	- / EN	0 / 3	Habitat for the eastern quoll includes rainforest, heathland, alpine areas, and scrub. However, it seems to prefer dry forest and native grassland mosaics which are bounded by agricultural land. **No suitable denning habitat, the species may move through the site**

Species	Status TSPA / EPBCA	Records 500m / 5 km	Comment
Haliaeetus leucogaster white-belled sea-eagle	v / -	0 / 15	Found in coastal habitats (especially those close to the seashore) and around terrestrial wetlands in tropical and temperate regions of mainland Australia and its offshore islands. The habitats occupied by the sea-eagle are characterised by the presence of large areas of open water (larger rivers, swamps, lakes, the sea).The species is mostly recorded in coastal lowlands but can occupy habitats up to 800 m above sea level in Tasmania. **No suitable nesting habitat, the species may utilise the site for foraging.**
Hirundapus caudacutus white-throated needletail	- / VU	0 / 2	Aerial species which rarely alights.
Lathamus discolor swift parrot	e / CE	0 / 3	During the breeding season, nectar from Tasmanian blue gum (*Eucalyptus globulus*) and black gum (*Eucalyptus ovata*) flowers are the primary food source for the species. These eucalypts are patchily distributed, and their flowering patterns are erratic and unpredictable, often leading to only a small proportion of swift parrot habitat being available for breeding in any one year. Swift parrots breed in tree hollows in mature eucalypts within foraging range of a flower source. **No suitable nesting or foraging habitat.**
Limnodynastes peronii striped marsh frog	e /	0 / 2	Forests, wetlands, grasslands and woodlands that have still pools of water available. **No suitable habitat**
Litoria raniformis green and gold frog	v / VU	0 / 37	In Tasmania, this species is found in lowland areas, primarily coastal. They require permanent or temporary water bodies for survival and tend to inhabit ones containing emergent plants such as *Cycnogeton procera* or species of *Juncus* or sedge. They are rarely seen in open water and spend most of their time in vegetation at the water's edges. They depend upon permanent fresh water for breeding, which occurs in Spring and Summer. **No suitable habitat**

Species	Status TSPA / EPBCA	Records 500m / 5 km	Comment
Tyto novaehollandiae castanops tasmanian masked owl	e / VU	0 / 1	This species occupies a range of habitats which contain some mature forest, usually below 600 m altitude - these include native forests and woodlands as well as agricultural areas with a mosaic of native vegetation and pasture. **No suitable habitat**

5 Impacts and Legislation

Vegetation

The proposed solar farm area in the north will have limited impacts on natural values. It is understood that there will be minimal vegetation clearance within this area, and the solar panels will predominantly be installed within the agricultural area. There is a small amount of GCL, GSL and DAC which may be impacted. NME (*Melaleuca ericifolia* swamp forest) is also present and is listed as a threatened vegetation community, however there will be no impact to this vegetation type.

Within the proposed transmission easement, the native communities of DAC (*Eucalyptus amygdalina* coastal forest) and DAD (*Eucalyptus amygdalina* forest on dolerite) will be the most impacted communities and a very small section of SHW (Wet heathland).

The small patch of DOV in the south of the transmission easement is listed as a threatened community under the NCA and corresponds with a threatened community under the EPBCA, however as there is only a small area on the edge of the study area, it is easily avoided, and no impacts will occur to this community.

The clearance of native vegetation within the transmission planning corridor will be confined to a 60 m wide easement. The final location of this easement will be placed to avoid the threatened community (DOV).

Table 3 shows the current area of each native community within the entire study area, including the full width of the transmission line planning corridor. The anticipated impacts to each community are calculated based on a 60 m wide easement cleared within the planning corridor. These numbers are not expected to increase, with the only potential change being the ratios of which communities are cleared. For example, there may be slightly less clearing f DAC and slightly more clearing of DAD.

Threatened Flora

Gratiola pubescens, which is listed as rare under the TSPA is the only threatened species found within the current study area (Figure 8). This small patch will not be impacted, an exclusion zone will be set up to prevent any accidental damage. This species thrives on disturbance, and any works occurring nearby will have no negative impact on the long term survival of the species.

No other threatened flora species were found within the study area.

Table 3: Native communities within study area with potential to be impacted and total in State and reserved taken from Tasmanian Reserve Estate report as of 30th June 2020

TASVEG Community	Area (ha) within the study area	Area (ha) anticipated to be impacted	Total in State	Total Reserved
Eucalyptus amygdalina coastal forest DAC	53	20	149,800	79,800
Eucalyptus amygdalina forest on dolerite DAD	26	12	156,100	47,700
Eucalyptus ovata forest DOV	< 1	0	16,400	4,900
Pteridium esculentum fernland FPF	15	5	unknown	unknown
Lowland grassland complex GCL	3	< 1	69,100	3,300
Lowland grassy sedgeland GSL	5	1	6,700	500
Bursaria – Acacia woodland NBA	2	<1	18,600	2,600
Melaleuca ericifolia swamp forest NME	1	0	9,800	3,900
Wet heathland SHW	1	<1	26,300	16,200

Raptor Nests

Due to the close proximity of an eagle nest to the proposed transmission easement (Figure 11), there is the potential for impact if works are carried out within the breeding season and the nest is active. A nest activity assessment will be carried out within October of the year the works are to occur to determine if the nest is active. No works, including vehicle traffic, will occur within the eagle nest buffer zone between 1st July and the completion of the nest activity assessment in October.

Construction of the entire transmission infrastructure is estimated to take 28 weeks.

Ongoing maintenance of the infrastructure may pose a risk of disturbing breeding eagles. To mitigate this impact, the routine maintenance of easements and infrastructure that is within 500 m or 1000 m line of sight of known eagle nests (as per Natural Values Atlas records) will be undertaken outside the eagle residency period. Similarly, overhead line inspections using helicopters or drones will be conducted

outside the eagle residency period (July to January inclusive). If drones are to be used to inspect poles/lines within 3 km of an eagle nest, this work should only be performed in accordance with the FPA Eagle Tech Note 1 which includes guidelines for conducting unmanned aerial vehicle (UAV) work near eagle nests.

Assessment of collision and electrocution risk to birds

The proposed overhead transmission conductors pose a very low collision risk for birds because the large diameter of the conductors (wires) makes them readily visible to birds, unlike much smaller gauge distribution conductors which are also closer together. Risk of electrocution to birds in flight is negligible since the distance between transmission conductors (3.6 m vertically and 5.2 m horizontally) exceeds the wingspan of wedge-tailed eagles and other birds (Figure 12). The proposed pole design reduces electrocution risk to birds perching on crossarms since the conductors are underslung and the distance between the crossarm and the conductor above is at least 2.1 m (Figure 12).

Eagles are thought to be at a greater risk of striking conductors when they are foraging. Especially if visibility is low, the area is unfamiliar, or new infrastructure exists. Foraging typically occurs in open landscapes which are cleared of vegetation (e.g. FAG) or grassland areas in plains and valley floors. Foraging behaviour is correlated to prey availability which is dependent on water availability and often related to the proximity to forest edges and vegetation patches which act as cover for prey species.

In assessing the proposed development footprint there are areas of the transmission line infrastructure within potential foraging habitat and the new easement will create some fragmentation and associated edge effects. As such, there is potential for eagle collisions with transmission conductors at times of low visibility, particularly with the earth wire as it is strung at the highest point across spans and particularly in the southern section of the route near the East Tamar Highway, which passes through an open grassy area. It is noted that collision is very difficult to monitor as birds may be fatally injured but able to remove themselves from the collision site. The overall risk is low since the transmission line conductors are not considered a collision risk due to their large diameter (>26 mm) and the transmission conductors largely avoid preferred eagle foraging habitat of open country by being located almost entirely through forested areas.

Mitigation is not practiced on transmission conductors in Tasmania because the mortality rate remains unknown at this stage and mitigation measures used on distribution conductors are considered to be inappropriate for transmission conductors. Nonetheless, potential risks can be reduced during the transmission infrastructure design phase. During design, consideration should be given to:

- the type of towers to prevent perches for eagles, or bird spikes on towers to prevent perching

- whether measures can be safely installed and maintained (an example would be spiral diverters installed on the earth wire to potentially increase visibility, however this is not proven technology and may be impractical for installation/maintenance)
- transmission corridor has been located to avoid water bodies due to potential impact on waterbirds (including swans) and migratory birds.

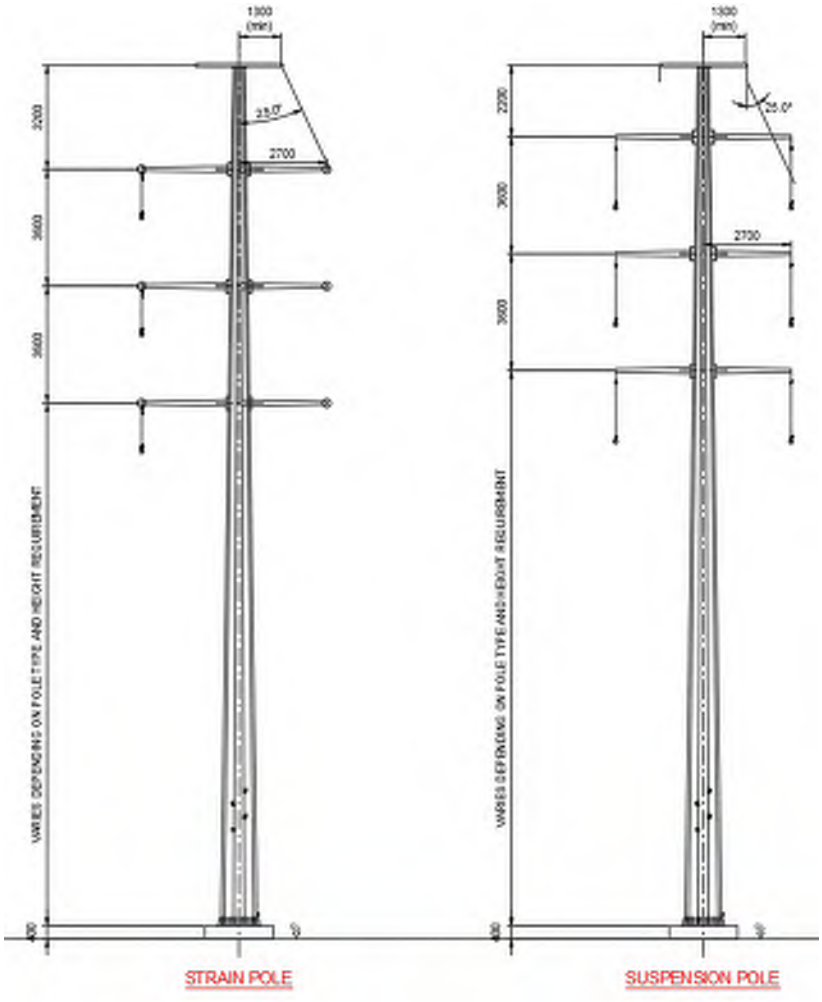

Figure 12: Proposed design of transmission poles and conductors (vertical cables supporting conductors below crossarms are 1500 mm long).

Weeds and Diseases

Declared and environmental weeds were recorded surrounding the study area (Figure 9). No declared weeds are within the study area. However, there is a risk of spreading these species during works. To

reduce this risk, it is advised that all works follow the best practice prescriptions as described in the *Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania* (DPIPWE, Stewart and Askey-Doran, 2015).

5.1 Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*

One threatened ecological community listed under the EPBC: Tasmanian forests and woodlands dominated by black gum or Brooker's gum (*Eucalyptus ovata / E. brookeriana*) corresponds to the *Eucalyptus ovata* forest (DOV) community mapped under the TASVEG scheme.

There is approximately 900 square metres of DOV present within the edge of the proposed transmission corridor, however this patch does not meet the requirements to be classed as threatened under the EPBCA. This area will be avoided and there will be no impacts to the community.

Eastern barred bandicoots are listed as Vulnerable under the EPBCA. If present, they may move through the site from time-to-time foraging and have potential to nest within the area. This species is highly adapted to modified environments. The proposal will have no significant impact to this species and its long-term survival.

5.2 Tasmanian *Threatened Species Protection Act 1995*

If works are planned to take place within the eagle breeding season (September to February) a nest activity assessment will take place in October of that year to determine if works may proceed or not.

Gratiola pubescens is present within the study area. This species is listed as rare under the TSPA. Prior to and during works an exclusion zone will be set up and maintained to avoid any impacts to this species.

5.3 *Nature Conservation Act 2002*

There is less than 1 ha of DOV (*Eucalyptus ovata* forest) and of NME (*Melaleuca ericifolia* swamp forest) that has been recorded on site. These communities are listed as threatened under the NCA.

Neither of these communities will be impacted.

The proposed transmission infrastructure will connect to the existing transmission substation on land (PID 2954844) owned and managed by TasNetworks. This property is a Conservation Area (CA) under the *Nature Conservation Act 2002*. The Act defines a CA as an area of land predominantly in a natural state and a CA aims to achieve *the conservation of the natural values of the area of land that are unique, important or have representative value, the conservation of the natural biological diversity or geological diversity of that area of land, or both, and the ecologically sustainable hunting of game species in that area of land. The protection and maintenance of the natural and cultural values of the area of land and*

the sustainable use of the natural resources of that area of land including special species timber harvesting (NCA 2002).

The proposed activity is in line with the existing use and development on the site. Nonetheless, NRE may require a reserve activity assessment (RAA) to determine whether the proposed development is acceptable. As noted above, the land is managed by TasNetworks and at least 84% of the area is occupied by a transmission substation and associated infrastructure.

5.4 Tasmanian *Biosecurity Act 2019*

No declared pests (weeds or diseases) were recorded within the study area.

Declared and environmental weeds have been recorded within the surrounding areas, which could pose a risk to further spreading or introducing them to areas where they do not occur. These will need to be managed in accordance with the relevant Statutory Weed Management Plans following the best practice prescriptions as laid out in the *Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania* (DPIPWE, Stewart and Askey-Doran, 2015)

5.5 Tasmanian Planning Scheme

Parts of the proposed development are covered by a Priority Vegetation Area and or a Waterway and Coastal Protection Area. Works within these areas must meet the development standards of the Natural Assets Code (C7.0).

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

As the acceptable solutions cannot be met, the performance criteria within C7.6.1 Development Standards must be addressed. Section P1.1 is addressed below. Sections P1.2 to P5 are not relevant to the proposed works.

P1.1

Buildings and works within a waterway and coastal protection area must avoid or minimise adverse impacts on natural assets, having regard to:

(a) impacts caused by erosion, siltation, sedimentation and runoff;

(b) impacts on riparian or littoral vegetation;

(c) maintaining natural streambank and streambed condition, where it exists;

(d) impacts on in-stream natural habitat, such as fallen logs, bank overhangs, rocks and trailing vegetation;