SOUTHERN MIDLANDS COUNCIL

PUBLIC COPY ATTACHMENTS

ORDINARY COUNCIL MEETING

Tuesday, 24th July 2018
Municipal Offices, 71 High Street, Oatlands
10.00 a.m.

Item 4.1	Draft Council Meeting Minutes (Open) – 27th June 2018
Item 4.2.1	Minutes – Woodsdale Community Memorial Hall Committee – 24th April 2018
	Minutes – Chauncy Vale Management Committee – 19th June 2018
	Minutes – Lake Dulverton and Callington Park Management Committee – 25th June 2018
	Minutes – Southern Midlands Emergency Management Committee – 25th June 2018
Item 4.3.1	Minutes – STCA – 14th May 2018
Item 11.1.2	Buddhist Cultural Park Application documents
Item 17.2.4	Population and the Policy Imperative – Presentation by Bernard Salt AM

SOUTHERN MIDLANDS COUNCIL

MINUTES
ORDINARY COUNCIL MEETING

Wednesday, 27th June 2018
10.02 a.m.
Municipal Offices, 85 Main Street, Kempton

INDEX

OPEN COUNCIL MINUTES

MINUTES OF AN ORDINARY MEETING OF THE SOUTHERN MIDLANDS COUNCIL HELD ON WEDNESDAY, 27th JUNE 2018 AT THE MUNICIPAL OFFICES, 85 MAIN STREET, KEMPTON COMMENCING AT 10:02 A.M

1. PRAYERS

Rev Dennis Cousens recited prayers.

2. ATTENDANCE

Mayor A E Bisdee OAM, Deputy Mayor A Green, Clr A Bantick, Clr E Batt, Clr R Campbell, Clr D Fish *(entered the meeting at 10.59 a.m.)* and Clr D Marshall.

Mr Tim Kirkwood (General Manager), Mr Andrew Benson (Deputy General Manager), Mr David Cundall (Manager, Development & Environment Services), Mr Jack :Lyall (Manager, Infrastructure & Works), Mr Brad Williams (Manager, Heritage Projects) Mrs Wendy Young (Corporate Compliance Officer) and Elisa Lang (Executive Assistant).

3. APOLOGIES

Nil.

4. MINUTES

4.1 Ordinary Council Minutes

DECISION
Moved by Clr E Batt, seconded by Clr R Campbell

THAT the Minutes (Open Council Minutes) of the previous meeting of Council held on the 23rd May 2018 be confirmed.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Dep. Mayor A O Green	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Marshall	√	

4.2 Special Council Minutes

DECISION
Moved by Deputy Mayor A Green, seconded by Clr E Batt

THAT the Minutes of the Special Meeting of Council held on the 13th June 2018 be confirmed.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Dep. Mayor A O Green	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Marshall	√	

4.2 Special Committees of Council Minutes

4.2.1 SPECIAL COMMITTEES OF COUNCIL - RECEIPT OF MINUTES

- Lake Dulverton & Callington Park Management Committee – 25th June 2018

DECISION
Moved by Clr E Batt, seconded by Clr A Bantick

THAT the minutes of the above Special Committee of Council be received.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Dep. Mayor A O Green	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Marshall	√	

4.2.2 SPECIAL COMMITTEES OF COUNCIL - ENDORSEMENT OF RECOMMENDATIONS

- Lake Dulverton & Callington Park Management Committee – 25th June 2018

DECISION
Moved by Clr E Batt, seconded by Clr R Campbell

THAT consideration of the recommendations contained within the minutes of the above Special Committee of Council be deferred to the July 2018 Council meeting.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Dep. Mayor A O Green	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Marshall	√	

4.3 Joint Authorities (Established Under Division 4 Of The Local Government Act 1993)

4.3.1 JOINT AUTHORITIES - RECEIPT OF MINUTES

Moved by Clr R Campbell, seconded by Clr D Marshall

THAT the minutes of the above Joint Authority Meetings be received.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Dep. Mayor A O Green	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Marshall	√	

4.3.2 JOINT AUTHORITIES - RECEIPT OF REPORTS (ANNUAL & QUARTERLY)

- Southern Tasmanian Councils Authority – Quarterly Reports for December 2017 and March 2018.

Moved by Deputy Mayor A Green, seconded by Clr R Campbell

THAT the quarterly reports of the above Joint Authority be received.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Dep. Mayor A O Green	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Marshall	√	

5. NOTIFICATION OF COUNCIL WORKSHOPS

Moved by Clr R Campbell, seconded by Clr D Marshall

THAT the information be received.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Dep. Mayor A O Green	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Marshall	√	

6. COUNCILLORS – QUESTION TIME

6.1 QUESTIONS (ON NOTICE)

Regulation 30 of the *Local Government (Meeting Procedures) Regulations 2015* relates to Questions on notice.

It states:

> *(1) A councillor, at least 7 days before an ordinary council meeting or a council committee meeting, may give written notice to the general manager of a question in respect of which the councillor seeks an answer at that meeting.*
>
> *(2) An answer to a question on notice must be in writing.*

The following questions were submitted by Clr R Campbell on the 20th June 2018.

Q1. How many SMC owned buildings have been converted to 100 per cent to LED lighting?

General Manager's response:

Whilst substantial progress has been made in converting all lighting to LED in both the Oatlands and Kempton Council Chambers, there is a number of light fittings which remain and will be converted at the time of replacement.

In terms of other SMC owned buildings, a number of these are outside the control of Council (e.g. Management Committees) and there has been insufficient time to confirm the status of these buildings.

Q2. How many SMC owned buildings have not been converted to 100 per cent LED lighting?

General Manager's response:

Refer response to Question 1.

Q3. The "Pioneer Wall" re motion as passed by Council when will it be implemented as per motion?

General Manager's response:

Clr Campbell refers to a 'Notice of Motion which was submitted to the Council Meeting held 25th July 2012.

The following is an extract from the Minutes of that meeting:

> "Clr B Campbell has submitted the following motion:
>
> **10.1 Roche Hall – Existing Site where Arch is located**

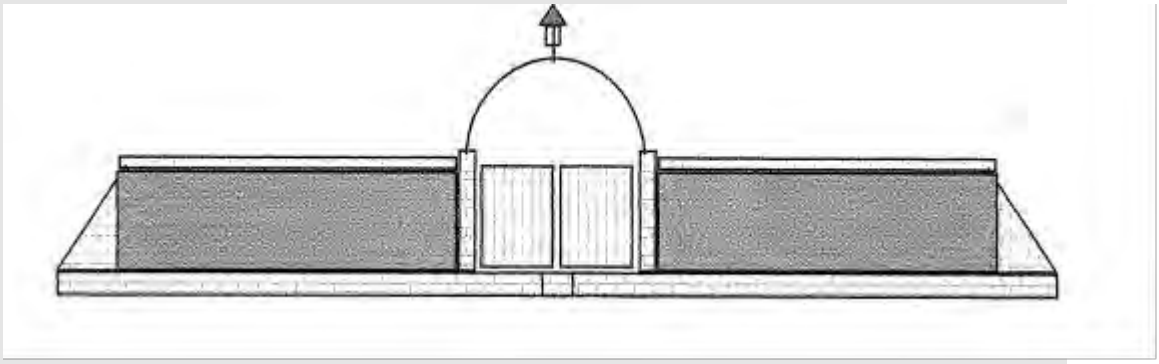
"THAT the following proposal be put to the people through public consultation meetings and via Southern Midlands News, Community Radio etc."

Proposal:

Due to the restoration of the old goal it is understandable that the arch be returned to the goal that means a blank space in front of Roche Hall, if this space is left with no replacement of interest to the people Council will have to face the people and their comments may well be fiery.

"When the arch is returned to the goal it be replaced with a "Pioneer (or settlers) Memorial Wall" (or arch) built with genuine sandstone. A large percentage of the stones would carry the name of a pioneer (this would include free settlers, convicts, military etc that settled in the area (before 1899) this area became known as the Oatlands Municipality.

Each stone carrying a name would be paid for by descendants of the "Pioneer" and would carry name / date of settlement in the area and place of living. (Thus reducing the cost to Council to build the wall.) The gates of the current arch can be retained and installed in the wall.



C/12/07/017/19093 DECISION
Moved by Clr B Campbell, seconded by Deputy Mayor M Jones OAM

"THAT a Pioneer Memorial Wall be included as an option to replace the existing Arch, which is to include the possibility of incorporating a plaque to convey the history of the Roche Hall property (Interpretation Sign).

CARRIED

Councillors will note that the suggestion of a 'Pioneer Memorial Wall' was only an option to be considered. To date Council has yet to formally consider and/or endorse a preferred design option. It should be noted that an alternative option of simply a relatively low-height sandstone retaining wall was also submitted by a number of interested community representatives.

In the absence of an allocated budget, neither options have been progressed to a final design stage. This is now proposed for 2018/19 recognising that a budget has been allocated for approval in the draft 2018/19 Capital Works Program.

Note: Clr Campbell made further comment in relation to Q3. He commented that the last time Roche Hall was discussed with the community was back in 2012. Request for design options to be taken back to the community for further consultation/comment.

It was acknowledged and accepted that a preferred design, or design options, would be referred to the community when developed to that stage.

6.2 QUESTIONS WITHOUT NOTICE

Section 29 of the *Local Government (Meeting Procedures) Regulations 2015* relates to Questions without notice.

It states:

"29. Questions without notice

(1) A councillor at a meeting may ask a question without notice –

(a) of the chairperson; or
(b) through the chairperson, of –
(i) another councillor; or
(ii) the general manager.

(2) In putting a question without notice at a meeting, a councillor must not –

(a) offer an argument or opinion; or
(b) draw any inferences or make any imputations –
except so far as may be necessary to explain the question.

(3) The chairperson of a meeting must not permit any debate of a question without notice or its answer.

(4) The chairperson, councillor or general manager who is asked a question without notice at a meeting may decline to answer the question.

(5) The chairperson of a meeting may refuse to accept a question without notice if it does not relate to the activities of the council.

(6) Questions without notice, and any answers to those questions, are not required to be recorded in the minutes of the meeting.

(7) The chairperson of a meeting may require a councillor to put a question without notice in writing.

An opportunity was provided for Councillors to ask questions relating to Council business, previous Agenda items or issues of a general nature."

Clr Bantick – at the last Council meeting there was a complaint from a resident about dogs barking in Wellington Street, Oatlands - has this been followed up?

The General Manager advised that the complaint has been researched and the Manager – Development & Environmental Services would further discuss the detail with the complainant, Mr Loftus.

It was reported that the initial complaint was lodged in August 2017. Council has followed up with two further requests to provide additional information i.e. specific property address (one verbal and one written), neither of which have received a further response from the complainant. The General Manager indicated that an anonymous Facebook post (subsequently corrected to confirm that the post was made by Mr Loftus) was posted to

Council's Facebook page regarding the complaint with a response from SMC advising them that further information had been requested and to contact the Animal Control Officer.

It was also noted that there had been nil complaints received from residents regarding barking at Anstey Court.

To date no further contact has been made and no further complaints regarding any barking or nuisance behaviour in the area. The Animal Control Officer has increased patrols in the area and has not heard any barking.

Clr Bantick – has any further progress been made with the carpark at Bagdad Primary School? Can Council expedite process taking into account the generous donation of the land.

The General Manager advised that no further information has been received from the State Government following discussion of the matter with State Cabinet (Cabinet meeting held at Oatlands). It was indicated that the State would provide details of its proposed capital development plan for the School. It is envisaged that construction of the car park can be incorporated in the development plan(s).

Clr Batt further advised that he has had conversations with the Minister for Education, Jeremy Rockliff MP.

Clr Bantick – queried the existing condition of trees at Maher's Point (Lake Dulverton foreshore). If they are considered dangerous, access to this location should be restricted pending decision re: removal etc.

To be referred to Manager – Infrastructure & Works for assessment.

Clr Campbell – question regarding Whynyates Street and Glenelg Street, Oatlands.

The Mayor advised he would like to add this to the supplementary agenda items.

Clr Campell – question regarding a Pump Station to be constructed at New Norfolk by TasWater? Sought general details, including cost, location etc.

Question taken on notice.

Deputy Mayor Green – question regarding the final estimated capital cost for the TasWater Colebrook Water Scheme project i.e. to pipe water from Campania to the township? He believed it was in the vicinity of $6.0 million which equates to some $150K per connection within the water district.

The General Manager advised that this information will be requested.

Clr Batt – sought confirmation that a representative from Tas Irrigation would be addressing Council and proposed that landowners within the proposed service area be invited to attend the meeting.

The General Manager confirmed that Mr Alan Coulson (Tas Irrigation) would be attending the July 2018 Council meeting to address Council.

7. DECLARATIONS OF PECUNIARY INTEREST

Nil.

8. CONSIDERATION OF SUPPLEMENTARY ITEMS TO THE AGENDA

The General Manager reported that the following items need to be included on the Agenda. The matters are urgent, and the necessary advice is provided where applicable:-

1. **GRANT DEED – BAGDAD COMMUNITY CLUB CARPARK**
2. **GRANT DEED – KEMPTON HEALTH FACILITY**
3. **GRANT DEED – OATLANDS AQUATIC CENTRE**
4. **WHYNYATES/GLENELG STREET, OATLANDS**
5. **PROPERTY MATTER – KEMPTON (CLOSED SESSION)**
6. **MEETING PROCEDURES FOR SPECIAL COUNCIL MEETINGS WHILE SITTING AS PLANNING AUTHORITY**

Moved by Clr R Campbell, seconded by Clr A Bantick

THAT the Council resolve by absolute majority to deal with the above listed supplementary items not appearing on the agenda, as reported by the General Manager in accordance with the provisions of the *Local Government (Meeting Procedures) Regulations 2015*.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Dep. Mayor A O Green	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Marshall	√	

9. PUBLIC QUESTION TIME

Public Question Time was held later in the meeting.

9.1 Permission to Address Council

Permission has been granted for the following person(s) to address Council:

- Nil.

10. MOTIONS OF WHICH NOTICE HAS BEEN GIVEN UNDER REGULATION 16 (5) OF THE LOCAL GOVERNMENT (MEETING PROCEDURES) REGULATIONS 2015

Nil.

11. COUNCIL ACTING AS A PLANNING AUTHORITY PURSUANT TO THE LAND USE PLANNING AND APPROVALS ACT 1993 AND COUNCIL'S STATUTORY LAND USE PLANNING SCHEME

Session of Council sitting as a Planning Authority pursuant to the Land Use Planning and Approvals Act 1993 and Council's statutory land use planning schemes.

11.1 DEVELOPMENT APPLICATIONS

Nil.

11.2 SUBDIVISIONS

Nil.

11.3 MUNICIPAL SEAL (Planning Authority)

11.3.1 COUNCILLOR INFORMATION: - MUNICIPAL SEAL APPLIED UNDER DELEGATED AUTHORITY TO SUBDIVISION FINAL PLANS & RELATED DOCUMENTS

Nil.

11.4 PLANNING (OTHER)

Nil.

12. OPERATIONAL MATTERS ARISING (STRATEGIC THEME – INFRASTRUCTURE)

12.1 Roads

Nil.

12.2 Bridges

Nil.

12.3 Walkways, Cycle ways and Trails

Nil.

12.4 Lighting

Nil.

12.5 Buildings

Nil.

12.6 Sewers

Nil.

12.7 Water

Nil.

12.8 Irrigation

Nil.

12.9 Drainage

Nil.

12.10 Waste

Nil.

12.11 Information, Communication Technology

Nil.

Moved by Deputy Mayor A Green, seconded by Clr E Batt

THAT the meeting be suspended to conduct a citizenship ceremony for Mrs Tracy Watson.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Dep. Mayor A O Green	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Marshall	√	

Clr Don Fish entered the meeting at 10.59 a.m.

The meeting resumed at 11.04 a.m.

The General Manager corrected the record in response to his earlier comments regarding a dog complaint raised in Councillor Question Time. In providing an update he referred to an 'anonymous' Facebook post. This was incorrect. From evidence presented (copy of Facebook post), it was actually made by Mr Terry Loftus.

12.12 Officer Reports – Infrastructure & Works

12.12.1 MANAGER – INFRASTRUCTURE & WORKS REPORT

QUESTIONS WITHOUT NOTICE TO MANAGER, INFRASTRUCTURE & WORKS

Clr Campbell – Inglewood Road (vicinity of Young's property) – major pothole

Clr Campbell – when are kerb and gutter works in Parattah scheduled? Advised waiting on contractor. Works to be completed in coming weeks which will extend from old Parattah Store to new section prior to Austral Park Road. Request for the hall driveway be extended?

Deputy Mayor Green – Stonor Road – requires maintenance grading (number of washed out sections)

Mayor Bisdee OAM – Swan Street footpath, how is this progressing with TasWater. Testing to be undertaken but it is intended that the project will proceed as TasWater has no current plans to replace the waterline.

Deputy Mayor Green – resulting from the Colebrook water pipeline project, road verges are in extremely poor condition and sections of pavement failure. Request Department of State Growth to inspect, in particular the section from Weavers Lane north through to Rosedale. Departmental staff to do a drive through with Council staff to identify issues.

Clr Fish – request for Manager Infrastructure and Works to be present when discussing tree on Esplanade (agenda item 14.2.3).

DECISION

Moved by Clr R Campbell, seconded by Clr E Batt

THAT the Infrastructure & Works Report be received and the information noted.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Dep. Mayor A O Green	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

13. OPERATIONAL MATTERS ARISING (STRATEGIC THEME – GROWTH)

13.1 Residential

Nil.

13.2 Tourism

Nil.

13.3 Safety

Nil.

13.4 Business

Nil.

13.5 Industry

Nil.

13.6 Integration

Nil.

14. OPERATIONAL MATTERS ARISING (STRATEGIC THEME – LANDSCAPES)

14.1 Heritage

14.1.1 HERITAGE PROJECT PROGRAM REPORT

DECISION
Moved by Clr R Campbell, seconded by Clr D Marshall

THAT the Heritage Projects Report be received and the information noted.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Dep. Mayor A O Green	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

14.2 Natural

14.2.1 LANDCARE UNIT – GENERAL REPORT

DECISIONC
Moved by Clr D Fish, seconded by Deputy Mayor A Green

THAT the Landcare Unit Report be received and the information noted.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Dep. Mayor A O Green	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

14.2.2 PROPOSED POLICY (DRAFT) – MANAGEMENT OF TREES ON COUNCIL LAND

DECISION
Moved by Deputy Mayor A Green, seconded by Clr D Fish

THAT Draft Version 3 'Management of Trees on Council Land Policy' be released for public comment.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Dep. Mayor A O Green	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

14.2.3 MAINTENANCE AND RISK MITIGATION, ESPLANADE RADIATA PINE OATLANDS

DECISION
Moved by Clr D Fish, seconded by Clr R Campbell

THAT:

a) the radiata pine tree (located on the corner of Barrack Street and the Esplanade, Oatlands) be removed as soon as practicable due to the significant safety issues identified and the fact that it is in a high traffic area; and
b) prior to removal, a heritage report be prepared to document the trees existence and heritage values.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Dep. Mayor A O Green	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

14.3 Cultural

Nil.

14.4 Regulatory (Other than Planning Authority Agenda Items)

Nil.

14.5 Climate Change

Nil.

15. OPERATIONAL MATTERS ARISING (STRATEGIC THEME – LIFESTYLE)

15.1 Community Health and Wellbeing

Nil.

15.2 Youth

Nil.

15.3 Seniors

Nil.

15.4 Children and Families

Nil.

15.5 Volunteers

Nil.

15.6 Access

Nil.

15.7 Public Health

Nil.

15.8 Recreation

Nil.

15.9 Education

Nil.

15.10 Animals

Nil.

16. OPERATIONAL MATTERS ARISING (STRATEGIC THEME – COMMUNITY)

16.1 Retention

16.1.1 ANGLICAN DIOCESE OF TASMANIA – SALE OF CHURCH AND CEMETERY PROPERTIES

DECISION
Moved by Clr E Batt, seconded by Deputy Mayor A Green

THAT Council conduct targeted consultation meetings in each community affected in the Southern Midlands. The purpose of the meetings is to identify and discuss the issues and options in relation to each individual property with the intent of facilitating and preparing a submission to the Anglican Diocese of Tasmania.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Dep. Mayor A O Green	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

17. OPERATIONAL MATTERS ARISING (STRATEGIC THEME – ORGANISATION)

17.1 Improvement

Nil.

The Manager, Heritage Projects left the meeting at 12.19 p.m.

17.2 Sustainability

17.2.1 COMMON SERVICES JOINT VENTURE UPDATE (STANDING ITEM – INFORMATION ONLY)

DECISION
Moved by Deputy Mayor A Green, seconded by Clr D Fish

THAT the information be received.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Dep. Mayor A O Green	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

17.2.2 SOUTH CENTRAL SUB-REGION COLLABORATION STRATEGY – STANDING ITEM

DECISION
Moved by Deputy Mayor A Green, seconded by Clr D Fish

THAT the information be received.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Dep. Mayor A O Green	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

17.2.3 LOCAL GOVERNMENT ASSOCIATION OF TASMANIA - 2018 ANNUAL CONFERENCE

DECISION
Moved by Clr R Campbell, seconded by Clr D Mashall

THAT the Mayor, Deputy Mayor and Clr Campbell attend the LGAT Annual Conference.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Dep. Mayor A O Green	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

17.2.4 BUSINESS CONTINUITY MANAGEMENT POLICY

DECISION
Moved by Clr E Batt, seconded by Clr D Marshal

THAT Council

1. **Receive and note the report;**
2. **Consider Draft version 1 of the Business Continuity Management Policy and subject to any amendments, submit for adoption at the July 2018 Council meeting;**
3. **Receive and note the SMC Business Continuity Plan;**
4. **Receive and note the Information Communications Technology (ICT) Business Continuity & Disaster Recovery Plan.**

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Dep. Mayor A O Green	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

17.2.5 REVIEW OF COUNCIL'S DRAFT STRATEGIC PLAN 2018-2027

DECISION
Moved by Clr E Batt, seconded by Clr R Campbell

THAT Council:

1. **Receive and note the report;**
2. **adopt the Strategic Plan 2018-2027 (acknowledging the Community input); and**
3. **make the Southern Midlands Council Strategic Plan 2018-2027 available on the Council's website.**

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Dep. Mayor A O Green	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

17.2.6 TABLING OF DOCUMENTS

17.2.6.1 TASMANIAN CHINESE BUDDHIST CULTURAL PARK OF AUSTRALIAN – LETTER & PETITION (INFORMAL)

DECISION
Moved by Clr D Fish, seconded by Deputy Mayor A Green

THAT the information be received, noting the level of support that exists.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Dep. Mayor A O Green	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

PUBLICIC QUESTION TIME (12:30 P.M.)

Councillors were advised that, at the time of issuing the Agenda, no Questions on Notice had been received from members of the Public.

Mayor A E Bisdee OAM then invited questions from members of the public in attendance.

Five (5) members of the public were in attendance.

Danny Connors – Kempton
Advice that the road/kerb/footpath in Main Street, Kempton (top end vicinity) is in very poor condition. The road being too high in relation to kerb and guttering.

The General Manager advised that this area has been identified by the Kempton Streetscape committee as a high priority for footpath renewal (section extends from Sugarloaf Road through to Memorial Avenue). Works are scheduled in the forthcoming financial year.

Terry Loftus – Southern Midlands Regional News
At the Special Council Meeting held in June, Clr Campbell made reference to a Council report on buildings in the Mill Precinct/Esplanade. Is this report still active or does it need rescinding?

The General Manager advised that he is not aware of any such report and Clr Campbell will further clarify/provide additional details.

Rowena McDougall – Baden
Question regarding the future use of 79 High Street, Oatlands (Commissariat) and what the direction for use/vision is for this building?

The General Manager advised that Expressions of Interest had been advertised through Council's newsletter with nil responses but it is to be re-advertised more broadly. Council are looking for not-for-profit groups to operate from the front section of the facility.

Moved by Deputy Mayor A Green, seconded by Clr R Campbell

THAT the meeting be suspended for lunch.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Dep. Mayor A O Green	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

Deputy Mayor Alex Green left the meeting at 1.20 p.m.

The meeting resumed at 1.23 p.m.

Glenda Pengelly - Tunbridge

Mayor Bisdee granted Mrs Glenda Pengelly permission to address Council following the lunch break due to her being unable to attend the Public Question Time session.

Mrs Pengelly raised a number of issues, including the following:

- Poor / intermittent Telstra coverage in the Tunbridge township. Mrs Pengelly has 4 people in her residence with serious medical issues and not having phone coverage is causing her concern and the requirement to travel to Ross to access phone and e-mail. The whole Tunbridge township is suffering from poor mobile coverage. Telstra did address the problem at her property previously by installing an antennae (after Council directly raised the issue with Telstra) and was assured by Telstra that she would no longer have communication problems. This is not the case.

Council will pursue this matter through Telstra Countrywide.

- Mrs Pengelly also raised an issue with Ambulance Tasmania and only having 1 person arrive when called to her property the last three times. This is creating issues due to her husband needing assistance with being lifted and she is unable to assist.
- Mrs Pengelly requested Council to lobby to have dialysis/specialty treatments provided at the Midlands Multi-Purpose Health Centre to prevent multiple trips to Hobart every week to receive this treatment.

The General Manager advised that Council will refer these issues to the Department of Health and Human Services. Opportunities may exist with the planned upgrade of the acute care section.

Mayor Bisdee further assured Mrs Pengelly that Council will further pursue the items raised at the meeting.

17.3 FINANCES

17.3.1 MONTHLY FINANCIAL STATEMENT (MAY 2018)

DECISION
Moved by Clr E Batt, seconded by Clr D Fish

THAT the Financial Report be received and the information noted.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

17.3.2 2018 / 2019 ANNUAL PLAN & BUDGETS (OPERATING & CAPITAL)

DECISION
Moved by Clr A Bantick, seconded by Clr D Fish

THAT Council formally approve the 2018 / 2019 Annual Plan and Budget – Operating and Capital.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

17.3.3 MINOR REVIEW AND CHANGES TO THE SCHEDULE OF FEES AND CHARGES 2017/18 AND ADOPTION OF SCHEDULE OF FEES AND CHARGES 2018/2019

DECISION
Moved by Clr D Marshall, seconded by Clr E Batt

THAT

A. This report be received by Council; and
B. The Schedule of Fees and Charges for 2018-2019 be adopted by Council inclusive of those minor changes considered in this report.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

17.3.4 ADOPTION OF THE 2018 / 2019 RATES AND CHARGES RESOLUTION

DECISION
Moved by Clr E Batt, seconded by Clr D Fish

THAT Council adopt the 2018-2019 Rates and Charges resolution as presented.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

18. MUNICIPAL SEAL

Nil.

19. CONSIDERATION OF SUPPLEMENTARY ITEMS TO THE AGENDA

Council to address urgent business items previously accepted onto the agenda.

19.1 FORMAL SIGNING /SEALING OF THE DEED OF AGREEMENT - BAGDAD CARPARK RECONSTRUCTION

DECISION
Moved by Clr D Fish, seconded by Clr A Bantick

THAT Council Sign and Seal the Grant Deed of Agreement for the carpark repairs for the Bagdad Community Club for the amount of $32,000.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

19.2 FORMAL SIGNING /SEALING OF THE DEED OF AGREEMENT – KEMPTON HEALTH FACILITY

DECISION
Moved by Clr E Batt, seconded by Clr R Campbell

THAT Council Sign and Seal the Grant Deed of Agreement for the contribution to the conversion an existing structure to a health care / education facility in the Kempton Community for the amount of $75,000.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

19.3 FORMAL SIGNING /SEALING OF A VARIATION TO THE DEED OF AGREEMENT – OATLANDS AQUATIC CENTRE

DECISION
Moved by Clr D Marshall, seconded by Clr E Batt

THAT Council Sign and Seal the Variation to the Grant Deed of Agreement with the State Government for the funding of the Oatlands Aquatic Centre.

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

19.4 WHYNYATES/GLENELG STREET, OATLANDS

Mayor Bisdee raised this matter and requested that the Manager, Infrastructure and Works be asked to provide an approximate cost estimate to construct Whynyates Street to a standard whereby it can be brought up to a reasonable road condition for possible transfer of ownership to Council. A cost estimate will enable further consideration of the options available.

19.5 MEETING PROCEDURES – SPECIAL COUNCIL MEETING

Mayor Bisdee raised this matter in respect as his position as Chairperson of these meetings and concerns with a Facebook post regarding the Special Council Meeting held on the 13th June 2018 stating that the meeting did not include a public question time. Under the Local Government meeting procedures public question time is not allowable when Council are sitting as a Planning Authority. The application discussed at this special meeting was advertised for public comment and then considered by Council as a Planning Authority at the special meeting. Members of the public had an opportunity to make representations that Council can consider when sitting as a Planning Authority.

The Mayor conducted the Special Meeting under the appropriate regulations and stated that the Facebook post was very misleading.

Property Matter Kempton

Closed Session Item.

DECISION
Moved by Clr R Campbell, seconded by Clr D Fish

THAT in accordance with Regulation 15 of the *Local Government (Meeting Procedures) Regulations 2015, the following items are to be dealt with in Closed Session.*

Matter	*Local Government (Meeting Procedures) Regulations 2015* Reference
Confirmation of Closed Council Minutes – 23/05/18	***15(2)***
Applications for Leave of Absence	***15(2)(h)***
Legal Matter	***15(2)(i)***
Property Matter – Kempton	***15(2)(g)***

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

DECISION
Moved by Clr R Campbell, seconded by Clr D Marshall

THAT in accordance with Regulation 15(2) of the *Local Government (Meeting Procedures) Regulations 2015*, Council move into Closed Session and the meeting be closed to members of the public.

CARRIED BY ABSOLUTE MAJORITY

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

CLOSED COUNCIL MINUTES

20. BUSINESS IN "CLOSED SESSION"

In accordance with the Local Government (Meeting Procedures) Regulations 2015, the details of the decision in respect to this item are to be kept confidential and are not to be communicated, reproduced or published unless authorised by Council.

20.1 CLOSED COUNCIL MINUTES - CONFIRMATION

Item considered in Closed Session in accordance with Regulation 15 (2) of the Local Government (Meeting Procedures) Regulations 2015.

20.2 APPLICATIONS FOR LEAVE OF ABSENCE

Item considered in Closed Session in accordance with Regulation 15 (2) (h) of the Local Government (Meeting Procedures) Regulations 2015.

20.3 LEGAL MATTER

Item considered in Closed Session in accordance with Regulation 15 (2) (i) of the Local Government (Meeting Procedures) Regulations 2015.

20.4 PROPERTY MATTER – KEMPTON

Item considered in Closed Session in accordance with Regulation 15 (2) (g) of the Local Government (Meeting Procedures) Regulations 2015.

DECISION
Moved by Clr R Campbell, seconded by Clr D Fish

THAT Council move out of "Closed Session"

CARRIED

Councillor	Vote FOR	Vote AGAINST
Mayor A E Bisdee OAM	√	
Clr A R Bantick	√	
Clr E Batt	√	
Clr R Campbell	√	
Clr D Fish	√	
Clr D Marshall	√	

OPEN COUNCIL MINUTES

21. CLOSURE

The meeting closed at 2.35 p.m.

Woodsdale Community Memorial Hall

ATTACHMENT
Agenda Item 4.2.1

Est. 1905

Minutes

FOR
General Committee Meeting
On
Tuesday 24th April 2018
At
Woodsdale Hall – Commencing at 7:15pm

1. **Welcome/opening**
   1.1 The President welcomes members to the meeting.
   1.2 The President declares the meeting open at

2. **Attendance**: Kaye Rowlands, Leon Scott, Frances Hillier, Kate Bourne and Ann Scott

3. **Apologies** Julie Bellette and Jim Wiggins

   Moved by Leon Scott **that the apologies be accepted**
   Seconded Frances Hillier
   Motion Carried

4. **Confirmation of Minutes – Meeting 6th March 2018**

   Moved by Kate Bourne that the Minutes from the 6th March, 2018 as read and distributed by mail and email be accepted
   Seconded: Frances Hillier
   Motion Carried

5. **Business Arising from Previous Minutes of 6th March, 2018**

   5.1 The Luncheon on 27th March 2018 for the Bus group of 49 people was very successful and our thanks go to Mrs Gwenda Cowle and Mrs Doreen Cowle whose help on the day was very gratefully received by the committee.

6. **Financial Report:**
   Total Funds as of 24th March 2018 is $5,946.51

Y.T.D. Financials

Opening Balance			**$5,289.89**
Incoming	**YTD**	**$1,385.00**	
Luncheons	**$ 805**		
Hall Hire	**$ 330**		
Hairdresser	**$ 200.**		
Donation	**$ 50.**		
Outgoing	**YTD**	**$ 683.36**	**$ 701.62**
All out going expense is Aurora			
Closing Balance			**$5,991.53**

1 Cheque counted into balance yet to be banked from Woodsdale Museum for $45.00

ATTACHMENT
Agenda Item 4.2.1

Petty Cash unchanged from previous month

Moved by Kate Bourne that the Financial Report as distributed to members be accepted, **Seconded by** Leon Scott

Motion Carried.

7. Business arising from Financial Report:

Nil

8. Consideration of Correspondence

8.1 In - Aurora Account and cheque from Woodsdale Museum

8.2 Out – Nil

9. General Business:

9.1 – Kate Bourne to contact the Heat Pump people to enquire re increasing the PAYG fee from $2.00/hour to $3.00/hour – **Outstanding**

10. Bookings

10.1 – The Campervan Club arriving 4th May, Dinner on the 5th May

10.2 – Hall Luncheon19th May

10.3 – Hairdresser's next visit 28th May

10.4 – Museum Luncheon 18th June

11. Next General Committee Meeting

To be held on Tuesday 15th May this was deferred, due to President and Treasurer/Secretary unavailable, until 26th June 2018

Meeting Closed at 7.40pm

CHAUNCY VALE WILDLIFE SANCTUARY MANAGEMENT COMMITTEE
SOUTHERN MIDLANDS COUNCIL

MINUTES

OF GENERAL MEETING HELD ON TUE 19TH JUNE 2018 @ 10 AM
CHAUNCY VALE WILDLIFE SANCTUARY, BAGDAD

Present: Heather Chauncy; Denna Kingdom (TLC); Peter Bird (BF&G); Jamie Ward; Victoria Needham; Sam Hilton (Caretaker); Graham Green (SMC); Councillor Tony Bantick; (Chair); Councillor Bob Campbell

Apologies: Peter Feil (P&WS); Danielle Madden-Hallett

1. Minutes of Previous Meeting

Minutes of the meeting held in March 2018 were received as a true and correct record:

Moved – Peter Seconded – Denna *Carried*

2. Correspondence

Incoming:

Heritage Tasmania – request to audit Chauncy Vale Cultural Heritage listing

Outgoing:

3. Financial Report

The financial report has been postponed and will be sent out as soon as some issues with internal accounting are rectified. It appears that some expenses over the last year have not yet been allocated to the Chauncy Vale budget e.g. some of Nigel Lockett's wages under the CIF Grant project. This means we probably have had an over-inflated picture of the health of our budget. Also, not all donation money has been finding its way to our account. Graham to meet with the Finance Officer ASAP to rectify budget issues.

Note: The donation money at question has been found and deposited into the Chauncy Vale account on 22/06/18.

Motion that the financial report be accepted:

Moved – Heather Seconded – Jamie *Carried*

4. 'The Shelter' – status of renovation et al

The renovation of the Shelter under the CIF grant has been progressing well.

Since the last meeting work completed with Nigel Lockett and volunteers includes: finishing new doors, installation of a bistro blind, completion of roofing around the deck, installation of a wood heater, internal painting, installation of a kitchen bench, and acquisition of a gas stove, sofa and a rug (donated by Jamie and Vic).

Investigating of lighting options has basically resulted in portable LED lantern style lighting to be the most appropriate option.

Installation of the gas stove will be undertaken later in June by a licensed gasfitter who does volunteer gas-fitting for Wildcare properties. The gas fittings (regulator etc) will cost around $200. Graham suggested that Ron the gasfitter be given something as a token of appreciation for his work (will investigate something appropriate).

Further work to do includes – completion of furnishing and some safety items e.g.

- Fire screen; fireplace utensils; gas leak detector; fire extinguisher; fire blanket

- Jamie to scope out a new gas BBQ

There was further discussion regarding future usage of the building, fees and naming. The renovation has improved the amenity of the site, providing scope for broadening usage e.g. meetings, parties, community & educational. Having the building code-locked makes it easier to manage bookings for the renovated space whilst the building still enables basic shelter and facilities to groups who haven't booked.

It was suggested that a base fee of $20 per half day be charged for use of the meeting room – or by donation with the expectation that groups that can afford more will pay more. Need to be careful that we procure more than what would have been made through gate donations as people are unlikely to pay at the gate once they have paid for the meeting room.

Some potential names for the meeting room – so far are:

- Whistler's Corner (Peter)
- Falcon's Rest (Heather)
- Wombat Flat (Graham)

<u>Any more</u> suggestions?

Potential 'glamping' accommodation to be discussed at the next meeting.

5. Other site management works

River works

Mates of Peter Bird (Digger Davis et al) undertook the river channel diversion work as discussed at the last meeting. The work was undertaken in accordance with Option 3 in the Hydrologists Report (April 2014). The work cost $3000.

Since the work was undertaken decent rainfall has put it to the test and it functions as anticipated.

Recently, a small team from 'Community Corrections' assisted with some river bank rehabilitation work inclusive of some tree planting.

Walking Tracks & Signs

A Tasmanian Land Conservancy contractor has completed sign installation, including the new track map near the start of the walking tracks.

Graham, with the assistance of volunteer David Masters, undertook track work at Guvy's Lagoon and the lower section of the Caves Loop Track. The safety awareness sign near Hutchins Cairn was moved up to the commencement of the new section of track leading to Brown's Caves.

A bush style seat will be installed near the stone bridge in July. This work has been paid for out of left over funds from the track and bridge component of the grant budget.

6. Tasmanian Land Conservancy - Flat Rock Reserve

Past issues associated with the top entrance to Flat Rock Reserve, particularly wood hooking, have diminished. This is partly due to a greater presence, and more frequent movements, of people living near the property inclusive of squatters in the weatherboard house and, in the other house, good tenants who have local connections.

Graham suggested perhaps another TLC open day to be organized, similar to the one 2 years ago – Denna to make internal inquiries.

7. Other Business

Book Order and Launch

Heather proposed the purchase of 200 copies of the double book 'Tiger in the Bush & Devil's Hill' from Living Book Press. The books will cost $11.85 each (5% discount) and there will be $80 freight.

Moved – Heather Seconded – Peter *Carried*

Graham will order the books early in the new financial year and get them delivered to Heather.

Heather suggested that there be a launch of this book in September coinciding with the opening of the renovated meeting room.

Scout Group Visit

Sam facilitated the visit of Old Beach Scouts on the June long weekend. It was an opportunity for Sam to run a range of new Chauncy Vale specific youth programs. Feedback from the Scout leader highlighted that the visit went very well for all involved.

Sam Hilton Presentation

Sam introduced himself to the Committee as our new caretaker and provided insight into his background and how he came to be at Chauncy Vale. He also provided vision for the potential of a community programs officer to run programs and events at Chauncy Vale and that the upcoming Tas Community Fund Grants could be an opportunity to fund this.

Graham to connect council's community officer (Michelle) with Sam to develop this further.

OHS & Risk Strategy

Sam has developed a Risk Strategy Matrix for Chauncy Vale and this has been forwarded to Wendy Young for review and comment.

Heritage Tasmania Visit

Staff from Heritage Tasmania recently audited the Chauncy Vale Cultural Heritage listing with a site visit. They were impressed with the direction that Chauncy Vale is headed and with the general improved look and feel of the reserve.

Communications Strategy

Graham tabled the new draft Communications Strategy for Chauncy Vale. A Web site working group will meet soon to plan the structure and content of a revamped web site.

Other issues/points

- Road widening works on Chauncy Vale Road have been completed.
- Toilet Roll Holders – new ones installed and they appear to have solved the toilet paper mess issue.

- Drainage – Peter mentioned that drainage along the road, particularly opposite the interpretations shelter, needs to be fixed – Graham to ask for this to be done.
- Wood heater flue – Heather reminded us that the Caretaker's house flue needs to be checked and cleaned.
- Death of Jim Poynter – The Committee acknowledged the passing of Jim Poynter. Jim, together with his wife Roberta, were huge contributors to Chauncy Vale in terms of development of resources, interpretations and running programs.

8. Next Meeting

The next meeting has been earmarked for mid-August

SOUTHERN MIDLANDS COUNCIL

SOUTHERN MIDLANDS EMERGENCY MANAGEMENT COMMITTEE

MINUTES OF MEETING

Minutes of a meeting of the Southern Midlands Emergency Management Committee held on Monday, 25th June 2018 at the Municipal Offices, Oatlands commencing at 5.30 p.m.

Committee: Councillor Tony Bantick (Chairperson),
Mark Dance (State Emergency Service)
Representative (Tasmania Police, Oatlands)
Representative (Ambulance Tasmania, Oatlands)
Representative (Tasmania Fire Service – District Officer, Midlands)
Robin Howlett (Tasmania Fire Service – Group Officer)
Representative (Midlands Multi-Purpose Health Centre)
Dr Robert Simpson (Local GP's)
Tim Kirkwood (Local Coordinator / General Manager SMC)
Jack Lyall (Deputy Local Coordinator / Works Manager SMC)
Craig Whatley (Works Coordinator SMC)

1. ATTENDANCE:

Clr Tony Bantick (Chair), Mark Dance (Regional Manager, South - SES), Michael Goldsmith (TFS, Midlands District), Robin Howlett (TFS, Group Officer), Kerry Mancey (TFS, Oatlands Brigade), Dr Robert Simpson (MMPHC), Jason Robins (SES), Steve Hickie (Ambulance Tas), Cindy Walsh (Ambulance Tas), Tim Kirkwood (Southern Midlands Council/Local Coordinator), Jack Lyall (Southern Midlands Council/Deputy Local Coordinator). Craig Whatley (Southern Midlands Council), Elisa Lang (Southern Midlands Council)

APOLOGIES:

Sgt Rob Cooke (Tasmania Police, Oatlands); Sandy Carmichael (MMPHC)

2. INTRODUCTION OF MEMBERS

Clr Tony Bantick welcomed all members present and opened the meeting.

Mark Dance (SES) provided a brief update on the recent major floods in Hobart and surrounds. Mark outlined the emergency response; BoM situational awareness and learnings.

3. CONFIRMATION OF MINUTES (PREVIOUS MEETING) / BUSINESS ARISING

RESOLVED that the Minutes of the previous meeting held 14th November 2016 be confirmed.

4. DESKTOP REVIEW - SOUTHERN MIDLANDS EMERGENCY MANAGEMENT PLAN

The Southern Midlands Emergency Management Plan was formally adopted by Council on the 27th May 2016 and officially signed off by the State Emergency Management Controller in September 2016. It is a requirement that this plan be reviewed every two (2) years for submission to the State Emergency Management Controller. The committee then undertook a desktop review of the plan during the meeting with a number of items identified for amendment:-

Acronyms (page 8)
- Updates required

Population & Demographics (page 13)
- Update details from 2016 Census data

Water (page 15)
- Update to include Midlands and Colebrook water schemes

Emergency Management Governance (page 17)
- Mark Dance to provide amendments to the committee

Summary of Responsibilities (page 18)
- Update reference to Forestry Tasmania to Sustainable Timber Tasmania

Fire Warning Types (pages 35-36)
- M Goldsmith to check all warnings are still correct

Public Information (page 37)
- Include reference to the increase in use of Social Media e.g TasAlerts Facebook page, various emergency service Facebook pages etc

Recovery (Section 3.4 – page 43)
- Mark Dance to provide amendments to the committee

Distribution List (page 48)
- Update AT title to Regional Manager
- Update TFS title to DO East Coast
- Include Department of Education

Plans and Arrangements (page 51-52)
- Update CBR Response to CBRN
- Update Fire Protection to Community Protection Plans
- Include AT Incident Response Plan dated 5 October 2014
- Include reference to sub-plans e.g Council/Community Halls Contact Lists; key contacts; Council vehicles; equipment listing etc rather than including specific details within the Plan that regularly change.

Risk Assessment Report (page 53)
- Mark Dance to provide amendments to the committee

It was agreed that the committee will reconvene for final sign-off on the amendments prior to submission to Council / State Emergency Management Controller.

SOUTHERN MIDLANDS COUNCIL

SOUTHERN MIDLANDS EMERGENCY MANAGEMENT COMMITTEE

7. GENERAL BUSINESS

Water filling points - Colebrook

Whilst reviewing the Emergency Management Plan a query was raised by M Goldsmith and R Howlett concerning strategic water fill points for emergency services in the Colebrook vicinity with the new water scheme. Council are to pursue this further with TasWater.

Wire barriers – Midland Highway

The Committee supported a letter being sent to the Department of State Growth in regard to highway wire barriers and issues surrounding timely access for emergency service vehicles. The correspondence should highlight to the Department the need to consider emergency turn-out points on the highway for emergency vehicles when planning highway upgrade works.

7. CLOSURE

The meeting closed at 6.40 p.m.

NEXT MEETING

Monday, 6th August 2018 at 5.30 p.m.
Southern Midlands Council, 71 High Street, Oatlands

ATTACHMENT
Agenda Item 4.2.1

LAKE DULVERTON & CALLINGTON PARK MANAGEMENT COMMITTEE

MINUTES

Monday 25th June 2018
Council Chambers, Oatlands 6.30 p.m.

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LAKE DULVERTON & CALLINGTON PARK MANAGEMENT COMMITTEE

MINUTES
Monday 25th June 2018

6.30 p.m. Council Chambers
Oatlands

MEMBERS:
Chairman: Councillor Don Fish (Proxy: Clr B Campbell)

Parks & Wildlife Rep: Paul Helleman (Proxy: Peter Feil)
Resident Representatives: Mrs Maria Weeding, Mr Athol Bennett, Dr Robert Simpson, Mr Robert Foster, Mrs Stephanie Burbury, Ms Helen Geard, Mrs Jenni Muxlow

The meeting opened at 6.35 p.m.

1. ATTENDANCE

Councillor Don Fish, Athol Bennett, Dr Robert Simpson, Stephanie Burbury, Maria Weeding, Helen Geard, Jenny Muxlow

2. APOLOGIES

Nil.

3. CONFIRMATION OF MINUTES

The committee to confirm the 16th April 2018 minutes.

RECOMMENDATION

That the Committee confirm the Minutes of the Lake Dulverton & Callington Park Management Committee meeting held on 16th April 2018.

SUB COMMITTEE RECOMMENDATION TO COUNCIL:

MOVED Mrs Jenny Muxlow
SECONDED Mrs Stephanie Burbury
THAT the Committee confirm the minutes of the Lake Dulverton & Callington Park Management Committee meeting, held on 16th April 2018.

CARRIED

4. BUSINESS ARISING FROM PREVIOUS MEETING

4.1 MACROCARPA TREE AREA BESIDE MAHERS POINT

A draft landscape plan went out for public consultation. The final plan was adjusted in line with the comments from the committee at the last meeting. A page on the various fence options was also provided for comment. See attached Plan and other information provided for the public consultation phase. Comment was sought for a three week period.

Three comments were received from the public. A copy of the comments was provided at the meeting.

The committee considered the submissions and any other information they would like to send to Council. It was decided that given most of the trees were to be removed that it would be better to remove all the trees in the one process. This is because it will be difficult to remove them at a later date once the new landscaping has been done. The presence of any remaining trees will also add another level of difficulty in establishing new plantings, due to the extensive root system taking much of the soil moisture around the area.

Support for the fence to be of the 'post and rail' style with the round logs was agreed by the committee and also through public comment feedback.

SUB COMMITTEE RECOMMENDATION TO COUNCIL:

MOVED Mrs Stephanie Burbury
SECONDED Mr Athol Bennett
THAT following public consultation, suggest that **all** the macrocarpa and pinus radiata trees in the subject area be removed and the landscaping of the area proceed upon removal of the trees. The fence to be extended to cover the extra area created by the removal of all the trees and additional plantings take place to fill the space.

CARRIED

4.2 WATER IN BACK PART OF THE LAKE – BUND WALL

There has been discussion at the last two meetings of the committee about the amount of water in the back part (Natural Zone) of the Lake. There was a query as the possibility of the valve on the bund wall leaking in some way? This has now been checked and it seems unlikely that the valve is leaking. The water level in the front part of the lake is being monitored.

The water level in the front part of the Lake is slowly increasing. There is however no additional water from the Midlands Water Scheme (agreement with Inland Fisheries has ceased) or the Blackman River and this will make quite a difference to the Lake level at the end of winter.

SUB COMMITTEE RECOMMENDATION TO COUNCIL:

RESOLVED
THAT the information be noted.

4.3 COMMITTEE WORKS - VARIOUS

At the last meeting it was agreed that the committee finalise a few works prior the end of the financial year. It was agreed to purchase a remote area toilet for the Dulverton walking track, pine bark the sheep yards at Callington Park and fix/ repair some of the gates in the old sheep yards. A working bee was to be held to spread the pine bark.

Since the last meeting the portable toilet and the pine bark has been ordered. The pine bark was spread on Tuesday 5th June with the help of the Council loader to bring the bark to the various pens. The committee is still waiting on the toilet to be delivered. It should be available sometime in July as it was sold out at the time of order.

A number of the yard gates were to be repaired etc. This has not occurred to date and the Committee will further discuss the works required in the next financial year.

SUB COMMITTEE RECOMMENDATION TO COUNCIL:

RESOLVED
THAT the information be noted.

{Dr Robert Simpson arrived at 7.30pm}.

4.4 BUDGET SUBMISSION TO COUNCIL

There is no further information at this stage. For noting.

SUB COMMITTEE RECOMMENDATION TO COUNCIL:

RESOLVED
THAT the information be noted.

5.0 TREASURER'S REPORT

A statement detailing Receipts and Expenditure for the financial year to date was tabled at the meeting.

SUB COMMITTEE RECOMMENDATION TO COUNCIL:

MOVED Mr Athol Bennett
SECONDED Mrs Stephanie Burbury
THAT the statement detailing the Committee receipts and expenditure for this financial year to date be received and endorsed.

CARRIED

SOUTHERN MIDLANDS COUNCIL

LAKE DULVERTON / CALLINGTON PARK MANAGEMENT COMMITTEE

STATEMENT OF RECEIPTS AND PAYMENTS
FOR THE PERIOD 1 JULY 2017 TO 22 JUNE 2018

RECEIPTS		PAYMENTS			
Balance from last Account (Lake) Commonwealth Bank Account	$ 4,159.76				
Callington Park	$ 3,940.05	Project 407-7057	$	1,539.88	Timber, Screws & Pinebark
Lake Dulverton Aquatic Building	$ -	Project 302-7055 (Aquatic Building)	$	-	
Lake Dulverton Corridor	$ -	Project 302- 5015 (Dulverton Corridor)	$	-	
Lake Dulverton - Foreshore (to Flax Mill)	$ 1,038.18	Project 302-7053 (Lake Dulverton)	$	808.77	Dispenser, Bags, Bollard, Gravel, Vent Accessory, Roses
Lake Dulverton - Foreshore Toilet Block	$ 33,600.00	Project 302-7053 (Lake Dulverton)	$	33,600.00	
Walking Track - Flax Mill To Parattah	$ 4,154.50	Project 302- 5015 (Dulverton Corridor)	$	2,381.20	Plants, Bobcat, Slasher
Grant - Walking Track Safety Upgrade	$ 2,996.79	Project G3020010 (Walking Track)	$	2,915.55	Galv $160.00 Post Caps $4.00 Cement $51.55
Walking Track - Donation	$ -	Project C3020004 (Portable Toilet)	$	2,000.00	Total cost $2,670 excl. less council contribution
Water Operational Costs	$ 22,575.00	Operational Charge (February)	$	7,482.00	
Weed Control	$ -	Asset Renewal Levy (February)	$	-	
Mary's Island	$ -	Water Usage - Annual (February)	$	7,916.10	153.89 ML
Interest	$ -				
		Bank Charges	$	-	
			$	-	
		Total Expense to date	$	58,643.50	
		Balance to Next Account	$	13,820.78	
	$ 72,464.28		$	72,464.28	

Funds on hand are represented by:

Comm. Bank Account No.06 7004 28003859	$	4,159.76
Special Projects - Unexpended Budget	$	9,661.02
	$	**13,820.78**

6.0 OTHER MATTERS

6.1 Cumbungi in Lake Dulverton – one more plant spotted

A resident reported a possible cumbungi plant they could see from the foreshore – well out into the lake. A further look with binoculars seems to confirm that this is the case. A small boat or canoe would be ideal to get to the plant. Any members with access to such? For discussion. It was mentioned that Kerry Mancey had suitable waders and that he had indicated that he would be able to assist. Details of the location to be provided to Kerry.

SUB COMMITTEE RECOMMENDATION TO COUNCIL:

RESOLVED
THAT the information be noted.

6.2 Heritage and Bullock Festival – 11th & 12th August 2018

A Heritage and Bullock Festival is being planned for Oatlands on 11th and 12th August. The historic machinery shed in Callington Park has been mentioned as something that would likely be of interest to visitors attending the Festival. Currently the shed is 'very full' of old machinery.

It has been suggested that the number of items in the shed be reduced, making it better to display the remaining items. A surface of light gravel stone would also give make the machinery stand out better for viewing. Currently there is a machinery shed brochure available that gives an idea of what the various items have been used for in the past.

The committee agreed that the machinery that was there could be displayed a lot better if the site was not so congested. Brian Fish and Don Fish will have a look at the items early next week to help in determining what would be best to stay and what could be stored elsewhere.

If the committee has sufficient funds in the 18/19 budget (to be confirmed), then the idea of placing a white stone gravel in the shed area was supported. This will allow the machinery to be better in terms of the visually display. It was acknowledged that there was very limited time between now and the bullock festival to get this task completed. Moving of machinery and implement items and placement of gravel will need the support of the Works Dept – if available.

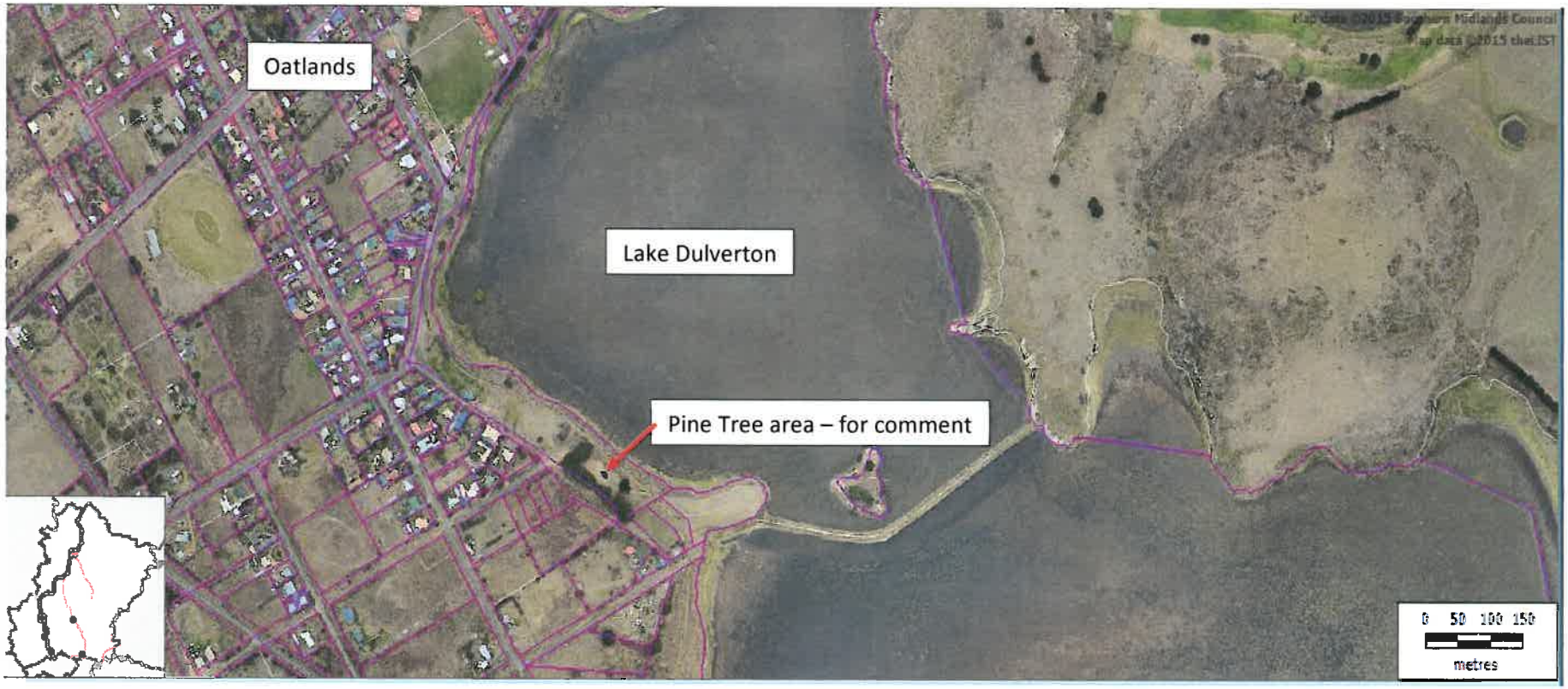
RESOLVED
THAT the information be noted and the machinery in the shed be better displayed by removal of a number of the items and placing of a white stone gravel in the shed area (if funds permit).

Lake Dulverton Foreshore –location known as the 'Pine Tree Area'
PUBLIC COMMENT INVITED

Public comment is sought on the proposed landscape plan of this area, following partial removal of some of the existing trees.

Details of the proposal can be viewed at the Council Office Oatlands or on the SMC Council web site.

Any suggestion for a name for this area of the foreshore?



Comments, suggestions to be in writing by letter or email, addressed to The General Manager, Southern Midlands Council, 71 High Street, Oatlands 7120 OR email – mail@southernmidlands.tas.gov.au **Responses by Monday 11th June 2018.**

Item 4.2 ATTACHMENT
Agenda Item 4.2.1

Background

The Lake Dulverton and Dulverton Action Plan (Edition 4) 2017 was adopted by Council in March 2017, after a period of public consultation through the Council's web site, ratepayer newsletter and flyers with in the community.

Within the Action Plan there is reference to an area known as The Pine Tree Area / Former Picnic Area, (near Mahers Point Cottage). According to the Plan the Macrocarpa trees and one Pinus radiata tree in this 'Pine Tree'area are scheduled to be removed. The removal of these particular trees has been driven by the age of the trees, which have now reached a stage of high maintenance due to the splintering and falling of limbs. This has become a safety issue.

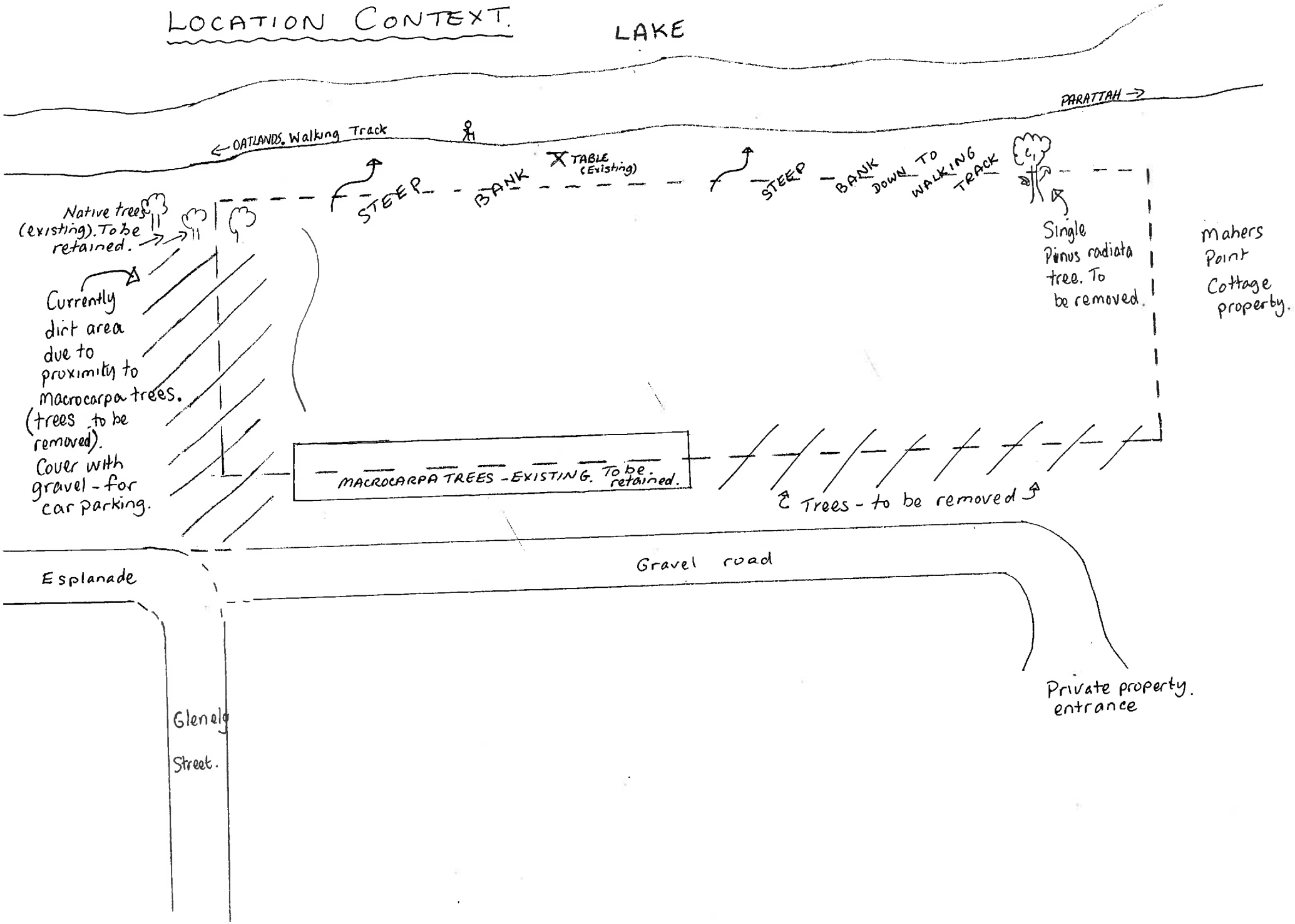
Councillors inspected the site early in 2018, and the action listed in the Plan was refined to the following decision, in terms of which trees are to be removed.

It was concluded by Council that:

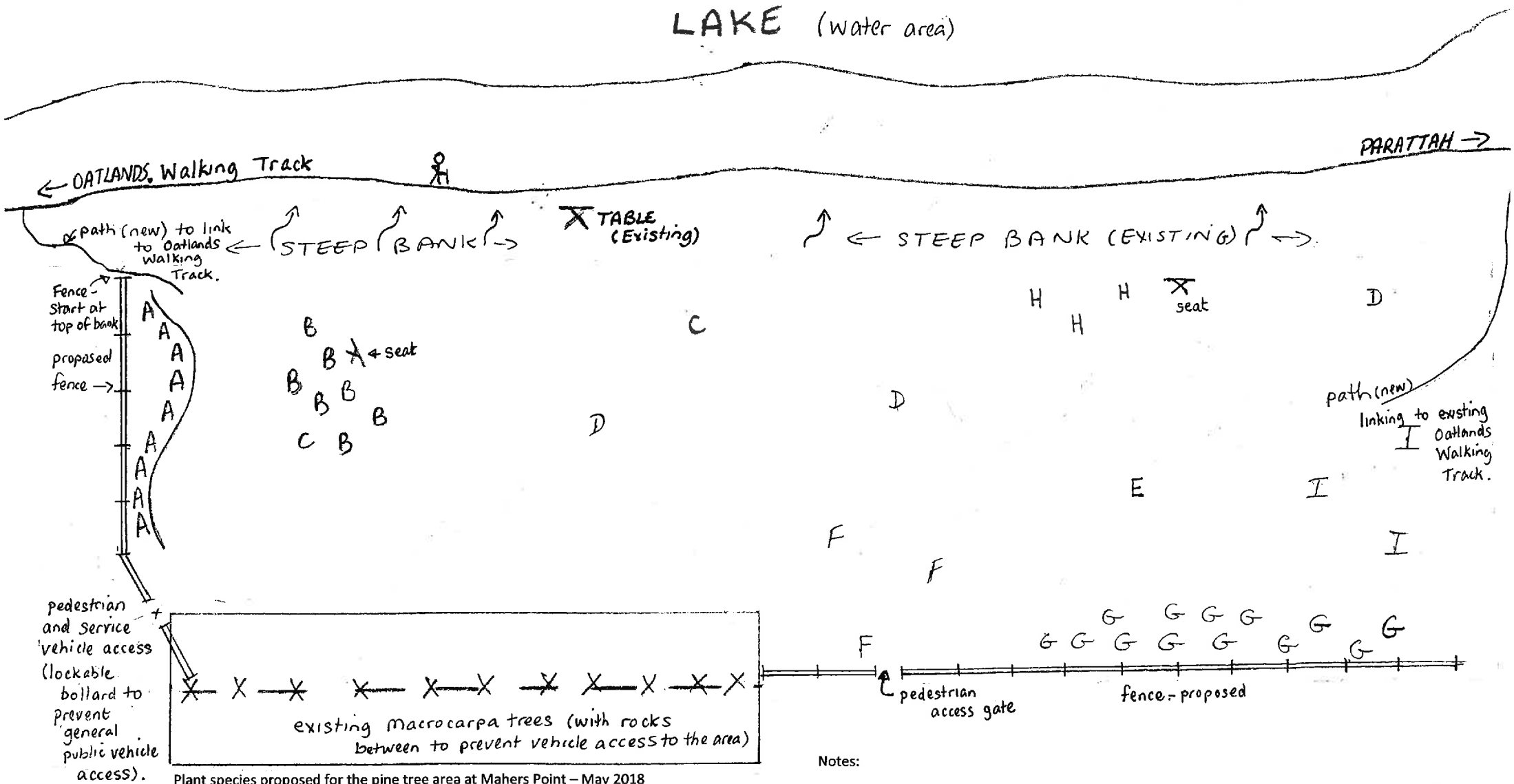
- *Retain the first eleven (11) trees which run parallel to the unmade road reserve and remove the remaining trees to the end of the row (Mahers Point Cottage end);*
- *Remove all of the trees in the line perpendicular to the lake;*
- *Remove the single large Pinus radiata located closer to the foreshore; and*
- *Proceed to prepare a landscape development plan for the area.*
- *The landscape plan is to go out for public comment prior to any works commencing.*

The landscape plan outlined here is for comment. Suggestions for a name for the area and fence style (if a fence is to be used) is also sought.

Comments made will go to the Lake Dulverton and Callington Park Management Committee for initial consideration. The final decision on what is included or not in a landscape plan will be made by Council, based on feedback received.



Plan



Plant species proposed for the pine tree area at Mahers Point – May 2018

A	Combination of Grevillia species, Viburnum and /or Escallonia, Correa species, Cistus (Rock Rose) Protea species
B	Copse of Betula pendula (Silver Birch) OR Betula papyifera (Paper Birch) trees
C	Fraxinus raywoodii (Claret Ash)
D	Quercus palustris (Pin Oak)
E	Conifer – possibly Picea Pungens glauca (Blue Spruce)
F	Allocasuarina littoralis (Black she oak)
G	Combination of Arbutus unedo (Irish Strawberry Tree), Grevillia species, Banksia marginata, Correa species, Poa grasses, Protea species
H	Prunus species – possibly pink flowering cherry
I	Eucalyptus pauciflora (Cabbage Gum)

Notes:

- Plants at A to be on a slight mound of soil.
- Plants at sites A and G to be closely planted, with a layer of pine bark or wood chip mulch used to combat weed invasion, especially during the establishment years.
- Plants at C, D, and E to have individual guards around the tree.
- Plants at B, H and I to be have tree stakes to assist plant in the establishment phase.
- Grass cover to be established on the area in general. BBQ has not been suggested due to no power currently available at the site.




A. Combination Grevillia species (rosemanifolia shown), Viburnum and/or Escallonia, Correa specis (reflexa shown), Cistus (Rock Rose) and

A. cont. Protea
(Pink Ice shown)


B. Betula pendula (Silver Birch) or
Betula papyifera (Paper Birch)

C. Fraxinus raywoodii (Claret Ash)

D. Quercus palustris (Pin Oak)

E. Conifer – (Picea Pungens glauca –
Blue Spruce shown)

F. Allocasurina littoralis (Black she oak)

Lake Dulverton Foreshore – "Pine Tree Area" plant varieties as shown on the proposed landscape plan May 2018





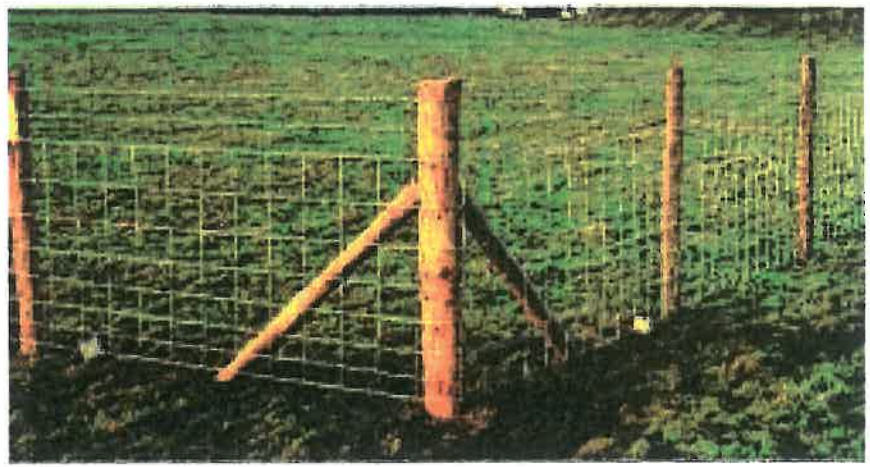


G. Combination of Arbutus unedo (Irish strawberry tree), Grevillia species (rosemanifolia shown), Banksia marginata, Correa specis (glabra turnbullii shown), Protea (Pink Ice shown) and Poa grasses


H. Prunus species (okame - pink flowering cherry shown)

I. Eucalyptus pauciflora (cabbage gum)

Fence Style - Options (note: final fence design will be subject to underlying geology – solid rock would limit the options shown here)



Item 4.1 - Public Responses

ATTACHMENT
Agenda Item 4.2.1

Maria Weeding

From: Chris Schofield <midlandslivestock@bigpond.com>
Sent: Wednesday, 23 May 2018 1:39 PM
To: SMC Mail
Subject: Lake Dulverton Foreshore

The General Manager,

Southern Midlands council.

Dear Sir,Our thoughts for the Lake Dulverton Foreshore are to remove all of the macrocarpa trees or we will have the same problem in a short time as they most likely were all planted at the same time.The fences can be either of the wooden post and rail with a preference for the round post & rail or alternately all boulder stones some metre or 1 1/2 metres apart.Perhaps call it Maher's Point Reserve,kind regards Anne & Chris Schofield,96 Esplanade,Oatlands.

Maria Weeding

From: Elizabeth Green on behalf of SMC Mail
Sent: Wednesday, 30 May 2018 11:16 AM
To: Maria Weeding
Subject: FW: Name for pine tree area at Lake Dulverton

From: Garry Thomas <gundey101@gmail.com>
Sent: Wednesday, 30 May 2018 10:51 AM
To: SMC Mail <mail@southernmidlands.tas.gov.au>
Subject: Name for pine tree area at Lake Dulverton

I suggest it be called " WEEDing World "

On Wed., 30 May 2018, 10:43 am Mail Delivery Subsystem, <mailer-daemon@googlemail.com> wrote:

Address not found

Your message wasn't delivered to **mail@southernmidlands.tas.gov.aun** because the domain southernmidlands.tas.gov.aun couldn't be found. Check for typos or unnecessary spaces and try again.

The response was:

```
DNS Error: 1526761 DNS type 'mx' lookup of southernmidlands.tas.gov.aun responded with
code NXDOMAIN Domain name not found: southernmidlands.tas.gov.aun
```

---------- Forwarded message ----------
From: Garry Thomas <gundey101@gmail.com>
To: mail@southernmidlands.tas.gov.aun
Cc:
Bcc:
Date: Wed, 30 May 2018 10:43:39 +1000
Subject: Name for pine tree area at Lake Dulverton
I suggest " WEEDing World "

Maria Weeding

From: Jane Figg <dalefigg@bigpond.com>
Sent: Monday, 11 June 2018 8:57 PM
To: SMC Mail
Subject: To The General Manager: RE: Lake Dulverton Foreshore Proposal

To The General Manager,

We are writing to raise our concerns with the proposed landscape plan of the Pine Tree Area

Our concerns are that the eleven trees you propose to leave are too close to our boundary with the limbs hanging way over the existing road. These trees are considered dangerous and cannot be left in their present state due to falling limbs.
These concerns have prompted previous correspondence from us in the past, and we would like to see these trees cut back to be made safe and at a minimum every second tree removed so sunlight can reach our land. At present, the trees restrict sunlight and this is preventing us from building on 2 Glenelg Street. Your proposal to remove other trees and replant with natives is a positive step but one that does not address our original and current concerns.

Kind regards,

Jane and Dale Figg

21 Nelson Street
OATLANDS 7120
0419 139 214 (m)
dalefigg@bigpond.com

Item 6.3

ATTACHMENT
Agenda Item 4.2.1

SOUTHERN TASMANIAN COUNCILS AUTHORITY
MINUTES

Minutes of a meeting of the Southern Tasmanian Councils Authority held on 14 May 2018 commencing at 11.00am in the Lord Mayor's Court Room, Town Hall, Hobart

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Present: Brighton Council – Mr James Dryburgh
Central Highlands Council – Mayor Loueen Triffitt and Ms Lyn Eyles
Clarence City Council – Mayor Doug Chipman and Mr Andrew Paul
Derwent Valley Council – Mayor Martyn Evans
Glamorgan/Spring Bay Council – Deputy Mayor Cheryl Arnol
Glenorchy City Council – Deputy Mayor Matt Stevenson and Mr Tony McMullen
Hobart City Council – Lord Mayor Ron Christie and Mr Nick Heath
Huon Valley Council – Commissioner Adriana Taylor and Mr Wayne Thorpe
Kingborough Council – Mayor Steve Wass and Mr Gary Arnold
Sorell Council – Mayor Kerry Vincent
Southern Midlands Council – Mayor Tony Bisdee
Tasman Council – Mayor Roseanne Heyward

Apologies: Brighton Council – Mayor Tony Foster and Mr Ron Sanderson
Derwent Valley Council - Mr Greg Winton
Glamorgan/Spring Bay Council – Mayor Michael Kent and Mr David Metcalf
Glenorchy City Council – Mayor Kristie Johnston
Huon Valley Council - Mr Emilio Reale
Sorell Council - Mr Robert Higgins
Southern Midlands Council - Mr Tim Kirkwood
Tasman Council - Mr Robert Higgins

1. **Welcome and apologies**
The Acting Chair opened the meeting at 11.05am and welcomed members to the meeting. Apologies for the meeting were noted and are as listed above.
The Board agreed to receive the presentations from Dr Tom Remenyi and Ms Alison Johnson as the first items of the meeting.

2. **STCA Board Chairman and Deputy Chairman Election**
The STCA Board undertook an election for the positions of Chairman and Deputy Chairman with Mayor Bisdee being elected Chairman of the STCA Board and Lord Mayor Christie being elected Deputy Chair of the STCA Board. Mayor Bisdee and Lord Mayor Christie will remain in these roles until the October local government elections.

RECOMMENDATION
The Board appoint Mayor Bisdee as Chairman and Lord Mayor Christie as Deputy Chairman of the STCA until the October 2018 local government elections.

CARRIED

3 **Confirmation of the Minutes of the ordinary meeting of the Southern Tasmanian Councils Authority held on Monday 5 February 2018**

RECOMMENDATION
That the minutes of the ordinary meeting of the Southern Tasmanian Councils Authority (STCA) Board Meeting held on Monday 5 February 2018 be confirmed as a true record of that meeting.

Moved: Mayor Vincent
Seconded: Mayor Triffitt

CARRIED

4. **Matters Arising**

Nil

5. **Dr Tom Remenyi, Climate Research Fellow, Climate Futures Program, Antarctic Climate and Ecosystems Cooperative Research Centre and Ms Alison Johnson, Climate and Energy Consultant.**
The Chair introduced Ms Alison Johnson to the Board and welcomed her to the meeting. Ms Johnson has been engaged by the STCA, through the Regional Climate Change

Initiative, to provide councils with accurate and up to date information of their municipal/community energy use and greenhouse gas emissions.

Ms Johnson presented the preliminary findings from the project which shows decreasing energy use.

In order to work out the total energy use and total greenhouse gas emissions per local government area the approach undertaken was to gather Australian energy statistics for Tasmania and population statistics for each local government area, then substitute the electricity and gas information provided by energy networks, apply standard emissions factors and then review and check results in order to present final results by postcode.

The project has found that across the 12 local government areas of Southern Tasmania there has been an 8 per cent reduction in energy use between 2006-07 and 2014-15. A similar trend has also occurred in relation to greenhouse gas emissions which has seen a 5 per cent reduction from 2006-07 to 2014-15, mainly in transport and industry.

Ms Johnson concluded her presentation by indicating that the initial results will be distributed to councils for review, individual council presentations will be provided with report, data and methodology delivery in June/July 2018.

The Chair thanked Ms Johnson and introduced Dr Remenyi to the Board and welcomed him to the meeting.

Dr Remenyi spoke to the Board about Tasmania's future climate-related risks. The Financial Stability Board (FSB) in their Recommendations of the Task Force on Climate-related Financial Disclosures final report states that ...'the market believes climate change is real and that humans are causing it by burning fossil fuels.' The FSB Task Force on Climate-related Financial Disclosures will develop voluntary, consistent climate-related financial risk disclosures for use by companies in providing information to investors, lenders, insurers and other stakeholders. The Task Force will consider the physical, liability and transition risks associated with climate change and what constitutes effective financial disclosures across industries.

The Australian Prudential Regulation Authority's (APRA) Executive Board Member, Geoff Summerhayes says that the days of viewing climate change within a purely ethical, environmental or long-term frame has passed. More and more, the conversations are about the practical realities and consequences of a changing climate. One reason for this is that we now have a much more sophisticated, granular, quantifiable understanding of the impacts, risk and probability distributions around climate change.

A recent report found that company directors who fail to properly consider and disclose foreseeable climate-related risks to their business could be held personally liable for breaching their statutory duty of due care and diligence under the Corporations Act.

In terms of Tasmania, there will be changes to extremes with more hot and very hot weather and less cold weather.
In terms of changes to rainfall seasonality, in Autumn Tasmania's east coast will be wetter probably due to an increase in east coast lows and in Summer there will be intense drying on the west coast while it will be wetter on the east coast. These changes may cause the supply of energy to decrease with a drier west coast.

In Tasmania, mean temperatures have risen at a rate of 0.1 degree Celsius per decade since the 1950s. The future fire danger predicts twice the danger, twice the area and twice as often.

Practical challenges include, bushfire, drought and heatwave; invasive species causing risks to agriculture; costs of air-conditioning; replacement rate of roads with increasing temperatures; size of gutters and stormwater pipes with warmer air creating more intense rainfall; sea level rise and inundation; waste management, disposal and safety. In summary, action is now required with the tools existing to take action and the spectre of liability approaching.

The Chair thanked Dr Remenyi who indicated that he would be happy to provide presentations to councils.

6. Regional Climate Change Initiative Update

The presentations from Alison Johnson and Dr Tom Remenyi provided an update on the activities of the Regional Climate Change Initiative.

RECOMMENDATION -

That the STCA Board note the Regional Climate Change Initiative update.

The Board resolved to accept the recommendation.

CARRIED

7. STCA Financial Report to 31 March 2018

The STCA Financial Report to 31 March 2018 was discussed by the Board. This update noted that regular monthly payments are being made to Summerhill Publishing for the management of the STCA website; $263,442 in carry forward funds remain unspent and $94,623 Waste Strategy South monies remain unspent.

RECOMMENDATION –

The STCA Board note the financial report for the period ending 31 March 2018

Moved: ***Commissioner Taylor***
Seconded: ***Mayor Evans***

CARRIED

8. 2018/19 STCA Budget

The Board discussed the proposed 2018/19 STCA budget and resolved to accept the recommendations.
It was noted that by agreeing to provide funds for the Waste Strategy South and Regional Climate Change Initiative programs that going forward the STCA will either need to increase future subscriptions or introduce a levy to fund ongoing operations.
Mayor Heyward spoke to the Waste Strategy South budget submission noting that waste will continue to be an issue and that the application of a voluntary levy will be discussed at the next Waste Strategy South meeting.

RECOMMENDATION –

The STCA Board approve Waste Strategy South's 2018/19 budget allocation request of $211,800.

The STCA Board approve the Regional Climate Change Initiatives budget allocation request of $120,000.

The STCA Board approve a budget allocation of $44,350 for operational expenses.

The STCA Board note if the current level of support for Waste Strategy South and the Regional Climate Change Initiative was to continue the STCA would need to review the level of subscriptions being paid by member councils.

Moved: ***Mayor Evans***
Seconded: ***Mayor Heyward***

CARRIED

9. Updates from Members

9.1 South Eastern Regional Development Association update

Mayor Vincent provided an update on the South Eastern Regional Development Association and advised that a meeting was to be held with Kim Goodes, TasCOSS and that the group is moving ahead with the Tasmanian Community Fund and Skills Tasmania. This is an updated version of HuonWorks which will be rolled out to other regional areas. In terms of workforce planning, work continues to occur on training and upskilling local people to enable them to access jobs in the area.

The recent State Election saw a number of commitments made by the political parties which will be beneficial to the region. The Association will now look to develop a strategic plan.

RECOMMENDATION -

That the STCA Board note the South Eastern Regional Development Association update.

9.2 Planning Reform update

Mr Paul provided a verbal update to the meeting and noted that:

- The Technical Reference Group are currently preparing Local Provision Schedules.
- The Rural and Agricultural Zones work is progressing.
- Feedback has been received from councils on the Natural Asset Management overlays and their applicability.

RECOMMENDATION -

The STCA Board note the Planning Reform update.

9.3 South Central Sub-region and Common Services update

Mr Dryburgh provided an update on the South Central Sub-region and Common Services. The recent State Election saw a number of commitments made by the political parties which will be beneficial to the region. The pilot with the Beacon Foundation is progressing well.

RECOMMENDATION –

That the STCA Board note the update from the South Central Sub-region and Common Services.

The Board resolved to accept the recommendations for items 9.1, 9.2 and 9.3.

CARRIED

10. Governance and Audit Committee update

The Minutes of the Governance and Audit Committee dated 1 May 2018 were accepted.

Items highlighted were the budget submissions for Waste Strategy South, the Regional Climate Change Initiative and the operational components of the STCA which were considered at today's meeting.

RECOMMENDATION

That the minutes from the Governance and Audit Committee meeting dated 1 May 2018 be accepted.

Moved: ***Mayor Triffitt***
Seconded: ***Mayor Wass***

CARRIED

11. Tasmanian Audit Office – STCA Audit of Financial Statements

The STCA noted the information received from the Tasmanian Audit Office (TAO) advising that due to resourcing issues within the TAO a contract service provider will undertake the audit of the STCA for the next two years.

RECOMMENDATION

That the STCA Board note the information received from the Tasmanian Audit Office

Moved: ***Mayor Heyward***
Seconded: ***Lord Mayor Christie***

CARRIED

12. LGAT meeting – call for motions

The Board discussed the issue of future recycling and agreed that something needs to be done to address this problem. Given that the LGAT meeting is to discuss a motion seeking support for a feasibility study into the establishment of a Local Government statewide waste management organisation, it was agreed that any STCA decision in addressing this issue would wait until after the 18 May 2018 LGAT meeting.

13. Other Business

Commissioner Taylor brought up the recent significant weather event experienced by some STCA member councils with the Board agreeing to letters being sent to relevant State Government ministers in support of those affected councils.

Meeting closed at 12.35pm

ATTACHMENT
Agenda Item 11.1.2

Holy Tantra Esoteric Buddhism Incorporated

Buddhist Cultural Park - 1384 Tea Tree Road, Campania

Rezoning Application - Supporting Planning Report

May 2018

Table of contents

Figure index

Appendices

1. Introduction

1.1 Purpose of this Report

GHD Pty Ltd has been engaged by Holy Tantra Esoteric Buddhism Incorporated to prepare an application to amend the *Southern Midlands Interim Planning Scheme 2015* (the Interim Scheme) to provide for a proposed Tasmanian Chinese Buddhist Cultural Park of Australia (the Buddhist Cultural Park) at 1384 Tea Tree Road, Campania (the subject land).

The subject land is currently zoned Rural Resource and a rezoning to Particular Purpose Zone – Tasmanian Chinese Buddhist Cultural Park (PPZ) is sought to facilitate the future use and development of the subject land for the Buddhist Cultural Park.

The application is made in accordance with Section 33 of the *Land Use Planning and Approvals Act 1993* (LUPAA). It is noted that references in this report to the provisions of the Act are references to former provisions, which remain in force until a Local Planning Schedule comes into effect, in accordance with Part 2, Schedule 6 – Savings and transitional provisions of the Land Use Planning and Approvals Amendment (Tasmanian Planning Scheme) Act 2015.

1.2 Report Structure

This report provides an assessment of the proposed rezoning against the objectives of Schedule 1 of LUPAA, the Interim Scheme, Council Strategies, the Southern Tasmania Regional Land Use Strategy and State Policies. The report is accompanied by, and relies upon, supporting preliminary assessments including a land capability assessment, ecological assessment, traffic impact assessment on-site wastewater assessment, bushfire assessment, Aboriginal heritage assessment, economic impact assessment and visual impact assessment.

1.3 Title Information

The proposed scheme amendment relates to relates to the subject land within Certificate of Title 155148 Folio 1, known as 1384 Tea Tree Road, Campania, and in the ownership of Holy Tantra Esoteric Buddhism Incorporated as provided at Appendix A.

1.4 Background to the Proposal and the Site

The Holy Tantra Esoteric Buddhism Incorporated has owned the subject land at 1384 Tea Tree Road for some 20 years and is the proponent of the Buddhist Cultural Park. Development of the subject land will comprise a staged approach, with the project envisaged to take place potentially over a significant number of years. Each stage of the Buddhist Cultural Park will likely be developed over a 20 year period once investments for that particular stage have been generated, however, it is possible that staging will be accelerated if funding allows.

The Buddhist Cultural Park will be open to the public most days of the year and will host a range of religious, educational and cultural activities and events.

Conceptual documentation is provided at Appendix B. By way of further background to the project an excerpt from that documentation is provided below as a general overview of the project:

Situated on top of the mountain ridge at 1384 Tea Tree Road, there is a precious piece of land, with mountains and valleys in the rear, and rolling hills that represent the Dragon spine to the left and right, lush vegetation, clean air, great scenery, similar to the holy land of Buddhism of ancient times.

The total land area of this plan is approximately 106.5 hectares.

Planning will consist of two major blocks:

The first block will be the temple complex, and the second will consist of structures for Buddhist cultural studies, international conference centres, Buddhist scriptural library, and exhibition halls. According to the traditional symmetrical layout of temple complexes, all structures will use the temple complex as the central axis, with Buddhist cultural research exchange facilities and accommodation for Sangha (monastic community of ordained Buddhist monks and nuns) and tourists situated on both sides of the temple complex.

Temples:

Following the natural typography of the land, the temple complex will be constructed at different elevations according to the terrain. Following the symmetrical layout of temple complexes, the Front Gate will be situated along the central axis (length: 108m; depth: 20m). After entering the Front Gate, with 99 steps leading up to the Great Hero Treasure Hall (Lord Sakyamuni Buddha Hall), the Great Hero Treasure Hall and the Avalokitesvara Hall will be constructed with a bridge crossing over a fishpond. Situated behind the Great Hero Treasure Hall will be the Hall of the Three Holy Buddhas, the Buddhist Scriptural Library, the Vairocana Buddha Hall, Museum, En-de Stupa (Stupa of Gratitude), with a total of 11 types of structures in this stage.

A secondary axis will be situated on both sides parallel to the central axis. Along this axis structures will consist of the Maitreya Buddha Hall, Bell Tower, Treasure Repository, Arahant Palace, Lecture Teaching Hall, Drum Tower, Repository of Great Compassion, Medicine Buddha Hall, Prayer Hall; Situated between the main central axis and the secondary axis will be a seating gallery (gallery on Buddhist history, sutras, stories and drawings). Accommodation (Sangha living area) and the lay practitioners (non-Sangha) living area (including dining hall), the large dining hall will be situated behind the two living areas and outside the secondary axis. With the entire temple complex conceptual conceived to have a gradual elevation from the front to the rear, the entire temple complex will be divided into a number of blocks constructed on different elevations.

Buddhist cultural research, exhibition, cultural exchange area:

According to the differing natures of research, exhibition and culture, this area will be divided into three blocks, independent and yet part of the temple complex. These areas will consist of areas for research and exchange of Chinese calligraphy, Chinese Drawing, Chinese Art of Tea, Chinese Dynamic Dharani, Chinese Art Music and Dance, and so on. Exhibition areas will be constructed within the temples.

Research and study hall:

This is primarily a place to study Buddhist cultural theory and cultural theory research, to provide an area for Buddhist devotees to concentrate on their studies.

Cultural exchange hall:

This is primarily a place for Sangha from the various sects from around the world to meet and exchange Buddhist culture. The cultural exchange hall does not need to align with the symmetry of the axis, the design will follow the southern and northern Chinese garden styles.

Current design plan:

Using ancient Chinese architectural styles to construct the grandest possible temples permitted. Between each structure, there will be corridors and galleries.

The architectural style used to construct the temple structures is not limited to any one particular

Chinese architectural period. According to what is required, Tang-Song style and Ming-Qing style temple structures can be adopted. With regards to colour scheme, the various grand halls of the

temple complex will use golden yellow amber coloured tiles accompanied by black-grey cylindrical tiles, even including small tiles. The colour of the walls can also be split into three types, old yellow, dark red and white.

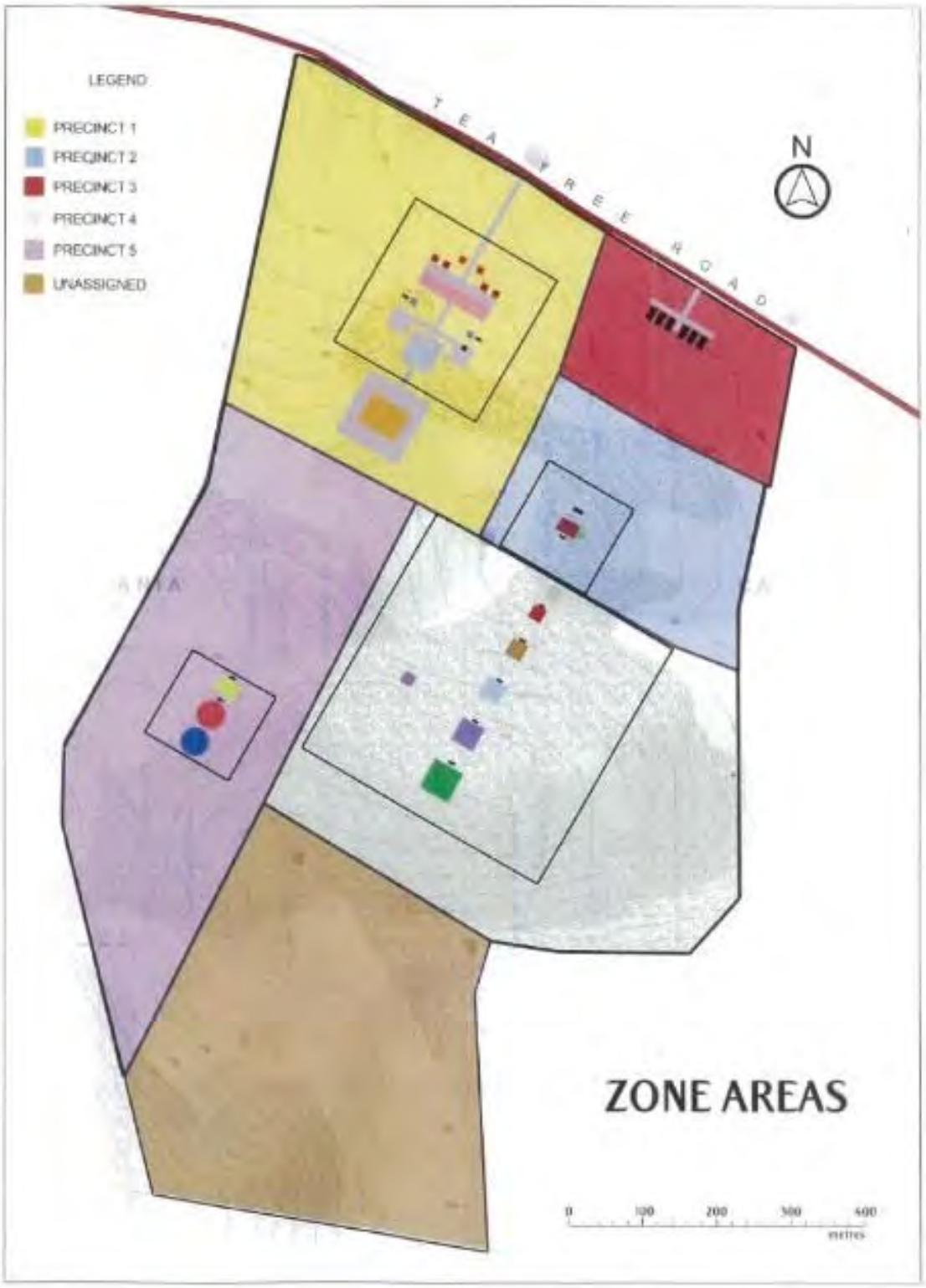


Figure 1 Conceptual Layout

Precincts 1, 2, 4 and 5 (See Figure 1) denote various elements of the proposed temple complex, while precinct 3 identifies the location of supporting residential and commercial development ancillary to the operation of the Buddhist Cultural Park.

1.4.1 Proposed Uses

The proposal involves the development of a mixed-use complex. Whilst there are a range of uses proposed to be developed over the life of the project, the primary use of the site will comprise the temple complex, including:

Museum

- Ceremonial buildings and spaces;
- Research and study (Buddhist cultural theory and research);
- Community meeting (Buddhist cultural exchange / meeting areas); and
- Function centre (to be held intermittently in various halls / conference rooms).

In support of the above temple complex a number of other uses will be developed, including:

- Visitor accommodation (to support the educational and community meeting uses);
- Residential (students and scholars, caretaker staff, others associated with the operation of the temple complex); and
- Visitor centre and foodservices (to form a subservient role to the main Buddhist Cultural Park use).

1.5 Scope and Limitations

This report has been prepared by GHD for Holy Tantra Esoteric Buddhism Incorporated and may only be used and relied on by Holy Tantra Esoteric Buddhism Incorporated for the purpose agreed between GHD and the Holy Tantra Esoteric Buddhism Incorporated as set out in section 1.1.

GHD otherwise disclaims responsibility to any person other than Holy Tantra Esoteric Buddhism Incorporated arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

2. Statutory References

2.1 Name of Planning Instrument

The subject of the proposed amendment is the Southern Midlands Interim Planning Scheme 2015 (the Interim Scheme).

2.2 Name of Planning Authority

The Planning Authority is the Southern Midlands Council.

3. Site Attributes and Surrounds

3.1 The Site

The subject land comprises an area of 106 ha. It is a relatively steep lot with contours ranging from 120m to 290m. The site is steepest in the far south-west corner where the land falls away to the north east at a gradient of 1:3 (33%) from an elevation of 290m. A small plateau in the middle of the lot, from which the land falls away at a gradient of 1:2.7 (37%) towards the south- west, thereafter slopes more gently towards the north and western portions of the lot.

There are a number of drainage lines that run in an east to north-easterly direction from the south-westerly and westerly portions of the lot. The topographic details are shown in Figure 2.

As outlined, the subject land has a history as rough grazing land. It is partially vegetated with native and exotic species, some of which have been relatively undisturbed and some of which have been modified. There is an existing development footprint on the northern portion of the site, which comprises a house, sheds and storage buildings, and is occupied by members of the Holy Tantra Esoteric Buddhism Community.

The site is generally surrounded by rural lands. Along the northern boundary the subject land is bound by Tea Tree Road. A train line runs parallel to the northern boundary on the opposite site of Tea Tree Road. To the west lies 1356 Tea Tree Road, where a recently approved 'Level 2 Activity' gravel quarry operates, as shown in Figure 3.

Figure 2 Topographic Details

(Source: The List; http://maps.thelist.tas.gov.au/listmap/app/list/map)

Figure 3 Site Aerial Photo

(Source: The List; http://maps.thelist.tas.gov.au/listmap/app/list/map)

3.2 Locality

The subject land is located on Tea Tree Road approximately 2.8 km to the west of the intersection with Colebrook Road and approximately 5 km east of Middle Tea Tree Road. The township of Campania lies 2.3 km directly north east of the site, with Richmond 7.5 km south- east of the site and Tea Tree 5.5 km south- west of the site. Refer to Location Map in Figure 4.

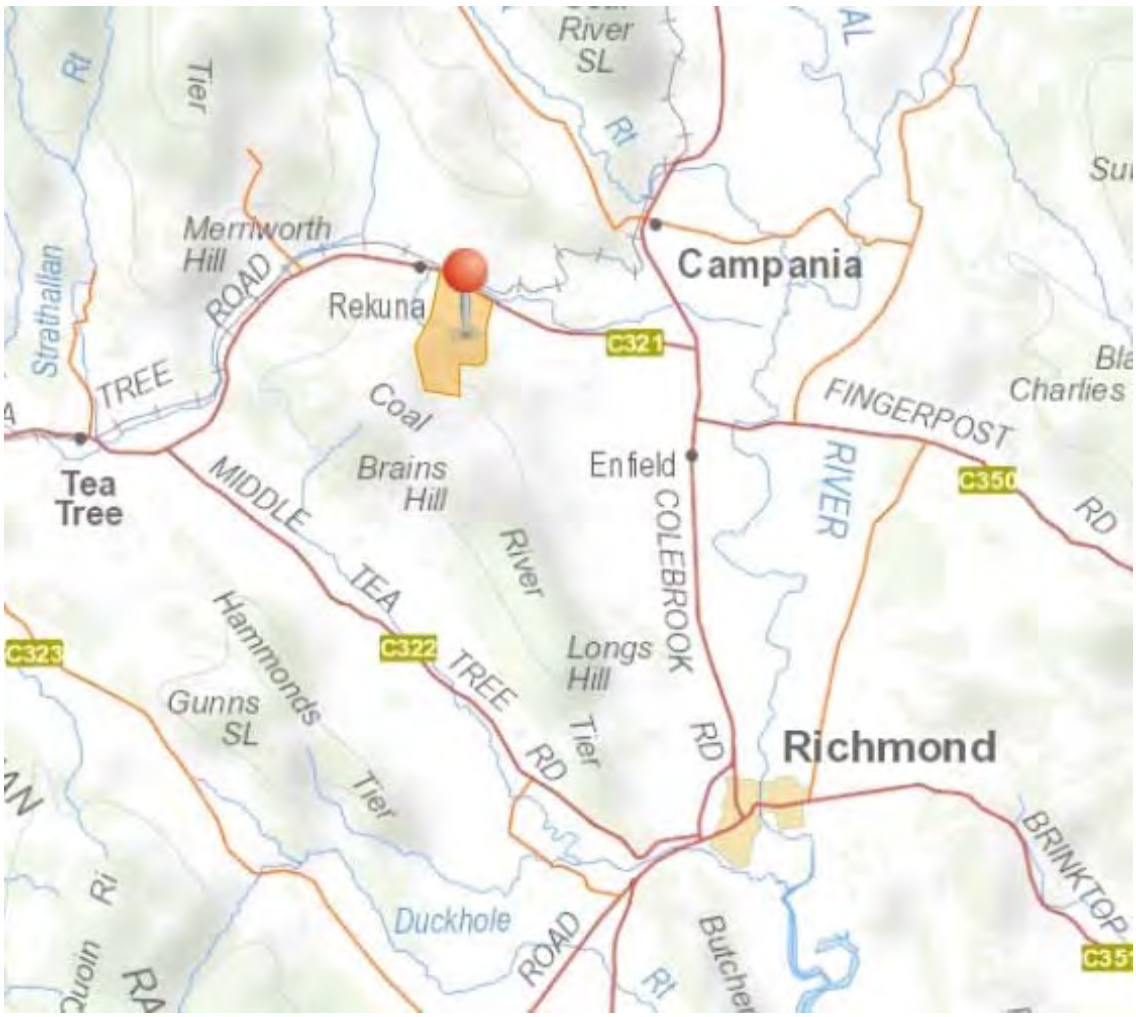


Figure 4 Location Map

(Source: The List: http://maps.thelist.tas.gov.au/listmap/app/list/map)

3.3 Land Capability

The subject land is mapped as comprising a combination of Class 4, 5 and 6 land, with the majority of the subject land mapped as Class 5 (refer Figure 5). A land capability study prepared by Soily Doyley Consulting is provided at Appendix C. The report further notes that the steeper slopes comprise Class 6 and 7 land.

In terms of the sites agricultural capacity, the report states that 'the land quality combined with local climatic conditions imposes sever limitations to agricultural production'. Further, the report finds that "the agricultural capability of much of the land area is therefore low and is limited by; soil erosion hazard, shallow soil depth, moderate slopes, and poor soil conditions (sandy and acidic topsoils of low nutrient holding capacity and poor structure).'

In respect of the Class 4 land, the report notes that cropping on this land is also subject to severe limitations and that 'major conservation treatments and/or careful management is required to minimise degradation'.

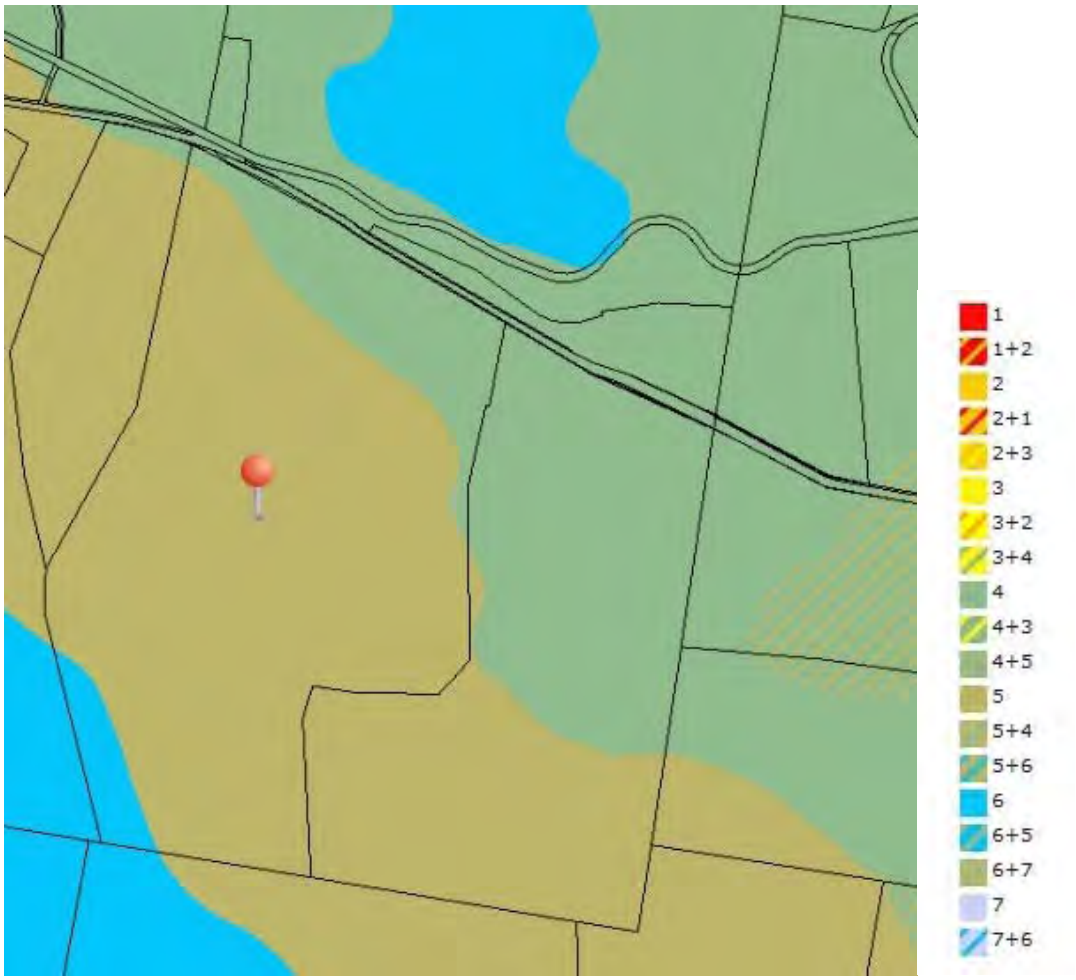


Figure 5 Land Capability

(Source: the List; http://maps.thelist.tas.gov.au/listmap/app/list/map)

3.4 Flora and Fauna

An ecological assessment undertaken by Ecotas is provided at Appendix D. In summary, the findings of the report were:

- Non-priority flora

No species of high conservation value detected.

- Non-priority fauna

No species of high conservation significance detected.

- Threatened flora

No plant species listed under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 was detected within the study area.

Three plant species listed under the Tasmanian *Threatened Species Protection Act 1995* detected within the study area, were as follows:

- Asperula scoparia subspecies scoparia (prickly woodruff): two localised populations (outside the project area);
- Austrostipa scabra subspecies falcate (sickly speargrass): widespread but localised (outside the project area); and
- Vittadinia muelleri (narrow leaf new-Holland daisy): localised small population amongst “rough pasture” (outside project area).

The presence of these species will need to be taken into account in further land use planning under Section 51 of the Tasmanian Threatened Species Protection Act 1995, but only Austrostipa scabra subsp. Falcata may be affected by the project at this stage.

- Threatened fauna

Potential habitat is present for swift parrot, forty-spotted pardalote, masked owl, spotted-tail quoll, and eastern barred bandicoot, although field survey did not indicate actual presence of these species.

Retention of the extent of Eucalyptus viminalis and Eucalyptus globulus- dominated forests and woodlands is recommended to protect potential habitat of the forty-spotted pardalote and swift parrot.

A policy of “no net loss” of native vegetation is recommended for other species, with an emphasis on ensuring minimal disturbance to larger trees (especially those with senescent features such as hollows), allowing natural regeneration of disturbed areas, and maintaining the level of coarse woody debris (fallen logs and trees), where safe to do so.

Potential and temporary dens of the Tasmanian Devil associated with a line of cliffs and sandstone outcrops. Avoiding disturbance to the line of cliffs is recommended, with a suggested minimum 30-50m buffer between the mapped dens and the nearest building.

- Threatened communities

The study area supports nine TASVEG mapping units.

No threatened ecological communities listed on the Commonwealth Environmental Protection and Biodiversity Conservation Act 1999 were found.

Three of the mapped units are classified as threatened under Schedule 3A of the Tasmanian Nature Conservation Act 2002 (Eucalyptus globulus dry forest and woodland; Eucalyptus amygdalina forest and woodland on sandstone; Eucalyptus viminalis grassy forest woodland). There are constraints on clearing of these vegetation types under the provisions of the Tasmanian Forest Practices Act 1985 through the Interim Scheme.

- Weeds

Four species of “declared weeds” within the meaning of the Tasmanian Weed Management Act 1999, were detected in the study area, as follows:

- Echium plantagineum (patersons curse);
- Chrysanthemoides monilifera subs. Monilifera (boneseed);
- Marrubium vulgare (white horehound); and
- Carduus tenuiflorus (winged thistle).

A formal weed management plan is not recommended given the limited areas impacted.

In conclusion Ecotas consider that, based on the site assessment, the ecological values within the subject land, and specifically within or in close proximity to the different project elements, can be managed during the more detailed planning and design stages of the project. The project will result in negligible disturbance to ecological values and should be able to proceed with minimal constraints.

The flora and fauna mapping for the subject land is provided below (see Figure 6).

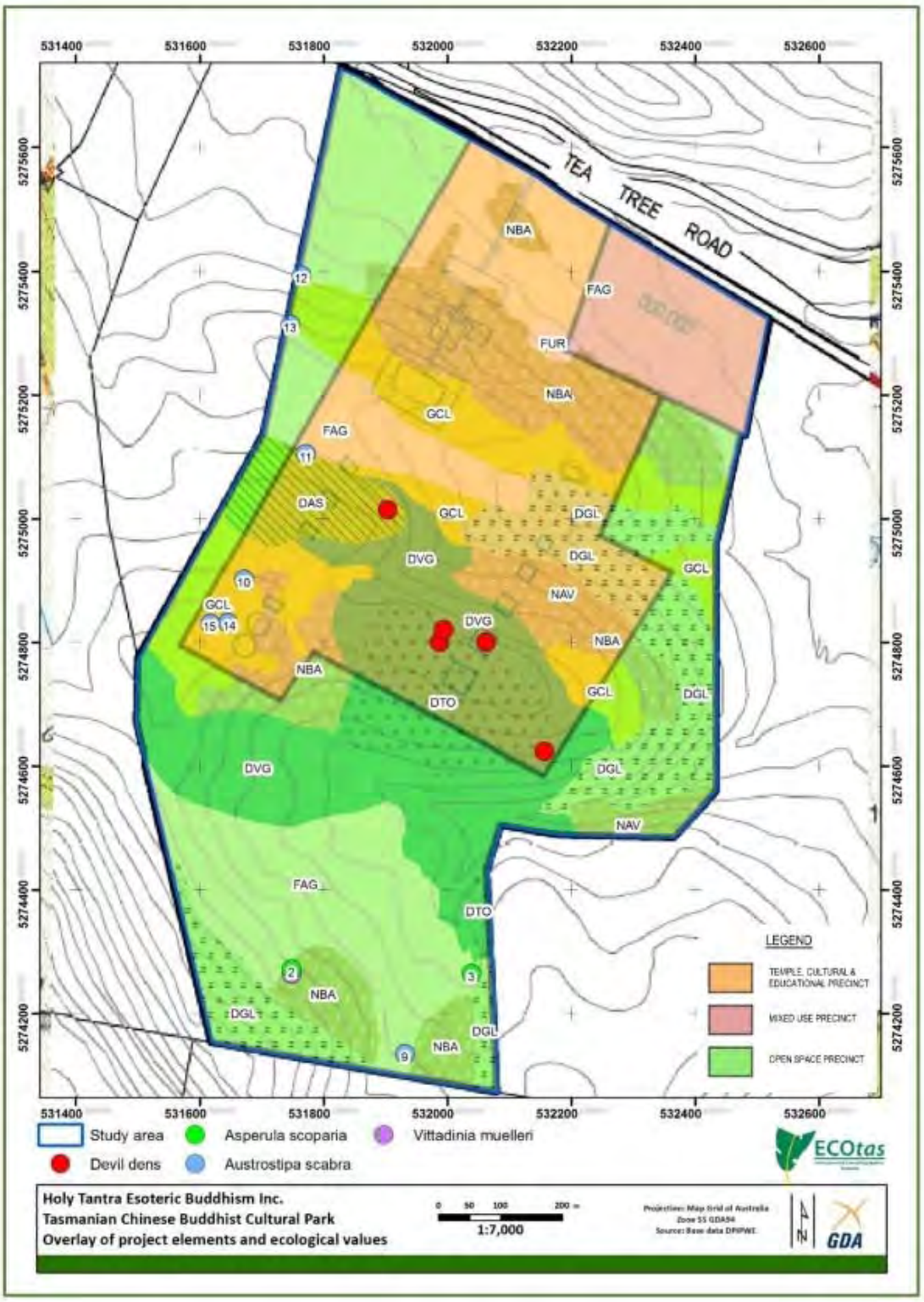


Figure 6 Distribution of Threatened Flora and Fauna

3.5 Transport and Access

The subject land is accessed via Tea Tree Road. The road is a Category 2 road, maintained by the Department of State Growth. As outlined, Tea Tree Road feeds to Colebrook Road approximately 2.8 km to the east of the site and the intersection with Middle Tea Tree Road lies approximately 5 km to the west of the site. Approximately 10 km directly west of the site access to the Brighton Bypass is provided to and from Tea Tree Road via two-way ramps. The road then feeds to Brighton Road a further 2.2 km to the west.

An open speed limit of 100km/h applies to the road at the subject site. Recent road works have been undertaken to satisfy a permit condition associated with the erection of 4 Heavenly Deva King Statues and 2 Stone Lion Statues. The widening of Tea Tree Road adjacent to the site provides 'pull over' areas for passing motorists wishing to view the statues. The site is serviced by an existing formed gravel access. Sight distances from the access are in excess of 250 metres.

Figure 7 Road Network

(Source: The List; http://maps.thelist.tas.gov.au/listmap/app/list/map)

A Traffic Impact Assessment was undertaken by GHD traffic engineers and is included at Appendix E. It investigated the potential future traffic impacts of the proposed rezoning of the subject land, to facilitate the future development of the Buddhist Cultural Park.

The TIA was carried out following a review of available traffic data, Austroads guidelines, Australian Standards and the Interim Scheme.

The key findings of the TIA are as follows:

- The development is expected to generate 313 trips per day (average) and up to 490 trips per day (seasonal peak) in the short-medium term (10-20 years).
- Over the long-term (>20 years) visitation will continue to increase, however, it is likely there will have been significant changes to development and transportation patterns within the surrounding area over this period that the long-term has not been assessed in this report.
- The peak traffic generation is assumed to be up to 68 vehicle movements per hour.
- The majority of traffic movements are likely to be left-in and right-out movements, therefore specific turn treatments (e.g. channelised turn lanes) are not considered to be required on the basis of low turning volumes and clear line of sight in both directions.
- Given the current configuration and capacity of Tea Tree Road, the additional traffic volume of up to 417 vehicles per day (and up to 58 vehicles per hour) can be readily absorbed into the road network without any significant or adverse impacts on capacity of efficiency.

- There is sufficient sight distance available at the proposed accesses in accordance with the requirements of the Southern Midlands Planning Scheme.
- While limited details regarding the proposed development are available, it is considered that there is sufficient space on-site to construct accesses and car parking areas to satisfy Planning Scheme requirements including compliance with:
  - AS/NZS 2890.1, *Parking facilities – Part 1: Off-street car parking,* 2004
  - AS 2890.1, *Parking facilities – Part 2: Off-street commercial vehicle parking,* 2002
  - *Building Code of Australia Section D3.5*

Based on the findings of this report, the proposal is supported on traffic grounds.

3.6 Service Infrastructure

The subject land is serviced by reticulated water, electricity and telecommunications. On site wastewater treatment will be required to service the development on the subject land.

A preliminary assessment and concept report was undertaken by consultants SEAM Environmental into the suitability of the subject land for the installation of onsite wastewater management systems. The assessment was made assuming levels of development as described in the 'concept plans'. It indicates that the site and soil conditions are suitable for a range of systems.

The final onsite wastewater management system is to be determined for each of the precincts when detailed plans are prepared for development approval purposes. The full report is provided at Appendix F.

3.7 Land Stability

As outlined in Figure 8, in relation to landslide the subject land is subject to low and medium hazard bands. On the Tasmanian Land Information System (TheLIST), the Low and Medium Hazard Exposures are described as:

Low:

This area has no know active landslides, however it has been identified as being susceptible to landslide by Mineral Resources Tasmania.

Medium:

The area has known landslide features, or is within a landslide susceptibility zone, or has legislated controls to limit disturbance of adjacent unstable areas.

Land stability issues will be considered in the detailed design process and in compliance with the requirements of the relevant Interim Scheme provisions. It is noted that the Interim Scheme standards do not apply to building development on land within a low hazard band.

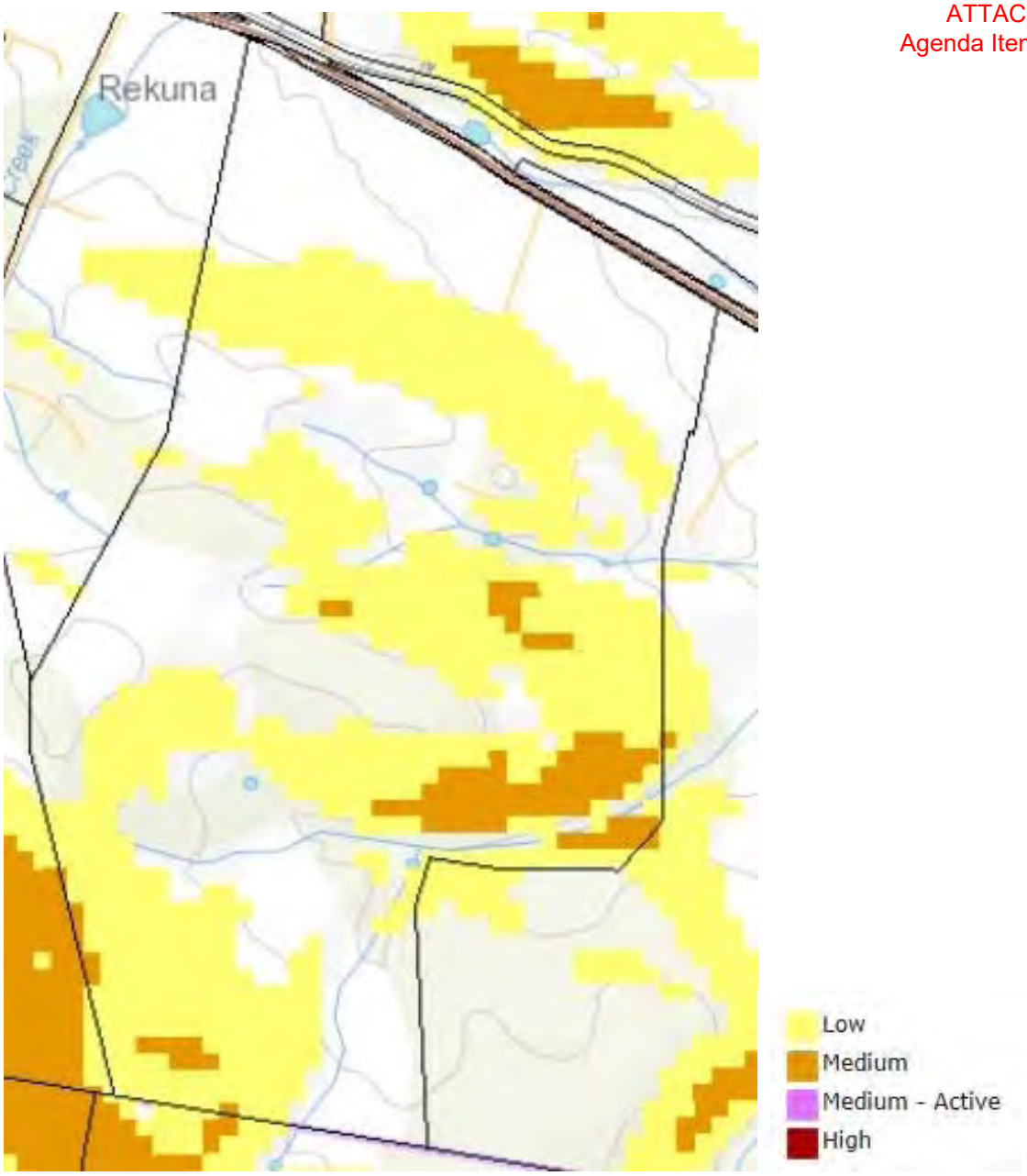


Figure 8 Landslide Mapping – Hazard Bands

(Source: TheLIST; http://maps.thelist.tas.gov.au/listmap/app/list/map)

3.8 Bushfire Assessment

A preliminary Bushfire Assessment was undertaken by Castellan Consulting and is provided at Appendix G. In the absence of detailed plans for development of the buildings, roads and other structures, the assessment addressed the high level potential bushfire related issues that may impact on the proposed development. The assessment concluded that by virtue of the significant distances between the proposed buildings and property boundaries, and that within the temple complex there is predominately managed landscaping, there is ample scope to provide substantial hazard management areas and the opportunity to achieve a BAL-LOW classification. Alternatively, specific construction requirements could be applied to building development if required to retained important vegetation. It will be necessary for the different design disciplines to work together to address the bushfire hazard, and related creation of appropriate hazard management areas. This includes provision of water supply, access arrangements, and emergency management plan.

3.9 Aboriginal Heritage

The subject site contains areas of known Aboriginal heritage significance. An Aboriginal Heritage Assessment has been undertaken by CHMA. The full report is provided at Appendix H. During the course of field survey, one Aboriginal site or isolated artefact was found. In addition to the single stone artefact found, five separate sand stone overhangs were recorded within the study area. These overhangs are all clustered along a sand stone cliff line in the central portion of the study area, outside the project footprint. While potential sites of Aboriginal occupation or use, the survey did not find any evidence that these overhangs had ever been occupied. No stone artefacts were identified within or immediate vicinity of the overhangs, no hearths (Aboriginal fire places) were identified on the shelter floors, and there was no evidence of aboriginal rock art. Given the absence of evidence of Aboriginal occupation, these overhangs have not been classified as Aboriginal sites.

The report concludes that, from the field survey work and general impressions generated, artefact densities are likely to be low to very low, reflecting sporadic Aboriginal activity throughout the landscape. This is generally consistent with the findings of previous archaeological research in the region.

If during the course of the proposed development works, previously undetected archaeological sites or objects are located, the processes outlined in the Unanticipated Discovery Plan (part 12 of the report) should be followed.

3.10 Visual Assessment

A visual assessment has been undertaken by GHD. The assessment has been undertaken via a viewshed analysis. The analysis considers the heights of the proposed buildings on the site in relation to the contours in the area to determine from which locations future development will be visible.

The view shed analysis does not take into account existing features such as vegetation and other buildings, structures or other development in the area, noting that these features have the capacity to further obscure views of the new buildings forming the Tasmanian Buddhist Cultural Park. The viewshed analysis is outlined in Figure 9, with a scaled version provided in Appendix I.

Importantly the analysis demonstrates that, as a result of the ridgeline lying between the site and the town of Richmond, the buildings will not be visible from the historic Richmond township and key tourist sites. The areas from which the site is most visible comprises mostly agricultural land in the immediate vicinity, although as outlined, does not take into account landscape features such as vegetation that would further obscure visibility into the site.

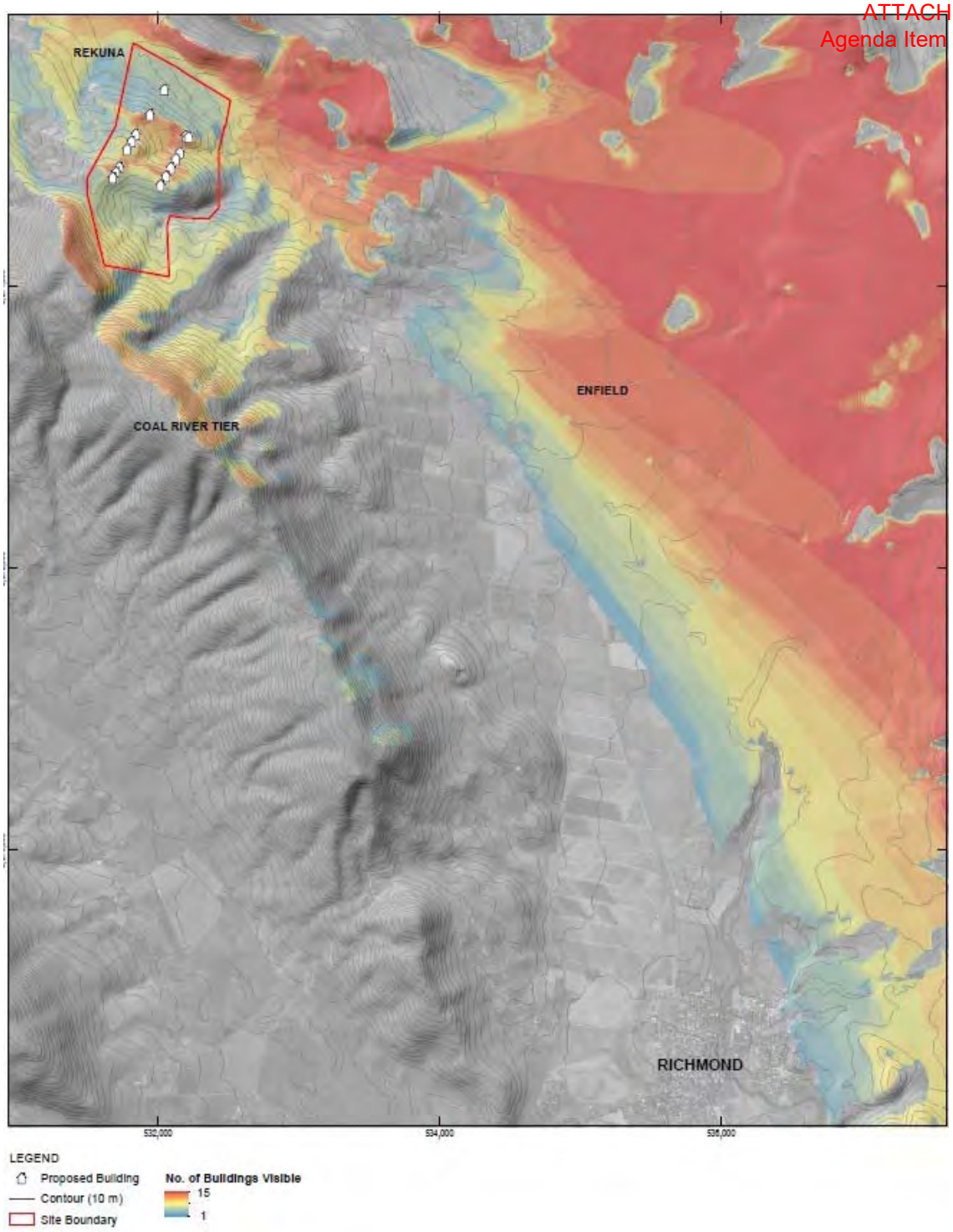


Figure 9 Viewshed Analysis

The Buddhist Cultural Park will be a landmark development, and as a consequence will have an impact visually in the immediately surrounding area, particularly from areas along Tea Tree Road. Whilst the facility will become a new attraction to the area, it is also important to consider the value attributed to the existing landscape and the role it plays in creating an attractive rural setting.

The Tea Tree Road area provides for a pleasant rural setting. However, within the context of the wider Coal River Valley and the respective landscape settings of both Richmond and Campania, and their associated transport corridors along the Richmond Road and Colebrook Road, the area does not provide for a distinctly different landscape requiring special protection.

In this regard, the visual impact of the proposal, whilst notable, will not adversely impact a significant rural landscape setting or an area of high landscape value. Development provisions drafted as part of the proposed amendment have also been prepared to require future development is of a high quality and guided by strategic provisions that ensure the character of the site remains true to the proposal's original intent.

On balance therefore the proposal, while visible from vantage points in the immediate vicinity, will not have an impact on the wider landscape values of the important Richmond Valley tourist route.

3.11 Economic Impact Assessment

An EIA of the proposed Tasmanian Chinese Cultural Park has been undertaken by SGS Economics and Planning (Appendix J), based on data provided by the Holy Tantra Esoteric Buddhism Inc.

The report documents the results of the economic impact assessment and highlights the benefits to be found during both construction and operational phases. In summary during the construction phase:

- There will be direct employment of 103 full-time equivalent jobs in the Greater Hobart and Southern Midlands regional economy, and the region will gain approximately $18 million in direct value-added from construction activity.
- When flow-on effects are incorporated the first phase of the development will support approximately 295 full-time equivalent jobs in the regional economy, and the region will gain $43.0 million in value-added from this construction; and
- The long term impacts of all stages of the proposed Park (with a construction timeframe of up to 200 years) has the potential to generate a further $62 million worth of value add, and 425 FTE jobs which includes all flow-on effects. However, these impact estimates over the very long period for construction are highly uncertain and should be considered indicative only.

During the ongoing operation and the attraction of students and visitors to the Park and Greater Hobart, the ongoing operation of the Accommodation will structurally:

- In the short term (to the year 2025), directly support approximately 143 full-time equivalent jobs in the Greater Hobart and Southern Midlands economy, and the region will gain the equivalent of $9.6 million in direct value-added per annum. In the medium term (2025 - 2040), as visitation and student numbers increase, the Park will directly support approximately 401 full-time equivalent jobs in the Greater Hobart and Southern Midlands economy, and the region will gain the equivalent of $26.7 million in direct value-added per annum;
- When flow-on effects are incorporated the development will support approximately 196 full-time equivalent jobs in the Greater Hobart and Southern Midlands economy, and the region will gain $17.2 million in value-added per annum in the short term. In the medium term, this increases to an annual value-added of $48 million and support for 550 full-time equivalent jobs.

The quantified economic impacts do not include wider unquantified social and cultural benefits, meaning the overall positive impact on the Southern Midlands and Greater Hobart, as well as all of Tasmania, would be higher still. Important but unquantified benefits include:

- Enhanced cultural exchange and understanding;
- Increased diversity in Tasmania's education sector;
- Broadening of Hobart's and Tasmania's tourism offerings; and
- Enhanced worldwide exposure to the Tasmanian brand for tourism and trade.

4. Interim Scheme

4.1 Zoning

The site is zoned Rural Resource under the Southern Midlands Interim Planning Scheme 2015 (the Interim Scheme). Adjacent land to the east and north of the rail line opposite is zoned Significant Agriculture, while to the rear adjacent the southern boundary the land is zoned Environmental Living. Tea Tree Road and the Rail Line are both zoned Utilities.

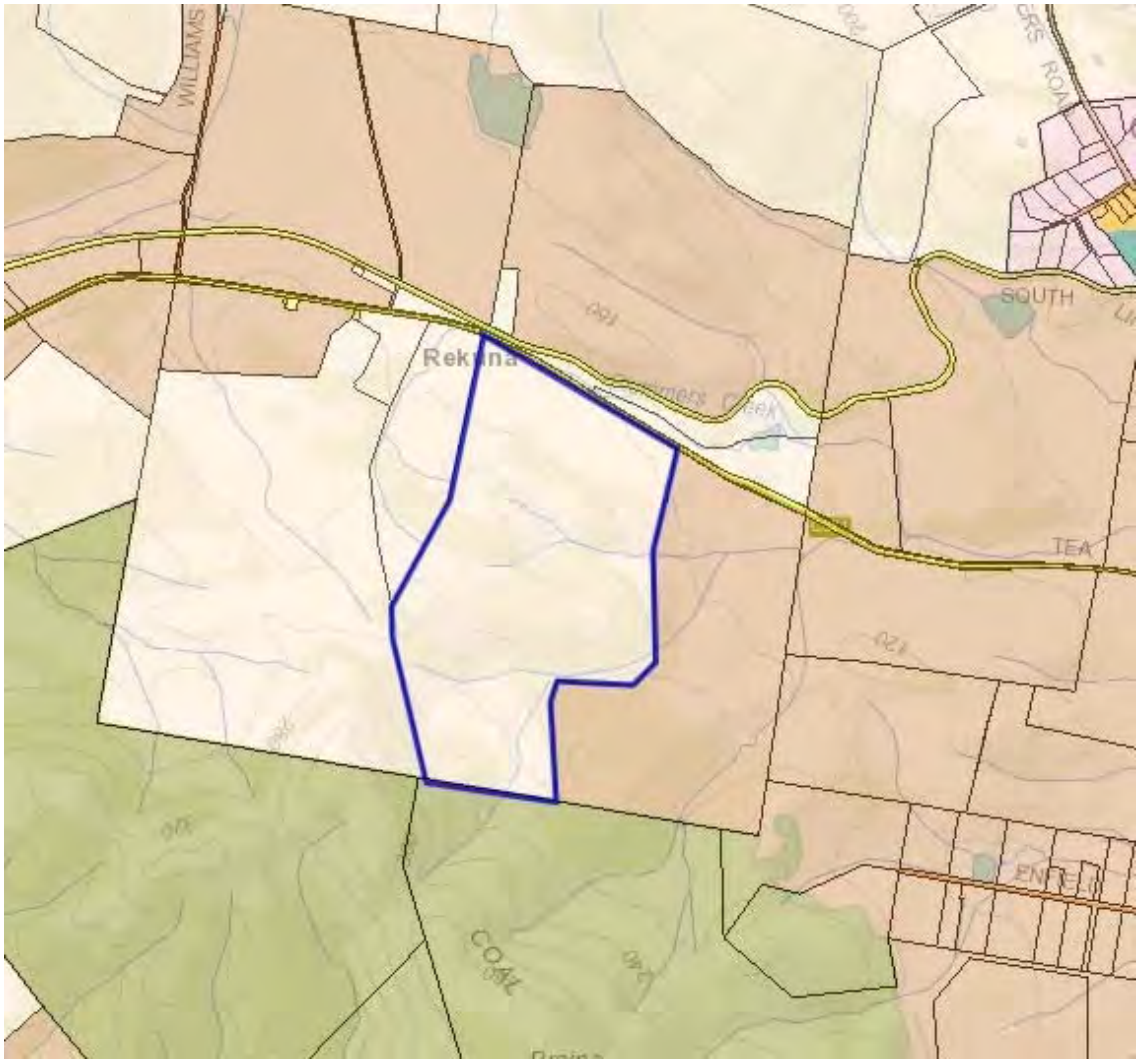


Figure 10 Zoning

4.2 Overlays

The site is also impacted by two overlays, the first and most extensive relates to a Landslide Hazard Area Overlay (see Figure 11), while an Attenuation Area Overlay (see Figure 12) associated with the neighbouring Williams Quarry has recently been included in the Interim Scheme following an amendment process. The landslide hazard rating is low for the majority of the site impacted and applications for future development within an area identified as landslide hazard and having a medium or high landslide risk is required to provide a landslide risk management report by a suitably qualified person. The report must demonstrate that the landslide risk associated with the buildings and works either are an 'acceptable risk' or capable of feasible and effective treatment through hazard management measures so as to be a tolerable risk. This is a matter dealt with at the development applications stage.

Similarly, in relation to the attenuation area applied to the neighbouring Williams Level 2 approved quarry, development for a sensitive use within the attenuation area must demonstrate that it will not be impacted by environmental harm from the operation of the quarry. A sensitive use is defined as "..meaning a residential use or a use involving the presence of people for extended period except in the course of their employment, such as a caravan park, childcare centre, dwelling, hospital or school." Development for a sensitive use within the identified attenuation area is to have regard to the performance criteria set out in the Scheme, including:

- The operational nature of the use with potential to cause environmental harm, its scale and intensity and degree of hazard or pollution that may be emitted from the activity;
- The degree of encroachment by the sensitive use into the attenuation area; and
- Measures in the design, layout and construction of the development for the sensitive use to eliminate, mitigate or manage effects of emissions.

As for landslide considerations, applications for development within the identified attenuation area is dealt with at the development application stage.

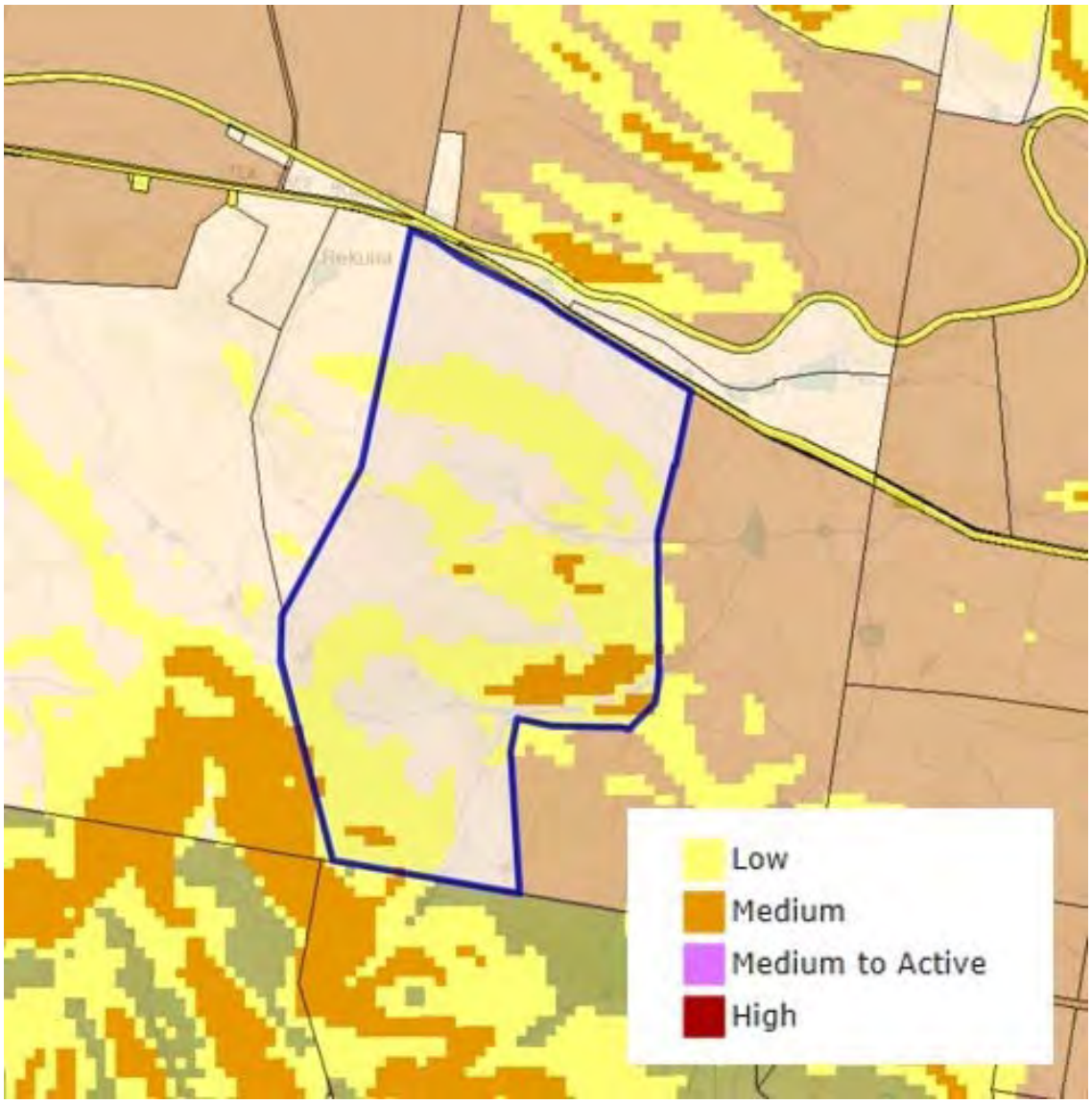


Figure 11 Landslide Hazard Area Overlay

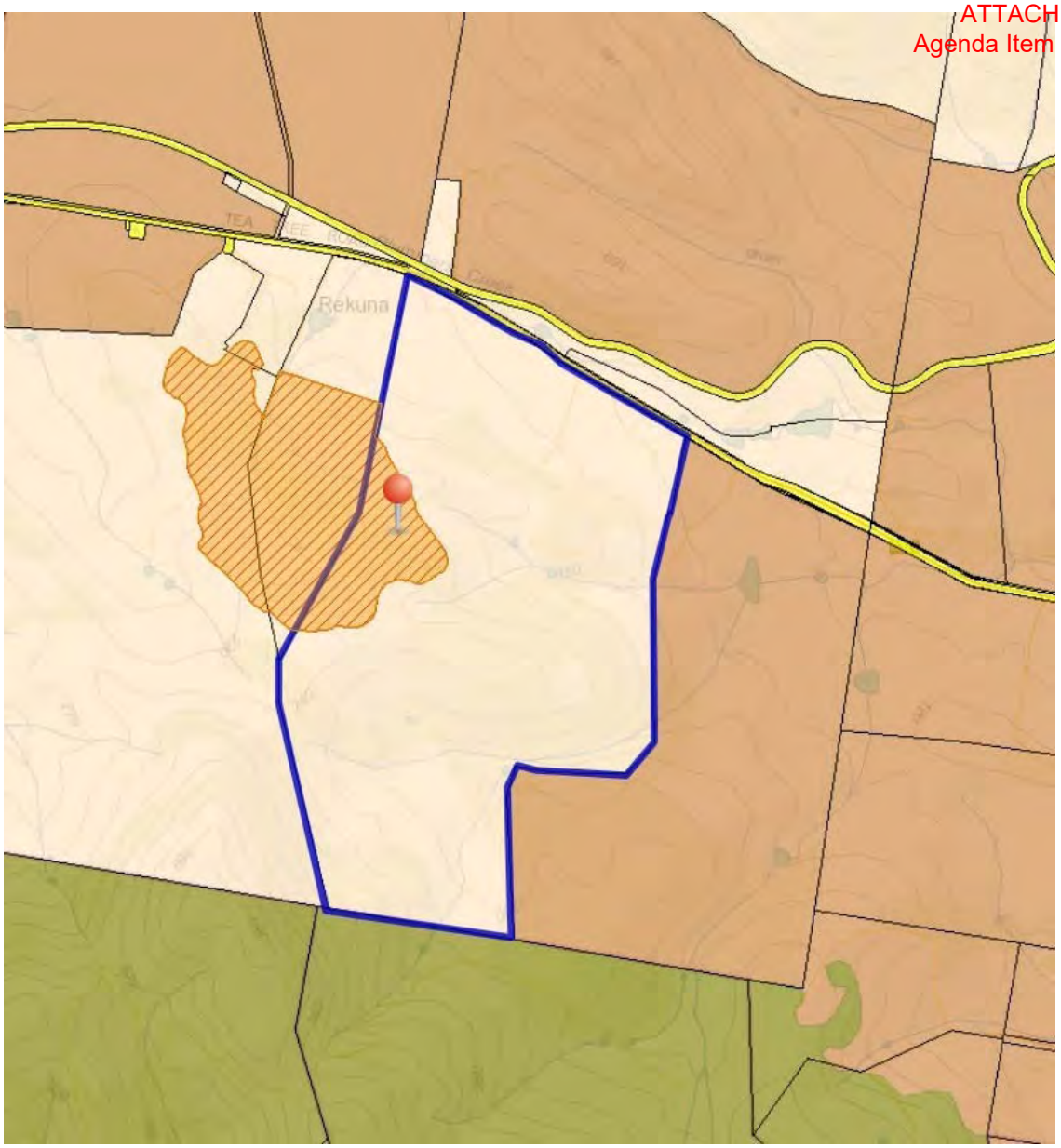


Figure 12 Attenuation Area Overlay

5. Proposal

The proposal is for the subject land to be rezoned under the Interim Scheme from Rural Resource to Particular Purpose Zone 3 - Buddhist Cultural Park Zone. A descriptive overview of the proposal is provided in Section 1.4, including concept plans that accompany the application.

5.1 Impact of the Rezoning

5.1.1 Overview

The purpose of the rezoning is to facilitate the development of the Buddhist Cultural Park as outlined in the conceptual plans provided. The PPZ proposed allows for use and development provisions to be tailored specifically to the intended use and development of the site. This approach ensures that the redevelopment is capable of approval under an alternate zoning, and that inappropriate use and development does not establish on the site.

It is anticipated that the PPZ will provide for development that specifically responds to on-site features, such as its topography, flora and fauna values, and Aboriginal heritage values, constraints such as landslide and attenuation distances, access, visual impacts, while also being cognisant of the adjacent rural land uses.

The PPZ will facilitate a unique, landmark development. The provisions of the PPZ have been drafted largely to provide a level of certainty in development outcomes, whilst building in flexibility to vary development where needs be, acknowledging the stages and timeframes involved in this particular proposal. The use and development standards are guided by Zone Purpose and Local Area Objective statements, to ensure future use and development is consistent with the original development intent for the site, and is of a high quality.

5.1.2 Key Strategic Changes

As outlined in more detail elsewhere in this supporting report, the Interim Scheme Economic Infrastructure Local Objectives identifies the establishment of the “Chinese Buddhist Cultural Park”, and application of a particular purpose zone over the subject land in order to achieve the intended outcome.

A key change is the conversion of the subject land, currently identified for rural purposes by application of the Rural Resource Zone, to use for a non-agricultural use and development. As outlined in the land capability assessment, the land has limited capacity for agricultural production, and importantly the proposal does not involve the subdivision or its further fragmentation. The Buddhist Cultural Park development is dependent on a peaceful rural setting and a spacious allotment and therefore the establishment of such a facility will likely involve the conversion of rural lands irrespective of its particular location.

The facility will be open to the public and therefore is anticipated to provide for a significant attraction at a regional level. With its proximity to a number of existing attractions in the area including local wildlife parks, vineyards and their wineries, the township of Richmond, and its accessibility to the Midland Highway, it will strengthen the tourism potential of the local area, including greater Hobart more generally. Due to its uniqueness, scale and location outside of a major settlement or tourist area, it will have the capacity to draw tourists into the locality. With potential to become a significant Buddhist temple complex in the Tasmanian context, and incorporating extensive educational and cultural activities, the development will also draw a number of visitors from outside of Tasmania and Australia. The proposal is therefore expected to provide a number of ongoing local and regional economic benefits once operational. Short to medium-term benefits are also expected as a result of the construction phase. The economic and social benefits of the project are expanded upon in section 6.3.1 of this report.

6. Planning Assessment

6.1 Southern Midlands Interim Planning Scheme 2015

6.1.1 Clause 2.1 Purpose

2.1.1 The purpose of this planning scheme is:

a) *To further the Objectives of the Resource Management and Planning System and of the Planning Process as set out in Parts 1 and 2 of Schedule 1 of the Act; and*

b) *To achieve the planning scheme objectives set out in clause 3.0 by regulating or prohibiting the use or development of land in the planning scheme area.*

Comment: The proposal is assessed against Schedule 1 of LUPAA in Section 6.3 of this report and against Clause 3 in Section 6.1.3 of this report.

6.1.2 Clause 2.2 Regional Land Use Strategy

Comment: Assessment against the Regional Strategy is included in Section 6 2 of this report.

6.1.3 Clause 3.0 Planning Scheme Objectives

The Interim Scheme sets out a number of Planning Scheme Objectives, which identify desired outcomes and actions intended to achieve the outcomes in relation to infrastructure, residential growth, activity centres, economic activity, natural and productive resources, water, healthy communities, competitiveness and liveability both at a regional and local level. A number of the desired outcomes are considered relevant to the assessment of the proposed amendment and creation of the new PPZ required to facilitate the establishment of the Buddhist Cultural Park.

Clause 3.0.1 Infrastructure: Regional Objectives

Objective:	
To adopt a more integrated approach to planning and infrastructure.	
Desired Outcomes:	Outcomes to be achieved by:
a) The efficiency of existing physical infrastructure is maximised. b) Physical infrastructure and servicing is planned, co-ordinated and delivered in a timely manner to support the regional settlement patters and specific growth management strategies. c) .A integrated transport and land use planning system that supports economic growth, accessibility and modal choice in an efficient, safe and sustainable manner is developed and maintained.	a) Facilitating developer charges for b) Off-site infrastructure provision which send the correct price signals to ensure the most efficient use of infrastructure overall. c) Protecting the function and safety of transport infrastructure through a road and rail assets code. d) Recognising and protecting major utilities through the use of the Utilities Zone. e) Protecting land identified for future major roads from inappropriate or premature development by applying the Particular Purposes Zone 2 – Future Road corridor.

Comment:
a) Development of the Buddhist Cultural Park will utilise existing reticulated water provided to the existing house, with an expectation that upgrades to the service would be funded by the developer.
b) The TIA accompanying the application demonstrates that Tea Tree Road is of sufficient size to cater for the expected increases in traffic generation given the regional transport route function it performs.
c) No impacts are anticipated on the Utilities Zone applied to the adjacent Tea Tree Road and Rail Line.
d) There are no future major road corridors affecting the subject land.

Clause 3.0.1 Infrastructure: Local Objective

Objective:	
Desire Outcomes	Outcomes to be achieved by
a) To maintain, improve and maximise the community benefit from existing and future infrastructure. b) To ensure infrastructure is appropriate to support development, is used efficiently and is expanded as necessary in an orderly and integrated manner.	
a) Adequate public infrastructure exists, or will be provided, to support land use envisaged by this Planning Scheme. b) Infrastructure is utilised efficiently. c) Infrastructure is designed to an appropriate standard under affordable best practice'. d) Key infrastructure with potential for amenity impacts is protected from encroachment and fettering by sensitive use or other incompatible use. e) Council's strategic land use planning is integrated with its asset management programs and long- term financial and capital works planning. f) Development of unserviced land is compatible with the capacity of the land and does not create demand for unplanned public infrastructure. g) New and expanded irrigation schemes are facilitated. h) Improved access to modern communications infrastructure is facilitated	a) Ensuring land zoned for residential, business and industrial use is, or can be, adequately serviced to provide for its intended use. b) Maximising densities within settlements, where appropriate, through appropriate zoning and development standards. c) Ensuring infrastructure necessary to service new development is provided as part of that development and that any off-site impact is mitigated. d) Applying the Utilities Zone to major utilities, facilities and corridors including major roads, the Particular Purpose Zone 2 – Future Road Corridor Zone to the route of the future Midland Highway Bagdad Bypass and using the Electricity Transmission Infrastructure Protection Code to protect major electricity transmission assets. e) Ensuring the zoning of land is cognisant of future implications for asset management and new capital works planning. f) Applying a suite of zones that is commensurate with the capacity of the land and avoids a demand for unplanned public infrastructure. g) Ensuring new development does not increase storm water. discharge above the pre-existing conditions unless downstream capacity exists or will be provided h) Ensuring irrigation infrastructure and associated agricultural use and downstream capacity exists or will be provided.

Objective:
Comment:

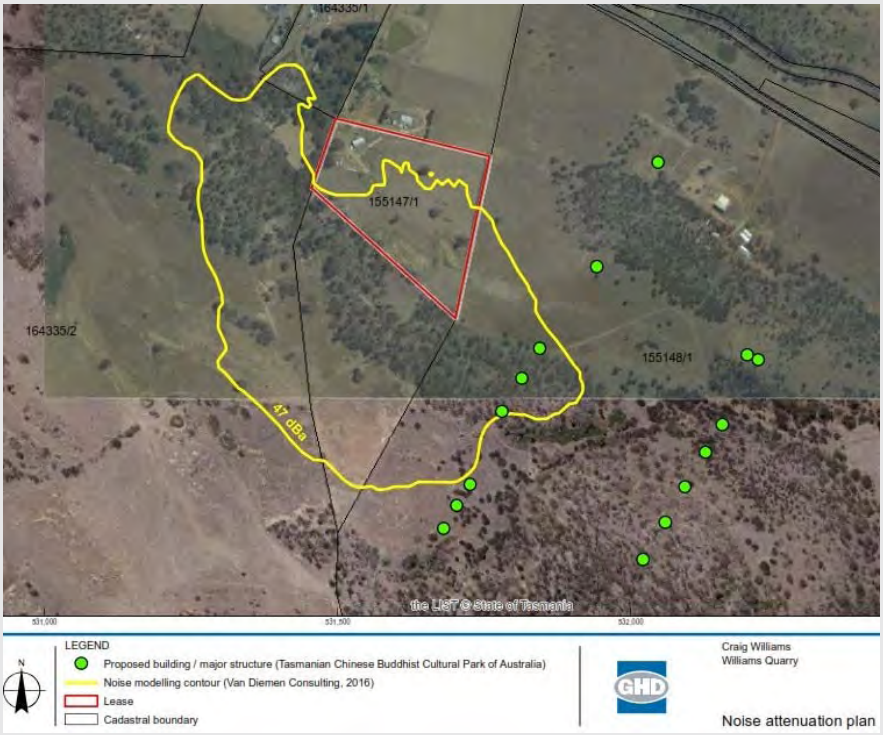
- Adequate infrastructure will be provided to service the proposed development. In part there is reliance on on-site wastewater treatment and disposal. However, the subject land is of sufficient size and with soil characteristics, as to allow on-site treatment without impacting on neighbouring properties.
- Extension of the existing reticulated water supply can be achieved without major extension of the existing network.
- Detailed servicing plans and infrastructure requirements will be undertaken during the design phases, including the staging of development.
- The proposed Buddhist Cultural Park has been under consideration for a number of years and has been identified as a future project in the preparation of the Interim Planning Scheme. In this respect the proposed Buddhist Cultural Park is not creating demand for unplanned public infrastructure.
- The proposed development of the Buddhist Cultural Park has no impact on existing irrigation infrastructure and associated agricultural use and development. The SE Irrigation Scheme services agricultural activities opposite and on adjacent land to the proposed Buddhist Cultural Park site, and its continued operation is not fettered or diminished by the creation of a new PPZ over the subject land. A more detailed assessment of the potential impacts on agricultural value-adding activities is provided elsewhere in this report.

Clause 3.0.4 Economic Infrastructure: Regional Objectives

Objective:	
To improve the region's economic infrastructure.	
Desired Outcomes:	Outcomes to be achieved by:
a) The supply of well-sited industrial land is identified, protected and managed to meet regional need across the 5, 15 and 30 year horizons. b) Existing strategically located export orientated industries are protected and managed. c) Ensure Industrial development occurs in a manner that that minimises regional environmental impacts and protects environmental values.	a) Applying the General Industrial zone to recognise the medium to *higher impact industrial uses in the area.* b) Applying the light industrial Zone to recognise the lower level impact industrial uses in the area. c) Minimizing and preventing land use conflicts through appropriate siting of industrial land and the use of an attenuation code.

Comment:

While not of itself located in an industrial zone, the adjacent approved Williams Level 2 Activity Quarry represents a use that is protected under the Interim Scheme by application of an Attenuation Area Overlay. The Overlay was applied as a result of a recent Tasmanian Planning Commission determination and related Resource Management and Planning Appeal Tribunal decision approving expansion of the quarry to its current Level 2 Activity status. The Attenuation Area has minimal impact on the footprint of the proposed Buddhist Cultural Park development, with the buildings shown as potentially affected used as museum (closest to frontage), research and study hall and cultural exchange hall respectively. In the event that a sensitive use (such as caretakers residence or similar) was proposed, the Interim Scheme establishes the processes for assessment to be followed.

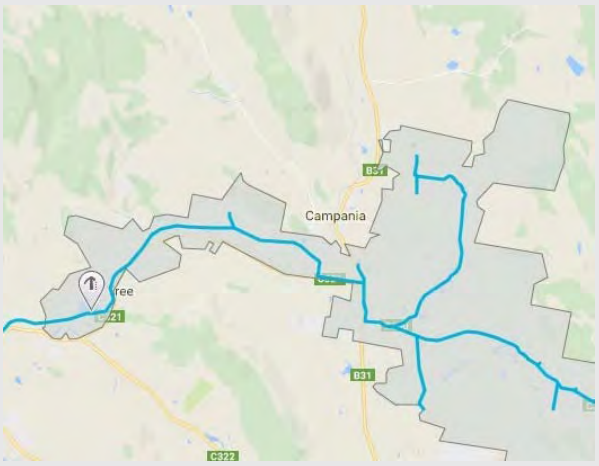


Clause 3.0.4 Economic Infrastructure: Local Objectives

Objective.	
To improve the economic infrastructure of the Southern Midlands.	
Desired Outcomes:	Outcomes to be achieved by:
a) The major road, rail, telecommunications, gas and electricity infrastructure within the municipality are protected from fettering by inappropriate use and development, whilst ensuring opportunities for appropriate access to these assets for economic development is provided. b) Opportunities for industrial use are identified, protected and managed to meet the needs of the municipal area across the 5, 15 and 30 year time horizons: specifically in regard to Oatlands and generally in regard to other towns & villages and rural areas. c) Potential for the establishment of industries requiring large attenuation distances and close proximity to major transport routes is generally maintained in rural areas. d) The municipality's heritage assets are protected, recognising their substantial contribution to the area's unique competitive advantage within the tourism sector. e) The Chinese Buddhist Cultural Park at Tea Tree Road, Rekuna is established. f) The former Oatlands Racecourse and surrounding area are utilised for existing and new equestrian g) Oriented activity, and potential for conflict with non-equestrian use is minimised. h) Potential for onsite renewable energy to support economic activity is maximised	a) Maintaining specific industrial zoning at Oatlands to meet short and long term need for service and export industry, including for potential new industries ancillary to the Midlands Irrigation Scheme. b) Ensuring the Village Zone for settlements other than Oatlands allows for existing and future local i) service industries where appropriately located to minimise potential for land use conflict. c) Utilising the Heritage Code to recognise and protect heritage places and precincts. d) Applying a particular purpose zone at Tea Tree Road Rekuna, that facilitates the establishment of the Chinese Buddhist Cultural Park. e) Providing an Oatlands Equestrian Area Specific Area Plan over the former Oatlands racecourse and surrounding area. j) f) Regulating wind and solar energy development for residential, industrial, commercial and agricultural use through the Wind and Solar Energy Code and appropriate exemptions.
Comment:	
A key desired outcome of the Interim Scheme is the establishment of the Buddhist Cultural Park on the subject land at Rekuna (see Desired Outcome (e) and supporting statement (d)). The Interim Scheme also identifies that this is to occur through application of a Particular Purposes Zone to the subject land. This amendment is entirely consistent with, and assists meeting this desired outcome.	

Clause 3.0.5 Productive Resources: Regional Objectives

Objective:	
To support the region's productive resources.	
Desired Outcomes	Outcomes to be achieved by:
a) Agricultural production on land identified as regionally significant is supported by affording it the highest level of protection from fettering or conversion to non-agricultural uses. b) The value of non-significant agricultural land is managed and protected in a manner that recognises sub-regional diversity in land and production characteristics. c) Regionally significant extractive industries are supported and protected. d) The aquaculture industry is supported. e) The forest industry is supported.	a) Recognising and protecting districts comprised of substantial areas of identified significant agricultural land by applying the Significant Agriculture Zone b) Prohibiting or substantially restricting non-agricultural uses within the Significant Agriculture Zone, allowing for such uses only where ancillary and/or subservient c) Providing large buffer distance between significant agriculture and residential development, and allow residential development otherwise only where it can be demonstrated that it will not fetter agriculture uses on neighbouring land. d) Restricting subdivision within the Significant Agriculture Zone to that necessary to facilitate the use of the land for agriculture. e) Providing for down-stream processing of agricultural products on farm' f) (Omitted by Southern Midlands Council) g) Providing for non-agricultural resource development, such as forestry, extractive industry and onshore aquaculture facilities within the Rural Resource Zone. h) Providing Subdivision standards in the Rural Resource Zone that are consistent with the optimum size for the predominating agricultural enterprise. i) Providing for resource processing industries within the Rural Resource Zone
Comment:	
As outlined, the land has a history of use for rough grazing, and the land capability assessment has determined it has limited potential for more intensive agricultural use. Neither is it suitable for forestry, and whilst the area more generally forms part of the southeast irrigation sub-region, the subject land does not fall within the area serviced by the irrigation scheme. Tea Tree Road marks its southern boundary.	



The land is not considered to have the qualities and attributes that warrant it being included in the adjacent Significant Agriculture zoned land. Nor will its conversion to a non-agricultural use lead to a fettering of agricultural activity on those areas zoned Significant Agriculture. Agricultural activities on the land north of Tea Tree Road is further buffered from the proposed Buddhist Cultural Park by the railway line, and the topography is also less conducive to intensive irrigation activity occurring in close proximity to the subject land.

The land is considered 'non-significant agricultural land' as referred to in policy b) above. The conversion of this land for the purposes of the Buddhist Cultural Park is not significant at a regional level given the relatively small development footprint proposed, and its limited suitability for agricultural production.

As identified under the discussion of economic objectives, the adjacent gravel quarry located and operating on the land directly adjacent at 1356 Tea Tree Road, is not considered a 'regionally significant activity'. Notwithstanding, and as a result of RMPAT, TPC and EPA processes, the quarry and related crusher has a permit to operate as a Level 2 Activity, and a site specific Attenuation Area has been applied under the Interim Scheme. The Attenuation Area impacts development of the proposed Buddhist Cultural Park to the extent that future sensitive uses will seek to avoid locating within the buffer area. In the event that a sensitive use were to be proposed within the buffer area, Clause E9.7.2 and its related performance criteria sets out the criteria to be applied in assessing a new sensitive use. A sensitive use is defined in the Interim Scheme as being:

"means a residential use or a use involving the presence of people for extended periods except in the course of their employment, such as in a in a caravan park, childcare centre, dwelling, hospital or school."

The performance criteria requires that the application must demonstrate that a sensitive use is not impacted by environmental harm from the operation of the quarry, having regard to:

- The nature of the use with potential to cause environmental harm i.e. how the quarry operates and the nature of the potential environmental harm such as hours of operation, noise, dust etc;
- The degree of encroachment of the sensitive use into the Attenuation Area; and
- Any measures in the design, layout and construction of the development for the sensitive use to eliminate, mitigate or manage effects of emissions.

The relevance of this provision would be tested when a development application for the use and development of the land is submitted.

The land is not currently associated with any forestry industry and is inappropriate for an aquaculture industry.

Clause 3.0.5 Productive Resources: Regional Objectives

Objective:	
To support the productive resources of the Southern Midlands and encourage diverse and viable high value agricultural enterprise and other rural resource industries.	
Desired Outcomes:	Outcomes to be achieved by:
a) The municipal area's best agricultural land remains available for intensive agricultural use into the long term, especially where serviced by existing irrigation schemes, planned irrigation schemes or possible future irrigation schemes. b) A diverse range of agricultural activities is encouraged and new downstream agricultural processing activities are supported. c) Potential for fettering of agricultural and other rural resource use by encroachment of sensitive use is minimised. d) Agricultural enterprises are supported through opportunity for other income streams including visitor accommodation, paddock-to-plate enterprises and farm gate sales (where traffic safety allows) e) Mineral resource extraction sites are protected from encroachment from sensitive use. f) The number of titles in rural areas is generally not increased, recognising that land tenure is currently generally too fractured. g) Inappropriate historical configurations of titles are able to be modified to produce a more rational division of land tenure in order to improve agricultural viability of individual enterprises and increase output.	a) Ensuring the Rural Resource Zone allows for existing and future rural industry including down-stream processing, and other industries requiring large attenuation distances, taking advantage of the major state road and rail routes through the municipality. b) Applying the Significant Agricultural Zone to the best quality agricultural land, especially where irrigation schemes exist or may exist in the future. c) Allowing complementary activities in the Rural Resource Zone and Significant Agricultural Zone to facilitate agricultural investment and use. d) Ensuring complementary retail sales and food services that encourage agricultural investment and production can be considered in rural areas. e) Ensuring that use and development standards do not restrict opportunities for agricultural production including new or unique modes of production. f) Applying the Attenuation Code to ensure adequate separation from mineral resources extraction sites and other industries with potential impacts from sensitive use. g) Provide for the reorganisation of existing rural lots to consolidate good agricultural land and proactively address existing inappropriate division of land tenure.

Comment:

a) Refer to response in Regional Objectives in the previous section.

b) The site is not currently associated with any downstream processing activities, so will not result in the conversion from such uses. As outlined the subject land has been occupied by the current owners for some 20 years, and has essentially been used for residential purposes. The conversion of the land to the Buddhist Cultural Park will not limit the potential for new downstream agricultural processing activities from establishing locally or within the region. As outlined, the land has limited potential for agricultural uses.

c) It is not anticipated that the location of the quarry will result in future land use conflict with the Buddhist Cultural Park. As noted previously a quarry is approved and operating as a Level 2 Activity on the adjacent land at 1356 Tea Tree Road. The impacts such as dust and noise are not considered to generate significant enough impact to impede the Buddhist Cultural Park activity. As noted an Attenuation Area has been applied under the Interim Scheme, and future use and development of the Buddhist Cultural Park must consider the provisions of E9.0 attenuation Code. Similarly, it is not anticipated that the future uses and developments on the subject land will impede the operation of the quarry. The proposal does not involve the establishment of a sensitive use adjacent to the existing quarry, and use and development associated with the Buddhist Cultural Park will be wholly contained within the site.

d) The proposal is not directly associated with an agricultural enterprise. However, as the site is not currently used for agricultural purposes and has limited capacity for such use, it is unlikely that it could provide for an agricultural enterprise associated with the site's productive values.

e) Refer to response c) above.

f) The amendment does not allow for subdivision of the site unless for the provision of public open space, a riparian or littoral reserve or utilities. Further fragmentation of the land will not arise as a result of the rezoning.

g) No subdivision is proposed.

Clause 3.0.6 Natural Environment: Regional Objectives

Objective:	
To increase responsiveness to the region's natural environment.	
Desired Outcomes	Outcomes to be achieved by:
a) The region's biodiversity is not significantly diminished and ecosystems' resilience to the impacts of climate change is facilitated. b) Significant areas of threatened vegetation communities, flora and fauna species, habitat for threatened species and places important for building resilience and adaptation to climate change for these, are recognised and protected. c) The biodiversity and conservation values of the Reserve Estate are protected. d) The spread of declared weeds under the Weed Management Act 1999 and other weeds of local significance is prevented and their removal is facilitated. e) There is a response to the risk of soil erosion and dispersive and acid sulphate soils. f) Significant biodiversity, landscape, scenic and cultural values of the region's coast are recognised and protected. g) Use and development in coastal areas is responsive to effects of climate change including sea level rise, coastal inundation and shoreline recession. h) The risk of loss of life and property from bushfires is minimised. i) The risk of loss of life and property from flooding is minimised. j) Life and property is protected from possible effects of land instability. k) Land and groundwater is protected from site contamination and progressive remediation of contaminated land required where a risk to human health or the environment exists.	a) Protecting land with the highest environmental values through the application of the Environmental Management Zone. b) Protecting significant environmental values through codes dealing with biodiversity, landscape, wetlands & waterways and water quality & stormwater. c) Avoid applying urban zones and the Significant Agriculture Zone to land with significant environmental values. d) Allow biodiversity 'off sets' to compensate for loss of environmental values if Council policy has determined that such values cannot be lost without compensation. e) Providing appropriate setbacks for development from the boundaries of reserved land. f) Minimising loss of native vegetation and/or soil disturbance, and preventing the spread of weeds from development sites through construction management provisions. g) Avoiding zoning any further land for urban development identified as at risk from rising sea levels. h) Back-zoning land identified as potentially at risk from rising sea levels where not substantially developed. i) Managing areas identified as potentially at risk from rising sea levels through a coastal hazards code. j) Recognising and protecting climate refugia through appropriate zoning and/or code. k) Generally zoning undeveloped land along the coast as Environmental Management, Recreation or Open Space. l) Avoiding zoning any new areas identified as at unacceptable risk from bushfire, flooding, land instability, dispersive and/or acid sulphate soils for urban development. m) Recognising areas at risk from bushfire and managing use and development accordingly through a bushfire prone areas code. n) Recognising areas at risk from flooding and managing use and development accordingly through a flood prone areas code. o) Recognising areas at risk from land instability and managing use and development accordingly through a landslip code. p) Recognising areas potentially at risk from site contamination and managing use and development accordingly through a potentially contaminated land code. q) Recognising areas at risk from soil erosion, dispersive and acid sulphate soils and managing use and development accordingly through construction management provisions and an acid sulphate soils code.

Comment:

An ecological assessment has been undertaken of the natural values of the subject land and no significant impact is anticipated. The assessment concluded that the proposed project would result in negligible disturbance to ecological values. In relation to the other outcomes, the following assessment is made:

- A bushfire assessment has been undertaken and bushfire hazard can be accommodated within the development footprint subject to the more detailed design phases;
- Land stability is identified as an issue that will need to be considered when undertaking more detailed planning and design, although noting that much of the identified landslide risk is categorised as low.
- Soil and environmental management plans will be taken into consideration in accordance with the requirements of the Interim Scheme when planning and design processes are undertaken.
- One aspect of the ecological assessment that is recognised is the need for an appropriate setback to the potential Tasmanian Devil den habitat created along the cliff escarpment within the subject land. This will be reflected in a development standard and setback being established protecting the potential use of these prospective dens in the future.

Clause 3.0.6 Natural Environment: Local Objectives

Objective:	
Desired Outcomes:	Outcomes to be achieved by:
a) Components of biodiversity that are highly valued by the local community are recognised and protected by the zoning of land and the implementation of the Biodiversity Code, noting that biodiversity values of importance at the state or national level are recognised and protected by those levels of government. b) Potential adverse effects from land hazards are avoided, managed or mitigated through the siting, design and construction of new development. c) New use and development is undertaken in a manner that minimises the spread of local environmental weeds identified in the Southern Midlands Weed Management Strategy and their potential impact on agricultural land.	a) Applying the Environmental Management Zone to land formally reserved for conservation purposes. b) Using best available spatial information on biodiversity in the implementation of the Biodiversity Code in a manner that meets local community expectations. This includes minimising impacts on local biodiversity values, (rather than avoiding altogether), and not requiring biodiversity offsets where impacts cannot be avoided. c) Protecting the core biodiversity values of the Chauncy Vale Wildlife Sanctuary through retaining a buffer area on surrounding land. d) Applying various codes that respond to land hazards and by giving due consideration to risk management in the zoning of land. e) Requiring the use of weed management practices during the construction of development and use of land.
Comment:	
As noted above, the subject land biodiversity values are unlikely to be detrimentally impacted. Potential adverse effects from hazards will be taken into account during the detailed planning and design phase of the development in order to meet the various code controls of the Interim Scheme. The ecological assessment concluded that the extent of weeds was not such that a formal weed management plan was warranted; however, it is likely that this would constitute a council permit condition in any event.	

Clause 3.0.7 Water Resources: Regional Objectives

Objective:	
To improve management of the region's water resources.	
Desired Outcomes:	Outcomes to be achieved by:
a) The ecological health, environmental values and water quality of surface and groundwater, including waterways, drinking water catchments, wetlands and estuaries are protected and managed. b) Wetlands and waterways are managed for their water quality, scenic, biodiversity, tourism and recreational values. c) The sustainable use of water is encouraged to decrease pressure on water supplies and reduce long-term cost of infrastructure provision.	a) Protecting environmental values of waterways generally through a number of codes. b) Minimising loss of riparian native vegetation in particular through a code dealing with wetlands & waterways. c) Requiring total water cycle management and water sensitive urban design principles to be applied to relevant development. d) Minimising loss of native vegetation and/or soil disturbance, and preventing the spread of weeds from development sites through construction management provisions. d) Facilitating the use of rainwater tanks in residential areas.
Comment:	
No impacts on existing waterways, wetlands or ground water are anticipated. Areas outside the development footprint will be retained in their natural state and will be used for passive recreation purposes in the main, enabling retention of native vegetation cover.	

Clause 3.0.7 Water Resources: Local Objectives

Objective:	
To ensure the economic and community values of water resources are protected through appropriate management of the resource.	
Desired Outcomes:	Outcomes to be achieved by:
a) High quality water resources are maintained for potable water use, agriculture and other industries, recreational fishing and the environment. b) The current condition and water quality in natural waterways is not adversely affected by new use and development of land. c) Potable water catchments are protected. d) Water infrastructure is protected.	a) Water resources are protected through the application of zones and development standards that have regard to the physical capability of the land. b) New point and diffuse discharges to natural waterways avoid potential for adverse impact to water quality. c) Potable water catchments, waterways and riparian vegetation are protected through the Waterway and Coastal Protection Code. d) Major water infrastructure facilities are included in the Utilities Zone.
Comment:	
No impacts on existing water resources or infrastructure is anticipated. There are no watercourses or wetland areas evident on the site, nor does it form part of a catchment of a potable water supply.	

Clause 3.0.9 Competitiveness: Regional Objectives

Objective	
To make the Southern Tasmanian region nationally and internationally competitive	
a) Strategic economic opportunities for Southern Tasmania are supported and protected. b) Innovative and sustainable tourism is provided for the region.	a) Ensuring key industries are appropriately zoned and provided for. b) Providing for minor tourism use and development in all appropriate zones. c) Applying the Major Tourism Zone to major tourist sites d) Providing for the assessment of new major tourism developments through alternative assessment processes such as Section 43A applications
Comment:	
As outlined in Section 5.1, the proposal is expected to act as a relatively significant tourist attraction to the region. This is largely a result of the Chinese temple style of use and development that will be particularly unique within the Tasmanian rural context. However, tourist activity is largely a 'by-product' of its intended use as a centre for religious, cultural and education experience. The proposal has not involved a combined amendment and development application as it is intended that staging of development will be undertaken over an extended period of time, and as such may be subject to some modification as the more detailed planning and design phases progress. As such, the Interim Scheme standards embodied in the proposed PPZ are drafted so there is both certainty in relation to the range of uses proposed and key development standards, while providing flexibility within the performance criteria to vary development standards where appropriate.	

Clause 3.0.10 Liveability: Regional Objectives

Objective:	
To create liveable communities.	
Desired Outcomes:	Outcomes to be achieved by:
a) An integrated open space and recreation system that responds to existing and emerging needs in the community and contributes to social inclusion, community connectivity, community health and well-being, amenity, environmental sustainability and the economy. b) A regional approach to the planning, construction, management, and maintenance of major sporting facilities to protect the viability of existing and future facilities and minimise overall costs to the community. c) Aboriginal heritage values within the region are recognised, retained and protected for their character, culture, sense of place, contribution to our understanding history and contribution to the region's competitive advantage. d) Historic cultural heritage values are recognised, retained and protected within the region for their character, culture, sense of place, contribution to our understanding history and contribution to the region's competitive advantage. e) Significant cultural landscapes are recognised and managed throughout the region to protect their key values. f) Archaeological values are recognised and managed throughout the region to preserve their key values	a) Applying the Recreation and Open Space Zones to land accommodating active sporting facilities and passive recreation respectively. b) Providing for the recognition and appropriate protection of known historic cultural heritage and archaeological sites of at least local significance within a local heritage code, particularly where not recognised and protected at the State level. c) Ensure development proponents are aware of their responsibilities under the Aboriginal Relics Act 1975. d) Applying the Environmental Management or Environmental Living zones, or a landscape protection code, to recognised significant landscapes, particularly key skylines and ridgelines around Greater Hobart. e) Ensuring development standards address open space, design and appearance issues.
Comments:	
A number of the desired outcomes and their implementation measures have been considered in the application. Specifically, an Aboriginal heritage assessment has been undertaken and one artefact was identified. While thought to have potential for Aboriginal occupation, the line of cliff overhangs located on the subject land were assessed as not being used for shelter, and therefore no site or area specific management recommendations apply. If during the course of development of the site previously undetected archaeological sites or objects are located, the usual processes for dealing with unanticipated items under the *Aboriginal Relics Act 1975* apply. Assessment of the potential for development to be seen from historic Richmond township has also been undertaken. Although subject to more detailed planning and design processes, it is not anticipated that the buildings and structures will be seen from Richmond. The proposed PPZ deals with the design and appearance of buildings.	

Clause 3.0.10 Liveability: Local Objectives

Objective:	
To enhance the liveability of towns, settlements and rural localities within the Southern Midlands.	
Desired Outcomes:	Outcomes to be achieved by:
a) Heritage values of buildings, precincts and cultural landscapes are recognised and protected in accordance with local community expectations. b) Opportunities for passive recreation and connectivity within and between settlements are provided for. c) Sporting infrastructure is improved and opportunity for use is increased. d) Open space is provided in locations and with appropriate dimensions topography and conditions to meet settlement needs.	a) Utilising the Heritage Code to recognise and protect heritage values at places, precincts and landscapes. b) Applying the Recreation Zone to key sporting infrastructure. c) Ensure passive recreation can be considered in all zones. d) Considering open space needs in all strategic land use planning activities and in the rezoning of land. e) Applying the Scenic Landscapes Code to important vistas in rural areas, together with development standards in the Environmental Living Zone and Environmental Management Zones.
Comment:	
The subject land is not impacted by the Scenic Landscapes Code. There is no doubt the proposed buildings will be of a style, scale, and appearance to be highly visible in the local landscape. The development of the Buddhist Cultural Park will be viewed as a 'one-off', not dissimilar to Saffire at Freycinet, MONA on the Derwent River, or Wrest Point Casino in Sandy Bay. The visual aspects of the proposed development is an inevitability if the strategic objective to support development of the Buddhist Cultural Park is to be achieved.	

Clause 3.0.9 Competitiveness: Local Objectives

Objective:	
To ensure that the Southern Midlands is competitive on a state, national and international basis	
a) Opportunities for increased agriculture and associated industries resulting from new and expanded irrigation schemes are facilitated, including downstream processing across all agricultural sectors. b) The Southern Midlands continues to build as a key tourism destination. i. Key tourism facilities prosper, including the Oatlands heritage township and on-farm tourism enterprises. ii. Innovative and sustainable tourism is provided within the Southern Midlands generally, building upon the landscape, values and tourism branding of the Heritage Highway. iii. A diverse range of visitor accommodation facilities are readily available in all areas and all market segments. iv. The historic cultural heritage assets of the Southern Midlands are recognised and protected for their contribution to local sense of place and visitor experience. v. Visually attractive landscapes are protected from adverse permanent change c) Industry is supported by access to major road & rail transport infrastructure, gas & electricity infrastructure and modern high speed communications. d) Opportunities for industries that require large attenuation distances and ready access to major road and rail transport routes are maximised	a) Ensuring zone provisions protect good agricultural land, especially where irrigated or potentially irrigated, and provide for agricultural support industries and downstream processing opportunities. b) Ensuring zones provide the necessary flexibility to maximise opportunities for economic activities that provide new or enhanced attractions for visitors. c) Ensuring visitor accommodation is allowable in residential, rural and commercial areas, where appropriate. d) Applying use and development standards that are best capable of enhancing settlement and municipal area wide sense of place. e) Applying the Heritage Code in order to recognise and protect places and precincts of local significance. f) Using a Scenic Landscape Overlay and Scenic Landscape Corridor to recognise and protect important landscape areas, including the Heritage Mile Heritage Landscape Precinct at Mangalore and the open rural land between Oatlands and the Midland Highway. g) Applying the Telecommunication Code that provides for the efficient rollout of the National Broadband Network. h) Ensuring the zoning of land has regard to the safety.

Comment:

The conversion of the land from the Rural Resource Zone has been discussed previously in this Section and in Section 5.1.

The proposal's role as a tourist attraction is outlined in the previous response to the Regional Objectives. The proposal is expected to contribute significantly to the area's tourist attraction, but will not be established specifically to service that role, and therefore a tourist zoning is not considered appropriate. As a regional attraction it will also contribute to the region's economy both during the construction and operational phases, as discussed previously.

Once developed the proposal will represent a unique, landmark presence within the context of its rural setting. This will contribute to the Buddhist Cultural Park's role as an attraction within the area as well as the region. It is intended that the development provisions along with consideration of the Local Area Objectives will ensure that whilst the Buddhist Cultural Park will have a significant visual impact in the immediate area, it will be guided by high quality building design, landscaping and site treatment so as to provide for a sophisticated response to the surrounding landscape. Overall, the development has a small footprint on the site.

An assessment of the visual impact of the proposal is outlined in Clause 3.11, noting that the buildings will not be visible from the historic township of Richmond.

6.2 Southern Tasmania Regional Land Use Strategy

Part 5A of the Land Use Planning and Approvals Act 1993 provides for regional areas and regional land use strategies. Regional strategies set out the long term planning goals for the three Tasmanian regions (North West, Northern, and Southern regions). Planning schemes must be consistent with the relevant Regional Land use Strategy. Declaration of the Southern Tasmanian Regional Land Use Strategy by the Minister for Planning and Local government occurred 14 September 2016. Any amendment to a planning scheme must be consistent with the relevant Regional Land Use Strategy.

The Southern Tasmania Regional Land Use Strategy (the Regional Strategy) provides broad strategic policy requirements for a coordinated and consistent approach to land use policy and decision-making in the region. Strategic policies, which are intended to guide local and state government planning, that are considered relevant to the proposed rezoning are addressed further below.

The Regional Strategy is structured into three main sections, The Vision, The Strategic Directions and the Regional Policies.

The regional vision for Southern Tasmania is:

"*a vibrant, growing, liveable and attractive region, providing a sustainable lifestyle and development opportunities that build upon our unique natural and heritage assets and our advantages as Australia's southern most region.*"

The strategic direction outlines how the Vision will be achieved through the Regional Land Use Strategy. They are a broad policy framework to guide what is planned and how it is to be achieved. The strategic directions include:

- *SD1: Adopting a more integrated Approach to Planning and Infrastructure*
- *SD2: Holistically managing Residential Growth*
- *SD3: Creating a network of Vibrant and Attractive Activity Centres*
- *SD4: Improving our Economic Infrastructure*
- *SD5: Supporting our Productive Resources*

- *SD6: Increasing the Responsiveness to our natural Environment*
- *SD7: Improving management of our Water Resources*
- *SD8: Supporting Strong and healthy Communities*
- *SD9: Making the Regional nationally and internationally competitive*
- *SD10: Creating Liveable Communities*

Regional Policies provide more specific direction for how the Strategic Directions will be achieved. The broad headings include:

- Biodiversity and Geodiversity
- Water Resources
- The Coast
- Managing risks and Hazards
- Cultural Values
- Recreation and Open Space
- Social Infrastructure
- Physical Infrastructure
- Land Use and Transport Integration
- Tourism
- Strategic Economic Opportunities
- Productive Resources
- Industrial Activity
- Activity Centres
- Settlement and Residential Development

A number of these Strategic Directions and Regional Policies are of relevance to the proposed amendment, and are discussed below.

6.2.1 Strategic Directions

SD5: Supporting our Productive Resources

While Southern Tasmania's contribution to the State's and nation's primary production value is limited to a few key areas: aquaculture, forestry and niche agricultural commodities, all forms of primary production are critical to the economic and social health of our regional towns and villages, assisting in creating employment opportunities and economic self-sufficiency. Supporting productive industries through appropriate land use planning responses is important for maintaining the vitality of these individual communities as well as protecting those landscape characteristics, which make Southern Tasmania an attractive place to live and visit.

Comment: The proposal will result in the conversion of land that has been identified for rural purposes through its land use zoning. As has been established, the site has limited agricultural potential, and has not been used for such purposes for some time. The proposed rezoning, however, will provide for a facility that is expected to contribute significantly to the region, including the potential to provide economic support to local agricultural enterprises and industries.

It is expected that the proposed facility will attract a significant number of visitors and further promote the surrounding rural areas, including the Coal River Valley in its tourism potential. This will directly support any rural enterprises, such as vineyards and farm-gate enterprises, both existing and those establishing in the future. It is considered that the proposed Buddhist Cultural Park will return a greater benefit to surrounding rural industries than it would were the land to be retained specifically for agricultural purposes.

SD9: Making the Region Nationally and Internationally Competitive

Ensuring that Southern Tasmania remains competitive for national and international investment is a significant element in strengthening our long-term economic health and increasing gross regional product. Southern Tasmania has clear comparative and competitive advantages, in terms of:

- Our geographic position of Australia's southern-most region;
- Our clean, green and liveable image;
- Relative abundance of water;
- Temperate climate;
- The landscape and cultural heritage; and
- The coastline and surrounding marine environment.

The identification of key land use opportunities for the region based upon these advantages is critical. For example, there are significant opportunities to build upon our Antarctic and Marine Research activities in key locations.

Land use planning and its outcomes have numerous impacts upon the tourism industry including how well authentic landscapes and character are protected and enhanced; and the degree to which planning schemes provide flexibility to ensure that tourism industry can be innovative and respond to demand and the market.

Careful management of the landscapes and characteristics within the region that contribute to the tourism experience, as well as how tourism developments are handled through the planning process, is important to this key economic activity. In addition, land uses associated with tourism also need to be managed to ensure that they do not detract from the value of the region as a living environment.

Comment: The proposal is considered to be directly supportive of this objective. It will provide for a significant cultural development in southern Tasmania, generating a number of visitors from outside of the State and providing for a significant tourist attraction at the regional level. It will be unique in the sense that it will provide for the only Buddhist temple development in the State, and one of only a few Australia wide.

The proposal will provide for an additional tourist attraction amongst a network in the greater Hobart area, including the township of Richmond and associated Coal River Valley celebrated Wine Route, Port Arthur, MONA, Mt Wellington, Salamanca Market to name a few. In this regard, it will provide further support to local enterprises within this network.

A significant factor in the success of the Buddhist Cultural Park will be the anticipated high quality design and landscape response associated with the development. The visual impact will be significant, but sophisticated in the landscape, and the zone provisions has been drafted to ensure that appropriate guidance is provided in this regard. Generous setbacks are required resulting in low site coverage to ensure opportunity for significant landscaping and visual separation of future development from its neighbours.

6.2.2 Regional Policies

Part 9 - Cultural Values

9.3 REGIONAL POLICIES

CV 1 *Recognise, retain and protect Aboriginal heritage values within the region for their character, culture, sense of place, contribution to our understanding history and contribution to the region's competitive advantage.*

CV 1.1 *Support the completion of the review of the Aboriginal Relics Act 1975 including the assimilation of new Aboriginal heritage legislation with the RMPS.*

CV 1.2 *Improve our knowledge of Aboriginal heritage places to a level equal to that for European cultural heritage, in partnership with the Aboriginal community,*

CV 1.3 *Avoid the allocation of land use growth opportunities in areas where Aboriginal cultural heritage values are known to exist.*

CV 1.4 *Support the use of predictive modelling to assist in identifying the likely presence of Aboriginal heritage values that can then be taken into account in specific strategic land use planning processes.*

CV 2 *Recognise, retain and protect historic cultural heritage values within the region for their character, culture, sense of place, contribution to our understanding history and contribution to the region's competitive advantage.*

CV 2.1 *Support the completion of the review of the Historic Cultural Heritage Act 1995.*

CV 2.2 *Promulgate the nationally adopted tiered approach to the recognition of heritage values and progress towards the relative categorisation of listed places as follows:*

a. *places of local significance are to be listed within Heritage Codes contained within planning schemes, as determined by the local Council*
b. *places of state significance are to be listed within the Tasmanian Heritage Register, as determined by the Tasmanian Heritage Council.*
c. *places of national or international significance are listed through national mechanisms as determined by the Australian Government.*

Comments: Neither the site nor immediate adjacent lands are included in any listing. The property opposite at 1347 Tea Tree Road is listed on the Tasmanian Heritage Register and as a heritage place under the Interim Scheme's Historic Heritage Code as a single storey Colonial Georgian rural dwelling. The dwelling is located in excess of 120 metres from the road frontage, with its visibility from the road obscured by landscaping. Given the location of Tea Tree Road and the setback of the house, the proposed Buddhist Cultural Park will not impact on its Heritage significance. An Aboriginal Heritage Report has been prepared and is provided at Appendix H.

Part 14 - Tourism

Land use planning and its outcomes have numerous impacts upon the tourism industry including how well authentic landscapes and character are protected and enhanced; and the degree to which planning schemes provide flexibility to ensure that tourism industry can be innovative and respond to demand and the market.

Careful management of the landscapes and characteristics within the region that contribute to the tourism experience, as well as how tourism developments are handled through the planning process, is important to this key economic activity. In addition land uses associated with tourism also need to be managed to ensure that they do not detract from the value of the region as a living environment.

14.5 REGIONAL POLICIES

T 1	*Provide for innovative and sustainable tourism for the region*
T 1.1	*Protect and enhance authentic and distinctive local features and landscapes throughout the region.*
T 1.2	*Identify and protect regional landscapes, which contribute to the region's sense of place, through planning schemes.*
T 1.3	*Allow for tourism use in the rural and significant agriculture zones where it supports the use of the land for primary production.*
T 1.4	*Provide flexibility for the use of holiday homes (a residential use) for occasional short-term accommodation.*
T 1.5	*Provide flexibility within commercial and business zones for mixed use developments incorporating tourism related use and development.*
T 1.6	*Recognise, planning schemes may not always be able to accommodate the proposed tourism use and development due to its innovative and responsive nature.*
T 1.7	*Allow for objective site suitability assessment of proposed tourism use and development through existing non-planning scheme based approval processes (43A application).*

Comments: The Buddhist Cultural Park's ability to contribute as a regional attraction has been discussed previously. It is also important however to consider the impact that the proposal will have on the existing rural landscape and sense of place, and the degree to which these values contribute to the area as a tourism destination.

The area forms part of a broader rural precinct area that is characterised by particularly scenic corridors such as sections of Richmond Road, Colebrook Road and sections of the Midland Highway within Southern Midlands known as the Heritage Highway. These features contribute significantly to the rural 'sense of place' and its related tourism potential.

As outlined in the visual assessment in Section 3.10 the Buddhist Cultural Park will become a significant feature in the landscape. Whilst the Tea Tree area provides for a pleasant rural setting, it is not considered a distinctive landscape. In this context the proposal will not adversely impact a highly valued landscape, and will therefore not impede the region's ability to promote its overall landscape value and sense of place. The proposed development of the

Buddhist Cultural Park is well located as it will provide for an attraction that can contribute to this broader network of scenic corridors without adversely affecting any identified and highly valued landscapes.

It is noted that Policy T1.6 above recognises that planning schemes cannot always anticipate tourism developments. Whilst the proposed Buddhist Cultural Park is not solely intended as a tourist development, it will serve as a regional attraction as outlined. The proposal is an example of an innovative proposal that requires an amendment to the Interim Scheme in order for it to be accommodated. Whilst a combined amendment and development application has not been prepared given the staging and time frames involved in future development, the amendment has been drafted to ensure certainty around future use and development, guided by consideration of the Local Area Objectives for different elements of the proposed development.

Part 15 - Strategic Economic Opportunities

There are a number of key economic opportunities. These include:

- A place of research excellence and learning – The region is host to a number of world-class research institutions and tertiary education facilities. It is also Australia's base for Antarctic exploration and research. These provide significant economic benefits to the region with opportunities to capitalise upon existing facilities through the construction of key research institutes including the Institute of Marine and Antarctic Science (IMAS), redevelopment of Domain House and the expansion of the Menzies Research Centre.
- A place of arts, culture and recreation – The region has a long history as a cultural hub in recognition of our significant cultural values. The region accommodates many cultural facilities, world-class recreational opportunities and events. The opening of MONA on the shores of the Derwent River is a case in point. Promotion and enhancement of this role will also attract greater number of visitors as well as increased employment opportunities.

The Regional Policies that relate to Strategic Economic Opportunities provide only for specific key sites and the Sullivan's Cove area in Hobart. They are therefore not relevant to the proposed rezoning. The proposed Buddhist Cultural Park is anticipated to contribute to the region in this regard, and is therefore considered against some of the statements provided in the policy overview.

Comment: The Buddhist Cultural Park will become a worldwide Buddhist learning centre in the practice of Chinese Han Transmission Tantrayana Buddhist philosophy and meditative methods. According to the Tasmanian Chinese Buddhist Cultural Park concept information (submitted with the application), it is intended that the Buddhist Cultural Park will."*be open to worldwide religious practitioners of various schools and traditions, academic scholars and professionals, as well as general tourists, becoming a vigorous cultural, learning and knowledge exchange centre*.", and

"*As a worldwide Buddhist learning and worshipping centre, the Tasmanian Buddhist Cultural Park presents Buddhist histories and cultures by displaying Buddhist sculptures, statues, architectures, arts paintings and images*."

The proposal will contribute significantly to a number of world-class educational and cultural facilities. Not only will this bring activity and economic prosperity to the region, but it will also contribute significantly to the increasing diversity of the Tasmanian cultural experience.

Part 16 - Productive Resources

Embodied within the Strategic Direction of holistically managing residential growth is the principle that residential development in rural areas should first and foremost be determined by a proactive settlement strategy, tempered by the productive and potential productive capability of land. Therefore, decisions to convert rural land to non-rural land use (such as large-lot residential) should not be driven by the current apparent productive capability, which has been the case in years past. Appropriate zoning, attenuation distances, and growth boundaries linked to settlement strategies must be implemented to enable the protection of agricultural land and farmers' ability to farm unfettered.

16.5 REGIONAL POLICIES

PR 1	Support agricultural production on land identified as regionally significant by affording it the highest level of protection from fettering or conversion to non-agricultural uses.
PR 1.1	Utilise the 'Significant Agriculture Zone' to identify regionally significant agricultural land in planning schemes and manage that land consistently across the region.
PR 1.2	Avoid further fettering from residential development areas by setting a minimum buffer distance of 200 metres to manage land use conflicts.
PR 1.3	Allow for ancillary and/or subservient non-agricultural uses that assist in providing income to support ongoing agricultural production
PR 1.4	Prevent further land fragmentation by restricting subdivision unless necessary to facilitate the use of the land for agriculture.
PR 1.5	Minimise the use of significant agricultural land for plantation forestry

PR 2	*Manage and protect the value of non-significant agricultural land in a manner that recognises sub-regional diversity in land and production characteristics.*
PR 2.1	*Tailor planning scheme standards, particularly the minimum lot size for subdivision, according to the designated subregion.*
PR 2.2	*Ensure the minimum lot size takes into account the optimum size for the predominating agricultural enterprise within that subregion.*
PR 2.3	*Utilise the settlement strategy to assess conversion of rural land to residential land through rezoning, rather than the potential viability or otherwise of the land for particularly agricultural enterprises.*
PR 2.4	*Ensure opportunities for down-stream processing of agricultural products are supported in appropriate locations or 'on-farm' where appropriate supporting infrastructure exists and the use does not create off-site impacts.*

Comment: The proposed rezoning of land identified for rural purposes has been discussed at length throughout this report. It is considered that each of the policies above has been adequately addressed in the discussions.

6.3 Land Use Planning and Approvals Act 1993 (LUPAA)

6.3.1 Section 32(1) of the Act

The requirements for preparing amendments in Section 32(1) of the Act are addressed below:

(e) must, as far as possible, avoid the potential for land use conflicts with use and development permissible under the planning scheme applying to the adjacent area; and

Comments: A consideration with creation of the PPZ is the potential to lead to conflict with the Significant Agriculture Zone applying to the adjacent land to the east, and north of the rail line opposite across Tee Tree Road. The application of the Significant Agriculture Zone has its origins in the work undertaken in preparing the Southern Tasmanian Regional Land Use Strategy 2010 – 2035.

Part 16 Productive Resources of the Regional Strategy outlines the strategic direction and regional policies adopted in the use and development of the regions rural and primary industry resources. The origins for identification of the Significant Agricultural Zone is outlined and is an important starting point for consideration of the proposed rezoning of the subject land to allow development of the Buddhist Cultural Park.

A key characteristic of the southern region agricultural production lies in the fact that the region has negligible prime agricultural land and its contribution to the State's overall production is significantly less than the other two regions. However, there has been an increasing focus on low volume, high value production, strengthened by the rollout of new irrigation schemes across the region.

Agricultural production is particularly diverse and varies from the extensive dry-land areas of the Southern Midlands and parts of the Central Highlands and Derwent Valley, to the intensive crop and fruit growing regions of the Huon, Derwent and Coal River Valleys and through to the wine production areas scattered throughout the region including parts of the East Coast.

The region adopted a strategy that recognised that the one-size fits all approach to planning scheme standards across the region would not achieve the best outcomes. While it was determined that the region had little prime agricultural land (Class 1-3), there is still productive agricultural land which is either irrigated, has access to natural water resources or has physical conditions suited to particularly high value crops. This very productive agricultural land within the region can be spatially distinguished against significantly less productive land due to topographic, soil, water availability and climatic conditions. This land was afforded the highest level of protection and became the basis of the Significant Agricultural Zone now included the Interim Scheme. This land was to have the highest level of protection from land use conflicts and fettering.

While acknowledging the strategy underpinning the identification of the Significant Agricultural Zone is valid, and the supporting regional policies are appropriate, the subject land is significantly constrained by topography and land capability as described in the Land Capability assessment. The attributes used to identify the Significant Agricultural Zone appear to not be particularly relevant to the subject land, and reinforced by it not being included in the gazetted SE Irrigation Scheme area.

The proposed Buddhist Cultural Park maintains significant setbacks to the respective side and front boundaries adjacent the Significant Agriculture zone. In addition the rail line provides an added 'buffer' to agricultural enterprises that may occur to the north of the line, while the areas to the east do not currently support intensive cropping enterprises, rather the paddocks appear to be cut for hay and silage production.

It is unlikely operation of the Tasmanian Buddhist Cultural Park will result in fettering or conflict with adjacent agricultural uses.

(ea) must not conflict with the requirements of section 30O; and

Comments: The amendment relates to the zoning of the land and therefore will not change a provision in the Interim Scheme ordinance. As the zoning is a local provision, the proposal will not affect, be in conflict with or inconsistent with a common provision in the Interim Scheme.

The zoning change is consistent with the Regional Land Use Strategy in as much as the area of land proposed to be rezoned from Rural Resource to Particular Purposes Zone is insignificant when considered in the context of the areas retained in the Significant Agriculture and Rural Resource zones. The amendment does not seek to revoke or amend an overriding local provision specified in the Planning Purpose Notice for the Interim Scheme. The amendment therefore does not conflict with the requirements of Section 30(O) of LUPAA.

The amendment therefore does not conflict with the requirements of Section 30(O) of LUPAA.

(f) Must have regard to the impact that the use and development permissible under the amendment will have on the use and development of the region as an entity in environmental, economic and social terms.

Comments: The amendment provides for site-specific use and development controls and will have little impact on the region as an entity in terms of its environmental impacts. However, in terms of its economic and social impacts it is clear that development of the Tasmanian Buddhist Cultural Park will have significant and positive impacts. These benefits include quantifiable economic and employment stimulus during the construction and operational phases, and wider unquantified social and cultural benefits. These include

- Enhanced cultural exchange and understanding – Tasmania is increasingly an attractive study location for overseas born students. UTAS has attracted significant enrolment from other countries, resulting in economic stimulus whether in construction of student housing, accommodating visiting parents, job employment, spending on food and clothing, attracting research or study grants, to name a few of the benefits to accrue to the Tasmanian economy. In large measure the planned move of UTAS facilities and campuses to city locations in Hobart, Launceston and Burnie is in response to the changing student demographic. The Buddhist Cultural Park will similarly be a catalyst for students and scholars wishing to follow the Holy Tantra Esoteric Buddhism teachings.
- Increased diversity in Tasmania's education sector – as noted above the diversity of the student population in Hobart particularly has significantly changed over the last decade. Development of the Buddhist Cultural Park will further enhance the reputation Tasmania has gained as a student destination of choice. This reputation has been gained because of its smaller scale and lower living costs, ease of movement, supportive community and high educational and academic standards.
- Broadening of Hobart's and Tasmania's tourism offerings – Tasmania has developed a reputation as a destination of choice built on fine food, cool climate wines, heritage, wilderness and unspoilt landscapes. In more recent years Tasmania, and Hobart in particular, has increased tourist numbers based on the success of MONA, festivals and other cultural events, cruise ship visitation, to name a few of the new attractions that are driving significant increases in tourist numbers. The Buddhist Cultural Park and the interest likely to be generated, particularly from China, will further enhance our reputation as a destination of choice.
- Enhanced worldwide exposure of the Tasmanian brand for tourism and trade – the worldwide connections, and in particular the links to China arising from membership of the Holy Tantra Esoteric Buddhism movement will ensure a high level of visitation and contribution to tourism and trade by overseas visitors and potential investors.
- Construction activity and employment – development of the Buddhist Cultural Park will require investment and related construction activity with much of the materials and labour sourced locally. While there may be employment of overseas specialist trades people, the majority of the labour and materials is anticipated to be sourced locally. This will occur across the broad spectrum of the building and construction industry, from the planning and detailed design consultants employed to prepare development application plans, through to the contractors commissioned to undertake the construction activities.
- Ongoing operation employment – it is anticipated that local employment will also follow with establishment of the Buddhist Cultural Park.

The overall positive impact on the Southern Midlands and Greater Hobart regions, as well as all of Tasmania, is assessed as being significant.

6.3.2 Section 20(1)(d) of the Act

The Act requires the Commission to have regard to the strategic plan of the Council. The Strategic Plan 2014-2023 articulates a number of strategic directions to be pursued by Council. Under the heading Landscapes, subcategory "cultural" objectives, the Council Strategic Plan has identified that it will support the establishment and development of the Buddhist Cultural Park in an appropriate location in the Southern Midlands. Council will also encourage the State Government to declare the project to be a Project of Regional Significance recognising its scale, importance and far reaching nature of its potential benefits and impacts.

The application fulfils this particular strategic direction in terms of the amendment process. Whether Southern Midlands Council continues to pursue the Project of Regional Significance route in relation to a future development application is unknown at this point in time.

6.3.3 Planning Process Objectives (Part 1 of Schedule 1)

The following is an assessment against the principles of the Resource Management and Planning System of Tasmania.

(a) To promote the sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity;

Comment: The assessment undertaken has taken into account the environmental, social and economic impacts of the proposed amendment. Application of the proposed PPZ provisions in combination with the requirements of the Interim Planning Scheme Codes will ensure that future use and development of the subject land is undertaken in a responsible and sustainable manner.

(b) To provide for the fair, orderly and sustainable use and development of air, land and water;

Comment: This amendment and any subsequent development application submitted for use and development of the subject land is the culmination of an assessment process that has as its fundamental tenant the 'fair, orderly and sustainable use and development of the air, land and water' resources of the subject land. This assessment and application of the PPZ has determined that the change in zoning is sustainable.

(c) To encourage public involvement in resource management and planning;

Comment: The application will be subject to public exhibition, with the opportunity for representations by the public to be received, in accordance with the requirements of LUPAA.

(d) To facilitate economic development in accordance with the objectives set out in paragraphs (a), (b) and (c);

Comment: The proposed amendment and subsequent development of the subject land for the Buddhist Cultural Park will lead to significant economic development during the construction and following operational phases of its establishment. The construction of the early stage Stone

Lion statues and Four Heavenly Deva Kings is an example of the economic benefits to be derived from the project, ranging from design and engineering fees paid, construction activity undertaken, and visitation to the site and viewing from Tea Tree Road by tourists to the region.

(e) To promote the sharing of responsibility for resource management and planning between the different spheres of Government, the community and industry in the State.

Comment: In accordance with the requirements of LUPAA, the amendment process is subject to both Local and State Government approval. The application is also assessed against all State, local and regional policies. Where appropriate the amendment will be referred to various State Government agencies for consideration and input. The community and industry have opportunities for input in accordance with Objective (c) above.

6.3.4 Planning Process Objectives (Part 2 of Schedule 1)

The following is an assessment against principles of the LUPAA.

(a) To require sound strategic planning and co-ordinated action by State and local government;

Comment: The amendment process and following development application statutory processes represent sound strategic planning and co-ordination by State and local government

The Buddhist Cultural Park is specifically identified as a desirable outcome to be pursued by Southern Midlands Council in their Strategic Plan. The Southern Tasmania Regional Land Use Strategy approved by the Minister for Local Government and Planning also identifies establishment of the Buddhist Cultural Park as a desirable outcome, and the Interim Scheme itself has identified the Buddhist Cultural Park as strategically important. Given the various reviews and strategic planning processes that have gone into preparing the Council Strategic Plan, the Southern Tasmania Regional Land Use Strategy and the Interim Order, it is clear the proposed amendment is the result of co-ordinated actions by all levels of government.

(b) To establish a system of planning instruments to be the principal way of setting objectives, policies and controls for the use, development and protection of land;

Comment: The application will facilitate a planning scheme amendment that will allow provisions to be drafted that specifically cater for development of the Buddhist Cultural Park. The Particular Purpose Zoning will allow use or development appropriate to the site, and establishes use and development controls that offer a measure of protection to adjoining use and development from potential fettering or adverse impacts from activities undertaken on the site.

(c) To ensure that the effects on the environment are considered and provide for explicit consideration of social and economic effects when decisions are made about the use and development of land;

Comment: Consideration has been given to the ecological values of the site, and the social and economic contributions likely to follow with establishment of the Buddhist Cultural Park have been outlined elsewhere in this report. The proposed development can easily be accommodated without adverse impact on the environmental values documented as being present on the subject land, and the social and economic benefits to the region, Greater Hobart, the Southern Region more generally and the Tasmanian economy will be significant.

(d) To require land use and development planning and policy to be easily integrated with environmental, social, economic, conservation and resource management policies at State, regional and municipal levels;

Comment: The proposal has been assessed against relevant local and State policies, and is found to be consistent.

(e) To provide for the consolidation of approvals for land use or development and related matters, and to co-ordinate planning approvals with related approvals

Comment: Objective (e) is not relevant to consideration of the proposal given a separate amendment process is being pursued in the first instance. The following development application processes will require co-ordination of the various inputs to the process, including referrals to TasWater and other infrastructure providers, Council internal assessment processes, and other Government agencies where required when assessing future development against the Interim Scheme Codes e.g. Hazard Management Code, Road and Rail Asset Code.

(f) To secure a pleasant, efficient and safe working, living and recreational environment for all Tasmanians and visitors to Tasmania;

Comment: This outcome is in large measure achieved with successful implementation of use and development allowed for under the Interim Scheme. The primary purpose of the Interim Scheme use and development standards is to ensure use and development does not result in future occupants being exposed to adverse impacts generated by adjacent activities, and conversely, that activities relating to operation of the Buddhist Cultural Park does not adversely impact on its neighbours

(g) To conserve those buildings, areas or other places which are of scientific, aesthetic, architectural or historical interest, or otherwise of special cultural value;

Comment: An Aboriginal heritage assessment has been undertaken and no specific recommendation for preservation or avoidance of areas was made. As previously identified, the property opposite at 1347 Tea Tree Road is listed on the Tasmanian Heritage Register as a heritage place under the Interim Scheme's Historic Heritage Code. The single storey Colonial Georgian rural dwelling is located in excess of 120 metres from the road frontage, with its visibility from the road obscured by landscaping. The proposed Buddhist Cultural Park will not impact on its heritage significance.

(h) To protect public infrastructure and other assets and enable the orderly provision and coordination of public utilities and other facilities for the benefit of the community;

Comment: It is understood that existing services have the capacity to accommodate the proposal, however, some upgrades may be necessary in the longer term once use of the site has intensified and existing services reach their design capacity over time.

(i) To provide a planning framework which fully considers land capability;

Comment: The site's ability to support an agricultural use and the appropriateness of converting the land is discussed extensively throughout the report. The proposed rezoning will provide the site with a planning framework that will promote non-agricultural uses. The Land Capability Assessment discussed in Section 3.3 suggests that there is no fundamental impediment to a change of use for the subject land. Other 'land capability' attributes such as its environmental capacity, availability of infrastructure, ability to deal with landslide hazards, impacts of attenuation areas, can all be satisfied during the statutory processes yet to be followed.

6.4 State Policies

6.4.1 State Policy on the Protection of Agricultural Land 2009

The purpose State Policy on the Protection of Agricultural Land (the State Policy) is to protect and preserve the State's agricultural lands for agricultural production. It has a particular focus on protecting prime agricultural land.

Section 3 of the State Policy outlines the Policy's Principles. As outlined, the focus of the Principles is on both inappropriate use or conversion of prime agricultural land, and the use and development of other agricultural land not being unduly constrained by non-agricultural use or development. The subject site does not involve prime agricultural land, and is therefore considered against the relevant Principles below.

Principal 1. Agricultural land is a valuable resource and its use for the sustainable development of agriculture should not be unreasonably confined or restrained by non-agricultural use or development.

Principal 7. The protection of non-prime agricultural land from conversion to non-agricultural use will be determined through consideration of the local and regional significance of that land for agricultural use.

Principal 8. Provision must be made for the appropriate protection of agricultural land within irrigation districts proclaimed under Part 9 of the Water Management Act 1999 and may be made for the protection of other areas that may benefit from broad-scale irrigation development.

Comment: As demonstrated in the Land Capability Assessment the subject land has only a small arable land area, which combined with its micro-climate, high erosion potential, and lack of irrigation infrastructure suggests its agricultural potential is low. The SE Irrigation Scheme services much of the adjacent areas zoned Significant Agriculture, including land to the south and opposite across Tea Tree Road. Although zoned Significant Agriculture there are constraints to its use for intensive agriculture. The land north of Tea Tree Road is constrained by the location of the Railway Line running adjacent to Tea Tree Road. This effectively provides a buffer to the subject land, and development of the Buddhist Cultural Park should not fetter agricultural activities undertaken on the Significant Agriculture zoned land to the north of the subject land. The areas to the south of the subject land are topographically constrained and unlikely to convert for intensive cropping enterprises. Further east off Tea Tree Road the Domaine A Vineyard suggests that this is a more likely intensive agricultural enterprise to be undertaken in the immediate vicinity of the subject land.

In response to the above principles, the following specific responses are provided:

- Development of the Buddhist Cultural Park will not fetter sustainable development of agriculture on adjacent lands due to a combination of unfavourable topography restricting intensive cropping activities, the location of transport infrastructure, and large separation distances involved;
- The local and regional significance of the subject land has been considered and its conversion to a non-agricultural use will have little impact on the overall area of land available for agricultural uses, particularly within the areas serviced by the SE Irrigation Scheme; and
- The subject land is not located within the SE Irrigation Scheme service area.

6.4.2 State Policy on Water Quality Management 1997

Comment: The proposal is not contrary to the objectives of this policy. Future development on the subject land is required to comply with the provisions of the Interim Scheme, including meeting the various water quality standards set out in the Stormwater Management and Waterway and Coastal Protection codes.

6.4.3 State Coastal Policy 1996

Comment: The proposal does not relate to coastal land. The Policy is not relevant to consideration of the rezoning.

7. Particular Purposes Zone

7.1 Background

The Southern Midlands Council Strategic Plan identifies a Particular Purposes Zone as the preferred form of amendment of the Interim Scheme. This approach is supported as it allows for specific provisions to be drafted to guide development of this unique complex. As outlined, it also allows for flexibility to be built into the zone standards, which is important given the development time frame proposed, but also ensures the proposed temple use remains dominant within the complex. This approach will ensure that the complex will integrate well into its surrounding rural environment, whilst maintaining the integrity and primary focus for development of the Buddhist Cultural Park.

It is also considered that other amendment options such as a Specific Area Plan would not provide the guidance required, and may conflict with provisions of the underlying Rural Resource Zone, leading to uncertainty in terms of the future use and development intended. The proposed Particular Purpose Zone – Tasmanian Buddhist Cultural Park Zone is provided at Appendix K. Key aspects of the PPZ are outlined below:

Zone Purpose Statement - Sets out the strategic intent and function of the zone. It describes that the intent is to cater primarily for a large temple complex that will consist of a number of buildings to be used for various activities ranging from worship, meeting spaces, education, cultural museum to name a few of the buildings to be developed. It is intended that the zone will also cater for a range of supportive use and development, primarily to accommodate those that work, worship or undertake studies, or visitors attracted to the site. It describes that the temple buildings will be of a significant scale and prominent in the landscape.

Local Area Objectives - Three precincts are proposed within the site:

- The Temple, Cultural and Education Precinct encompasses all of the buildings that accommodates the worship, cultural, education, and related activities that form the core of the Tasmanian Buddhist Cultural Park. The Local Area Objective describes the architecture and nature of buildings anticipated, much like a ‘statement of desired future character'.
- The Mixed Use Precinct is intended to provide for the range of supportive uses that will be required during the construction and operation of the temple complex.
- The Open Space Precinct caters for the balance areas of the site, which will be left largely in its natural state, to be used for recreation and visual/separation of uses buffer.
- A Precinct Plan is included in the clause.

Table of Uses- Within the three precincts, the following uses are proposed:

- The Temple, Cultural and Education Precinct – Permitted uses include 'Community meeting and entertainment' (not for a Function Centre), 'Educational and occasional care' (not for childcare centre, day respite centre, kindergarten, primary or secondary school), 'Business and professional services' (only where related to the aforementioned uses), 'Residential' (only where related to the aforementioned uses – caretakers dwellings), and 'tourist operation' (only where related to the aforementioned uses). Utilities (if minor utility), 'Natural and cultural values management' and 'Passive recreation' are no permit required uses, while "Crematoria and cemeteries' and 'Utilities' are both discretionary
- The Mixed Use Precinct – permitted uses include 'Business and professional services' (only where related to an existing or proposed 'Community meeting and entertainment' or 'Education and occasional care' uses, 'Food services' (only where related to an existing or proposed 'Community meeting and entertainment' or 'Educational and occasional care' uses), 'General retain and hire' (only where related to an existing or proposed 'Community meeting and entertainment' or 'Educational and occasional care' uses), 'Visitor accommodation (only where related to an existing or proposed 'Community meeting and entertainment' or 'Educational and occasional care' uses), 'Residential' (only where related to an existing or proposed 'Community meeting and entertainment' or 'Educational and occasional care' uses). Utilities (if minor utility), 'Natural and cultural values management' and 'Passive recreation' are no permit required uses, while "Community meeting and entertainment' and 'Utilities' are both discretionary.
- The Open Space Precinct – no permit required uses include 'Utilities (if minor utility)', 'Natural and cultural values management' and 'Passive recreation'.

Use Standards – These have been drafted to ensure emissions are contained within the property boundaries, including regulating:

- Hours of operation
- Location of noise generating equipment
- External lighting
- Movement of commercial vehicles

Development Standards - these have been drafted recognising the intent is to construct a number of large buildings on the site. The provisions also require that within the Temple, Cultural and Education Precinct, the buildings constructed are true to the Chinese Imperial Court Buddhist Temple style of architecture described in the Local Area Objectives. Subdivision, other than for the provision of utilities or open space, is not permitted. Specific development standards included in the PPZ include:

- Building design
- Building setback and height
- Natural and Cultural Heritage
- Landscape treatment
- Subdivision
- Provision of Services

8. Conclusion

GHD Pty Ltd acts on behalf of Holy Tantra Esoteric Buddhism Incorporated in seeking approval for an amendment to the Southern Midlands Interim Planning Scheme 2015 in accordance with Part 3 of LUPAA for a Buddhist Cultural Park - 1384 Tea Tree Road, Campania.

The proposed amendment has been assessed against the objectives of Schedule 1 of LUPAA, the Interim Scheme, relevant Council Strategies, the Southern Tasmania Regional Land Use Strategy and relevant State Policies. It is recommended to Council and the Tasmanian Planning Commission for approval.

Appendices

Appendix A – Title Reference

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
155148	1
EDITION	DATE OF ISSUE
3	23-Jan-2013

SEARCH DATE : 13-Jul-2017
SEARCH TIME : 11.53 AM

DESCRIPTION OF LAND

Parish of DRUMMOND Land District of MONMOUTH
Lot 1 on Plan 155148
Derivation : Part of 870 Acres Granted to J. Till
Prior CT 23265/2

SCHEDULE 1

M381094 TRANSFER to HOLY TANTRA ESOTERIC BUDDHISM INCORPORATED Registered 23-Jan-2013 at 12.01 PM

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
SP 23265 FENCING COVENANT in Schedule of Easements
SP23265 BURDENING EASEMENT: a grant of easement made between Frederick James Grant and Sarah Jean Dunbabin and the Metropolitan Water Board over the "Pipeline Easement" 6.00 wide on P.155148 (more fully set forth in SP23265 & Deed 56/5151)

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

OWNER T.P. TAI

FOLIO REFERENCE C.T.23265/2

GRANTEE PART OF 870AC GRANTED TO JOHN TILL

PLAN OF TITLE

LOCATION
LAND DISTRICT OF MONMOUTH
PARISH OF DRUMMOND

FIRST SURVEY PLAN No. SP23265

COMPILED BY LESTER FRANKS SURVEY & GEOGRAPHIC PTY LTD

SCALE 1: 6000 LENGTHS IN METRES

REGISTERED NUMBER
P155148

APPROVED 26 FEB 2009
Alice Kawa
Recorder of Titles

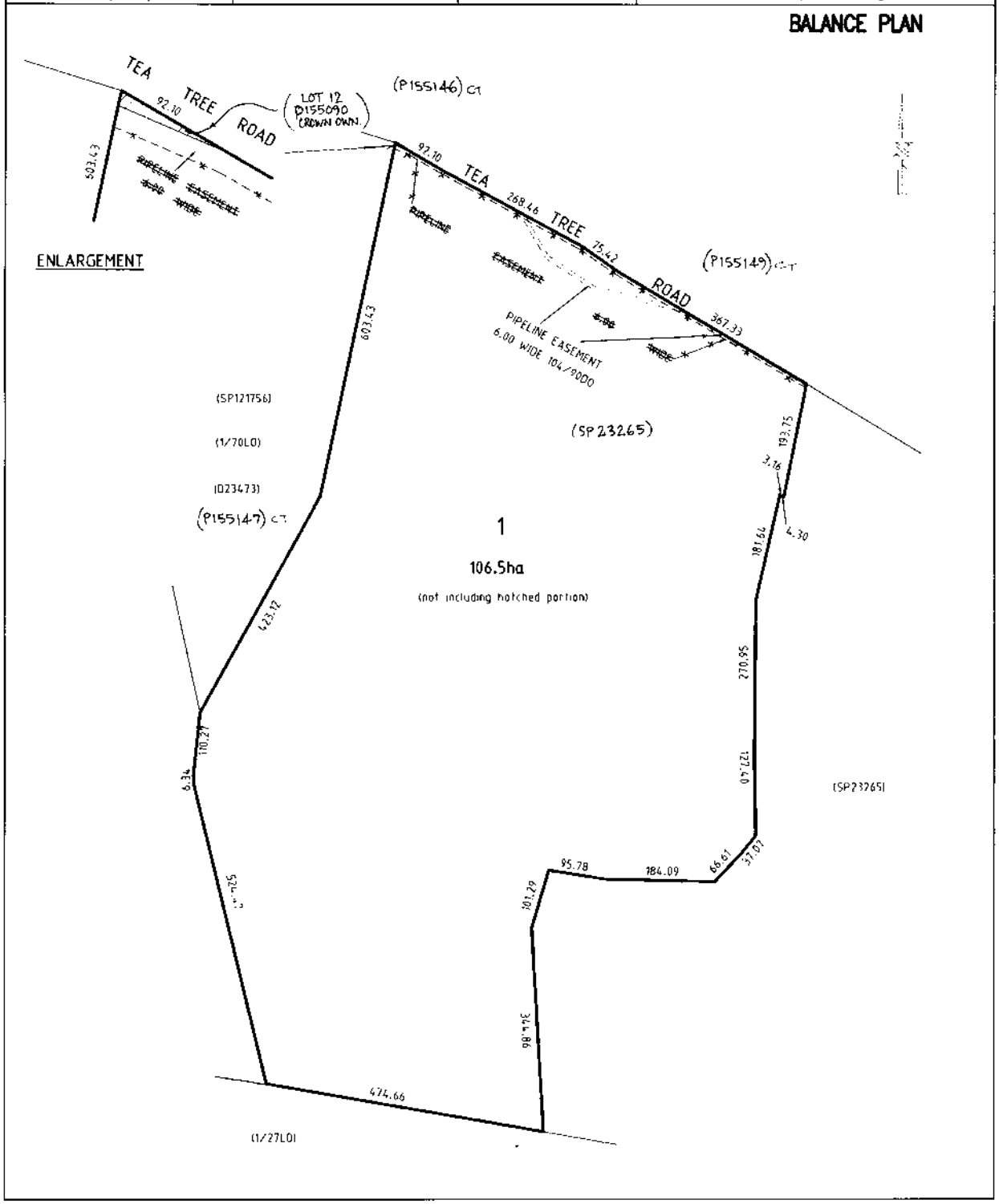
MAPSHEET MUNICIPAL CODE No. 125 (5227)

LAST UPI No. BYS51

LAST PLAN No. SP23265

ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN

BALANCE PLAN



Appendix B – Conceptual Plan

Tasmanian Chinese Buddhist Cultural Park of Australia

Conceptual Plan

Tasmanian Chinese Buddhist Academy of Australia

July 2015
(DRAFT)

PROPOSAL :

SCALE : NOT TO SCALE PAGE SIZE : A3 DATE : 2015 DRAFT CONCEPT

HOLY TANTRA ESOTERIC BUDDHISM INC. - TASMANIAN CHINESE BUDDHIST CULTURAL PARK OF AUSTRALIA ADDRESS : 1384 TEA TREE ROAD, CAMPANIA TAS AUSTRALIA 7026

A brief description on the conceptual plan for the
Tasmanian Chinese Buddhist Cultural Park of Australia

Chinese Buddhism has a long history. According to the relevant experts and confirmation through site inspections, in Chinese history the Jin-Gang-Dhyana Temple is a rather supreme outer-worldly base of Holy Tantra Esoteric Buddhism for the shared dissemination of Exoteric and Esoteric Buddhism symbolic of the 12 classifications of the holy religion. To resume the Chinese Buddhist culture of the Jin-Gang-Dhyana Temple has historical and modern day practical significance in the investigation of various cultural and historical developments following the introduction and tortuous transmission of Ancient Indian Tantrayana Buddhism in China. For the sake of restoring the original relationship of Tantrayana Buddhism along with the inheritance and progression of Buddhist civilization, hence, we started with the construction of the original Tantrayana Jin-Gang-Dhyana Temple.

Situated on top of the mountain ridge at 1384 Tea Tree Road, there is precious piece of land, with mountains and valleys in the rear, and rolling hills that represent the Dragon spine to the left and right, lush vegetation, clean air, great scenery, similar to the holy land of Buddhism of ancient times.

The total land area of this plan is approximately 106.5 hectares.

Planning will consist of two major blocks:
The first block will be the temple complex, and the second will consist of structures for Buddhist cultural studies, international conference centers, Buddhist scriptural library, and exhibition halls. According to the traditional symmetrical layout of temple complexes, all structures will use the temple complex as the central axis, with Buddhist cultural research exchange facilities and accommodation (for Sangha and tourists) situated on both sides of the temple complex.

Temples:
Following the natural typography of the land, the temple complex will be constructed at different elevations according to the terrain. Following the symmetrical layout of temple complexes, the Front Gate will be situated along the central axis (length: 108m; depth: 20m). After entering the Front Gate, with 99 steps leading up to the Great Hero Treasure Hall (Lord Sakyamuni Buddha Hall), the Great Hero Treasure Hall and the Avalokitesvara Hall will be constructed with a bridge crossing over a fishpond. Situated behind the Great Hero Treasure Hall will be the Hall of the Three Holy Buddhas, the Buddhist Scriptural Library, the Vairocana Buddha Hall, Museum, En-de Stupa (Stupa of Gratitude), with a total of 11 types of structures in this stage.

A secondary axis will be situated on both sides parallel to the central axis. Along this axis structures will consist of the Maitreya Buddha Hall, Bell Tower, Treasure Repository, Arahant Palace, Lecture Teaching Hall, Drum Tower, Repository of Great Compassion, Medicine Buddha Hall, Prayer Hall; Situated between the main central axis and the secondary axis will be a seating gallery (gallery on Buddhist history, sutras, stories and drawings). Accommodation (Sangha living area) and the lay practitioners (non-Sangha) living area (including dining hall), the large dining hall will be situated behind the two living areas and outside the secondary axis. With the entire temple complex conceptual conceived to have a gradual elevation from the front to the rear, the entire temple complex will be divided into a number of blocks constructed on different elevations.

Buddhist cultural research, exhibition, cultural exchange area:
According to the differing natures of research, exhibition and culture, this area will be divided into three blocks, independent and yet part of the temple complex. These areas will consist of areas for research and exchange of Chinese calligraphy, Chinese Drawing, Chinese Art of Tea, Chinese Dynamic Dharani, Chinese Art Music and Dance, and so on. Exhibition areas will be constructed within the temples.

Research and study hall:
This is primarily a place to study Buddhist cultural theory and cultural theory research, to provide an area for Buddhist devotees to concentrate on their studies.

Cultural exchange hall:
This is primarily a place for Sangha from the various sects from around the world to meet and exchange Buddhist culture. The cultural exchange hall does not need to align with the symmetry of the axis, the design will follow the southern and northern Chinese garden styles.

In order to construct one of the world's largest temple complex centralizing the theories of Confucianism, Buddhism, Taoism, Exoteric and Esoteric Buddhism, the temple complex designs will be inspired by site visits made to places in China such as Mount Hu in Anhui province, Mount Putuo in Zhejiang, Mount Emei in Sichuan, Mount Wutai in Shangxi, Mount Wudang in Hubei, although these are China's largest and most well-known Buddhist holy lands, the building structures are rather scattered with structures overlapping one another, and thus unable to display the magnificence of the temple complex.

PROPOSAL :

SCALE : NOT TO SCALE PAGE SIZE : A3 DATE : 2015 DRAFT CONCEPT

HOLY TANTRA ESOTERIC BUDDHISM INC. - TASMANIAN CHINESE BUDDHIST CULTURAL PARK OF AUSTRALIA ADDRESS : 1384 TEA TREE ROAD, CAMPANIA TAS AUSTRALIA 7026

Current design plan:
Using ancient Chinese architectural styles to construct the grandest possible temples permitted. Between each structure there will be corridors and galleries.

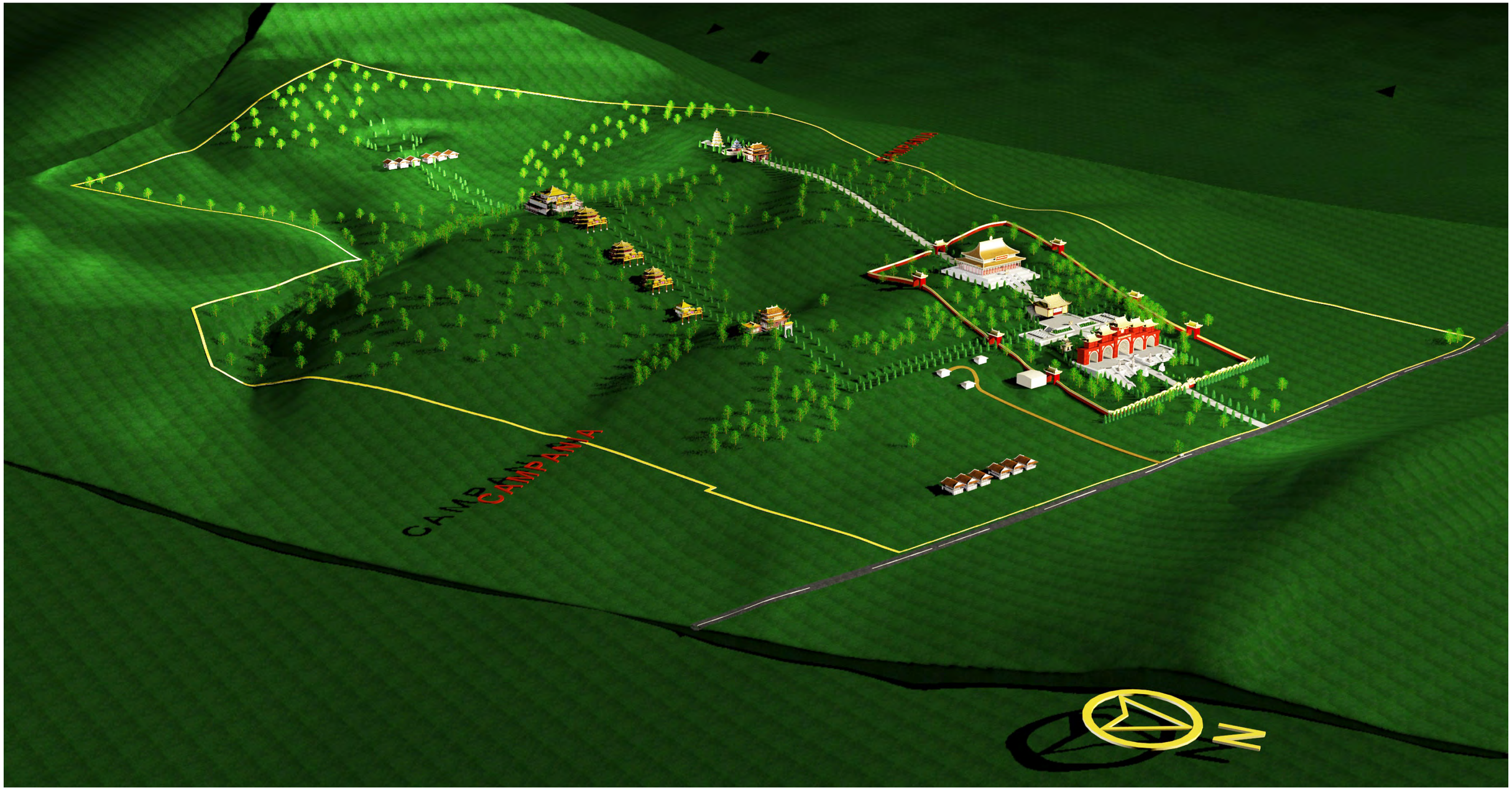
The architectural style used to construct the temple structures is not limited to any one particular Chinese architectural period. According to what is required, Tang-Song style and Ming-Qing style temple structures can be adopted. With regards to color scheme, the various grand halls of the temple complex will use golden yellow amber colored tiles accompanied by black-grey cylindrical tiles, even including small tiles. The color of the walls can also be split into three types, old yellow, dark red and white.

Below are the conceptual and elevation drawings for a selected sample of the ten structures, which include: stupas, palaces, repositories, museum, halls, rooms and towers.

PROPOSAL :

SCALE : NOT TO SCALE PAGE SIZE : A3 DATE : 2015 DRAFT CONCEPT

HOLY TANTRA ESOTERIC BUDDHISM INC. - TASMANIAN CHINESE BUDDHIST CULTURAL PARK OF AUSTRALIA ADDRESS : 1384 TEA TREE ROAD, CAMPANIA TAS AUSTRALIA 7026



PROPOSAL : Conceptual Model - Tasmanian Chinese Buddhist Cultural Park of Australia

SCALE : NOT TO SCALE PAGE SIZE : A3 DATE : 2015 DRAFT CONCEPT

HOLY TANTRA ESOTERIC BUDDHISM INC. - TASMANIAN CHINESE BUDDHIST CULTURAL PARK OF AUSTRALIA ADDRESS : 1384 TEA TREE ROAD, CAMPANIA TAS AUSTRALIA 7026

PROPOSAL : Vantage Point from Tea Tree Road

SCALE : NOT TO SCALE PAGE SIZE : A3 DATE : 2015 DRAFT CONCEPT

HOLY TANTRA ESOTERIC BUDDHISM INC. - TASMANIAN CHINESE BUDDHIST CULTURAL PARK OF AUSTRALIA ADDRESS : 1384 TEA TREE ROAD, CAMPANIA TAS AUSTRALIA 7026

PROPOSAL : Vantage Point from Tea Tree Road

SCALE : NOT TO SCALE PAGE SIZE : A3 DATE : 2015 DRAFT CONCEPT

HOLY TANTRA ESOTERIC BUDDHISM INC. - TASMANIAN CHINESE BUDDHIST CULTURAL PARK OF AUSTRALIA ADDRESS : 1384 TEA TREE ROAD, CAMPANIA TAS AUSTRALIA 7026

PROPOSAL : Vantage Point from Tea Tree Road

SCALE : NOT TO SCALE PAGE SIZE : A3 DATE : 2015 DRAFT CONCEPT

HOLY TANTRA ESOTERIC BUDDHISM INC. - TASMANIAN CHINESE BUDDHIST CULTURAL PARK OF AUSTRALIA ADDRESS : 1384 TEA TREE ROAD, CAMPANIA TAS AUSTRALIA 7026

PROPOSAL : Vantage Point from Tea Tree Road Rekuna Park (Direction: East) (42.66925S 147.38267E)

SCALE : NOT TO SCALE PAGE SIZE : A3 DATE : 2015 DRAFT CONCEPT

HOLY TANTRA ESOTERIC BUDDHISM INC. - TASMANIAN CHINESE BUDDHIST CULTURAL PARK OF AUSTRALIA ADDRESS : 1384 TEA TREE ROAD, CAMPANIA TAS AUSTRALIA 7026

PROPOSAL : Vantage Point from Tea Tree Road eastern boundary neighbour (Direction: West) (42.67587S 147.40271E)

SCALE : NOT TO SCALE PAGE SIZE : A3 DATE : 2015 DRAFT CONCEPT

HOLY TANTRA ESOTERIC BUDDHISM INC. - TASMANIAN CHINESE BUDDHIST CULTURAL PARK OF AUSTRALIA ADDRESS : 1384 TEA TREE ROAD, CAMPANIA TAS AUSTRALIA 7026

PROPOSAL : Vantage Point from City of Clarence sign at turn onto Tea Tree Road (Direction: West) (42.68016S 147.42994E)

SCALE : NOT TO SCALE PAGE SIZE : A3 DATE : 2015 DRAFT CONCEPT

HOLY TANTRA ESOTERIC BUDDHISM INC. - TASMANIAN CHINESE BUDDHIST CULTURAL PARK OF AUSTRALIA ADDRESS : 1384 TEA TREE ROAD, CAMPANIA TAS AUSTRALIA 7026

Appendix C – Land Capability Assessment

DOYLE SOIL CONSULTING

LAND CAPABILITY ASSESSMENT

1384 Tea Tree Road
Campania

20th May 2018

Doyle Soil Consulting -150 Nelson Rd Mt Nelson 7007 -0488 080 455 robyn@doylesoilconsulting.com.au

Table of Contents

Executive Summary

Doyle Soil Consulting (see www.doylesoilconsulting.com.au) was engaged to complete a Land Capability Assessment according to the guidelines of Grose (1999). The site is located at 1384 Tea Tree Road in the Coal River Valley. The total land area is approximately 106 ha (CT 155148/1), of which it is proposed to use 0.66 ha for construction.

Desktop review and field inspection revealed the dominant soils are shallow Brown Soils on Dolerite (unit 'Bd' in CSIRO Reconnaissance Soil Maps) over the northern part of the site, with sandy clay soils developing on Triassic sandstone over the remainder of the study area.

There are two main soil types found on the property. The first is a brown to reddish clayey soil forming on Jurassic Dolerite, which are classified as Red and Brown Dermosols according to the Australian Soil Classification (Isbell 2003).

The second soil type forms on Triassic sandstone with sandy surface horizons and sand clay subsoils. Due to the texture-contrast profile trend these soils were mostly classified as Kurosols, however where loose sands are deeper (due to reworking by wind and water) some Podosols also occur.

Our agricultural Land Capability Assessment largely concurs with the published 1:100,000 mapping conducted by Musk and DeRose (2000) i.e., that the property is dominated by Class 5 land with minor areas of Classes 4 and 6 land. The one exception was that areas of exposed bedrock and bluffs are classified as Class 7, i.e, unsuitable for agriculture. Thus, due to the very small area of low class arable land, the dry climate, high wind and water erosion potential, and lack of irrigation infrastructure on the property the agricultural economic potential of the site is low.

1 Introduction

The site is located at 1384 Tea Tree Road in the Coal River Valley near the township of Campania. The total land area is approximately 106 ha (CT 155148/1), of which it is proposed to use 0.66 ha for construction.

Parallel to Tea Tree Road the land is gently sloping agricultural land with a north-easterly aspect, covered with mixed pasture and weedy vegetation. The topography becomes moderately to steeply sloping towards the south, with native eucalypt forest that has previously been grazed and thinned out through timber harvesting. Evidence of recent bushfires through the forested areas was observed.

The site has some development, with several residences and a large shed (refer to aerial photo in Appendix 3). Several ephemeral tributaries have their source on the hills of the site, with water moving through dams into Plummers Creek and from there into the Coal River and out to Pitt Water. The site has a good access point to Tea Tree Road, and is an un-serviced area. The property lies within the command area of the Craigbourne dam.

In its present form the property is grazing land which mixes land of different levels of agricultural capability in the one title. Therefore, it is recommended that land capability assessment be used as a scientific tool to aid land use planning. This report considers the capability of the land to support sustainable agricultural production. It is not the aim of this report to address planning issues, but rather to use a scientific framework to classify the biophysical features of the land in the context of possible land use.

2 Planning context

The land area proposed for development falls within the Rural Resource Zone as defined by the Southern Midlands Interim Planning scheme of 2015.

Rural Resource Zone

Whilst the site falls within the Rural Resource Zone, the somewhat poor soil quality, rugged topography, climate, and small existing cleared areas of the property limit the economic sustainability of the land for agricultural production. Further, it is likely that any further land clearing and intensive agricultural activity on much of the property would result in land degradation due to poor soil structural properties and high potential for wind and water erosion of the soils forming on Triassic sandstone, while the soils forming on Jurassic dolerite are reactive clay soils and will tend to move down slope, by creep action, if the vegetation is removed on the steeper slopes of the property.

Therefore, the mixed density residential development of the land would not be in conflict with the intent of the Interim Planning Scheme regarding the protection of agricultural land for sustainable production – that is, intensive agricultural use of the land would not be economically or environmentally sustainable. Based upon the principles of the Interim Planning Scheme and land capability assessment the logical decision would be to allocate competing land uses to the most appropriate land class.

3 Legislative context

The State Policy on the Protection of Agricultural Land 2009 has two objectives:

To enable the sustainable development of agriculture by minimising:

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

One of the essential aims of the policy is to protect quality agricultural land (Class 1-3) for future use without conflict with competing and neighbouring land uses. It is also a key aim of the policy to allow greater certainty in planning decisions involving agricultural land by utilising established principles of land capability assessment to classify land.

The recognition of different land capability classes when assigning development standards should be central to good environmental planning. A logical proposal would be to preserve any productive land contained on the property for agricultural uses, whilst allowing sensible rural residential development on low quality unproductive land close to infrastructure. In addition, land capability planning should also aim to preserve land based upon environmental values such as remnant bush on areas of steeper slopes where agricultural or residential development would be difficult. This approach would be consistent with both the objectives of the State policy on the protection of agricultural land and principles environmental planning.

The protection of agricultural land policy goes on to list a number of principles that are designed to guide outcomes of the policy. In particular the policy aims to protect prime agricultural land, which as defined as *land classified as or capable of being classified as Class 1, 2 or 3 land using the class definitions and methodology from the land capability handbook (Grose 1999)*.

It is clear from the land capability assessment undertaken in Section 5 (below) and the prior 1:100,000 scale mapping of Musk & De Rose in their Derwent Report (2000) that the land examined is not Prime Agricultural Land (Classes 1 – 3). When assessed according to the guidelines of Grose (1999) the land is in fact predominantly Class 5 land with minor areas of Classes 4 and 6 land. As such the site is mostly marginal agricultural land only suitable for limited grazing with moderate to severe limitations. While there is a small area of Class 4 land in the northern most part (front) of the site its limited in area and failure to meet the classification of Prime Agricultural Land means the intended site use meets .

The Southern Midlands Interim Planning Scheme 2015 Rural Resource Zone, as applies to this property, has certain 'Zone Purpose Statements' which need consideration, namely;

Southern Midlands Interim Planning Scheme 2015

26.0 Rural Resource Zone

26.1 Zone Purpose

26.1.1 Zone Purpose Statements

26.1.1.1 To provide for the sustainable use or development of resources for agriculture, aquaculture, forestry, mining and other primary industries, including opportunities for resource processing.

26.1.1.2 To provide for other use or development that does not constrain or conflict with resource development uses.

26.1.1.3 To provide for non-agricultural use or development, such as recreation, conservation, tourism and retailing, where it supports existing agriculture, aquaculture, forestry, mining and other primary industries.

26.1.1.4 To allow for residential and other uses not necessary to support agriculture, aquaculture and other primary industries provided that such uses do not:

(a) fetter existing or potential rural resource use and development on other land;

(b) add to the need to provide services or infrastructure or to upgrade existing infrastructure;

(c) contribute to the incremental loss of productive rural resources.

26.1.1.5 To provide for protection of rural land so future resource development opportunities are no lost.

26.1.1.6 To provide for economic development that is compatible with agricultural and other rural resource activities.

4 Site information

Site information relevant to determining the capability of the land to support economically and environmentally sustainable agricultural production without causing environmental harm was collected from desktop and field survey.

Geology
The study area falls within the Mineral Resources Tasmania 1:25 000 mapping sheet for Tea Tree, which indicates the area is underlain predominantly by Triassic sandstone, with some areas underlain by Jurassic Dolerite and a small area of Tertiary sediments in the north western corner which may be prone to erosion (Figure 1).

Field inspection revealed that Sandstone is the dominant rock type, with typically shallow and stony soils across much of the site. Sandstone cliffs protrude from the ridge top in the centre of the site. Areas of soils forming on Jurassic dolerite showed well-structured highly plastic clay soils with a moderate stone content.

Soil distribution
The soils found on the property show a very close correlation with underlying geological materials, and are therefore classified according to geological association e.g., acidic texture contrast soils (Kurosols) and deep acidic sands (Podosols) on the Triassic sandstones and more slightly acidic to neutral Brown Dermosols and texture-contrast Chomosols on the Jurassic Dolerites with reactive dark cracking clay soils in low lying areas (Black Vertosols). The major soil types examined on the property described have been integrated into the land capability framework which classifies land according to its ability to support agricultural production or residential development without environmental harm. Representative soil profile photographs for each major soil type

examined on the property are found in Appendix 1. The road cuttings that were examined and bore hole locations are indicated on the site plan in Appendix 2.

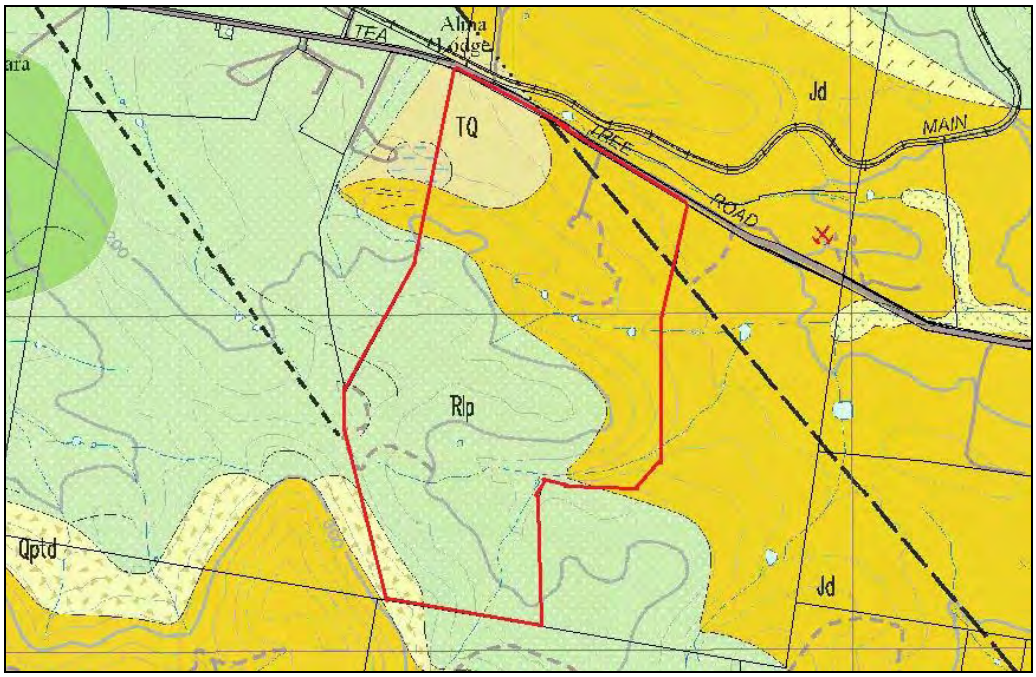


Figure 1 The 1:25 000 Tea Tree Geological Map of the site shows Triassic - dominantly medium-coarse grained sandstone with minor mudstone (Rlp - light green) is the dominant mapped lithology, with Jurassic Dolerite (Jd) represented in orange and undifferentiated Tertiary-Quaternary sediments in light tan colouring (TQ). The property boundary is outlined in red.

Climate summary

The property has an approximate 30 year average rainfall of 500 mm/yr and as such falls within a low rainfall district as classified by the Department of Primary Industries Water and Environment (2003). Climate averages for the Campania area are not available, so extrapolation based upon Bureau of meteorology figures for the Hobart airport weather station contained in Appendix 5 have been made.

Long term climate averages indicate that greater than 20 days per annum have a minimum temperature below 2° C, thereby greatly limiting the range of potential crops that may be grown in the winter months. In addition, the low rainfall (approximately 500 mm/year) excludes intensive cropping activities unless reliable reticulated irrigation water was available. Based upon the poor soil quality, pasture growth at the site is likely to be poor to moderate and dominated by native species with low dry matter production. Therefore the climate averages suggest that agricultural activity on the property is likely to very limited.

The Site does not currently have irrigation infrastructure that may have improved the Class 4 land to a Class 3, and the site lies just outside the area that is stipulated to be able to access the Southeast Irrigation Scheme – although the property is only a very short distance from such mapped areas (see Appendix 6)

5 Agricultural Land Capability Assessment

Agricultural Land Capability assessment has been developed in Tasmania by the Department of Primary Industries Water and Environment according to the basic guidelines described in Noble (1992) and enhanced guidelines in Grose (1999). The system uses a rating system of seven Classes to rank land according to its ability to sustain a range of agricultural uses without land degradation, i.e. sustained agricultural use. Agricultural land capability is generally based upon the permanent biophysical features of the land such as geology, soils, slope, climate, erosion hazard etc and does not include economic or social factors.

The agricultural land capability system in Tasmania utilizes a hierarchical framework of seven Classes which describe the ranking of the land based on the number and degree of limitations. It ranges from land with little or no limitations in Class 1, to extreme limitations in Class 6 and finally non-agricultural land at Class 7. Subclasses then describe those dominant limitation(s) within each class, i.e. Erosion (wind, water and mass movement), wetness (waterlogging and/or flooding), soils (stoniness, structure, depth etc), and climate (rainfall, temperature ranges, frost risk etc).

Land classified as Classes 1 – 3 are suitable for cropping (arable uses) activities subject to the limitations of each Class as might be locally apparent, Class 4 is a transitional low class arable (cropping uses) but moderately suitable grazing land, Classes 5 and 6 are generally suitable only for grazing with increasingly careful management as Class increases from 5 to 6 often due to increasing erosion risks, and Class 7 land is unsuitable for agricultural use (Noble 1992 and Grose 1999). According to the State Policy on the Protection of Agricultural Land 2000 land classified as Class 1, 2 and 3 is defined as Prime Agricultural Land due to its arable capability and general wide diversity of land use options.

Agricultural Land Capability Summary

The land contained within the study area was the subject of a site specific land capability assessment according to the methodology of the land capability handbook of Noble (1992) and Grose (1999). Reference was also paid to the published 1:100 000 Land Capability Series – Derwent Sheet (Musk & De Rose 2000) which indicated Class 4, 5 and 6 land on the property (see appendix 4).

A field survey was also undertaken to describe key soil types on the property, confirm mapped soils, geological unit, topography, erosion risks and assess the local microclimate. In addition reference was made to published climate averages available for proximal stations (appendix 5) to evaluate possible agriculture production capability.

The land area surveyed is classified as substantially **Class 5** with a minor component of riparian land classified as Class **4** for agricultural use and some **Class 6 and 7** land on the steeper slopes.

The majority of the property is classified as Class 5 agricultural land.

Class 5 is defined as "*Land with slight to moderate limitations for pastoral use. This land is unsuitable for cropping, although some areas on easier slopes may be cultivated for pasture establishment or renewal. The effects of limitations on the grazing potential may be reduced by applying appropriate soil conservation measures and land management practices".*

The areas surveyed would be suitable for low density stocking, but at the time of survey there was no evidence of stocking on the property, with only remnant fencing infrastructure remaining.

Figure 2 – Class 5 land on higher elevations limited by soil depth, moderate slope angle and rock outcrops. The patchy grass cover indicates low fertility and sandy topsoils will be prone to water erosion if all vegetative cover was removed either by tillage or overgrazing.

The main limitation to agriculture on the Class 5 land is erosion risk from sandy topsoils and poor soil structure. The shallow stony nature of many of the soils across the property and potential subsoil sodicity, together with imperfect drainage and poor surface structural properties for cultivation and plant growth limit the overall agricultural potential.

Figure 3 –Shallow stony soils on weathered Jurassic Dolerite - Class 5 land

Figure 4 – Landscape photo showing the break in soil type and in Class type

Class 6 is defined as "*Land marginally suitable for grazing because of severe limitations. This land has low productivity, high risk of erosion, low natural fertility, or other limitations that severely restrict agricultural use*".

Much of the land not cleared features shallow rocky soils on steep slopes, unsuitable for intensive agricultural use (Figure 5).

Figure 5 – Class 6/7 land limited by shallow, stony poor-quality soils.

Figure 6 – Class 6 land limited by high erosion potential – exposed sandy topsoil would be highly prone to wind erosion if exposed by tillage or cultivation.

Figure 7 – Class 6 land limited by high erosion potential with wombat burrows in the Sandy topsoils.

The low inherent land quality combined with local climatic conditions imposes severe limitations to agricultural production on the land i.e. Class 5 and 6 agricultural land capability. The agricultural capability of much of the land area is therefore low and is limited by; soil erosion hazard, shallow soil depth, moderate slopes, and poor soil conditions (sandy and acidic topsoils of low nutrient holding capacity and poor structure).

A minor component of the total land area of the property (approximately 11 hectares), at its northern end (road frontage), is classified as Class 4 land for agricultural production. Class 4 land is described as 'Land primarily suitable for grazing but which may be used for occasional cropping. Severe limitations restrict the length of cropping phase and/or severely restrict the range of crops that could be grown. Major conservation treatments and/or careful management is required to minimise degradation".

Brown or Red Dermosols, are reasonably fertile, moderately to well structured, and well drained. The areas in which they are found are usually limited by soil depth and stone content (l = limiting layer and/or g = coarse fragments). Low rainfall is the dominant limitation where soils are sufficiently deep and stone free to facilitate cropping (p = Precipitation). Cropping may also be limited by frost risk (t = temperature).

Figure 8 Looking east along the Class 4 land with Tea Tree Rd on the left and Class 5 land on the mid slopes

Figure 9 Brown Dermosol from Dolerite in road cutting at from of property. Note the stony nature of the soil but otherwise strong structure and clayey texture.

Figure 10 Reactive clays in the Dermosol subsoils indicated by the shrinkage cracks– Class 4 land

Figure 11 View of the small area of Class 4 land in the northern corner (front) of the property to the west of the driveway.

6 Conclusions

- None of the land area examined is rated as Prime Agricultural Land as defined under the State Protection of Agricultural Land Policy.
- The property is classified as predominantly Class 5 land for agricultural use, with moderate Class 6 and areas of Class 7 (sandstone bluffs) and a small area of Class 4 at the northern road frontage.
- The current single title mixes land of differing agricultural capability.
- The site is not mapped within the area allocated to receive the benefit of the South East Irrigation Scheme (Coal River and Sorell Irrigation Districts).

7 References

Isbell. R.F. (1996). The Australian Soil Classification. CSIRO Publishing.

Musk R and De Rose R (2000). Land Capability survey of the Derwent. Department of Primary Industries, Water and Environment, Tasmania.

Noble K E (1992). Land Capability Survey Handbook. Department of Primary Industry,, Tasmania.

Grose C (1999). Land Capability Survey Handbook. Department of Primary Industry and Fisheries.

Appendix 1 – Typical Soil Profile Descriptions

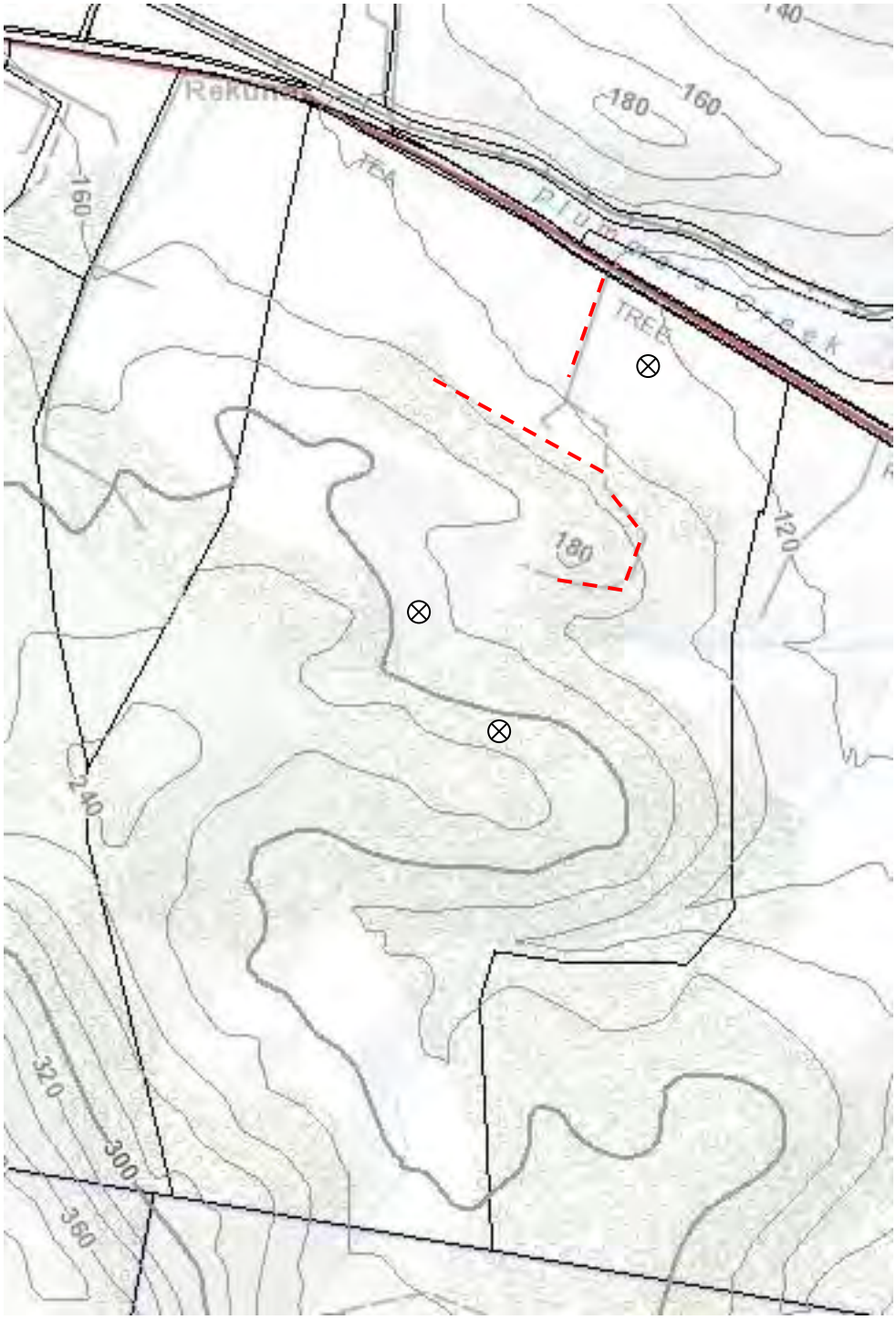
Dermosols - Brown soils on Dolerite - Bd (areas of class 5 Agricultural Land Capability)

Vertosols - Black clay soil on Dolerite - Bld (areas of Classes 4 and 5 Agricultural Land Capability)

Kurosols - Texture contrast soil on Sandstone (areas of Class 5 and 6 Agricultural Land Capability)

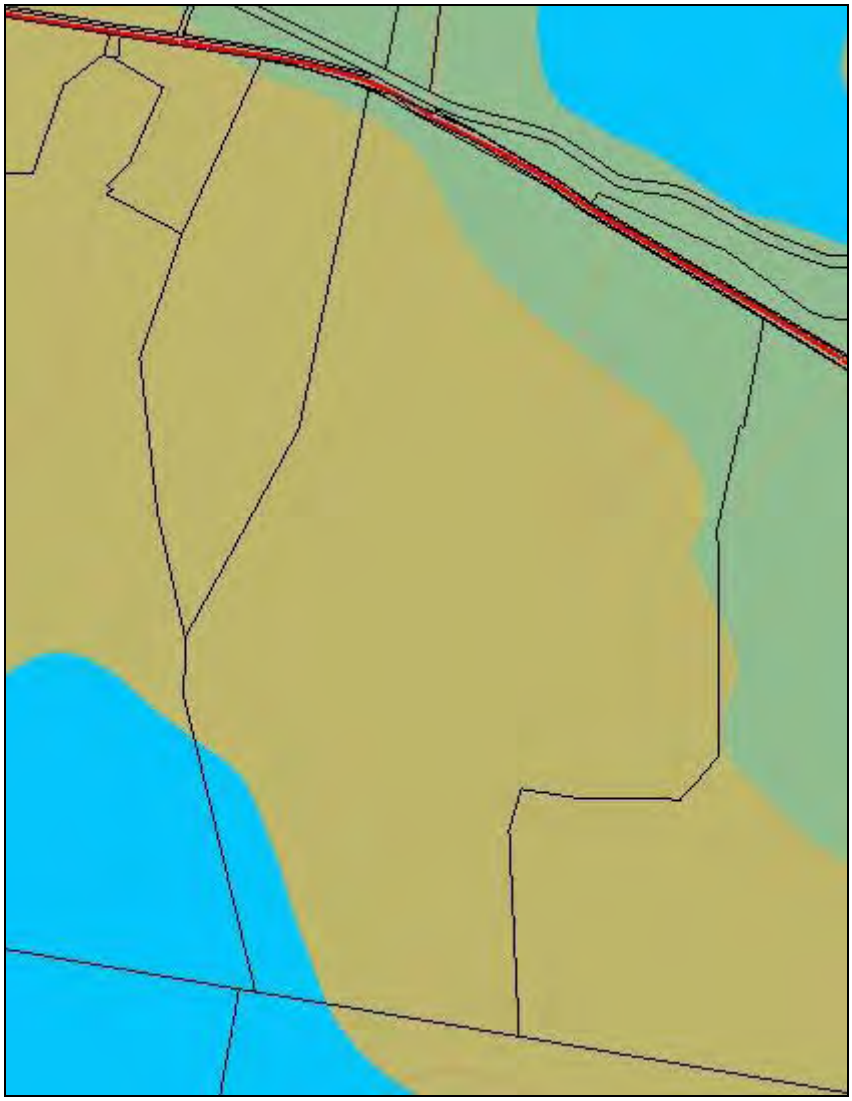
Appendix 2 – Site Plan

Auger Holes ⊗ Examined road cuttings - - -



Appendix 3 – Site aerial photograph with 20 m contour overlay

Appendix 4
DPIPWE Agricultural Land Capability Mapping of the Site showing the dominance of Classes 5 with minor areas of Class 4 and 6 land.



Legend

- Class 4 Land
- Class 5 Land
- Class 6 Land

Appendix 5 – Climate data (Bureau of meteorology Hobart Airport Weather Station)

Site name: Hobart Airport | Site number: 094008 | Commenced: 1958
Latitude: 42.83° S | Longitude: 147.50° E | Elevation: 4 m | Operational status: Open

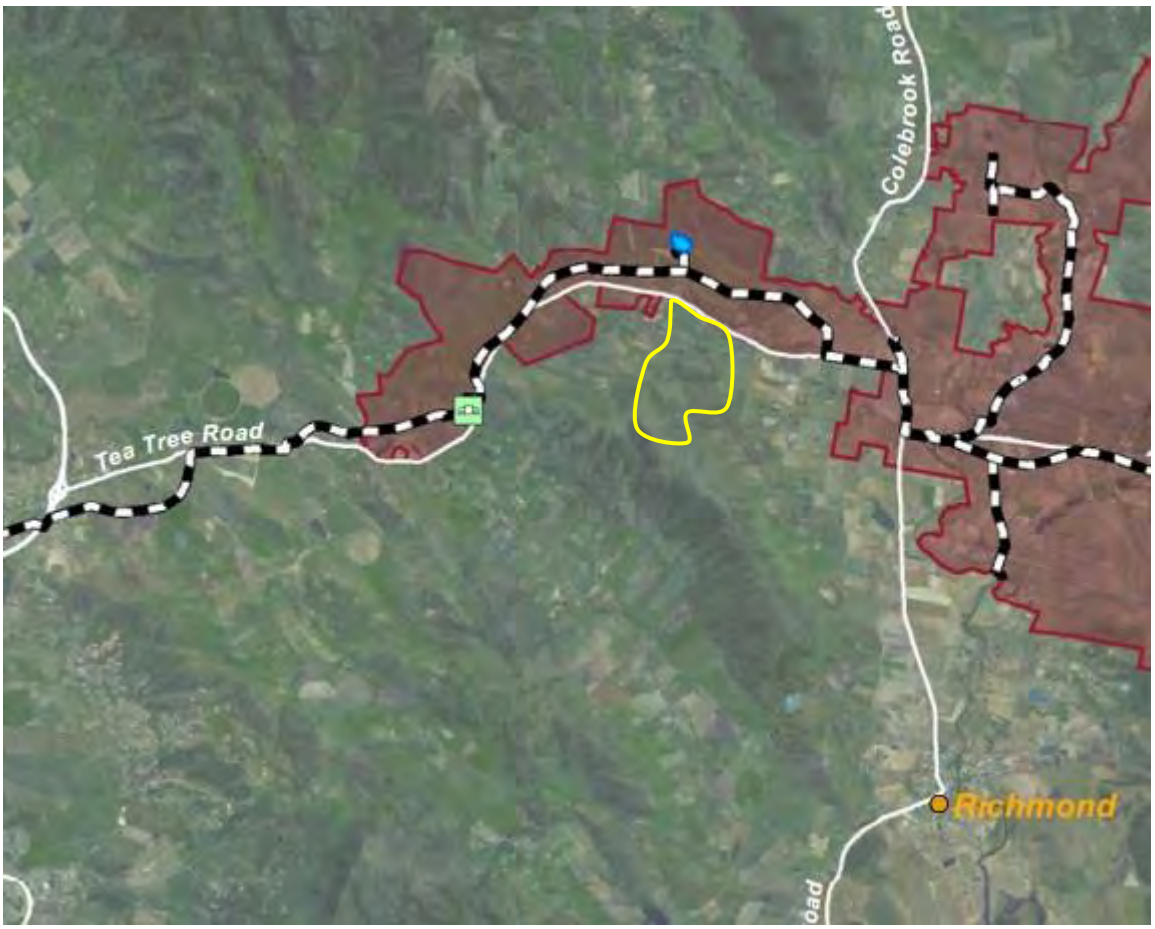
Statistic Element	January	February	March	April	May	June	July	August	September	October	November	December	Annual	No of Years	Start Year	End Year
Mean maximum temperature (Degrees C)	22.6	22.3	20.8	18.1	15.3	12.9	12.5	13.5	15.3	17.3	19	20.7	17.5	56	1958	2014
Highest temperature (Degrees C)	40.3	39.8	37	30.7	25.6	19.5	20.4	23.7	31.1	33.4	38.5	39.2	40.3	56	1958	2014
Date of Highest temperature	4-Jan-13	15-Feb-82	14-Mar-08	1-Apr-05	1-May-97	4-Jun-58	30-Jul-75	31-Aug-06	27-Sep-87	12-Oct-06	23-Nov-66	11-Dec-98	4-Jan-13	N/A	1958	2014
Lowest maximum temperature (Degrees C)	13.2	9.7	12.1	8.9	7.8	4.5	5.4	5.8	7.2	6.9	10.5	11.1	4.5	56	1958	2014
Date of Lowest maximum temperature	4-Jan-00	23-Feb-64	8-Mar-87	25-Apr-67	24-May-68	18-Jun-85	9-Jul-96	4-Aug-74	19-Sep-94	23-Oct-58	11-Nov-65	12-Dec-64	18-Jun-85	N/A	1958	2014
Decile 1 maximum temperature (Degrees C)	17.5	17.3	16.1	13.8	11.8	9.8	9.7	10.1	11.5	12.9	14.3	16		57	1958	2014
Decile 9 maximum temperature (Degrees C)	28.7	28.1	26.3	22.8	19	16.2	15.4	16.8	19.2	22.5	24.4	26		57	1958	2014
Mean number of days >= 30 Degrees C	2.4	1.7	0.9	0	0	0	0	0	0	0.1	0.7	1.1	6.9	56	1958	2014
Mean number of days >= 35 Degrees C	0.6	0.4	0.1	0	0	0	0	0	0	0	0	0.3	1.4	56	1958	2014
Mean number of days >= 40 Degrees C	0.1	0	0	0	0	0	0	0	0	0	0	0	0.1	56	1958	2014
Mean minimum temperature (Degrees C)	12	12	10.8	8.8	6.6	4.6	4.1	4.7	6.1	7.5	9.2	10.7	8.1	56	1958	2014
Lowest temperature (Degrees C)	3.7	3.4	2.2	-0.6	-2.2	-3.9	-3.2	-2	-2.3	-1	2.3	2.7	-3.9	56	1958	2014
Date of Lowest temperature	18-Jan-66	10-Feb-80	31-Mar-87	26-Apr-82	29-May-79	23-Jun-72	1-Jul-68	3-Aug-79	1-Sep-59	5-Oct-65	11-Nov-02	1-Dec-60	23-Jun-72	N/A	1958	2014
Highest minimum temperature	21.8	23.6	20.4	18.6	16	12.5	12.3	14.3	17.3	17	18.8	22.3	23.6	56	1958	2014
Date of Highest minimum temperature	4-Jan-13	1-Feb-74	13-Mar-13	3-Apr-89	5-May-05	8-Jun-91	18-Jul-72	30-Aug-05	24-Sep-87	12-Oct-06	26-Nov-91	30-Dec-02	1-Feb-74	N/A	1958	2014
Decile 1 minimum temperature (Degrees C)	8.3	8.2	6.8	5	2.9	1.3	1.1	1.5	2.6	3.7	5.4	7.2		57	1958	2014
Decile 9 minimum temperature (Degrees C)	15.6	15.6	14.5	12.7	10.3	8.3	7.3	8.1	9.6	11.2	12.8	14.2		57	1958	2014

Mean number of days <= 2 Degrees C	0	0	0	0.2	1.4	5.8	6.5	4.7	1.8	0.7	0	0	21.1	56	1958	2014
Mean number of days <= 0 Degrees C	0	0	0	0	0.2	0.8	1.2	0.6	0.1	0.1	0	0	3	56	1958	2014
Mean daily ground minimum temperature Degrees C	9.3	9.4	7.9	5.6	3.5	1.7	1.2	1.8	3	4.5	6.3	7.9	5.2	56	1958	2014
Lowest ground temperature Degrees C	-0.5	-0.5	-2.6	-3.6	-7.2	-6.4	-7.7	-6.6	-11.1	-4.1	-2.8	-2.4	-11.1	56	1958	2014
Date of Lowest ground temperature	2-Jan-74	16-Feb-75	31-Mar-73	26-Apr-82	29-May-79	23-Jun-72	30-Jul-71	7-Aug-60	10-Sep-96	4-Oct-62	5-Nov-64	2-Dec-96	10-Sep-96	N/A	1958	2014
Mean number of days ground min. temp. <= -1 Degrees C	0	0	0.1	0.7	3.3	7.4	7.8	6.2	3.3	1.6	0.4	0.1	30.9	56	1958	2014
Mean rainfall (mm)	39.8	36.3	36.2	42.2	35.6	32.5	43.8	47.1	41.6	46.5	45.2	52.5	499.2	56	1958	2014
Highest rainfall (mm)	97.6	186.4	112.4	250.7	112.8	136.2	156.1	115.4	117.8	117.3	103	169.8	735.4	56	1958	2014
Date of Highest rainfall	2002	1964	2003	1960	1969	2009	1967	1958	2005	1975	2001	1993	1975	N/A	1958	2014
Lowest rainfall (mm)	2.6	3.2	1.8	7.4	3.4	4.2	4.8	6.8	10.5	14.2	1.8	0.8	297.2	56	1958	2014
Date of Lowest rainfall	2008	2001	1992	1993	1991	2010	2010	1982	1968	2008	2003	1994	2006	N/A	1958	2014
Decile 1 monthly rainfall (mm)	10.5	9	12.7	13.8	13.2	12.2	15	15.2	19.1	19.5	16.4	16.9	363.4	56	1958	2014
Decile 5 (median) monthly rainfall (mm)	31.9	28.7	30.5	31.2	29.9	27.9	32.2	43.4	37.8	39.3	40.3	43.4	481	56	1958	2014
Decile 9 monthly rainfall (mm)	86.1	65.6	70.9	82.2	59.8	58.5	76.2	80.8	68.3	88.2	82.3	107.2	663.5	56	1958	2014
Highest daily rainfall (mm)	53.6	64	61.4	130.3	61.7	48.8	62	54	63.8	53.3	40.6	64.2	130.3	56	1958	2014
Date of Highest daily rainfall	22-Jan-97	23-Feb-64	23-Mar-83	23-Apr-60	17-May-69	8-Jun-11	11-Jul-67	28-Aug-81	12-Sep-05	21-Oct-73	30-Nov-77	27-Dec-93	23-Apr-60	N/A	1958	2014
Mean number of days of rain	9.3	8.1	10	10.7	11.4	11.3	13.3	13.8	13.9	13.9	13	11.9	140.6	56	1958	2014
Mean number of days of rain >= 1 mm	5.3	4.9	6.1	6.8	6.9	6.4	7.9	8.8	8.2	8.6	7.6	7.3	84.8	56	1958	2014
Mean number of days of rain >= 10 mm	1.2	1.1	0.8	0.9	0.8	0.6	0.9	1.1	0.8	1	1.2	1.4	11.8	56	1958	2014
Mean number of days of rain >= 25 mm	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.4	2.2	56	1958	2014
Mean daily wind run (km)	429	393	387	363	353	335	330	373	416	425	423	442	389	20	1995	2014
Maximum wind gust speed (km/h)	115	102	117	115	117	111	111	111	111	130	124	102	130	55	1958	2014

Date of Maximum wind gust speed	4-Jan-75	7-Feb-67	15-Mar-80	17-Apr-81	18-May-62	13-Jun-83	31-Jul-84	29-Aug-62	22-Sep-83	26-Oct-88	9-Nov-82	23-Dec-72	26-Oct-88	N/A	1958	2014
Mean daily sunshine (hours)	8.2	7.9	6.7	5.8	4.7	4.2	4.8	5.6	6.3	7.3	7.4	7.9	6.4	46	1968	2014
Mean daily solar exposure (MJ/(m*m))	23.6	19.8	15	9.5	6.1	4.6	5.3	8.4	12.7	17.2	20.9	23.9	13.9	25	1990	2014
Mean number of clear days	4.9	4.3	4.2	4	3.8	4.1	4.1	3.8	2.9	3.1	2.7	2.9	44.8	51	1958	2010
Mean number of cloudy days	13.4	11.1	13	13.8	15.7	14.3	14.4	14.5	13.9	14	15.6	15.4	169.1	51	1958	2010
Mean daily evaporation (mm)	6.3	5.4	4.2	2.8	1.9	1.3	1.4	2	3	4.1	4.9	5.9	3.6	28	1986	2014
Mean 9am temperature (Degrees C)	16.6	16.1	14.7	12.8	10	7.6	7.1	8.2	10.6	12.4	13.9	15.5	12.1	51	1958	2010
Mean 9am wet bulb temperature (Degrees C)	12.6	12.7	11.7	10.2	8.1	6	5.6	6.4	7.9	9.3	10.4	11.6	9.4	51	1958	2010
Mean 9am dew point temperature (Degrees C)	8.7	9.3	8.7	7.4	5.9	4.1	3.6	3.9	4.7	5.5	6.6	7.5	6.3	51	1958	2010
Mean 9am relative humidity (%)	61	66	69	71	77	80	80	76	68	64	63	60	69	51	1958	2010
Mean 9am cloud cover (okas)	5.1	5.1	5.1	5.1	5.2	5	4.9	4.8	5.1	5.2	5.4	5.5	5.1	51	1958	2010
Mean 9am wind speed (km/h)	14.5	13.2	12.8	13.4	12.3	12.3	12.3	13.8	16.1	16.4	15.8	15.5	14	50	1958	2010
Mean 3pm temperature (Degrees C)	20.5	20.6	19.1	16.6	14.1	11.9	11.4	12.4	13.8	15.6	17.3	18.9	16	51	1958	2010
Mean 3pm wet bulb temperature (Degrees C)	14.5	14.7	13.8	12.1	10.4	8.8	8.3	8.7	9.6	10.9	12.3	13.4	11.5	51	1958	2010
Mean 3pm dew point temperature (Degrees C)	9	9.5	8.8	7.4	6.3	5.1	4.4	4.3	4.7	5.7	7	8	6.7	51	1958	2010
Mean 3pm relative humidity (%)	50	51	53	56	61	64	63	60	56	54	53	52	56	51	1958	2010
Mean 3pm cloud cover (oktas)	4.7	4.6	4.9	5.2	5.3	5.3	5.2	5.4	5.5	5.3	5.4	5.3	5.2	51	1958	2010
Mean 3pm wind speed (km/h)	23.9	22.2	20.1	18.1	15.5	14	15.2	17.6	20.9	22.5	23.7	24.2	19.8	50	1958	2010

Appendix 6 – Map of coverage for Stage 3 South East Irrigation Scheme

Approximate location of the property marked in yellow showing it is not part of either the Coal River or Sorrell Irrigation Districts.



Appendix D – Ecological Assessment

ECOLOGICAL ASSESSMENT OF 1384 TEA TREE ROAD, CAMPANIA, TASMANIA

Environmental Consulting Options Tasmania (ECO*tas*) for
Holy Tantra Esoteric Buddhism Incorporated

19 June 2017

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AUTHORSHIP

Field assessment: Mark Wapstra

Report production: Mark Wapstra

Habitat and vegetation mapping: Mark Wapstra

Base data for mapping: TheList, TasMap

GIS mapping: Mark Wapstra

Digital and aerial photography: Mark Wapstra, GoogleEarth, TheList

ACKNOWLEDGEMENTS

Richard Ho provided background information and on-site guidance on the proposed location of design elements.

COVER ILLUSTRATION

Looking south across the property, with Coal River Tier in the background.

Please note: the blank pages in this document are deliberate to facilitate double-sided printing.

CONTENTS

SUMMARY

General

Holy Tantra Esoteric Buddhism Incorporated engaged Environmental Consulting Options Tasmania (ECO*tas*) to undertake an ecological assessment of private property at 1384 Tea Tree Road, Campania, Tasmania, primarily to facilitate further land use planning for the Tasmanian Chinese Buddhist Cultural Park through the Southern Midlands Council planning procedures.

At this stage of land use planning, the assessment and report are presented to indicate ecological values that may need to be taken into account when making land use decisions such as the location of roads, buildings, and other infrastructure. More detailed surveys may become necessary at a finer-scaled level of land use planning.

The study area was assessed on 27 November 2013 by Mark Wapstra. An initial report was produced in 2013 − the present report is a formal update of that report.

Summary of key findings

Non-priority flora (e.g. species of biogeographic significance)

- No species of high conservation significance detected − no special management actions required.

Non-priority fauna (e.g. species of biogeographic significance)

- No species of high conservation significance detected − no special management actions required.

Threatened flora

- No plant species listed as threatened on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* were detected from the study area.
- Three plant species listed as threatened on the Tasmanian *Threatened Species Protection Act 1995* were detected from the study area, as follows:
  - *Asperula scoparia* subsp. *scoparia* (prickly woodruff): two localised populations (outside project area);
  - *Austrostipa scabra* subsp. *falcata* (sickle speargrass): widespread but localised (most sites outside project area; localised patches may be affected by project); and
  - *Vittadinia muelleri* (narrowleaf new-holland-daisy): localised small population amongst "rough pasture" (outside project area).
- The presence of these species will need to be taken into account in further land use planning under Section 51 of the Tasmanian *Threatened Species Protection Act 1995*, but only *Austrostipa scabra* subsp. *falcata* may be affected by the project at this stage.

Threatened fauna

- Potential habitat is present for swift parrot, forty-spotted pardalote, masked owl, spotted-tailed quoll, and eastern barred bandicoot but field survey did not indicate actual presence of these species.

- Retention of the extent of *Eucalyptus viminalis*- and *Eucalyptus globulus*-dominated forests and woodlands is recommended to protect potential habitat of the forty-spotted pardalote and swift parrot, respectively – this recommendation will not have a material impact on the project concept.
- A policy of "no net loss" of native vegetation is recommended for other species, with an emphasis on ensuring minimal disturbance to larger trees (especially those with senescent features such as hollows), allowing natural regeneration of disturbed areas, and maintaining the level of coarse woody debris (fallen logs and trees), where safe to do so.
- Potential and temporary dens of the Tasmanian devil were associated with a line of sandstone cliffs and sandstone outcrops.
- Avoiding disturbance to the line of cliffs is recommended, with a suggested minimum 30-50 m buffer between the mapped dens and the nearest building (but the detail of this recommendation to be determined closer to the time of that part of the project).

Vegetation types

- The study area supports nine TASVEG mapping units:
  - "agricultural land" (TASVEG code: FAG): widespread on broad flats; also occurs as a mosaic with "lowland grassland complex" on slopes;
  - "urban areas" (TASVEG code: FUR): existing buildings;
  - "lowland grassland complex" (TASVEG code: GCL): widespread as a mosaic with NBA and FAG on slopes;
  - "*Bursaria-Acacia* woodland and scrub" (TASVEG code: NBA): as above;
  - "*Allocasuarina verticillata* forest" (TASVEG code: NVA): localised to two small patches on dolerite-based slopes;
  - "*Eucalyptus globulus* dry forest and woodland" (TASVEG code: DGL): localised to a few smaller remnants on slopes and ridges; all occurrences outside the area proposed for development;
  - "*Eucalyptus tenuiramis* forest and woodland on sediments" (TASVEG code: DTO): on insolated slopes and ridges, mainly in centre of study area above sandstone cliffs;
  - "*Eucalyptus amygdalina* forest and woodland on sandstone" (TASVEG code: DAS): restricted to one ridge-based remnant, grading with DTO and DVG; and
  - "*Eucalyptus viminalis* grassy forest and woodland" (TASVEG code: DVG): widespread on slopes, grading into NBA, DGL, DTO and DAS.
- None of these mapping units equate to threatened ecological communities listed on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.
- FAG, FUR, GCL, NBA, NVA and DVG are not classified as threatened under Schedule 3A of the Tasmanian *Nature Conservation Act 2002* – no special management actions are required (although note comments in regard to threatened flora and fauna).
- DGL, DAS and DTO are classified as threatened under Schedule 3A of the Tasmanian *Nature Conservation Act 2002* – there are constraints on clearing these vegetation types under the provisions of the Tasmanian *Forest Practices Act 1985* through the local planning scheme (in practice, virtually no areas of these vegetation types will be "cleared" within the intent of vegetation management policy).

Weeds

- Four species, classified as a "declared weeds" within the meaning of the Tasmanian *Weed Management Act 1999*, were detected from the study area, as follows:
  - *Echium plantagineum* (patersons curse): localised to edge of eastern fenceline, where the species is locally frequent on the adjacent property (control possible through hand-pulling when flowering);
  - *Chrysanthemoides monilifera* subsp. *monilifera* (boneseed): highly localised in NBA west of houses above dam (occurrence of individual already hand-pulled on day of survey);
  - *Marrubium vulgare* (white horehound): several scattered individuals to small patches, in pasture areas (does not pose a threat to viability of pasture or adjacent native forest remnants); and
  - *Carduus tenuiflorus* (winged thistle): scattered populations arising after fire but only occasional denser patches (likely to be short-lived occurrences only as native grasses become dominant again over time).
- The extent of weeds is not such that a complex and/or formal weed management plan is considered warranted because establishment of various project elements will effectively eliminate the majority of occurrences, at least locally. At this stage of planning, a detailed map has not been provided. The key concern is to ensure that vegetation debris and seed-contaminated topsoil is carefully managed such the risk of weeds establishing in other parts of the property and municipality is minimised. To that end, on-site disposal of such material (e.g. burning in accordance with Tasmania Fire Service and Southern Midlands Council guidelines and regulations) is suggested.

Plant disease

- No evidence of plant disease (*Phytophthora cinnamomi*, rootrot fungus; myrtle wilt; myrtle rust) was detected – no special management actions are required.

Animal disease (chytrid)

- The title area is not known to support frog chytrid disease and the project is not likely to disturb habitats conducive to the disease persisting.
- No special management is recommended.

Recommendations

The study area proposed for long-term development as the Tasmanian Chinese Buddhist Cultural Park supports a mosaic of exotic and native vegetation, in various states of ecological condition from relatively heavily anthropogenically modified to relatively undisturbed.

No formal referral to the relevant Commonwealth government agency under the provisions of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* is considered warranted.

There are several ecological values that will require careful consideration under relevant State legislation related to threatened species and vegetation management. The development will result, eventually, in the "clearing" of "forest" (albeit very small areas over c. 200 years) within the meaning of the *Forest Practices Act 1985* and Regulations, and as such, approval under the relevant planning scheme is required. A separate threatened species permit under the Tasmanian *Threatened Species Protection Act 1995* will be required for some aspects of the project, depending on the final design and scheduling of the project elements.

Based on the site assessment, the ecological values present within the title area, and specifically within/close to the areas for different parts of the overall project, can be appropriately taken into account during the more detailed stages of project planning. For the purposes of local government planning approvals, in my opinion, the proposed project will result in negligible disturbance to ecological values and should be able to proceed with minimal constraints.

PURPOSE, SCOPE, LIMITATIONS AND QUALIFICATIONS OF THE SURVEY

Purpose

Holy Tantra Esoteric Buddhism Incorporated engaged Environmental Consulting Options Tasmania (ECO*tas*) to undertake an ecological assessment of private property at 1384 Tea Tree Road, Campania, Tasmania, primarily to facilitate further land use planning for the Tasmanian Chinese Buddhist Cultural Park through the Southern Midlands Council planning procedures.

At this stage of land use planning, the assessment and report are presented to indicate ecological values that may need to be taken into account when making land use decisions such as the location of roads, buildings, and other infrastructure. More detailed surveys may become necessary at a finer-scaled level of land use planning.

Scope

This report relates to:

- flora and fauna species of conservation significance, including a discussion of listed threatened species potentially present, and other species of conservation significance/interest;
- vegetation types (forest and non-forest, native and exotic) present, including a discussion of the distribution, condition, extent, composition and conservation significance of each community;
- plant and animal disease management issues;
- weed management issues; and
- a discussion of some of the policy and legislative implications of the identified ecological values.

This report follows, in a general sense, the government-produced *Guidelines for Natural Values Assessments – Terrestrial Development Proposals* (DPIPWE 2015) in anticipation that the report (or extracts of it) may be used as part of various approval processes that may be required for the development proposal on the site.

The report also specifically addresses further information usually requested by local government for developments on titles where particular environmental values need to be considered under the relevant planning scheme. In this case, the client has had initial discussions with planning officers from the Southern Midlands Council who indicated that a "flora and fauna survey from a suitably qualified person is required" was warranted to assist with future planning decisions.

The assessment also complies, in a general sense, with the Tasmanian EPA's *Environmental Effects Report* requirements. The report format will also be applicable to other assessment protocols as required the Commonwealth Department of the Environment & Energy (for any referral/approval that may be required under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* -unlikely to be required).

Limitations

The ecological assessment was undertaken on 20 November 2013. Many plant species have ephemeral or seasonal growth or flowering habits, or patchy distributions (at varying scales), and

it is possible that some species were not recorded for this reason. However, every effort was made to sample the range of habitats present in the survey area to maximise the opportunity of recording the majority of species present (particular those of conservation significance). Late spring and into summer is usually regarded as the most suitable period to undertake the majority of botanical assessments (although this season is particularly good for spring-flowering species, including many threatened species such as orchids, with an "early" season in progress due to good winter rains and warming conditions). While some species have more restricted flowering periods, a discussion of the potential for the site to support these is presented. It is noted that the survey coincided with the peak flowering of many threatened plants in nearby areas.

The survey was also limited to vascular species: species of mosses, lichens and liverworts were not recorded. However, a consideration is made of species (vascular and non-vascular) likely to be present (based on habitat information and database records) and reasons presented for their apparent absence.

Surveys for threatened fauna were practically limited to an examination of "potential habitat" (i.e. comparison of on-site habitat features to habitat descriptions for threatened fauna), and detection of tracks, scats and other signs, except as indicated.

Qualifications

Except where otherwise stated, the opinions and interpretations of legislation and policy expressed in this report are made by the author and do not necessarily reflect those of the relevant agency. The client should confirm management prescriptions with the relevant agency before acting on the content of this report.

Permit

Any plant material was collected under DPIPWE permit TFL 13066 (in the name of Mark Wapstra). Relevant data will be entered into DPIPWE's *Natural Values Atlas* database by the author. Some plant material may be lodged at the Tasmanian Herbarium by the author.

THE STUDY AREA

The title area comprises c. 106 ha of private property centred on approximately 531989mE 5274876mN (GDA 94; TASMAP Tea Tree 5227), on the broad valley floor and adjacent steeper slopes south of Tea Tee Road extending onto the Coal River Tier (Figures 1 & 2). The title is accessed direct off Tea Tree Road.

The title area comprises primary production land dominated by pasture on the more gently sloped to flatter ground (northern part of title closer to Tea Tree Road) and "rough grazing" country on the steeper ground. Several large patches of remnant native forest are present, mainly in drainage features and on steeper rocky slopes and ridges.

Several minor drainage features dissect the title area (all essentially dry at the time of assessment), all of which form the upper tributaries of Plummers Creek that flow direct into the Coal River east of Colebrook Road. Several small dams are present on the title.

There are several minor tracks within the title area. The title area is fully fenced. There are existing residences and sheds and associated driveways and gravelled areas in the north of the title.

Elevation of the study area varies from c. 110 m a.s.l. (far northeast corner of title near Tea Tree Road) to c. 290 m a.s.l. (far southwest of title area).

Topography is variable but generally comprises broad ridges flanked by moderately steep slopes that extend to drainage features in gullies. Aspect is variable.

Geology of the title area is mapped as:

- Jurassic-age "dolerite (tholeiitic) with locally developed granophyre" (geocode: Jd): wide band between sandstone slopes/ridges and Tea Tree Road (northern part of title area) and small pocket in southwest of title area; and
- Triassic-age Upper Parmeener Supergroup "dominantly quartz sandstone" (geocode: Rq): broad band between two sections of dolerite.

This geological mapping was confirmed by site assessment, with dolerite and dolerite talus present on slopes/ridges and sandstone outcrops/cliffs present approximately as indicated by geological mapping.

Land tenure and other categorisations of the title area are as follows:

- private property (PID 2941293; title 155148/1; LPI BYS51; 1384 Tea Tree Road);
- Southern Midlands municipality, zoned as Rural Resource;
- South East Bioregion (according to the 5/6.1 boundaries used by most government agencies); and
- Southern Natural Resource Management (NRM) region.

The study area is wholly within private property, bounded entirely by private property titles and Tea Tree Road to the north.

Some of the native vegetation including grassland, shrubland and eucalypt forest were burnt in the March 2013 wildfires.

THE PROPOSAL

Holy Tantra Esoteric Buddhism Incorporated is a non-profit charitable institution endorsed by the Australian Taxation Office, proposing to construct a Tasmanian Chinese Buddhist Cultural Park (TCBCP) at 1384 Tea Tree Road, Campania Tasmania (Figure 3).

The total land area is 106.5 ha. The TCBCP is proposed to consist of ten major temple constructions, infrastructure and facilities of an educational and cultural institution, and other ancillary facilities e.g. car park, café and souvenir shop, toilets, recreational ground, traditional Chinese-style landscaped gardens, etc.

Due to funding constraints, the TCBCP project is planned as a 200 year project with 10 to 20 major stages. The client has produced various information documents that fully describe the project, its elements and stages. Of particular relevance to the consideration of ecological values and their management is that (a) the project philosophy is based on minimising the carbon footprint and environmental impact through careful planning and a concept of replacing every tree cut down with ten new trees somewhere else on the property, and (b) the siting of the project elements is very deliberate and reflect a "Dragon Energy Spine", meaning the alignment of elements is critical.

On this basis, the study area was deemed to comprise the entire title area to provide a broad overview of the ecological values, with a survey emphasis on more accessible areas most likely to be suitable for development.

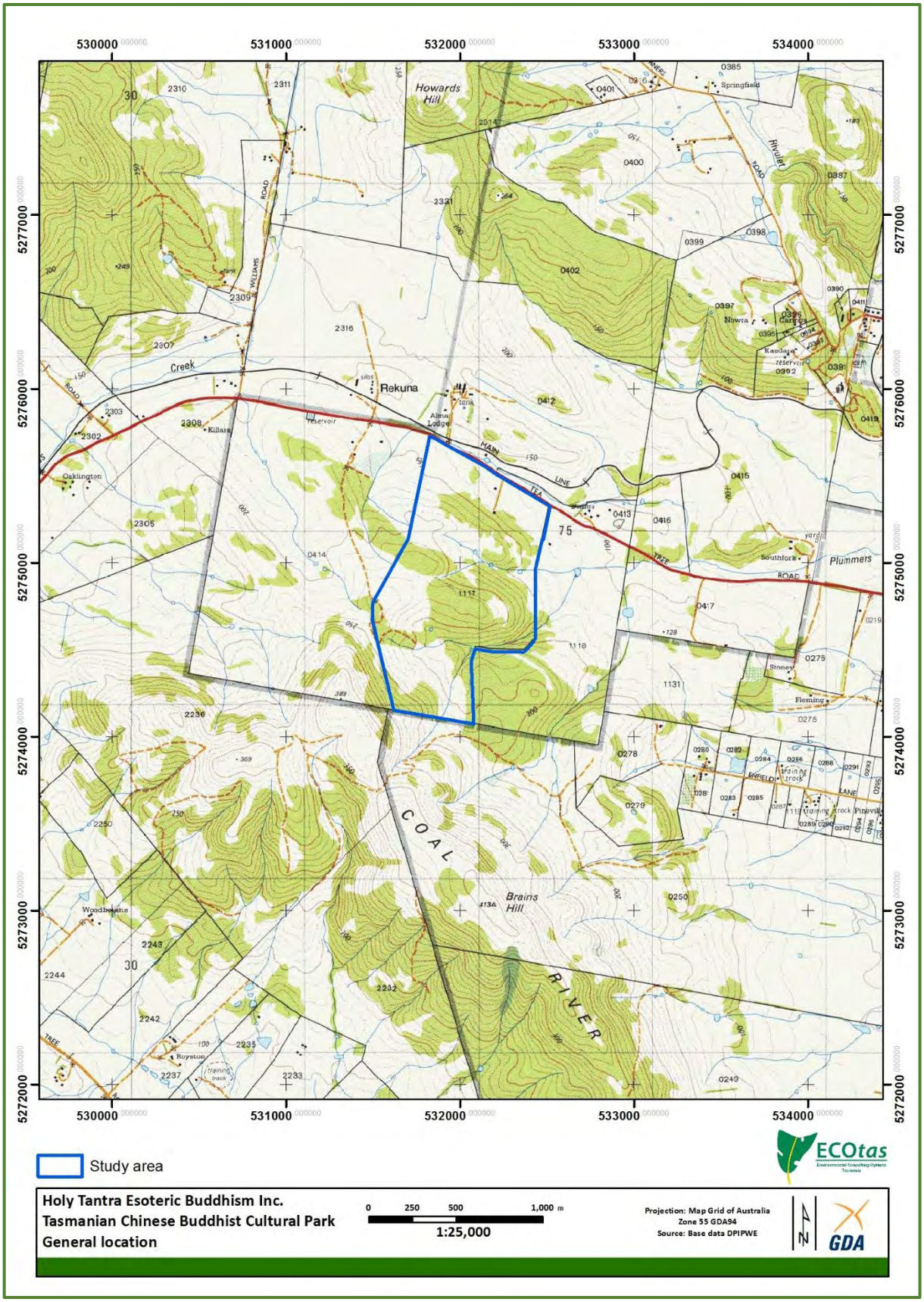

Figure 1. General location of the study area

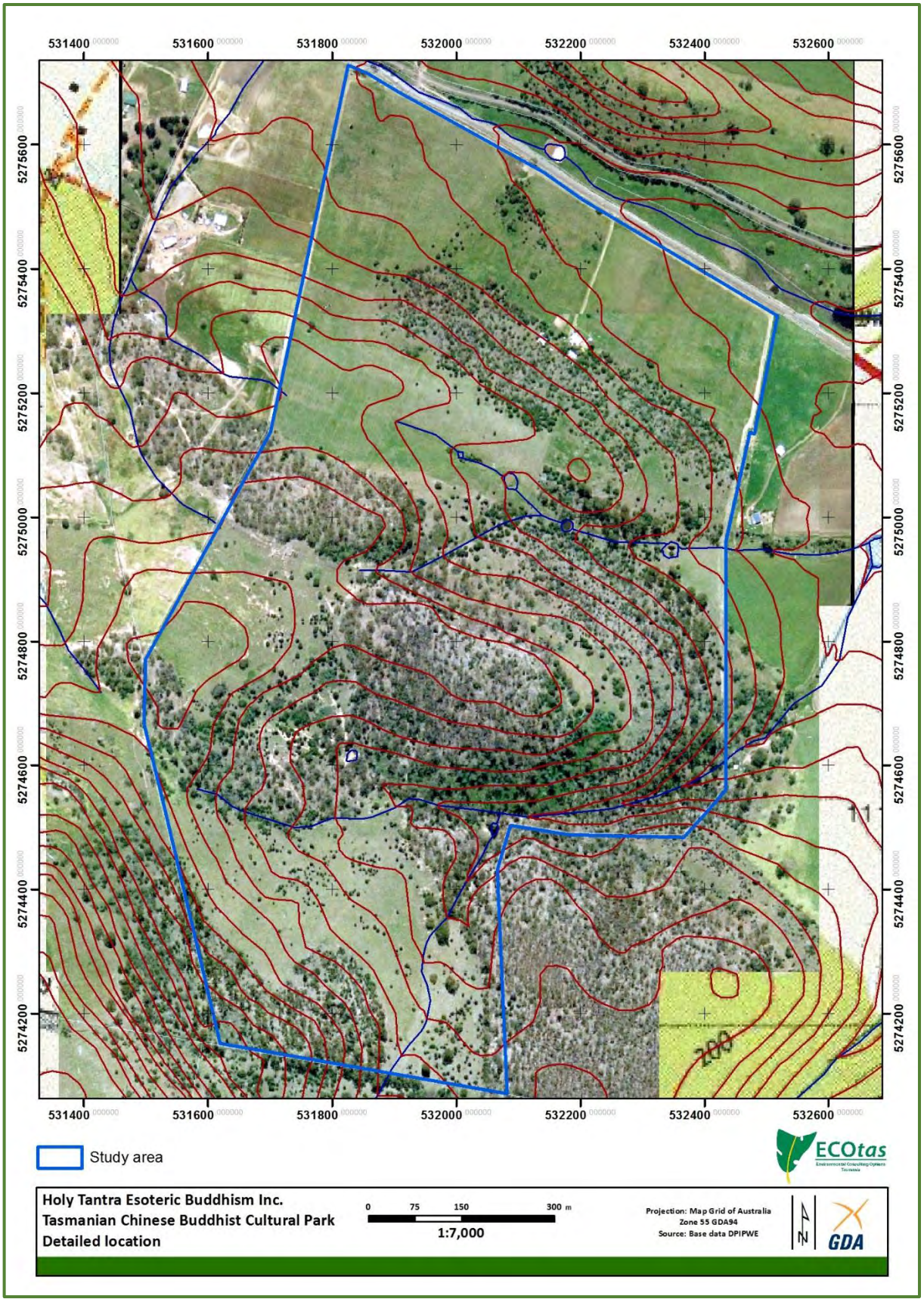

Figure 2. Detailed location of study area showing current vegetation cover

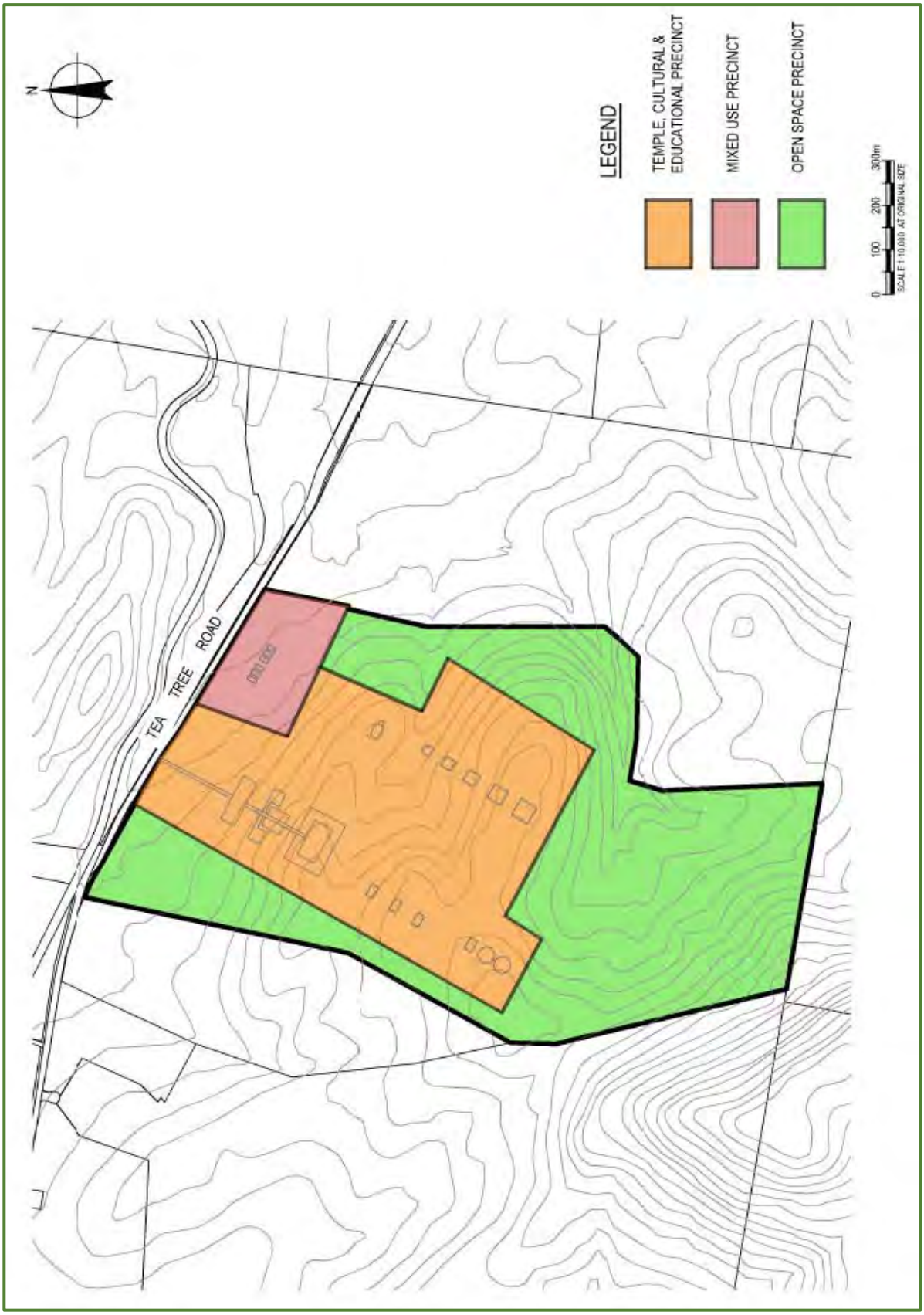

Figure 3. Approximate layout of proposed project elements (courtesy HTEBI)

METHODS

Nomenclature

All grid references in this report are in GDA94, except where otherwise stated.

Vascular species nomenclature follows Baker & de Salas (2016) for scientific names and Wapstra et al. (2005+) for common names. Fauna species scientific and common names follow the listings in the cited *Natural Values Atlas* reports (DPIPWE 2013a).

Vegetation classification follows TASVEG, as described in *From Forest to Fjaeldmark: Descriptions of Tasmania's Vegetation* (Kitchener & Harris 2013).

Preliminary investigation

Available sources of threatened flora and fauna records, vegetation mapping and other potential environmental values were interrogated. These sources include:

- Tasmanian Department of Primary Industries, Parks, Water & Environment's *Natural Values Atlas Report ECOtas_HolyTantraEsotericBuddhism_Campania* for a polygon defining the title area, buffered by 5 km, dated 19 June 2017 (DPIPWE 2017) – Appendix F;
- Forest Practices Authority's *Biodiversity Values Database* report, specifically the species' information for grid reference 531989mE 5274875mN (grid centroid of the cited *Natural Values Atlas* report), buffered by 2 km, hyperlinked species' profiles and predicted range boundary maps, dated 19 June 2017 (FPA 2017) – Appendix G;
- Commonwealth Department of Environment & Energy's *Protected Matters Search Tool Report* for a polygon defining the title area, buffered by 5 km, dated 19 June 2017 (CofA 2017) – Appendix H;
- the TASVEG vegetation coverage (as available through a GIS coverage – Figure 4);
- other sources listed in tables and text as indicated.

Botanical survey

The study area was assessed on 27 November 2013 by Mark Wapstra (ECO*tas*). The survey aimed to assess the range of habitat types present in the study area (at the broad scale e.g. vegetation type, altitude variation, and at the finer scale e.g. microhabitats such as open areas, tracks, poorly-drained patches, disturbed sites, etc.). In this case, the study area comprises open pasture, "rough pasture" and lightly wooded slopes and ridges such that survey was not restricted in any manner.

Reference to topographic maps (Tea Tree 5227 TASMAP 1:25000 scale), aerial photography (GoogleEarth, TheList) and vegetation maps (TASVEG as per the cited *Natural Values Atlas* report) established the approximate range and distribution of topographic and habitat variation present in the study area.

Detailed plots recording all vascular species, vegetation structure and site characteristics were undertaken in each of the representative native vegetation types.

Where threatened flora populations were encountered, hand-held GPS (Garmin Oregon 650) was used to delineate the point location and/or extent of the population and estimates made of

abundance of individuals, where practical. The term "where practical" is used in relation to species such as *Carex tasmanica* (curly sedge), *Austrostipa scabra* subsp. *falcata* (sickle speargrass) and *Asperula scoparia* subsp. *scoparia* (prickly woodruff) that were either locally extremely abundant or difficult to count due to growing through dense grass, respectively.

Zoological survey

Potential habitat for threatened fauna (as listed on databases referred to above) was assessed by reference to the vegetation types and site characteristics present. The presence of mammals, birds, frogs and reptiles was determined by opportunistic discovery (e.g. sightings and calls) during the main botanical assessment, and evidence such as tracks, scats and other signs.

Surveys for dens of Tasmanian devils

During the course of the assessment, a series of sandstone cliffs, overhangs and small caves were encountered in the approximate centre of the study area. These were superficially suitable for dens of the Tasmanian devil (and other vertebrates), and as such, the line of cliffs (and individual ledges and isolated outcrops) were searched by examining overhangs, caves and potential entrance sites. Where evidence of Tasmanian devil use of such a habitat feature was noted, a GPS reading and digital images were taken.

RESULTS

Vegetation types

Comments on TASVEG mapping

This section, which comments on the existing TASVEG mapping for the study area, is included to highlight the differences between existing mapping and the more recent mapping from the present study to ensure that any parties assessing land use proposals (via this report) do not rely on existing mapping. Note that TASVEG mapping, which was mainly a desktop mapping exercise based on aerial photography, is often substantially different to ground-truthed vegetation mapping, especially at a local scale.

TASVEG (Figure 3) maps the study area as:

- "agricultural land" (TASVEG code: FAG): majority of open grassy areas in northern part of title (majority shown on aerial images as managed (fenced) paddocks) and a "tongue" of "grassland" (clearly lightly wooded on aerial imagery) extending from the title to the south;
- "lowland grassland complex" (TASVEG code: GCL): small pocket in approximate centre of title and larger area extending west off title;
- "*Eucalyptus viminalis* grassy forest and woodland" (TASVEG code: DVG): majority of areas shown as forest/woodland on aerial imagery.

The mapping is variably accurate. It is clear that there have been several efforts of vegetation mapping in the broader area because there are sharp boundaries between vegetation types that are based on property boundaries rather than actual vegetation differences. For example, a patch

of DVG is mapped on the far southern boundary but this continues as DGL ("*Eucalyptus globulus* dry forest and woodland") on the title to the south.

Vegetation types recorded as part of the present study

Vegetation types have been classified according to *From Forest to Fjaeldmark: Descriptions of Tasmania's Vegetation* (Kitchener & Harris 2013). Conservation priorities alluded to in Table 1 and discussed in the text below are taken from Schedule 3A of the *Nature Conservation Act 2002* (DPIPWE 2017). Table 1 provides information on the vegetation types identified with notes provided on condition. Figure 4 indicates the revised mapping of the vegetation within the study area.

Table 1. Vegetation mapping units present in study area

[conservation priorities: TASVEG – as per Schedule 3A of the Tasmanian *Nature Conservation Act 2002*, using units described by Kitchener & Harris (2013), relating to TASVEG mapping units only; EPBCA – as per the listing of ecological communities on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, relating to communities as described under that Act, but with equivalencies to TASVEG units]

TASVEG Equivalent (Harris & Kitchener 2013)	Conservation priority TASVEG EPBCA	Comments
Agricultural, urban and exotic vegetation		
Agricultural land (FAG)	Not threatened Not threatened	FAG occupies much of the gentler slopes and grades with native grassland (mapped as GCL), depending on land use history (e.g. fire, cultivation). Note that the various small dams within FAG have not been separately mapped as "Water" (TASVEG code: OSM) due to the scale of mapping.
Urban areas (FUR)	Not threatened Not threatened	FUR has been used to map the area around the existing buildings. Parts of the area may be better mapped as "extra-urban miscellaneous" (TASVEG code: FUM) but at the scale of mapping, this was not practical.
Native grassland		
Lowland grassland complex (GCL)	Not threatened Not threatened	GCL occupies the stonier and more insolated cleared areas not occupied by FAG. FAG and GCL grade into one another at a local scale. GCL also forms a mosaic with patches of tall shrubs (mainly prickly box, black wattle and sheoak), which are mapped as "*Bursaria-Acacia* woodland and scrub" (TASVEG code: NBA – see below).
Non-eucalypt forest and woodland		
Bursaria-Acacia woodland and scrub (NBA)	Not threatened Not threatened	NBA forms a mosaic with GCL, reflecting the long clearing, burning and grazing history of the property. In most places, NBA is sparse and almost better mapped as GCL with scattered shrubs, but some areas are quite distinct on aerial imagery and on the ground. The extent of NBA is not precisely shown on maps because of this mosaic distribution.
Allocasuarina verticillata forest (NAV)	Not threatened Not threatened	NAV occupies a small area on steep dolerite-based slope above the main creekline, where it grades into DGL with scattered large blue gums on its fringes. It also occurs on the main broad slope below the sandstone cliffs, where *Allocasuarina verticillata* appears to have out-competed prickly box and black wattle after a disturbance to create NAV instead of NBA.

TASVEG Equivalent (Harris & Kitchener 2013)	Conservation priority TASVEG EPBCA	Comments
Dry eucalypt forest and woodland		
Eucalyptus globulus dry forest and woodland (DGL)	Threatened (vulnerable) Not threatened	DGL occupies sites on both dolerite and sandstone in the south and east of the property, generally occurring on steeper north-facing slopes. DGL grades into NBA, GCL and DVG. Much of DGL has been burnt in the most recent wildfire.
Eucalyptus tenuiramis forest and woodland on sediments (DTO)	Threatened (vulnerable) Not threatened	DTO occurs on the dry ridges in the centre of the study area (above the sandstone cliffs) and along the eastern boundary. DTO grades into DVG and NBA. There is a relatively extensive line of sandstone cliffs and ledges at the transition of DTO and DVG.
Eucalyptus amygdalina forest and woodland on sandstone (DAS)	Threatened (vulnerable) Not threatened	DAS occupies a sandstone-based ridge and adjacent slope in the west of the study area. Here it grades with DVG and DTO, with mixed canopy dominance making classification somewhat problematic.
Eucalyptus viminalis grassy forest and woodland (DVG)	Not threatened Not threatened	DVG occupies insolated to somewhat sheltered slopes on both sandstone and dolerite. Classification of dolerite-based occurrences of forest and woodland dominated by *Eucalyptus viminalis* is in strict accordance with TASVEG. Mapping of sandstone-based occurrences is less strictly adherent to TASVEG, where such occurrences are sometimes subsumed into a broad concept of DAS. In this case, however, the floristic and structural elements of the "DVG on sandstone" has closer affinities to "DVG proper" than the DAS mapped for the site.

Of the vegetation types present, DGL, DAS and DTO are classified as threatened under Schedule 3A of the Tasmanian *Nature Conservation Act 2002*, and some management constraints may apply to these areas (see DISCUSSION *Legislative and policy implications* for more detail). Based on the draft proposed layout of the project elements, limited areas will be affected. DGL is also associated with potential foraging habitat for the endangered swift parrot and clearing of this vegetation type is likely to be constrained for that value also. Some threatened flora populations were also associated with some of the patches of DGL.

Plant species

General observations

A total of 185 vascular plant species were recorded from the study area (Appendix B), comprising 118 dicotyledons (including 2 endemic and 45 exotic species); 62 monocotyledons (including 1 endemic and 20 exotic species); 5 pteridophytes (all native) and 0 gymnosperms. Additional surveys at different times of the year may detect additional short-lived herbs and grasses, although such surveys are not considered warranted because any additional species detected are not likely to have a high priority for conservation management.

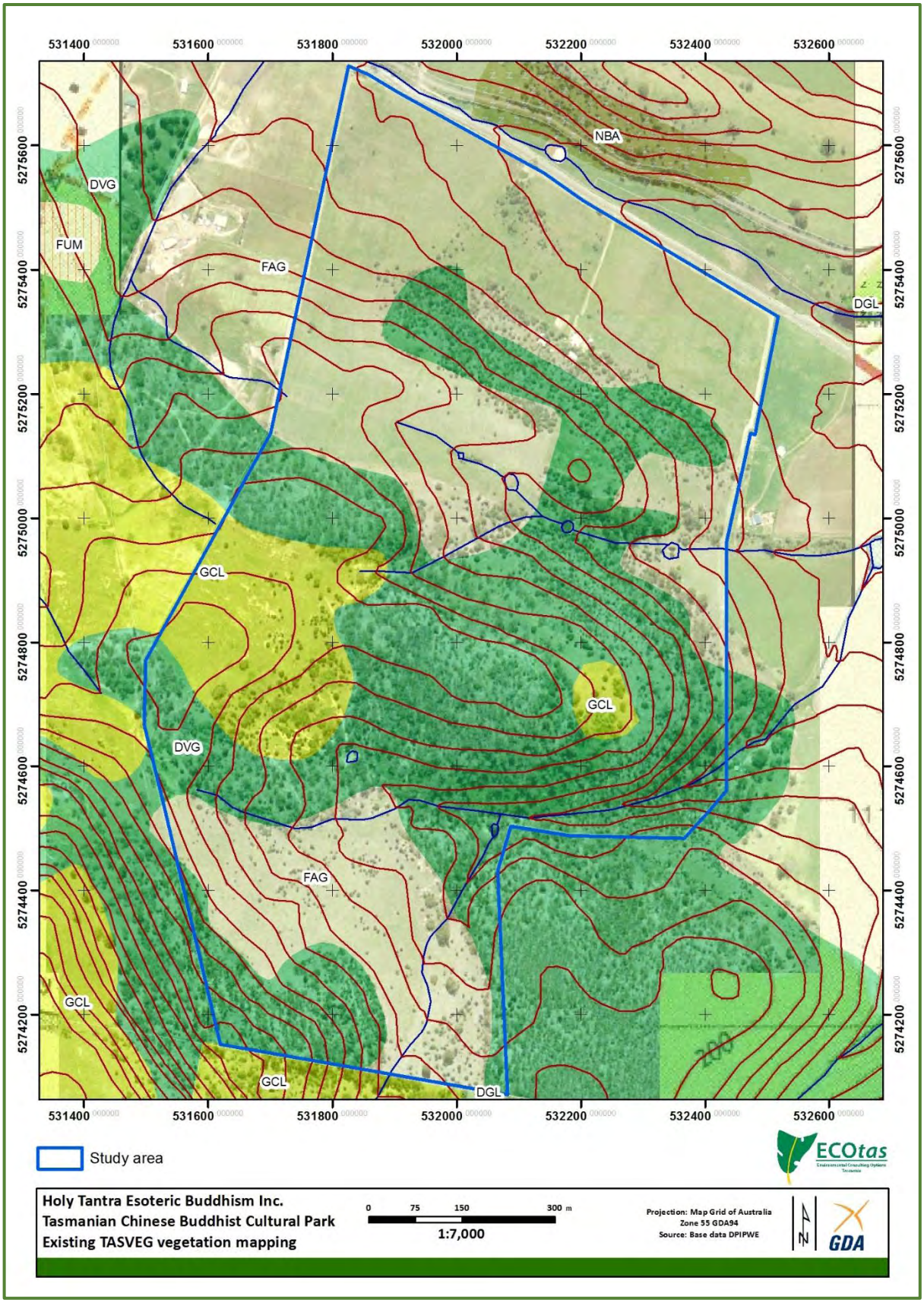

Figure 4. Existing TASVEG mapping of the title area (refer to text for description of the vegetation codes)

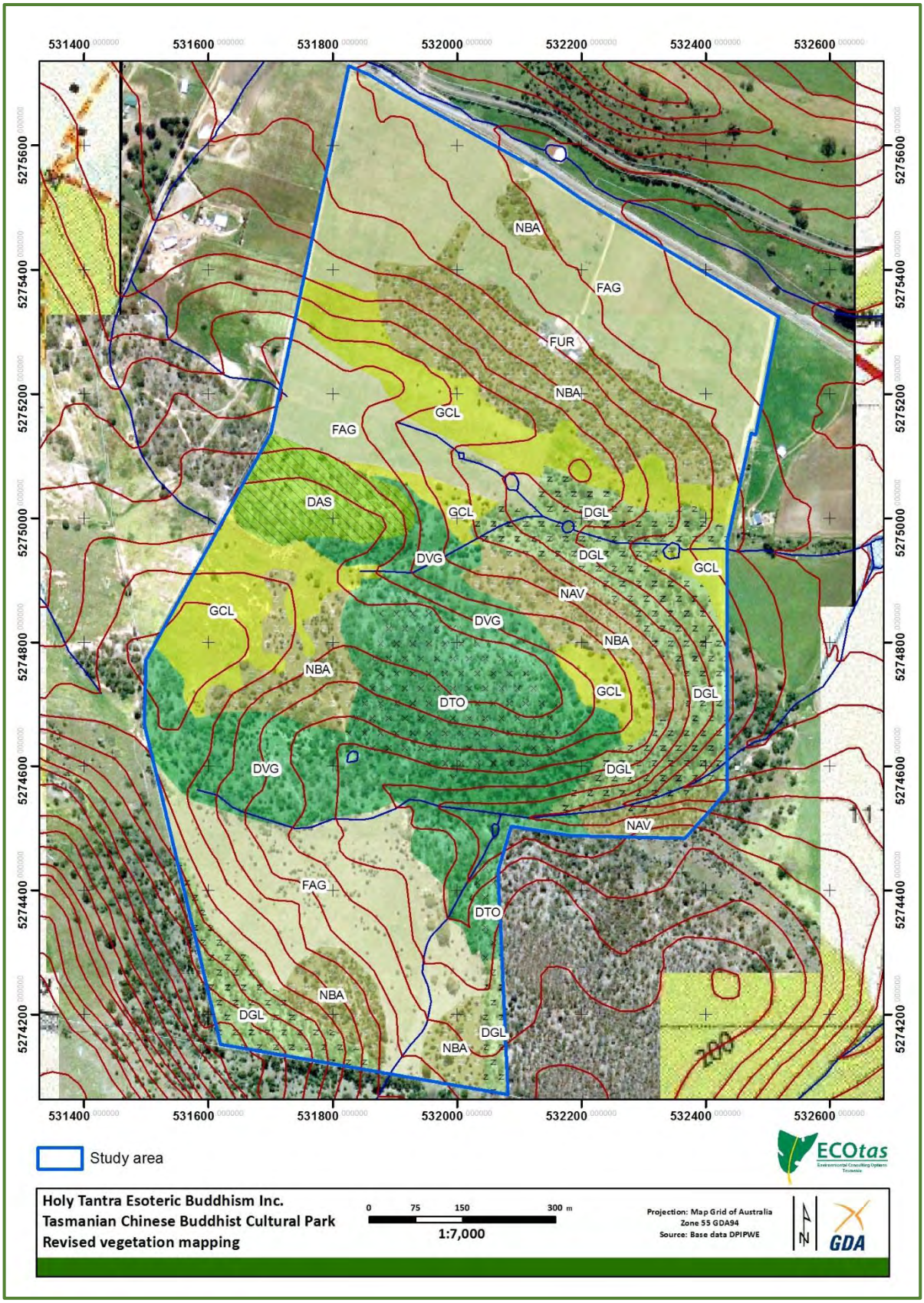

Figure 5. Revised vegetation mapping of the title area – overview (refer to text for description of the vegetation codes)

Threatened flora species recorded from the study area

No plant species listed as threatened on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) were detected from the study area. Note that an initial report identified a population of *Carex tasmanica* (curly sedge) from near Tea Tree Road between an existing dam and the fenceline along the road, comprising 100s to 1,000s of individuals occupying a sedge-rush dominated poorly-drained part of the lower slope. At the time (2013), this species was listed as Vulnerable on the EPBCA. It has since been removed from schedules of the EPBCA and does not need to be taken into account. The species was never listed on the Tasmanian *Threatened Species Protection Act 1995*.

Three plant species listed as threatened on the Tasmanian *Threatened Species Protection Act 1995* (TSPA) were detected from within and adjacent to the study area (Table 2, Figure 6, Figure 7).

Austrostipa scabra subsp. *falcata* (sickle speargrass) is widespread and locally frequent in several sites, mainly associated with "rough pasture" (Plates 1 & 2). The species appears to be absent from more developed pasture areas dominated by exotic pasture grasses. The species is not in particularly high abundance as it is in neighbouring areas, where it can occupy 10s of hectares of rocky insolated grassy slopes. Estimating the abundance of the species is impractical: certainly it occurs in the high 100s to 1000s. Stock grazing and fire within the title area have probably resulted in a proliferation and spread of the species. Depending on the precise layout of the project elements, only a miniscule proportion of the mapped patches will be disturbed at some point in the future. While the proposed development will locally eliminate some parts of the population, extensive tracts of the title area will remain undeveloped and the species will persist and thrive in such areas.

Plate 1. (LHS). Habitat of *Austrostipa scabra* from the study area

Plate 2. (RHS). Plants of *Austrostipa scabra* (from nearby area) – note the distinctive falcate awns

A permit to "take" will be technically required under the Tasmanian *Threatened Species Protection Act 1995* (see DISCUSSION – *Legislative and policy implications* for more detail) for any patches to be disturbed. No special management of the species is recommended based on its conservation status: it is listed as rare on the Act, and despite some taxonomic uncertainty between subsp. *falcata* and subsp. *scabra* (which may not even be present in Tasmania), increasing opinion

is indicating that the conservation status of the species should be reviewed with a view to removing it from the schedules of the Act. Depending on the scheduling of the project elements, it will be prudent to confirm the status of the species prior to applying for a permit.

Asperula scoparia subsp. *scoparia* (prickly woodruff) is localised to the margins of a drainage feature in the southeast of the study area (Plates 3 & 4), in an area that will remain completely undisturbed. This species responds positively to disturbance and often occurs in "rough pasture" and forest-woodland remnants amongst pasture. Unless the known sites are likely to be disturbed, no special management will be required (the species will persist without management intervention).

Plate 3. (LHS). Habitat of *Asperula scoparia* from the study area

Plate 4. (RHS). Plants of *Asperula scoparia* (from Conara area)

Vittadinia muelleri (narrowleaf new-holland-daisy) was localised to a small population amongst the recently burnt and recovering native grassland (Plates 5 & 6) in the far south of the study area, in an area that will remain completely undisturbed. Unless the known sites are likely to be disturbed, no special management will be required (the species will persist without management intervention).

Plate 5. (LHS). Habitat of *Vittadinia muelleri* from the study area

Plate 6. (RHS). Plants of *Vittadinia muelleri* from the study area

Table 2. Details of threatened flora recorded from study area

[site = as per numbered points in Figure 6]

Site	Easting	Northing	Location	Abundance & extent
Vittadinia muelleri (narrowleaf new-holland-daisy) [EPBCA: -; TSPA: r]				
1	531748	5274263	amongst "rough grassland" on southern slopes of study area	3 in 1 m^2
Asperula scoparia subsp. *scoparia* (prickly woodruff) [EPBCA: -; TSPA: r]				
2	531748	5274271	along margin of NBA/FAG in southern section of study area; co-occurs with *Vittadinia muelleri*	10s in several square metres (difficult to count due to rapid new growth after fire event)
3	532038	5274264	in drainage depression in southeast of study area	10s to low 100s over 20+ m^2 (difficult to count due to rapid new growth after fire event)
Austrostipa scabra subsp. *scabra* (sickle speargrass) [EPBCA: -; TSPA: r]				
9	531931	5274134	in "rough pasture" near southern boundary	localised patches
10	531671	5274901	on most northerly rise amongst "rough pasture"	localised patches
11	531771	5275104	along lower edge of forest/"rough pasture"	locally frequent along edge of forest but distribution blurred by recent fire
12	531764	5275393	along rough track along western fenceline	locally abundant
13	531746	5275313	as above	as above
14	531645	5274831	on rise near special site	localised patches amongst "rough pasture"
15	531616	5274830	as above	as above

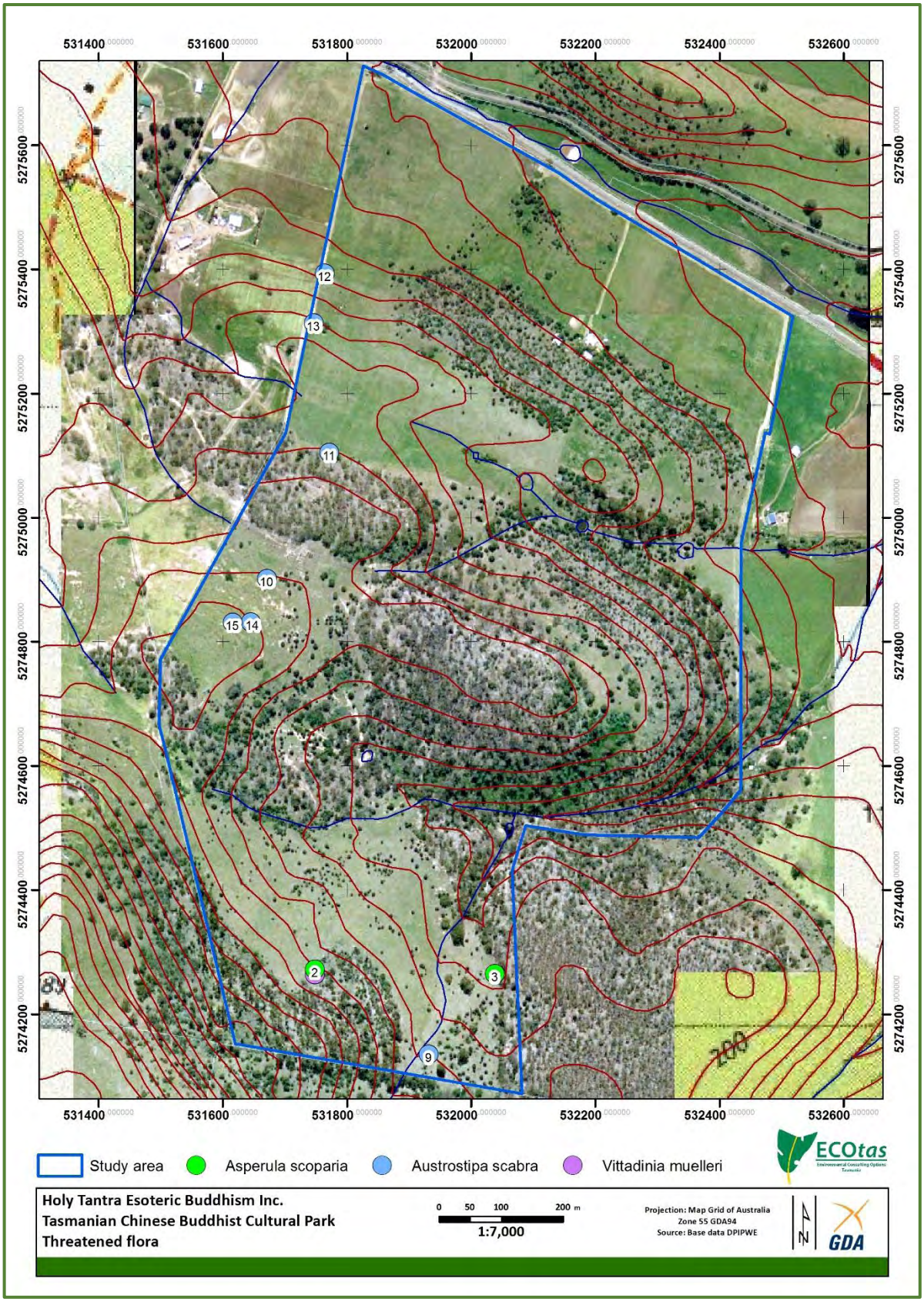

Figure 6. Distribution of threatened flora within study area (note that *Vittadinia muelleri* site is hidden under western *Asperula scoparia* site); cross-reference to Table 2 for site numbers

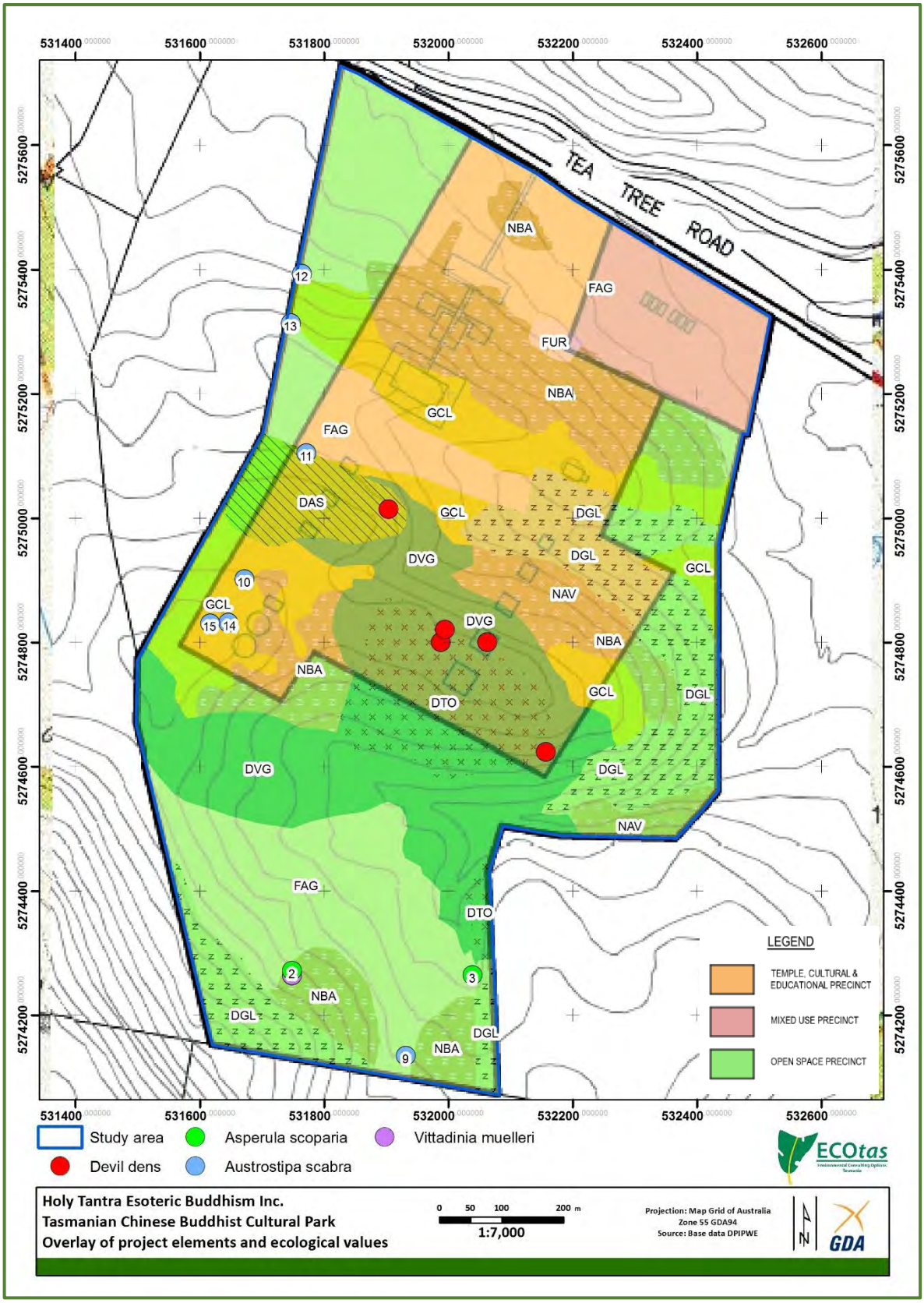

Figure 7. Distribution of threatened flora/fauna within study area relative to project elements (note that *Vittadinia muelleri* site is hidden under western *Asperula scoparia* site); cross-reference to Table 2 for site numbers

Comments on threatened flora species recorded from databases

Table D1 (Appendix D) provides a listing of threatened flora from within 5,000 m of the study area (nominal buffer width usually used to discuss the potential of a particular study area to support various species listed in databases), with comments on whether potential habitat is present for the species, and possible reasons why a species was not recorded. Some species not listed on databases but considered by the author to have potential to occur in the study area are also discussed.

Note that the field assessment was not restricted to the species listed in Table D1 but considered any threatened flora with the potential to be present. While the database analysis utilises a nominal buffer of 5,000 m, the author's own experience of the vegetation and flora of the greater study area combined with database interrogation, meant that the specific potential for numerous other species previously recorded from the wider area were considered.

Fauna species

General observations

Appendix C provides an annotated list of vertebrate species detected during the course of assessment, which included 28 species comprising 7 mammal, 15 bird, 5 amphibian and 1 reptile species. The detection of these species was opportunistic and more targeted surveys are likely to detect a greater diversity of species. However, such surveys are not considered warranted due to the existing disturbed nature of the proposed development area.

Threatened fauna species recorded from the study area

No fauna species listed as threatened on the Tasmanian *Threatened Species Protection Act 1995* and/or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* were directly recorded from the study area. Evidence of utilisation of sandstone caves by the Tasmanian devil was recorded (see section on Further information on Tasmanian devil after Table 4). Potential habitat for several species was recorded (see Table 4 for more details).

- Further comments on Tasmanian devil

[see also Plates 7-12, Figures 7 & 8]

Several potential and actual dens of the Tasmanian devil were detected, mainly associated with a line of exposed sandstone cliffs, ledges, overhangs and small caves. Most sites were associated with broad open caves with sandy floors and no obvious site of permanent occupation, with evidence of temporary use determined from the presence of scats. Some sites were also associated with more isolated sandstone outcrops (large broken chunks shifted downhill from main cliffs). One potential site was also associated with the more sheltered slope above the creek. It is difficult to determine the nature of the use of the den sites but all appeared temporary, based on the lack of obvious sites within the overhangs for permanent occupation or concealment of imps i.e. the dens do not appear to be maternal. It is also difficult to estimate the time since a particular site was last used: scats were not particularly fresh but weather conditions can affect the appearance of scats.

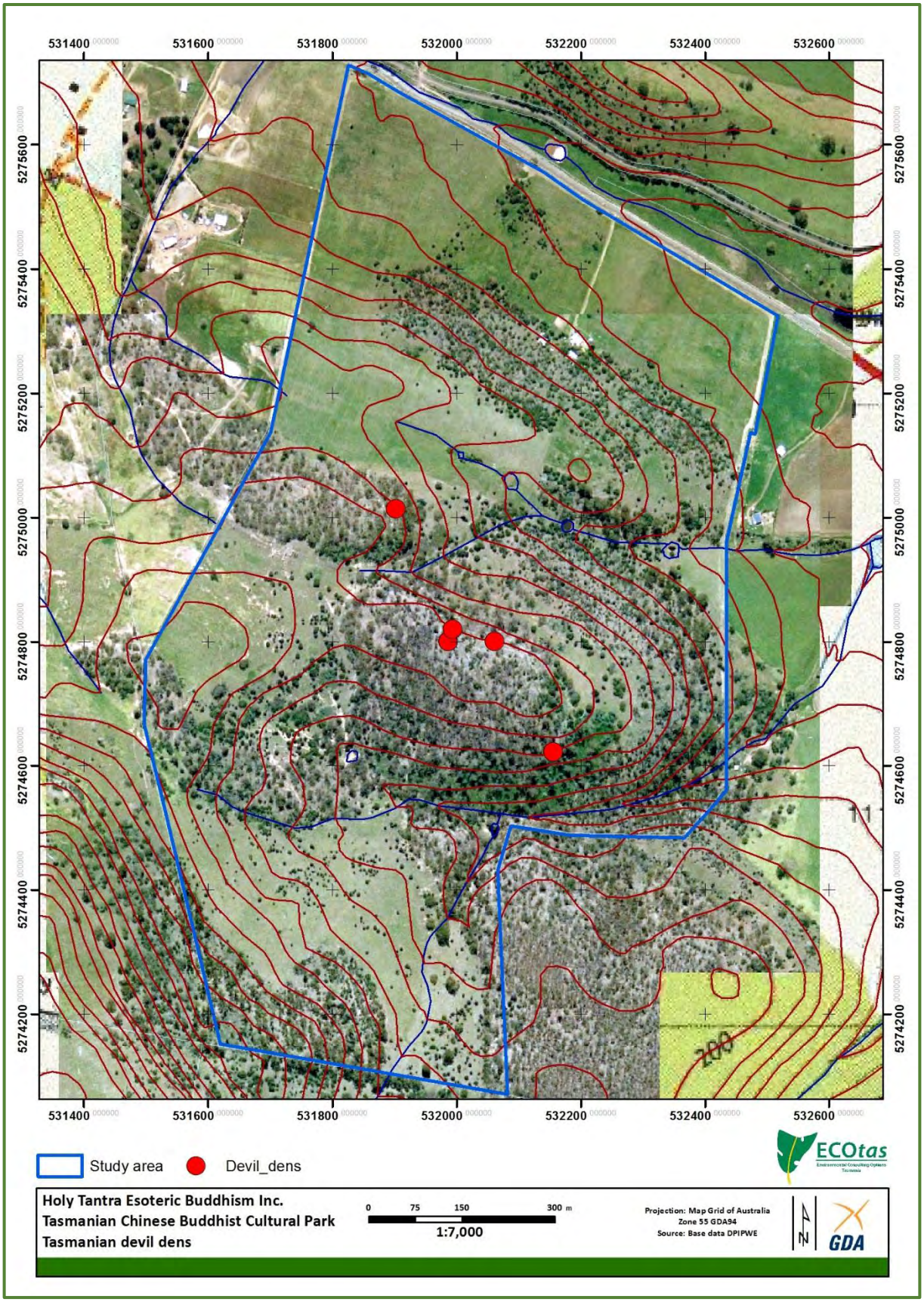

Figure 8. Distribution of dens of the Tasmanian devil within study area

Plates 7-12. Examples of den sites of the Tasmanian devil from the study area

In some types of development (e.g. open-cut mines, extensive forest harvesting, etc.), establishment of a buffer zone (usually a minimum of 30-50 m) from the edge of the cluster of dens is required by approval agencies. In this case, given the very long term nature of the project, the key management issue is to determine if the presence of the dens/potential dens poses a significant constraint to the proposal to ensure that planning can progress for other project elements. In the short term, based on on-site discussions regarding the contextual position of the

project elements relative to the potential den sites, it appears the project will not threaten the viability of the den sites and, conversely, the den sites are unlikely to constrain the project (see Figure 7 but note that the apparent coincidence of a temple site and a den site does not reflect the nature of the cliff habitat making it impractical to build on the cliff edge). This is based on the nature of the development i.e. a meditation temple on the flats above the cliff, with virtually no removal of vegetation. Such a facility is unlikely to result in direct disturbance to the den sites and indirect disturbance is likely to be limited to daylight hours and to quiet activities (i.e. no constant machinery operations, etc.).

In the longer term, the sandstone cliffs may present as an excellent study site for research on the denning behaviour of the Tasmanian devil e.g. number of individuals using dens, den use variation between days, seasons, years, etc. Setting up remote infra-red cameras may yield results to determine the nature of the use of the sites, but in the short term this is not considered warranted for the first stages of the project. Note that as part of reporting procedures, it is usual for site data on threatened flora and fauna to be supplied to DPIPWE's *Natural Values Atlas* database, and this may prompt officers of DPIPWE to contact the owner of the property to discuss the types of issues mentioned above.

Comments on threatened fauna species recorded from databases

Table E1 (Appendix E) provides a listing of threatened fauna from within 5,000 m of the study area (nominal buffer width usually used to discuss the potential of a particular study area to support various species listed in databases), with comments on whether potential habitat is present for the species, and possible reasons why a species was not recorded.

Other ecological values

Weed species

Four species, classified as "declared weeds" within the meaning of the Tasmanian *Weed Management Act 1999*, were detected from the study area, as follows:

- *Echium plantagineum* (patersons curse): localised to edge of eastern fenceline, where the species is locally frequent on the adjacent property (control possible through hand-pulling when flowering);
- *Chrysanthemoides monilifera* subsp. *monilifera* (boneseed): highly localised in NBA west of houses above dam (occurrence of individual already hand-pulled on day of survey);
- *Marrubium vulgare* (white horehound): several scattered individuals to small patches, in pasture areas (does not pose a threat to viability of pasture or adjacent native forest remnants); and
- *Carduus tenuiflorus* (winged thistle): scattered populations arising after fire but only occasional denser patches (likely to be short-lived occurrences only as native grasses become dominant again over time).

Management actions should aim to:

- minimise the risk of introducing new weeds to the title area;
- minimise the risk of spreading weeds from the title area to other parts of the municipality; and
- reducing the overall extent and density of weeds within the title area.

The extent of weeds is not such that a complex and/or formal weed management plan is considered warranted because establishment of various project elements will effectively eliminate the majority of occurrences, at least locally. The key to these actions will be strict hygiene protocols for machinery, vehicles and personnel entering the work area from a potentially weed-affected site. Any material (e.g. gravel) brought into the site should be sourced from a facility certified as weed-free. Any topsoil and vegetation debris created during the project should be considered as "weed-contaminated" and treated in accordance with municipal by-laws (ideally disposed of on-site through burial and/or burning). Several planning manuals provide guidance on appropriate management actions, which can be referred to develop site-specific prescriptions for the project. These manuals include:

- Allan, K. & Gartenstein, S. (2010). *Keeping It Clean: A Tasmanian Field Hygiene Manual to Prevent the Spread of Freshwater Pests and Pathogens*. NRM South, Hobart;
- Rudman T. (2005). *Interim* Phytophthora cinnamomi *Management Guidelines*. Nature Conservation Report 05/7, Biodiversity Conservation Branch, Department of Primary Industries, Water & Environment, Hobart;
- Rudman, T., Tucker, D. & French, D. (2004). *Washdown Procedures for Weed and Disease Control*. Edition 1. Department of Primary Industries, Water & Environment, Hobart; and
- DPIPWE (2015). *Weed and Disease Planning and Hygiene Guidelines - Preventing the Spread of Weeds and Diseases in Tasmania*. Department of Primary Industries, Parks, Water & Environment, Hobart.

Rootrot pathogen, *Phytophthora cinnamomi*

Phytophthora cinnamomi (PC) is widespread in lowland areas of Tasmania, across all land tenures. However, disease will not develop when soils are too cold or too dry. For these reasons, PC is not a threat to susceptible plant species that grow at altitudes higher than about 700 metres or where annual rainfall is less than about 600 mm (e.g. Midlands and Derwent Valley). Furthermore, disease is unlikely to develop beneath a dense canopy of vegetation because shading cools the soils to below the optimum temperature for the pathogen. A continuous canopy of vegetation taller than about 2 metres is sufficient to suppress disease. Hence PC is not considered a threat to susceptible plant species growing in wet sclerophyll forests, rainforests (except disturbed rainforests on infertile soils) and scrub e.g. teatree scrub (Rudman 2005; FPA 2009).

No evidence of the pathogen was noted (i.e. no dead or dying susceptible plant species). No soil sampling was undertaken (for later laboratory analysis for the pathogen). However, this part of the State is generally considered too dry to allow the pathogen to persist. As such, no special machinery hygiene prescriptions need to be considered for any major works in the area.

Myrtle wilt

Myrtle wilt, caused by a wind-borne fungus (*Chalara australis*), occurs naturally in rainforest where myrtle beech (*Nothofagus cunninghamii*) is present. The fungus enters wounds in the tree, usually caused by damage from wood-boring insects, wind damage and forest clearing. The incidence of myrtle wilt often increases forest clearing events such as windthrow and wildfire.

Nothofagus cunninghamii is absent from the title area and surrounds. No special management is required.

Myrtle rust

Myrtle rust is a disease limited to plants in the Myrtaceae family. This plant disease is a member of the guava rust complex caused by Puccinia psidii, a known significant pathogen of Myrtaceae plants outside Australia. Infestations are currently limited to NSW, Victoria, Queensland and Tasmania (DPIPWE 2015).

No evidence of myrtle rust was noted. No special management is required.

Chytrid fungus and other freshwater pathogens

Native freshwater species and habitat are under threat from freshwater pests and pathogens including *Phytophthora cinnamomi* (root rot), *Batrachochytrium dendrobatidis* (Chytrid frog disease), *Mucor amphibiorum* (platypus Mucor disease) and the freshwater algal pest *Didymosphenia geminata* (Didymo) (Allan & Gartenstein 2010). Freshwater pests and pathogens are spread to new areas when contaminated water, mud, gravel, soil and plant material or infected animals are moved between sites. Contaminated materials and animals are commonly transported on boots, equipment, vehicles tyres and during road construction and maintenance activities. Once a pest pathogen is present in a water system it is usually impossible to eradicate. The manual *Keeping it Clean - A Tasmanian Field Hygiene Manual to Prevent the Spread of Freshwater Pests and Pathogens* (Allan & Gartenstein 2010) provides information on how to prevent the spread of freshwater pests and pathogens in Tasmanian waterways wetlands, swamps and boggy areas.

The study area supports minor ephemeral drainage features and small farm dams only. At present there are no specific guidelines for these types of projects but minimising the spread of soil, gravel and water between catchments is strongly recommended. In this case, provided machinery, equipment and vehicles access the proposed building areas from the existing farm track network and across open grassy paddocks (as far as is practical and recognising some new tracks will be installed) no further management conditions are considered warranted.

Additional "Matters of National Environmental Significance"

The EPBCA *Protected Matters Area* report (CofA 2013) indicates that the Critically Endangered threatened ecological community "Lowland Native Grasslands of Tasmania" is likely to occur within the report area. The current and revised vegetation mapping clearly indicates that the study area does not support this vegetation type (the EPBCA-listed entity does not include the concept of the Tasmanian-described "lowland grassland complex").

The EPBCA *Protected Matters Area* report (CofA 2013) indicates that the RAMSAR Wetland of International Importance, "Pittwater – Orielton Lagoon", is within 10 km of the report area. The report area is within the catchment of the Coal River, which flows out via Richmond to the Orielton Lagoon area, but the site is well up in the catchment (upper reaches) such that no impact on the wetland is anticipated.

DISCUSSION

Summary of key findings

Non-priority flora (e.g. species of biogeographic significance)

- No species of high conservation significance detected – no special management actions required.

Non-priority fauna (e.g. species of biogeographic significance)

- No species of high conservation significance detected – no special management actions required.

Threatened flora

- No plant species listed as threatened on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* were detected from the study area.
- Three plant species listed as threatened on the Tasmanian *Threatened Species Protection Act 1995* were detected from the study area, as follows:
  - *Asperula scoparia* subsp. *scoparia* (prickly woodruff): two localised populations (outside project area);
  - *Austrostipa scabra* subsp. *falcata* (sickle speargrass): widespread but localised (most sites outside project area; localised patches may be affected by project); and
  - *Vittadinia muelleri* (narrowleaf new-holland-daisy): localised small population amongst "rough pasture" (outside project area).
- The presence of these species will need to be taken into account in further land use planning under Section 51 of the Tasmanian *Threatened Species Protection Act 1995*, but only *Austrostipa scabra* subsp. *falcata* may be affected by the project at this stage.

Threatened fauna

- Potential habitat is present for swift parrot, forty-spotted pardalote, masked owl, spotted-tailed quoll, and eastern barred bandicoot but field survey did not indicate actual presence of these species.
- Retention of the extent of *Eucalyptus viminalis*- and *Eucalyptus globulus*-dominated forests and woodlands is recommended to protect potential habitat of the forty-spotted pardalote and swift parrot, respectively – this recommendation will not have a material impact on the project concept.
- A policy of "no net loss" of native vegetation is recommended for other species, with an emphasis on ensuring minimal disturbance to larger trees (especially those with senescent features such as hollows), allowing natural regeneration of disturbed areas, and maintaining the level of coarse woody debris (fallen logs and trees), where safe to do so.
- Potential and temporary dens of the Tasmanian devil were associated with a line of sandstone cliffs and sandstone outcrops.
- Avoiding disturbance to the line of cliffs is recommended, with a suggested minimum 30-50 m buffer between the mapped dens and the nearest building (but the detail of this recommendation to be determined closer to the time of that part of the project).

Vegetation types

- The study area supports nine TASVEG mapping units:

  - "agricultural land" (TASVEG code: FAG): widespread on broad flats; also occurs as a mosaic with "lowland grassland complex" on slopes;
  - "urban areas" (TASVEG code: FUR): existing buildings;
  - "lowland grassland complex" (TASVEG code: GCL): widespread as a mosaic with NBA and FAG on slopes;
  - "*Bursaria-Acacia* woodland and scrub" (TASVEG code: NBA): as above;
  - "*Allocasuarina verticillata* forest" (TASVEG code: NVA): localised to two small patches on dolerite-based slopes;
  - "*Eucalyptus globulus* dry forest and woodland" (TASVEG code: DGL): localised to a few smaller remnants on slopes and ridges; all occurrences outside the area proposed for development;
  - "*Eucalyptus tenuiramis* forest and woodland on sediments" (TASVEG code: DTO): on insolated slopes and ridges, mainly in centre of study area above sandstone cliffs;
  - "*Eucalyptus amygdalina* forest and woodland on sandstone" (TASVEG code: DAS): restricted to one ridge-based remnant, grading with DTO and DVG; and
  - "*Eucalyptus viminalis* grassy forest and woodland" (TASVEG code: DVG): widespread on slopes, grading into NBA, DGL, DTO and DAS.

- None of these mapping units equate to threatened ecological communities listed on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.
- FAG, FUR, GCL, NBA, NVA and DVG are not classified as threatened under Schedule 3A of the Tasmanian *Nature Conservation Act 2002* – no special management actions are required (although note comments in regard to threatened flora and fauna).
- DGL, DAS and DTO are classified as threatened under Schedule 3A of the Tasmanian *Nature Conservation Act 2002* – there are constraints on clearing these vegetation types under the provisions of the Tasmanian *Forest Practices Act 1985* through the local planning scheme (in practice, virtually no areas of these vegetation types will be "cleared" within the intent of vegetation management policy).

Weeds

- Four species, classified as a "declared weeds" within the meaning of the Tasmanian *Weed Management Act 1999*, were detected from the study area, as follows:
  - *Echium plantagineum* (patersons curse): localised to edge of eastern fenceline, where the species is locally frequent on the adjacent property (control possible through hand-pulling when flowering);
  - *Chrysanthemoides monilifera* subsp. *monilifera* (boneseed): highly localised in NBA west of houses above dam (occurrence of individual already hand-pulled on day of survey);
  - *Marrubium vulgare* (white horehound): several scattered individuals to small patches, in pasture areas (does not pose a threat to viability of pasture or adjacent native forest remnants); and
  - *Carduus tenuiflorus* (winged thistle): scattered populations arising after fire but only occasional denser patches (likely to be short-lived occurrences only as native grasses become dominant again over time).
- The extent of weeds is not such that a complex and/or formal weed management plan is considered warranted because establishment of various project elements will effectively eliminate the majority of occurrences, at least locally. At this stage of planning, a detailed map has not been provided. The key concern is to ensure that vegetation debris and seed-contaminated topsoil is carefully managed such the risk of weeds establishing in other parts of the property and municipality is minimised. To that end, on-site disposal of such material

(e.g. burning in accordance with Tasmania Fire Service and Southern Midlands Council guidelines and regulations) is suggested.

Plant disease

- No evidence of plant disease (*Phytophthora cinnamomi*, rootrot fungus; myrtle wilt; myrtle rust) was detected – no special management actions are required.

Animal disease (chytrid)

- The title area is not known to support frog chytrid disease and the project is not likely to disturb habitats conducive to the disease persisting.
- No special management is recommended.

Legislative and policy implications

Some commentary is provided below with respect to the key threatened species, vegetation management and other relevant legislation. Note that there may be other relevant policy instruments in addition to those discussed. The provisions of the local planning scheme have not been considered in detail because this will form the basis of a separate planning document.

Tasmanian *Threatened Species Protection Act 1995*

Three plant species listed as threatened on the Tasmanian *Threatened Species Protection Act 1995* were detected within or adjacent to the study area. The study area supports potential habitat for threatened fauna species but site assessment failed to detect evidence of such species (e.g. tracks, scats, dens, diggings) from within the area proposed for development. Potential and temporary dens of the Tasmanian devil were detected from outside the likely extent of project works.

Threatened flora on this Act are managed under Section 51, where a permit is required to knowingly "take" (which includes kill, injure, catch, damage, destroy and collect), keep, trade in or process any specimen of a listed species. This section has applicability to threatened flora (specifically *Austrostipa scabra* subsp. *falcata*) but not to the populations of *Vittadinia muelleri* and *Asperula scoparia* subsp. *scoparia*, which are outside the areas likely to be disturbed. Where threatened flora are likely to be taken, it is usual to apply for a permit under Section 51 of the Act on the required proforma to the Policy & Conservation Advice Branch (PCAB, DPIPWE). This should only be submitted when the specific design of the project is known such that details can be provided of the degree of anticipated impact on the species.

Under the provisions of the planning scheme, it is my understanding that Council cannot issue conditions related to threatened species i.e. Council is not delegated authority to issue permits under the Tasmanian *Threatened Species Protection Act 1995* and a planning permit cannot be contingent on the successful issuing of a permit under another Act. This means that the first step in the approval process is the issuing of the planning permit under the planning scheme, followed by the application for a permit under Section 51 of the Tasmanian *Threatened Species Protection Act 1995*. This is because the latter permit is usually only issued when the actual development is finalised (DPIPWE do not tend to issue permits on a prospective basis). It is appropriate for DPIPWE, and not the local planning authority, to issue conditions related to threatened flora. That said, in some cases it is reasonable to apply for a threatened species permit prior to a development permit being issued, if the number of individuals of a threatened species to be disturbed can be defined irrespective of the final configuration of the development, or the number of individuals to be disturbed is difficult to estimate. However, PCAB is usually in a difficult position to issue a permit prior to a planning permit being issued under the relevant planning scheme because until such a

permit is issued, the precise extent of disturbance to threatened species may not be known i.e. the threatened species permit is usually the last permit to be issued, which prevents follow-up variations.

If a planning permit is issued prior to a threatened species permit, it does not provide an exemption from the requirements of a threatened species permit. Under the Tasmanian *Threatened Species Protection Act 1995*, a permit is required if threatened species will be "knowingly" taken (and clearly the present report has confirmed the presence of threatened flora species within project area). This means that a planning permit can be issued first and a threatened species permit applied for at a later stage. Whether the planning permit refers to this requirement directly or indirectly (e.g. in general terms only) or in fact does not make mention of it at all is of no particular concern, because the term "knowingly" effectively requires the person taking action that may affect threatened species to do so under a Section 51 permit.

The key question, therefore, at this stage of planning is whether PCAB (DPIPWE) would issue a permit to take threatened flora associated with a development application for this project. My experience indicates that it is unusual for a development of this scale involving the species detected to be constrained by a permit not being issued. The secondary question is then what permit conditions may be associated with the permit. In practice, it is highly unlikely that special conditions would be applied because of the reasons stated previously in relation to *Austrostipa scabra* (the other two threatened species detected are outside the project area). In my opinion, the presence of *Austrostipa scabra* should not constrain further development planning and approvals under the local planning scheme.

Potential habitat of threatened fauna, and management of features such as dens of the Tasmanian devil that are technically outside the project area, are more complex to manage under Section 51 of the Act because unless works would result in the "taking" of a specimen, a permit under the Act is not technically possible. However, it is usual for development proposals involving the disturbance of potential habitat of threatened species listed on the Act to be referred to DPIPWE for advice. In the absence of being in a position to issue a permit under Section 51 of the Act, PCAB may make recommendations to a development proponent in regard to managing habitat of threatened species and/or may endorse or comment on proposed offset/mitigation strategies. In this case, the sites are probably many years from being located close to disturbance and it appears unlikely that the juxtaposition of the project elements and the potential den sites will affect one another in an adverse manner.

Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*

There is potential habitat for several fauna species listed on this Act, namely *Perameles gunnii* subsp. *gunnii* (eastern barred bandicoot), *Dasyurus maculatus* subsp. *maculatus* (spotted-tailed quoll), *Dasyurus viverrinus* (eastern quoll), *Aquila audax* subsp. *fleayi* (wedge-tailed eagle), *Lathamus discolor* (swift parrot) and *Tyto novaehollandiae* subsp. *castanops* (Tasmanian masked owl).

The Commonwealth Department of the Environment & Energy provides a *Significant Impact Guidelines* policy statement (CofA 2013) to determine if referral to the department is required. In my opinion, with respect to the above species, any proposed disturbance within the study area will not constitute a "significant impact" because while there will be a loss/modification of potential habitat, the loss is not such that it is likely to lead to a long-term decrease in the size of an important population of a species, reduce the area of occupancy of an important population, fragment an existing important population into two or more populations, adversely affect habitat critical to the survival of a species, disrupt the breeding cycle of an important population, modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline, result in invasive species that are harmful to a threatened species

becoming established in the threatened species' habitat, introduce disease that may cause the species to decline, or interfere substantially with the recovery of the species. Note that this statement is made irrespective of any mitigation applied under State approval processes (e.g. retention of potential habitat).

Sarcophilus harrisii (Tasmanian devil) was detected (temporary dens) from the study area.

Whether the proposed project would constitute a "significant impact" to the Tasmanian devil (i.e. the viability and continued use of the den sites) is somewhat more nebulous in the absence of knowledge on how the dens are being utilised (e.g. temporary, opportunistic, maternal) and specific locations of the project elements from particular dens. However, it is highly unlikely that the proposed works will materially affect the den sites or the likelihood of the species utilising the dens, given that the species will utilise areas under buildings (including for maternal dens), especially in rural settings. Unless the project will result in persistent and material disturbance to the sandstone outcrops, a formal referral to under the *Significant Impact Guidelines* (CofA 2009) is not considered warranted.

Tasmanian *Wildlife (General) Regulations 2010*

While the assessment of the study area indicated the presence of species listed on schedules of the Regulations (i.e. "specially protected wildlife", "protected wildlife", "partly protected wildlife" – see Appendix C), no "products" (e.g. nests, dens, etc.) of these species were detected, except for the temporary dens of the Tasmanian devil (which will remain unaffected by the project). Any disturbance within the study area will not knowingly disturb listed species or products of such species, such that no special actions are likely to be required in relation to these *Regulations*.

Tasmanian *Weed Management Act 1999*

Four species, classified as "declared weeds" within the meaning of the Tasmanian *Weed Management Act 1999*, were detected from the study area.

These species are subject to Statutory Weed Management Plans under the *Weed Management Act 1999* (see information on weed section of DPIPWE's web site). The study area falls within the Southern Midlands municipality, which for the management of *Carduus tenuiflorus* and *Marrubium vulgare* is classified as a "Zone B" municipality (widespread infestations), for *Echium plantagineum* as "Zone B" (localised occurrences), and for *Chrysanthemoides monilifera* as a "Zone A" (isolated occurrences). For the record, the only identified occurrence of this species within the title was immediately removed.

In relation to "Zone B" species, "containment", within the meaning of the *Weed Management Act 1999*, is the most appropriate management objective for municipalities who have problematic infestations but no plan and/or resources to undertake control actions at a level required for eradication. The management outcome for these municipalities is ongoing prevention of the spread of declared weeds from existing infestations to areas free or in the process of becoming free of these weeds.

The extent of weeds is not such that a complex and/or formal weed management plan is considered warranted because establishment of various project elements will effectively eliminate the majority of occurrences, at least locally. The key to these actions will be strict hygiene protocols for machinery, vehicles and personnel entering the work area from a potentially weed-affected site. Any material (e.g. gravel) brought into the site should be sourced from a facility certified as weed-free. Any topsoil and vegetation debris created during the project should be considered as "weed-contaminated" and treated in accordance with municipal by-laws (ideally disposed of on-site

through burial and/or burning). Several planning manuals provide guidance on appropriate management actions, which can be referred to develop site-specific prescriptions for the project.

Tasmanian *Nature Conservation Act 2002*

Schedule 3A of the Act lists vegetation types classified as threatened within Tasmania. The title supports such vegetation types.

Clearing of threatened vegetation listed under this Act is either through the Tasmanian *Forest Practices Act 1985* and associated regulations (not applicable in this case – see below) or the Tasmanian *Land Use Planning and Approvals Act 1993* through the local planning scheme (direct application in this case – see below).

Tasmanian *Forest Practices Act 1985* and associated regulations

A Forest Practices Plan (FPP) is required for most "clearing" activities in areas of forest and woodland (and for some activities within threatened non-forest native vegetation). Usually, an FPP is only required for clearing activities that exceed certain thresholds i.e. 1 ha or 100 tonnes of timber, from any one property in any calendar year. An FPP is required for any clearing on "vulnerable land", which includes sites inhabited by threatened species.

Under the *Forest Practices Regulations 2017* (Section 4), circumstances in which an FPP is not required are specified, which include:

> 4. Circumstances in which forest practices plan, &c., not required
>
> For the purpose of section 17(6) of the Act, the following circumstances are prescribed:
>
> (j) the harvesting of timber or the clearing of trees on any land, or the clearance and conversion of a threatened native vegetation community on any land, for the purpose of enabling–
>
> (i) the construction of a building within the meaning of the *Land Use Planning and Approvals Act 1993* or of a group of such buildings; or
>
> (ii) the carrying out of any associated development–
>
> if the construction of the buildings or carrying out of the associated development is authorised by a permit issued under that Act
>
> where "associated development" is defined under the Regulations as:
>
> "development that is related to the construction or use of a building, or to the construction or use of a group of buildings, and includes the development of–
>
> (a) water, sewerage, gas, electrical, telecommunications and other services to be provided to the building or group of buildings; and
>
> (b) roads, footpaths and cycle paths; and
>
> (c) firebreaks; and
>
> (d) recreational facilities, including but not limited to parks and sportsgrounds; and
>
> (e) facilities to enable the commercial use of the building or group of buildings".

On this basis, a Forest Practices Plan is not required for "clearing" of "forest" provided that a permit is issued under the Tasmanian *Land Use Planning and Approvals Act 1993*.

Recommendations

The study area proposed for long-term development as the Tasmanian Chinese Buddhist Cultural Park supports a mosaic of exotic and native vegetation, in various states of ecological condition from relatively heavily anthropogenically modified to relatively undisturbed.

No formal referral to the relevant Commonwealth government agency under the provisions of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* is considered warranted.

There are several ecological values that will require careful consideration under relevant State legislation related to threatened species and vegetation management. The development will result, eventually, in the "clearing" of "forest" (albeit very small areas over c. 200 years) within the meaning of the *Forest Practices Act 1985* and Regulations, and as such, approval under the relevant planning scheme is required. A separate threatened species permit under the Tasmanian *Threatened Species Protection Act 1995* will be required for some aspects of the project, depending on the final design and scheduling of the project elements.

Based on the site assessment, the ecological values present within the title area, and specifically within/close to the areas for different parts of the overall project, can be appropriately taken into account during the more detailed stages of project planning. For the purposes of local government planning approvals, in my opinion, the proposed project will result in negligible disturbance to ecological values and should be able to proceed with minimal constraints.

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APPENDIX A. Vegetation community structure and composition

The tables below provide detailed descriptions of the native vegetation mapping units identified from the study area. The lists of species provided are representative dominant species only.

Eucalyptus globulus dry forest and woodland (TASVEG code: DGL)		
DGL occupies sites on both dolerite and sandstone in the south and east of the property, generally occurring on steeper north-facing slopes. DGL grades into NBA, GCL and DVG. Much of DGL has been burnt in the most recent wildfire.		
  Looking across pasture into recently burnt DGL		
Stratum	Height (m) Cover (%)	Species (underline = dominant, parentheses = sparse)
Trees	25-30 m 20-30%	*Eucalyptus globulus*
Trees	15-22 m 30%	*Eucalyptus globulus*
Tall shrubs	4-6 m 20%	*Bursaria spinosa*, *Allocasuarina* spp., *Acacia mearnsii, Banksia marginata*
Low shrubs	<1 m +	*Acacia genistifolia, Lissanthe strigosa, Epacris impressa, Astroloma humifusum*
Grasses/graminoids	80-95%	*Themeda triandra, Poa* spp., *Austrostipa* spp., *Hordeum* spp., *Bromus* spp., *Holcus lanatus, Dactylis glomerata*
Herbs	variable	*Geranium* spp., *Arctotheca calendula, Trifolium* spp. *Oxalis* spp. *Erodium spp., Plantago* spp., *Dichondra repens, Scleranthus* spp., *Myosotis discolor*

Eucalyptus tenuiramis forest and woodland on sediments (TASVEG code: DTO)
DTO occurs on the dry ridges in the centre of the study area (above the sandstone cliffs) and along the eastern boundary. DTO grades into DVG and NBA. There is a relatively extensive line of sandstone cliffs and ledges at the transition of DTO and DVG.

Views of recently burnt DTO showing the relatively high rock cover (sandstone) and sparse understorey

Stratum	Height (m) Cover (%)	Species (underline = dominant, parentheses = sparse)
Trees	18-23 m 5-30%	*Eucalyptus tenuiramis, (Eucalyptus amygdalina), (Eucalyptus viminalis)*
Tall shrubs	4-8 m <5%	*Bursaria spinosa*, *Allocasuarina* spp., *Acacia mearnsii*
Low shrubs	<1 m +	*Acacia genistifolia, Lissanthe strigosa, Epacris impressa, Astroloma humifusum*
Grasses/graminoids	10-20%	*Themeda triandra, Poa* spp., *Austrostipa* spp., *Hordeum* spp., *Bromus* spp., *Holcus lanatus, Dactylis glomerata, Lomandra longifolia, Lepidosperma* spp.
Herbs	variable	*Calandrinia calyptrata, Geranium* spp., *Arctotheca calendula, Trifolium* spp., *Oxalis* spp., *Erodium spp., Plantago* spp., *Dichondra repens, Scleranthus* spp., *Myosotis discolor*

Eucalyptus amygdalina forest and woodland on sandstone (TASVEG code: DAS)
DTO occurs on the dry ridges in the centre of the study area (above the sandstone cliffs) and along the eastern boundary. DTO grades into DVG and NBA. There is a relatively extensive line of sandstone cliffs and ledges at the transition of DTO and DVG.

Views of recently burnt DAS showing mixed canopy dominance and large areas of bare ground cover

Stratum	Height (m) Cover (%)	Species (underline = dominant, parentheses = sparse)
Trees	18-20 m 30%	*Eucalyptus amygdalina, (Eucalyptus viminalis)*
Tall shrubs	4-8 m <5%	*Bursaria spinosa*, *Allocasuarina* spp., *Acacia mearnsii*
Low shrubs	<1 m +	*Acacia genistifolia, Lissanthe strigosa, Epacris impressa, Astroloma humifusum*
Grasses/graminoids	80%	*Themeda triandra, Poa* spp., *Austrostipa* spp., *Hordeum* spp., *Bromus* spp., *Holcus lanatus, Dactylis glomerata, Lomandra longifolia, Lepidosperma* spp.
Herbs	variable	*Calandrinia calyptrata, Geranium* spp., *Arctotheca calendula, Trifolium* spp., *Oxalis* spp., *Erodium spp., Plantago* spp., *Dichondra repens, Scleranthus* spp., *Myosotis discolor*

Eucalyptus viminalis grassy forest and woodland (TASVEG code: DVG)
DVG occupies insolated to somewhat sheltered slopes on both sandstone and dolerite. Classification of dolerite-based occurrences of forest and woodland dominated by *Eucalyptus viminalis* is in strict accordance with TASVEG. Mapping of sandstone-based occurrences is less strictly adherent to TASVEG, where such occurrences are sometimes subsumed into a broad concept of DAS. In this case, however, the floristic and structural elements of the "DVG on sandstone" has closer affinities to "DVG proper" than the DAS mapped for the site.


LHS. View across top of sandstone cliffs with DTO on the top grading into DVG on slopes below cliffs
RHS. DVG along creekline and adjacent gentle slopes

Stratum	Height (m) Cover (%)	Species (underline = dominant, parentheses = sparse)
Trees	18-20 m 30%	*Eucalyptus viminalis, (Eucalyptus tenuiramis), (Eucalyptus globulus)*
Tall shrubs	4-8 m <5%	*Bursaria spinosa*, *Allocasuarina* spp., *Acacia mearnsii*
Low shrubs	<1 m +	*Acacia genistifolia, Lissanthe strigosa, Epacris impressa, Astroloma humifusum*
Grasses/graminoids	80%	*Themeda triandra, Poa* spp., *Austrostipa* spp., *Hordeum* spp., *Bromus* spp., *Holcus lanatus, Dactylis glomerata, Lomandra longifolia, Lepidosperma* spp.
Herbs	variable	*Calandrinia calyptrata, Geranium* spp., *Arctotheca calendula, Trifolium* spp., *Oxalis* spp., *Erodium spp., Plantago* spp., *Dichondra repens, Scleranthus* spp., *Myosotis discolor*
Ferns	variable	*Microsorum pustulatum, Asplenium flabelliform* (both on rock ledges), *Pteridium esculentum* (occasionally dense on slopes)

Bursaria-Acacia woodland and scrub (TASVEG code: NBA)
NBA forms a mosaic with GCL, reflecting the long clearing, burning and grazing history of the property. In most places, NBA is sparse and almost better mapped as GCL with scattered shrubs, but some areas are quite distinct on aerial imagery and on the ground. The extent of NBA is not precisely shown on maps because of this mosaic distribution.

LHS. Looking across pasture from the edge of Coal River Tier into sparse NBA (mainly black wattle)
RHS. Typical prickly box-dominated NBA on slopes

Stratum	Height (m) Cover (%)	Species (underline = dominant, parentheses = sparse)
Tall shrubs	4-8 m 10-40%	*Bursaria spinosa*, *Allocasuarina* spp., *Acacia mearnsii*
Low shrubs	<0.5 m +	*Astroloma humifusum*
Grasses/graminoids	80-95%	*Themeda triandra, Poa* spp., *Austrostipa* spp., *Hordeum* spp., *Bromus* spp., *Holcus lanatus, Dactylis glomerata*
Herbs	variable	*Geranium* spp., *Arctotheca calendula, Trifolium* spp., *Oxalis* spp., *Erodium spp., Plantago* spp., *Dichondra repens, Scleranthus* spp., *Myosotis discolor*

Allocasuarina verticillata (TASVEG code: NAV)
NAV occupies a small area on steep dolerite-based slope above the main creekline, where it grades into DGL with scattered large blue gums on its fringes. It also occurs on the main broad slope below the sandstone cliffs, where *Allocasuarina verticillata* appears to have out-competed prickly box and black wattle after a disturbance to create NAV instead of NBA.

Looking across the gully into the dense patch of NAV

Stratum	Height (m) Cover (%)	Species (underline = dominant, parentheses = sparse)
Trees	18 m+ +	*Eucalyptus viminalis, Eucalyptus globulus*
Tall shrubs	8-15 m 10-40%	*Allocasuarina verticillata*
Low shrubs	<0.5 m +	*Astroloma humifusum*
Grasses/graminoids	20%	*Poa* spp., *Austrostipa* spp.
Herbs	variable	*Geranium* spp., *Oxalis* spp., *Plantago* spp., *Dichondra repens*

Lowland grassland complex (TASVEG code: GCL)
GCL occupies the stonier and more insolated cleared areas not occupied by FAG. FAG and GCL grade into one another at a local scale. GCL also forms a mosaic with patches of tall shrubs (mainly prickly box, black wattle and sheoak), which are mapped as "*Bursaria-Acacia* woodland and scrub" (TASVEG code: NBA – see above).

View of "rough pasture" somewhere between "agricultural land" (TASVEG code: FAG) and "lowland grassland complex"

Stratum	Height (m) Cover (%)	Species (underline = dominant, parentheses = sparse)
Tall shrubs	4-8 m +	*Bursaria spinosa*, *Allocasuarina* spp., *Acacia mearnsii*
Low shrubs	<0.5 m +	*Astroloma humifusum*
Grasses/graminoids	80-95%	*Themeda triandra, Poa* spp., *Austrostipa* spp., *Hordeum* spp., *Bromus* spp., *Holcus lanatus, Dactylis glomerata*
Herbs	variable	*Geranium* spp., *Arctotheca calendula, Trifolium* spp., *Oxalis* spp., *Erodium spp., Plantago* spp., *Dichondra repens, Scleranthus* spp., *Myosotis discolor*

APPENDIX B. Vascular plant species recorded from study area

Botanical nomenclature follows *A Census of the Vascular Plants of Tasmania* (de Salas & Baker 2016), with family placement updated to reflect the nomenclatural changes recognised in the *Flora of Tasmania Online* (Duretto 2009+) and APG (2016); common nomenclature follows *The Little Book of Common Names of Tasmanian Plants* (Wapstra et al. 2005+, updated online at www.dpipwe.tas.gov.au).

i = introduced/naturalised; e = endemic to Tasmania; t = within Australia, only occurs in Tasmania;

TSPA = Tasmanian *Threatened Species Protection Act 1995* (with status);

DW = declared weed within meaning of Tasmanian *Weed Management Act 1999*.

Table B1. Summary of vascular species recorded from the study area

	ORDER			
STATUS	DICOTYLEDONAE	MONOCOTYLEDONAE	GYMNOSPERMAE	PTERIDOPHYTA
	70	41	-	5
e	2	1	-	-
i	46	20	-	-
t	-	-	-	-
Sum	118	62	0	5
TOTAL	185			

	DICOTYLEDONAE		
	AMARANTHACEAE		
	Einadia nutans subsp. *nutans*	climbing saltbush	
	Ptilotus spathulatus f. *spathulatus*	pussytails	
	APIACEAE		
	Daucus glochidiatus	australian carrot	
	ARALIACEAE		
	Hydrocotyle callicarpa	tiny pennywort	
	Hydrocotyle hirta	hairy pennywort	
	ASTERACEAE		
i	*Arctotheca calendula*	capeweed	
i	*Bellis perennis*	english daisy	
	Brachyscome aculeata	hill daisy	
i	*Carduus tenuiflorus*	winged thistle	DW
i	*Chrysanthemoides monilifera* subsp. *monilifera*	boneseed	DW
i	*Cirsium vulgare*	spear thistle	
	Cotula australis	southern buttons	
	Craspedia glauca	common billybuttons	
	Euchiton involucratus	star cottonleaf	
	Euchiton japonicus	common cottonleaf	
i	*Hypochaeris glabra*	smooth catsear	
i	*Hypochaeris radicata*	rough catsear	
	Leptorhynchos squamatus subsp. *squamatus*	scaly buttons	
	Ozothamnus obcordatus	yellow everlastingbush	
	Senecio glomeratus subsp. *glomeratus*	shortfruit purple fireweed	
	Senecio hispidulus	rough fireweed	
	Senecio minimus	shrubby fireweed	
	Senecio prenanthoides	common fireweed	
	Senecio quadridentatus	cotton fireweed	
i	*Sonchus oleraceus*	common sowthistle	
i	*Taraxacum officinale*	common dandelion	
i	*Tragopogon porrifolius* subsp. *porrifolius*	salsify	
	Vittadinia muelleri	narrowleaf new-holland-daisy	TSPA (rare)

	BORAGINACEAE		
	Cynoglossum suaveolens	sweet houndstongue	
i	*Echium plantagineum*	patersons curse	DW
i	*Marrubium vulgare*	white horehound	DW
i	*Myosotis discolor*	changing forgetmenot	
	BRASSICACEAE		
i	*Brassica rapa*	turnip	
i	*Capsella bursa-pastoris*	shepherds purse	
i	*Erophila verna* subsp. *verna*	spring whitlowgrass	
i	*Sinapis arvensis*	charlock	
i	*Sisymbrium officinale*	hedge-mustard	
	CAMPANULACEAE		
	Wahlenbergia gracilis	sprawling bluebell	
	Wahlenbergia gymnoclada	naked bluebell	
	CARYOPHYLLACEAE		
i	*Arenaria leptoclados*	slender sandwort	
i	*Cerastium vulgare*	common mouse-ear	
i	*Petrorhagia nanteuilii*	proliferous pink	
i	*Polycarpon tetraphyllum*	fourleaf allseed	
	Scleranthus biflorus	twinflower knawel	
i	*Silene gallica* var. *gallica*	french catchfly	
i	*Silene gallica* var. *quinquevulnera*	spotted catchfly	
	CASUARINACEAE		
	Allocasuarina verticillata	drooping sheoak	
	CONVOLVULACEAE		
	Convolvulus angustissimus var. *angustissimus*	blushing bindweed	
	Dichondra repens	kidneyweed	
	CRASSULACEAE		
	Crassula decumbens var. *decumbens*	spreading stonecrop	
	Crassula sieberiana	rock stonecrop	
	DILLENIACEAE		
	Hibbertia riparia	erect guineaflower	
	DROSERACEAE		
	Drosera auriculata	tall sundew	
	Drosera peltata	pale sundew	
	ERICACEAE		
	Acrotriche serrulata	ants delight	
	Astroloma humifusum	native cranberry	
	Epacris impressa	common heath	
	Lissanthe strigosa subsp. *subulata*	peachberry heath	
	FABACEAE		
	Acacia dealbata subsp. *dealbata*	silver wattle	
	Acacia genistifolia	spreading wattle	
	Acacia mearnsii	black wattle	
	Acacia verticillata subsp. *verticillata*	prickly moses	
i	*Medicago polymorpha*	burr medick	
	Pultenaea pedunculata	matted bushpea	
i	*Trifolium campestre*	hop clover	
i	*Trifolium repens*	white clover	
i	*Trifolium subterraneum*	subterranean clover	
i	*Vicia sativa* subsp. *sativa*	common vetch	
	FUMARIACEAE		
i	*Fumaria muralis* subsp. *muralis*	wall fumitory	
	GENTIANACEAE		
i	*Centaurium erythraea*	common centaury	
	GERANIACEAE		
i	*Erodium botrys*	long heronsbill	
i	*Erodium cicutarium*	common heronsbill	
i	*Geranium dissectum*	cutleaf cranesbill	
	Geranium potentilloides var. *potentilloides*	mountain cranesbill	
	Geranium retrorsum	grassland cranesbill	
	Geranium solanderi	southern cranesbill	
	Pelargonium australe	southern storksbill	

	GOODENIACEAE		
	Goodenia lanata	trailing native-primrose	
	HALORAGACEAE		
	Gonocarpus tetragynus	common raspwort	
	HYPERICACEAE		
	Hypericum gramineum	small st johns-wort	
	LINACEAE		
	Linum marginale	native flax	
	MALVACEAE		
i	*Malva sylvestris*	tall mallow	
	MYRSINACEAE		
i	*Lysimachia arvensis*	scarlet pimpernel	
	MYRTACEAE		
e	*Eucalyptus amygdalina*	black peppermint	
	Eucalyptus globulus subsp. *globulus*	tasmanian blue gum	
e	*Eucalyptus tenuiramis*	silver peppermint	
	Eucalyptus viminalis subsp. *viminalis*	white gum	
	ONAGRACEAE		
	Epilobium billardierianum subsp. *intermedium*	marsh willowherb	
	OXALIDACEAE		
i	*Oxalis corniculata* subsp. *corniculata*	yellow woodsorrel	
	Oxalis perennans	grassland woodsorrel	
	PITTOSPORACEAE		
	Bursaria spinosa subsp. *spinosa*	prickly box	
	PLANTAGINACEAE		
i	*Plantago coronopus* subsp. *coronopus*	slender buckshorn plantain	
i	*Plantago lanceolata*	ribwort plantain	
	Plantago varia	variable plantain	
	Veronica gracilis	slender speedwell	
	POLYGONACEAE		
i	*Acetosella vulgaris*	sheep sorrel	
	Rumex dumosus	wiry dock	
i	*Rumex pulcher* subsp. *pulcher*	fiddle dock	
	PORTULACACEAE		
	Calandrinia calyptrata	pink purslane	
	PROTEACEAE		
	Banksia marginata	silver banksia	
	RANUNCULACEAE		
	Ranunculus lappaceus	woodland buttercup	
	Ranunculus sessiliflorus var. *sessiliflorus*	rockplate buttercup	
	RESEDACEAE		
i	*Reseda luteola*	weld	
	ROSACEAE		
	Acaena echinata	spiny sheepsburr	
	Acaena novae-zelandiae	common buzzy	
	Acaena x *anserovina*	hybrid sheepsburr	
i	*Aphanes arvensis*	parsley piert	
	RUBIACEAE		
	Asperula conferta	common woodruff	
	Asperula scoparia subsp. *scoparia*	prickly woodruff	TSPA (rare)
i	*Galium aparine*	cleavers	
	Galium gaudichaudii subsp. *parviflorum*	smallflower rough bedstraw	
i	*Galium murale*	small bedstraw	
	Opercularia varia	variable stinkweed	
	SANTALACEAE		
	Exocarpos cupressiformis	common native-cherry	
	SAPINDACEAE		
	Dodonaea viscosa subsp. *spatulata*	broadleaf hopbush	
	SCROPHULARIACEAE		
i	*Verbascum thapsus* subsp. *thapsus*	great mullein	
	THYMELAEACEAE		
	Pimelea humilis	dwarf riceflower	

	VIOLACEAE		
	Viola hederacea subsp. *hederacea*	ivyleaf violet	
	MONOCOTYLEDONAE		
	ASPHODELACEAE		
	Bulbine semibarbata	smallflower leeklily	
	CENTROLEPIDACEAE		
	Centrolepis strigosa subsp. *strigosa*	hairy bristlewort	
	CYPERACEAE		
	Carex breviculmis	shortstem sedge	
	Carex tasmanica	curly sedge	
	Eleocharis acuta	common spikesedge	
	Isolepis inundata	swamp clubsedge	
	Isolepis marginata	little clubsedge	
	Lepidosperma elatius	tall swordsedge	
	Lepidosperma gunnii	narrow swordsedge	
e	*Lepidosperma inops*	fan sedge	
	Lepidosperma laterale	variable swordsedge	
	Schoenus apogon	common bogsedge	
	HEMEROCALLIDACEAE		
	Dianella revoluta var. *revoluta*	spreading flaxlily	
	JUNCACEAE		
	Juncus australis	southern rush	
i	*Juncus capitatus*	capitate rush	
	Juncus pallidus	pale rush	
	Juncus pauciflorus	looseflower rush	
	Juncus procerus	tall rush	
	Juncus subsecundus	finger rush	
	Luzula flaccida	pale woodrush	
	LAXMANNIACEAE		
	Lomandra longifolia	sagg	
	Lomandra nana	dwarf mat-rush	
	ORCHIDACEAE		
	Diuris pardina	leopard orchid	
	Microtis unifolia	common onion-orchid	
	Prasophyllum brevilabre	shortlip leek-orchid	
	Thelymitra nuda	plain sun-orchid	
	POACEAE		
i	*Agrostis capillaris* var. *capillaris*	browntop bent	
i	*Agrostis stolonifera*	creeping bent	
i	*Aira caryophyllea* subsp. *caryophyllea*	silvery hairgrass	
i	*Aira elegantissima*	delicate hairgrass	
i	*Alopecurus pratensis* subsp. *pratensis*	meadow foxtail	
i	*Anthoxanthum odoratum*	sweet vernalgrass	
	Austrostipa mollis	soft speargrass	
	Austrostipa rudis subsp. *australis*	southern speargrass	
	Austrostipa scabra subsp. *falcata*	sickle speargrass	TSPA (rare)
	Austrostipa semibarbata	fibrous speargrass	
	Austrostipa stuposa	corkscrew speargrass	
i	*Briza maxima*	greater quaking-grass	
i	*Briza minor*	lesser quaking-grass	
i	*Bromus catharticus*	prairie grass	
i	*Bromus diandrus*	great brome	
i	*Bromus hordeaceus*	soft brome	
i	*Dactylis glomerata*	cocksfoot	
	Deyeuxia quadriseta	reed bentgrass	
	Dichelachne rara	common plumegrass	
	Anthosachne scabra	rough wheatgrass	
i	*Festuca arundinacea*	tall fescue	
i	*Holcus lanatus*	yorkshire fog	
i	*Hordeum glaucum*	bluish barleygrass	
i	*Hordeum leporinum*	long-anther barleygrass	
i	*Lolium perenne*	perennial ryegrass	
	Microlaena stipoides var. *stipoides*	weeping grass	

i	*Poa annua*	winter grass
	Poa hookeri	hookers tussockgrass
	Poa labillardierei var. *labillardierei*	silver tussockgrass
	Poa sieberiana var. *sieberiana*	grey tussockgrass
	Rytidosperma caespitosum	common wallabygrass
	Rytidosperma penicillatum	slender wallabygrass
	Rytidosperma pilosum	velvet wallabygrass
	Tetrarrhena distichophylla	hairy ricegrass
	Themeda triandra	kangaroo grass
i	*Vulpia bromoides*	squirreltail fescue
	PTERIDOPHYTA	
	ADIANTACEAE	
	Adiantum aethiopicum	common maidenhair
	Cheilanthes austrotenuifolia	green rockfern
	ASPLENIACEAE	
	Asplenium flabellifolium	necklace fern
	DENNSTAEDTIACEAE	
	Pteridium esculentum	bracken
	POLYPODIACEAE	
	Microsorum pustulatum subsp. *pustulatum*	kangaroo fern

APPENDIX C. Vertebrate fauna recorded from study area

The following table lists the vertebrate fauna recorded from the study area. The list is based on opportunistic detection during the course of the more detailed botanical assessment. Intensive surveys for vertebrate fauna (e.g. dissection of logs, turning of stones, nocturnal and crepuscular surveys, trapping, etc.) were not undertaken.

Vertebrate nomenclature follows the following texts for the different groups:

Birds: Christidis, L. & Boles, W.E. (2008). *Systematics and Taxonomy of Australian Birds*. CSIRO Publishing, Collingwood;

Reptiles: Hutchinson, M., Swain, R. & Driessen, M. (2001). *Snakes and Lizards of Tasmania*. Fauna of Tasmania Handbook No. 9. University of Tasmania and Department of Primary Industries, Water & Environment, Hobart.

Amphibians: Littlejohn, M. (2003). *Frogs of Tasmania*. Fauna of Tasmania Handbook No. 6 (2nd edition). University of Tasmania, Hobart.

i = introduced/naturalised; e = endemic to Tasmania

Table C1. Summary of vertebrate species recorded from the study area

	ORDER			
STATUS	MAMMALS	BIRDS	AMPHIBIANS	REPTILES
	5	10	4	1
e	2	2	1	-
i	1	3	-	-
Sum	7	15	5	1
TOTAL	28			

Table C2. Vertebrate fauna recorded from study area

Species	Common name	Comments	Sight	Scat	Call	Other
Mammals						
Trichosurus vulpecula	Common brushtail possum	Scats on logs and rocks in forest and below some larger trees		+		
Macropus rufogriseus	Red-necked wallaby	5 flushed; scats numerous	+	+		
e *Thylogale billardierii*	Tasmanian pademelon	4 flushed; scats numerous	+	+		
Tachyglossus aculeatus	Short-beaked echidna	Diggings occasional	+			+
Vombatus ursinus	Common wombat	Diggings and scats		+		+
e *Sarcophilus harrisii*	Tasmanian devil	Scats in dens		+		+
i *Oryctolagus cuniculus*	European rabbit	Scats and diggings numerous; 4 flushed	+	+		+
Birds						
Phaps chalcoptera	Common bronzewing	1 pair flushed from near dam	+			

Species	Common name	Comments	Sight	Scat	Call	Other
Pachycephala pectoralis	Golden whistler	Several calling in various forest patches			+	
e *Platycercus caledonicus caledonicus*	Green rosella	Calls and sightings	+		+	
Platycercus eximius	Eastern rosella	Small flocks amongst remnant eucalypts				
Anthochaera chrysoptera	Little wattlebird	One heard from DGL			+	
Phylidonyris pyrrhopterus	Crescent honeyeater	One heard			+	
e *Lichenostomus flavicollis*	Yellow-throated honeyeater	Occasional	+		+	
Malurus cyaneus	Superb fairy-wren	Locally common in small flocks	+		+	
Rhipidura albiscapa	Grey fantail	Several individuals	+			
Corvus tasmanicus	Forest raven	Common flying over	+		+	
Colluricincla harmonica	Grey shrike-thrush	One seen	+			
Acanthiza pusilla pusilla	Brown thornbill	Widespread and locally common	+		+	
i *Sturnus vulgaris*	European starling	Several small flocks	+		+	
i *Alauda arvensis*	Skylark	Several in "rough pasture"				
i *Dacelo novaeguinea*	Laughing kookaburra	One sighted on fencepost	+			
Reptiles						
Niveoscincus metallicus	Metallic skink	Several on and around fallen timber	+			
Amphibians						
Crinia signifera	Common froglet	Heard around dams; tadpoles	+		+	
e *Crinia tasmaniensis*	Tasmanian froglet	Heard around dams			+	
Litoria ewingi	Brown tree frog	Heard around dams; tadpoles	+		+	
Limnodynastes dumerilii insularis	Southern banjo frog	Heard around dams			+	
Limnodynastes tasmaniensis	Spotted marsh frog	Heard around dams			+	

APPENDIX D. Analysis of database records of threatened flora

Table D1 provides a listing of threatened flora from within 5,000 m of the study area (nominal buffer width usually used to discuss the potential of a particular study area to support various species listed in databases), with comments on whether potential habitat is present for the species, and possible reasons why a species was not recorded. Some species not listed on databases but considered by the author to have potential to occur in the study area are also discussed.

Note that the field assessment was not restricted to the species listed in Table D1 but considered any threatened flora with the potential to be present. While the database analysis utilises a nominal buffer of 5,000 m, the author's own experience of the vegetation and flora of the greater study area combined with database interrogation, meant that the specific potential for numerous other species previously recorded from the wider area were considered.

Table D1. Threatened flora records from within 5,000 m of boundary of study area

Species listed below are listed as rare (r), vulnerable (v), endangered (e), or extinct (x) on the Tasmanian *Threatened Species Protection Act 1995* (TSPA); vulnerable (VU), endangered (EN), critically endangered (CR) or extinct (EX) on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA). Information below is sourced from DPIPWE's *Natural Values Atlas* (DPIPWE 2017) and other sources where indicated. Habitat descriptions are taken from FPA (2016) and TSS (2003+), except where otherwise indicated. Species marked with # are listed in CoFA (2017).

Scientific name Common name	Status TSPA EPBCA	Tasmanian habitat description (and distribution)	Comments on project area and database records
Asperula scoparia subsp. *scoparia* prickly woodruff	r -	*Asperula scoparia* subsp. *scoparia* is widespread in Tasmania, and is mainly found in native grasslands and grassy forests, often on fertile substrates such as dolerite-derived soils. Forested sites are usually dominated by *Eucalyptus globulus* and *E. viminalis* (lower elevations) an *E. delegatensis* (higher elevations).	Species detected. Refer to FINDINGS *Plant species* Threatened flora species recorded from the study area for more details.
Austrostipa blackii crested speargrass	r -	The habitat of *Austrostipa blackii* is poorly understood because of confusion with other species. In its "pure" form (i.e. long coma), *A. blackii* is a species of very near-coastal sites such as the margins of saline lagoons, creek outfalls and vegetated dunes. Further inland, where it seems to grade into other species, it occurs in open grassy woodlands.	Potential habitat marginally present. This distinctive perennial grass (detectable at any time of the year) was not recorded.
Austrostipa scabra rough speargrass	r -	*Austrostipa scabra* occurs mainly in open grasslands and in grasslands created by the loss of tree cover (e.g. through dieback in the Midlands), and occasionally in open woodland and forest, often occurring in rocky habitats such as stony rough pasture, generally on sites with lighter soil than *Austrostipa nodosa*. Many sites are in highly disturbed habitats such as roadside verges.	Species detected. Refer to FINDINGS *Plant species* Threatened flora species recorded from the study area for more details.
Brachyscome rigidula cutleaf daisy	v -	*Brachyscome rigidula* is found in the Midlands, East Coast and in parts of the eastern Central Highlands of Tasmania, where it occurs in rough pasture, grassland and grassy woodland on dry rocky hills and flats.	Potential habitat present. The species was not detected.

Scientific name Common name	Status TSPA EPBCA	Tasmanian habitat description (and distribution)	Comments on project area and database records
Caladenia caudata tailed spider-orchid	v VU # only	*Caladenia caudata* has highly variable habitat, which includes the central north: *Eucalyptus obliqua* heathy forest on low undulating hills; the northeast: *E. globulus* grassy/heathy coastal forest, *E. amygdalina* heathy woodland and forest, *Allocasuarina* woodland; and the southeast: *E. amygdalina* forest and woodland on sandstone, coastal *E. viminalis* forest on deep sands. Substrates vary from dolerite to sandstone to granite, with soils ranging from deep windblown sands, sands derived from sandstone and well-developed clay loams developed from dolerite. A high degree of insolation is typical of many sites.	Potential habitat absent (highly atypical of all known sites).
Calocephalus citreus lemon beautyheads	r -	*Calocephalus citreus* inhabits disturbed dry grasslands, and is found from a few locations in the southeast of the State.	Potential habitat present. The species was not detected.
Carex gunniana mountain sedge	r -	The habitat of *Carex gunniana* is poorly understood and highly variable. It includes wet eucalypt forest, sandy heathlands, margins of streams, littoral sands, shingle with seepage, damp grasslands within dry forest and rough pasture.	No database records within 5,000 m but potential habitat present. This species was not detected.
Carex longebrachiata drooping sedge	r -	*Carex longebrachiata* grows along riverbanks, in rough grassland and pastures, in damp drainage depressions and on moist slopes amongst forest, often dominated by *Eucalyptus viminalis, E. ovata* or *E. rodwayi*.	As above.
Colobanthus curtisiae grassland cupflower	r VU # only	*Colobanthus curtisiae* occurs in lowland grasslands and grassy woodlands but is also prevalent on rocky outcrops and margins of forest on dolerite on the Central Highlands (including disturbed sites such as log landings and snig tracks).	Potential habitat essentially absent (atypical of known sites).
Dianella amoena grassland flaxlily	r EN #	*Dianella amoena* occurs mainly in the northern and southern Midlands, where it grows in native grasslands and grassy woodlands.	Potential habitat present. The species was not detected.
Eryngium ovinum blue devil	v -	*Eryngium ovinum* occurs in a range of lowland vegetation types most often on fertile heavy clay soils derived from dolerite. Vegetation types include open grasslands usually dominated by *Themeda triandra* (kangaroo grass), grassy forests and woodlands on slopes, ridges and broad flats, and also roadside verges (representing remnant populations),	Potential habitat present. The species was not detected.
Glycine latrobeana clover glycine	v VU # only	*Glycine latrobeana* occurs in a range of habitats, geologies and vegetation types. Soils are usually fertile but can be sandy when adjacent to or overlaying fertile soils. The species mainly occurs on flats and undulating terrain over a wide geographical range, including near-	Potential habitat marginally present, albeit atypical of known sites, and well outside the recognise range of the species in Tasmania.

Scientific name Common name	Status TSPA EPBCA	Tasmanian habitat description (and distribution)	Comments on project area and database records
		coastal environments, the Midlands, and the Central Plateau. It mainly occurs in grassy/heathy forests and woodlands and native grasslands.	
Haloragis heterophylla variable raspwort	r -	*Haloragis heterophylla* occurs in poorly-drained sites (sometimes only marginally so), which are often associated with grasslands and grassy woodlands with a high component of *Themeda triandra* (kangaroo grass). It also occurs in grassy/sedgy *Eucalyptus ovata* forest and woodland, shrubby creek lines, and broad sedgy/grassy flats, wet pasture and margins of farm dams.	Potential habitat present. The species was not detected.
Isoetopsis graminifolia grass cushion	v -	*Isoetopsis graminifolia* grows in native grasslands, usually dominated by *Themeda triandra* (kangaroo grass), or on rockplates, the underlying substrate being mostly basalt or dolerite. The elevation range of recorded sites is 20-360 m a.s.l. in areas of low rainfall.	Potential habitat marginally present. The species was not detected.
Juncus amabilis gentle rush	r -	*Juncus amabilis* occurs in a variety of habitats, usually poorly-drained sites such as damp grasslands and grassy woodlands, wet pastures, roadside ditches and edges of still and slow-flowing waterbodies. As presently understood, the species is mainly confined to lowland areas in the eastern half of the State but there are potential higher elevation and more western records that require confirmation.	Potential habitat present. The species was not detected.
Lepidium hyssopifolium soft peppercress	e EN # only	The native habitat of *Lepidium hyssopifolium* is the growth suppression zone beneath large trees in grassy woodlands and grasslands (e.g. over-mature black wattles and isolated eucalypts in rough pasture). *Lepidium hyssopifolium* is now found primarily under large exotic trees on roadsides and home yards on farms. It occurs in the eastern part of Tasmania between sea-level to 500 metres a.s.l. in dry, warm and fertile areas on flat ground on weakly acid to alkaline soils derived from a range of rock types. It can also occur on frequently slashed grassy/weedy roadside verges where shade trees are absent.	Potential habitat absent.
Leucochrysum albicans var. *tricolor* grassland paperdaisy	e EN	*Leucochrysum albicans* var. *tricolor* occurs in the west and on the Central Plateau and the Midlands, mostly on basalt soils in open grassland. This species would have originally occupied *Eucalyptus pauciflora* woodland and tussock grassland, though most of this habitat is now converted to improved pasture or cropland.	Potential habitat marginally present, albeit atypical of known sites, and well outside the recognise range of the species in Tasmania.

Scientific name Common name	Status TSPA EPBCA	Tasmanian habitat description (and distribution)	Comments on project area and database records
Lobelia pratioides poison lobelia	v -	*Lobelia pratioides* occurs in seasonally inundated to waterlogged soils at the margins of swamps, wetlands and drainage lines, and also in damp depressions within grassland and grassy woodland.	Potential habitat present. The species was not detected.
Prasophyllum apoxychilum tapered leek-orchid	v EN	*Prasophyllum apoxychilum* is restricted to eastern and northeastern Tasmania where it occurs in coastal heathland or grassy and scrubby open eucalypt forest on sandy and clay loams, often among rocks. It occurs at a range of elevations and seems to be strongly associated with dolerite in the east and southeast of its range.	Potential habitat absent.
Pterostylis commutata midlands greenhood	e CR	*Pterostylis commutata* is restricted to Tasmania's Midlands, where it occurs in native grassland and *Eucalyptus pauciflora* grassy woodland on well-drained sandy soils and basalt loams.	Potential habitat marginally present, albeit atypical of known sites, and well outside the recognise range of the species in Tasmania.
Pterostylis ziegeleri grassland greenhood	v VU	*Pterostylis ziegeleri* occurs in the State's south, east and north, with an outlying occurrence in the northwest. In coastal areas, the species occurs on the slopes of low stabilised sand dunes and in grassy dune swales, while in the Midlands it grows in native grassland or grassy woodland on well-drained clay loams derived from basalt.	Potential habitat marginally present, albeit atypical of known sites.
Rytidosperma indutum tall wallabygrass	r -	*Rytidosperma indutum* is relatively widespread on mudstone and dolerite in dry sclerophyll woodlands and associated lowland grasslands in drier parts of the State.	Potential habitat present. This distinctive grass (identifiable at any time of the year) was not detected.
Scleranthus diander tufted knawel	v -	*Scleranthus diander* is found from the Central Midlands area to Hobart with most of the records from the Ross and Tunbridge areas. This species inhabits grassy woodland and is associated with dolerite and basalt substrates.	Potential habitat present. The species was not detected. The nearby records from the adjacent property are attributed to one of my earlier studies. I have subsequently re-allocated these records to the introduced *Scleranthus annuus*.
Scleranthus fasciculatus spreading knawel	v -	*Scleranthus fasciculatus* is only recorded from a few locations in the Midlands and southeast. The vegetation at most of the sites is *Poa* grassland/grassy woodland. *Scleranthus fasciculatus* appears to need gaps between the tussock spaces for its survival and both fire and stock grazing maintain the openness it requires. Often found in areas protected from grazing such as fallen trees and branches.	Potential habitat present. The species was not detected.
Senecio squarrosus leafy fireweed	r -	*Senecio squarrosus* occurs in a wide variety of habitats. One form occurs predominantly in lowland damp tussock grasslands. The more widespread and common form occurs mainly in dry forests (often grassy) but extends to wet forests and other vegetation types.	No database records within 5,000 m but potential habitat present. This species was not detected.

Scientific name Common name	Status TSPA EPBCA	Tasmanian habitat description (and distribution)	Comments on project area and database records
Siloxerus multiflorus small wrinklewort	r -	*Siloxerus multiflorus* occurs in a range of somewhat exposed lowland habitats, including bare soil and rocks amongst dense windswept coastal shrubbery to rock outcrops and bare ground associated with native grassland, grassy woodland and forest.	Potential habitat present. The species was not detected.
Teucrium corymbosum forest germander	r -	*Teucrium corymbosum* occurs in a wide range of habitats from rocky steep slopes in dry sclerophyll forest and *Allocasuarina* (sheoak) woodland, riparian flats and forest.	No database records within 5,000 m but potential habitat present. This species was not detected.
Velleia paradoxa spur velleia	v -	*Velleia paradoxa* is known from the Hobart and Launceston areas, and the Midlands and the Derwent Valley, where it occurs in grassy woodlands or grasslands on dry sites. It has been recorded up to 550 m a.s.l. at sites with an annual rainfall range of 450-750 mm.	Potential habitat present. The species was not detected.
Vittadinia burbidgeae smooth new-holland-daisy	r -	*Vittadinia burbidgeae* occurs in native grassland and grassy woodland.	Potential habitat present. The species was not detected.
Vittadinia cuneata var. *cuneata* fuzzy new-holland-daisy	r -	*Vittadinia cuneata* var. *cuneata* occurs in native grassland and grassy woodland.	Potential habitat present. The species was not detected.
Vittadinia gracilis woolly new-holland-daisy	r -	*Vittadinia gracilis* occurs in native grassland and grassy woodland.	Potential habitat present. The species was not detected.
Vittadinia muelleri narrowleaf new-holland-daisy	r -	*Vittadinia muelleri* occurs in native grassland and grassy woodland.	Species detected. Refer to FINDINGS *Plant species* Threatened flora species recorded from the study area for more details.

APPENDIX E. Analysis of database records of threatened fauna

Table E1 provides a listing of threatened fauna from within 5,000 m of the study area (nominal buffer width usually used to discuss the potential of a particular study area to support various species listed in databases), with comments on whether potential habitat is present for the species, and possible reasons why a species was not recorded.

Table E1. Threatened fauna records from 5,000 m of boundary of study area

Species listed below are listed as rare (r), vulnerable (v), endangered (e), or extinct (x) on the Tasmanian *Threatened Species Protection Act 1995* (TSPA); vulnerable (VU), endangered (EN), critically endangered (CR) or extinct (EX) on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA). Information below is sourced from the DPIPWE's *Natural Values Atlas* (DPIPWE 2017), Bryant & Jackson (1999) and FPA (2017); marine, wholly pelagic and littoral species such as marine mammals, fish and offshore seabirds are excluded. Species marked with # are listed in CoFA (2017).

Scientific name Common name	Status TSPA EPBCA	Tasmanian habitat description (and distribution)	Comments on project area and database records
Accipiter novaehollandiae grey goshawk	e -	Potential habitat of *Accipiter novaehollandiae* is native forest with mature elements below 600 m altitude, particularly along watercourses. Significant habitat may be summarised as areas of wet forest, rainforest and damp forest patches in dry forest, with a relatively closed mature canopy, low stem density, and open understorey in close proximity to foraging habitat and a freshwater body (i.e. stream, river, lake, swamp, etc.).	Potential habitat absent.
Antipodia chaostola tax. *leucophaea* chaostola skipper	e EN #	Potential habitat of *Antipodia chaostola* tax. *leucophaea* is dry forest and woodland supporting *Gahnia radula* (usually on sandstone and other sedimentary rock types) or *Gahnia microstachya* (usually on granite-based substrates).	Potential habitat absent (two key *Gahnia* species entirely absent from study area).
Aquila audax subsp. *fleayi* Tasmanian wedge-tailed eagle	e EN #	Potential habitat of *Aquila audax* subsp. *fleayi* comprises potential nesting habitat and potential foraging habitat. Potential foraging habitat is a wide variety of forest (including areas subject to native forest silviculture) and non-forest habitats. Potential nesting habitat is tall eucalypt trees in large tracts (usually more than 10 ha) of eucalypt or mixed forest. Nest trees are usually amongst the largest in a locality. They are generally in sheltered positions on leeward slopes, between the lower and mid sections of a slope and with the top of the tree usually lower than the ground level of the top of the ridge, although in some parts of the State topographic shelter is not always a significant factor (e.g. parts of the northwest and Central Highlands). Nests are usually not constructed close to sources of	No known nests within 500 m or 1 km line-of-sight of title area. The majority of surrounding areas are topographically and vegetatively unsuitable but forested gullies and slopes associated with Plummers Creek within the title area are superficially suitable. No nests were observed within the study area.

Scientific name Common name	Status TSPA EPBCA	Tasmanian habitat description (and distribution)	Comments on project area and database records
		disturbance and nests close to disturbance are less productive. More than one nest may occur within a territory but only one is used for breeding in any one year. Breeding failure often promotes a change of nest in the next year.	
Dasyurus maculatus subsp. *maculatus* spotted-tailed quoll	r VU #	Potential habitat of *Dasyurus maculatus* subsp. *maculatus* is coastal scrub, riparian areas, rainforest, wet forest, damp forest, dry forest and blackwood swamp forest (mature and regrowth), particularly where structurally complex and steep rocky areas are present, and includes remnant patches in cleared agricultural land.	Potential habitat present. No distinctive scats or den sites of this species were recorded. The study area may be used opportunistically by foraging or dispersing individuals but is unlikely to be considered as "critical" habitat. The proposed development would not result in a "significant impact" on the habitat of the species, as defined by the guidelines (CofA 2013) under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.
Dasyurus viverrinus eastern quoll	- EN #	Potential habitat of *Dasyurus viverrinus* is a variety of habitats including rainforest, heathland, alpine areas and scrub. However, it seems to prefer dry forest and native grassland mosaics which are bounded by agricultural land.	See above.
Discocharopa vigens ammonite snail	e CR # only	Potential habitat of *Discocharopa vigens* is dry and wet eucalypt forests on dolerite in the Hobart lowlands (all below 400 m a.s.l).	Study area is well outside the predicted range of the species, and none of the habitats are a good match for any of the species' known sites around Hobart.
Haliaeetus leucogaster white-bellied sea-eagle	v -	Potential habitat of *Haliaeetus leucogaster* comprises potential nesting habitat and potential foraging habitat. Potential foraging habitat is any large waterbody (including sea coasts, estuaries, wide rivers, lakes, impoundments and even large farm dams) supporting prey items (fish). Potential nesting habitat is tall eucalypt trees in large tracts (usually more than 10 ha) of eucalypt or mixed forest within 5 km of the coast (nearest coast including shores, bays, inlets and peninsulas), large rivers (Class 1), lakes or complexes of large farm dams. Scattered trees along river banks or pasture land may also be used.	No known nests within 500 m or 1 km line-of-sight of title area.

Scientific name Common name	Status TSPA EPBCA	Tasmanian habitat description (and distribution)	Comments on project area and database records
Lathamus discolor swift parrot	e CR #	Potential habitat of *Lathamus discolor* comprises potential foraging habitat and potential nesting habitat. Potential foraging habitat comprises *Eucalyptus globulus* (blue gum) or *Eucalyptus ovata* (black gum) trees that are old enough to flower. For management purposes, potential nesting habitat is considered to comprise eucalypt forests that contain hollow-bearing trees.	There are patches of forest dominated by *Eucalyptus globulus* (mapped as DGL) and also scattered mature "paddock trees" of this species. There is unlikely to be a material loss of potential foraging habitat for the species because the project elements will be sited to avoid significant patches of forest. The proposed development would not result in a "significant impact" on the habitat of the species, as defined by the guidelines (CofA 2013) under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.
Litoria raniformis green and golden frog	v VU #	Potential habitat of *Litoria raniformis* is permanent and temporary waterbodies, usually with vegetation in or around them, including features such as natural lagoons, permanently or seasonally inundated swamps and wetlands, farm dams, irrigation channels, artificial water-holding sites such as old quarries, slow-flowing stretches of streams and rivers and drainage features.	Potential habitat marginally present within the study area in the form of small dams. These dams were assessed in bright, sunny and warm conditions ideal for detecting the species and it was not detected. Provided that the dams are retained "as is" without substantial modification, the proposed development would not result in a "significant impact" on the habitat of the species, as defined by the guidelines (CofA 2013) under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.
Pardalotus quadragintus forty-spotted pardalote	e EN #	Potential habitat of *Pardalotus quadragintus* is any forest and woodland supporting *Eucalyptus viminalis* (white gum) where the canopy cover of *E. viminalis* is greater than or equal to 10% or where *E. viminalis* occurs as a localised canopy dominant or codominant in patches exceeding 0.25 ha.	The site is atypical of known colony sites elsewhere in Tasmania, and while it remains possible that the species will opportunistically utilise the potential habitat, the proposed development would not result in a "significant impact" on the habitat of the species, as under the guidelines (CofA 2013) related to the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, because no significant amount of *Eucalyptus viminalis* will be cleared.
Perameles gunnii subsp. *gunnii* eastern barred bandicoot	- VU #	Potential habitat of *Perameles gunnii* subsp. *gunnii* is open vegetation types including woodlands and open forests with a grassy understorey, native and exotic grasslands, particularly in landscapes with a mosaic of agricultural land and remnant bushland.	Potential habitat widespread. The distinctive diggings of this species were not observed (there was a lot of evidence of rabbits), however, it is likely that the area is used as foraging habitat, at least opportunistically. The proposed development would not result in a "significant impact" on the habitat of the species, as defined by the guidelines (CofA 2013) under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (species certain to persist in, or be encouraged by, a mosaics of forest/woodland retention, buildings and ornamental plantings).

Scientific name Common name	Status TSPA EPBCA	Tasmanian habitat description (and distribution)	Comments on project area and database records
Prototroctes maraena Australian grayling	v VU #	Potential habitat of *Prototroctes maraena* is all streams and rivers in their lower to middle reaches. Areas above permanent barriers (e.g. Prosser River dam, weirs) that prevent fish migration, are not potential habitat.	Potential habitat absent (no permanent creeks present).
Pseudemoia pagenstecheri tussock skink	v -	Potential habitat of *Pseudemoia pagenstecheri* is grassland and grassy woodland (including rough pasture with paddock trees), generally with a greater than 20% cover of native grass species, especially where medium to tall tussocks are present.	Potential habitat technically present within the study area, although quite atypical of known sites elsewhere in Tasmania. Given the level of disturbance proposed (essentially utilising existing tracks and constructing buildings in open grassy areas or pasture), a specialist survey is considered warranted.
Sarcophilus harrisii Tasmanian devil	e EN #	Potential habitat of *Sarcophilus harrisii* is all terrestrial native habitats, forestry plantations and pasture. Devils require shelter (e.g. dense vegetation, hollow logs, burrows or caves) and hunting habitat (open understorey mixed with patches of dense vegetation) within their home range (427 km^2). Significant habitat of *Sarcophilus harrisii* is a patch of potential denning habitat where three or more entrances (large enough for a devil to pass through) may be found within 100 m of one another, and where no other potential denning habitat with three or more entrances may be found within a 1 km radius, being the approximate area of the smallest recorded devil home range. Potential denning habitat of *Sarcophilus harrisii* is areas of burrowable, well-drained soil, log piles or sheltered overhangs such as cliffs, rocky outcrops, knolls, caves and earth banks, free from risk of inundation and with at least one entrance through which a devil could pass.	Evidence of temporary utilisation of a series of sandstone cliffs, caves and overhangs in the approximate centre of the study area was recorded. See FINDINGS *Fauna species* Threatened fauna species recorded from the study area for further information.
Tyto novaehollandiae subsp. *castanops* Tasmanian masked owl	e VU #	Potential habitat of *Tyto novaehollandiae* subsp. *castanops* is all areas with trees with large hollows (≥15 cm entrance diameter). In terms of using mapping layers, potential habitat is considered to be all areas with at least 20% mature eucalypt crown cover (PI type mature density class 'a', 'b', or 'c'). Remnants and paddock trees (in any dry or wet forest type) in agricultural areas may constitute potential habitat. Significant habitat for the masked owl is any areas within the core range of native dry forest with trees over 100 cm dbh with large hollows (≥15 cm entrance diameter).	Large trees with obvious large hollows are present within the study area but essentially restricted to the more remote parts of the title not proposed for development. It is likely that this species uses the area opportunistically for foraging and dispersal. The proposed development would not result in a "significant impact" on the habitat of the species, as defined by the guidelines (CofA 2013) under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

APPENDIX F**. DPIPWE's** *Natural Values Atlas* report for project area

Appended as pdf file.

APPENDIX G**. Forest Practices Authority's** *Biodiversity Values Atlas* report for project area

Appended as pdf file.

APPENDIX H**. CofA's** *Protected Matters* report for project area

Appended as pdf file.

Natural Values Atlas Report

Authoritative, comprehensive information on Tasmania's natural values.

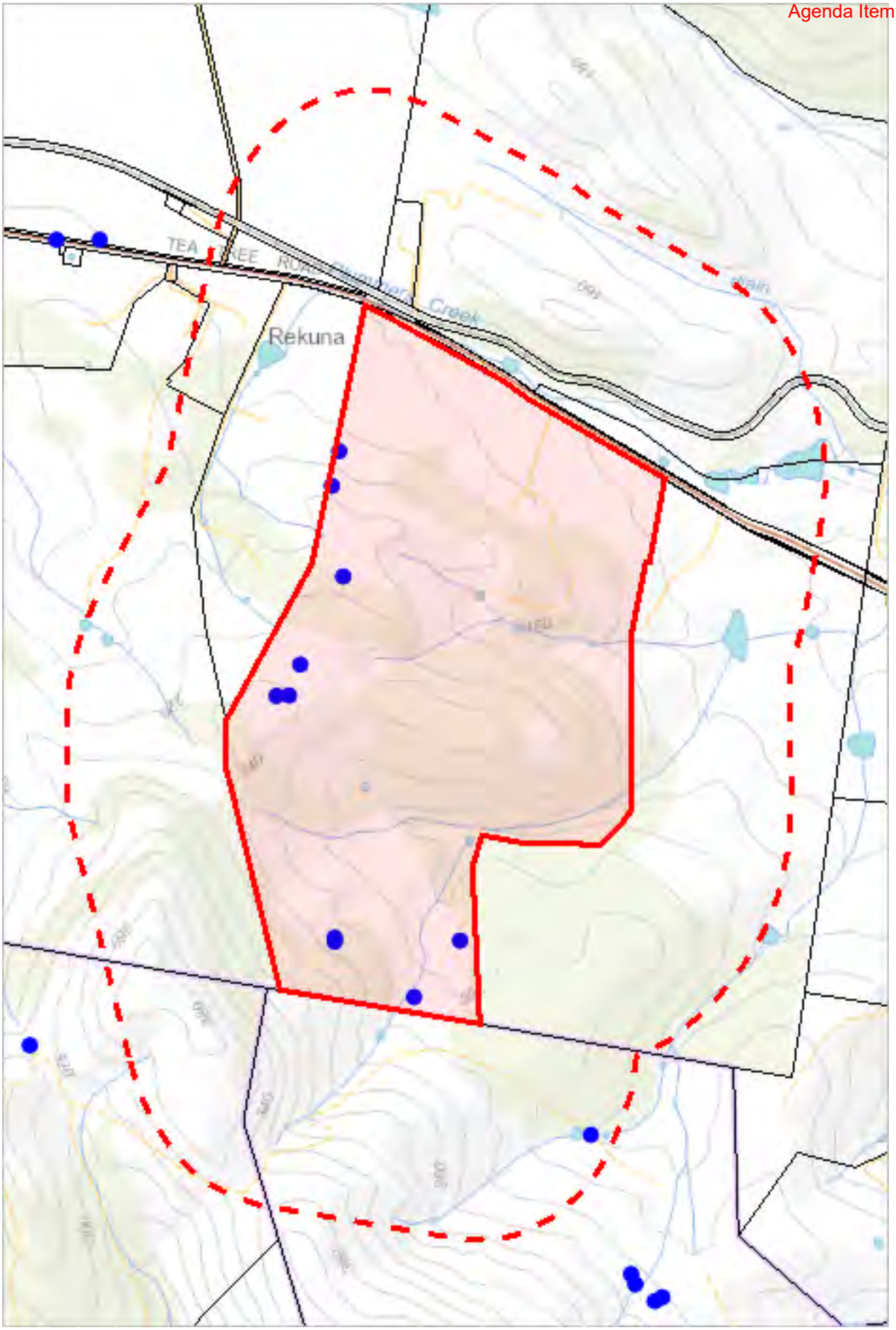
Reference: ECOtas_HolyTantraEsotericBuddhism_Campania
Requested For: MWapstra
Report Type: Summary Report
Timestamp: 11:03:45 AM Monday 19 June 2017

Threatened Flora: buffers Min: 500m Max: 5000m
Threatened Fauna: buffers Min: 500m Max: 5000m
Raptors: buffers Min: 500m Max: 5000m
Tasmanian Weed Management Act Weeds: buffers Min: 500m Max: 5000m
Priority Weeds: buffers Min: 500m Max: 5000m
Geoconservation: buffer 1000m
Acid Sulfate Soils: buffer 1000m
TASVEG: buffer 1000m
Threatened Communities: buffer 1000m
Fire History: buffer 1000m
Tasmanian Reserve Estate: buffer 1000m
Biosecurity Risks: buffer 1000m

The centroid for this query GDA94: 531989.0, 5274875.0 falls within:

Property: 2941293

Threatened flora within 500 metres



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

Threatened flora within 500 metres

Legend: Verified and Unverified observations

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

Legend: Cadastral Parcels

Threatened flora within 500 metres

Verified Records

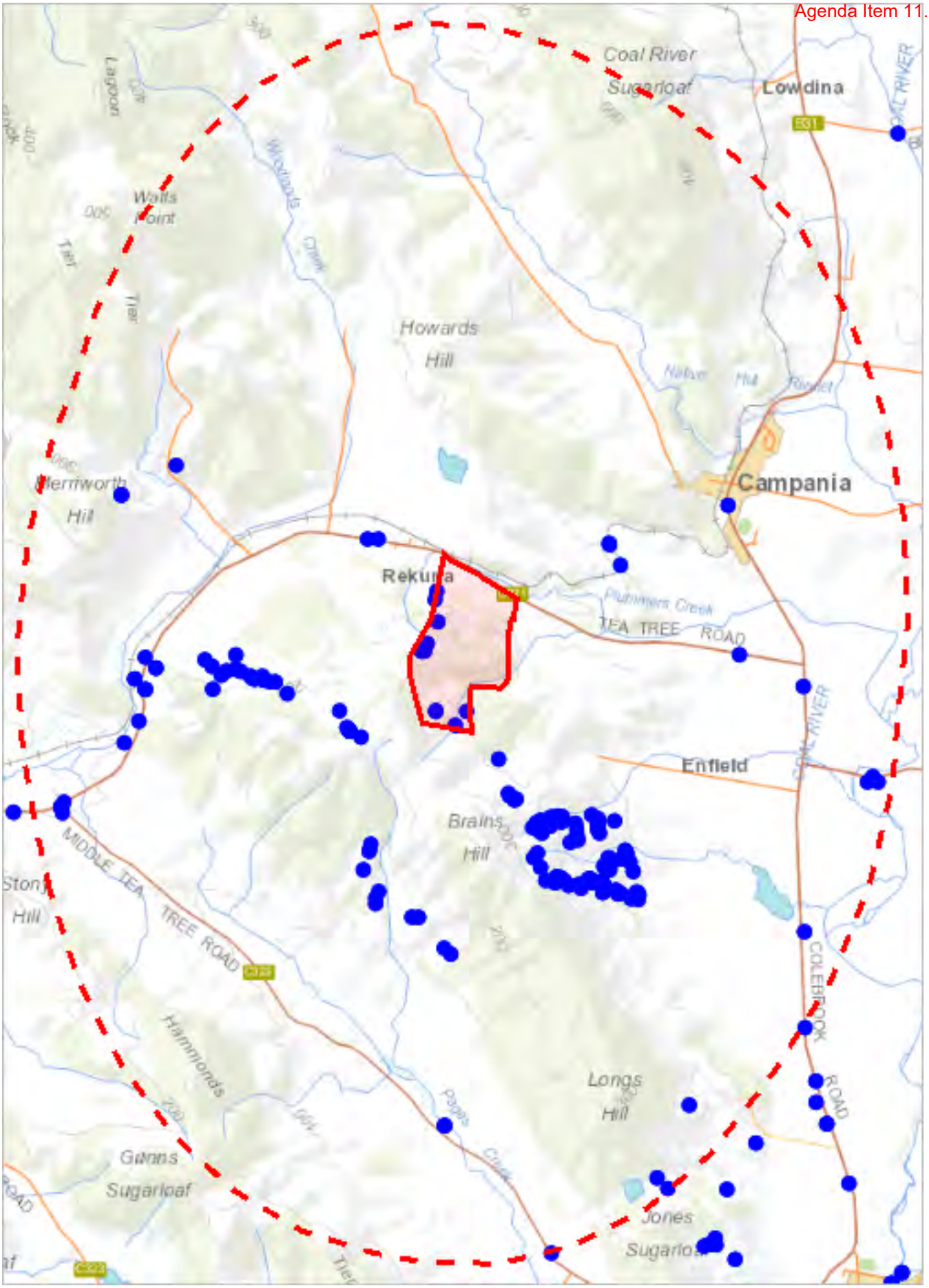
Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
Asperula scoparia subsp. scoparia	prickly woodruff	r		n	2	27-Nov-2013
Austrostipa scabra	rough speargrass	r		n	7	27-Nov-2013
Haloragis heterophylla	variable raspwort	r		n	1	29-Oct-2013
Vittadinia muelleri	narrowleaf new-holland-daisy	r		n	1	27-Nov-2013

Unverified Records

No unverified records were found!

For more information about threatened species, please Threatened Species Enquiries.
Telephone: (03) 6165 4340
Email: ThreatenedSpecies.Enquiries@dpipwe.tas.gov.au
Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

Threatened flora within 5000 metres



527640, 5268865

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

Threatened flora within 5000 metres

Legend: Verified and Unverified observations

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

Legend: Cadastral Parcels

Threatened flora within 5000 metres

Verified Records

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
Asperula scoparia subsp. scoparia	prickly woodruff	r		n	12	27-Nov-2013
Austrostipa blackii	crested speargrass	r		n	1	01-Oct-1966
Austrostipa scabra	rough speargrass	r		n	102	27-Nov-2013
Brachyscome rigidula	cutleaf daisy	v		n	5	07-Feb-2014
Calocephalus citreus	lemon beautyheads	r		n	5	04-Dec-2002
Dianella amoena	grassland flaxlily	r	EN	n	15	27-Nov-2012
Eryngium ovinum	blue devil	v		n	1	01-Jan-1993
Haloragis heterophylla	variable raspwort	r		n	1	29-Oct-2013
Isoetopsis graminifolia	grass cushion	v		n	2	26-Aug-2008
Juncus amabilis	gentle rush	r		n	2	01-Jan-1993
Lobelia pratioides	poison lobelia	v		n	1	28-Mar-2000
Scleranthus diander	tufted knawel	v		n	6	23-Feb-2009
Scleranthus fasciculatus	spreading knawel	v		n	12	29-Oct-2013
Siloxerus multiflorus	small wrinklewort	r		n	2	20-Oct-2015
Velleia paradoxa	spur velleia	v		n	1	16-Dec-1942
Vittadinia burbidgeae	smooth new-holland-daisy	r		e	2	23-Feb-2009
Vittadinia cuneata var. cuneata	fuzzy new-holland-daisy	r		n	1	01-Nov-1984
Vittadinia gracilis	woolly new-holland-daisy	r		n	19	27-Nov-2012
Vittadinia muelleri	narrowleaf new-holland-daisy	r		n	13	16-May-2014
Vittadinia muelleri (broad sense)	narrow leaf new holland daisy	p		n	18	28-Mar-2007

Unverified Records

No unverified records were found!

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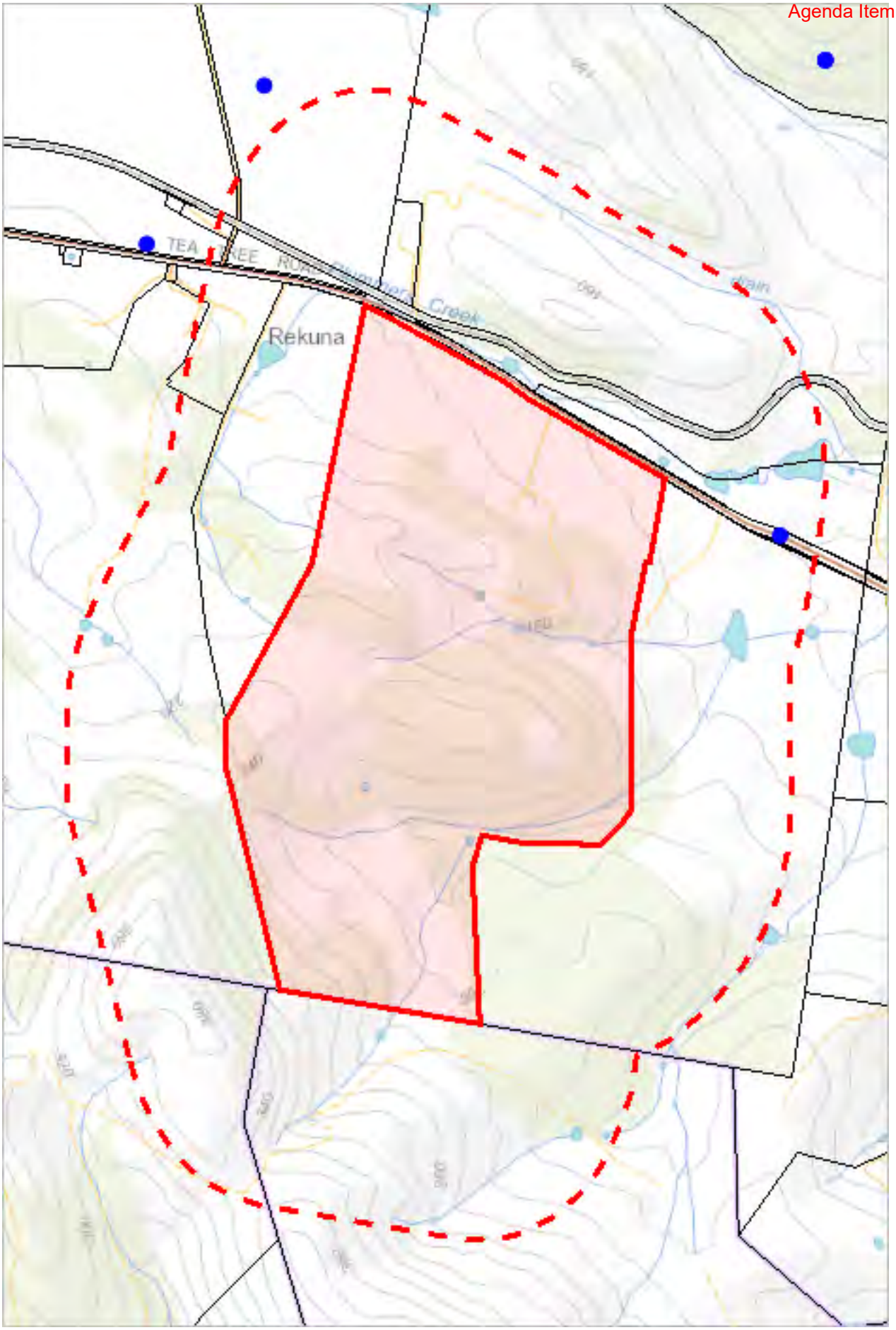
Threatened fauna within 500 metres



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

Threatened fauna within 500 metres

Legend: Verified and Unverified observations

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

Legend: Cadastral Parcels

Threatened fauna within 500 metres

Verified Records

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
Perameles gunnii	eastern barred bandicoot		VU	n	1	14-Jun-1992

Unverified Records

No unverified records were found!

Threatened fauna within 500 metres

(based on Range Boundaries)

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

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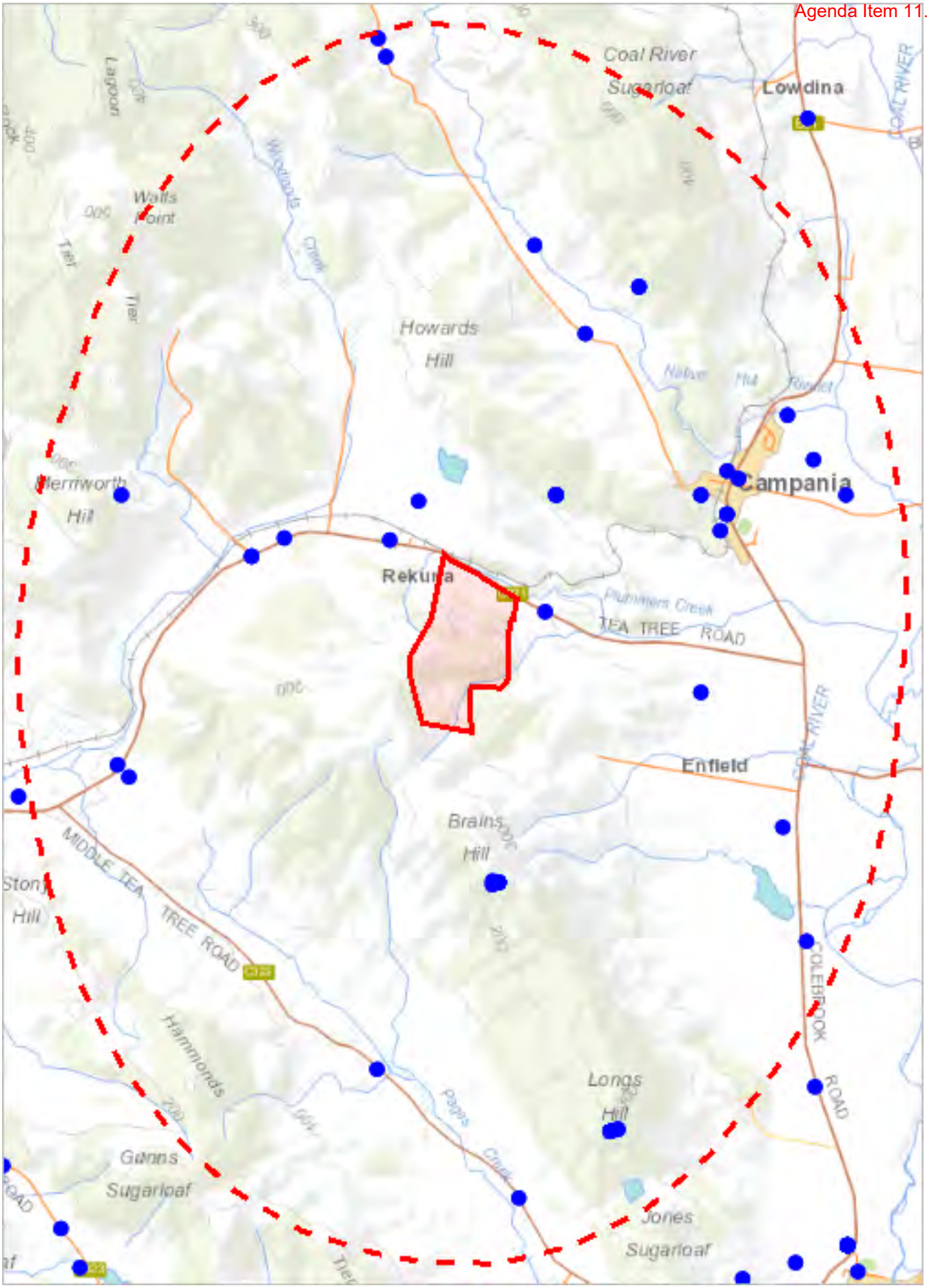
Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

Threatened fauna within 5000 metres



527640, 5268865

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

Threatened fauna within 5000 metres

Legend: Verified and Unverified observations

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

Legend: Cadastral Parcels

Threatened fauna within 5000 metres

Verified Records

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
Aquila audax	wedge-tailed eagle	pe	PEN	n	1	10-Oct-2013
Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	e	EN	e	21	18-Nov-2013
Dasyurus maculatus	spotted-tailed quoll	r	VU	n	1	01-May-2017
Dasyurus viverrinus	eastern quoll		EN	n	4	01-Jan-1995
Perameles gunnii	eastern barred bandicoot		VU	n	29	07-Oct-1993
Sarcophilus harrisii	tasmanian devil	e	EN	e	26	01-Mar-2017
Tyto novaehollandiae	masked owl	pe	PVU	n	2	31-Mar-1977

Unverified Records

No unverified records were found!

Threatened fauna within 5000 metres

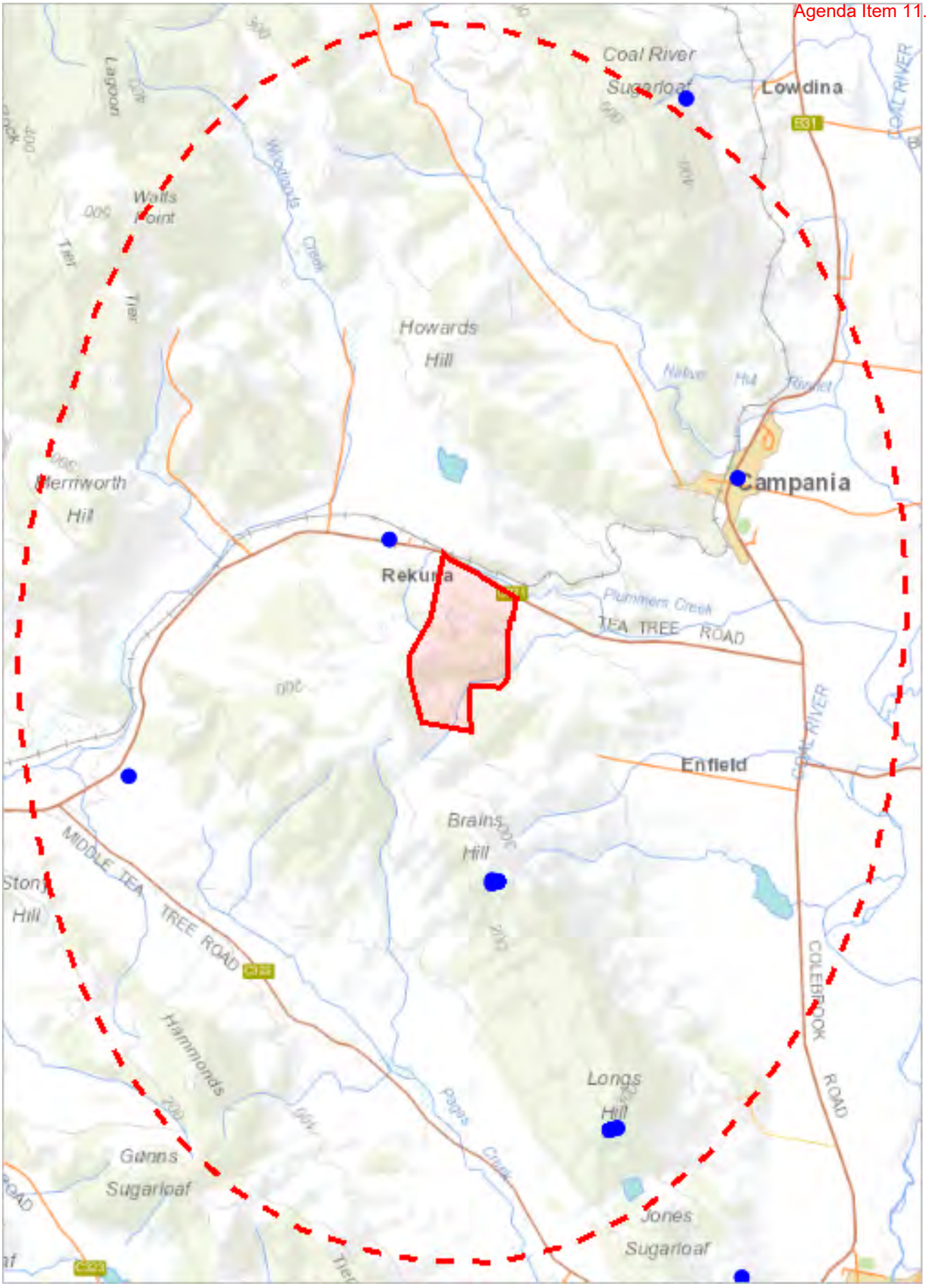
(based on Range Boundaries)

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

For more information about threatened species, please Threatened Species Enquiries.
Telephone: (03) 6165 4340
Email: ThreatenedSpecies.Enquiries@dpipwe.tas.gov.au
Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

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

Raptor nests and sightings within 5000 metres



527640, 5268865

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

Raptor nests and sightings within 5000 metres

Legend: Verified and Unverified observations

Legend: Cadastral Parcels

Raptor nests and sightings within 5000 metres

Verified Records

Nest Id/Location Foreign Id	Species	Common Name	Obs Type	Observation Count	Last Recorded
2181	Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	Nest	1	10-Nov-2013
2218	Aquila audax	wedge-tailed eagle	Nest	1	10-Oct-2013
369	Falco peregrinus	peregrine falcon	Nest	1	01-Jan-1985
370	Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	Nest	8	16-Nov-2007
588	Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	Nest	2	16-Nov-2007
987	Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	Nest	9	18-Nov-2013
	Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	Sighting	1	17-May-1995
	Tyto novaehollandiae	masked owl	Sighting	2	31-Mar-1977

Unverified Records

No unverified records were found!

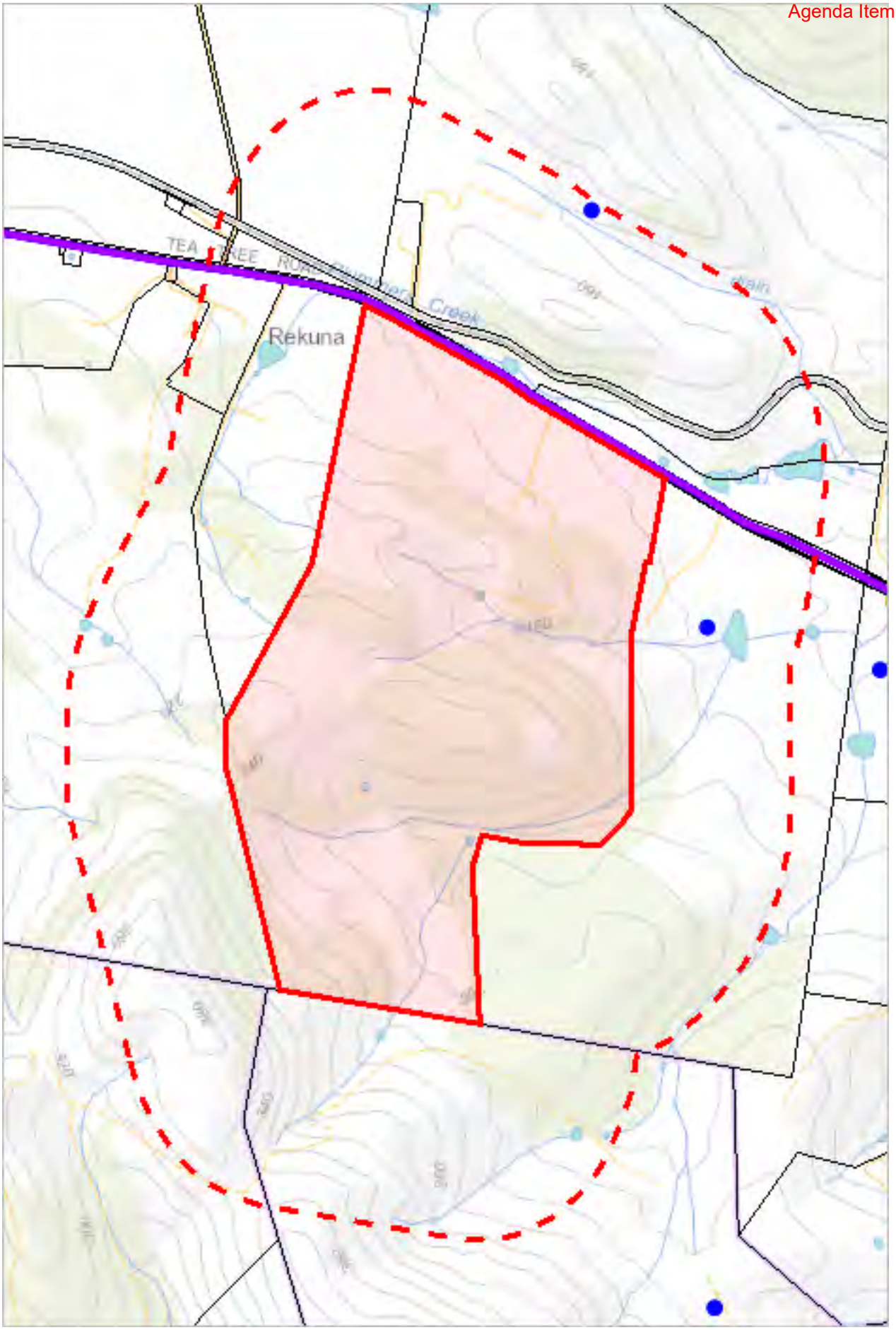
Raptor nests and sightings within 5000 metres

(based on Range Boundaries)

Species	Common Name	SS	NS	Potential	Known	Core
Aquila audax	wedge-tailed eagle	pe	PEN	1	0	0
Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	e	EN	1	0	0
Tyto novaehollandiae	masked owl	pe	PVU	1	0	1
Haliaeetus leucogaster	white-bellied sea-eagle	v		2	0	0
Accipiter novaehollandiae	grey goshawk	e		1	0	0

For more information about raptor nests, please contact Threatened Species Enquiries.
Telephone: (03) 6165 4340
Email: ThreatenedSpecies.Enquiries@dpipwe.tas.gov.au
Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

Tas Management Act Weeds within 500 m



530975, 5273368

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

Tas Management Act Weeds within 500 m

Legend: Verified and Unverified observations

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

Legend: Cadastral Parcels

Tas Management Act Weeds within 500 m

Verified Records

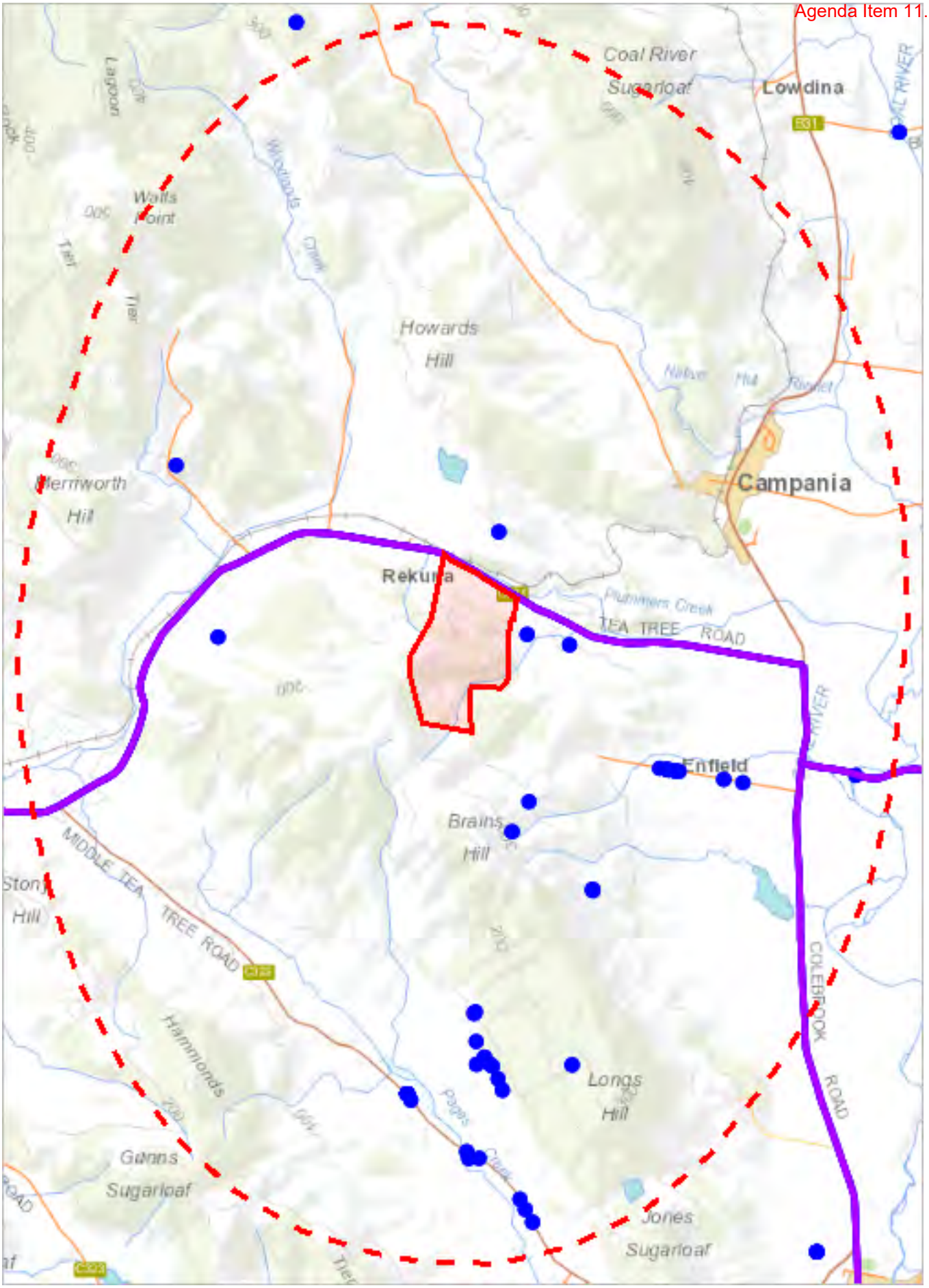
Species	Common Name	Observation Count	Last Recorded
Foeniculum vulgare	fennel	1	08-Jan-1995
Lycium ferocissimum	african boxthorn	2	13-Dec-2012
Solanum marginatum	white-edged nightshade	1	31-Aug-1999
Ulex europaeus	gorse	1	08-Jan-1995

Unverified Records

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

http://dpipwe.tas.gov.au/invasive-species/weeds

Tas Management Act Weeds within 5000 m



527640, 5268865

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

Tas Management Act Weeds within 5000 m

Legend: Verified and Unverified observations

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

Legend: Cadastral Parcels

Tas Management Act Weeds within 5000 m

Verified Records

Species	Common Name	Observation Count	Last Recorded
Asparagus asparagoides	bridal creeper	10	01-Jan-2009
Carduus nutans	nodding thistle	1	01-Jan-1993
Carduus tenuiflorus	winged thistle	1	01-Nov-1984
Chrysanthemoides monilifera subsp. monilifera	boneseed	2	07-Oct-2009
Cytisus scoparius	english broom	5	16-Aug-2012
Echium plantagineum	patersons curse	1	01-Nov-2016
Elodea canadensis	canadian pondweed	1	06-Mar-2015
Foeniculum vulgare	fennel	11	16-Aug-2012
Genista monspessulana	montpellier broom	2	10-Jul-2009
Lepidium draba	hoary cress	1	10-Jul-2009
Lycium ferocissimum	african boxthorn	30	27-Jun-2016
Marrubium vulgare	white horehound	2	29-Oct-2013
Rubus fruticosus	blackberry	3	30-Sep-2009
Solanum marginatum	white-edged nightshade	1	31-Aug-1999
Ulex europaeus	gorse	8	29-Oct-2013

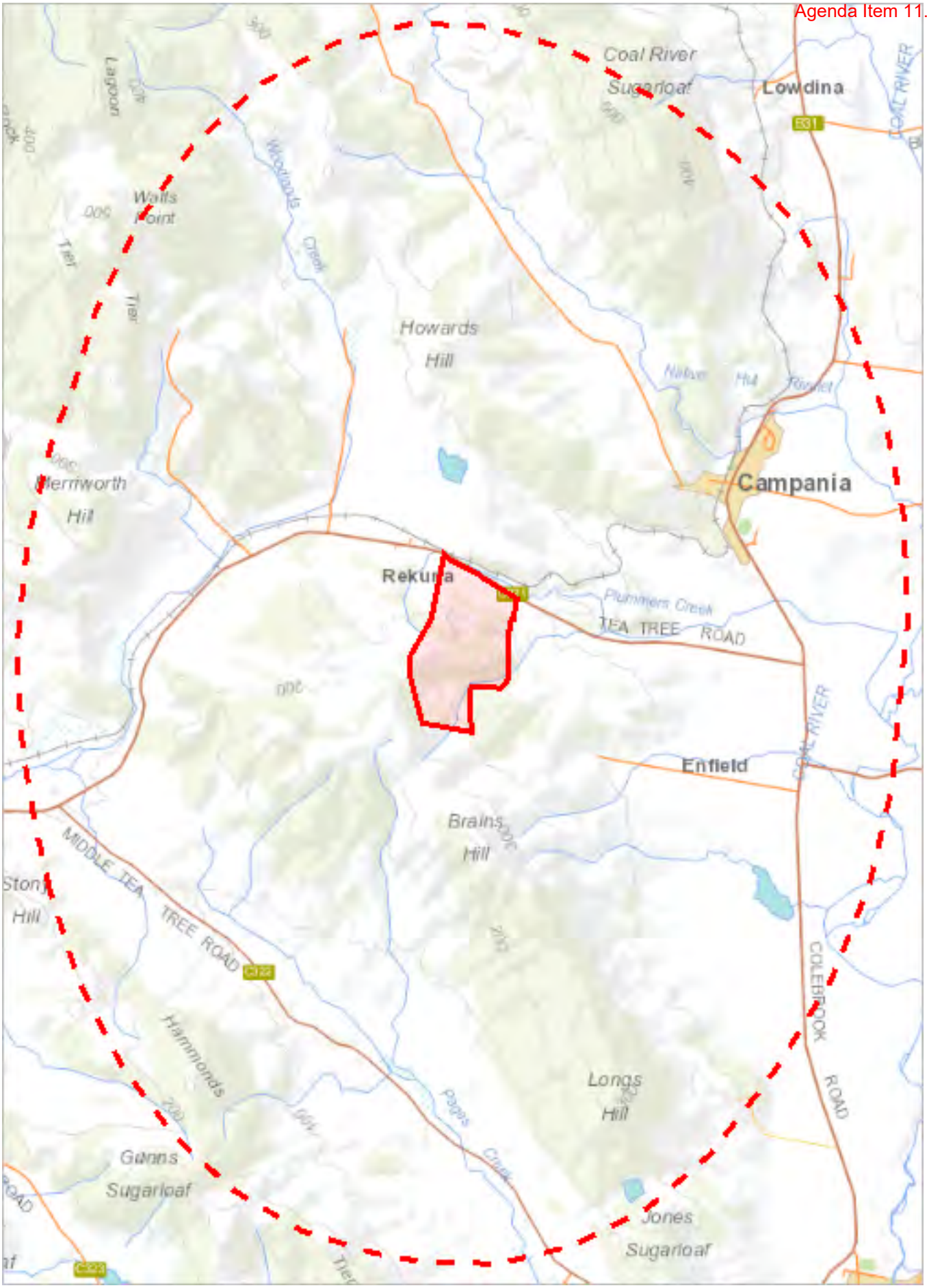
Unverified Records

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

http://dpipwe.tas.gov.au/invasive-species/weeds

*** No Priority Weeds found within 500 metres ***

Priority Weeds within 5000 m



527640, 5268865

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

Priority Weeds within 5000 m

Legend: Verified and Unverified observations

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

Legend: Cadastral Parcels

Priority Weeds within 5000 m

Verified Records

Species	Common Name	Observation Count	Last Recorded
Acacia baileyana	cootamundra wattle	1	10-Jul-2009
Grevillea rosmarinifolia	rosemary grevillea	1	16-Aug-2012

Unverified Records

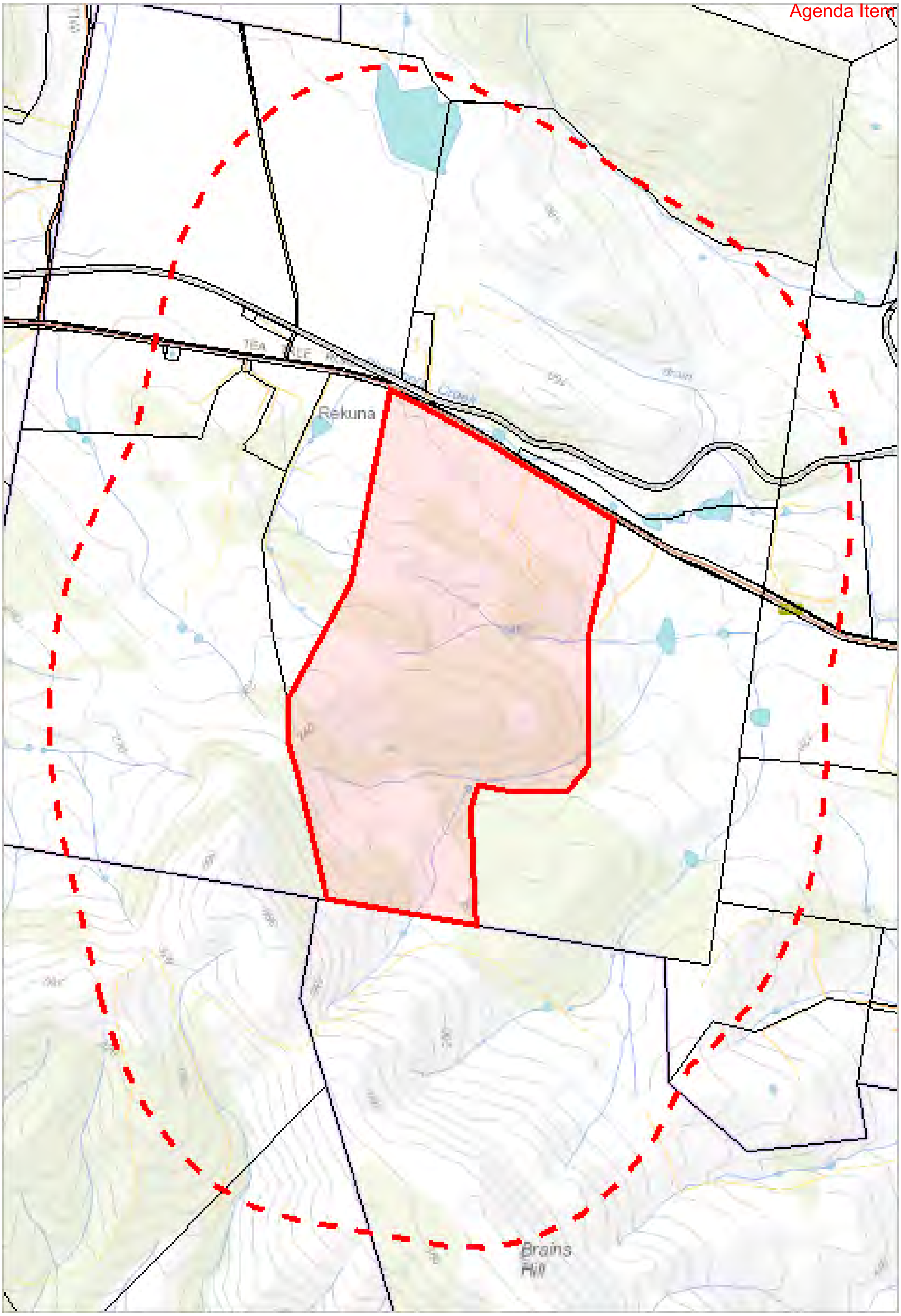
For more information about introduced weed species, please visit the following URL for contact details in your area:

http://dpipwe.tas.gov.au/invasive-species/weeds

Geoconservation sites within 1000 metres

ATTACHMENT
Agenda Item 11.1.2

533410, 5276930



530605, 5272868

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Tasmanian Government

Geoconservation sites within 1000 metres

Legend: Geoconservation (NVA)

Legend: Cadastral Parcels

Geoconservation sites within 1000 metres

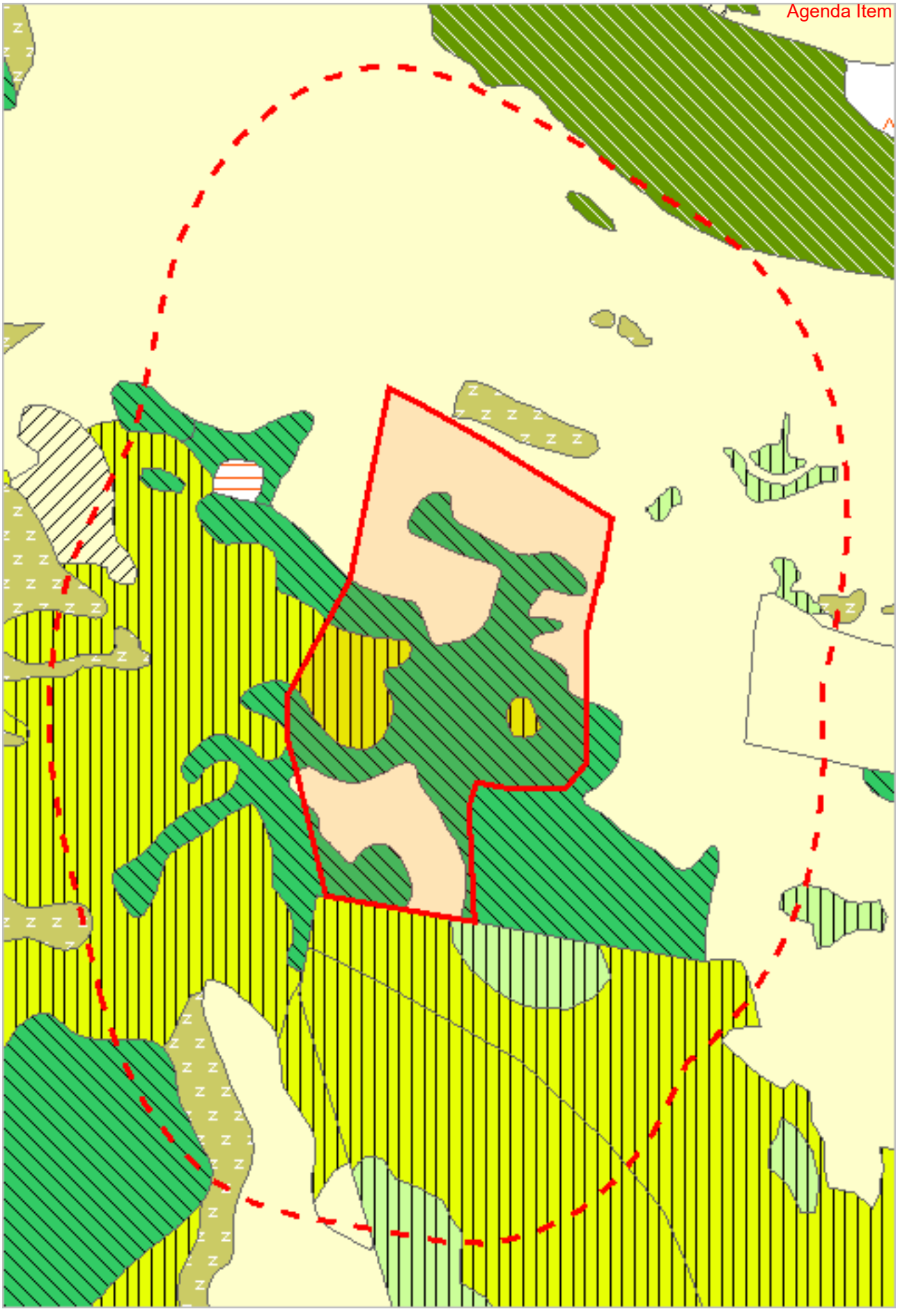
Id	Name	Statement of Significance	Geographical Significance	Status
2527	Western Tasmania Blanket Bogs	The most extensive organosol terrain in Australia and the Southern Hemisphere.	Global	Listed

For more information about the Geoconservation Database, please visit the website: http://dpipwe.tas.gov.au/conservation/geoconservation
or contact the Geoconservation Officer:

Telephone: (03) 6165 4401
Email: Geoconservation.Enquiries@dpipwe.tas.gov.au
Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

*** No Acid Sulfate Soils found within 1000 metres ***

TASVEG 3.0 Communities within 1000 metres



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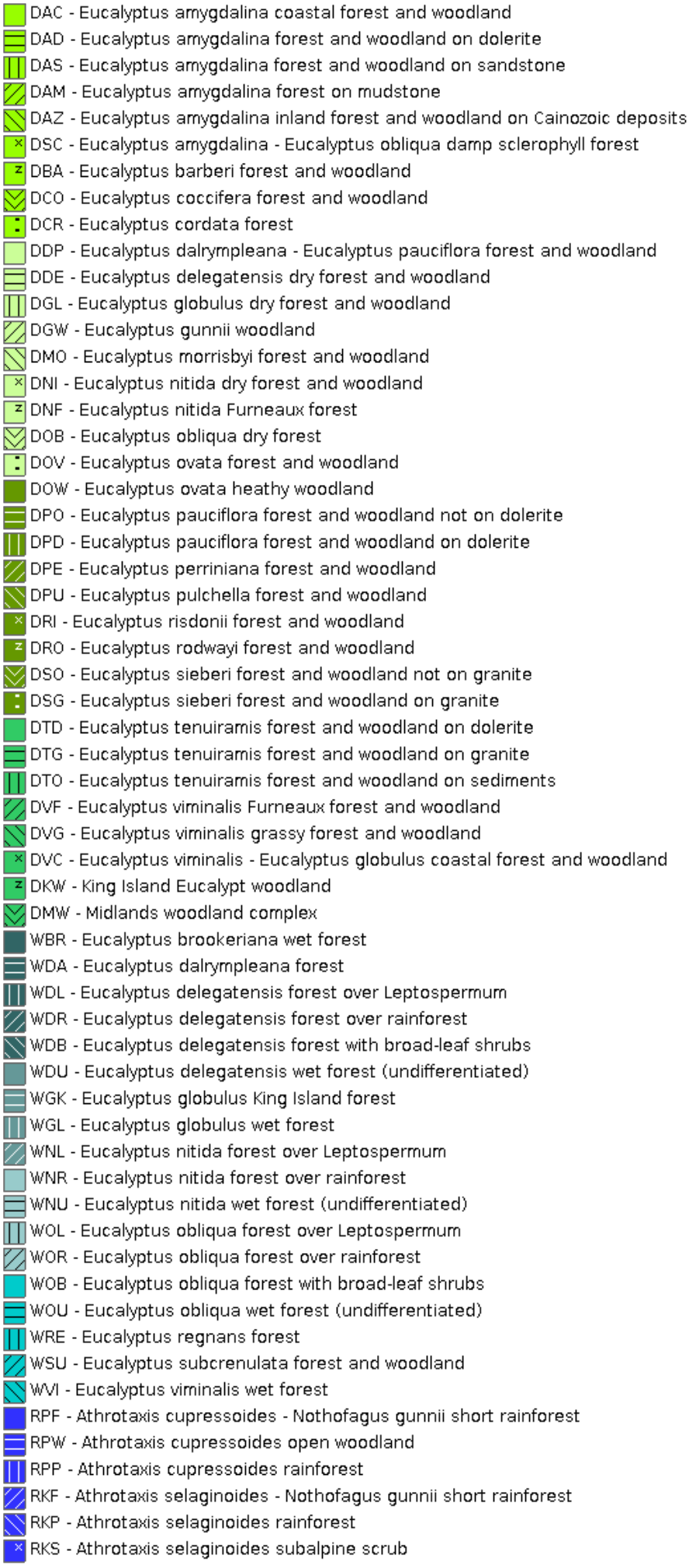
Please note that some layers may not display at all requested map scales

TASVEG 3.0 Communities within 1000 metres

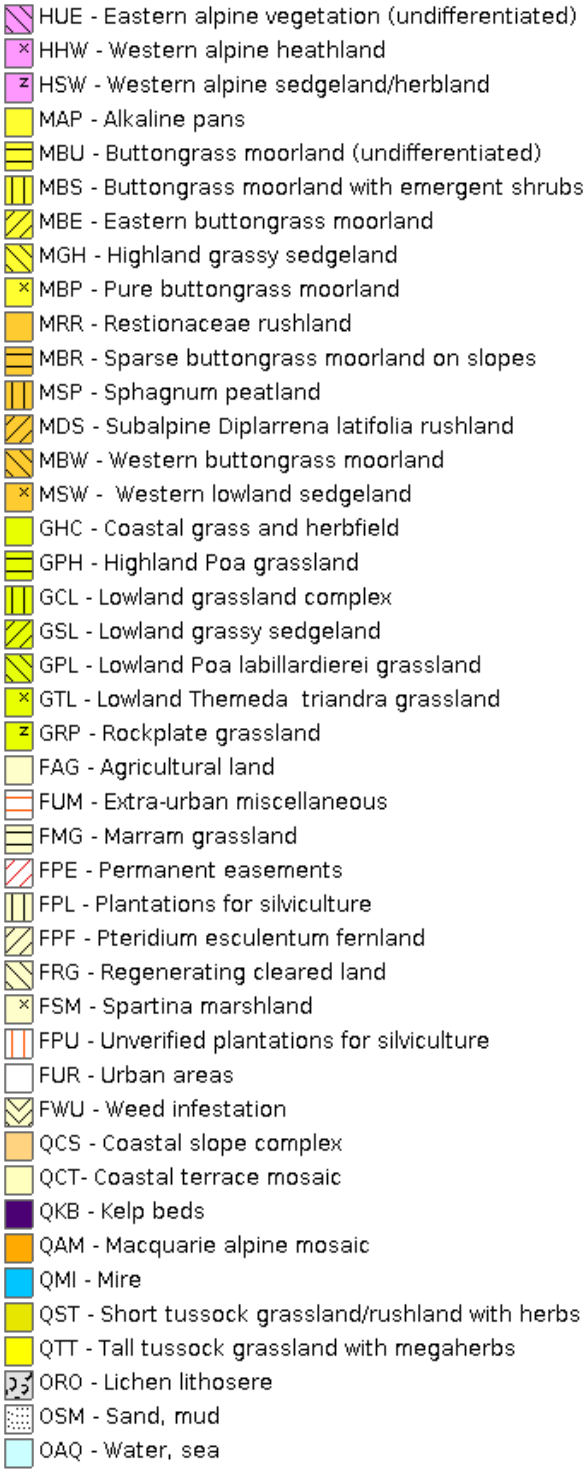
Legend: TASVEG 3.0



TASVEG 3.0 Communities within 1000 metres

- RCO - Coastal rainforest
- RSH - Highland low rainforest and scrub
- RKX - Highland rainforest scrub with dead Athrotaxis selaginoides
- RHP - Lagarostrobos franklinii rainforest and scrub
- RMT - Nothofagus - Atherosperma rainforest
- RML - Nothofagus - Leptospermum short rainforest
- RMS - Nothofagus - Phyllocladus short rainforest
- RFS - Nothofagus gunnii rainforest and scrub
- RMU - Nothofagus rainforest (undifferentiated)
- RFE - Rainforest fernland
- NAD - Acacia dealbata forest
- NAR - Acacia melanoxylon forest on rises
- NAF - Acacia melanoxylon swamp forest
- NAL - Allocasuarina littoralis forest
- NAV - Allocasuarina verticillata forest
- NBS - Banksia serrata woodland
- NBA - Bursaria - Acacia woodland and scrub
- NCR - Callitris rhomboidea forest
- NLE - Leptospermum forest
- NLM - Leptospermum lanigerum - Melaleuca squarrosa swamp forest
- NLA - Leptospermum scoparium - Acacia mucronata forest
- NME - Melaleuca ericifolia swamp forest
- NLN - Subalpine Leptospermum nitidum woodland
- AHF - Fresh water aquatic herbland
- ASF - Freshwater aquatic sedgeland and rushland
- AHL - Lacustrine herbland
- AHS - Saline aquatic herbland
- ARS - Saline sedgeland/rushland
- AUS - Saltmarsh (undifferntiated)
- ASS - Succulent saline herbland
- AWU - Wetland (undifferentiated)
- SAL - Acacia longifolia coastal scrub
- SBM - Banksia marginata wet scrub
- SBR - Broad-leaf scrub
- SCH - Coastal heathland
- SSC - Coastal scrub
- SCA - Coastal scrub on alkaline sands
- SRE - Eastern riparian scrub
- SED - Eastern scrub on dolerite
- SCL - Heathland on calcareous substrates
- SKA - Kunzea ambigua regrowth scrub
- SLG - Leptospermum glaucescens heathland and scrub
- SLL - Leptospermum lanigerum scrub
- SLS - Leptospermum scoparium heathland and scrub
- SLW - Leptospermum scrub
- SRF - Leptospermum with rainforest scrub
- SMP - Melaleuca pustulata scrub
- SMM - Melaleuca squamea heathland
- SMR - Melaleuca squarrosa scrub
- SRH - Rookery halophytic herbland
- SSK - Scrub complex on King Island
- SSZ - Spray zone coastal complex
- SHS - Subalpine heathland
- SWR - Western regrowth complex
- SSW - Western subalpine scrub
- SWW - Western wet scrub
- SHW - Wet heathland
- HCH - Alpine coniferous heathland
- HCM - Cushion moorland
- HHE - Eastern alpine heathland
- HSE - Eastern alpine sedgeland

TASVEG 3.0 Communities within 1000 metres



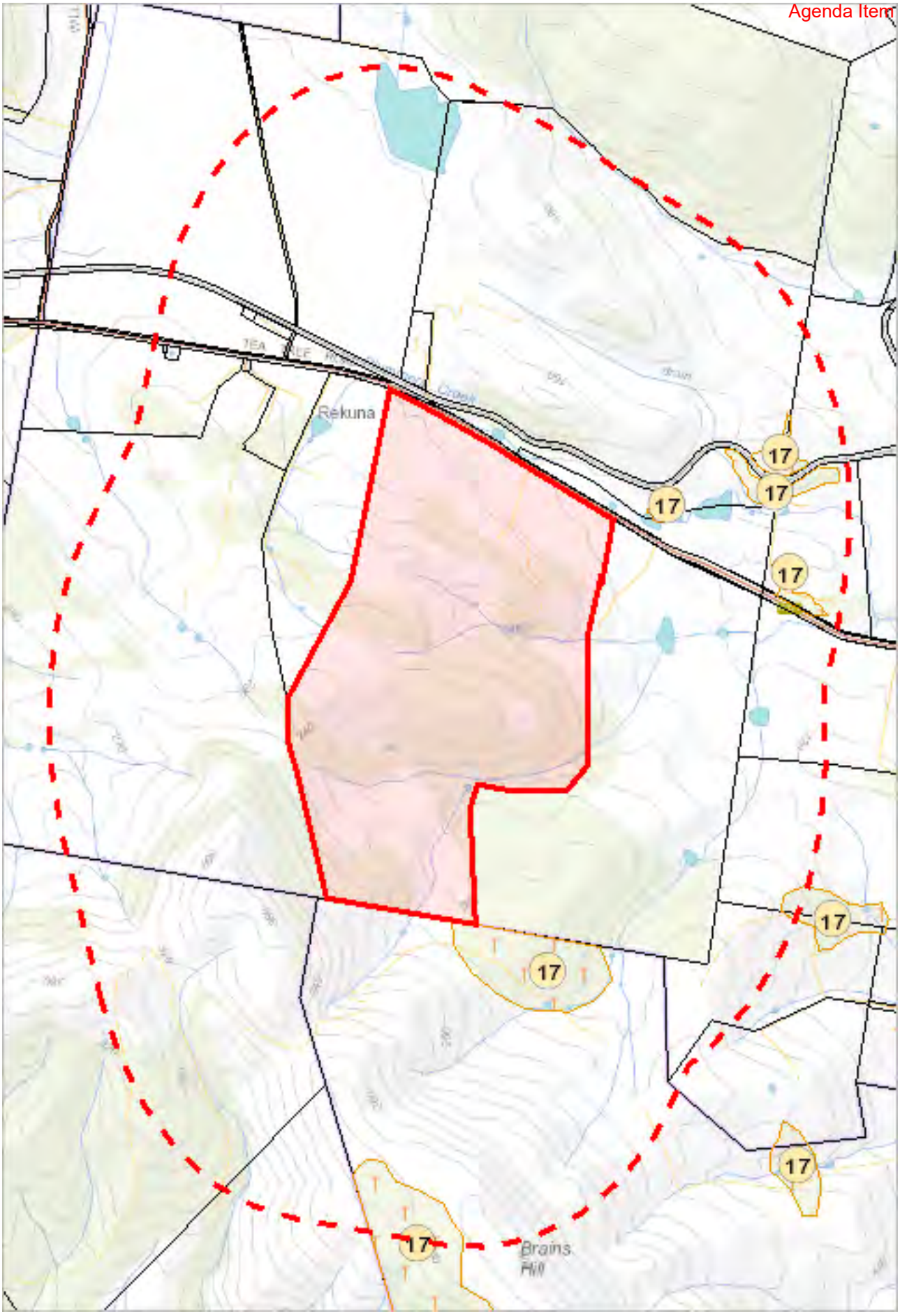
Legend: Cadastral Parcels

TASVEG 3.0 Communities within 1000 metres

Code	Community	Emergent Species
DGL	(DGL) Eucalyptus globulus dry forest and woodland	
DPU	(DPU) Eucalyptus pulchella forest and woodland	
DVG	(DVG) Eucalyptus viminalis grassy forest and woodland	
FAG	(FAG) Agricultural land	EV
FAG	(FAG) Agricultural land	
FPF	(FPF) Pteridium esculentum fernland	
FUM	(FUM) Extra-urban miscellaneous	
GCL	(GCL) Lowland grassland complex	
NBA	(NBA) Bursaria - Acacia woodland and scrub	EV
NBA	(NBA) Bursaria - Acacia woodland and scrub	

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

Threatened Communities (TNVC 2014) within 1000 metres



530605, 5272868

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

Threatened Communities (TNVC 2014) within 1000 metres

Legend: Threatened Communities

- 1 - Alkaline pans
- 2 - Allocasuarina littoralis forest
- 3 - Athrotaxis cupressoides/Nothofagus gunnii short rainforest
- 4 - Athrotaxis cupressoides open woodland
- 5 - Athrotaxis cupressoides rainforest
- 6 - Athrotaxis selaginoides/Nothofagus gunni short rainforest
- 7 - Athrotaxis selaginoides rainforest
- 8 - Athrotaxis selaginoides subalpine scrub
- 9 - Banksia marginata wet scrub
- 10 - Banksia serrata woodland
- 11 - Callitris rhomboidea forest
- 13 - Cushion moorland
- 14 -Eucalyptus amygdalina forest and woodland on sandstone
- 15 - Eucalyptus amygdalina inland forest and woodland on cainozoic deposits
- 16 - Eucalyptus brookeriana wet forest
- 17 - Eucalyptus globulus dry forest and woodland
- 18 - Eucalyptus globulus King Island forest
- 19 - Eucalyptus morrisbyi forest and woodland
- 20 - Eucalyptus ovata forest and woodland
- 21 - Eucalyptus risdonii forest and woodland
- 22 - Eucalyptus tenuiramis forest and woodland on sediments
- 23 - Eucalyptus viminalis - Eucalyptus globulus coastal forest and woodland
- 24 - Eucalyptus viminalis Furneaux forest and woodland
- 25 - Eucalyptus viminalis wet forest
- 26 - Heathland on calcareous substrates
- 27 - Heathland scrub complex at Wingaroo
- 28 - Highland grassy sedgeland
- 29 - Highland Poa grassland
- 30 - Melaleuca ericifolia swamp forest
- 31 - Melaleuca pustulata scrub
- 32 - Notelaea - Pomaderris - Beyeria forest
- 33 - Rainforest fernland
- 34 - Riparian scrub
- 35 - Seabird rookery complex
- 36 - Sphagnum peatland
- 36A - Spray zone coastal complex
- 37 - Subalpine Diplarrena latifolia rushland
- 38 - Subalpine Leptospermum nitidum woodland
- 39 - Wetlands

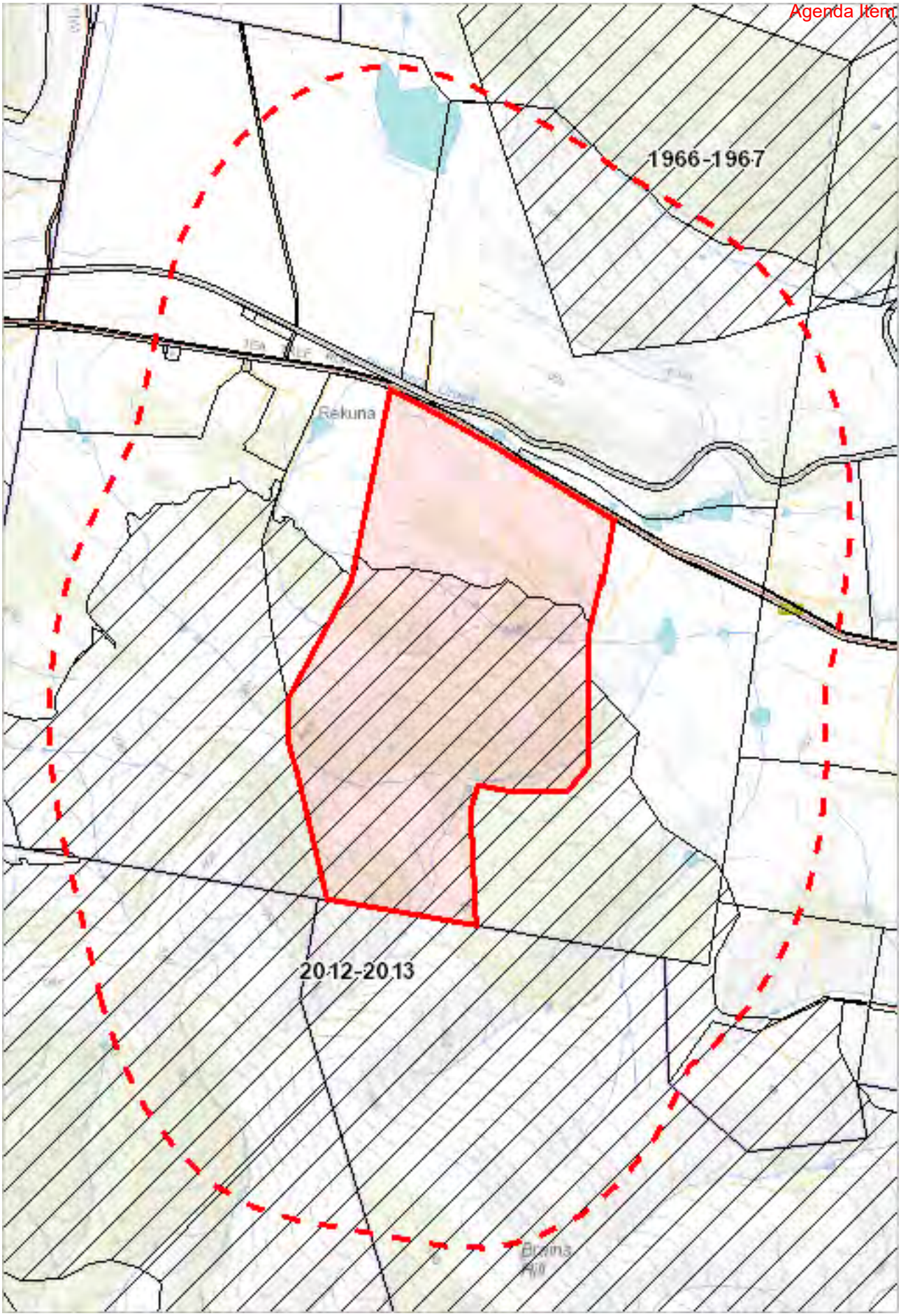
Legend: Cadastral Parcels

Threatened Communities (TNVC 2014) within 1000 metres

Scheduled Community Id	Scheduled Community Name
17	Eucalyptus globulus dry forest and woodland

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

Fire History (All) within 1000 metres



530605, 5272868

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

Fire History (All) within 1000 metres

Legend: Fire History All

Bushfire-Unknown Category

Completed Planned Burn

Bushfire

Legend: Cadastral Parcels

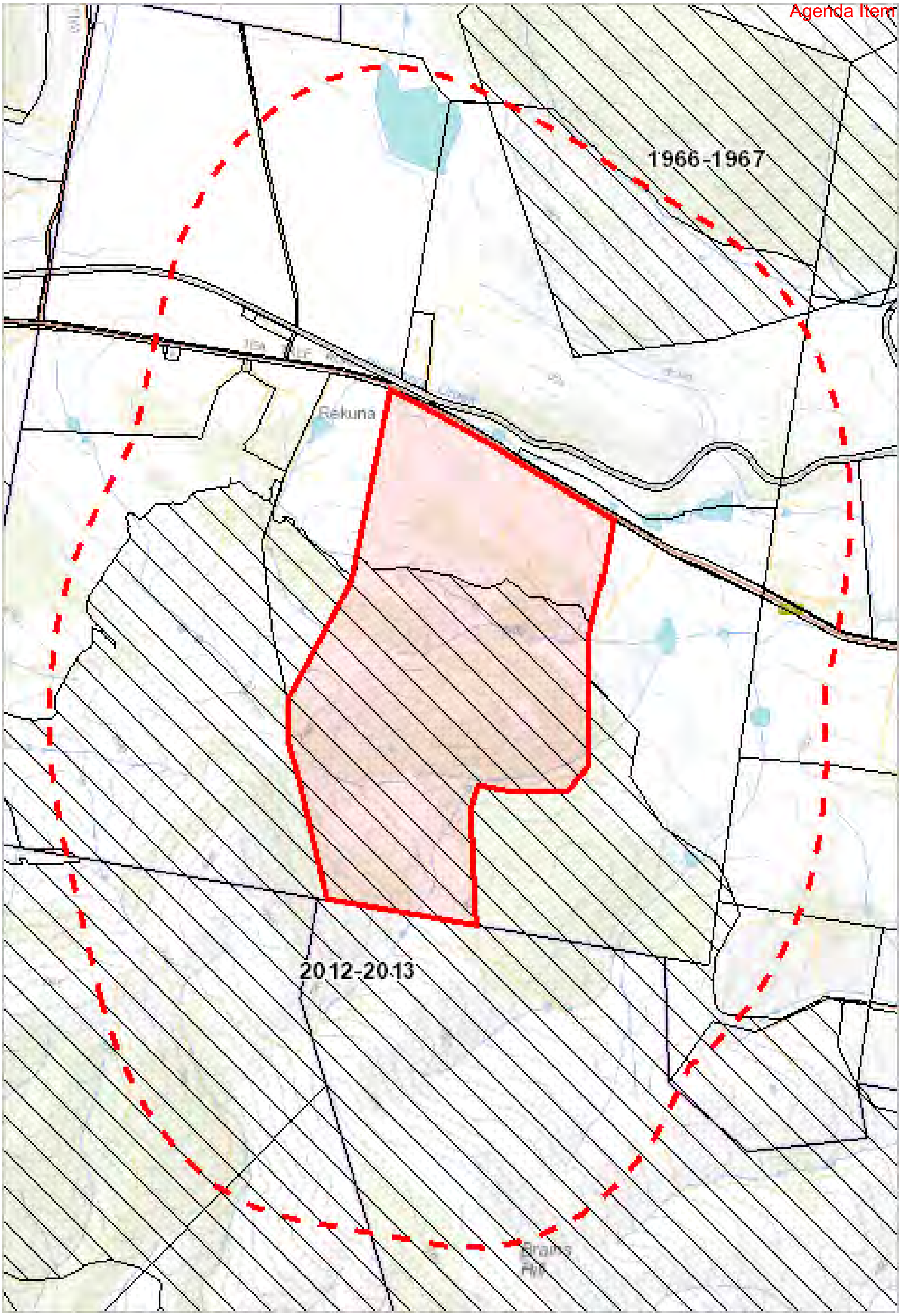
Fire History (All) within 1000 metres

Incident Number	Fire Name	Ignition Date	Fire Type	Ignition Cause	Fire Area (HA)
0	1967 Fire	22-Feb-1967	Bushfire	Undetermined	198780.41788592
205787	Tea Tree Road	27-Apr-2013	Bushfire	Undetermined	1234.2579408

For more information about Fire History, please contact the Manager Community Protection Planning, Tasmania Fire Service.
Telephone: 1800 000 699
Email: planning@fire.tas.gov.au
Address: cnr Argyle and Melville Streets, Hobart, Tasmania, Australia, 7000

Fire History (Last Burnt) within 1000 metres

533410, 5276930



530605, 5272868

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

Fire History (Last Burnt) within 1000 metres

Legend: Fire History Last

Bushfire-Unknown category

Bushfire

Completed Planned Burn

Legend: Cadastral Parcels

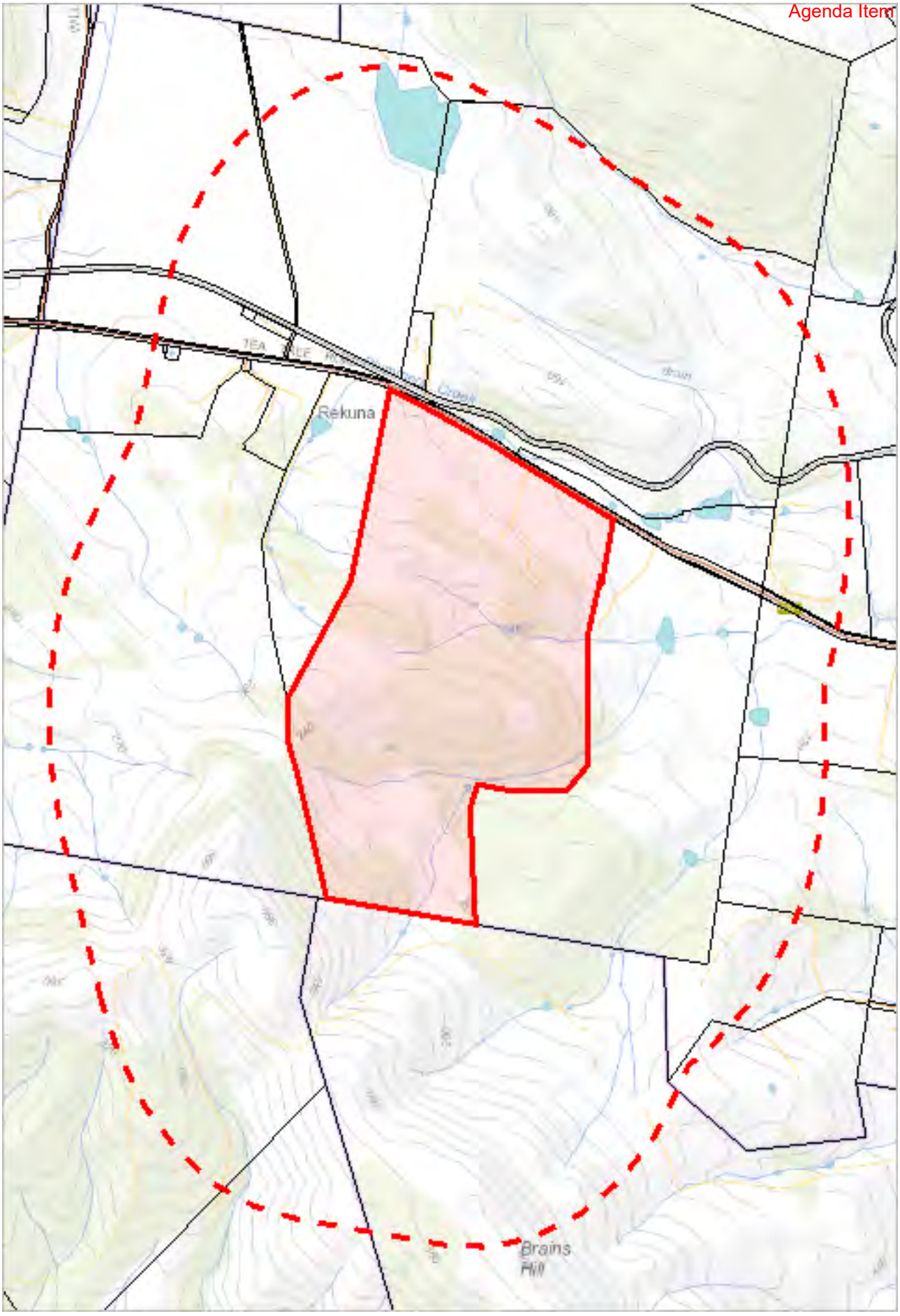
Fire History (Last Burnt) within 1000 metres

Incident Number	Fire Name	Ignition Date	Fire Type	Ignition Cause	Fire Area (HA)
0	1967 Fire	22-Feb-1967	Bushfire	Undetermined	198780.41788592
205787	Tea Tree Road	27-Apr-2013	Bushfire	Undetermined	1234.2579408

For more information about Fire History, please contact the Manager Community Protection Planning, Tasmania Fire Service.
Telephone: 1800 000 699
Email: planning@fire.tas.gov.au
Address: cnr Argyle and Melville Streets, Hobart, Tasmania, Australia, 7000

*** No reserves found within 1000 metres ***

Known biosecurity risks within 1000 meters



530605, 5272868

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

Known biosecurity risks within 1000 meters

Legend: Biosecurity Risk Species

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

Legend: Hygiene infrastructure

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

Legend: Cadastral Parcels

Known biosecurity risks within 1000 meters

Verified Species of biosecurity risk

Species Name	Common Name	Prescription	Observation Count	Last Recorded
Rattus rattus	black rat		1	14-Jun-1992

Unverified Species of biosecurity risk

No unverified species of biosecurity risk found within 1000 metres

Generic Biosecurity Guidelines

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

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

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

Apply controls relevant to the area / activity:

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

Hygiene Infrastructure

No known hygiene infrastructure found within 1000 metres

Biodiversity Values Database Search
To browse the web map please click HERE.

ATTACHMENT
Agenda Item 11.1.2

GDA Easting (6 digits) 531989
GDA Northing (7digits) 5274875
Search (this may take some time)

click here to print this report (If experiencing print layout issues in internet explorer try hold down the shift key and reload the page. However the print layout functions much better in alternative browsers e.g. Firefox or Chrome.)

The page was accessed on: 19/06/2017 11:45 AM

The coordinate falls within the following threatened species ranges

Common name	Scientific Name	range class	Habitat Description	Web Map
tussock skink	Pseudemoia pagenstecheri	Potential Range	Potential habitat for the tussock skink is grassland and grassy woodland (including rough pasture with paddock trees), generally with a greater than 20% cover of native grass species, especially where medium to tall tussocks are present.	Web map
grey goshawk	Accipiter novaehollandiae	Potential Range	Potential habitat for the grey goshawk is native forest with mature elements below 600 m altitude, particularly along watercourses. FPA's Fauna Technical Note 12 can be used as a guide in the identification of grey goshawk habitat. Significant habitat for the grey goshawk may be summarised as areas of wet forest, rainforest and damp forest patches in dry forest, with a relatively closed mature canopy, low stem density, and open understorey in close proximity to foraging habitat and a freshwater body (i.e. stream, river, lake, swamp, etc.). FPA's Fauna Technical Note 12 can be used as a guide in the identification of grey goshawk habitat.	Web map
swift parrot	Lathamus discolor	Core Breeding Range	Potential breeding habitat for the Swift Parrot comprises potential foraging habitat and potential nesting habitat, and is based on definitions of foraging and nesting trees (see Table A in swift parrot habitat assessment Technical Note). Potential foraging habitat comprises E. globulus or E. ovata trees that are old enough to flower. The occurrence of foraging-habitat can be remotely assessed, although only to a limited extent, by using mapping layers such as GlobMap (DPIPWE 2010). Due to the scale and inadequacies in current foraging-habitat mapping, potential foraging-habitat density within operational areas may need to be largely identified by ground-based surveys as per Table B in the swift parrot habitat assessment Technical Note. For management purposes potential nesting habitat is considered to comprise eucalypt forests that contain hollow-bearing trees. The FPA mature habitat availability map (see Technical Note 2) predicts the availability of hollow-bearing trees using the relevant definitions of habitat provided in Table C of the swift parrot habitat assessment Technical Note. The mature habitat availability map is designed to be used to make landscape-scale assessments and may not be reliable for stand-level assessments required during the development of a Forest Practices Plan. At the stand-level the availability and distribution of hollow-bearing trees across a coupe or operation area is best determined from a ground-based assessment (see Table C in the swift parrot habitat assessment Technical Note). Significant habitat is all potential breeding habitat within the SE potential breeding range and the NW breeding areas.	Web map
eastern barred bandicoot	Perameles gunnii	Core Range	Potential habitat for the eastern barred bandicoot is open vegetation types including woodlands and open forests with a grassy understorey, native and exotic grasslands, particularly in landscapes with a mosaic of agricultural land and remnant bushland. Significant habitat for the Eastern Barred Bandicoot is dense tussock grass-	Web map

			sagg-sedge swards, piles of coarse woody debris and denser patches of low shrubs (especially those that are densely branched close to the ground providing shelter) within the core range of the species.	
eastern quoll	Dasyurus viverrinus	Core Range	Potential 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. Potential range for the Eastern Quoll is the whole of mainland Tasmania and Bruny Island. Core range for the Eastern Quoll is a specialist-defined area based primarily on modelling work published in Fancourt et al 2015 and additional expert advice.	Web map
australian grayling	Prototroctes maraena	Potential Range	Potential habitat for the Australian Grayling is all streams and rivers in their lower to middle reaches. Areas above permanent barriers (e.g. Prosser River dam, weirs) that prevent fish migration, are not potential habitat.	Web map
tasmanian devil	Sarcophilus harrisii	Potential Range	Potential habitat for the Tasmanian devil is all terrestrial native habitats, forestry plantations and pasture. Devils require shelter (e.g. dense vegetation, hollow logs, burrows or caves) and hunting habitat (open understorey mixed with patches of dense vegetation) within their home range (4-27 km^2). Significant habitat for the Tasmanian devil is a patch of potential denning habitat where three or more entrances (large enough for a devil to pass through) may be found within 100 m of one another, and where no other potential denning habitat with three or more entrances may be found within a 1 km radius, being the approximate area of the smallest recorded devil home range (Pemberton 1990). Potential denning habitat for the Tasmanian devil is areas of burrowable, well-drained soil, log piles or sheltered overhangs such as cliffs, rocky outcrops, knolls, caves and earth banks, free from risk of inundation and with at least one entrance through which a devil could pass. FPA's Fauna Technical Note 10 can be used as a guide in the identification of potential denning habitat	Web map
white-bellied sea-eagle	Haliaeetus leucogaster	Potential Range	Potential habitat for the White-Bellied Sea-eagle species comprises potential nesting habitat and potential foraging habitat. Potential foraging habitat is any large waterbody (including sea coasts, estuaries, wide rivers, lakes, impoundments and even large farm dams) supporting prey items (fish). Potential nesting habitat is tall eucalypt trees in large tracts (usually more than 10 ha) of eucalypt or mixed forest within 5 km of the coast (nearest coast including shores, bays, inlets and peninsulas), large rivers (Class 1), lakes or complexes of large farm dams. Scattered trees along river banks or pasture land may also be used. Significant habitat for the white-bellied sea-eagle is all native forest and native non-forest vegetation within 500 m or 1 km line-of-sight of known nest sites (where nest tree still present).	Web map
green and golden frog	Litoria raniformis	Potential Range	Potential habitat for the green and gold frog is permanent and temporary waterbodies, usually with vegetation in or around them. Potential habitat includes features such as natural lagoons, permanently or seasonally inundated swamps and wetlands, farm dams, irrigation channels, artificial water-holding sites such as old quarries, slow-flowing stretches of streams and rivers and drainage features. Significant habitat is high quality potential habitat within the core range of this frog species. See FPA Fauna Technical Note 18 for guidance on assessing significant habitat for the green and gold frog.	Web map
Chaostola Skipper	Antipodia chaostola	Potential Range	Potential habitat for the Chaostola Skipper is dry forest and woodland supporting Gahnia radula (usually on sandstone and other	Web map

			sedimentary rock types) or Gahnia microstachya (usually on granite-based substrates).	
wedge-tailed eagle	*Aquila audax subsp. fleayi*	Potential Range	Potential habitat for the wedge-tailed eagle comprises potential nesting habitat and potential foraging habitat. Potential foraging habitat is a wide variety of forest (including areas subject to native forest silviculture) and non-forest habitats. Potential nesting habitat is tall eucalypt trees in large tracts (usually more than 10 ha) of eucalypt or mixed forest. Nest trees are usually amongst the largest in a locality. They are generally in sheltered positions on leeward slopes, between the lower and mid sections of a slope and with the top of the tree usually lower than the ground level of the top of the ridge, although in some parts of the State topographic shelter is not always a significant factor (e.g. parts of the northwest and Central Highlands). Nests are usually not constructed close to sources of disturbance and nests close to disturbance are less productive. More than one nest may occur within a territory but only one is used for breeding in any one year. Breeding failure often promotes a change of nest in the next year. [see FPA?s Fauna Technical Note 1 and FPA?s Fauna Technical Note 6 for more information] Significant habitat for the wedge-tailed eagle is all native forest and native non-forest vegetation within 500 m or 1 km line-of-sight of known nest sites (where the nest tree is still present).	Web map
masked owl	Tyto novaehollandiae	Core Range	Potential habitat for the masked owl is all areas with trees with large hollows (>=15 cm entrance diameter). Remnants and paddock trees (in any dry or wet forest type) in agricultural areas may also constitute potential habitat. Significant habitat for the masked owl is any area of native dry forest, within the core range, with trees with large hollows (>=15 cm entrance diameter). Remnants and paddock trees (in any dry or wet forest type) in agricultural areas may also constitute significant habitat. See FPA Fauna Technical Note 17 for guidance on assessing masked owl habitat using 'on-ground' and remote methods.	Web map
spotted-tailed quoll	Dasyurus maculatus	Core Range	Potential 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 land or plantation areas. Significant habitat for the spotted-tailed quoll is all potential denning habitat within the core range of the species. Potential denning habitat for the spotted-tailed quoll includes 1) any forest remnant (>0.5ha) in a cleared or plantation landscape that is structurally complex (high canopy, with dense understorey and ground vegetation cover), free from the risk of inundation, or 2) a rock outcrop, rock crevice, rock pile, burrow with a small entrance, hollow logs, large piles of coarse woody debris and caves. FPA?s Fauna Technical Note 10 can be used as a guide in the identification of potential denning habitat.	Web map

N.V.A. threatened fauna records within 5 km

Common Name	Scientific Name	Easting	Northing	Distance (m)	Accuracy (m)	Observation Type	Observation State	NVA Observation ID
eastern barred bandicoot	Perameles gunnii	532782	5275194	855	100	Sighting	Present	743155
wedge-tailed eagle	*Aquila audax*	532276	5272672	2222	30	Nest	Present	1440100

tasmanian wedge-tailed eagle	*Aquila audax subsp. fleayi*	532329	5272659	2242	7	Nest	Present	1454824
tasmanian wedge-tailed eagle	*Aquila audax subsp. fleayi*	532329	5272659	2242	7	Nest	Present	1454824
tasmanian wedge-tailed eagle	*Aquila audax subsp. fleayi*	532329	5272659	2242	7	Nest	Present	1455289
tasmanian wedge-tailed eagle	*Aquila audax subsp. fleayi*	532329	5272659	2242	7	Nest	Present	1454982
tasmanian wedge-tailed eagle	*Aquila audax subsp. fleayi*	532329	5272659	2242	7	Nest	Present	1416618
tasmanian wedge-tailed eagle	*Aquila audax subsp. fleayi*	532329	5272659	2242	7	Nest	Present	1257487
tasmanian wedge-tailed eagle	*Aquila audax subsp. fleayi*	532329	5272659	2242	7	Nest	Present	1257488
tasmanian wedge-tailed eagle	*Aquila audax subsp. fleayi*	532329	5272659	2242	7	Nest	Present	1257489
tasmanian wedge-tailed eagle	*Aquila audax subsp. fleayi*	532273	5272637	2256	40	Nest	Present	1421084
eastern barred bandicoot	Perameles gunnii	534256	5276282	2668	1850	Sighting	Present	895012
masked owl	Tyto novaehollandiae	534612	5276433	3051	2000	Sighting	Present	351168
eastern barred bandicoot	Perameles gunnii	535012	5273163	3474	25	Sighting	Present	886083
eastern barred bandicoot	Perameles gunnii	528793	5276307	3502	1850	Sighting	Present	895485
eastern barred bandicoot	Perameles gunnii	535622	5276275	3893	1850	Sighting	Present	895239
tasmanian wedge-	*Aquila audax subsp. fleayi*	533374	5270321	4760	5	Nest	Absent	1463257

tailed eagle								
tasmanian wedge-tailed eagle	*Aquila audax subsp. fleayi*	533374	5270321	4760	5	Nest	Present	1256084
tasmanian wedge-tailed eagle	*Aquila audax subsp. fleayi*	533374	5270321	4760	5	Nest	Present	1256081
tasmanian wedge-tailed eagle	*Aquila audax subsp. fleayi*	533374	5270321	4760	5	Nest	Present	1256082
tasmanian wedge-tailed eagle	*Aquila audax subsp. fleayi*	533374	5270321	4760	5	Nest	Present	1256083
tasmanian wedge-tailed eagle	*Aquila audax subsp. fleayi*	533374	5270321	4760	5	Nest	Present	1256080
tasmanian wedge-tailed eagle	*Aquila audax subsp. fleayi*	533374	5270321	4760	5	Nest	Present	1256077
tasmanian wedge-tailed eagle	*Aquila audax subsp. fleayi*	533374	5270321	4760	5	Nest	Present	1256078
tasmanian wedge-tailed eagle	*Aquila audax subsp. fleayi*	533374	5270321	4760	5	Nest	Present	1256079
tasmanian wedge-tailed eagle	*Aquila audax subsp. fleayi*	533442	5270340	4762	5	Nest	Present	1256545
tasmanian wedge-tailed eagle	*Aquila audax subsp. fleayi*	533442	5270340	4762	5	Nest	Present	1256544
eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	18500	Sighting	Present	895556
eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	20000	Sighting	Present	895570
eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	18500	Sighting	Present	895592
eastern barred	Perameles gunnii	527427	5276312	4783	18500	Sighting	Present	895597

bandicoot								
eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	18500	Sighting	Present	895624
eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	18500	Sighting	Present	895742
eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	18500	Sighting	Present	895534
eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	20000	Sighting	Present	895846
eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	20000	Sighting	Present	895873
eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	18500	Sighting	Present	895756
eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	18500	Sighting	Present	895195
eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	18500	Sighting	Present	895275
eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	20000	Sighting	Present	895300
eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	18500	Sighting	Present	895333
eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	18500	Sighting	Present	895334
eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	18500	Sighting	Present	895341
eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	20000	Sighting	Present	895363
eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	18500	Sighting	Present	895374
eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	18500	Sighting	Present	895437
eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	18500	Sighting	Present	895443
eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	20000	Sighting	Present	895498

eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	18500	Sighting	Present	895755
eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	18500	Sighting	Present	895525
eastern barred bandicoot	Perameles gunnii	527427	5276312	4783	18500	Sighting	Present	895506

N.V.A. threatened flora records within 2 km

Scientific Name	Common Name	Easting	Northing	Distance (m)	Accuracy (m)	Observation Type	NVA Observation ID
Ranunculus *sessiliflorus var.* sessiliflorus	rockplate buttercup	532140	5274904	154	5	Sighting	1401152
Ranunculus *sessiliflorus var.* sessiliflorus	rockplate buttercup	532156	5274623	302	5	Sighting	1401151
Ranunculus *sessiliflorus var.* sessiliflorus	rockplate buttercup	532156	5274623	302	5	Sighting	1465958
Austr*ostipa scabra*	rough speargrass	531771	5275104	316	5	Sighting	1400191
Austr*ostipa scabra*	rough speargrass	531671	5274902	319	5	Sighting	1400163
Austr*ostipa scabra*	rough speargrass	531645	5274831	347	5	Sighting	1400194
Austr*ostipa scabra*	rough speargrass	531616	5274830	376	5	Sighting	1400195
Austr*ostipa scabra*	rough speargrass	531746	5275313	501	5	Sighting	1400193
Austr*ostipa scabra*	rough speargrass	531764	5275393	565	5	Sighting	1400192
Austr*ostipa scabra*	rough speargrass	531931	5274134	743	5	Sighting	1400162
*Haloragis hetero*phylla	variable raspwort	532338	5273815	1116	5	Sighting	1400962
Vittadinia muelleri	narrowleaf new-holland-daisy	531042	5274027	1271	5	Sighting	1048575
Vittadinia gracilis	woolly new-holland-daisy	531212	5275883	1273	100	Sighting	345351
Austr*ostipa scabra*	rough speargrass	530841	5274275	1295	5	Sighting	1048578
Vittadinia muelleri	narrowleaf new-holland-daisy	530934	5274087	1317	5	Sighting	1048576
Vittadinia muelleri	narrowleaf new-holland-daisy	530933	5274086	1318	5	Sighting	1048581
Vittadinia burbidgeae	smooth new-holland-daisy	530933	5274086	1318	5	Sighting	1048580
Vittadinia burbidgeae	smooth new-holland-daisy	530933	5274086	1318	5	Sighting	1316834
Vittadinia muelleri	narrowleaf new-holland-daisy	530933	5274086	1318	5	Sighting	1316622
Austr*ostipa scabra*	rough speargrass	530910	5274117	1319	5	Sighting	1048577
Vittadinia gracilis	woolly new-	531112	5275883	1337	100	Sighting	345352

	holland-daisy						
Austrostipa scabra	rough speargrass	532429	5273493	1450	5	Sighting	1400337
Austrostipa scabra	rough speargrass	532439	5273470	1475	5	Sighting	1400338
Austrostipa scabra	rough speargrass	532501	5273440	1524	5	Sighting	1400340
Austrostipa scabra	rough speargrass	532484	5273431	1527	5	Sighting	1400339
Austrostipa scabra	rough speargrass	533495	5275627	1683	10	Sighting	1451477
Austrostipa scabra	rough speargrass	533393	5275820	1692	10	Sighting	1451476
Austrostipa scabra	rough speargrass	530349	5274439	1697	5	Sighting	1048579
Austrostipa scabra	rough speargrass	533390	5275833	1697	20	Sighting	1077640
Austrostipa scabra	rough speargrass	530236	5274547	1783	5	Sighting	1048583
Austrostipa scabra	rough speargrass	530236	5274547	1784	5	Sighting	1302392
Austrostipa scabra	rough speargrass	532731	5273240	1796	5	Sighting	1400345
Austrostipa scabra	rough speargrass	532828	5273269	1812	5	Sighting	1400356
Austrostipa scabra	rough speargrass	532846	5273264	1825	5	Sighting	1400357
Austrostipa scabra	rough speargrass	532655	5273171	1829	5	Sighting	1400341
Austrostipa scabra	rough speargrass	532856	5273261	1832	5	Sighting	1400358
Austrostipa scabra	rough speargrass	532894	5273280	1834	5	Sighting	1400363
Austrostipa scabra	rough speargrass	530181	5274549	1837	5	Sighting	1048589
Austrostipa scabra	rough speargrass	532936	5273273	1861	5	Sighting	1400383
Austrostipa scabra	rough speargrass	532935	5273255	1876	5	Sighting	1400381
Austrostipa scabra	rough speargrass	532900	5273232	1878	5	Sighting	1400364
Rytidosperma popinensis	blue wallabygrass	530419	5275913	1882	10	Sighting	1058710
Austrostipa scabra	rough speargrass	532820	5273184	1884	5	Sighting	1400355
Austrostipa scabra	rough speargrass	532723	5273134	1889	5	Sighting	1400344
Austrostipa scabra	rough speargrass	530124	5274565	1891	5	Sighting	1048588
Austrostipa scabra	rough speargrass	530114	5274602	1895	5	Sighting	1048584
Austrostipa scabra	rough speargrass	532921	5273223	1896	5	Sighting	1400379
Austrostipa scabra	rough speargrass	532936	5273230	1898	5	Sighting	1400382
Austrostipa scabra	rough speargrass	532928	5273224	1899	5	Sighting	1400380
Austrostipa scabra	rough speargrass	532742	5273119	1911	5	Sighting	1400354
Austrostipa scabra	rough speargrass	530042	5274573	1970	5	Sighting	1048587
Austrostipa scabra	rough speargrass	533059	5273209	1979	5	Sighting	1400387
Austrostipa scabra	rough speargrass	530020	5274583	1991	5	Sighting	1048586

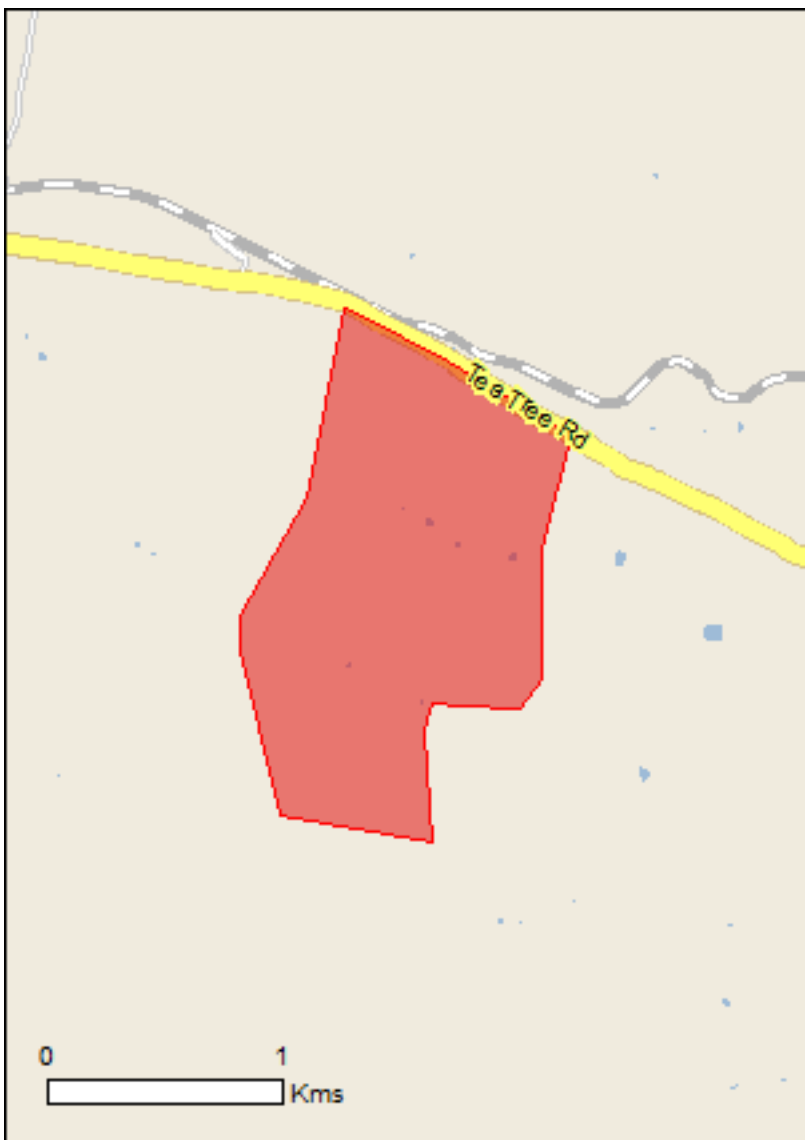
EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

Report created: 19/06/17 11:07:22



Coordinates

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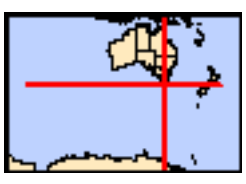

Summary

Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	25
Listed Migratory Species:	11

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	15
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	None

Extra Information

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

State and Territory Reserves:	1
Regional Forest Agreements:	1
Invasive Species:	33
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar) [Resource Information]

Name	Proximity
Pitt water-orielton lagoon	Within 10km of Ramsar

Listed Threatened Ecological Communities [Resource Information]

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

Name	Status	Type of Presence
Lowland Native Grasslands of Tasmania	Critically Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Aquila audax fleayi Tasmanian Wedge-tailed Eagle, Wedge-tailed Eagle (Tasmanian) [64435]	Endangered	Breeding likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Breeding likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Tyto novaehollandiae castanops (Tasmanian population) Masked Owl (Tasmanian) [67051]	Vulnerable	Breeding known to occur within area
Fish		
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat may occur within area
Frogs		
Litoria raniformis Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog [1828]	Vulnerable	Species or species habitat known to occur within area
Insects		

Name	Status	Type of Presence
Antipodia chaostola leucophaea		
Tasmanian Chaostola Skipper, Heath-sand Skipper [77672]	Endangered	Species or species habitat may occur within area
Mammals		
Dasyurus maculatus maculatus (Tasmanian population)		
Spotted-tail Quoll, Spot-tailed Quoll, Tiger Quoll (Tasmanian population) [75183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus viverrinus		
Eastern Quoll, Luaner [333]	Endangered	Species or species habitat known to occur within area
Perameles gunnii gunnii		
Eastern Barred Bandicoot (Tasmania) [66651]	Vulnerable	Species or species habitat known to occur within area
Sarcophilus harrisii		
Tasmanian Devil [299]	Endangered	Species or species habitat likely to occur within area
Other		
Discocharopa vigens		
Ammonite Snail [82806]	Critically Endangered	Species or species habitat likely to occur within area
Plants		
Caladenia caudata		
Tailed Spider-orchid [17067]	Vulnerable	Species or species habitat likely to occur within area
Colobanthus curtisiae		
Curtis' Colobanth [23961]	Vulnerable	Species or species habitat may occur within area
Dianella amoena		
Matted Flax-lily [64886]	Endangered	Species or species habitat known to occur within area
Glycine latrobeana		
Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat likely to occur within area
Lepidium hyssopifolium		
Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed [16542]	Endangered	Species or species habitat likely to occur within area
Leucochrysum albicans var. tricolor		
Hoary Sunray, Grassland Paper-daisy [56204]	Endangered	Species or species habitat may occur within area
Prasophyllum apoxychilum		
Tapered Leek-orchid [64947]	Endangered	Species or species habitat may occur within area
Pterostylis commutata		
Midland Greenhood [64535]	Critically Endangered	Species or species habitat may occur within area
Pterostylis ziegeleri		
Grassland Greenhood, Cape Portland Greenhood [64971]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat likely to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [Resource Information]

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

Name
Commonwealth Land -

Listed Marine Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
[Ardea ibis](#) Cattle Egret [59542]		Species or species habitat may occur within area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
[Calidris canutus](#) Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
[Haliaeetus leucogaster](#) White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
[Hirundapus caudacutus](#) White-throated Needletail [682]		Species or species habitat likely to occur within area
[Lathamus discolor](#) Swift Parrot [744]	Critically Endangered	Breeding likely to occur within area
[Myiagra cyanoleuca](#) Satin Flycatcher [612]		Species or species habitat known to occur within area
[Numenius madagascariensis](#) Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
[Tringa nebularia](#) Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Coolgardie	TAS

Regional Forest Agreements	[Resource Information]

Note that all areas with completed RFAs have been included.

Name	State
[Tasmania RFA](#)	Tasmania

Invasive Species

[Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Carduelis chloris European Greenfinch [404]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Mammals		
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area
Cytisus scoparius Broom, English Broom, Scotch Broom, Common Broom, Scottish Broom, Spanish Broom [5934]		Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		Species or species habitat likely to occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Nassella neesiana Chilean Needle grass [67699]		Species or species habitat likely to occur within area
Nassella trichotoma Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Ulex europaeus Gorse, Furze [7693]		Species or species habitat likely to occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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

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

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

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

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

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

Coordinates

-42.670301 147.388345,-42.670365 147.388645,-42.671784 147.392293,-42.673898 147.396928,-42.676991 147.395898,-42.680682 147.395898,-42.681471 147.39504,-42.681407 147.392765,-42.681313 147.391649,-42.68207 147.391392,-42.685193 147.391692,-42.684436 147.385899,-42.67983 147.38444,-42.678884 147.38444,-42.675571 147.386929,-42.670301 147.388345

Acknowledgements

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

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

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

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

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Appendix E – Traffic Impact Assessment

Holy Tantra Esoteric Buddhism Incorporated

Tasmanian Chinese Buddhist Cultural Park Traffic Impact Assessment

September 2017

Table of contents

Table index

Figure index

1. Introduction

1.1 Background

GHD was engaged by Holy Tantra Esoteric Buddhism Incorporated to prepare a traffic impact assessment for the proposed rezoning of 1384 Tea Tree Road, Campania, to facilitate future development of a Buddhist Cultural Park.

1.2 Purpose of this Report

The purpose of this report is to assess the traffic, access and parking impacts of the proposed rezoning against the relevant provisions of the Planning Scheme.

1.3 Referenced Materials

The following documents have been referred to in this report:

- *Southern Midlands Interim Planning Scheme 2015* (the Planning Scheme)
- Department of State Growth crash data, 2012-2017
- Department of State Growth traffic data
- *Guide to Road Design – Part 4A: Unsignalised and signalised intersections,* Austroads 2010
- Australian/New Zealand Standard AS/NZS 2890.1, *Parking facilities – Part 1: Off-street car parking,* 2004 (AS2890.1)
- Australian Standard AS2890.2, *Parking facilities – Part 2: Off-street commercial vehicle facilities,* 2002 (AS2890.2)
- *National Construction Code 2016 – Volume One: Building Code of Australia,* Australian Building Codes Board, May 2016

2. Existing Conditions

2.1 The Site

The subject site is within the *Rural Resource Zone* as defined in the Planning Scheme and shown in Figure 2-1. The site has a total area of approximately 106 ha and is accessed via Tea Tree Road, approximately 3.1 km west of the Colebrook Road junction. The previous use of the site was for rural residential purposes and it contains open pasture, remnant bushland, a dwelling, sheds and outbuildings, and internal roads.

2.2 Transport Network

For the purpose of this assessment, the transport network is considered to consist of the following roads:

- Colebrook Road
- Tea Tree Road

These roads are examined in detail in Sections 2.2.1 and 2.2.2 of this report. Other roads, including Midland Highway and Middle Tea Road, were also considered in this report but were not examined in detail. The transport network is shown in Figure 2-2.

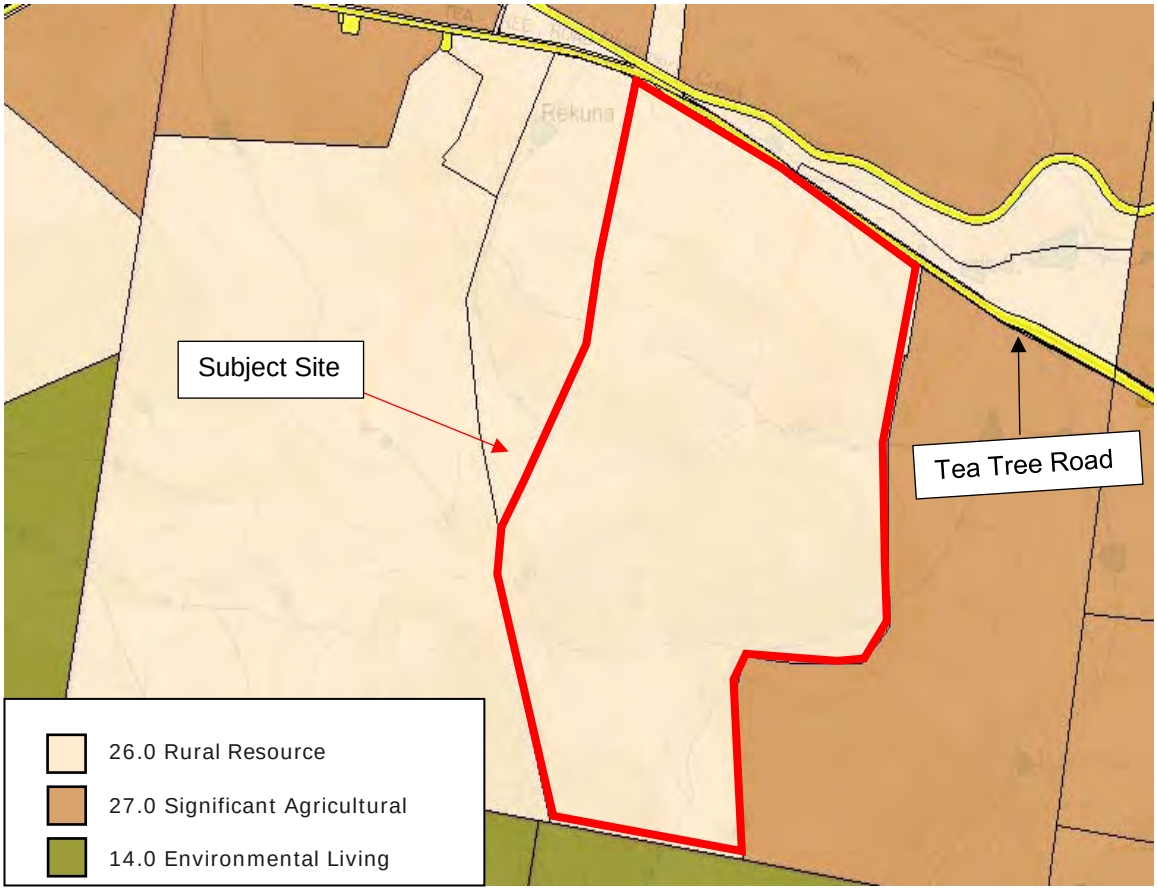


Figure 2-1: Zoning Map

Base image source: LISTMap (www.thelist.tas.gov.au) © State of Tasmania

Figure 2-2: Transport Network

Base image source: LISTMap (www.thelist.tas.gov.au) © State of Tasmania

2.2.1 Tea Tree Road

Tea Tree Road runs in a predominantly east-to-west direction providing a connection between Brighton and Richmond. The horizontal and vertical alignment of Tea Tree Road is slightly undulating. It has a posted speed limit of 100 km/h in the vicinity of the study area. The speed limit is reduced to 70 km/h in the Tea Tree residential area.

Tea Tree Road is defined as a two lane, two way Category 2 road in the Tasmanian State Road Hierarchy, and is owned and maintained by the Department of State Growth. The function of Category 2 roads is broadly summarised as follows:

> *Category 2 Roads link major production catchments to the Category 1 Roads. They carry a large number of both heavy freight and passenger vehicles. Category 2 Roads facilitate:*
>
> – *Heavy inter-regional and sub-regional freight movement*
> – *Passenger vehicle movement*
> – *Commercial interaction*
> – *Tourist movement.*
>
> *They are also the Department of State Growth's preferred heavy freight vehicle routes where alternative routes exist. Together with category 3 Roads, they provide safe and efficient access to Tasmania's regions.*

Tea Tree Road is considered a regional freight route and is also used by tourists. It connects between the Midland Highway (Brighton Bypass) and Colebrook Main Road between Richmond and Campania. Several minor, local roads connect into Tea Tree Road including Back Tea Tree Road and Middle Tea Tree Road. Tea Tree Road was recently upgraded to allow access by high productivity vehicles and is considered by the Department of State Growth to be sufficient to meet demand within the foreseeable future.

Tea Tree Road Looking east from the existing access is shown in Figure 2-3.

Figure 2-3: Tea Tree Road looking east

Based on 2014 traffic counts, two-way peak volumes on Tea Tree Road were around 126 vehicles per hour during the weekday morning peak period (7:00 am – 8:00 am), and around 135 vehicles per hour in the evening (4:00 pm – 5:00 pm). Average daily traffic volumes were around 1,300 vehicles per day. Heavy vehicles (defined as Austroads Class 3 truck and above) make up approximately 8% of the traffic stream.

The hourly traffic profile for Tea Tree Road is shown in Figure 2-4 and Figure 2-5.

Figure 2-4: Hourly Traffic Profile – Tea Tree Road (Eastbound)

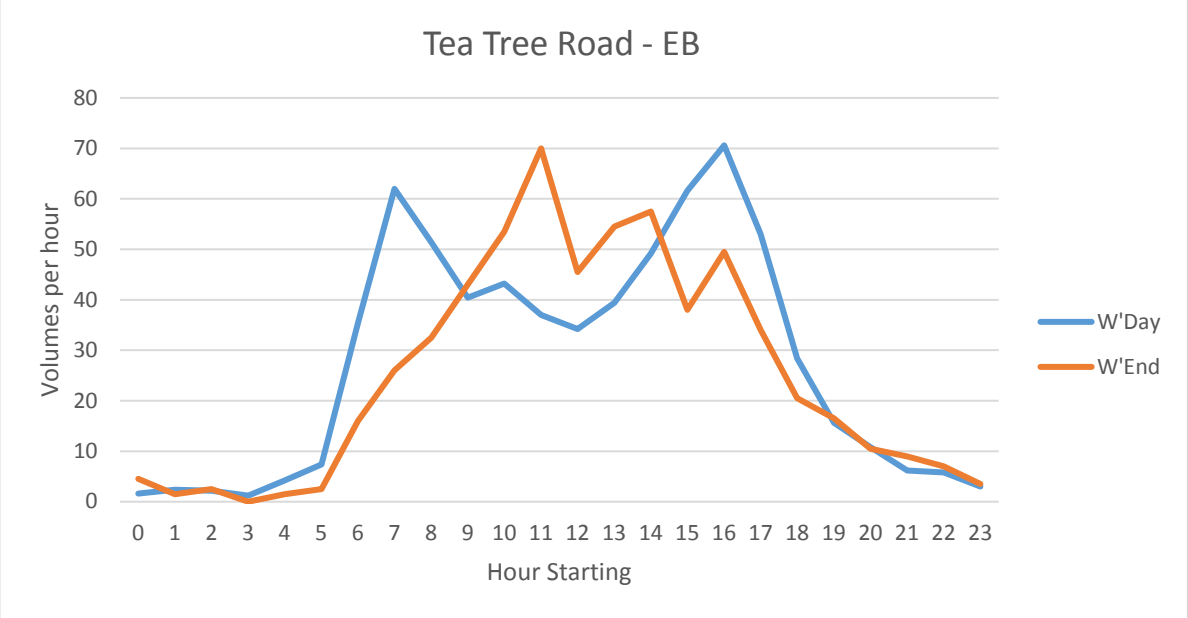
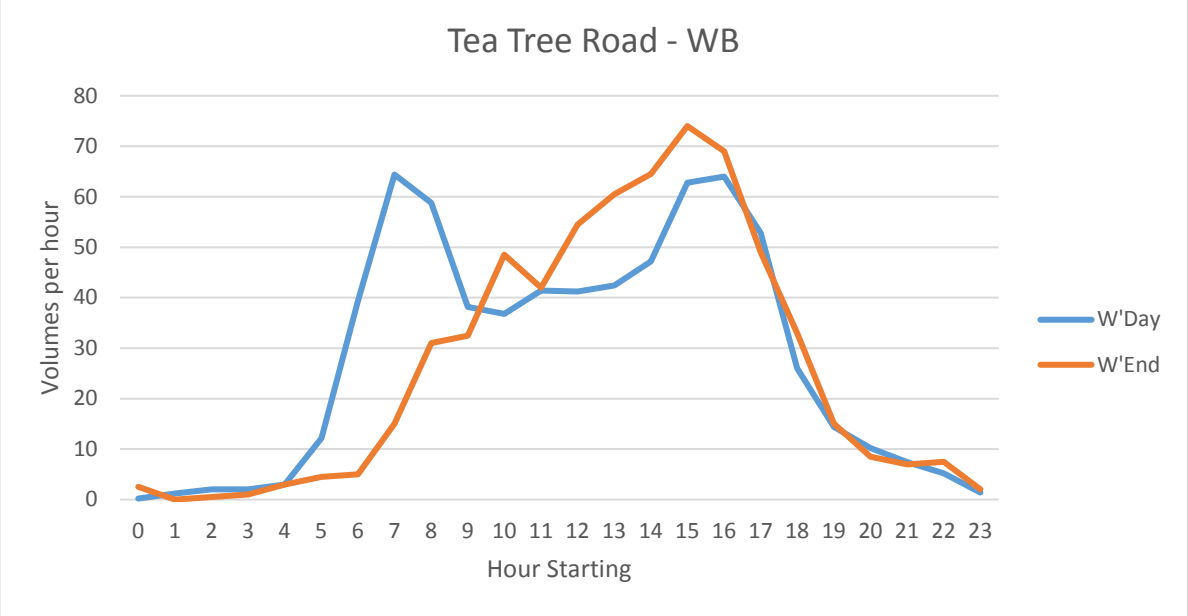


Figure 2-5: Hourly Profile – Tea Tree Road (Westbound)



2.2.2 Colebrook Road

Colebrook Road runs in a predominantly north to south direction providing a connection between Richmond and Colebrook. The road to the north becomes Richmond Street and then Mud Walls Road and eventually connects to Midland Highway at Jericho. Colebrook Road has a posted speed limit of 100 km/h. It is nominally a two lane, two way road and is classified as a Category 5 road north of Tea Tree Road intersection and a Category 4 road to the south. Colebrook Road is owned and maintained by the Department of State Growth.

Based on 2014 traffic counts, two-way peak volumes on Colebrook Road were around 266 vehicles per hour during the weekday morning peak period (7:00 am – 8:00 am), and around 309 vehicles per hour in the evening (4:00 pm – 5:00 pm).

The hourly traffic profile for Colebrook Road is shown in Figure 2-6 and Figure 2-7.

Figure 2-6: Daily Profile – Colebrook Road (Northbound)

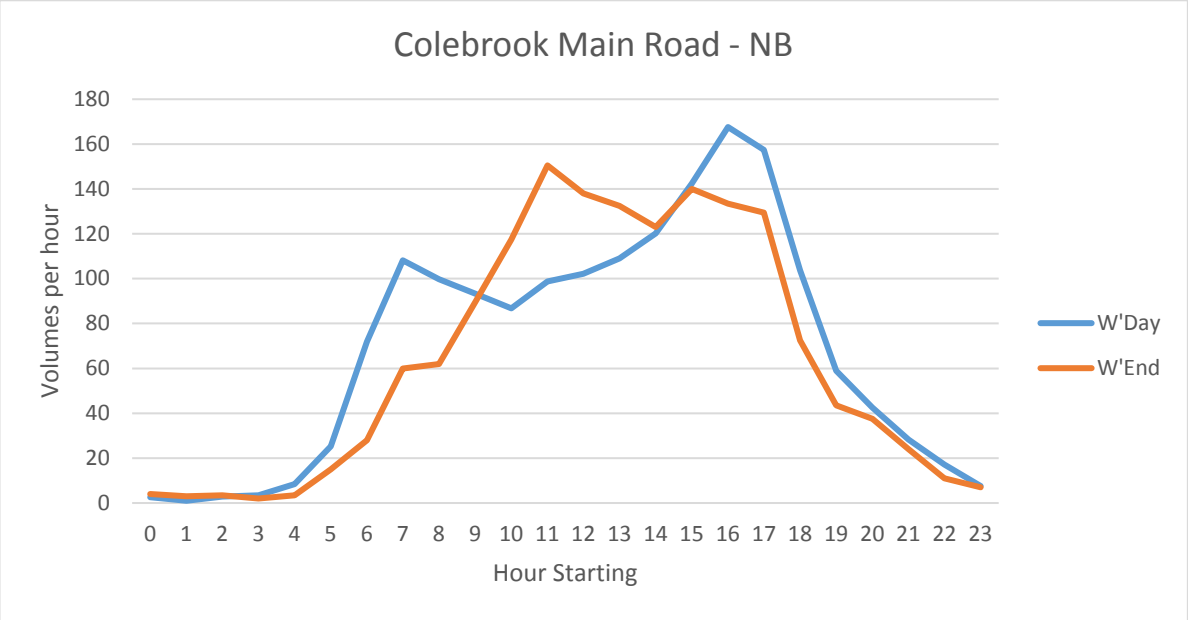
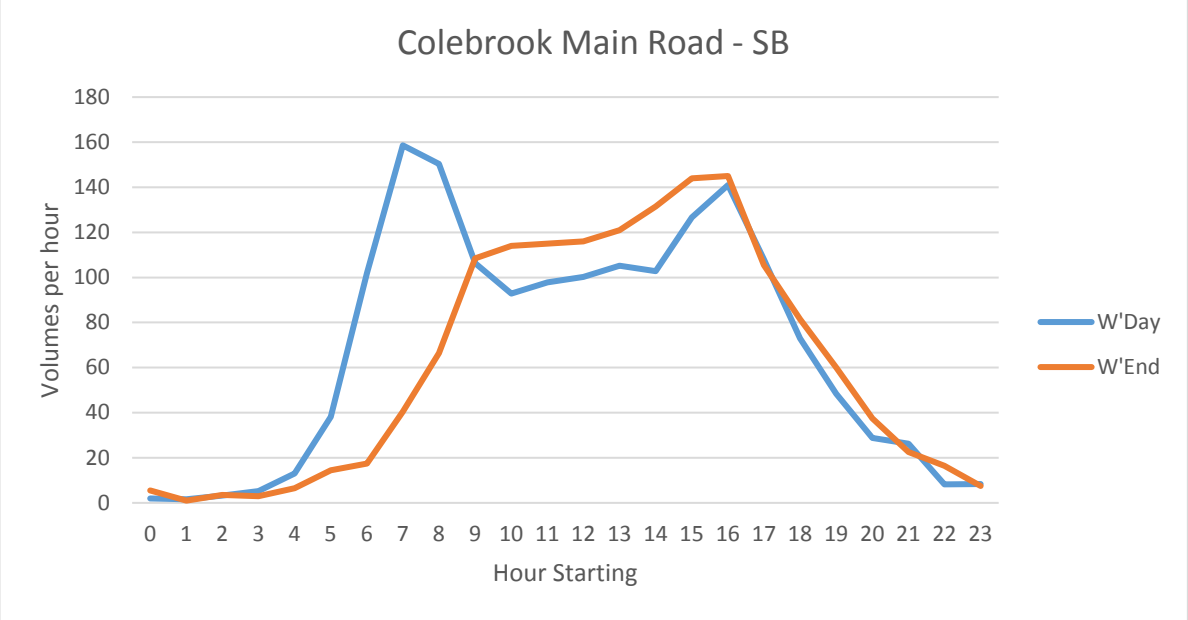


Figure 2-7: Daily Profile – Colebrook Road (Southbound)



2.3 Road Safety Performance

The crash history for the surrounding road network was obtained from the Department of State Growth, for the 5-year period from 1st January 2012 until 31st December 2016. It is summarised in Table 1. Crash maps for Tea Tree Road and Colebrook Road and provided in Figure 2-8 and Figure 2-9.

Table 1: Crash History (2012 – 2016 Inclusive)

Location	Number of Crashes		Dominant crash type(s)
	Total	Casualty	
Mid-Block Segments			
Colebrook Road	14	8	Off path on straight (4) Overtaking (3)
Tea Tree Road	19	12	Off path on curve (10) Off path on straight (5)
Intersections			
Back Tea Tree Road / Tea Tree Road	7	3	Opposing right turn (5) Rear End (2)
Colebrook Road / Tea Tree Road	1	0	Off path on straight (1)
Colebrook Road / Fingerpost Road	2	0	Intersection (1)
Colebrook Road / Middle Tea Tree Road	1	0	Rear End (1)
Colebrook Road / Franklin Street	2	2	Intersection (2)
Bridge Street / Colebrook Road / Richmond Road	1	0	Intersection (1)
Total	***47***	***25***	

Figure 2-8: Crash History for Tea Tree Road

Crash map obtained from Department of State Growth

Figure 2-9: Crash History for Colebrook Road

Crash map obtained from Department of State Growth

There were a total of 47 crashes recorded over the 5-year period on the nominated roads, with 4 of those resulting in injury, ranging in severity from minor to serious. The area examined comprises of Tea Tree Road (15 km) and Colebrook Road (9.5 km) between Richmond and Campania, a total of 2.8 km of road.

The Back Tea Tree Road / Tea Tree Road Intersection accounts for 7 of the 47 crashes (15%) and 3 of the 25 casualty crashes (12%). Five of these were *'right through'* type crashes which involve vehicles turning right from the main road into the path of oncoming traffic. This intersection is located on the crest of a hill with a curve located east of the junction. It is likely that restricted sight distance due to the crest is contributing to the crash history at this location.

On Tea Tree Road, of the 19 crashes, 10 of these were defined as being *'off path on curve'* type crashes. Tea tree road is an undulating road and the majority of these crashes are likely to be due to the horizontal road alignment. The crash cluster noted in Figure 2-8 shows a location where several crashes have occurred on a series of tightly spaced curves.

Clusters of crashes on Colebrook Road were generally recorded at the locations of minor road junctions.

There was one fatality recorded in the data. This occurred on Colebrook Road approximately 650 metres north of the Tea Tree Road junction and involved a head-on collision at 5:30 am.

The crash trends identified in the data are unlikely to be impacted by the proposed development at 1384 Tea Tree Road as there were few crashes recorded within the vicinity of the site access points.

2.4 Traffic Growth

State Growth has provided traffic flow data on Tea Tree Road and Colebrook Road which was collected in 2014. An annual linear traffic growth rate of 1.8% was applied to Tea Tree Road based on historic growth rates. Similarly, a growth rate of 1.7% was applied to Colebrook Road. The average daily traffic demand for each of these roads over the next 10 years is provided in Table 2 and Table 3.

Table 2: Tea Tree Road Average Daily Traffic Flow (Growth Rate 1.8% p.a.)

Tea Tree Road					
Year	Eastbound		Westbound		**Total**
	Total	% HV	Total	% HV	
2014	647	8.7%	662	7.4%	1,309
2017	682	8.7%	698	8.7%	1,380
2027	798	8.7%	817	8.7%	1,615

Table 3: Colebrook Road Average Daily Traffic Flow (Growth Rate 1.7% p.a.)

Colebrook Road					
Year	Northbound		Southbound		**Total**
	Total	% HV	Total	% HV	
2014	1,623	6.0%	1,601	6.0%	3,224
2017	1,706	6.0%	1,683	6.0%	3,389
2027	1,982	6.0%	1,955	6.0%	3,937

3. Proposed Development

3.1 General Overview

Holy Tantra Esoteric Buddhism Incorporated has owned the site at 1384 Tea Tree Road for some 20 years and are the proponents of the Buddhist Cultural Park project. The development of the Buddhist Cultural Park will comprise a staged approach, envisaged to take place over a period of approximately 200 years.

The Buddhist Cultural Park will be open to the public most days of the year and will host a range of religious and cultural activities and events.

3.2 Traffic Generation

The proposed Buddhist Cultural Park will be defined as ‘Community meeting and entertainment’ as the principle use, with other secondary uses including 'Educational and occasional care' (excluding childcare centre, day respite centre, kindergarten, primary or secondary school), ‘Business and professional services’, 'Food services', 'General retail and hire', 'Visitor accommodation', 'Residential', 'Tourist Operation' (visitor centre), and 'Crematoria and cemeteries'.

Given the range of facilities to be provided, and the lack of similar developments for use as comparison sites, the traffic generation for this proposal is difficult to predict. This is particularly the case when considering the medium- to long-term traffic generation (greater than 10 years) as the site may have attained significant physical and operational status (i.e. Buddhist Practitioner and visitor activity on-site). The traffic generation could also vary based on the level

of public interest the site attracts as this will influence the level of visitation by both locals and tourists.

Notwithstanding the above, it is likely that, over time, the following general traffic generation trends will emerge:

- Moderate traffic generation in the short-term (< 10 years) due to the following uses in the initial stages:
  - 100 room visitor accommodation,
  - Museum,
  - Visitor information/interpretation centre,
  - Café, and
  - Some buildings within the temple complex.
- Increasing traffic over the medium-term (10-20 years) as the number of significant buildings and structures on the site increases and facilities become operational for religious activities and events. It is likely that tourist visitation during the medium-term will be significant due to the unique nature of the development.
- Over the long-term (> 20 years) visitation will continue to increase, however it is likely that there will have been significant changes to development and transportation patterns within the surrounding area over this period such that the long term has not been assessed in this report.

3.2.1 Short-Term Traffic Generation Estimates

Visitor Accommodation

Traffic generation rates for the visitor accommodation use have been sourced from the Roads and Maritime Services (RMS) publication, *Guide to Traffic Generating Developments,* 2002. The most appropriate traffic generation rate is for 'Motels', calculated as follows:

- Peak vehicle trips 0.4 / unit
- Daily vehicle trips 3 / unit

A peak occupancy rate of 80% has been adopted based on recent data obtained from the Australian Bureau of Statistics[1]. Based on 100 rooms, the traffic generation for the visitor accommodation is estimated as follows:

- Daily vehicle trips 240 vehicle trips per day
- Peak hour vehicle trips 32 vehicle trips per hour

It is noted that motel occupancy rates are significantly lower during the seasonal off-peak, with typically around 40-50% of rooms occupied.

Tourism Uses

While actual visitation numbers generated by the museum and visitor information/interpretation centre are difficult to predict, and will vary based on numerous factors, a figure of approximately 50,000 visitors per annum in the short-term has been assumed for the purpose of this assessment. Using an average car occupancy of 2.2 persons per vehicle, this would result in around 125 trips per day (on average) and is estimated at up to a maximum of 250 trips per day accounting for seasonal variation (approximately 2 times the average). The peak hourly traffic generation is assumed to be around 36 vehicle movements per hour.

[1] *Room occupancy rates (%), Motels and Guest Houses with 15 or more rooms, Tasmania, ABS 1998-2016*

Café

The café is considered ancillary and will attract use of the patrons of other facilities (i.e. tourists/hotel guests) that are already at the site.

Summary

Based on the above assessment, the total short-term traffic generation (visitor accommodation and the tourism uses combined) is expected to be as follows:

Table 4: Traffic Generation Summary

Use	Seasonal Peak		Off-Peak		Yearly Average	
	Daily Trips	Peak Hourly Trips	Daily Trips	Peak Hourly Trips	Daily Trips	Peak Hourly Trips
Visitor Accommodation	240	32	135	18	188	25
Tourism	250	36	83	12	125	18
Café	~0	~0	~0	~0	~0	~0
Total	***490***	***68***	***218***	***30***	***313***	***43***

3.2.2 Planning Scheme Assessment

Clause E5.5.1-A1 of the Planning Scheme states that "*The annual average daily traffic (AADT) of vehicle movements, to and from a site, onto a category 1 or category 2 road, in an area subject to a speed limit of more than 60km/h , must not increase by more than 10% or 10 vehicle movements per day, whichever is the greater.*"

The proposed development is anticipated to generate an average of 313 vehicle trips per day (accounting for seasonal peak and off-peak) in the short-term. This represents a significant increase compared to the existing use of the site. The proposed traffic generation is greater than the figures in Acceptable Solution A1 of E5.5.1 and therefore requires assessment against the following performance criteria:

> *"Any increase in vehicle traffic to a category 1 or category 2 road in an area subject to a speed limit of more than 60km/h must be safe and minimise any adverse impact on the efficiency of the road…"*

The performance criteria is addressed in Section 4 of this report.

3.3 Traffic Distribution

The following traffic generation has been assumed:

- 60% - Colebrook Road South
- 25% - Colebrook Road North
- 15% - Midland Highway

4. Traffic Impacts

4.1 Site Access Impacts

Clause E5.6.2-A1 of the Planning Scheme states: *"No new access or junction to roads in an area subject to a speed limit of more than 60km/h."*

It is proposed to use the existing access at least until the project is sufficiently developed to attract significant practitioner / tourist interest. There is unlikely to be significant demand for a second access until a number of facilities on the site have been developed.

At some point during the development timeline, a new access will be provided on Tea Tree Road. The proposal therefore will be required to comply with performance criteria as follows:

> *"For roads in an area subject to a speed limit of more than 60 km/h, accesses and junctions must be safe and not unreasonably impact on the efficiency of the road…"*

Tea Tree Road carries relatively low traffic volumes with peak traffic flows not expected to exceed around 198 vehicles per hour (2027 forecasts). Given the low hourly traffic generation of the proposal (no more than 68 vehicles per hour) the site access is expected to operate efficiently without impacting on the operation of Tea Tree Road.

Based on the assumed traffic distribution provided in Section 3.3 of this report, the majority of traffic movements into and out of the site are likely to be left-in and right-out movements. Specific turn treatments (e.g. channelised turn lanes) are not considered to be required on the basis of low turning volumes and clear line of sight in both directions.

The traffic generated by the proposal will be typically light vehicles, with the exception of some heavy vehicle activity during the construction phases. Tea Tree Road is a classified as a Category 2 road and is designed to accommodate heavy vehicle movement. The Department of State Growth have advised that they have no specific concerns regarding the future development of the site and access on Tea Tree Road.

Based on the above assessment, the future access point is considered to comply with performance criteria Clause E5.6.2-P1.

4.1.1 Sight Distance Assessment

Clause E5.6.2-A2 of the Planning Scheme states that: *"Sight distances at … an access or junction must comply with the Safe Intersection Sight Distance shown in Table E5.1."*

The planning Scheme requires a minimum SISD of 290 metres to be provided for a prevailing vehicle speed of 110 km/hr. Tea Tree Road is a straight road with a clear line of sight and the available sight distance of over 300 metres in both directions complies with the Planning Scheme requirements.

Looking East

Looking West

Figure 4-1: Tea Tree Road Looking from the Access Point

4.2 Traffic Efficiency

Tea Tree Road and Colebrook Road are both generally classified as Arterial Roads with primarily traffic carrying function. The nominal capacity of these roads is considered to be around 20,000 per day. Tea Tree Road will attract up to an additional 417 vehicles per day (85% of daily traffic generation). Similarly, Colebrook Road (south) will have up to an additional 188 vehicles per day. These additional traffic flows can be readily absorbed into the road network without any significant or adverse impacts on roadway capacity.

Peak traffic volumes on Tea Tree Road during the seasonal peak period are likely to increase as follows:

- AM Peak (2027)
  - Existing 2017 135 vehicles per hour
  - Future 2027 154 vehicles per hour
  - Proposed 2027 212 vehicles per hour
- PM Peak (2027)
  - Existing 2017 142 vehicles per hour
  - Future 2027 167 vehicles per hour
  - Proposed 2027 225 vehicles per hour

Using the methodology provided in the *Highway Capacity Manual 2010* (HCM2010) Tea Tree Road is expected to operate at Level of Service B (LOS B) during the peak periods under proposed conditions in 2027.

4.3 Road Safety Impacts

No adverse road safety impacts are foreseen for the project. This is based on the following:

- There is sufficient sight distance available at the proposed access in accordance with the planning scheme requirements.
- The crash history does not indicate that there are any specific road safety deficiencies that might be exacerbated by the additional traffic generated by the proposed development.
- It is likely that peak entry flows will occur during mid-morning and exit flows during the afternoon. The arrival and departure of vehicles at the site is likely to be dispersed over several hours and not likely to co-inside with the peak periods on Tea Tree Road of 7:00 am – 8:00 am and 4:00 pm – 5:00 pm.

4.4 Car parking Assessment

4.4.1 Planning Scheme Assessment

Clause E6.6.1-A1 of the Planning Scheme states that: *"The number of on-site car parking spaces must be … no less than the number specified in Table E6.1."* The proposed development may include a range of different uses and the specific details are not available at this stage.

The car parking rates for the likely eventual uses of the site, as given in Table E6.1 of the Planning Scheme, are summarised in Table 5.

Table 5: Number of Car Parking Spaces Required

Use Class	Rate (spaces)	Car parking measure
Community meeting and entertainment	1	for each 15m^2 floor area or for each 3 seats whichever is the greater
Educational and occasional care	0.5	for each employee and 0.1 for each student/client.
Food services	15	for each 100m^2 of floor area or 1 space for each 3 seats, whichever is the greater.
General retail and hire	1	for each 30m^2 of floor area.
Residential - Single dwelling containing 1 bedroom or studio (including all rooms capable of being used as a bedroom)	1	
Tourist Operation (visitor centre)	1	for each 25m2 of floor area for indoor attractions, displays, restaurants and the like; plus 1 space for each 40m 2 of outdoor area for attractions, displays and the like; plus a minimum of 1 bus parking space.
Visitor accommodation	1	for each bedroom.
Crematoria and cemeteries	1	for each 3 seats or 30 spaces, whichever is the greater

There is sufficient space on the site such that car parking areas can be constructed to comply with the parking requirements outlined above. It is recommended that on-site car parking be provided in accordance with the above rates to comply with clause E6.6.1-A1, of the Planning Scheme.

4.4.2 Car Park and Access Layout

Clause E6.7.2-A1 and Clause E6.7.5-A1 of the Planning Scheme require vehicular access points and car parking areas to be designed and constructed in accordance with the relevant Australian Standards:

- AS/NZS 2890.1, *Parking facilities – Part 1: Off-street car parking,* 2004
- AS 2890.2, *Parking facilities – Part 2: Off-street commercial vehicle facilities,* 2002

4.4.3 Accessible Car Parking

Clause E6.6.2 -A1 of the Planning Scheme states that *"Car parking spaces provided for people with a disability must:*

a) Satisfy the relevant provisions of the Building Code of Australia;

b) Be incorporated into the overall car park design;

c) Be located as close as practicable to the building entrance.

Based on the requirements set out in the Building code of Australia Section D3.5, one accessible car parking space should be provided for every 50 car parking spaces provided on the site.

4.5 Pedestrians and Cyclists

The movements of pedestrians and cyclists are not expected to change external to the site as there are no future facilities for this mode proposed on the public road network.

5. Conclusions

This Traffic Impact Assessment has investigated the potential future traffic impacts of the proposed rezoning of 1384 Tea Tree Road, Campania, to facilitate the future development of a Buddhist Cultural Park. The site is to be accessed via the existing access on Tea Tree Road, with a potential future access to be constructed at some point along the development timeline.

This TIA has been carried out following a review of available traffic data, Austroads guidelines, Australian Standards and the Southern Midlands Planning Scheme.

The key findings are as follows:

- The development is expected to generate 313 trips per day (average) and up to 490 trips per day (seasonal peak) in the short term (around 10-20 years).
  - Over the long-term (> 20 years) visitation will continue to increase, however it is likely that there will have been significant changes to development and transportation patterns within the surrounding area over this period such that the long-term has not been assessed in this report.
- The peak traffic generation is estimated to be up to 68 vehicle movements per hour during the seasonal peak period.
- The majority of traffic movements are likely to be left-in and right-out movements, therefore specific turn treatments (e.g. channelised turn lanes) are not considered to be required on the basis of low turning volumes and clear line of sight in both directions.
- Given the current configuration and capacity of Tea Tree Road, the additional traffic volume of up to 417 vehicles per day (and up to 58 vehicles per hour) can be readily absorbed into the road network without any significant or adverse impacts on capacity of efficiency.
- There is sufficient sight distance available at the proposed accesses in accordance with the requirements of the Southern Midlands Planning Scheme.
- While limited details regarding the proposed development are available, it is considered that there is sufficient space on-site to construct accesses and car parking areas to satisfy Planning Scheme requirements including compliance with:
  - AS/NZS 2890.1, *Parking facilities – Part 1: Off-street car parking,* 2004
  - AS 2890.2, *Parking facilities – Part 2: Off-street commercial vehicle parking,* 2002
  - *Building Code of Australia Section D3.5*

Based on the findings of this report, the proposal is supported on traffic grounds.

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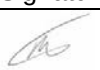
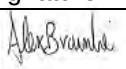
Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
0	A. Andrews	M. Petrusma		A. Brownlie		1/09/17

Appendix F – Wastewater Assessment

seam environmental

2017

Site Suitability Assessment & Concept Designs for the proposed Tasmanian Chinese Buddhist Cultural Park at 1384 Tea Tree Road, Campania

Contents

Document History and Status

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Project Manager:	Jamie Wood
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Name of Project:	1384 Tea Tree Road – Buddhist Cultural Park
Job Number:	17045

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

Executive Summary

This assessment follows a request from GHD to ascertain if the land proposed for the Tasmanian Chinese Buddhist Cultural Park of Australia is suitable for the installation of onsite wastewater management systems (OSWM). The proposed development is divided into three precincts, each with various stages, that will be constructed over several years. See Precincts Map (Figure 2) on page 9.

NOTE: *This is a preliminary assessment and concept report only, each precinct will require detailed wastewater assessments when final plans and wastewater loadings are available. This report gives a preliminary assessment of suitable wastewater disposal systems and the area required for wastewater disposal (m^2). The aim being to provide sufficient information about OSWM to enable the planning process to consider rezoning of the land.* * Building/Structure that will generate wastewater.

Temple, Cultural & Educational Precinct:

As this precinct covers a large area, there are several different aspects, soils profiles and slopes throughout the Temple, Cultural and Educational Precinct. Due to this, several of the buildings within this precinct have been placed into "groups" that reflect the site conditions.

- Stone Lion Statues
- Heavenly Deva Kings
- Reception Hall*
- Buddha Statue
- Bell Tower
- Drum Tower
- Front Gate*
- Great Hero Treasure Hall Homa Altar*
- Three Tiered Fire Protection Homa Altar
- Great Hero Treasure Hall (Lord Sakyamuni Buddha Hall)*

This precinct has a predominantly northerly aspects, with moderate slopes ranging from 6 to 10 degrees. The soil in this area consists of Clay Loams/Light Clays (Category 4/5) with good drainage.

This area is suitable for wastewater disposal with a treatment system and 815m^2 of irrigation OR several separate septic tank and absorption trench setups (size and location to be confirmed).

- Medium Gate
- Medicine Buddha Hall*
- Conference Room*
- Small gate

These sites have a predominantly north easterly/easterly aspect. The slopes are moderate to steep with slopes recorded in the vicinity 10 to 12 degrees. The soils in this area consist of Medium to heavy Clays (Category 6) with moderate drainage.

This area is suitable for wastewater disposal with a treatment system and 685m^2 of irrigation OR several separate septic tank and absorption trench setups (size and location to be confirmed).

- Abhisecana Hall/Samantabhadra Tathagata*
- Blessing of the Three Tantras Hall/Manjushri Buddha Tathagata
- Shi Zhen Vidyadhara Hall/Ahdharma Buddha*
- Holy Tantra Ten Dharma Realms Hall.Asraya*
- Great Sun Tathagata Hall/Vairocana Buddha/Samantabhadra Tatagatha/Ahdharma Buddha/Asraya Tathagata*
- Library/Sutra Repository*

This area sits high on top of a hill with some steep slopes surrounding the proposed buildings. The slopes range from 10 to 12 degrees with a north easterly aspect. The soils consists of Medium to Heavy Clays (Category 6). To dispose of this wastewater using a treatment system (AWTS) an area of 1650m^2 would be required.

- Small Gate
- Avalokitesvara Hall*
- Ancestral Patriarchs Hall/Vajra Dharmadhatu Palace*
- Sarira Pagoda*
- Museum*
- Research and Study Hall*
- Cultural Exchance Hall*

These sites have a predominantly easterly aspects, with moderate slopes ranging from 6 to 9 degrees. The soil in this area consists of Clay Loams/Light Clays (Category 4/5) with good drainage. This group of buildings is suitable for wastewater disposal with a treatment system and 815m^2 of irrigation OR several separate septic tank and absorption trench setups (size and location to be confirmed).

Mixed Use Precinct

- Visitor accommodation*

This site has a north easterly aspect, with gentle slopes ranging from 2 to 4 degrees. The soil in this area consists of Clay Loams/Light Clays (Category 4/5) with good drainage.

The forecast loading for all of the Mixed Use Precinct is up to 20,000 Liters per day. To dispose of this wastewater using a aerated wastewater treatments system (AWTS) or a package treatment plant would require a disposal (irrigation) area of 5,715m^2 based on a 100 bedroom visitor accommodation.

Open Space Precinct

This area has varying slopes (2 to 10 degrees) with a north easterly aspect. Soils consist of clay loams/light clays (Category 4/5). Currently there are no wastewater generating buildings within this precinct.

The overall site is over 100 hectares and the total wastewater disposal area required for the entire site is 11,415m^2 or 1.14ha (1.14% of the entire site). The site also has deep soils capable of thorough drainage, acceptable slopes and very good aspects. Therefore it is considered that there is sufficient area within the site for the proposed development and all of the wastewater generated from the proposed development.

1. Introduction

This assessment follows a request from GHD to ascertain if the land proposed for the Buddhist Cultural Park is suitable for the installation of onsite wastewater disposal systems. The request was made by Ashley Brook (GHD) Planning Consultant on behalf of the Holy Tantra Esoteric Buddhism Incorporated for land at 1384 Tea Tree Road, Campania 7026 (Fig 1)

The site plan with proposed Precincts is presented in Figure 2. The assessment provides an appraisal of suitability of wastewater disposal for each of the proposed Precincts.

2. Methodology

This wastewater assessment is based on the initial Precinct plan. A site visit was made on 19th June 2017 by J.Wood & T.Speed and test holes were (excavated) throughout the site using a back hoe operated by Finton Downham and his colleague. Approximate locations of these test holes are shown on the Site Plan (Figure 2), and a soil profile of each test hole is attached in Appendix D. Soil Samples were also collected for analysis.

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

In preparing the assessment, the following documentation has been reviewed:
- Plan prepared by Holy Tantra Esoteric Bhuddism Inc
- Tasmania Department of Mines – Geological Atlas 1:25,000 – Tea Tree
- Google Earth map
- "The List" Tasmanian government website

3. Site and Soil Evaluation Results – Existing Conditions

3.1 Topography & Aspect

The site can be roughly divided into three areas based on aspect, slope and soil type.

Area 1: Northern area of the Temple, Cultural & Educational Precinct. This area has predominantly moderate slopes with a northerly/north easterly aspect. Slopes range from 5 to 10 degrees with mainly grassland and woodland vegetation. The soil in this area consists of Clay Loams/Light Clays (Category 4/5).
Area 2: Southern area of the Temple, Cultural & Educational Precinct and the Open Space Precinct. This area has steeper slopes of approximately 7 to 12 degrees, with a predominantly easterly aspect and mainly forest vegetation. Soils in this area consist of Medium to Heavy Clays (Category 5/6).
Area 3: Mixed Use Precinct. This area has gentle slopes of 2-3 degrees with a north easterly aspect and wholly with grassland. The soils consist of Clay loams/Light Clays (Category 4/5).

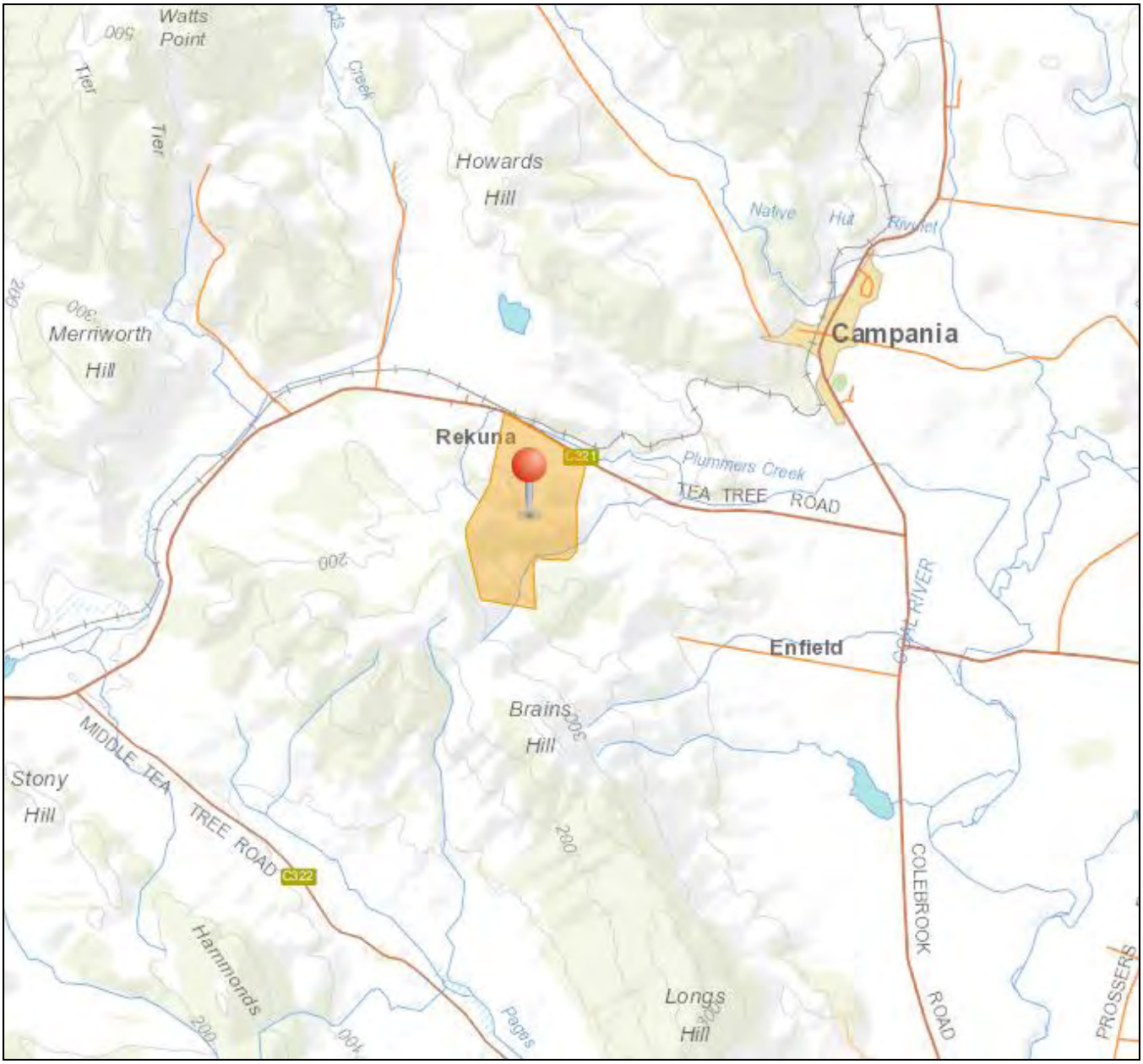


Figure 1: Site Location Plan

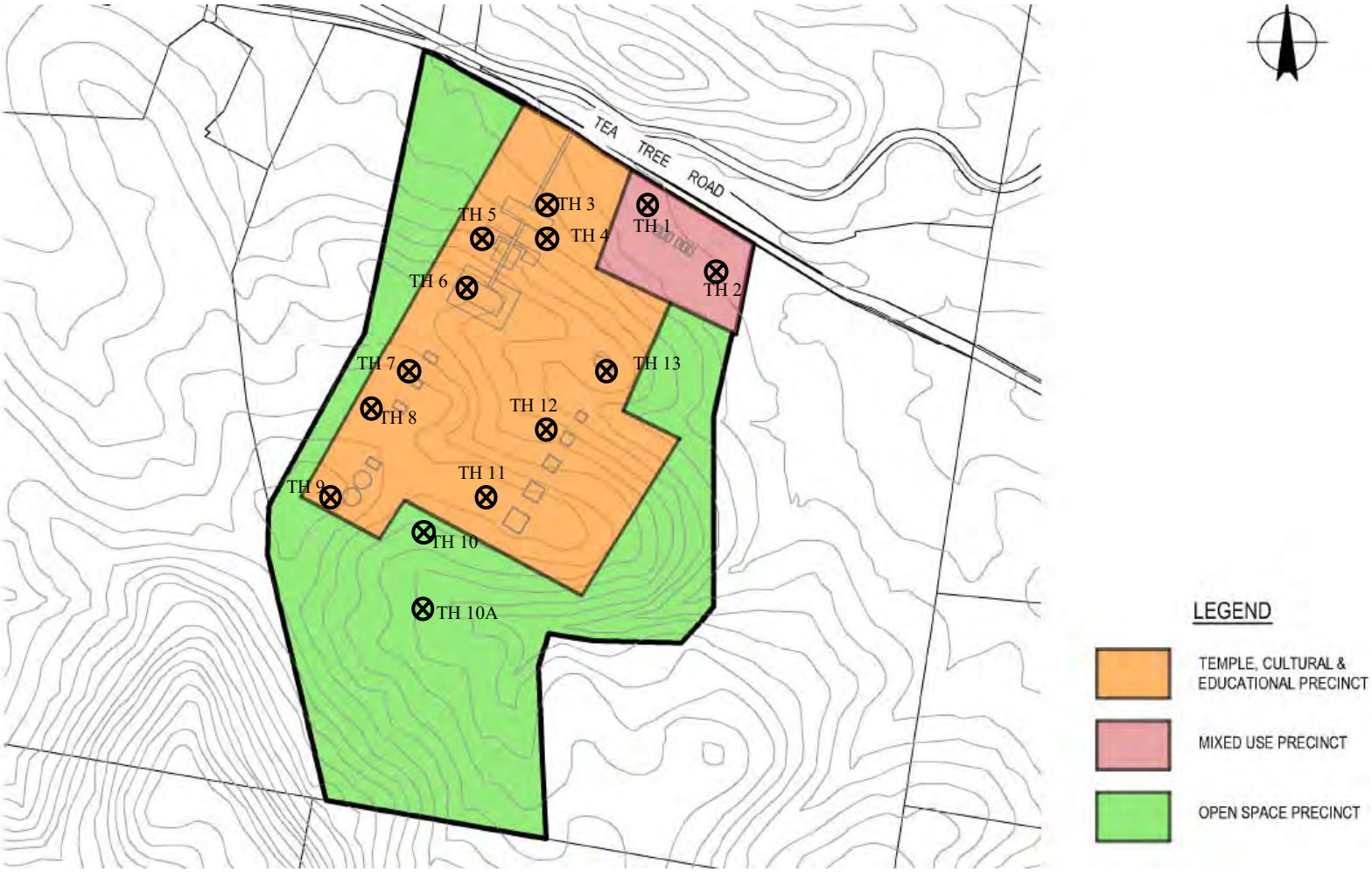


Figure 2: Site Illustrating proposed Precincts & test hole locations

3.2 Vegetation

The vegetation varies throughout the 100-hectare site, with areas of grassland, woodland and forest vegetation throughout. A vegetation assessment is outside the scope of this assessment.

3.3 Geology

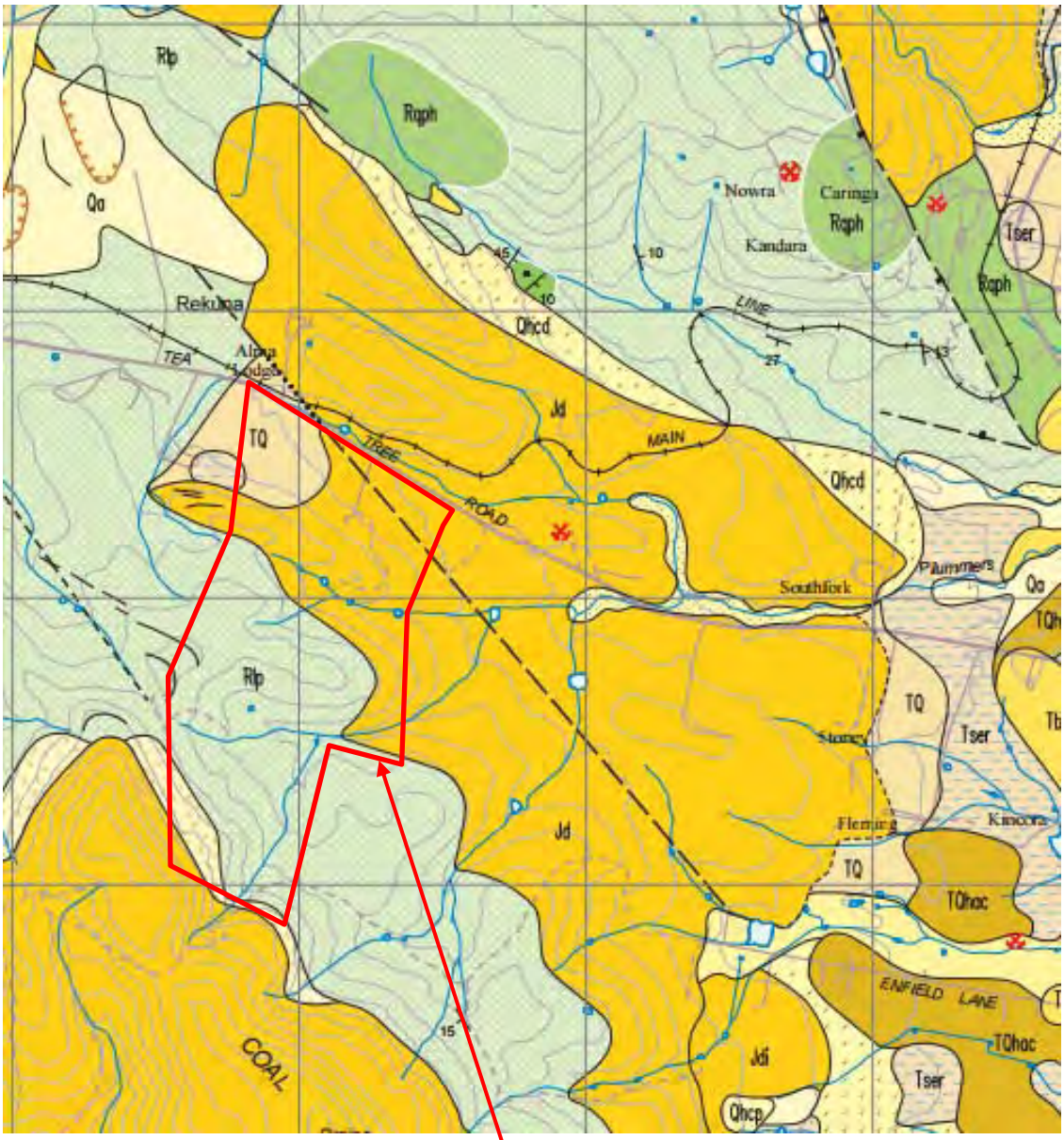
The Tasmania Department of Mines – Geological Atlas 1:25,000 – Tea Tree, lists the soils in the area as a combination of: (Jd) Jurassic Dolerite, (TQ) Quaternary - Cenezoic deposites and (Rlp) Triassic – medium course grained sandstone, minor mudstone, minor mica and feldspar content.

3.4 Soils

As can be seen on the Geological Map on page 10 (Figure 3). The site has three distinct soil types which also mirror the zones mentioned earlier. The different soils are described below.

- **Area 1**: The soil in this area consists of Clay Loams/Light Clays (Category 4/5).
- **Area 2**: Soils in this area consist of Medium to Heavy Clays (Category 5/6).
- **Area 3**: The soils consists of Clay loams/Light Clays (Category 4/5).

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



Area of investigation (Boundaries are approximate only)
Map Key over page

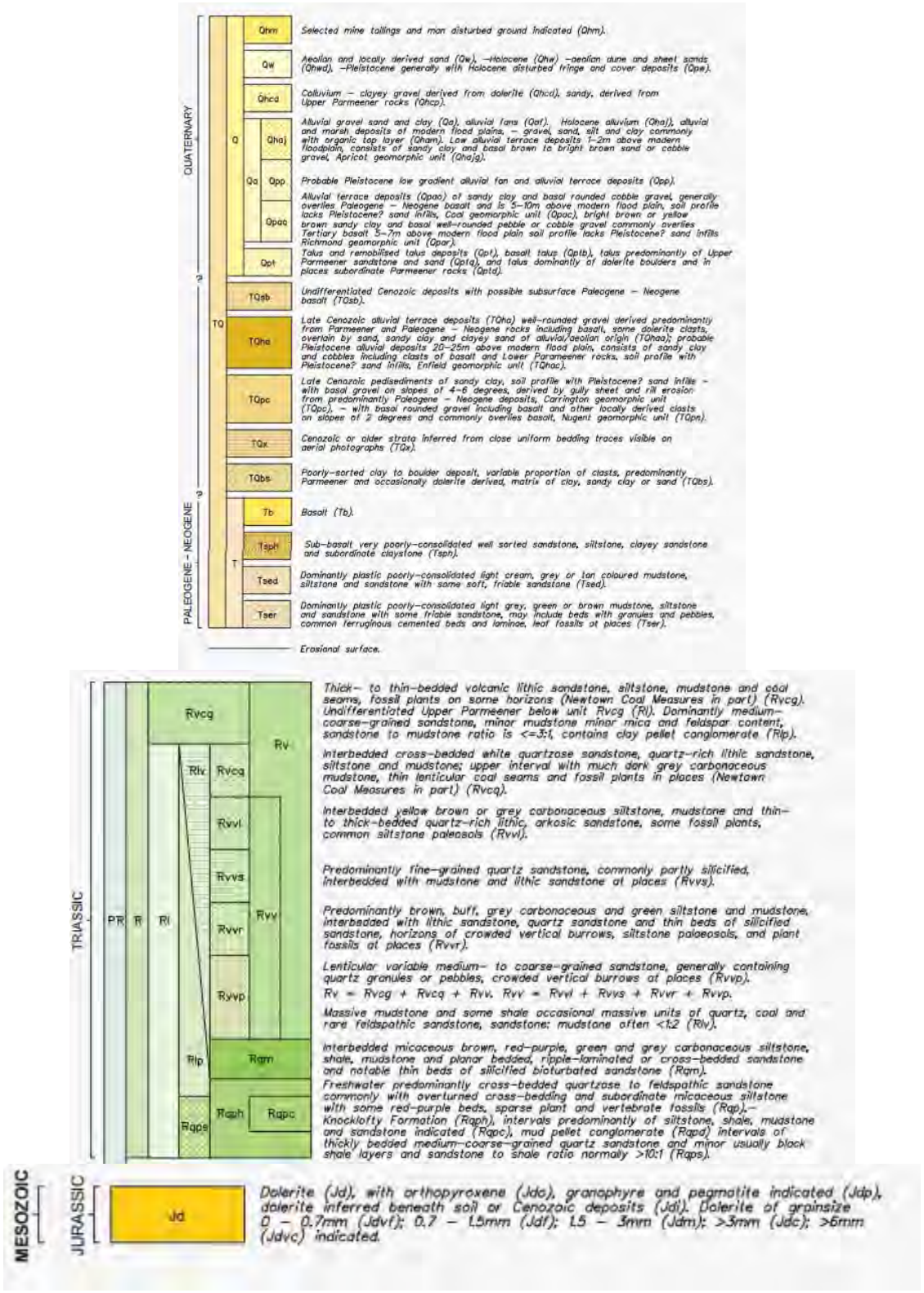


Figure 3-Tasmania Department of Mines–Geological Atlas 1:25,000 – Tea Tree

4. Site Features

4.1 Site Limitations and Constraints

We have conducted a site evaluation for both the Temple, Cultural and Educational Precinct and the Mixed Used Precinct. This preliminary report will determine the amount of space required for wastewater disposal, with a detailed design to be completed when building approval is sought.

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

- Very heavy wastewater loads (Especially the proposed visitor accommodation)
- Clay Soils
- Moderate slopes (in sections)
- Close proximity to water courses including dams & drainage lines (in some areas)

Positive aspects for the land overall include:

- ✓ Large land area(s) for wastewater disposal
- ✓ Good drainage throughout
- ✓ Good evapo-transpiration

4.2 Existing Buildings within the site

There are two existing buildings with wastewater generated (houses) within the site that have existing wastewater disposal systems. Both of these systems appear to be working effectively, and due to the large areas surrounding the buildings, the proposed future development is considered to have no impact upon this existing systems.

Further to this, if the system is ever needed to be upgraded in the future there is adequate space for a new wastewater system to be installed.

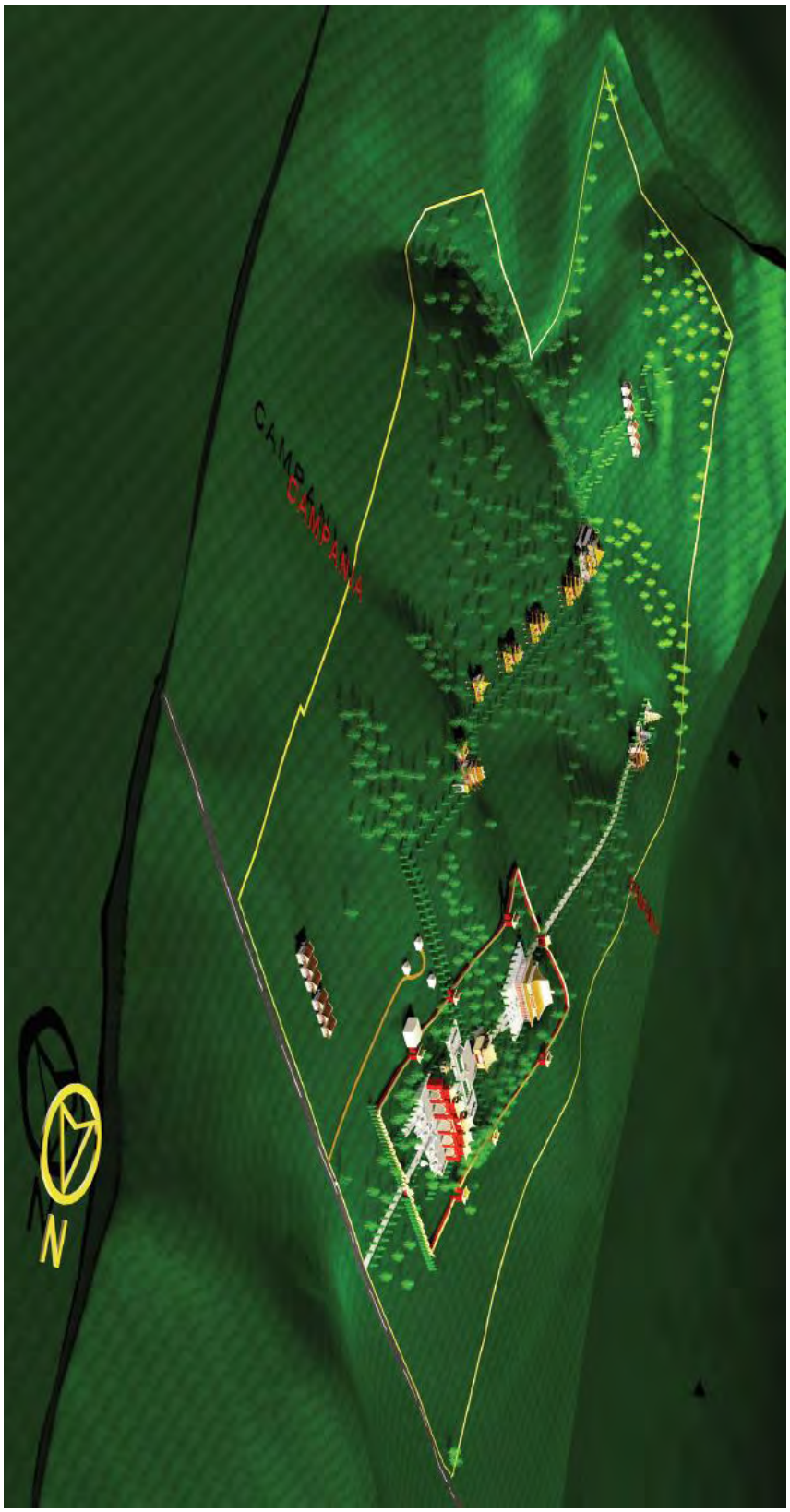


Figure 4 : Conceptual Layout Plan

5. Assessment Report

5.1 Background

The assessment of the land is based on the three areas of the site as mentioned in section 3.1 of this report. These are based on common aspect, slope, soil type, geology and vegetation. Therefore we have conducted 3 assessments to capture the whole site. The study is based around preliminary modelling using the Trench 3 ™ program. The results of the modelling are presented in Appendix B. The Assessment Report collates all the information from the Site Capability Report and the Environmental Sensitivity Report and provides a recommended preliminary design.

5.2 Projected Loadings

The exact loadings are difficult to determine. Many of the Halls, Alters and Palaces, Pegodas and Large Gates have a "Caretaker" Cottage attached to the structure for residential accommodation. The cottages will consist of two bedrooms with up to six persons per Cottage (residential accommodation).

Further to the caretaker cottages many of the Halls, Alters and Palaces, Pegodas and Large Gates will also have amenities for visitors to the site. The number of visitors to the site is very difficult estimate, and therefore 2000 visitors for the Temple, Cultural & Educational Precinct has been used in the wastewater calculations. This figure of 2000 persons for the precinct is considered to be an extremely high (and unlikely for many years). It is an assumed loading figure that adds a very high level of conservatism to the design.

The Mixed used Precinct will have much heavier wastewater load due to it being the location of the proposed visitor accommodation. As the visitor accommodation will consist of 100 rooms, the **maximum** number for the proposed visitor accommodation within the precinct has been assumed to be 200 people at capacity.

Table 1 has a breakdown of the projected daily wastewater loadings for each of the Precincts.

Devices such as a front loading washing machine, aerated water faucets, water efficient shower heads and low flush toilet [6 litres / 3 litres] are recommended for the detailed design.

	Wastewater Loading from Caretaker Cottages (Per day)	Number of structures/buildings	Total Projected Wastewater Load	Area (m2) required for irrigation	Design Irrigation Rate - based on soils in area
Temple, Cultural & Educational Precinct	12 x Cottages - 36 (persons) x 150L = 5400L	2000 (persons) x 3L = 6000L	11,400L per day	5,700m2	2mm/day - Cat 6 soil*
Precinct 3	100 bedroom visitor accommodation 200 persons x 100L per day = 20,000L	N/A	Up to 20,000L per day	5,715m2	3.5mm/day - Cat 4 soil
Open Space Precinct	N/A	N/A	N/A	N/A	2mm/day - Cat 6 soil

* Note - Most of the sites within the Temple, Cultural & Educational Precinct are actually located on Category 4 Soils with a DIR of 3.5mm day. However to illustrate the maximum amount of space required to dispose of all of the wastewater from the Temple, Cultural & Educational Precinct, the lower DIR of 2mm per day was used (Category 6 soil). This ads another level of conservatism to the design.

Table 1 : Projected Daily Wastewater Loadings

5.2.1 Projected Wastewater Loadings

Wastewater loadings based on Table 4 – Directors Guidelines for On-site Wastewater Management Systems

- 150L per person for the caretakers cottage
- 100L per person - Visitor Accommodation (Motel) – Out sourced Laundry
- 3L Per person based on – Public hall, theatre, gallery (no kitchen)

5.3 Assessment Determination & Recommended System Design

As the wastewater loadings are heavy, the generic disposal method has been based on secondary treated effluent (E.g. an Aerated Wastewater Treatment System/Package Treatment Plant) with irrigation. This has been selected as the amount of absorption trench/bed required would be excessive and the recommended method provided valuable wastewater for reuse.

This report **is not ruling out the use of conventional septic tank and absorption trenches and beds**. They can be designed when a more detailed report is required. Table 1 illustrates that even with a significant wastewater load, and subsequent large area required for wastewater disposal, there is still adequate area within the 100 hectare site to successfully dispose of the wastewater generated.

Temple Cultural and Educational Precinct:
With Clay loams through to medium clays and a total wastewater loading of 11,400L per day for all of the Temple, Cultural and Educational Precinct, the total area required for wastewater disposal is: 5,700m^2

Note: As the soils, slopes and aspects vary significantly within this large precinct, so does the amount of space required for wastewater disposal. See pages 4 to 6 for a simple summary of the area required for wastewater for each "group" of wastewater generating structures.

Mixed Use Precinct – Visitor accommodation:
This Precinct has gentle slopes with well drained clay loam soils. There is plenty of sun light with a north easterly aspect. As the wastewater loading will potentially be heavy, a package treatment plan or an Aerated Wastewater Treatment System (AWTS) are the only options for this precinct.

The forecast loading for all of the Mixed Used Precinct is up to 20,000 Liters per day. To dispose of this wastewater using (secondary treatment and) irrigation, an area of 5,715m^2 would be required.

Note: *The buildings within the Temple, Cultural and Educational Precinct 5 could all utilize conventional passive OSWM such as a septic tank and absorption trench disposal system. However it would require a separate and individual wastewater disposal system for each of the "caretaker cottages" and amenities within the Precinct. This would lead to several wastewater disposal systems within the precinct and may not be preferred. Effluent from a primary treatment system cannot be reused unless secondary and tertiary treatment are undertaken.*

Also each precinct has adequate room for a 100% reserve area . If conventional OSWM is utilized then 100% reserve areas are necessary, whereas with the use of Aerated wastewater treatment systems, the regulator may permit a 50% reserve area only

5.4 Storm Water Disposal

The storm water from any proposed dwelling/building should be diverted away from any wastewater disposal area and either capture in water tanks for subsequent reuse or be drained into one of the 4 drainage lines that runs through the property.

6. Conclusion & Recommendations

- **Temple, Cultural and Educational Precinct:**

This Precinct is suitable for wastewater disposal with a treatment system and 5,700m^2 of irrigation OR several separate septic tank and absorption trench setups (size and location to be confirmed).

- **Mixed Use Precinct – Visitor accommodation:**

This Precinct is suitable for wastewater disposal via an Aerated Wastewater Treatment System (AWTS or treatment package and 5,715m^2 of irrigation – Due to the heavy wastewater load only a treatment system is considered suitable.

The overall site is over 100 hectares and the total wastewater disposal area required for the entire site is 11,415 (1.14% of the entire site) . The site also has deep soils capable of drainage, acceptable slopes and very good aspects. Therefore it is considered that there is sufficient area within the site for the proposed development and all of the wastewater generated from the proposed development.

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

Appendix A Methodology & Trench 3 Results

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

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

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

Assessment Report

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

Appendix B: Site Modeling using Trench 3™

Trench Report – Temple, Cultural & Educational Precinct

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

Site Capability Report
Wastewater disposal Area - Temple, Cultural & Educational Precinct

Assessment for	Tasmanian Chinese Buddhists	Assess. Date	28-Jun-17
	1384 Tea Tree Road, Campania 7026	Ref. No.	17045
Assessed site(s)	1384 Tea Tree Road, Campania 7026	Site(s) inspected	19-Jun-17
Local authority	Southern Midlands Council	Assessed by	Jamie Wood

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

Alert	Factor	Units	Value	Confid level	Limitation Treach	Amended	Remarks
	Expected design area	sq m	1,000,000	V. high	Very low		
	Density of disposal systems	/sq km	2	Mod.	Very low		
	Slope angle	degrees	6	V. high	Low		
	Slope form		Straight simple	V. high	Low		
	Surface drainage		Mod. good	High	Low		
	Flood potential		Site floods <1:100 yrs	Mod.	Very low		
	Heavy rain events		Rare	Mod.	Low		
	Aspect (Southern hemi.)		Faces NE or NW	V. high	Low		
	Frequency of strong winds		Common	High	Low		
	Wastewater volume	L/day	11,400	Mod.	Very high	Moderate	Other factors lessen impact
	SAR of septic tank effluent		2.3	Mod.	Moderate	Low	Other factors lessen impact
	SAR of sullage		2.5	Mod.	Moderate	No change	
	Soil thickness	m	1.0	High	Low	Moderate	
	Depth to bedrock	m	1.5	Mod.	Moderate	Low	
	Surface rock outcrop	%	0	V. high	Very low		
	Cobbles in soil	%	2	V. high	Very low		
	Soil pH		7.0	Guess	Very low		Other factors lessen impact
	Soil bulk density	gm/cub. cm	1.5	Guess	Low		
	Soil dispersion	Emerson No.	8	High	Very low		
	Adopted permeability	m/day	0.2	High	Very low		
	Long Term Accept. Rate	L/day/sq m	16	Mod.	Very low	Moderate	Other factors increase impact

seam environmental

Sustainable Environmental Assessment and Management

Land suitability and system sizing for on-site wastewater management

Trench 3.0 (Australian Institute of Environmental Health)

Environmental Sensitivity Report

Wastewater disposal Area - Temple, Cultural & Educational Precinct

Assessment for	Tasmanian Chinese Buddhists 1384 Tea Tree Road, Campania 7026	Assess. Date Ref. No.	28-Jun-17 17045
Assessed site(s)	1384 Tea Tree Road, Campania 7026	Site(s) inspected	19-Jun-17
Local authority	Southern Midlands Council	Assessed by	Jamie Wood

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

Alert	Factor	Units	Value	Confid level	Limitation: Treach	Limitation: Amended	Remarks
A	Cation exchange capacity	mmol/100g	45	Mod.	High	No change	
	Phos. adsorp. capacity	kg/cub m	0.7	Mod.	Moderate		
	Annual rainfall excess	mm	-211	High	Very low		
	Min. depth to water table	m	2	High	Low		
	Annual nutrient load	kg	117.5	Guess	Very high	Moderate	Other factors lessen impact
	G'water environ. value	Agric non-sensit		High	Low		
	Min. separation dist. required	m	4	High	Very low	Low	Other factors increase impact
	Risk to adjacent bores						Factor not assessed
	Surf. water env. value	Agric sensit/dom drink		High	Moderate		
	Dist. to nearest surface water	m	175	High	Moderate		
	Dist. to nearest other feature	m	200	High	Very low		
	Risk of slope instability	Very low		High	Very low		
	Distance to landslip	m	300	High	Very low		

seam environmental

Sustainable Environmental Assessment and Management

Land suitability and system sizing for on-site wastewater management

Trench 3.0 (Australian Institute of Environmental Health)

Assessment Report

Wastewater disposal Area - Temple, Cultural & Educational Precinct

Assessment for	Tasmanian Chinese Buddhists	Assess. Date	28-Jun-17
	1384 Tea Tree Road, Campania 7026	Ref. No.	17045
Assessed site(s)	1384 Tea Tree Road, Campania 7026	Site(s) inspected	19-Jun-17
Local authority	Southern Midlands Council	Assessed by	Jamie Wood

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

Wastewater Characteristics

Wastewater volume (L/day) used for this assessment = 11,400 (using the 'No. of bedrooms in a dwelling' method)

Septic tank wastewater volume (L/day) = 3,760

Sullage volume (L/day) = 7,640

Total nitrogen (kg/year) generated by wastewater = 81.5

Total phosphorus (kg/year) generated by wastewater = 36.0

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

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean rainfall (mm)	53	40	38	42	37	40	44	52	50	51	53	53
Adopted rainfall (R, mm)	58	44	42	46	41	44	48	57	55	56	58	58
Retained rain (Rr, mm)	49	37	36	39	35	37	41	48	47	48	49	49
Max. daily temp. (deg. C)	23	22	21	18	15	13	13	14	15	17	19	21
Evapotrans (ET, mm)	86	69	66	53	43	47	48	52	54	63	68	78
Evapotr. less rain (mm)	**36**	**31**	**30**	**14**	**9**	**9**	**8**	**4**	**7**	**16**	**19**	**29**

Annual evapotranspiration less retained rain (mm) = 211

Soil characterisitics

Texture = Clay Loam Category = 4 Thick. (m) = 1

Adopted permeability (m/day) = 0.2 Adopted LTAR (L/sq m/day) = 16 Min depth (m) to water = 2

Proposed disposal and treatment methods

Proportion of wastewater to be retained on site:	All wastewater will be disposed of on the site
The preferred method of on-site primary treatment:	In a package treatment plant
The preferred method of on-site secondary treatment:	In-ground
The preferred type of in-ground secondary treatment:	None
The preferred type of above-ground secondary treatment:	Trickle irrigation
Site modifications or specific designs:	Not needed

Suggested dimensions for on-site secondary treatment system

Total length (m) =	232
Width (m) =	25
Depth (m) =	0.2
Total disposal area (sq m) required =	11400
comprising a Primary Area (sq m) of:	5,700
and a Secondary (backup) Area (sq m) of:	5,700

Sufficient area is available on site

Comments

See full report for details

Trench Report – Mixed Used Precinct (100 Bedroom Visitor accommodation)

Sustainable Environmental Assessment and Management

Land suitability and system sizing for on-site wastewater management

Trench 3.0 (Australian Institute of Environmental Health)

Site Capability Report

Wastewater disposal Area - Mixed Use Precinct - 100 Room Visitor Accommodation

Assessment for	Tasmanian Chinese Buddhists 1384 Tea Tree Road, Campania 7026	Assess. Date Ref. No.	28-Jun-17 17045
Assessed site(s)	1384 Tea Tree Road, Campania 7026	Site(s) inspected	19-Jun-17
Local authority	Southern Midlands Council	Assessed by	Jamie Wood

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

Alert	Factor	Units	Value	Confid level	Limitation Trench	Limitation Amended	Remarks
	Expected design area	sq m	1,000,000	V. high	Very low		
	Density of disposal systems	/sq km	2	Mod.	Very low		
	Slope angle	degrees	2	V. high	Very low		
	Slope form	Straight simple		V. high	Low		
	Surface drainage	Mod. good		High	Low		
	Flood potential	Site floods <1:100 yrs		Mod.	Very low		
	Heavy rain events	Rare		Mod.	Low		
	Aspect (Southern hemi.)	Faces NE or NW		V. high	Low		
	Frequency of strong winds	Common		High	Low		
	Wastewater volume	L/day	20,000	Mod.	Very high	Moderate	Other factors lessen impact
	SAR of septic tank effluent		2.3	Mod.	Moderate	Low	Other factors lessen impact
	SAR of sullage		2.5	Mod.	Moderate	No change	
	Soil thickness	m	1.0	High	Low	Moderate	
	Depth to bedrock	m	1.5	Mod.	Moderate	Low	
	Surface rock outcrop	%	0	V. high	Very low		
	Cobbles in soil	%	2	V. high	Very low		
	Soil pH		7.0	Guess	Very low		Other factors lessen impact
	Soil bulk density	gm/cub. cm	1.5	Guess	Low		
	Soil dispersion	Emerson No.	8	High	Very low		
	Adopted permeability	m/day	0.25	High	Very low		
	Long Term Accept. Rate	L/day/sq m	17	Mod.	Very low	Moderate	Other factors increase impact

Sustainable Environmental Assessment and Management

Land suitability and system sizing for on-site wastewater management

Trench 3.0 (Australian Institute of Environmental Health)

Environmental Sensitivity Report

Wastewater disposal Area - Mixed Use Precinct - 100 Room Visitor Accommodation

Assessment for	Tasmanian Chinese Buddhists 1384 Tea Tree Road, Campania 7026	Assess. Date Ref. No.	28-Jun-17 17045
Assessed site(s)	1384 Tea Tree Road, Campania 7026	Site(s) inspected	19-Jun-17
Local authority	Southern Midlands Council	Assessed by	Jamie Wood

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

Alert	Factor	Units	Value	Confid level	Limitation Treach	Limitation Amended	Remarks
A	Cation exchange capacity	mmol/100g	45	Mod.	High	No change	
	Phos. adsorp. capacity	kg/cub m	0.7	Mod.	Moderate		
	Annual rainfall excess	mm	-181	High	Very low		
	Min. depth to water table	m	2	High	Low		
	Annual nutrient load	kg	206.2	Guess	Very high	Moderate	Other factors lessen impact
	G'water environ. value	Agric non-sensit		High	Low		
	Min. separation dist. required	m	2	High	Very low	Low	Other factors increase impact
	Risk to adjacent bores						Factor not assessed
	Surf. water env. value	Agric sensit/dom drink		High	Moderate		
	Dist. to nearest surface water	m	190	High	Moderate		
	Dist. to nearest other feature	m	200	High	Very low		
	Risk of slope instability	Very low		High	Very low		
	Distance to landslip	m	300	High	Very low		

Sustainable Environmental Assessment and Management

Land suitability and system sizing for on-site wastewater management

Trench 3.0 (Australian Institute of Environmental Health)

Assessment Report

Wastewater disposal Area - Mixed Use Precinct - 100 Room Visitor Accommodation

Assessment for	Tasmanian Chinese Buddhists	Assess. Date	28-Jun-17
	1384 Tea Tree Road, Campania 7026	Ref. No.	17045
Assessed site(s)	1384 Tea Tree Road, Campania 7026	Site(s) inspected	19-Jun-17
Local authority	Southern Midlands Council	Assessed by	Jamie Wood

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

Wastewater Characteristics

Wastewater volume (L/day) used for this assessment = 20,000 (using the 'No. of bedrooms in a dwelling' method)

Septic tank wastewater volume (L/day) = 6,600

Sullage volume (L/day) = 13,400

Total nitrogen (kg/year) generated by wastewater = 143.0

Total phosphorus (kg/year) generated by wastewater = 63.2

Climatic assumptions for site

(Evapotranspiration estimated using mean max. daily temperatures)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean rainfall (mm)	53	40	38	42	37	40	44	52	50	51	53	53
Adopted rainfall (R, mm)	58	44	42	46	41	44	48	57	55	56	58	58
Retained rain (Rr, mm)	52	40	38	41	37	40	43	51	50	50	52	52
Max. daily temp. (deg. C)	23	22	21	18	15	13	13	14	15	17	19	21
Evapotrans (ET, mm)	86	69	66	53	43	47	48	52	54	63	68	78
Evapotr. less rain (mm)	**33**	**29**	**28**	**11**	**7**	**7**	**5**	**1**	**4**	**13**	**16**	**26**

Annual evapotranspiration less retained rain (mm) = 181

Soil characterisitics

Texture = Clay Loam Category = 4 Thick. (m) = 1

Adopted permeability (m/day) = 0.25 Adopted LTAR (L/sq m/day) = 17 Min depth (m) to water = 2

Proposed disposal and treatment methods

Proportion of wastewater to be retained on site:	All wastewater will be disposed of on the site
The preferred method of on-site primary treatment:	In a package treatment plant
The preferred method of on-site secondary treatment:	In-ground
The preferred type of in-ground secondary treatment:	None
The preferred type of above-ground secondary treatment:	Trickle irrigation
Site modifications or specific designs:	Not needed

Suggested dimensions for on-site secondary treatment system

Total length (m) =	58
Width (m) =	100
Depth (m) =	0.2
Total disposal area (sq m) required =	11400
comprising a Primary Area (sq m) of:	5,715
and a Secondary (backup) Area (sq m) of:	5,715

Sufficient area is available on site

Comments

See full report for details

Appendix C Photos (selected test holes representative of precincts)

Plate 1 – Soils in Mixed Precinct – (Test Hole 2)

Plate 2 – Soils in Temple, Cultural & Educational Precinct – Test Hole 4

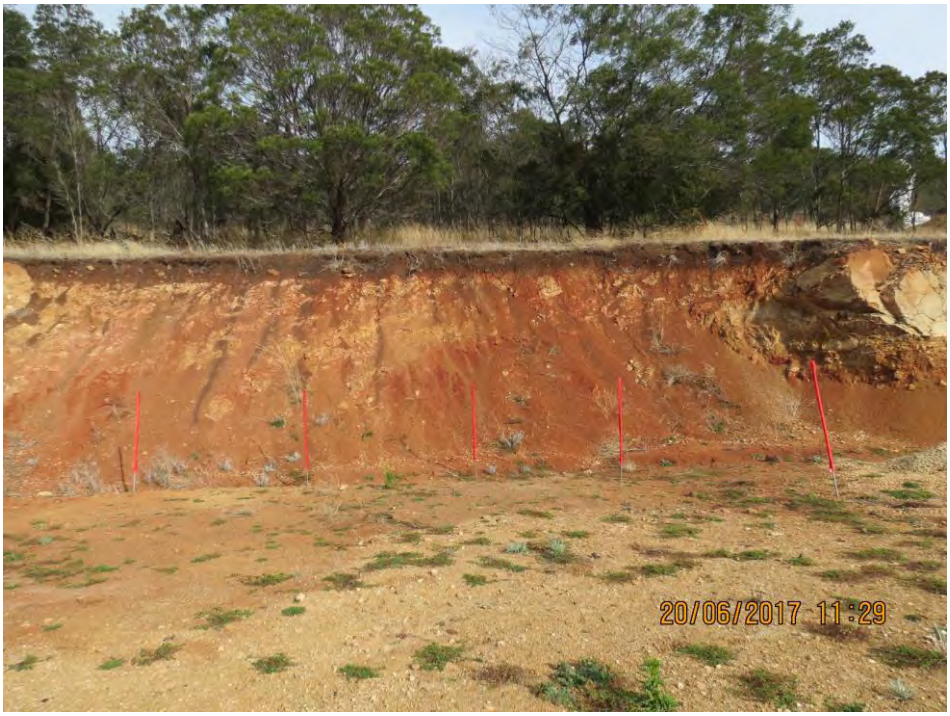


Plate 3 – Looking North East over Temple, Cultural & Educational Precinct

Plate 4 – Looking South over Temple, Cultural & Educational Precinct

Plate 5 – Test Hole 4 Profile- Note difference between TH4 & TH5 (next image)

Plate 6 – Test Hole 5 - Temple, Cultural & Educational Precinct

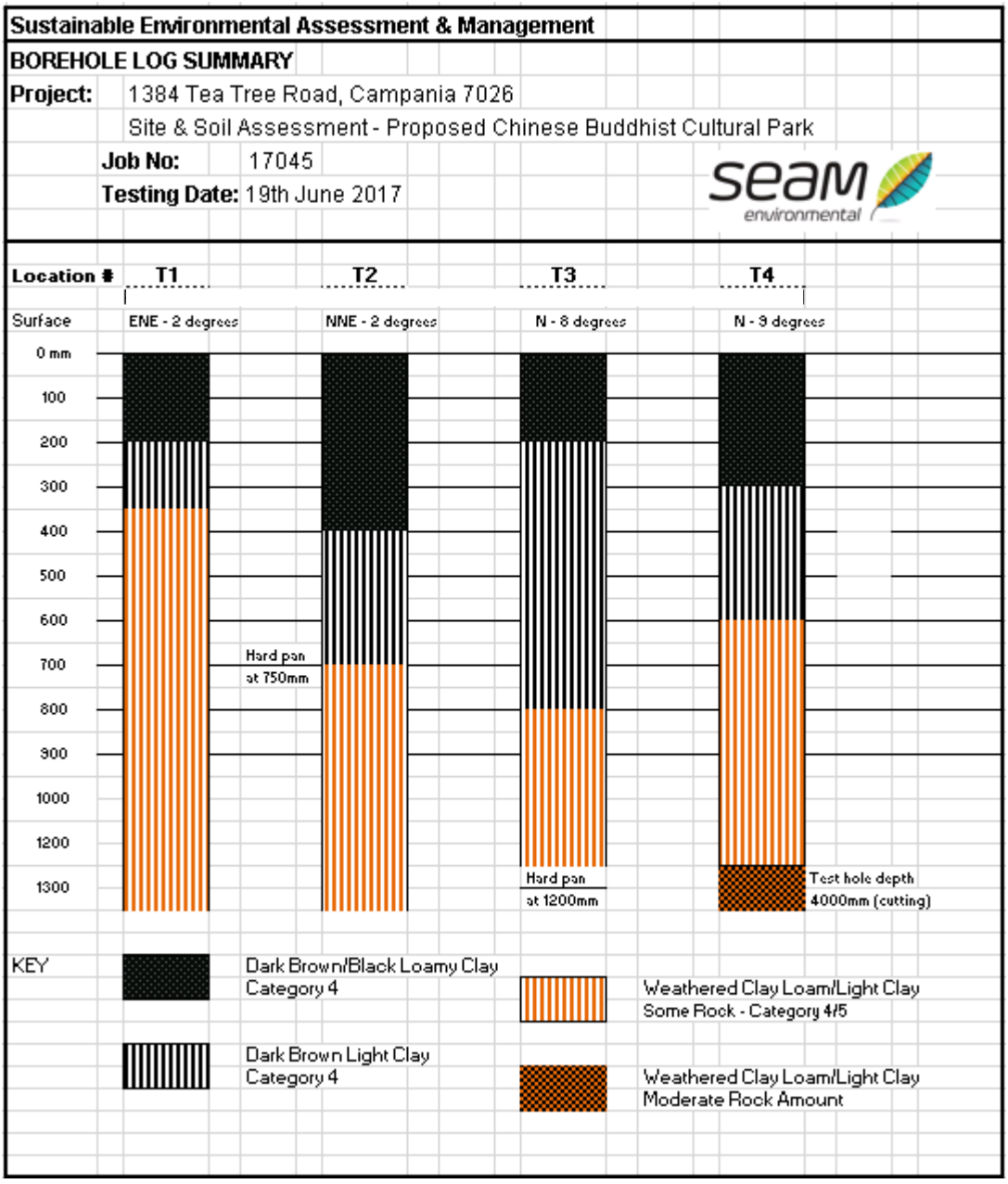
Plate 7 – Test Hole 8 – towards the southern boundary of the Temple, Cultural & Educational Precinct

Plate 8 – Looking South over Temple, Cultural & Educational Precinct

Plate 9 – Test Hole 12 – Temple, Cultural & Educational Precinct

Plate 10 – Looking over Temple, Cultural & Educational Precinct

Appendix D – Soil Profiles



Sustainable Environmental Assessment & Management

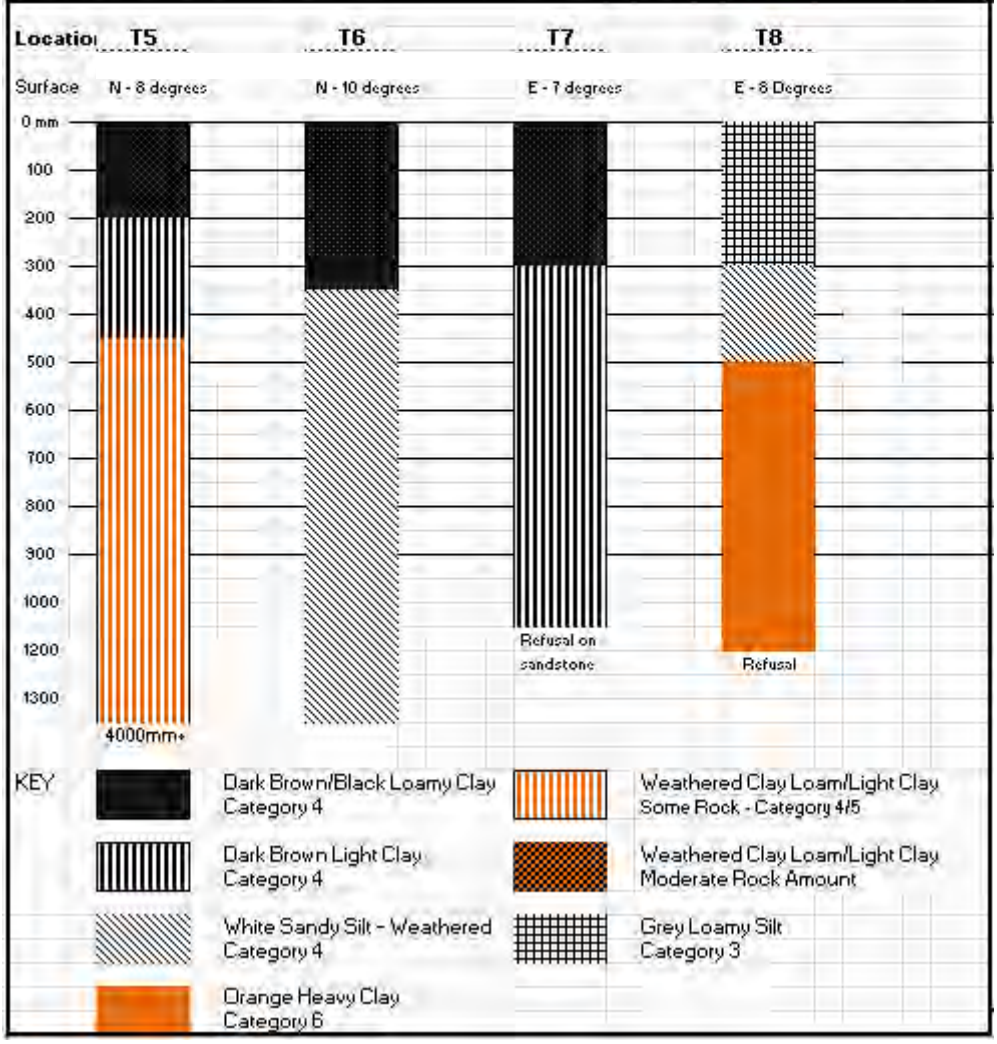
BOREHOLE LOG SUMMARY

Project 1384 Tea Tree Road, Campania 7026

Site & Soil Assessment - Proposed Chinese Buddhist Cultural Park

Job No: 17045

Testing Date 19th June 2017



Sustainable Environmental Assessment & Management

BOREHOLE LOG SUMMARY

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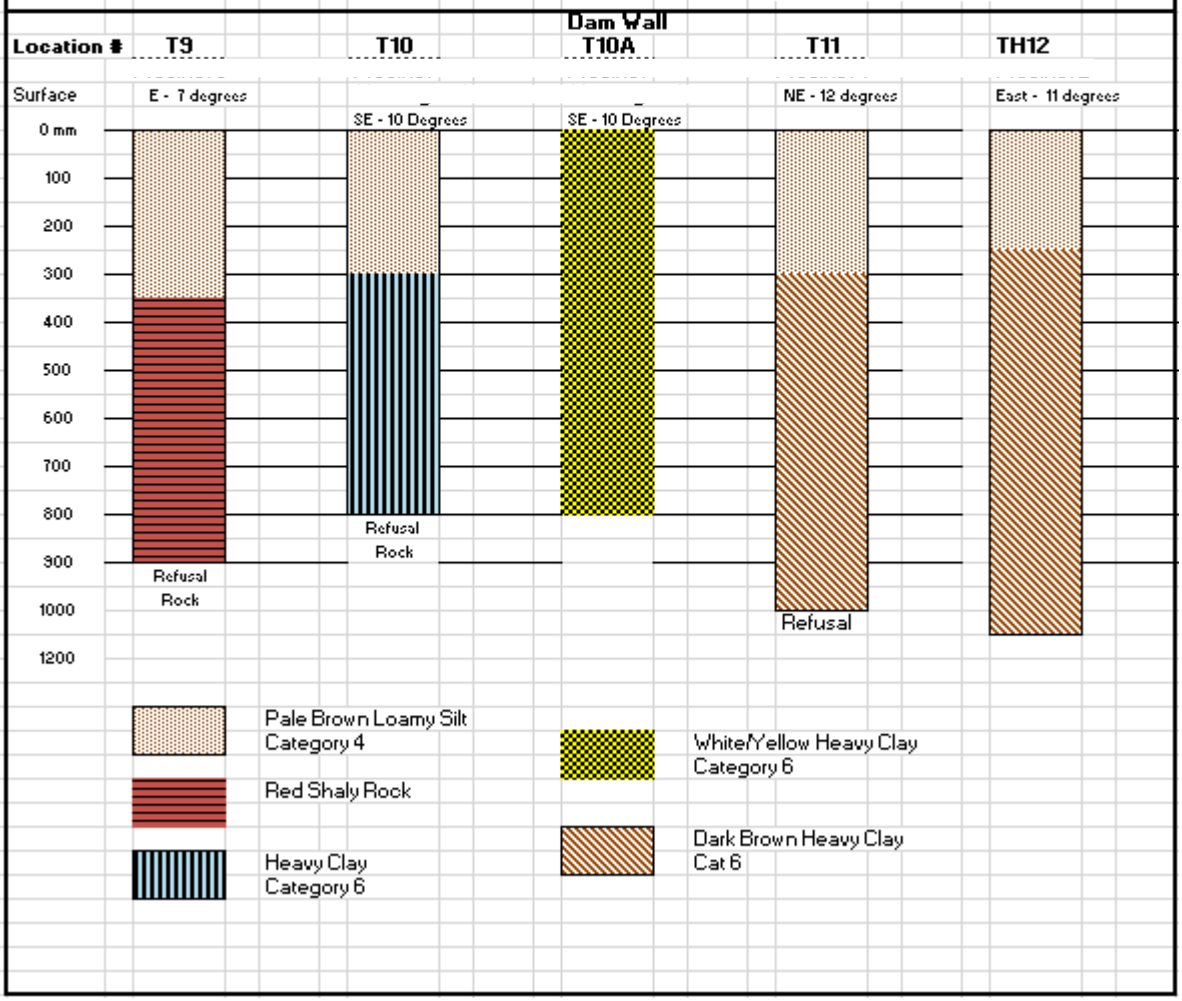
Site & Soil Assessment - Proposed Chinese Buddhist Cultural Park

Job No: 17045

Testing Date: 19th June 2017



Preliminary Wastewater Assessment – Concept Design – 1384 Tea Tree Road, Campania

I/We authorise the Southern Midlands Council to make copies of the report for internal office use.

Attached with the report or included with the application are original copies of all required certifications from suitably qualified persons.

REPORT BY:

NAME OF ORGANISATION:
(SEAM) Sustainable Environmental Assessment and Management

ADDRESS:
Main Office:160 New Town Road, New Town, Hobart 7008
North West: 102 Best Street, Devonport 7310
Postal: PO Box 2064, Lower Sandy Bay 7005

CONTACT DETAILS:
Phone: (03) 6228 1600
Fax: (03) 6228 1700
Mobile: 0419 330 686

Prepared By: J. M. Wood

Accredited Building Services Designer (Hydraulic)
Certified Environmental Practitioner (Impact Assessment Specialist)

SIGNED:_____ DATE: 24th July 2017

Appendix G – Bushfire Assessment

castellan consulting

Preliminary Bushfire Protection Report Tasmanian Buddhist Cultural Park 1384 Tea Tree Road, Campania TAS

Prepared for
GHD
obo Holy Tantric Esoteric Buddhism Incorporated

Revision 01
Project VA17000019

20 July 2017

Prepared by: Ross Murphy & Danny McDermott

GPO Box 2030 Hobart TAS 7001
admin@castellan.com.au
Phone: 04477 10152
ABN 58 130 782 679

Table of Contents

	Name	Signature	Date
Prepared by:	**Ross Murphy &** **Danny McDermott**		**20 July 2017**

1. Introduction

Castellan Consulting Pty Ltd (Castellan) has been engaged by GHD on behalf of Holy Tantric Esoteric Buddhism Incorporated (the Client) to prepare a report addressing potential bushfire related issues that may impact on the proposed development at 1384 Tea Tree Road, Campania TAS 7026 (the Property). The proposed development is shown on the drawings provided at Attachment 1.00.

The process is currently at a stage where application is being made to re-zone the land. There is no specific requirement to provide a Bushfire Hazard Report for the re-zoning application, however, the client has requested that Castellan produce a brief report outlining matters that may be relevant to the development at such time as a Bushfire Hazard Report is required.

This revision to the report (Revision 1.00) includes an updated site plan at Attachment 1.00. There are no other changes to the original report.

2. Statutory Requirement

The statutory requirement relating to bushfire for the proposed development relates to both the Development Application and the Building Permit processes.

There will be a need for a Bushfire Hazard Report and associated Bushfire Hazard Management Plan (BHMP) at Development Application stage as the proposal would be assessed as a Vulnerable Use, due to a proposed educational and occasional care use including accommodation, under the Interim Planning Directive No. 1.1 Bushfire-Prone Areas Code.

The Building Act will also require that the development complies with the Performance Requirements of the NCC. The Deemed to Satisfy (DtS) prescriptive option would include: compliance with AS 3959 Construction of buildings in bushfire-prone areas, vehicle access, and a fire fighting water supply.

3. Bushfire Related Considerations

3.1 Description of the Land and Adjacent Land

The development site consists of a parcel of land to the south of Tea Tree Road in Campania in the Southern Midlands of approximately 106.5ha.

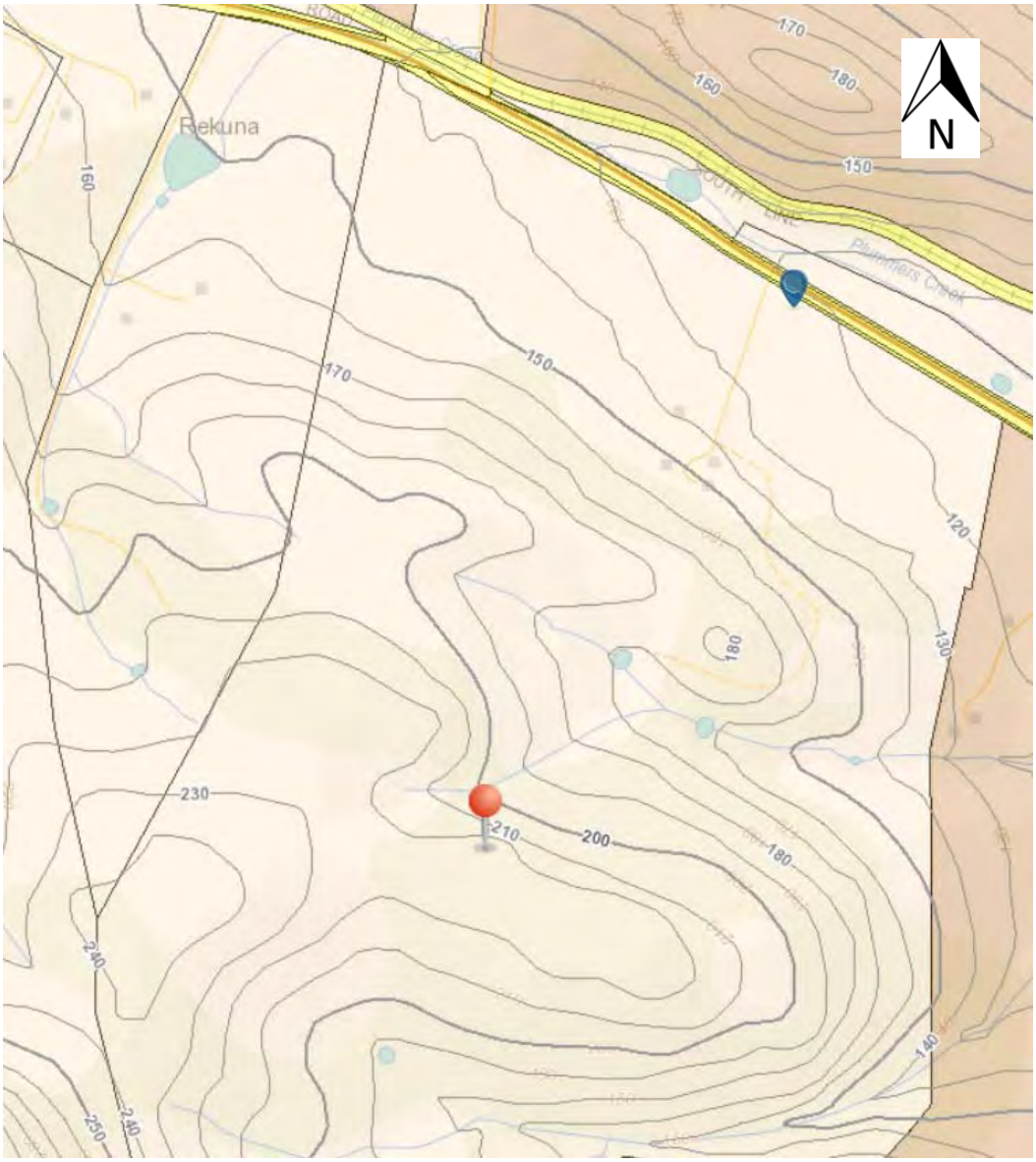
Title 155148/1 Property ID 2941293

The allotment is currently zoned Rural Resource under the Southern Midlands Interim Planning Scheme 2015, as are the allotments to the west. The

allotments to the north and east are zoned Significant Agricultural and to the south is an area zoned for Environmental Living.

Arial View of site

The following images show the development site with information from the Land Information showing contours at 10m.


N
Rekuna
Plummers Creek
170
160
180
150
120
130
140
230
210
200
240
250


270
290
300
320
190
210
180
380
260

3.2 Description of the Proposed Use

The proposed use includes a number of buildings of various uses to be constructed in a number of stages, provisionally detailed in the documentation provided at Attachment 1.00.

The NCC use classifications of these buildings have not been finalised but would potentially be predominantly assembly buildings, Class 9b.

3.3 Impact of Development

This assessment concludes that the provision of the proposed development will introduce a number of short, medium and long term residents within the area. The occupants of the proposed development will be staff and visitors.

The development will not reduce the risk of naturally occurring bushfire events in the Campania area, however, with the increased area of managed vegetation on the site and improved road access it is felt that there would be a sufficient reduction in the threat to the development or to the adjacent sites from bushfire.

3.4 Occupant Characteristics

The staff will be trained in evacuation procedures and the response to a bushfire. They will be capable of receiving warnings of a potential bushfire threat and physically capable of undertaking evacuation as required.

Other occupants may include resident and non-resident visitors that will need to be considered.

An evacuation plan will be provided as part of the Bushfire Hazard Management provisions.

It is expected that due to the size and type of the buildings they will be *Specified Buildings* under the *General Fire Regulations 2010* which will also necessitate an evacuation plan.

3.5 Assessment of Potential Bushfire Relevant Matters.

The following is a preliminary assessment of the elements that are considered in a BHMP.

3.5.1 Construction Requirements & Hazard Management Area

The construction requirements for lower BAL levels are generally readily incorporated into normal building practices.

Generous setbacks are indicated for the proposed buildings from the property boundaries on the attached design. This gives the potential for appreciable hazard management areas allowing for lower BAL ratings to be achieved.

There would appear to be opportunity to incorporate the hazard management areas for the buildings into the landscape design using the variety of options to achieve low-threat vegetation as specified in Cl 2.2.3.2 of AS3959.

In addition to areas that could be managed in the manner of public reserves or parkland and be considered low-threat there is potential for some areas of vegetation, meeting size and proximity restraints, to be unmanaged.

This offers opportunity to work with any identified areas where significant flora, including threatened species, have been identified and be managed in accordance with any ecological requirements.

The attainment of a BAL-LOW would avoid constraints on the design as at this level there are no specific construction requirements.

The provision of external walls in the landscaping can also be an effective barrier to the spread of fire

3.5.2 Firefighting Water Supply

A fire fighting water supply should be provided which is also accessible to a responding fire fighting appliance to comply with the DtS provisions of the NCC.

The NCC requires each building to be provided with a separate supply of firefighting water, however, there may be potential to consider groups of building as a single entity for the purposes of water provision, though this may require a Performance Solution.

There is opportunity for the water supply to be stored remotely or underground with the access being provided by pipework to the access points.

Due to the size of some of the proposed building compliance with the NCC may require the provision of fire hydrants and hose reels. These requirements will need to be assessed in conjunction with the bushfire fire fighting water supply.

3.5.3 Property Access

Access is required from the point of entry from Tea Tree Road to the various buildings in the complex and the water connection point to the static water supply and remote offtakes as described above.

In this instance the access point to the development is adjacent to the road and easily reached by responding emergency services.

3.5.4 Emergency Plan

An emergency management plan would need to be prepared and, as noted above, as there would also be a requirement for an evacuation plan under the building legislation these plans to be developed in tandem.

4. Conclusions and Recommendations

The distance of the proposed buildings from the property boundaries and the predominantly managed landscaping would provide substantial hazard management area and the opportunity to achieve a BAL-LOW classification.

By liaising with those undertaking the landscaping design and the ecological investigation there is potential to include any areas identified as containing significant flora within the hazard management areas.

If the development is to be undertaken in stages, with occupation of buildings occurring as they are constructed, consideration will need to be given to the HMA's and provision of water and access to occur in tandem with the development.

5. References

Australian Building Codes Board, *National Construction Code*

Department of Justice - Building Standards and Occupantional Licensing, Determination - Director of Building Control - Regquirements for Building in Bushfire-Prone Areas - Building Act 2016.

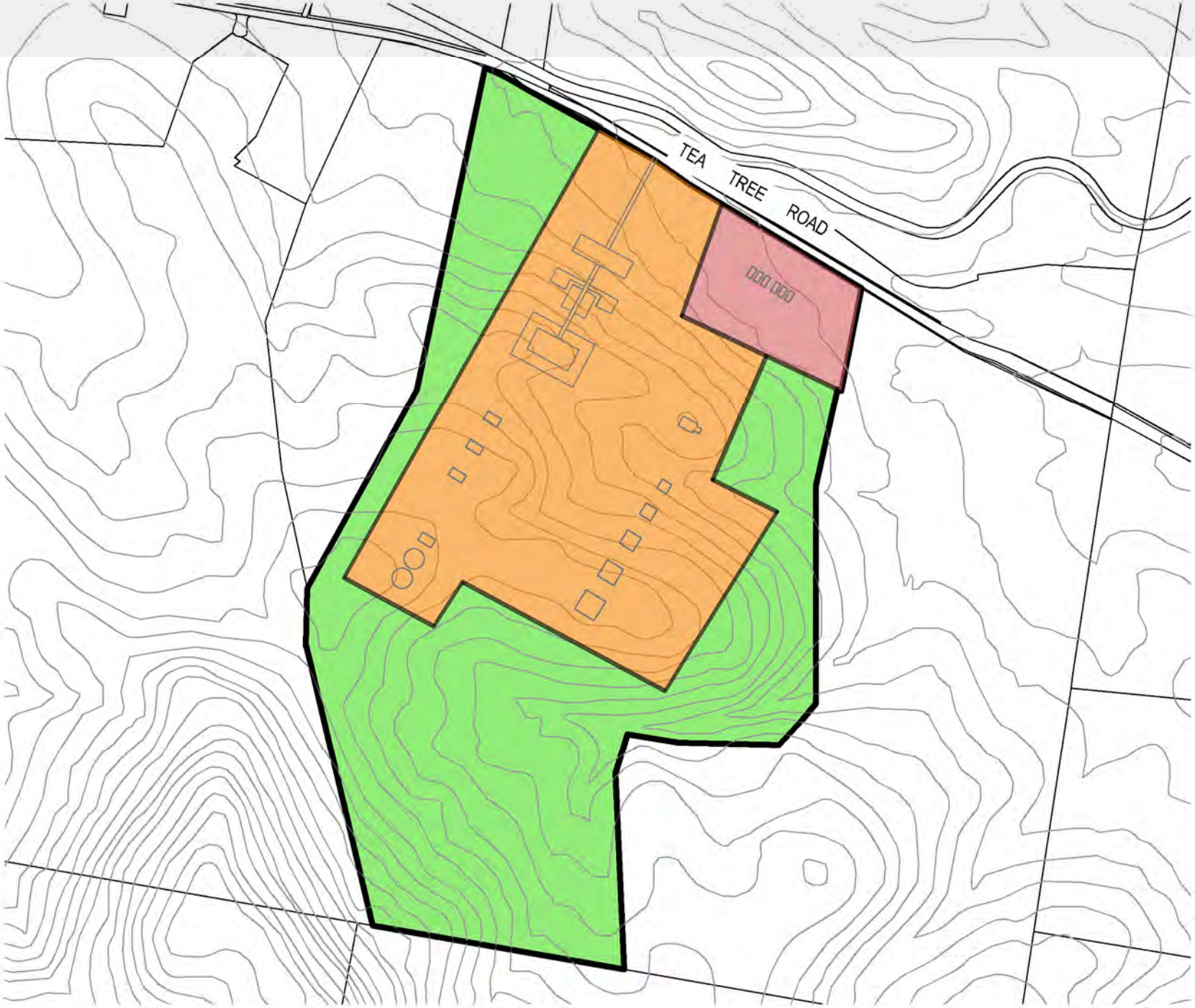
General Fire Regulations 2010 (Tas)

Interim Planning Directive No. 1.1 Bushfire-Prone Areas Code.

Standards Australia, AS 3959-2009 - Construction of buildings in bushfire-prone areas - Incorporating 3 Amendments. 2009, Standards Australia.

Tasmania Fire Service - Chief Officer, Bushfire Hazard Advisory Note No 4 - 2016

ATTACHMENT 1.00
SITE PLAN FOR THE PROPOSED DEVELOPMENT



N

LEGEND

TEMPLE, CULTURAL & EDUCATIONAL PRECINCT

MIXED USE PRECINCT

OPEN SPACE PRECINCT

0 100 200 300m

SCALE 1:10,000 AT ORIGINAL SIZE

Appendix H – Aboriginal Assessment

Tasmanian Chinese Buddhist Park of Australia
1384 Tea Tree Road, Campania

Aboriginal Cultural Heritage Assessment

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CLIENT: GHD

29.06.2017

CULTURAL
HERITAGE
MANAGEMENT
AUSTRALIA

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Executive Summary

Project Background
Holy Tantra Esoteric Buddhism Inc. are proposing to develop the Tasmanian Chinese Buddhist Cultural Park of Australia. The development will focused within a 106.5ha parcel of land known as 1384 Tea Tree Road, Campania (see Figures 1-3).

Planning will consist of two major blocks. The first block will be the temple complex, and the second will consist of structures for Buddhist cultural studies, international conference centres, Buddhist scriptural library, and exhibition halls. According to the traditional symmetrical layout of temple complexes, all structures will use the temple complex as the central axis, with Buddhist cultural research exchange facilities and accommodation (for Sangha and tourists) situated on both sides of the temple complex (see Figures 4 and 5).

CHMA Pty and Ltd and Vernon Graham (AHO) have been engaged to undertake an Aboriginal heritage assessment for the proposed Tasmanian Chinese Buddhist Cultural Park of Australia. This report presents the findings of the assessment.

Registered Aboriginal Sites in the Vicinity of the Study Area
As part of Stage 1 of the present assessment a search was carried out of Aboriginal Heritage Register (AHR) to determine the extent of registered Aboriginal heritage sites within and in the general vicinity of the study area.

The search shows that there are a total of 14 registered sites that are located within a 3km radius of the study area. Eight of these sites are classified as artefact scatters, with the remaining six sites being isolated artefacts. None of these 14 registered sites are located within the bounds of the study area. The closest sites to the study area are situated over 1km to the south-east and north-west.

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

Results of the Field Survey
The field survey assessment was conducted over a period of 1 day (6-8-2015) by Stuart Huys (CHMA archaeologist) and Vernon Graham (Aboriginal Heritage Officer). The team was also accompanied by Richard J. Ho (a representative from the Holy Tantra Esoteric Buddhism Inc), who was able to show the team across the proposed footprint of the development.

The survey assessment involved the field team walking a series of survey transects within the bounds of the study area. In total, 8.9km of transects were walked within the study area. The average width of each transect was estimated to be 10m. These transects were aligned across most parts of the study area, with particular attention paid to the proposed development footprint of the Tasmanian Chinese Buddhist Cultural Park.

During the course of the field survey assessment, the team identified one Aboriginal site (AH13103). The site, which is classified as an isolated artefact, is located in the northern portion of the study area, approximately 20m to the south of Tea Tree Road. The site appears to be situated outside the development footprint. Table i provides the summary details for this site, with Figure 1 showing the site location. The detailed description for this site is presented in Appendix 2.

Table i: Summary details for Aboriginal site AH13103, identified during the course of survey assessment of the Study Area

AH No.	Grid Reference (GDA 94)	Site Type	Site Description
AH13103	E532182 N5275515	Isolated artefact	The site is located on the basal northern side slopes of a prominent hill, where the hill slopes interface with the flat valley floor of a small east-west trending valley system (Tea Tree Valley). The site was identified on a recently ploughed strip of land measuring approximately 80m in length (east-west) x 20m wide. The ploughed strip of land runs parallel to the southern edge of Tea Tree Road, right on the northern boundary of the study area. ***Artefact Details*** - Grey/brown chert flake (use-wear on distal margin) 36mm x 64mm x 7mm

In addition to site AH13103, five separate sand stone overhangs were recorded within the study area. These overhangs are all clustered along a sand stone cliff line in the central portion of the study area. The five overhangs appear to be situated outside the proposed development footprint.

The field team carried out a detailed inspection of each of these overhangs, but did not identify any evidence to indicate that these overhangs may have been occupied Aboriginal rock shelter sites. No stone artefacts were identified within or in the immediate vicinity of the overhangs, no hearths (Aboriginal fire places were identified on the shelter floors, and there was no evidence of Aboriginal rock art. Given the absence of evidence for Aboriginal occupation, these overhangs have not been classified as Aboriginal sites.

Three of the overhangs (Overhangs 1-4-5) are assessed as having a low-moderate potential for having been occupied by Aboriginal people in the past. This is based on ease of access to the overhangs, the size of the overhangs, the presence of a flat to gently sloping floor, and soil deposits on the floor. The other two overhangs (Overhangs 2 and 3) are assessed as having a low potential for having been the focus of Aboriginal occupation in the past. This is based on the difficulty of access to the overhangs, the sloping nature of the overhang floors and the absence of soil deposits on the floors. Interestingly, overhangs 2 and 3 both had European graffiti.

Table ii provides the summary details for the overhangs, with Figure i showing the locations of these overhangs.

Besides site AH13103, and the five sand stone overhangs, no other Aboriginal sites or features were identified within the study area. The general impression generated from the field survey is that site and artefact densities within the study area is likely to be low to very low, reflecting sporadic Aboriginal activity through this landscape. This is generally consistent with the findings of previous archaeological research in the region. The detailed results of the field survey are presented in section 7 of this report.

Table ii: Summary details for sandstone overhangs recorded during the survey

Overhang Feature	Grid Reference (GDA 94)	Description
Overhang 1	E531900 N5275007	Located on upper north side slopes of ridge line. NE facing with relatively easy access from approaches at base of cliff line. Overhang floor is flat to gently sloping with deposits up to 10cm in depth (see Plate 22). Height at overhang entrance: 2.2m Height at rear of overhang: 1.25m Width of overhang: 2.4m Depth of overhang: 3.8m Low-Moderate potential for occupation.
Overhang 2	E531942 N5274880	Located on upper north side slopes of ridge line. North facing overhang is 3-4m up steep cliff line, making access moderately difficult. Overhang floor is sloping with no depth of deposit. No evidence of Aboriginal occupation. Some European graffiti on rear wall of overhang, dating to 1940s (see Plates 23 and 24). Height at overhang entrance: 1.9m Height at rear of overhang: 1.1m Width of overhang: 7.2m Depth of overhang: 3.3m Low potential for occupation.
Overhang 3	E531957 N5274865	Located on upper north side slopes of ridge line. North facing overhang is 3-4m up steep cliff line, making access moderately difficult. Overhang floor is sloping with no depth of deposit. No evidence of Aboriginal occupation. Some European graffiti on rear wall of overhang, dating to 1940s (see Plate 25). Height at overhang entrance: 2.5m Height at rear of overhang: 1.2m Width of overhang: 8.1m Depth of overhang: 3.6m Low potential for occupation.
Overhang 4	E531981 N5274820	Located on upper north side slopes of ridge line. NE facing with relatively easy access from approaches at base of cliff line. Overhang floor is flat to gently sloping with deposits up to 5cm in depth (see Plate 26). Height at overhang entrance: 1.3m Height at rear of overhang: 0.8m Width of overhang: 2.4m Depth of overhang: 2.5m Low-Moderate potential for occupation.

Overhang Feature	Grid Reference (GDA 94)	Description
Overhang 5	E532030 N5274810	Located on upper north side slopes of ridge line. NE facing with relatively easy access from approaches at base of cliff line. Overhang floor is flat to gently sloping with deposits up to 10cm in depth (see Plate 27). Height at overhang entrance: 2.9m Height at rear of overhang: 1.5m Width of overhang: 6.1m Depth of overhang: 2.5m Low-Moderate potential for occupation.

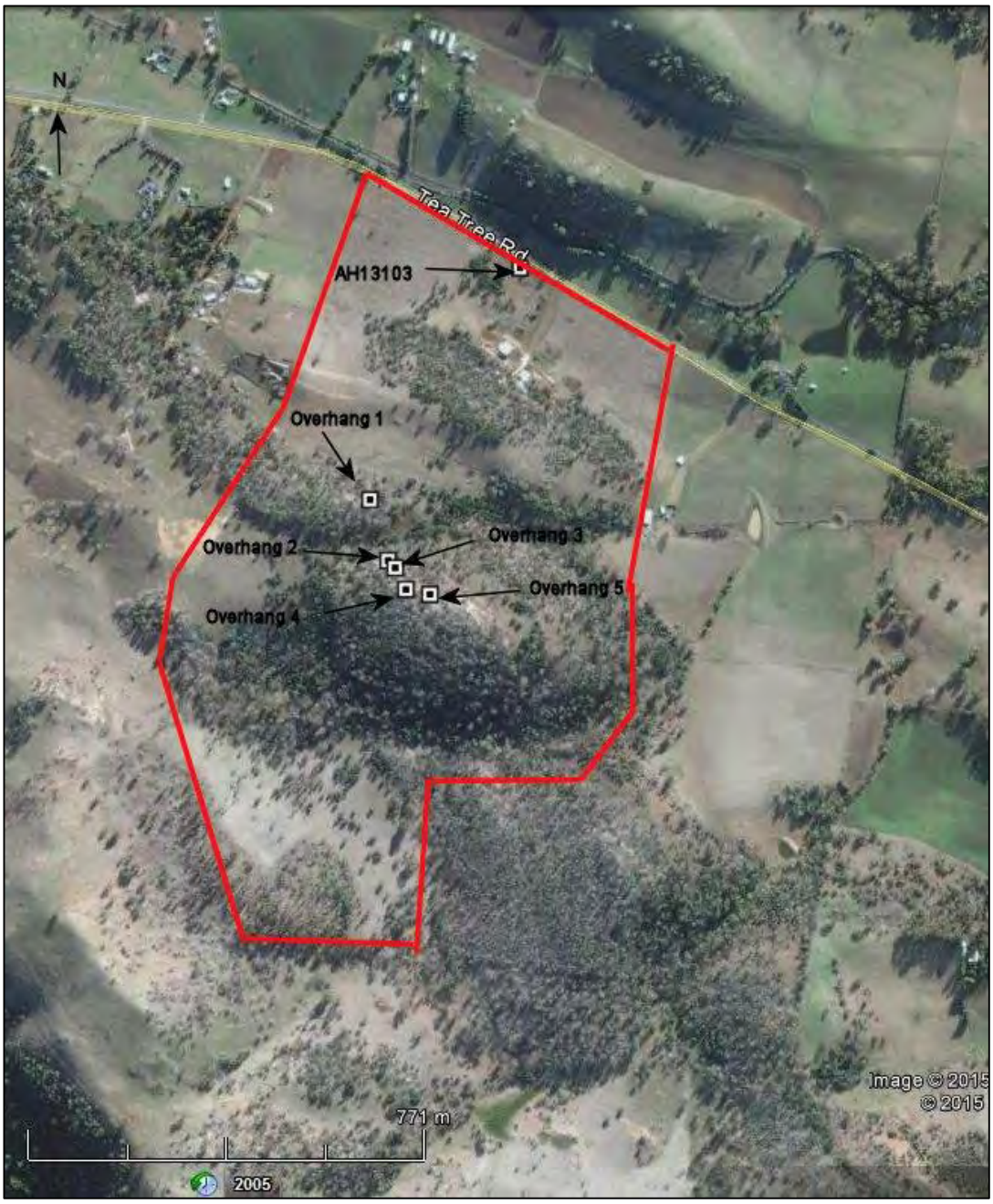


Figure i: The location of site AH13103 and the five sand stone overhangs recorded during the field survey (Google earth map)

Significance Assessments

One Aboriginal site was recorded during the present field survey (site AH13103). The site 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 iii provides the summary details for significance ratings for AH13103. A more detailed explanation for the assessment ratings are presented in section 8 of this report.

Table iii: Summary significance ratings for registered Aboriginal site AH13103

AH Site Number	Site Type	Scientific Significance	Aesthetic Significance	Historic Significance	Social Significance
AH13103	Isolated artefact	Low	Low-medium	N/A	Medium

Cultural Heritage Management Recommendations

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

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

The recommendations are aimed at minimising the impact of the proposed Tasmanian Chinese Buddhist Park of Australia development on the Aboriginal cultural heritage resources present within the study area.

Table iv provides a summary overview of the management recommendations. The more detailed recommendations are presented in section 11 of this report.

Table iv: Summary management recommendations for Aboriginal heritage sites and features identified as part of the Aboriginal heritage assessment

Site	Grid Reference (GDA 94)	Management Recommendations
AH13103	E532182 N5275515	- Erect temporary protective barricading around site, note location and avoid. - If it appears that site may be impacted then obtain Permit.
Sandstone Overhangs 1-5	E553500 N5230970	- Note location of the five sand stone overhangs and avoid impacts. If impacts on any of the five overhangs may occur, then liaise with AHT regarding further heritage requirements.

General Recommendations

- Apart from Aboriginal site (AH13103) and the sandstone overhangs dealt with in the above management recommendations, no other Aboriginal features or areas of specific archaeological sensitivity were identified within the study

area. There are therefore no further site or area specific management recommendations that apply to this project.

- If, during the course of the proposed development works, previously undetected archaeological sites or objects are located, the processes outlined in the Unanticipated Discovery Plan should be followed (see section 12).

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

1.0 Project Outline

1.1 Project Background

Holy Tantra Esoteric Buddhism Inc. are proposing to develop the Tasmanian Chinese Buddhist Cultural Park of Australia. The development will focused within a 106.5ha parcel of land known as 1384 Tea Tree Road, Campania (see Figures 1-3).

Planning will consist of two major blocks. The first block will be the temple complex, and the second will consist of structures for Buddhist cultural studies, international conference centres, Buddhist scriptural library, and exhibition halls. According to the traditional symmetrical layout of temple complexes, all structures will use the temple complex as the central axis, with Buddhist cultural research exchange facilities and accommodation (for Sangha and tourists) situated on both sides of the temple complex (see Figures 4 and 5).

CHMA Pty and Ltd and Vernon Graham (AHO) have been engaged to undertake an Aboriginal heritage assessment for the proposed Tasmanian Chinese Buddhist Cultural Park of Australia. This report presents the findings of the assessment.

1.2 Aims of the Investigation

The principal aims of the present Aboriginal heritage assessment are as follows.

- Complete an Aboriginal Heritage Assessment of the 1384 Tea Tree Road Campania property (the study area), in accordance with the guidelines produced by Aboriginal Heritage Tasmania;
- To determine the extent of previously identified Aboriginal heritage sites within and in the immediate vicinity of the study area.
- To locate and document Aboriginal heritage sites that may be present within the identified bounds of the study area.
- To assess the archaeological sensitivity values of the study area.
- To assess the scientific and Aboriginal cultural values of identified Aboriginal heritage sites.
- To develop a detailed set of management strategies which are aimed at minimising the impacts of the proposed Tasmanian Chinese Buddhist Cultural Park of Australia development on the Aboriginal heritage resources in the study area.

1.3 Limitations of the Investigation

All archaeological investigations are subject to limitations that may affect the reliability of the results.

The main constraint to the present investigation was restricted surface visibility due primarily to vegetation cover. At the time of the field survey, surface visibility across the majority of the study area was restricted to an estimated average of around 30%. These constraints limited the effectiveness of the survey assessment. In an effort to increase the effective coverage of the field survey, all areas where there was improved surface visibility (vehicle tracks, erosion scalds etc) were the focus of a

detailed inspection. The issue of surface visibility is further discussed in section 6 of this report.

1.4 Project Methodology

A three stage project methodology was implemented for this assessment.

Stage 1 (Pre-Fieldwork Background Work)

Prior to field work being undertaken, the following tasks were completed by Stuart Huys (CHMA archaeologist).

Consultation with Aboriginal Heritage Tasmania (AHT)

Aboriginal Heritage Tasmania (AHT) was contacted and informed that a field survey was to be undertaken for the proposed Tasmanian Chinese Buddhist Cultural Park of Australia development. 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.

The collation of relevant documentation for the project

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

- A review of the relevant heritage registers (AHR register) and the collation of information pertaining to any registered heritage sites located within the general vicinity of the study area;
- Maps of the study area;
- Relevant reports documenting the outcomes of previous Aboriginal heritage studies in the vicinity of the study area;
- Ethno-historic literature for the region;
- References to the land use history of the study area;
- GIS Information relating to landscape units present in the study area;
- Geotechnical information for the study area, including soil and geology data.

Consultation with Vernon Graham (Aboriginal Heritage Officer)

Vernon Graham is the designated Aboriginal Heritage Officer for the present investigations. As part of Stage 1 works Stuart Huys (CHMA archaeologist) and Vernon Graham were in regular contact. The main purpose of this contact was to discuss the scope of the present investigations, to ratify the proposed methodology for the investigations and to co-ordinate the timeframes for implementing field work.

Stage 2 (Field Work)

Stage 2 involved the field work component of the project. The field survey assessment was conducted over a period of 1 day (6-8-2015) by Stuart Huys (CHMA archaeologist) and Vernon Graham (Aboriginal Heritage Officer). The team was also accompanied by Richard J. Ho (a representative from the Holy Tantra Esoteric Buddhism Inc), who was able to show the team across the proposed footprint of the development.

The survey assessment involved the field team walking a series of survey transects within the bounds of the study area. In total, 8.9km of transects were walked within the study area. The average width of each transect was estimated to be 10m. The transects were aligned across most parts of the study area, with particular attention paid to the proposed development footprint of the Tasmanian Chinese Buddhist Cultural Park.

The results of the field investigation were discussed by Vernon Graham and Stuart Huys. This included the potential cultural and archaeological sensitivity of the study area, and possible management options.

Stage 3 (Report Preparation)

Stage three of the project involved the production of a Draft and Final Report which includes an analysis of the data obtained from the field survey and the development of heritage management recommendations. The report was prepared by Stuart Huys (CHMA), in liaison with Vernon Graham (Aboriginal Heritage Officer).

Plate 1: Vernon Graham (Aboriginal Heritage Officer) and Richard J. Ho (a representative from the Holy Tantra Esoteric Buddhism Inc)

Figure 1: The location of the study area (State Map Google Earth Image)

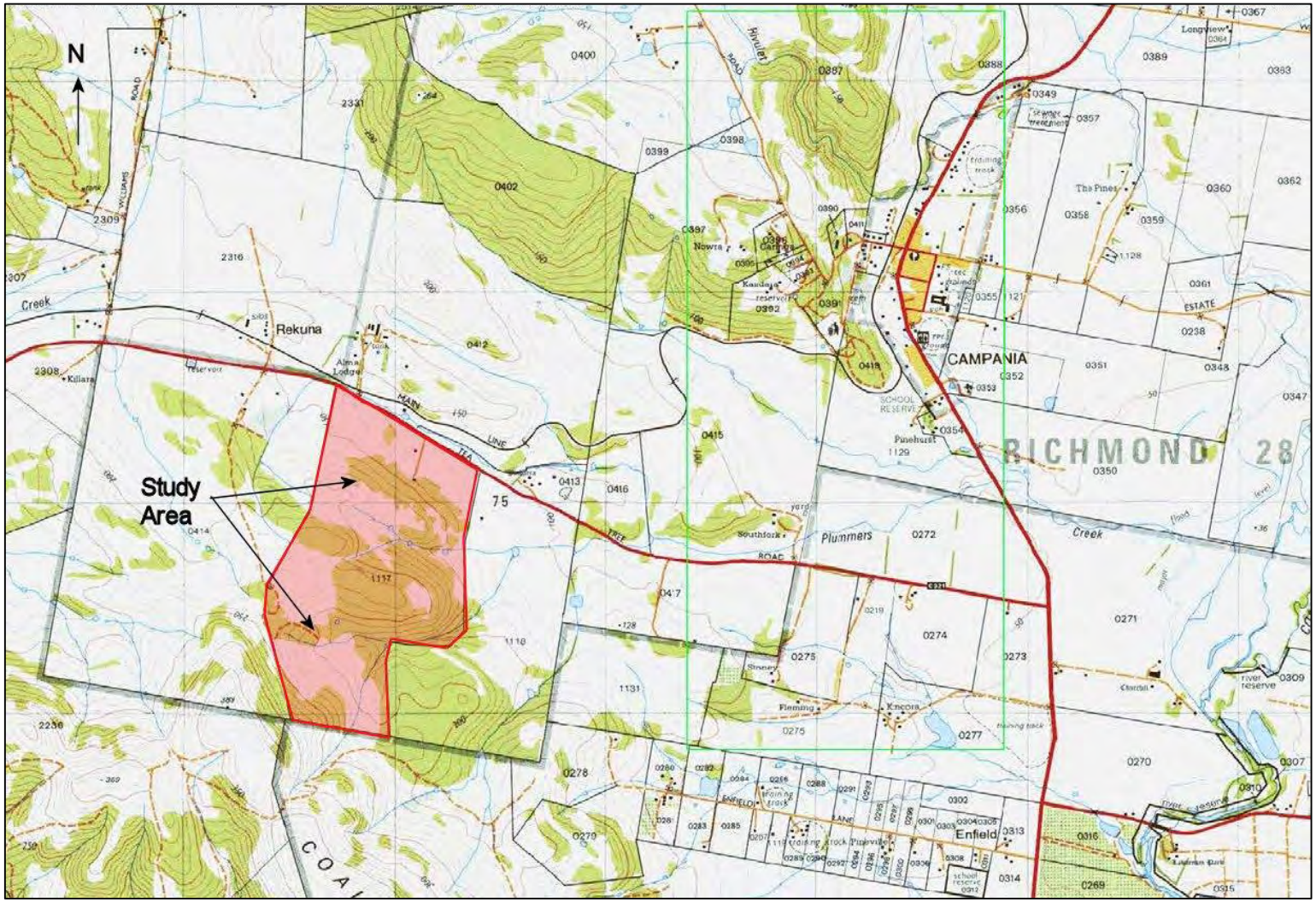


Figure 2: The property boundaries of 1384 Tea Tree Road Campania

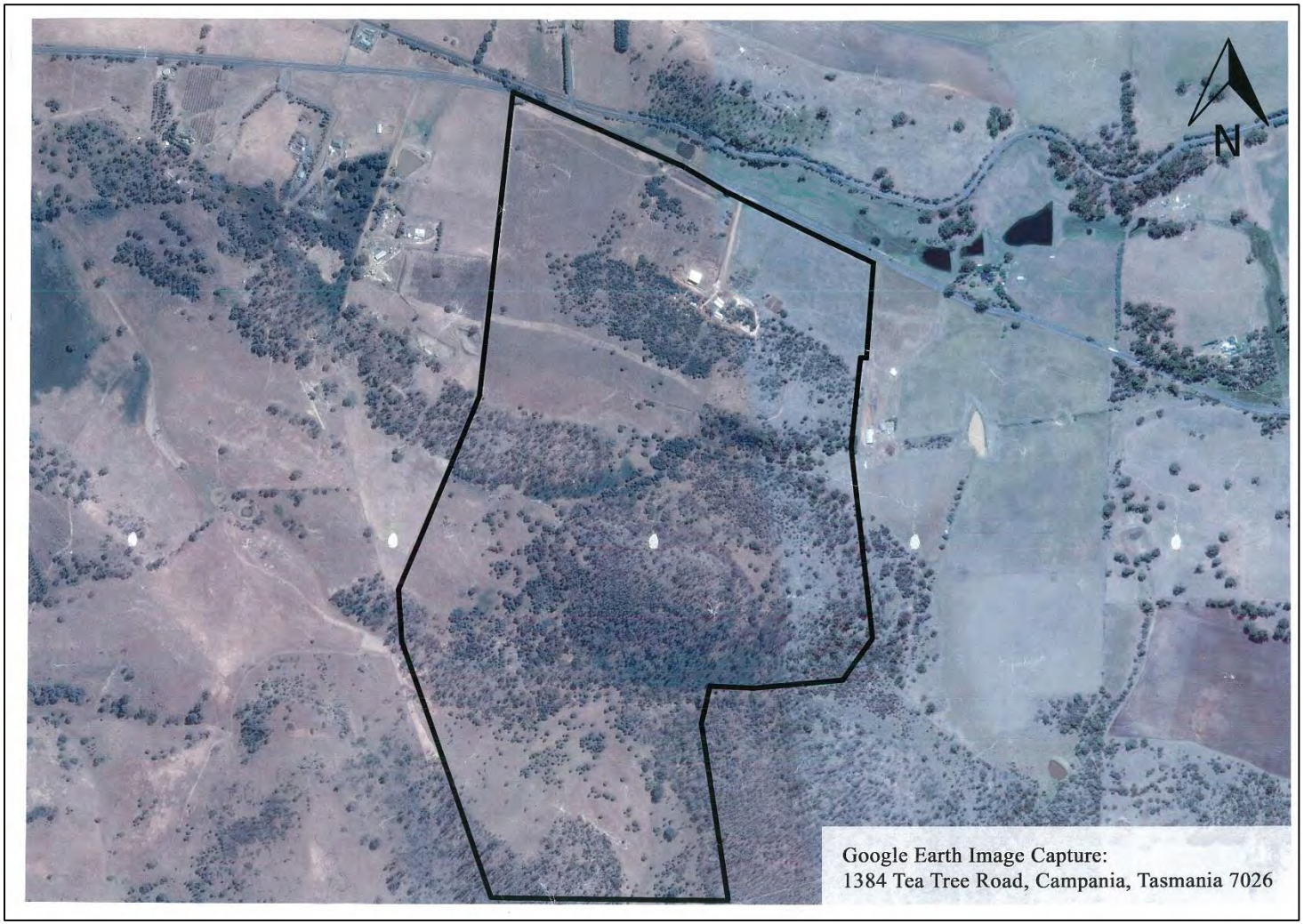


Figure 3: The property boundaries of 1384 Tea Tree Road Campania (Google Earth Image)

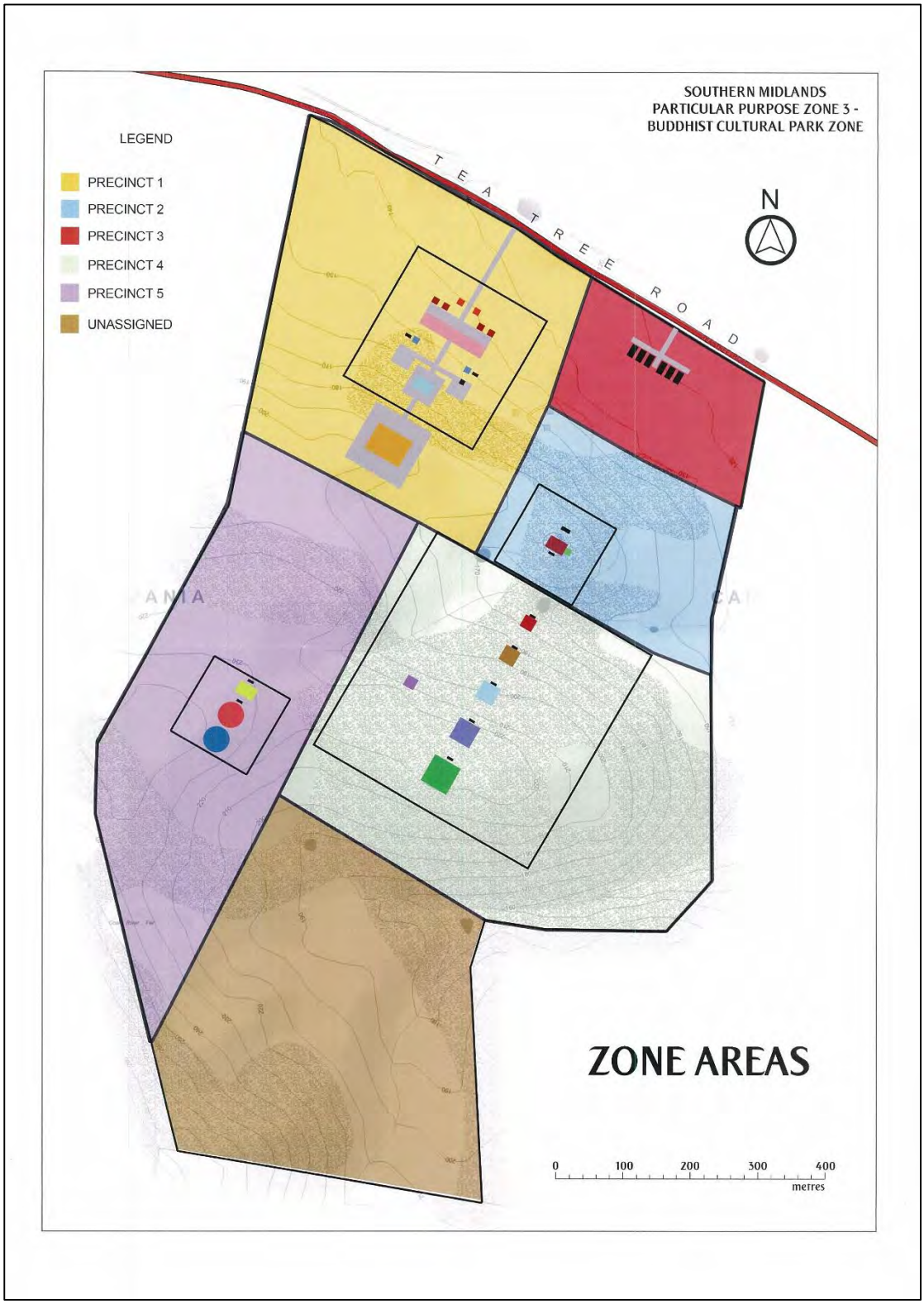


Figure 4: Plan showing the proposed design layout of the Chinese Buddhist Cultural Park

Figure 5: A schematic diagram showing the proposed design layout of the Chinese Buddhist Cultural Park

2.0 Environmental Context

2.1 Introduction

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

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

The primary environmental factors known to affect archaeological patterning include the presence or absence of water, both permanent and ephemeral, animal and plant resources, stone artefact resources and terrain.

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

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

2.2 Physiography, Landscape Setting and Hydrology

The study area, which is encompasses 106ha, is situated in the Southern Midlands region of Tasmania, approximately 2km to the south-west of the town of Campania, and immediately to the south of Tea Tree Road. It is located on the northern end of a prominent series of hills and ranges, collectively known as the Coal River Tier. These ranges extend form the town of Richmond, north through to the Tea Tree Road, and fringe the western side of the Coal River Valley (see Figure 6). The terrain within the study area varies considerably. Within the southern and central portion of the study

area there are three prominent east-west trending ridge lines that extend across the study area. The spines of these ridges are characteristically broad and flat, with the gradient of the side slopes of the ridges varying from moderate to steep, 10-40º (see Plates 2 and 3). Between the three ridges are a series of small, narrow, steeply incised east-west trending gullies, which are drained by un-named ephemeral creek lines. In the northern portion of the study area, closer to Tea Tree Road, the terrain is more gently undulating, with the northern side slopes of the ridges gradually decreasing in gradient from 30º down to around 2-3º (see Plate 4).

A small east-west trending valley system is situated on the northern boundary of the study area. Tea Tree Road runs through this valley. This valley is fringed by another prominent series of ranges associated with the Lagoon Tier. A small saddle located just to the north of the study area forms the head of the valley and the watershed point. To the east of the saddle the water shed drains easterly down to the Coal River Valley, with Plummers Creek being the main creek line. West of the saddle, Woodlands Creek flows in a westerly direction, emptying into the Jordan River, around Pontville. The small valley forms a link with the larger Coal River and Jordan River valleys to the east and west. The valley opens out on to the much broader Coal River Valley, around 3km to the east of the study area, and joins with the Jordan River valley approximately 10km to the west of the study area (see Figure 6).

Plate 2: View east along the spine of one of the main ridge lines that run through the study area

Plate 3: View south across the steeper terrain in the southern portion of the study area

Plate 4: View south across the flatter terrain in the northern portion of the study area

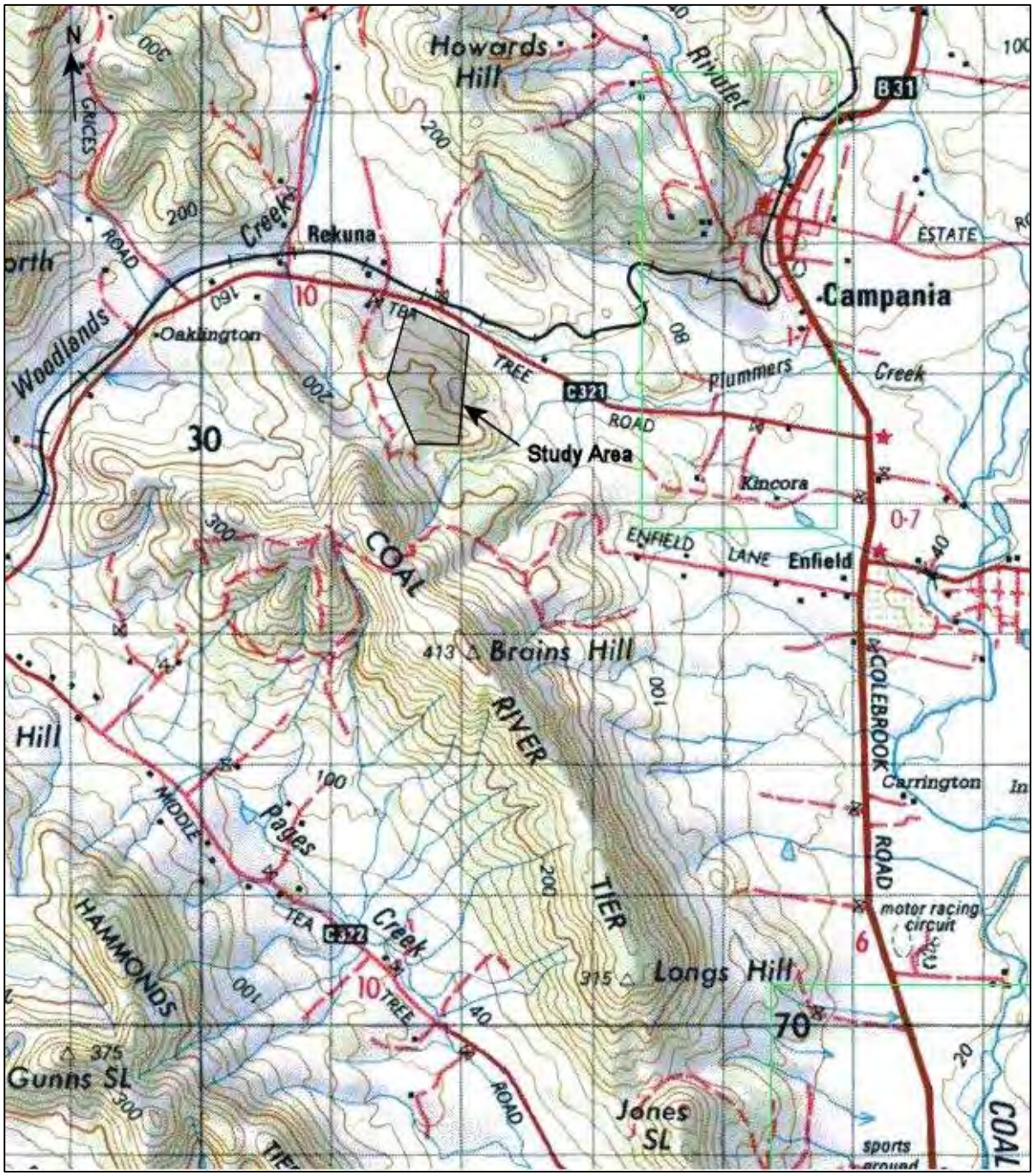


Figure 6: The topography within and in the general surrounds of the study area

2.3 Geology and Soils

Geology

The geology of the study area is broadly divided into Jurassic dolerite in the northern half and medium-coarse grained sandstone and mudstone in the central and southern portions (see Figure 7). The sandstone is exposed to the surface in the central portions of the study area, in the form an extensive east-west trending sandstone escarpment. Along the northern face of this escarpment there are a series of small vertical cliffs, where there are numerous small overhangs that may have been potentially suitable as Aboriginal occupation shelters (see Plate 4).

The north eastern corner of the area is occupied by a large patch of undifferentiated Cainozoic sediment, within which sits beds and granules/cobbles of mudstone, siltstone and sandstone. There is the potential for stone materials to be present in this area that may have been suited for use by Aboriginal people for artefact manufacturing. Mudstone, siltstone and sandstone all have utility in the manufacture of flaked stone artefacts depending upon the individual qualities of the materials present. Mudstone, siltstone and sandstone can all have a high degree of variability in quality even within a single source. The more homogenous and finer grained the material, the greater its utility and the higher the likelihood of its having been utilised in artefact manufacture.

Plate 5: Sandstone escarpment in the central portion of the study area

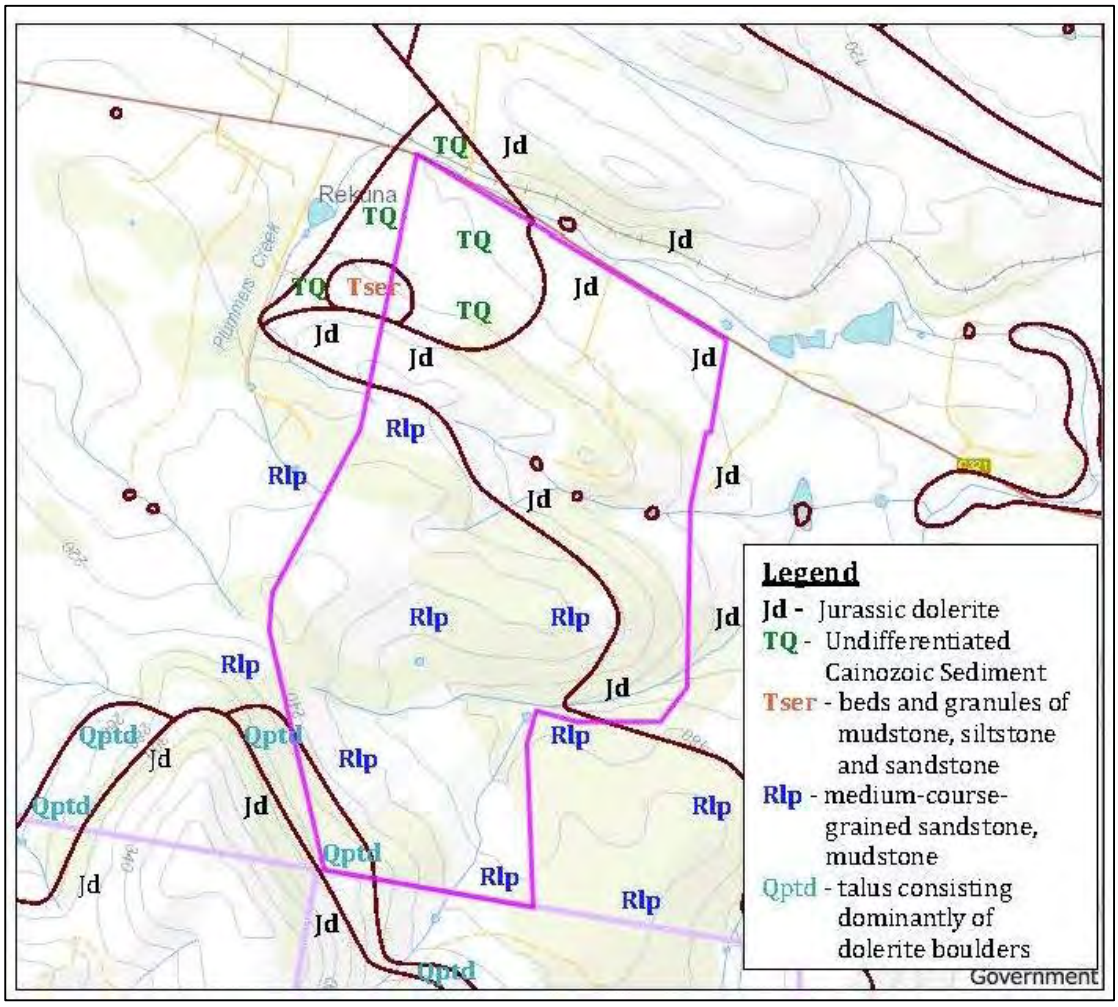


Figure 7: Underlying geology of the study area (image modified from theLIST Geology 25k polygons accessed 11th August 2015)

Soils

Mapped soils for the region show, not surprisingly, a very similar distribution to the geology underlying it. Podzolic soils extend broadly over the underlying areas of sandstone, over the undulating to rolling landscape through the centre and south of the study area (see Plate 6 and Figure 8). The gently undulating land to the north and at the southernmost portion of the study area is covered in the thick black soils occur over the Tertiary dolerite/basalt (see Plate 7 and Figure 8).

Plate 6: Podzolic soils that occur in the central and southern portions of the study area, in association with the sandstone bedrock

Plate 7: Thick black soils occur overlying the Tertiary dolerite/basalt in the northern portion of the study area

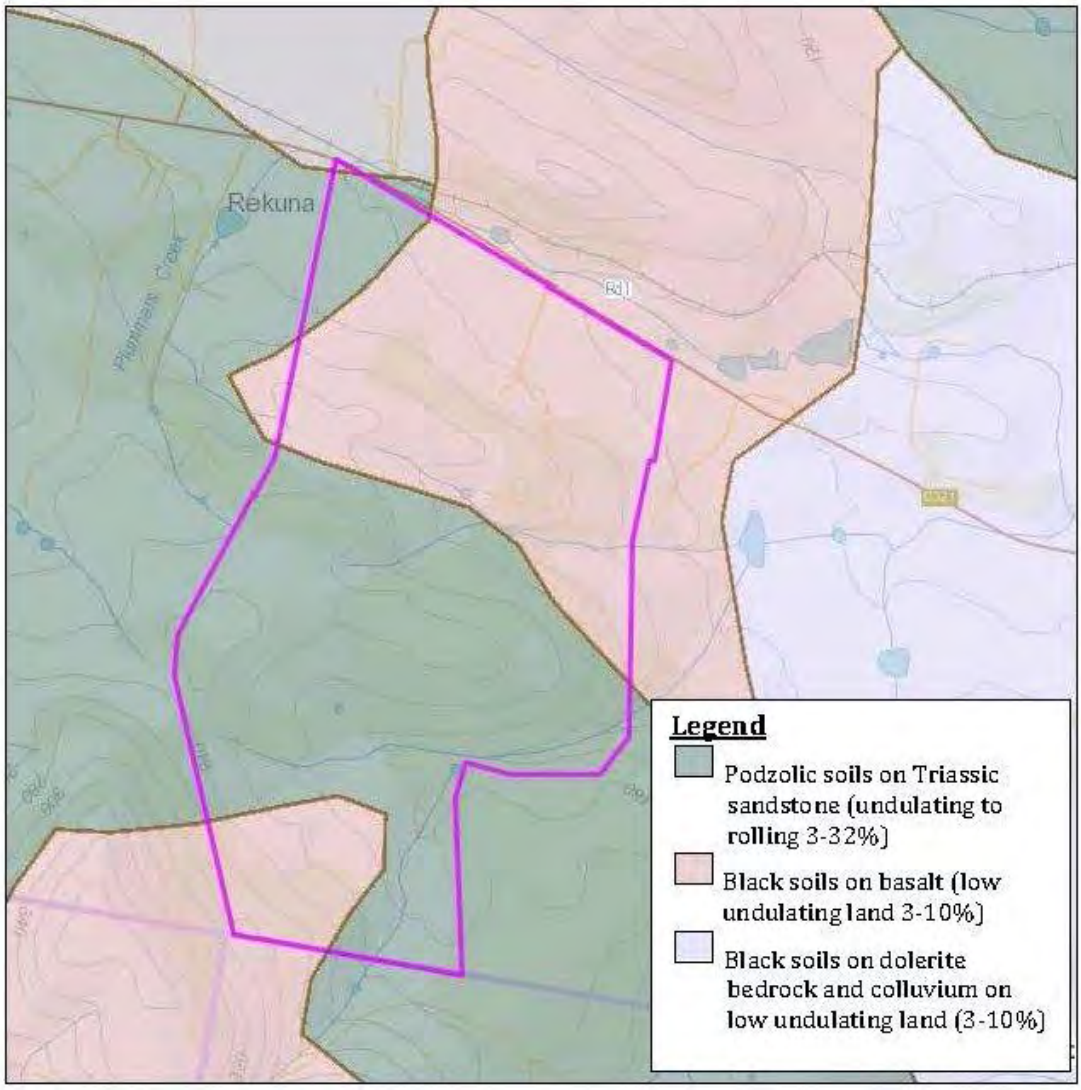


Figure 8: Soil types across the study area (image modified from theLIST Soil Types layer accessed 11th August 2015) (Spanswick and Kidd 2000)

2.4 Vegetation and Past Landscape Use

Three broad groups of vegetation occur across the study area. Both the northern section and a large portion in the south of the study area is entirely agricultural land, subject to extensive clearing in the past and now dominated by a mix of both urban and exotic vegetation types (see Plates 8 and 9). Through the centre of the study area and extending, in patches, into both the north and south portions of the study area, are broad open native grasslands defined as the lowland grassland complex. Within these native grasslands are small patches (in both the east and west of the study area) of native *Eucalyptus viminalis* forest and woodland (see Plate 10 and Figure 9).

Besides the pre-mentioned disturbances associated with land clearing and agricultural practices, there has been very little addition disturbance within the study area. There is an existing house and large shed located on the lower hill slopes in the northern portion of the study area (see Plate 11). A network of graded vehicle

tracks run through the study area, and there are a number of small farm dams located along the ephemeral drainage lines that occur within the study area.

This landscape would originally have offered a range of resources for exploitation by Aboriginal people in the prehistoric period, much of which is now lost through agriculture. The archaeological context of sites found within agricultural areas tends to be somewhat compromised (moved or damaged) by the mechanical processes involved in these activities. Sites occurring within native and relatively untouched areas are thus more likely to have better retained their context. Natural post-depositional processes such as wind and water, erosion and pedogenesis will of course still be a factor in the condition of any site. However the minimal European disturbance to this area dramatically increases the possibility of sites within the area remaining in situ.

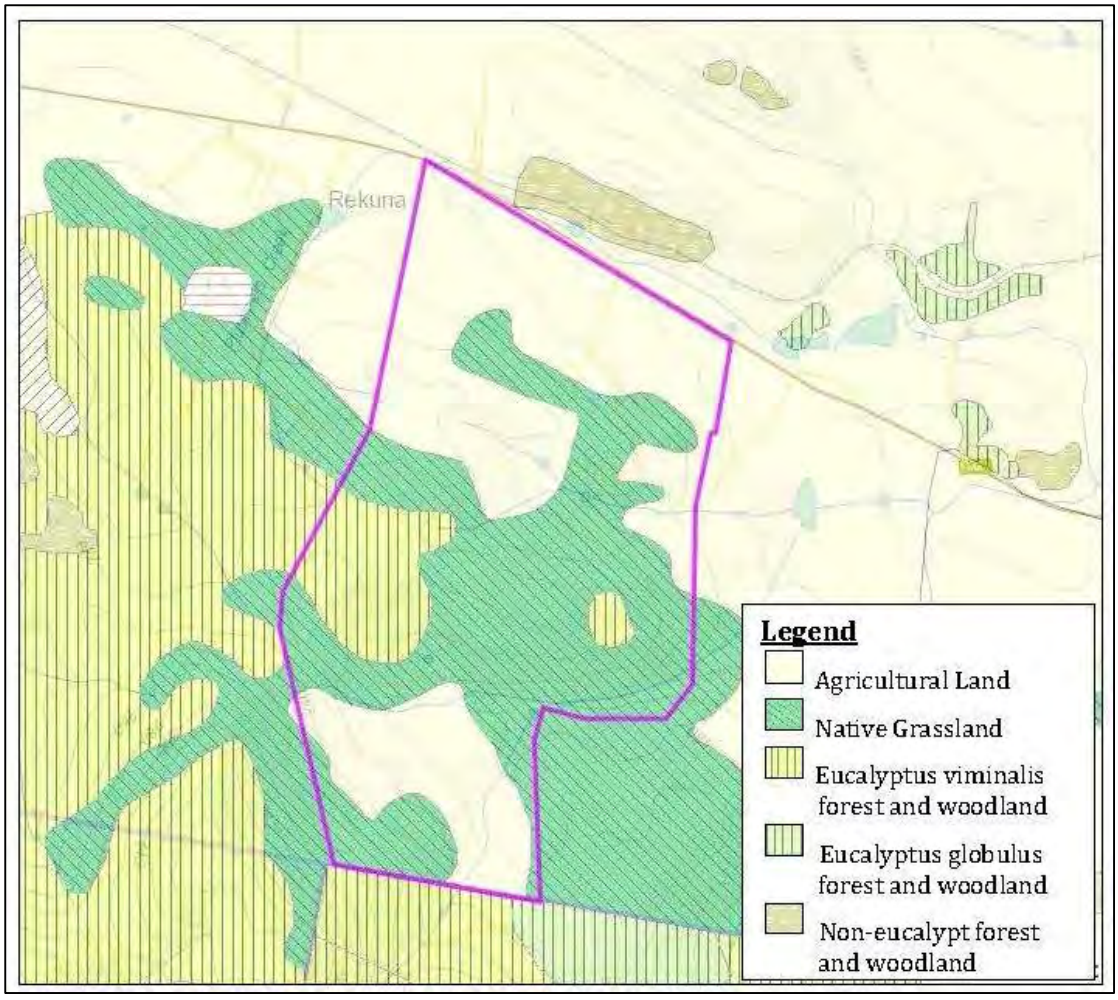


Figure 9: Vegetation within the current study area (map modified from theLIST TASVEG 3.0 layer, accessed 11th August 2015)

Plate 8: View east across the northern portion of the study area which has been extensively cleared of native vegetation and ploughed in the past

Plate 9: View north at land clearing in the southern portion of the study area

Plate 10: Undisturbed portions of the study area with stands of *Eucalyptus viminalis* forest and woodland

Plate 11: View south at existing house and shed in the northern portion of the study area

3.0 Ethno-historic Background

3.1 Ethno-historic Overview

The following provides a brief overview of the nature of pre-contact Aboriginal groupings, Aboriginal concepts of land ownership, and the relationship of both these to pre-contact Aboriginal land use in Australia. The purpose is to establish a basic framework of understanding regarding Aboriginal social organisation, within which the archaeology of the study area may be viewed. Such an understanding is an essential prerequisite to any archaeological research analysing the relationship between Aboriginal people and their environment.

The model of Aboriginal society being divided into a series of tribes, based on Tindale's 1974 publication is now generally considered to be defunct. The tribe is described by the early ethnographers as having rights over a defined tract of land, that included control over entry to people from outside and the right to hunt and extract resources from within the bounds of that area (Keen 2010:46). Several researchers have argued that the concept of a tribe does not account for the complexities of social interaction and organisation found in Aboriginal society (eg, Keen 2004). The tribal model was used for most of the twentieth century by anthropologists to describe the social organisation of Aboriginal groups and how this related to land ownership. There has been a shift to attempts to describe Aboriginal society as multi layered and to explore interconnected relationships that operated within broad social groups.

In Australia the band is generally considered by anthropologists as the basic social and economic unit in pre-contact Australian Aboriginal society (Service 1966, Peterson 1976). The band is described as a small scale population, comprised of between two to six extended family units, or about 14 – 33 people, which together cooperate in the food quest (Service 1966; Keen 2004:106). The composition of this group (in terms of numbers) was not rigid; group size fluctuated in response to factors such as the availability of resources and visiting kin (Peterson 1975).

Individual bands are seen to occupy and exploit a specific range (Service 1966). The concept of a band's 'range' is not easily defined, and is therefore somewhat problematical to delineate. The ideal method of defining range would be to identify the outermost points of an area used by a group in order to demonstrate the total area, or range, in which that band operated. Yet, as Peterson (1986) points out, the kind of evidence needed to achieve this, (details of daily movements over several years) is not available for any group within Australia. Nor is such evidence likely to be discernible in the archaeological record. The practical alternative, both from an archaeological and an anthropological perspective, is to identify the base camps used over a period of time by a group. This provides a rough equivalent of a band's "home range".

Environmental Determinants of Social Organisation

Ecology is, according to Peterson (2008:186) a 'crucial variable' when assessing estate, range and domain. Range normally encompassed the estate, although there were exceptions to this (Peterson 2008:186). In cultures across the world it is impossible to separate natural landscapes from cultural landscapes (White 2003:188). From an archaeological perspective, it is equally impossible to discuss economy and subsistence without reference to the environment.

As Sutton (2008:170) explains, WEH Stanner explored the connectedness of economy, environment and spirituality over forty years ago. Stanner's famous paper 'Aboriginal territorial organisation: estate, range, domain and regime' published in *Oceania* in 1965 was a benchmark as it provided a new framework within which to define and discuss Aboriginal land ownership (Peterson 2008:185). This framework separated concepts of land ownership from the land that people actually used. Peterson (2008:185) suggests that this was a fundamental shift that has influenced the last forty years of anthropological debate.

In coastal and riverine environments where a higher population density could be supported compared to desert environments, people could lead more sedentary lives (Keen 2004:103). In these situations the social organisation of neighbouring groups could become more individualised; whereas in more arid climates people relied on being able to traverse vast tracts of land to access food and water, requiring closer social relations with neighbouring people (Keen 2004:103).

This argument reflects Louis Binford's model of 'foragers' and 'collector' societies. Foragers are highly mobile groups that move regularly and as a whole to new locations in order to exploit resources. In contrast, collector societies may move less often but rely on individual members of a society venturing out beyond the camp site location in order to provide the group with resources to continue residing at the location (Keen 2004:104). Keen (2004:104) suggests that most Australian Aboriginal societies fall within Binford's 'collectors' model – forming home bases and voyaging out from these bases to exploit resources from the surrounding area, which could be very large.

It was economically vital for Aboriginal people to be organised into bands, as this made groups more effective at surviving. Subsistence becomes more efficient and reliable if people are organised into groups that are larger than the nuclear family. This increases the number of 'producers' (people who can actively provide food for a group) and acts as a buffer against the sickness, injury or death of any one individual (Keen 2004:105). However, these groups will never become too large, as increased numbers reduce the mobility of the band, as well as potentially leading to broader social disintegration (Keen 2004:106).

The range of a band had to be capable of providing for the survival of the group for much of the year. Keen (2004) takes an economic view of range and presents a case for the range of a group to be determined by access to preferred food resources. As Keen (2004) argues, availability of foods, food preferences, production techniques and methods of transport all affect the means by which Aboriginal people across

Australia were able to access food resources at varying times of the year. These factors therefore greatly affected mobility; groups had to be able to mobilise and move to where the preferred, available and accessible foods were located (Keen 2004:23).

Keen (2004:126) suggests that seasonal mobility of a particular group is largely influenced by rainfall. In Gippsland, where there are clearly defined seasons, but steady year round rainfall people operated within a broad seasonal migration pattern. However, in the Western desert where rainfall was much less reliable, this was a weaker pattern of seasonal movement. Regular droughts brought on by the El Nino cycles and other more haphazard climatic events all influenced the seasonal movement based on food resources that Aboriginal people required (Keen 2004:79). This affected issues of range, ceremony and interactions with neighbouring groups (Keen 2004:79).

The factors that influence selection of a 'home base' are varied and illustrate the nature of pre-contact Aboriginal societies. Access to fresh water is probably the most fundamental requirement, and will be common to all home base sites. Distance to food resources is the next consideration. As Keen (2004:104) notes it may be that home sites are better located adjacent to less transportable resources, rather than in areas where there is the highest abundance of food items. The distance that an individual collector can travel within a single day forms an important scope of the range of the home base, and therefore the size of the resource pool available. Keen (2004:104) suggests that in hunter gatherer societies around the world, a distance of 20-30km is considered the maximum foraging distance from a home base. People could then establish smaller temporary camps away from the central home site to enable longer foraging journeys (Keen 2004:105).

Despite the difficulties faced in defining ranges, Peterson (1986) believes there is good evidence for supposing that bands are localised and generally have bounded and exclusive ranges. The most significant evidence is ethnographic accounts recording the elaborate rites of entry accorded to visitors when entering a bands range (see Peterson 1986). However, it appears that the boundaries of a group's 'range' were not necessarily clearly demarcated lines. Trigger describes these overlapping boundaries as 'zones of transition' (Trigger 2010:155).

Aspects of Aboriginal Social Organisation

Individual bands or clans were by no means a social or cultural isolate, but rather interacted with each other in a variety of ways. Typically, these interactions involved visitations, marriage, ceremonies and trade. Through these interactions, links were established or re-affirmed between neighbouring bands. The result was the formation of a cluster of bands, wherein there was some sense of collective identity, often expressed in terms of possessing a common and distinctive language (White & Cane 1986). Most people in pre-contact Aboriginal society were multi-lingual and marriages outside of the language group were common (Keen 2004:134). Indeed, within some totemic groups several languages were spoken (Keen 2004:135).

Linguistic inheritance could be multi-layered. Trigger (1992:104) records how in some northern Australian societies most people were (a) multi-lingual and (b) adopted a primary linguistic label based on where their present circumstances were aligned. This implies that linguistic affiliation was perhaps a less formal and more adaptive social mechanism. Trigger (1992:105) suggests that this undermines the concept of linguistic groups, which was a characteristic often used in the past to define tribal groups.

Similarly, Keen argues that a shared language did not necessarily indicate shared cosmic beliefs or social customs, nor did language or dialect clearly define social groups (Keen 2004:135). Rather, Keen suggests that broad social groups tended to define themselves more by location, with reference to the type of environment (coastal, hinterland etc.) or direction (northerners or southerners) (Keen 2004:135). Groups were also sometimes named after and therefore defined by, the name of the leader or a prominent person in that community (Keen 2004:135). Blundell (2003) discusses how the Wandjina rock art sites of the Kimberly formed the cultural and cosmic centres for the 'little countries' or 'dambina' which correlate with concept of an estate as used by anthropologists (Blundell 2003:162).

Keen (2004:170) presents a model of the complexities of Aboriginal society, where an individual's identity depended largely on context. In some situations, Keen (2004) argues language was the defining factor, in another the broad region to which you claimed affinity, and in yet other circumstances it may be totemic identity that was important. Interestingly, Keen (2004:170) suggests that identity was 'most clearly defined' in areas rich in resources, such as coastal zones, while people in more arid environments had less strongly applied rules governing identity. This reflects the imperative for desert people to be on solid relationships with their neighbours. The following section discusses issues of Aboriginal connection to the land in more detail.

Concepts of Aboriginal Land Ownership

The band was in essence a land using group, but not a land owning group. Land ownership was vested in 'the clan' or 'corporate group' which is defined as a broad group of people that shared social characteristics, and was often tied to having rights over certain tracts of land, known as an 'estate' (Keen 2004:134; Peterson 1986).

It is uncertain whether clans within eastern Australia were strictly patrilineal (as is suggested in other parts of Australia), or whether membership was determined more on the basis of place of birth (White and Cane 1986). Keen (2004:136) argues that across Australia it was common for totems to be partifilial, where a child took their father's totem, and that this was strongly tied to land ownership. The totem was an important feature of Aboriginal society and was used to define individuals, small groups and larger groups (Keen 2004:135). This was by no means the only form of land connection across Australia; in some parts a person's place of birth determined which country they were tied to (Keen 2004:137).

Where matrifilial systems operated (where a totem was passed from mother to child) it tended to cause people of the same totemic identity to be dispersed among several land based groups. In this way, matrifilial relations become important when

determining marriage and other social ceremonies, but were not generally connected to land ownership (Keen 2004:137).

The system of patrifilial transition of land ownership concepts is reflected in Patterson's 1811 account of Bennelong's sense of ownership of Goat Island (Keen 2010:45). Patterson wrote that Bennelong had 'inherited' Goat Island from his father, and that he in turn had the right to pass it on to his companion By-gone (Keen 2010:45). This is supported by Eyre's 1845 observations about the hereditary transmission of Aboriginal land ownership (Keen 2010:46).

Ancestral law was the defining principle that controlled access to country and landmarks, including water sources (Keen 2004:299). Tied to this notion are concepts of cosmology, religion and the ongoing influence of the ancestors (Keen 2004:303). Keen suggests that: 'ancestral significance integrated country, resources and technologies into the all-encompassing framework of ancestral law, not only as a mode of control, but as a way of being.' (Keen 2004:303). Myers has also argued that ownership of territory was largely vested in knowledge of the 'stories, objects, and ritual associated with the mythological ancestors of the dreaming at a particular place (in Peterson 2008:192).

Ethnographic and anthropological research provides a context within which to view the archaeological record. The overview presented here reveals the complexities of Aboriginal societies across Australia. It indicates the interrelated nature of the environment, religion and social structure in pre-contact Aboriginal societies and has implications for discussions of the archaeological record.

3.2 Aboriginal Social Organisation in Tasmania

The discussions presented in Section 3.1 regarding concepts of Aboriginal social organisation and notions of land ownership should be taken into account when reviewing the following social structure described for Aboriginal society 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 clan and the nation. The hearth group was the basic family unit and would generally have consisted of a man and woman, their children, aged relatives and sometimes friends and other relatives. The size of hearth groups would generally range from between 2-8 individuals (Jones 1974: Plomley 1983). Plomley (1983:168) provides a description made by Peron of a hearth group he encountered at Port Cygnet.

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

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

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

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

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

Ryan (2012:13) presents a map showing the approximate boundaries for the nine Tasmanian Aboriginal Nations. This map shows that the study area falls within the boundaries of land occupied by Oyster Bay Nation (see Figure 10). According to Ryan (2012:17) the Oyster Bay nation was the largest in Tasmania, 'if not in area then certainly in population' (2012:17). The territory of the Oyster Bay nation covered approximately 8500 square kilometers, 500 of which comprised 'usable coastline' extending along the east coast from 'St Patrick's Head to the Derwent Estuary. The boundary then followed the eastern bank of the River Derwent to the mouth of the Jordan River which it followed inland to St Peters Pass in the Midlands, east past Crown Lagoon, north to the watershed of the Macquarie and Elizabeth rivers at Tooms Lake and Lake Leake and then northeast along the South Esk River back to St Patrick's head' (Ryan 2012:17).

According to Jones (1974), the nation consisted of at least 10-15 clans, which comprised several family groups each. The total number of individuals within a clan ranged between 30 and 80, and it is estimated that the total population of the Oyster Bay nation might have reached 800 people. Each clan had an allocated territory marked by prominent geographic features and covered, on average, between 300 and 500 square kilometers of land (Jones 1974). However, the clan members would

often enter contiguous territories of other bands whilst searching for food (Brown 1991:14). In addition, all clans within the nation followed a similar pattern of seasonal movement (Jones 1974). Each clan had a chief; usually an older man respected for his impressive hunting and fighting skills. Women were often acquired from other bands and forced to stay in their husband's band (Brown 1991:14). All the clans within the nation spoke the same language and shared the same cultural traits (Jones 1974). However, Plomley (1966) indicates some linguistic and cultural differences between clans of the Oyster Bay nation.

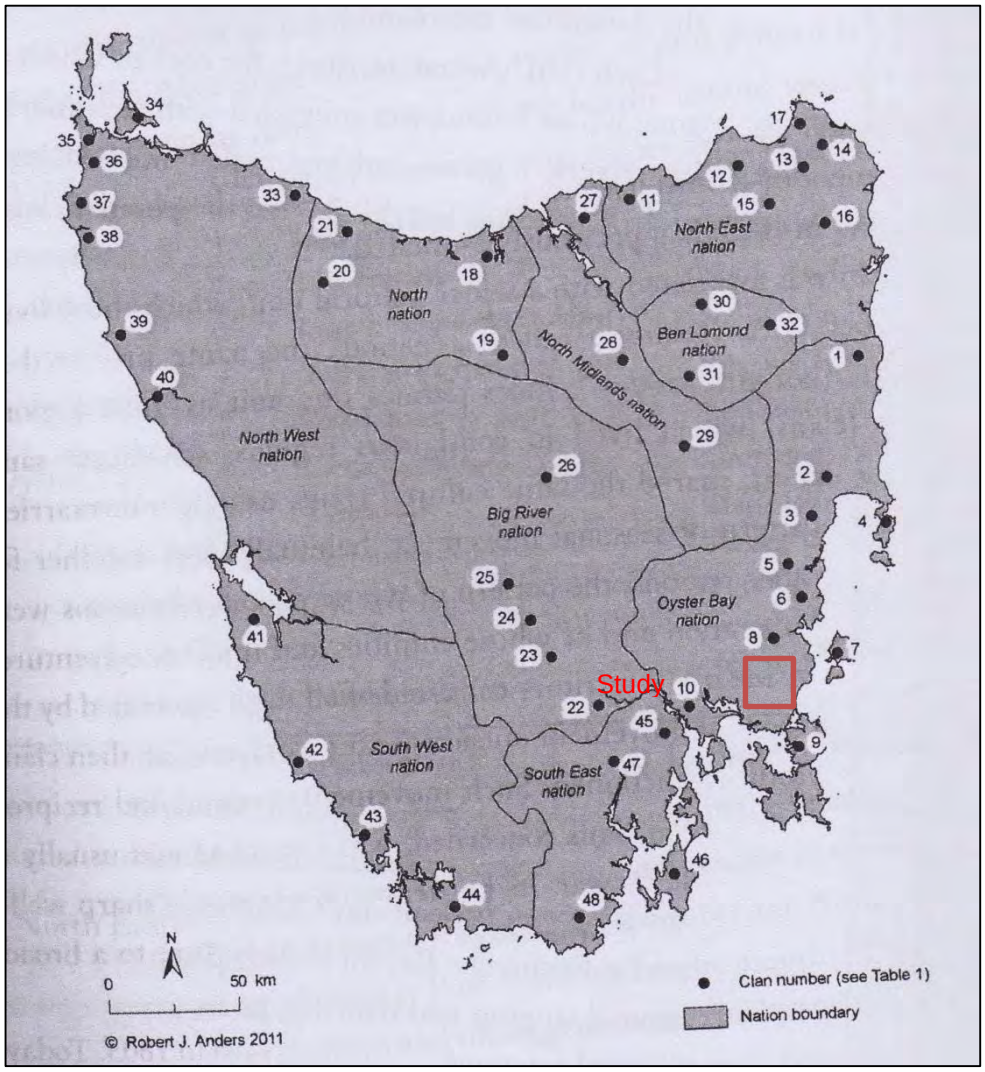


Figure 10: Aboriginal Nations of Tasmania (from Ryan 2012:13)

The Oyster Bay Nation was comprised of at least ten clans (Ryan 2012:15). These clans are listed below:

1. Leetermairremener people were based in the north at St Patricks Head
2. Linetemairrener people at North Moulting Lagoon
3. Loontitetermairrelehoinner people at North Oyster Bay
4. Toorernomairremener people on Schouten Island
5. Poredareme people at Little Swanport
6. Laremairremener people at Grindstone Bay
7. Tyreddeme people on Maria Island

8. Portmairremener people around the Prosser River
9. Pydairrerme people on the Forestier and Tasman Peninsulas and
10. Moomairremener people around Pitt Water and Risdon (Ryan 2012:15)

The present study area falls in an area controlled by either the Moomairremener clan who occupied the areas around Pitt Watter and Risdon, or the Portmairremener people who occupied the area around the Prosser River.

Seasonal Movements

The movement of the Oyster Bay Nation through the landscape is thought to have been largely based on the seasonal availability of food resources. Ryan (2012:17) argues that the clans of the Oyster Bay Nation were aligned within three groups defined on the basis of seasonal movement across the nation (see Figure 11).

The four clans from Little Swanport to the Tasman Peninsula, (the Pydairrerme people on the Forestier and Tasman Peninsulas and the Tyreddeme people on Maria Island), comprise one of the four groups identified by Ryan (2012:18). At around the start of August the Little Swanport group of clans travelled inland through the Prosser and Little Swanport River valleys. The coastline provided the basis of the subsistence economy of this group throughout the year. However, in the summer months some members of the southern Oyster Bay clans travelled into the high country, through St Peter's Pass, to hunt in the territory of the Big River Nation (Ryan 2012:18). In early spring, these groups would congregate at Moulting Lagoon and Schouten Island to take advantage of the large flocks of migrating sea birds that congregated on the lagoon and islands. During summer these clans travelled up the St Pauls and Break O'Day Rivers to the Ben Lomond plateau, or along the Meredith River, across the Midlands and into the highlands of the Great Western Tiers north of the Isis River (Ryan 2012:18). They would return to the coast in early January to hunt mutton bird and seals (Ryan 2012:20). In March, the clans would congregate around the kangaroo hunting grounds at Stockers Bottom (Ryan 2012:20).

The four clans from St Peters Head to Schouten Island and the two clans from Maria Island and Pitt Water/Risdon comprise the remaining groups identified by Ryan (2012:17-18). These clans are believed to have focused on the shorelines of their respective territories all year round (Ryan 2012:18). In summer, however, these clans made visits north into the Big River Nation to attend ceremonies (Ryan 2012:18). By early autumn, they would return to the Midlands and be settled back on the southern coastlines by June (Ryan 2012:18).

The early European records mention a network of paths and roads, which significantly varied in length, from local routes (Plomley 1983) to links connecting distant areas (Plomley 1966). Brown (1991:20) suggests a rather formalised manner of Aboriginal movement through the landscape; however, it is also possible that these routes might have been formed randomly. The patterns of movement, flexible enough to adjust to constantly changing natural conditions, were partially influenced by the seasonal availability of food resources, such as eggs, fruits or certain animal species (Brown 1991:20-21). There is only scattered historical evidence as to what time of the year the Aboriginal people congregated along the coast and it is merely

based on the recorded presence or absence of coastal fires encountered by European observers (Brown 1991:21).

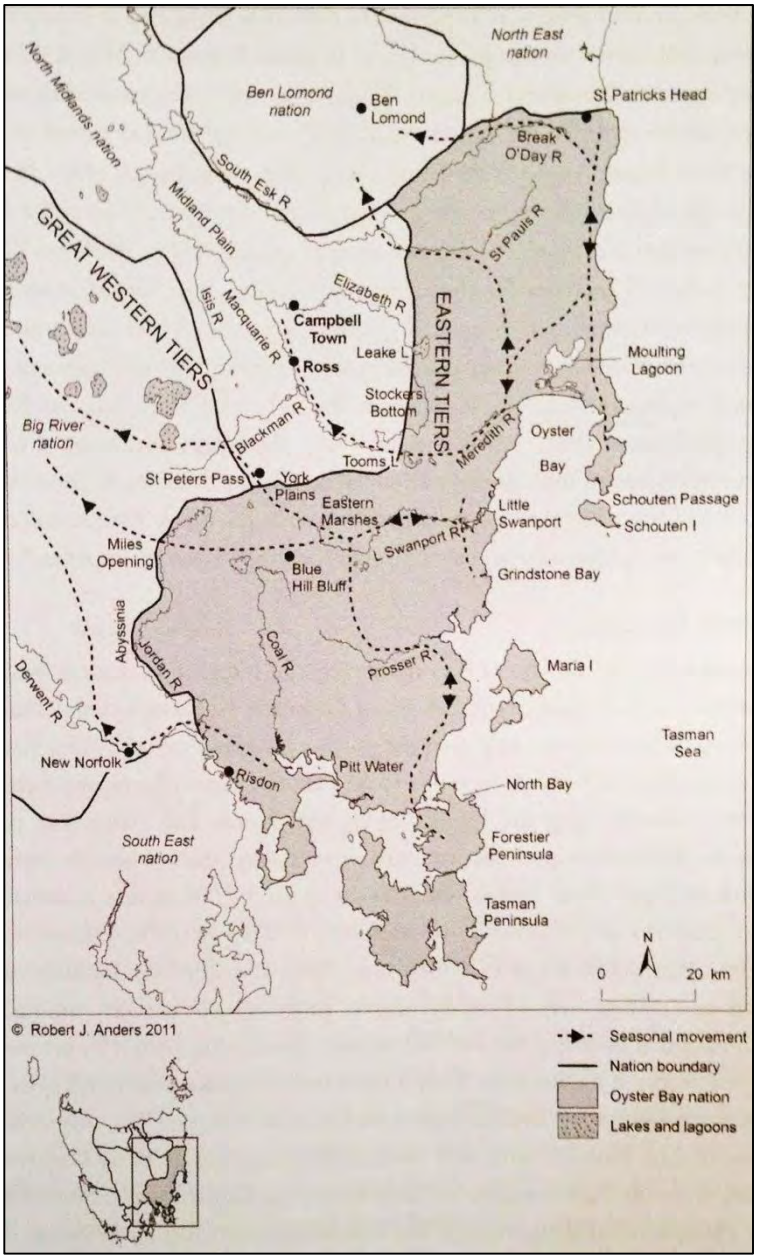


Figure 11: Seasonal migration routes of the Oyster Bay Nation (Ryan 2012:20)

Relations between the Oyster Bay Nation and other adjoining Nations (the North East, Ben Lomond, North Midlands, Big River and South East Nations) varied considerably (Brown 1991:21). There is recorded animosity between some clans of the Oyster Bay Nation and those of the North Midlands, North East and South East Nations. On the other hand, the relationships between the Oyster Bay Nation and the Big River Nation seemed to be relatively harmonious, with some ethno-historical records of trading beads and red ochre, as well as cultural exchange between the two groups. Moreover, it is known that members of the Big River Nation foraged on the territory that belonged to the Oyster Bay Nation. In addition, at one point, these

two nations are believed to have joined together to fight a group from the Midlands Nation (Plomley 1966).

Large gatherings of Aboriginal people assumed to be of the Oyster Bay Nation have been recorded in the ethnographic records. McGowan (1985:92) reports that in May 1804 a large group of Aborigines, variously estimated to be up to 500 individuals, including men women and children were observed hunting kangaroo near the first European settlement at Risdon Cove.

Robinson noted that a Mr. Earl related *'…that he had seen as many as 500 in one mob together, i.e. the Coal River mob.'* (Robinson in Plomley (1966:595).

One of the earliest and more comprehensive descriptions of the Oyster Bay people comes from Lieutenant Le Dez who was a member of the Marion du Fresne expedition of 1772. The following account was written after he encountered Aboriginal people from the Oyster Bay Nation at Forestier Peninsula at North Bay:

> *Their usual height is 5 ½ feet, their colour very much approaches rust, but they rub themselves with black and make patterns in the form of a crescent on their bodies with this colour: their hair is cottony; they have very little beard, very white teeth, large, harsh features and a wild appearance. In general they are badly built with thin bodies and slender legs and thighs. They speak with a singular vivacity and we were unable to distinguish any sounds other than these: la-ga – la-ga.*
>
> *I compared them with the inhabitants of New Holland of whom Dampier speaks. They appear to me widely dispersed or wandering like them in bands or in families and the fires we have often seen along the coast are probably the places where each band stops. They must naturally prefer places near the sea and in coves because of the ease with which they can find their sustenance there. I think they are seafood eaters because we found many places in the woods where they had stopped. One notices easily the place where they slept around a mound of ash and one sees, nearby, fish bones and many burnt shells.*
>
> *It appears that they are always naked and among those that we saw there was one that had a skin belt with long hairs and another had a white feather in his hair: was that a mark of distinction or an ornament. The women we saw only from a distance; they always stayed on the edge of the woods ready to run away (and) seemed to have as their only clothing a piece of skin which covered their breasts and reached to their thighs. I think they must suffer very much during the winter, which must be long and hard, because I do not think they have other ways of fending off the cold than by lighting fires. Thus they appreciate fire very much and when I saw them come to meet our sailors and offer them fire it occurred to me this element was the one they held most useful; it was a sign of friendship to offer it to us. Perhaps they behave in this way among themselves when they meet. We noticed that most of them, besides their spears and a few stones, carry a firebrand as*

> *well and each time they stop, and it is often only for a moment, they make a fire and gather round it. It is astonishing how many places we have found where they have lit a fire and how much the woods are devastated by it. We have seen few trees that were not injured at the foot and it was the same throughout the whole bay. We have covered almost all of it without encountering inhabitants or any of their retreats.*
>
> *It was only on the island in the NNE that we found a few pieces of bark, badly arranged with one end resting on a piece of wood set crosswise and the other on the ground; that formed, if you wish, a kind of hut. It seems that they had not long left it; one can conjecture from that that they make similar ones and we did not penetrate sufficiently into the woods to encounter them and that it is for that purpose or to make ropes (because we found a piece that was quite well twisted) that there are numerous trees that we saw stripped of their bark to a height of five or six feet…We have found nothing that could make us suspect that they have canoes or rafts…Their spears are nothing other than sticks about six feet long, pointed at the thick end. They are not poisoned at all…"*(Le Dez in Cox 2010:18-19).

This account certainly provides some interesting insights not only as to the physical appearance of the Oyster Bay people, but also with respect to their diet and material culture. These topics are explored further in the sections below.

The Subsistence Economy of the Oyster Bay People

The account provided by Le Dez stresses the importance of seafood in the diet of the Oyster Bay people, and interestingly notes the presence of fish bones in campfires. There are a number of other ethno-historic accounts that comment on the prevalence of shellfish and crustaceans in the diet of the local inhabitants (see Plomley 1966 and 1983), and the archaeological evidence (in the form of midden sites) provides testimony to this. However, the ethnographic and archaeological evidence for the consumption of fish is comparatively very sparse. This has led to some suggestions that fish was not a component of the diet of the Tasmanian Aborigines (see Jones 1974).

Ethnographic accounts also indicate that terrestrial fauna was an important component of the Aboriginal diet. This is particularly the case with Kangaroos and wallabies, which appears to have been hunted en masse at certain times of the year. McGowan (1985:92), for example reports that in May 1804 a large group of Aborigines, variously estimated to be up to 500 individuals, including men women and children were observed hunting kangaroo near the first European settlement at Risdon Cove. Robinson provides an account of the 'chief' Mannalargennana of the Oyster Bay Nation cooking wallaby.

> *…The animal is first thrown on the fire whole as is their custom with all animals, and when the hair is singed they take the carcase off the fire and rub off the scorched hair with their hands. This practice is tenaciously observed with all animals except the possum; the fur of this animal is first pulled off previous to its being placed on the fire. After the chief has rubbed the hair off*

> *the wallaby, he broke the fore leg by twisting it with his hands…He then cut the hind legs, after which he made a hole in the belly with his fingers and pulled out the entrails and then thrust in some hot ashes, the animal being previously roasted outside…* (Robinsoin in Plomley 1966:548-549)

Possum also seems to have been frequently hunted, and there are a number of accounts of the various utilised. Plomley (1966:533) describes possums being knocked down out of trees with waddies, or trees were climbed to reach possum holes.

Unfortunately, there are very few accounts available for the hunting of other terrestrial fauna, however, it is likely that a much wider range of species were targeted, including echidna and smaller marsupials.

Certainly within the midlands region, birds and eggs appear to have also formed a major component of the diet of the local inhabitants, with swans, ducks and red bills being some of the main species targeted (Plomley 1966:217). However, there are very few accounts available for the south-east Tasmanian region, for the hunting of birds and the gathering of eggs. Nonetheless, it would be reasonable to assume that this also was carried out at certain times of the year.

Only a few plant foods are documented in the ethohistoric accounts as having been eaten. This includes a bulbous plant known as 'native bread' and a plant that has the appearance of asparagus which was found by the roots of peppermint trees (Plomley 1966). It is very likely that many more plant foods were eaten by the local Aboriginal population. Jones (1971:91-95) for example lists 70 edible plant species that are available in Tasmania, and are likely to have been consumed at times of seasonal availability. This would include pig face, tree ferns, fern roots and a variety of sea weeds.

Material Culture

The account described previously by Le Dez (in Cox 2010:18-19) of his encounters with Oyster Bay people provides some details of the material culture of the people. For example, he provides a description of a rudimentary shelter that he observed at a deserted camp location. Several other ethnographic accounts are available for the south-east region which also describes the shelters of the local inhabitants. These indicate that the dwellings ranged from simple windbreaks (such as that described by Le Dez) through to more elaborate half domed shaped huts. (see Labillardiere 1800 and Plomley 1966). There are also accounts that the hollowed bases of trees were occasionally utilised for shelter by people in the south-east region (Labillardiere 1800:99).

Plomley (1983:185-194) provides a comprehensive account of the weapons and implements used by the Tasmanian Aborigines, based on the ethnographic accounts. It appears that the two main weapons used by the local inhabitants were the spear and the club. The spear was a simple flexible rod with a point at one end, the length of which appears to have varied significantly from between 6-12 feet. The club is described as a piece of wood about 60cm long, 2.5cm in diameter and slightly

tapered toward the gripping end. This item is reported to have been used as a throwing stick as well as a club.

Plomley (1983:22) also makes reference to the use of a wooden spatula that was used primarily for removing shellfish from rocks.

In many of the early ethnographic accounts for the South East region, there is reference to the baskets carried by the Aboriginal people, however often there is very little detail regards their construction. One of the more detailed descriptions comes from Robinson (in Plomley 1966:58), while he was on Bruny Island:

> *The native basket is made of rushes of a species of grass called iris. In preparing them for use they place the same on a slow fire which gives them a tenacity that enables the manufacturer to twist them into threads. These are plaited together and then formed into a basket which in shape is somewhat semiglobular. (Robinson in Plomley 1966:58)*

There also a number of reports of water vessels constructed from the fronds of giant kelp which could hold up to five to ten litres of water (see Labillardiere 1800:190).

In the earlier account provided by Le Dez he stated '*we have found nothing that could make us suspect that they have canoes or rafts…'* However, there are numerous other ethnographic accounts for the South-east region describing the watercraft used by the local inhabitants. One of the most detailed descriptions of these watercraft comes from Louis Freycinet, an officer on the Naturalist in 1802 (in Plomley 1983:119-120):

> *We have seen them and have measured several. They had the same dimensions and were constructed in exactly the same way. Three roles of the bark of the eucalypt made up its whole structure…These bundles when taken separately, resemble in a way the yard of a vessel, were joined at their ends, and this caused them to stick up in a point and make up the whole of the canoe. The assemblage was made quite firm with a sort of grass or sedge. In this state, the craft had the following dimensions-*
>
> - *Length inside 2.95m*
> - *Breadth outside 0.89m*
> - *Total height 0.65m*
> - *Depth inside 0.22m*
> - *Size at the ends 0.27m*
>
> *The savages can put five or six peoples in these canoes; but more commonly only three or four are taken at a time. Their paddles are plain pieces of wood…Usually they sit down to manoeuvre their canoes; in that case they place bundles of grass to serve as seats. At other times they stand up. We have seen them cross the Channel only in fine weather. One can imagine that such a fragile and imperfect craft would never be able to make their way, let alone keep afloat, in a rough sea…It is to be noted that they always put a fire at one end of their canoes, and to prevent the fire from spreading they place under it a bed of earth or ashes of sufficient thickness.*

In terms of clothing, it appears that Le Dez was correct when he observed that the local inhabitants wore very few garments. Most accounts indicate that the only protective clothing worn was a single animal skin wrapped around the body in various fashions. Most often the skins were worn by women, but also on occasions by men (Plomley 1983:141).

The only other type of protective clothing that appears to have been worn on occasion was a sandal type covering worn on the soles of the feet, which was made from kangaroo skin or possibly a piece of bull kelp (Plomley 1983:123)

Interestingly, although stone artefacts dominate the archaeological record for Tasmania (and Australia generally), there are few ethnographic accounts in Tasmania documenting their use. Those observations that are made, primarily relate to the finding of stone implements at camp sites. Frustratingly, there are virtually no accounts regarding the form of the implements, how they were made or used.

Robinson (in Plomley 1966:113) reports that he:

> *Obtained a stone from one of the Bruny natives with which they sharpen their waddies…It has the resemblance of flint and is found at the Isthmus of Brune..”*

One of the very few descriptions of Aboriginal people carrying out quarrying activity comes from Raynor (in Roth 1899:151) who recounted that his father had come across about 20-30 Aborigines, men, women and children, at a quarry near Plenty on the southern side of the middle Derwent Valley who were:

> *Noisily chatting, they were breaking the stone into fragments, either by dashing them on the rocks or by striking them with other stones, and picking up the sharp edged ones for use…*

This quarry was subsequently visited by Rhys Jones, who noted that the quarried material was an indurated chert/hornfels and that the quarry extended over an area of about 2 ½ hectares (Jones 1971:456).

Body Decoration

Aboriginal people of south east Tasmania are described as frequently bearing tattoos and cicatrices. The ethnographers generally describe these as decorative, although it is likely that they held a range of other meanings as well. Robinson described the process of cutting the skin with a sharp stone and rubbing the wound with charcoal or red ochre mixed with animal fat (Plomley 2008:137). The scarring was observed on both men and women and typically was either in the form of a series of short lines, or straight, concentric or circular liens across the chest (AT 2010:25). At Rocky Bay Labillieire noted that people rubbed their bodies with powdered charcoal and records one man whose cropped hair was 'plastered with ochre' (AT 2010:25).

Burial Practices

Burial customs were also observed by the ethnographers. Cremation was the usual form of disposing of a deceased person (Plomley 2008:17). The cremated remains were observed by Robinson to sometimes be wrapped in kangaroo skins and carried

as an amulet by members of the deceased person's clan (AT 2010:21). Robinson reports on a funeral pyre built by both men and women of branches and twigs. The body was placed on the pyre with bound arms and legs. This was left to burn for a day, with the relatives returning the following day. The remains were collected and burnt a second time, after which the ash was scattered through the grass (Plomley 2008:17).

Other burial practices in the south east region include internment and burial in hollow trees. Illustrations from the Baudin expedition show 'tombs' at Maria Island (Bonnemains *et al* 1988:131). These were bark tepee-like constructions built over remains that have been covered in fibres or leaves weighted down by rocks (Bonnemains *et al* 1988:131). The practice of placing remains in hollow trees in the south east region is reported by Robinson (Plomley 2008; AT 2010:21). Hollow tree burials are perhaps associated with violent deaths, as occurred in the Central Highlands (AT 2010:20).

Land Management

Aboriginal people across South Eastern Tasmania appear to have actively managed their environment. Historical sources provide numerous references to burning vegetation. AT (2010:9) suggest that this had a range of applications, including modifying the environment, attracting terrestrial game, encouraging edible plant regrowth and maintaining pathways used to travel across the country. Robinson recorded that Aboriginal people in the south east would travel along 'well beaten paths' and leave abalone shells at drinking places along rivers (Plomley 2008:59). Aboriginal pathways were also utilised by the first European settlers to the area.

The Aboriginal people of the south east greatly valued fire and there are several first-hand accounts of fire being transported by means of burning torches or 'fire brands'. In 1777 Bligh recorded seeing a basket of white 'flint like stones' at Adventure Bay (AT 2010:12). These are likely to have been fire brands.

Baudin in 1802 reported seeing a 'multiplicity of fires' burning in 'on all sides' from where his ship was anchored in North West Bay (AT 2010:12). Captain Hamlin reported to Baudin watching two Aboriginal men pull up their canoe at North West Bay and walk into the scrub, setting fire to the undergrowth as they walked (AT 2010:12).

Specific Reports of Contact

Marion Dufresne's 1772 landing illustrates the complex nature of contact on the D'Entrecasteaux Channel. Marion begins by describing a peaceful meeting between one of his longboats and a group of about forty Aboriginal men on the beach (Smith 2003:13-14). The French interpret the gestures of the Aboriginal party to be welcoming; two French sailors strip off their clothes and swim ashore. Upon reaching land, an Aboriginal man offered Marion a burning torch, which the French considered to be a gift of welcome. The parties exchanged items such as mirrors and buttons, and singing and dancing ensued.

However, at the approach of a second French boat the Aboriginal men took up their spears that had been lying on the beach. Marion and his party obviously felt threatened and retreated to their boat. Marion recorded that spears and stones rained down upon his men. They responded by firing a musket volley that wounded several men and was later found to have killed one of the Aboriginal men. Upon finding the body later upon the beach Marion described broken spears that had been placed around the body as an offering (Smith 2003:13-14).

Another significant moment in contact history occurred when D'Entrecasteaux's two ships the *Recherche* and the *Esperance* were anchored for five weeks in what is now Recherche Bay (Smith 2003:15). D'Entrecasteaux made detailed records of the bay, the Aboriginal people living there and Tasmanian flora and fauna. They established an observatory and were responsible for taking the first measurements of the earth's magnetic field in the southern hemisphere from this observatory (Smith 2003:16).

The scientist Labillardiere and gardener La Haye happened upon a group of about forty Aboriginal men, women and children in February 1793 while exploring the land around the Recherche Bay settlement (Dyer 2005:89). Labillardiere approached the eldest man and offered him some biscuit, demonstrating that it could be eaten by eating some himself. Labilliardiere then held out his hand and the man:

> *…gave me his, inclining himself a little and raising at the same time his left foot…these motions were accompanied by a most pleasing smile.* (Dyer 2005:89)

Labilliardiere and La Haye were guided back to their ship by some of the Aboriginal party, who assisted them through the scrub (Dyer 2005:90). This episode is remarkable in the social customs of greetings that it records, and also in the friendliness of the cultural encounter.

Another detailed account of early contact is recorded by Baudin, who anchored in North West Bay in the summer of 1802 – 1803 (Cornell 1974:311). Baudin spent some weeks exploring the south east coast and observing the Aboriginal people. His journals describe numerous meetings with Aboriginal people that were generally amicable on both sides. Baudin and his men investigated the North West Bay River as a possible source of fresh water (Cornell 1974:311). The astronomers of the expedition camped at site in the vicinity of the North West Bay River mouth in the hope of observing Jupiter pass across the sun on the night of the 22nd January 1803 (Cornell 1974:312). Baudin records numerous fires along the beaches of North West Bay, and observes Aboriginal people crossing from the D'Entrecasteaux Channel in what he describes as their 'miserable canoes' (Cornell 1974:312).

In his meetings with the Aboriginal people of D'Entrecasteaux Channel Baudin describes how 'mutual trust was immediately established' (Cornell 1974:302). This was achieved through the exchange of gifts such as mirrors, buttons and knives from the Europeans. However, he notes that the Aboriginal people generally declined to eat any of the biscuits or bread offered by the French.

Englishman Captain Walsh reported the friendly cultural relations that were established on Bruny Island when he visited in 1828 (Plomley 2008:49). By 1828 of course, the British settlement of Van Dieman's Land was well established. The chief at the time is recorded as an older woman called Nelson and up to fifty people were known to gather at Bruny Island and the southern channel to meet arriving government ships. The Europeans and Aboriginal people hunted and fished together, with the Europeans trading bread for shellfish and other fresh foods (Plomley 2008:49). However, Robinson was later told of a Mr. Taw who had found a severed Aboriginal hand on the beach at Bruny Island, and had also taken a skeleton from Bruny which he presented to Dr. Grant (Plomley 2008:750). It is clear from such varying accounts that contact in the D'Entrecasteaux Channel was complex and multi-faceted.

3.3 Cultural Contact and Frontier Violence

In the first years of the settlement at Hobart the surrounding areas became vital hunting grounds supplying kangaroo meat to the struggling colony on the brink of starvation (Alexander 2006:5). Hunting parties could be away from Hobart for months at a time, and would have needed to learn how to survive in the Tasmanian bush.

The economic importance of the kangaroo hunters to the success of the colony cannot be over emphasised. Without the supply of kangaroo meat the government would have been unable to meet the rations and maintain the settlement (Boyce 2009:52). However, the reliance of the colonisers on kangaroo brought them into direct conflict with the Aboriginal people. Access to seasonal kangaroo hunting grounds was central to the economies of both the Big River and Oyster Bay Nations.

At first, the Europeans were at an advantage as they had hunting dogs that greatly increased the numbers of kangaroo that a hunter could kill (Boyce 2009:52). The Aboriginal people quickly adapted to the use of dogs, an example of rapid cultural and economic adaptation. This brought the two groups onto a more even par (Boyce 2009:66). This period of parity only lasted while the European population was small; as early as 1806 the kangaroo populations around Hobart had been decimated and the hunters were being forced to move further north, towards the Brighton district (Boyce 2009:54). The settlement was literally starving, and there was a strong economic imperative for hunters to extend to the north in search of fresh sources of game. As the settlement continued to expand, both the colonists need for a meat supply, and their transformation of the hunting grounds into cleared, pastoral farms set the scene for an escalation in conflict (Boyce 2009).

Clashes with Aboriginal communities became more frequent and more violent as European settlement expanded. Lieutenant-Governor George Arthur proclaimed Martial Law in November 1828, leading to the active pursuit, capture and death of many Aboriginal people. A bounty was introduced in February 1830 of five pounds for every adult captured and two pounds for each child. In the two years between November 1828 and November 1830 some twenty Aboriginal people were captured and a further sixty lost their lives (Ryan 2012:102).

A series of six 'roving parties' were established for the purposes hunting and capturing the remaining Aboriginal occupants of the settled areas. This military action resulted in a general increase in the scale of violent conflict between Europeans and Aboriginal people, and by 1830 it was decided that a full-scale military offensive was required in order to quell the Aboriginal uprising. This operation, termed the 'Black Line,' involved the assembly of 2000 men in October 1830, who formed a human chain that swept through the settled districts over a period of three weeks, with the aim of driving the remnant Aboriginal populations from these areas. At the time the military campaign was widely believed to have achieved its objectives, with virtually the entire Aboriginal population having been either killed, or driven out of the settled areas. In 1832 the proclamation of Martial Law was revoked (Ryan 2012:112-113).

The Black Line was Governor Arthur's response to repeated insistence from settlers that Aboriginal people should be removed from the midlands (Alexander 2006:15). This reflects the level to which conflict had reached by 1830. Over three weeks two thousand settlers formed a line across the midlands, attempting to drive Aboriginal people south onto the Tasman peninsula (Alexander 2006:15). The line passed through Brighton in October 1830; no Aboriginal people were captured in the district (Alexander 2006:16).

Whilst the Black Line itself proved to be a dismal failure, with the total capture of two Aborigines and death of another three, it was sufficiently distressing to the general Aboriginal community that more than two hundred people subsequently allowed themselves to be persuaded by George Augustus Robinson (the 'Protector of Aborigines') to relocate to Flinders Island in exchange for food, shelter and safety (Lines 1991:47). They were further promised that they would be returned to their former homes on the Tasmanian mainland as soon as possible.

By 1835, the majority of the 220 Aborigines who arrived with Robinson at the Wybalenna Aboriginal establishment on Flinders Island had died from inadequate shelter, insufficient provisions and introduced disease. Birth rates were extremely low and few children survived infancy. In 1847 six Aborigines at Wybalenna made a petition to Queen Victoria asking that the promises made to them be honoured. In October 1847, the surviving 47 Aborigines were transferred to their final settlement at Oyster Cove (only forty four people survived the trip). Conditions at Oyster Cove were only marginally better than at Wybalenna and numbers continued to diminish.

4.0 Background Archaeology

4.1 Previous Archaeological Research in the Study Region

The current study area is located within the south-east region of Tasmania. This area has been subject to a number of Aboriginal archaeological studies over the past two decades. The majority of these have been in the form of survey assessments associated with proposed development activities, and have focused on discreet areas (these are summarised in Section 4.2) However, there has also been some broader research based investigations undertaken in the region. Probably the most comprehensive of these and the one most pertinent to the present investigations is that of Brown (1986). The following provides a summary of this regional study.

In 1986 Steve Brown was engaged to carry out the South East Tasmanian Archaeology Project. This was one of nine regional overview studies, funded through National Estate grants, which were directed at examining the Aboriginal archaeological resources of Tasmania. The aims or duty statement for the South East Tasmanian Archaeology Project was to define the prehistory of the region and to define present and potential future impacts on the Aboriginal heritage resources in the region.

As part of his research design, Brown (1986:49-50) divided the landscape of the south-east region into landform unit types. Five major landform unit divisions were identified. These were;

- small offshore islands,
- Bruny Island,
- coastal and estuarine environments (consisting of coastal margins, coastal plains, river estuaries, lagoons and swamps),
- inland hills, plains and river valleys, and
- inland mountains (alpine plateau).

Brown (1986:49-50) then collated available archaeological data for these landscape units, including the range of site types present, the site components and the distribution and frequency of sites. The data was generated from previous archaeological investigations undertaken in the region, as well as the findings from the field work carried out by Brown.

The field survey investigations implemented by Brown (1986:50-52) involved a selective sampling procedure, where block surveys were undertaken at three designated areas, these being Bruny Island, the Coal River, and Bothwell. In addition, more general survey assessments were carried out at a variety of locations.

Of the five landscape units identified by Brown (1986), the most pertinent to the present investigations is the inland hills, plains and river valleys, which includes the Coal River survey block investigated by Brown (1986). The following provides an overview of the findings, as presented by Brown (1986) for this landform unit.

Inland Hills, Plains and River Valleys

This landscape unit was the largest of the five unit divisions established by Brown (1986) for the South-east Tasmanian region. It is also the most pertinent landscape unit in relation to the present investigation, as the study area lies within a River valley system.

Brown (1986) reports that open artefact scatters are the most common site type identified in the Inland Hills, Plains and River Valley zone. The greatest number of these sites are reported as occurring on the valley and creek floors and the foot slopes adjoining these areas. It appears that site and artefact densities appear to be comparatively much lower on mid and upper hill slopes and on ridges and crests. The largest artefact scatters (those comprising over 50 artefacts) have a number of site location factors in common. They are all situated on well drained sandy soils. They are in slightly elevated positions above river and creek floodplains. They usually have a northerly aspect, and finally the sites are generally situated in close proximity to a fresh water source. For medium and small sized artefact scatters there appears to be no distinct pattern of distribution (Brown 1986).

The range of stone artefacts identified at sites in this zone includes the debris of stone artefact manufacturing and maintenance (fragments, flakes, flake fragments, flaked pieces and cores). Retouched stone artefacts include a large variety of scrapers. Unmodified cobbles have also been identified at a range of sites. The reduction of stone material appears to have occurred mainly at the source location. Backed artefacts appear to absent from the site assemblages in this zone, and in South-east Tasmania in general, and pebble choppers appear to be rare (Brown 1986).

Numerous stone quarry/procurement sites have been identified in the Inland Hills and Plains zone. These sites range in size from areas where a few boulders of cobbles have been flaked through to extensive sites such as the Oyster Cover quarry site. The quarried stone material types include silcrete, quartzites, cherty hornfels, chalcedony and silicified breccia (Brown 1986).

Sandstone rock shelters and overhangs are common in the Inland hills and Plains zone. In the majority of instances artefacts are not found on the shelter floor surfaces. Brown (1986) postulates that this may be due to accelerated depositional rates in sandstone shelters. Paintings have been recorded at two sandstone rock shelters, with both occurring near Ellendale in the upper Derwent Valley.

Interestingly, Brown (1986) reported that no ochre sources, ochre quarries, or stone arrangements had been identified in this zone.

Field Survey Assessments within the Coal River Basin

As part of the field survey component of his study, Brown (1986) carried out a limited field survey assessment within a portion of the Coal River Basin, in the vicinity of Colebrook. The survey area encompassed approximately 4km². In the course of the investigations Brown (1986) identified a total of 44 Aboriginal sites. The majority of

these sites (37) are classified as isolated artefacts or artefact scatters, with the remaining 7 sites being rock shelters. Three of the identified artefact scatters are reported as being comparatively large, comprising over 50 artefacts. The sites were situated within three landform types, these being the flat river floodplains of Coal River and Wallaby Rivulet, the lower hill slopes adjacent to the floodplains and the sandstone escarpment.

On the floodplains, 16 sites were identified (with a total artefact assemblage of 159 artefacts). Fourteen of the sixteen sites were identified in areas where recent soil disturbance had taken place and surface visibility was improved (ploughed areas). The other two sites (TASI 2606 and 2481) consist of in-situ artefacts exposed in the banks of the Coal River and Wallaby Rivulet.

On the lower hill slopes, 15 sites were identified. Fourteen of these sites were situated on the gently inclined southern foot slopes of the hills, with the remaining site (TASI 2479) being located on one of the few gently inclined foot slopes that is north of Wallaby Rivulet. The two sites that comprised the highest number of recorded surface artefacts were situated within this landscape zone (TASI 2482 – 138 artefacts, and TASI 2598 – 98 artefacts). Both sites are situated on elevated locales on gently inclined foot slopes, are in close proximity to a major water source, have a north aspect and are on well drained sandy soils. Both sites are interpreted as representing favoured camping locations.

Twelve sites were identified along the sandstone escarpment fringing the valley floor. Seven of these are classified as potential habitation shelters. Six of these are situated within a few metres of the flood plain and overlook it. The other shelter is located within 25m of the floodplain. The remaining five sites are classified as isolated artefacts or small artefact scatters.

In general, Brown (1986) was of the opinion that the distribution of the sites identified during the survey demonstrated a widespread use of the floodplains and foot slopes of the Coal River and Wallaby Rivulet by Aboriginal people. The pattern of site distribution, and the general character of the sites were seen as generally conforming with those sites identified in the broader inland east coast region of Tasmania.

On the basis of the observed distribution of sites within the Colebrook survey area, Brown (1986) developed an Aboriginal land use model for the broader region. In this model, the Coal River Basin, incorporating the Colebrook survey area, was part of the core territory of a band comprising some 50 or more people. Within this area during dry weather, campsites were widespread and located predominantly on the floodplains close to drinking water. At times of wet weather, campsites were confined to favoured locations which offered protection from the elements and faced the sun (rock shelters and well drained north facing foot slopes). It is postulated that movement between different regions by this band may have followed known and frequently used trails. It is further postulated that the Coal River Basin may have been rich enough in resources to support large social and ritual gatherings of 200 or more people (Brown 1986).

The area surveyed by Brown (1986) was incorporated the then proposed inundation area of the Craigbourne Dam. This dam inundation area was the focus of much more intensive archaeological investigations, first by Brown (1986), who did the initial field survey assessment of the inundation area, and later by Jones and Ferguson (1987), who carried out salvage excavation works. The investigations were predominantly focused on two areas, the Coal River Rock shelter, and a large open artefact scatter that was concentrated on a broad sand sheet adjacent to the rock shelter site. The excavation of the rock shelter site yielded a large amount of fragmented terrestrial faunal remains, as well as stone artefacts. At the adjacent sand sheet site a large number of stone artefacts were recovered, and on the basis of the density of recovered artefacts it was estimated that this site contained in the vicinity of 5.5 million artefacts. On the basis of the findings at both the rock shelter site and the sand sheet site, it was interpreted that a diversity of terrestrial fauna was being exploited by the local Aboriginal inhabitants of the Coal River valley, and that this activity extended back to at least 4300 BP (Jones and Ferguson 1987).

Overview for the South-East Tasmanian Region

In summary, Brown (1986) has identified the following broad patterns of site type distribution in South-East Tasmania.

- Aboriginal archaeological sites occur in all parts of the landscape.
- The coastal margins (including off shore islands), coastal plains and river estuaries are very rich in archaeological resources and contain a high density of sites with large quantities of archaeological remains. The Derwent Estuary in particular was an area of rich archaeological resources.
- Inland sites are dominated by open artefact scatters and isolated artefacts. Artefact densities are highest along the river, rivulet and creek valley floors and adjacent to lower hill slopes, particularly where the hill slopes are gently inclined, with a north aspect, and have sandy well drained soils.
- Shell middens most frequently occur in close proximity to shellfish resources, particularly on cliff tops or headlands where there is easy access to these resources.
- Stone artefact quarries most frequently occur where there is a surface expression of geological contact zones, in particular between Jurassic dolerite and Triassic or Permian strata.

As a general statement, Brown (1986) summarises that site numbers and densities in South-east Tasmania are greatest within 300m of the present coastline and in the immediate vicinity of coastal lagoons.

Brown (1986) is of the opinion that topography is perhaps the most consistent and important environmental factor affecting site location. Sites in general, but particularly the larger ones (in terms of artefact numbers) are very seldom found on steep gradient slopes.

Brown (1986) believes that the South-eastern region has probably been occupied by Aboriginal people for the past 20 000 years. However, he acknowledges that there are no conclusive dates for sites beyond 6000 years old for the region. Pleistocene

dates have however been obtained for sites in close proximity to the region (Beginners Luck Cave and a cave on the Weld River).

4.2 Smaller Investigations in the Vicinity of the Study Area

A number of smaller heritage investigations have been carried out within the general vicinity of the study area. The majority of these studies have been undertaken as part of impact assessments associated with specific development projects such as proposed dam sites, rail and road corridor assessments and pipeline easements. One investigation, undertaken by CHMA (2011a) of the South East Irrigation Scheme, passed within the immediate vicinity of the current study area. Several others have been undertaken within the broad region. The following provides a summary overview of these studies.

CHMA (2011a) South East Irrigation Scheme Pipeline

In 2011, Hydro Tasmania (now ENTURA) commissioned CHMA to conduct a heritage assessment of the South East Irrigation Scheme (SEIS). The study included 164km of proposed pipeline within South East Tasmania extending from Brighton to the Coal Valley, Sorrell and out to Forcett. The study resulted in the identification of 69 sites, comprising 34 artefact scatters, 30 isolated finds, two artefact scatters with associated PADs, two shell middens, one possible shell midden and 29 PADs where no material culture was present. Several of the sites listed in the TASI site search in Section 4.3 below where located during this investigation (TASI 11463-11465, TASI 11471-11473, TASI 11517-11519, TASI 11523).

The two areas of specific relevance to, proximity to the current study area was those of the Coal River and Tea Tree Valley Systems. Of the 69 sites discovered during the investigation, 47 of them were located within the Coal River Valley (CRV). These comprised of 25 open artefact scatters, 18 isolated finds, four artefact scatters with associated areas of potential and a further 22 areas of potential archaeological sensitivity where no material culture was present (CHMA 2011a).

Of the 18 isolated artefacts identified, 8 were identified on the gentle basal slopes of landforms situated along the margins of ephemeral creek lines, which empty into the Coal River within 150m. The remaining finds were located within margins of the Coal River itself or on the nearby floodplain (CHMA 2011a).

The vast majority of artefact scatters are low density, numbering 5 artefacts or less (N=35) and are dominated by silcrete, chert and quartzite. Unretouched flakes are the most common class of artefact, with cores and retouched flakes recorded in lower frequencies. This distribution of artefact types is true of the archaeological record as a whole. These smaller artefact scatters occurred along the margins of ephemeral creek lines that empty into the Coal River within 150 to 300m (N=15) (CHMA 2011a). Most are positioned on elevated summits and gentle basal slopes of landforms immediately adjacent to water (N=13) (CHMA 2011a).

Of the 12 remaining high-density scatters, three showed densities in excess of 20 artefacts. In excess of 20 artefacts were recorded at site TASI 11494, over 100 artefacts were estimated at site TASI 11473 and more than 200 artefacts were

recorded at TASI 11515. Sites TASI 11494 and TASI 11515 both occurred along the margins of the Coal River itself, while TASI 11473 is located on the very gentle basal slopes of a hill which sits at the junction between a smaller valley system and the broader Coal River valley. All three sites are located on well-drained, elevated areas immediately adjacent to permanent water sources.

The contents of these larger assemblages include flakes, retouched flakes and cores, made from a variety of raw materials of which silcrete, chert and indurated mudstone dominates. Quartzites, hornfels and basalt also feature heavily with hammer and grinding stones present (particularly at TASI 11515).

Within the Tea Tree Valley (TTV) a total of five sites were identified, comprising three artefact scatters (TASI 11493, TASI 11474, TASI 11475) and two isolated finds (TASI 8657, TASI 11492). All five sites were found to be of moderate archaeological sensitivity. Two areas of potential archaeological sensitivity were also identified.

The artefact scatters were all low density (eight artefacts or less) and dominated by indurated mudstone and silcrete flakes with two small hornfels flakes also identified. Of the two isolated finds, one may in fact be an extension of the previously recorded TASI 8657 and consisted of a multidirectional chert core. The other (TASI 11492) was a small silcrete core. All three artefact scatters are located along the margins of ephemeral creeks, situated on very gentle basal slopes of immediately adjacent hills. The two isolated finds occurred on valley flats and floodplains immediately adjacent to ephemeral creek lines.

The results of this investigation confirmed predictive modeling for the area. Sites were consistently found in all environmental contexts along gently sloping terrain in close proximity to watercourses. The larger sites identified in all environments were consistently located on well drained, level, elevated landscape features, including flat summits of low relief knolls and hills, elevated sand ridges and the basal slopes of hills. All larger sites occurred within 100m of major water sources. Site and artefact densities were shown to decrease away from permanent water sources and in low lying areas of the flood plains that would have been vulnerable to damp and flooding.

Within this general model of site patterning occurred environmental contextual differences. The Coal River Valley, providing a good permanent water source, formed a focal point for Aboriginal occupation evidenced by high densities of archaeological sites and the presence of large artefact scatters.

The smaller inland hills and plains areas, such as Tea Tree Valley, which is only a minor river valley was accordingly dominated by isolated finds and low-density artefact scatters (generally only 2 artefacts).

Stone procurement sites were not recorded in the region. This was argued to be due to the fact that the underlying geology of much of the region is basalt and dolerite: materials that are not generally suited to the manufacture of stone artefacts. Exceptions exist in the form of hammerstones and grinders, which were identified at site TASI 11515 (in the CRV).

Mud Walls Road Improvement Study (Stanton 2004; CHMA 2011b)

Stanton (2004) was engaged by GHD in undertake an Aboriginal heritage assessment of two sections of the Mud Walls Road which had been selected for road upgrade works. The first of these (the southern section) was 2.73km in length and extended from near the junction with Rosedale Road, north through to a sharp bend at the base of Limekiln Hill. This section of road traverses the flat valley floor of the Coal River Valley and at its closest point is within 200m of the Coal River. The second section of road (the northern section) was 3.25km in length and extended from the junction of Eldon Road at the town of Colebrook, through to a point just north of the railway crossing, around the property of 'Sunnyside' (the southern commencement point of the present study). This section of road is reported to run along the Coal River valley floor, parallel to and within 300m of the Wallaby Rivulet (Stanton (2004).

Stanton (2004) reported that no Aboriginal heritage sites or significant Aboriginal cultural landscapes were identified during the course of the survey assessment. In addition, a search of the TASI register showed that there were no registered Aboriginal heritage sites within a 2.5km radius of either section of road.

CHMA confirmed Stanton's findings when they assessed the area on behalf of DIER in 2011. No heritage sites were identified, however three areas of potential archaeological sensitivity where identified along the route. The road works were altered to avoid each of these areas and as such, their potential archaeological contents are unknown. CHMA concluded that artefact densities along the corridor route where likely to be low.

CHMA (2010a; 2010b) Colebrook Rail Improvement Project

CHMA (2010a) were engaged by GHD (on behalf of Tasmanian Railway Pty Ltd) to undertake an Aboriginal heritage assessment of proposed works associated with the Colebrook Rail Improvement Project. Stephen Stanton was the designated AHO for the project. The investigations were focused along a 5km section of proposed re-alignment of the existing Colebrook rail line around the township of Colebrook. This is just to the south of the present study area.

Due to poor visibility in the area, the field survey assessment failed to identify any Aboriginal heritage sites or objects were within the bounds of the 5km route re-alignment easement (CHMA 2010a). However, given the poor visibility a the time, the negative survey results could not be assessed as being an accurate indicator as to the complete absence of Aboriginal sites within the route easement.

On the basis of predictive modeling, three sections of the proposed route easement were assessed as having potential archaeological sensitivity (PAS1, PAS2 and PAS3). All three areas encompassed elevated and level landscape features on the lower side slopes of the valley system, adjacent to water sources. It was predicted that these areas may have been utilised as interim camp locations by Aboriginal people moving through the valley system, and that low to moderate densities of artefacts may be present at each location. PAS1 and PAS2 were situated either side

of Wallaby Rivulet, whilst PAS3 was located on the spine of a small spur, on the margins of Coalmine Creek. The remainder of the proposed route re-alignment easement was assessed as having either low or very low archaeological sensitivity, because it traversed steeper hill side slopes (CHMA 2010a).

Subsequent sub-surface investigations in these areas confirmed the presence of low density artefact deposits at area PAS1 (site TASI 11169) and PAS3 (site TASI 11170). Six artefacts were recovered from the twenty test pits excavated at PAS1 and two artefacts from the ten pits at PAS3 (CHMA 2010b). Artefact densities were considerably lower at both locations than originally predicted by CHMA (2010a). In the case of PAS3 (TASI 11170), CHMA (2010b) suggested that this discrepancy was possibly due to the fact that the section of the route easement that traversed the area designated as PAS3 (the spine of the spur line) was subsequently re-aligned just to the north, thereby just avoiding this area. It was therefore likely that the two artefacts identified along the re-aligned section of the easement represented the northern extent of a larger artefact deposit that is situated on the spur line. However, this contention could not be confirmed.

No artefact deposits were identified at area PAS2, where ten test pits were excavated (CHMA 2010b).

CHMA (2010c; 2012) Richmond Link Road Project

CHMA (2010c) was engaged by DIER to undertake an Aboriginal cultural heritage assessment for the Richmond Link Road Project. Steve Stanton was the designated AHO for the project. The Richmond Link Road is proposed to skirt around the western side of the Richmond township between Middle Tea Tree Road and the Richmond Recreation Ground. In the course of the field survey assessment a total of four Aboriginal heritage sites were recorded (Sites TASI 10999 – TASI 11002). These sites comprised two artefact scatters (sites TASI 10999 and TASI 11000), with each artefact scatter comprising three artefacts, and two isolated finds (TASI 11001 and TASI 11002).

Due to poor visibility from existing vegetation ground cover, CHMA anticipated that additional undetected surface and sub-surface artefact deposits would be present within the route corridor, and that artefact densities may be comparatively quite high in particular locations. A program of subsurface testing was therefore recommended which was undertaken in 2012 (CHMA 2012).

A total of 135 test pits were excavated at various localities identified as having archaeological potential across the study area. These investigations resulted in the identified presence of three Aboriginal site locations. The largest site (TASI 3897) occurred on an elevated and level rise positioned between a creek and low-lying wetlands, on loosely consolidated sand deposits. It comprised up to 32 artefacts/m2 with highest concentrations occurring at the broadest flattest portion of the rise.

The second site (TASI 11525) comprised a sparse, low density scatter located on the flat summit of an elevated rise on the northern margins of low-lying wetlands.

Moderate densities of artefacts were recovered at TASI 11000 located approximately 300m to the west of the Coal River (a similar distance from the River as the proposed location for the Palmer Dam). Artefact densities and assemblage composition was representative of interim camping activity, however the reason for its location so far from the River or any other water courses or concentrated resource zones was a source of confusion. CHMA concluded that the site was probably representative 'of the western portion of a more extensive deposit of artefacts, which possible extends across the slightly elevated sand body, through to the western margins of the Coal River.

4.3 Registered Aboriginal Sites in the Vicinity of the Study Area

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

The search shows that there are a total of 14 registered sites that are located within a 3km radius of the study area (search results provided by Sam Dix from AHT on the 31/7/2015). Eight of these sites are classified as artefact scatters, with the remaining six sites being isolated artefacts. None of these 14 registered sites are located within the bounds of the study area. The closest sites to the study area are situated over 1km to the south-east and north-west.

Table 1 provides the summary details for the 14 registered Aboriginal sites, with Figure 12 showing the location of these sites.

Table 1: Registered Aboriginal sites located within and in the general vicinity of the study area

AH Number	Site Types	Locality	Easting	Northing
11471	Artefact Scatter	Campania	534960	5275207
11472	Artefact Scatter	Campania	534745	5275329
11473	Artefact Scatter	Campania	534624	5275360
11474	Artefact Scatter	Campania	530811	5276130
11475	Artefact Scatter	Tea Tree	529990	5275950
11517	Artefact Scatter	Campania	534601	5275138
11518	Isolated Artefact	Campania	533821	5275526
11519	Isolated Artefact	Campania	534290	5275266
11523	Isolated Artefact	Campania	534973	5275177
11788	Isolated Artefact	Campania	531946	5276478
11791	Artefact Scatter	Campania	534570	5274815
6831	Isolated Artefact	Campania	533412	5274982
6832	Artefact Scatter	Campania	533512	5274982
6833	Isolated Artefact	Campania	535012	5274682

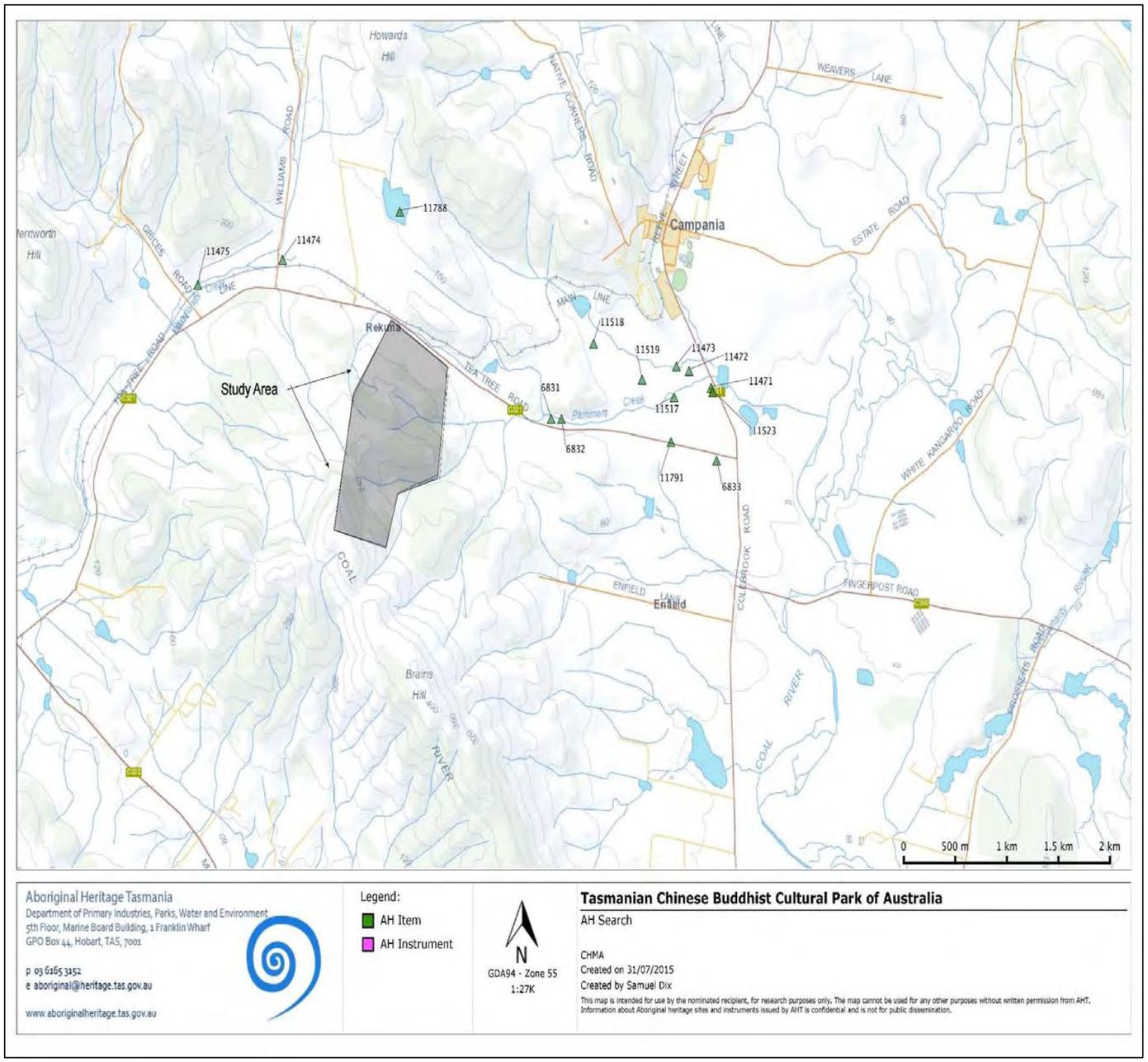


Figure 12: Registered Aboriginal heritage sites located within and in the general vicinity of the study area (Map provided by AHT and amended by CHMA)

5.0 Predictive Modeling

5.1 Introduction to Predictive Modeling

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

5.2 Predictive Models; Strengths and Weaknesses

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

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

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

The findings of the regional study of Brown (1986), together with the results of the smaller scaled archaeological investigations undertaken in the area, and the AHR search (as summarised in Sections 4.2 and 4.3 of this report) can be used in combination to develop a broad predictive model for the study area.

These investigations indicate that the most likely site types that will be encountered within the study areas will be artefact scatters and isolated artefacts. It is also possible, although less likely that Aboriginal stone quarry/procurement sites and/or rock shelters/rock art sites may be present in the study area. The following provides a general predictive statement for their distribution.

Artefact Scatters and Isolated Artefacts

Site type definition:

Isolated artefacts are defined as single stone artefacts. Where isolated finds are closer than 50 linear metres to each other they should generally be recorded as an Artefact Scatter. Artefact scatters are usually identified as a scatter of stone artefacts lying on the ground surface. For the purposes of this project, artefact scatters are defined as at least 2 artefacts within 50 linear metres of each other. Artefacts spread beyond this can be best defined as isolated finds. It is recognised that this definition, while useful in most instances, should not be strictly prescriptive. On some large landscape features for example, sites may be defined more broadly. In other instances, only a single artefact may be visible, but there is a strong indication that others may be present in the nearby sediments. In such cases it is best to define the site as an Isolated Find/Potential Archaeological Deposit (PAD).

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

Predictive Statement for artefact scatters and isolated finds

The results of previous archaeological studies within the Coal River Valley and Tea Tree Valley have identified the following pattern of distribution.

- Site and artefact densities are comparatively high within the larger Coal River Valley systems where there is an associated permanent water source (a river or rivulet). Site densities are significantly lower in the smaller Tea Tree Valley system.
- Site and artefact densities are highest within 200m of the watercourse, with densities tending to decrease significantly with distance away from water.
- The larger open artefact scatters (representing more intensive activity, such as regular camp areas); tend to be located on level, elevated landscape features, close to (within 100-200m) of major watercourses. The most common areas are the elevated basal slopes of hills, the level spines of spurs (around the termination point of the spur), the flat summits of low relief knolls or hills, or the elevated sand ridges that represent the banks of ancient river courses.

- There appears to be a strong correlation between the presence of elevated sand bodies and larger artefact scatters. It appears that these sand bodies may have been favoured for camping.
- Site and artefact densities on the lower lying flood plains of watercourses tend to be comparatively lower. This may be reflective of the fact these low lying areas were less favoured as camp locations, due to such factors as rising damp and vulnerability to flooding; and
- Site and artefact densities also tend to be comparatively lower in areas away from watercourses, and on moderate to steeply sloping terrain.
- Isolated finds lack any visible archaeological patterning and tend to be randomly scattered across the landscape.

The study area fringes the southern edge of the Tea Tree Valley system, and is situated around 3km to the west of the larger Coal River Valley system. The terrain throughout the majority of the study area is characteristically moderate to steeply undulating, incorporating three major east-west trending ridges. Previous archaeological investigations in the region has demonstrated that the density of artefacts in this type of terrain is characteristically low to very low. The most likely site type to be present would be small artefact scatters and isolated artefacts, and these are generally likely to occur on the flatter spines of the ridges, or on locally level landscape units, close to the ephemeral creek lines that drain these ridges. Slightly elevated densities of artefacts may be present in the northern portion of the study area, on the gentler northern slopes, fringing the southern edge of Tea Tree Valley.

The depth of soil deposits present within the study area will also have a direct bearing on the extent of artefact deposits present in the study area. If shallow soil deposits prevail across the site then it would be reasonably anticipated that artefact deposits would be predominantly confined to the soil surface. If deeper soil deposits are present then there is an increased possibility of encountering more extensive artefact deposits.

Stone Quarry/Procurement Sites

Definition

A stone procurement site is a place where stone materials were obtained by Aboriginal people for the purpose of manufacturing stone artefacts. Quarry sites on the other hand have some evidence of the stone being actively extracted using knapping and/or digging. Stone procurement sites are often pebble beds in water courses (where there may be little or no evidence of human activity) or naturally occurring lag deposits exposed on the surface. Quarry sites are usually stone outcrops, with evidence of knapping and pits dug to expose the rock. Concentrations of hammer stones and a thick layer of knapping debris are often present.

Predictive Statement for Procurement Sites

Previous research for the broader Southern Midlands region has shown that the most common stone material types utilised for making stone artefacts are silcrete, chert, hornfels, quartzites, quartz, and fine grained volcanics. The sources for these stone material types usually occur in the form of discreet outcrops of bedrock material or concentrations of nodules either within the soil matrix, or in the beds of watercourses.

The geological mapping for the study area shows that there is a large patch of undifferentiated Cainozoic sediment within the north eastern corner of the study area, within which sits beds and granules/cobbles of mudstone, siltstone and sandstone (see section 2.3). There is the potential for stone materials to be present in this area that may have been suited for use by Aboriginal people for artefact manufacturing. Mudstone, siltstone and sandstone all have utility in the manufacture of flaked stone artefacts depending upon the individual qualities of the materials present. Mudstone, siltstone and sandstone can all have a high degree of variability in quality even within a single source. The more homogenous and finer grained the material, the greater its utility and the higher the likelihood of its having been utilised in artefact manufacture.

Rock Shelters and Rock Art Sites

Definition

As the name implies, these sites are formed under rocky outcrops which may either be escarpments hollowed by erosion, or in the case of rocks such as granite shelters, may be located under boulder overhangs. Such sites may contain deposit and/or art.

Rock art consists of paintings, drawings and/or engravings on rock surfaces. Some of the art may have had a ceremonial or ritual purpose, while other art may have been produced for more secular purposes.

Predictive Statement

Obviously, rock shelters will only occur in areas where there are rock formations of a suitable size and scale to provide potential shelter for human habitation. In the Southern Midlands region, the most common form of rock shelters are sandstone caves/overhangs and granite overhangs.

As described in section 2.3 of this report, the geology of the study area is broadly divided into Jurassic dolerite in the northern half and medium-coarse grained sandstone and mudstone in the central and southern portions. The sandstone is exposed to the surface in the central portions of the study area, in the form an extensive east-west trending sandstone escarpment. Along the northern face of this escarpment there are a series of small vertical cliffs, where there are numerous small overhangs that may have been potentially suitable as Aboriginal occupation shelters. If these shelters have been occupied by Aboriginal people in the past, then there is the possibility that rock art may also be present.

6.0 Survey Coverage of the Study Area

Survey Coverage

Survey coverage refers to the estimated portion of a study area that has actually been visually inspected during a field survey. For the purpose of this assessment, it is estimated that the two member survey team walking a single transect can achieve a ten metre wide survey inspection coverage.

In total, 8.9km of transects were walked within the study area. The average width of each transect was estimated to be 10m. The transects were aligned so as to provide reasonable coverage of the various landscape units that occur throughout the study area. During the survey, the team was accompanied by Richard J. Ho (a representative from the Holy Tantra Esoteric Buddhism Inc), who was able to show the team across the proposed footprint of the development. Additional survey transects were walked in those areas where development was proposed to occur.

Figure 14 shows the alignment of the survey transects.

Surface Visibility

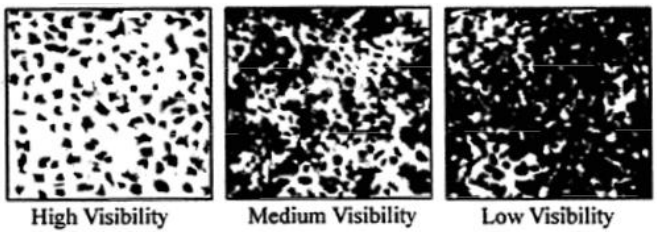
Surface Visibility refers to the extent to which the actual soils of the ground surface are available for inspection. There are a number of factors that can affect surface visibility, including vegetation cover, surface water and the presence introduced gravels or materials.

Surface visibility across the study area varied from low to medium (see Figure 13 for a guideline to estimations of surface visibility). Across the northern portion of the study area, on the gently sloping ground fringing the Tea Tree Valley system, surface visibility was typically low (20%). The main impediment to visibility in this area was thick grass cover (see Plate 12). There were a few discrete areas, in the form of ploughed firebreaks, that provided transects of improved visibility (see Plate 13). Surface visibility in parts of the southern and central portions of the study area was also low (20%), particularly in the narrowly incised valleys between the three ridge lines. Again, the main impediment to visibility in these areas was grass cover (see Plate 14).

Surface visibility was typically improved along the spines and side slopes of the east-west trending ridge lines that run through the study area. The soils on these ridge lines was generally quite shallow, with bedrock exposed to the surface in many areas. Due to the shallow soil deposits, vegetation cover was generally quite sparse, providing visibility in the order of 40%-50% (see Plates 15 and 16).

There is a network of graded vehicle tracks that run through the study area, and these also provided transects of improved visibility (80%). In an effort to increase the effective coverage within the study area. It is estimated that 1.3km of transects were walked along tracks (see Plates 17-19).

Visibility



☐Full (100%) ☐High (75%) ☐Medium (50%) ☐Low (24%) ☐None (0%)

Figure 13: 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. The combination of survey coverage and surface visibility is referred to as effective survey coverage. Table 2 presents the estimated effective survey coverage achieved within the study area.

Table 2: Effective Survey Coverage achieved within the study area

Zone of Study Area	Total Area Surveyed	Estimated Surface Visibility	Effective Survey Coverage
Transects within areas of low visibility	3400m x 10m = 34 000m²	20%	6 800m²
Driveway alignments	4200m x 10m = 42 000m²	50%	21 000m²
Vehicle access tracks	13000 x 10m = 13 000m²	80%	10 400m²
TOTAL			38 200m²

Plate 12: View south across grassed paddocks in the north portion of the study area reducing visibility to 20%

Plate 13: Ploughed firebreak along the north boundary of the study area providing improved visibility

Plate 14: An example of low surface visibility in the southern portion of the study area

Plate 15: Sparse vegetation on the side slopes of a ridge line, providing visibility of around 50%

Plate 16: Improved visibility (40%) on the spine of a ridge line

Plate 17: View north-east along vehicle track running through the study area providing transect of improved visibility

Plate 18: Vehicle track providing transect of improved visibility

Plate 19: Vehicle track providing transect of improved visibility

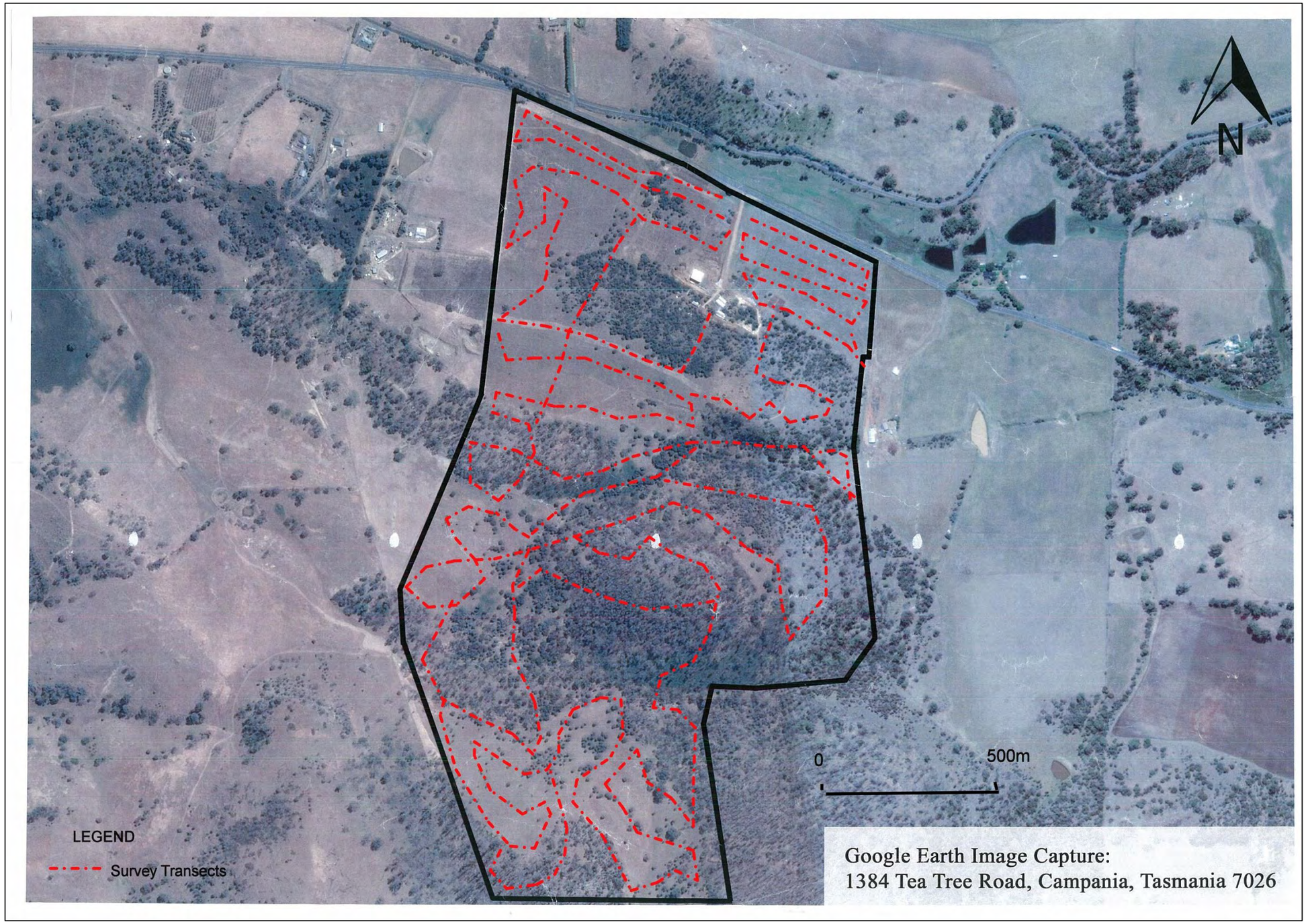


Figure 14: Survey transects walked by the field team within the study area

7.0 Survey Results and Discussion

7.1 Summary Survey Results

During the course of the field survey assessment, the team identified one Aboriginal site (AH13103). The site, which is classified as an isolated artefact, is located in the northern portion of the study area, approximately 20m to the south of Tea Tree Road (see Plates 20 and 21). It was identified on a recently ploughed fire break 80m in length (east-west) and 20m wide that runs along the northern boundary of the study area. The site appears to be situated outside the development footprint. Table 3 provides the summary details for this site, with Figures 15-17 showing the site location. The detailed description for this site is presented in Appendix 2.

Table 3: Summary details for Aboriginal site AH13103, identified during the course of survey assessment of the Study Area

AH No.	Grid Reference (GDA 94)	Site Type	Site Description
AH13103	E532182 N5275515	Isolated artefact	The site is located on the basal northern side slopes of a prominent hill, where the hill slopes interface with the flat valley floor of a small east-west trending valley system (Tea Tree Valley). The site was identified on a recently ploughed strip of land measuring approximately 80m in length (east-west) x 20m wide. The ploughed strip of land runs parallel to the southern edge of Tea Tree Road, right on the northern boundary of the study area. ***Artefact Details*** - Grey/brown chert flake (use-wear on distal margin) 36mm x 64mm x 7mm

Plate 20: Artefact from site AH13103

Plate 21: view west at the location of site AH13103

In addition to site AH13103, five separate sand stone overhangs have been recorded within the study area. These overhangs are all clustered along a sand stone cliff line in the central portion of the study area. Table 4 provides the summary details for the overhangs, with Figures 15-17 showing the locations of these overhangs.

The field team carried out a detailed inspection of each of these overhangs, but did not identify any evidence to indicate that these overhangs may have been occupied Aboriginal rock shelter sites. No stone artefacts were identified within or in the immediate vicinity of the overhangs, no hearths (Aboriginal fire places were identified on the shelter floors, and there was no evidence of Aboriginal rock art. Given the absence of evidence for Aboriginal occupation, these overhangs have not been classified as Aboriginal sites.

Three of the overhangs (Overhangs 1-4-5) are assessed as having a low-moderate potential for having been occupied by Aboriginal people in the past. This is based on ease of access to the overhangs, the size of the overhangs, the presence of a flat to gently sloping floor, and soil deposits on the floor (see Plates 22, 26 and 27).

The other two overhangs (Overhangs 2 and 3) are assessed as having a low potential for having been the focus of Aboriginal occupation in the past. This is based on the difficulty of access to the overhangs, the sloping nature of the overhang floors and the absence of soil deposits on the floors. Interestingly, overhangs 2 and 3 both had European graffiti (see Plates 23, 24 and 25).

The reason that these overhangs are not generally assessed as having a higher potential for Aboriginal occupation is based on the general landscape setting of the study area, and the generally low expression of Aboriginal sites within the study area and surrounds. Only one isolated artefact was identified during the field survey of the study area, indicating that the Aboriginal activity through this landscape was sporadic. These findings are generally consistent with previous archaeological investigations in the surrounding region, which shows that site and artefact densities within moderately steeply terrain away from major valley systems was generally sparse. If the five overhang features were sited within a major river valley system such as the Coal River Valley, then the potential for Aboriginal occupation would be significantly higher, as the major valley would have been a focal point for seasonal Aboriginal activity. This is discussed further in section 7.2 of this report.

The geological mapping for the study area shows that there is a large patch of undifferentiated Cainozoic sediment within the north eastern corner of the study area, within which sits beds and granules/cobbles of mudstone, siltstone and sandstone The predictive modelling presented in section 5 of this report, indicated that there may be the potential for stone materials to be present in this area that may have been suited for use by Aboriginal people for artefact manufacturing. The field team carried out a detailed search in this general area, but did not identify any evidence to indicate Aboriginal quarrying/procurement activity. No stone materials were identified in this area, or indeed the broader study area, which would have been suited to stone artefact manufacturing.

Table 4: Summary details for sandstone overhangs recorded during the survey

Overhang Feature	Grid Reference (GDA 94)	Description
Overhang 1	E531900 N5275007	Located on upper north side slopes of ridge line. NE facing with relatively easy access from approaches at base of cliff line. Overhang floor is flat to gently sloping with deposits up to 10cm in depth (see Plate 22). Height at overhang entrance: 2.2m Height at rear of overhang: 1.25m Width of overhang: 2.4m Depth of overhang: 3.8m Low-Moderate potential for occupation.
Overhang 2	E531942 N5274880	Located on upper north side slopes of ridge line. North facing overhang is 3-4m up steep cliff line, making access moderately difficult. Overhang floor is sloping with no depth of deposit. No evidence of Aboriginal occupation. Some European graffiti on rear wall of overhang, dating to 1940s (see Plates 23 and 24). Height at overhang entrance: 1.9m Height at rear of overhang: 1.1m Width of overhang: 7.2m Depth of overhang: 3.3m Low potential for occupation.
Overhang 3	E531957 N5274865	Located on upper north side slopes of ridge line. North facing overhang is 3-4m up steep cliff line, making access moderately difficult. Overhang floor is sloping with no depth of deposit. No evidence of Aboriginal occupation. Some European graffiti on rear wall of overhang, dating to 1940s (see Plate 25). Height at overhang entrance: 2.5m Height at rear of overhang: 1.2m Width of overhang: 8.1m Depth of overhang: 3.6m Low potential for occupation.
Overhang 4	E531981 N5274820	Located on upper north side slopes of ridge line. NE facing with relatively easy access from approaches at base of cliff line. Overhang floor is flat to gently sloping with deposits up to 5cm in depth (see Plate 26). Height at overhang entrance: 1.3m Height at rear of overhang: 0.8m Width of overhang: 2.4m Depth of overhang: 2.5m Low-Moderate potential for occupation.
Overhang 5	E532030 N5274810	Located on upper north side slopes of ridge line. NE facing with relatively easy access from approaches at base of cliff line. Overhang floor is flat to gently sloping with deposits up to 10cm in depth (see Plate 27). Height at overhang entrance: 2.9m Height at rear of overhang: 1.5m Width of overhang: 6.1m Depth of overhang: 2.5m Low-Moderate potential for occupation.

Plate 22: View south at Overhang 1

Plate 23: View south at Overhang 2

Plate 24: Graffiti on rear wall of Overhang 2

Plate 25: View west at Overhang 3

Plate 26: View south at Overhang 4

Plate 27: View south-west at Overhang 5

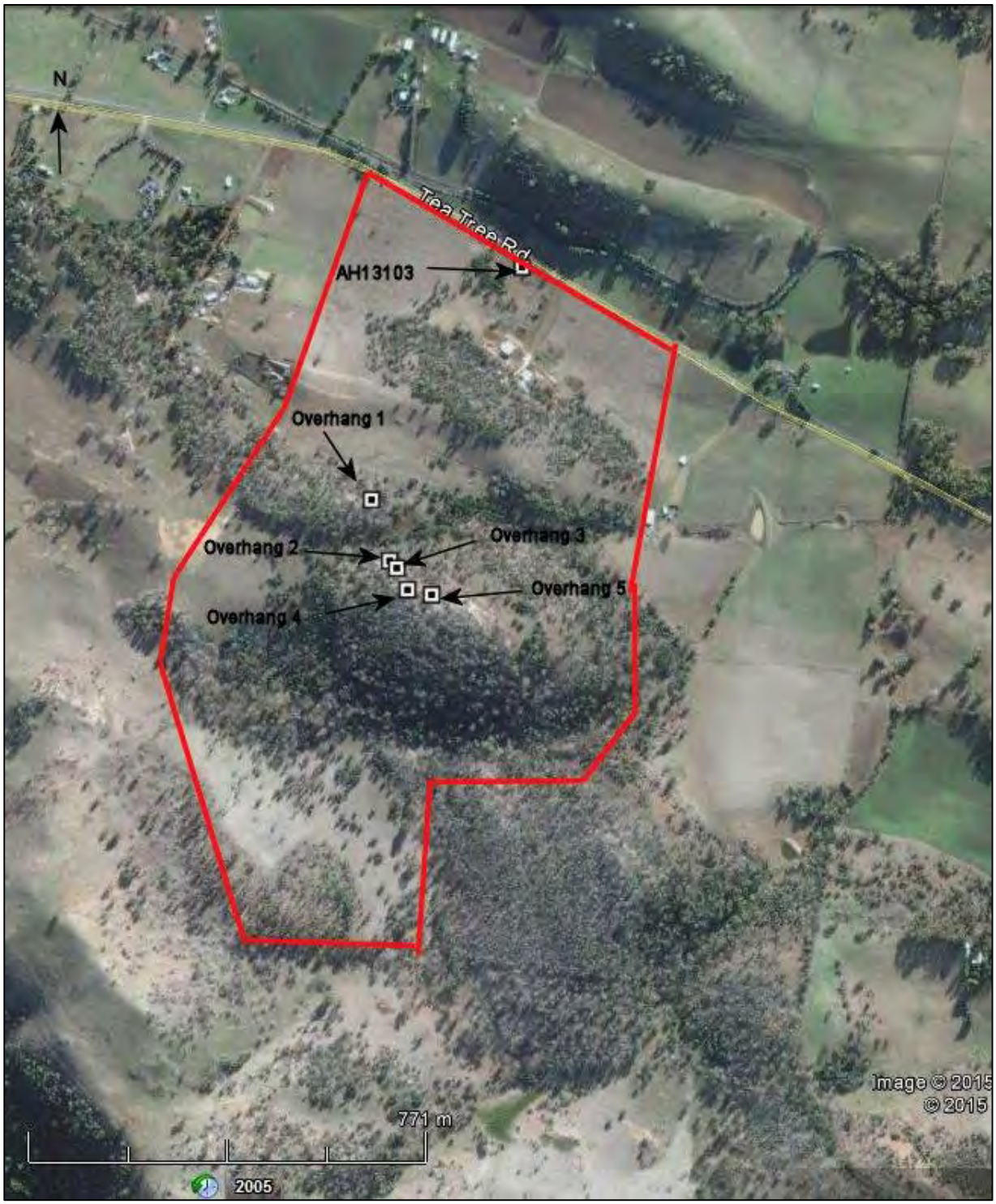


Figure 15: The location of site AH13103 and the five sand stone overhangs recorded during the field survey (Google earth map)

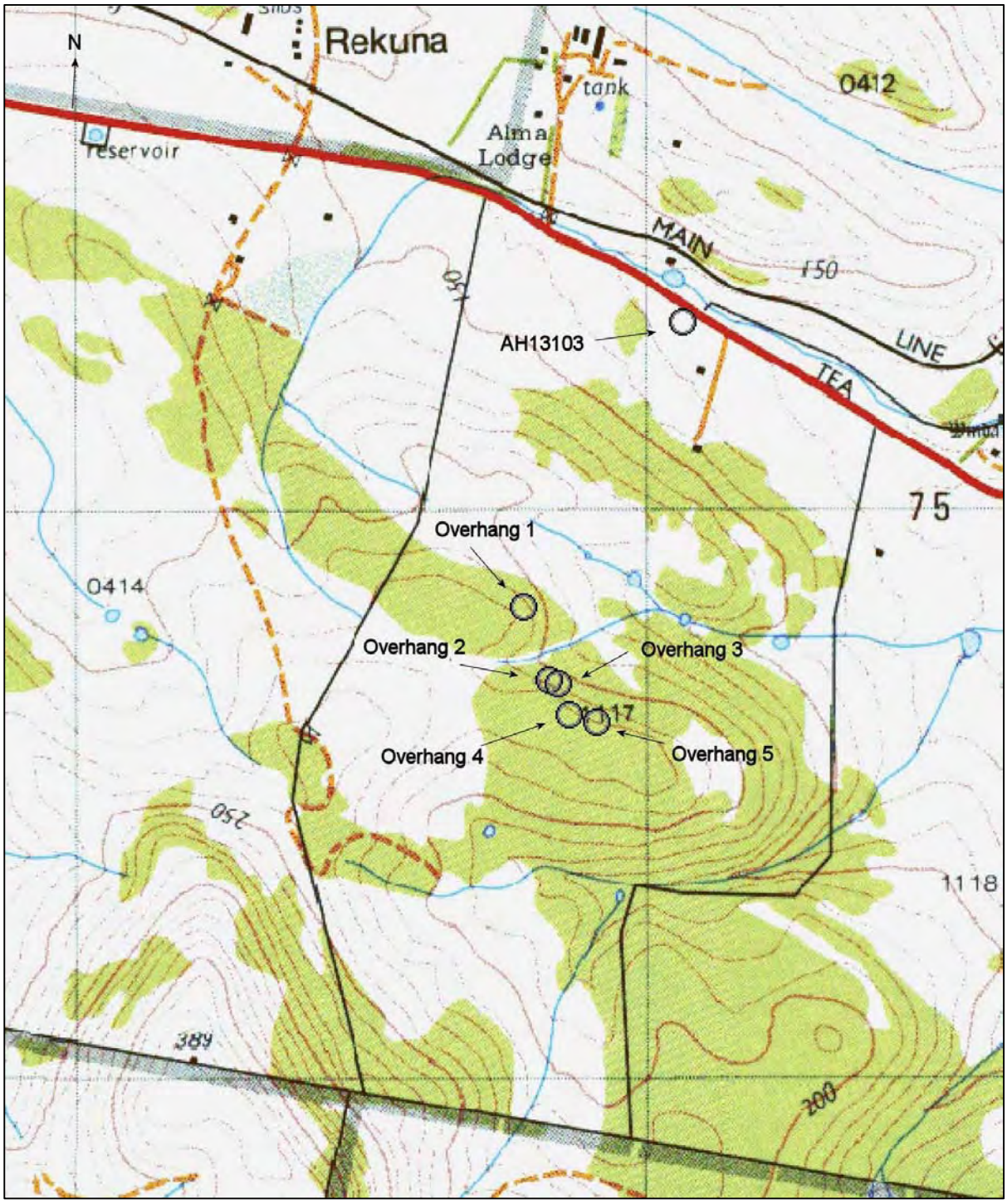


Figure 16: The location of site AH13103 and the five sand stone overhangs recorded during the field survey (Map scale 1:25 000)

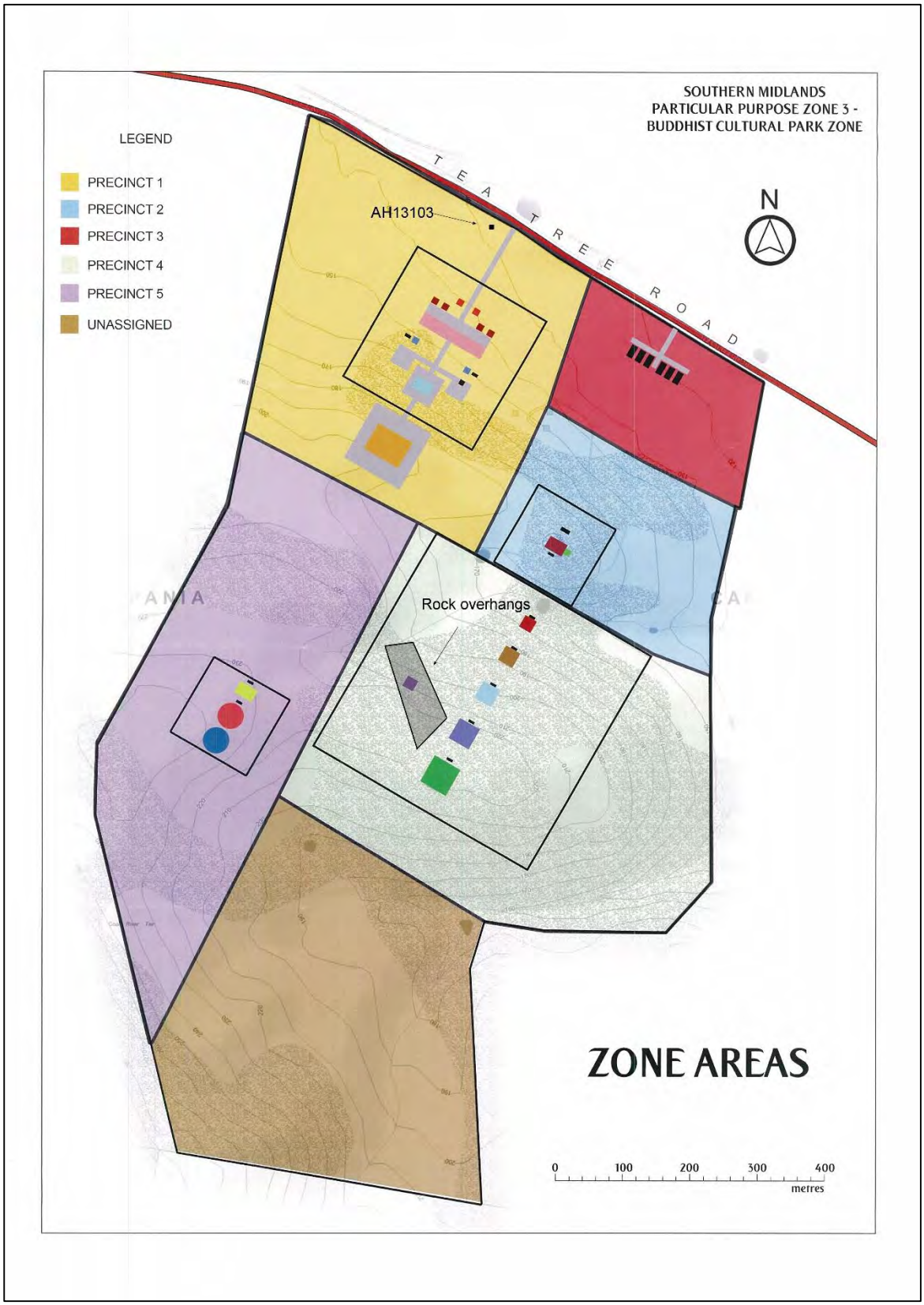


Figure 17: Development Masterplan showing the location of site AH13103 and the five sand stone overhangs recorded during the field survey, in relation to the proposed development footprint

7.2 Further Discussions

The field survey assessment resulted in the identification of just one Aboriginal site (AH13103), which is classified as an isolated artefact.

As detailed in section 6 of this report, surface visibility throughout many parts of the study area was typically quite constrained due to vegetation cover, with average visibility estimated to have varied from low (20%) to medium (50%). Whilst 8.9km of survey transects were walked within the study area corridor (equating to survey coverage of 89 000m²), the effective coverage within the study area was reduced to 38 200m². In light of these constraints, the survey results cannot be taken to be a complete and accurate inventory of all Aboriginal heritage resources that may be present in the study area. However, it is still assessed that there was sufficient effective coverage achieved to generate a general impression as to the extent and nature of Aboriginal sites present in this area. Moreover, the field survey observations, together with predictive modelling can be used to make informed hypotheses regarding the likely extent of Aboriginal sites present in the study area.

The survey results indicate that site and artefact densities throughout the study area is characteristically low to very low. These results are generally consistent with the findings of previous archaeological research undertaken in the region by Brown (1986), and other smaller heritage assessments in the vicinity of the study area. The regional study undertaken by Brown (1986) show that site densities in terrain similar to that encountered within the study area (steep rolling hills away from major river valley systems and away from coastal foreshores) was typically low. The most common site types encountered in this type of terrain were small artefact scatters and isolated artefacts. Higher concentrations of sites, and the larger artefact scatters tended to be concentrated in major resource zones such as large river valley systems.

Within the Coal River Valley the greatest number of sites is reported as occurring on the valley and creek floors and the foot slopes adjoining these areas. It appears that site and artefact densities are comparatively much lower on mid and upper hill slopes and on ridges and crests. The largest artefact scatters (those comprising over 50 artefacts) have a number of site location factors in common. They are all situated on well drained sandy soils. They are in slightly elevated positions above river and creek floodplains. They usually have a northerly aspect, and finally the sites are generally situated in close proximity to a fresh water source. For medium and small sized artefact scatters there appears to be no distinct pattern of distribution (Brown 1986). The presence of very high artefact densities within the Craigbourne Dam inundation area is certainly testimony to the fact that there was intensive Aboriginal occupation at selected locations within the valley (see Jones and Ferguson 1987).

The Coal River valley system would have constituted a resource rich corridor running from the hinterland to the coast, providing access to terrestrial, aquatic and littoral zone food resources. As such, there is very little doubt that this valley system and other similar large valleys (such as the Jordan River valley) would have been utilised as major travelling routes by the local Aboriginal inhabitants, and areas within the

valley may have been a focal point for the gathering of bands at various times of the year.

Brown (1986) has developed a plausible Aboriginal land use model for the broader South-east region which includes specific statements regarding potential occupation strategies for the Coal River Valley. In this model, the Coal River Basin was part of the core territory of a band comprising some 50 or more people. Within this area during dry weather, campsites were widespread and located predominantly on the floodplains close to drinking water. At times of wet weather, campsites were confined to favoured locations which offered protection from the elements and faced the sun (rock shelters and well drained north facing foot slopes). It is postulated that movement between different regions by this band may have followed known and frequently used trails. It is further postulated that the Coal River Basin may have been rich enough in resources to support large social and ritual gatherings of 200 or more people (Brown 1986).

In comparison, the current study area is located on the fringes of the smaller Tea Tree Valley system, where only ephemeral water courses are present. The exploitable food resource base within this valley system would have been much more limited compared with the adjacent Coal River valley. In addition, there appears to be no suitable stone material resources for artefact manufacturing present within the valley, with the bedrock geology being dolerite. On this basis, it would be reasonable to assume that Aboriginal activity within this small valley will have been much less intensive compared with the adjacent much larger Coal River Valley, and that site and artefact densities will be correspondingly much lower.

This having been said, the Tea Tree Valley does provide a natural link between the Coal River Valley and the Jordan River Valley to the west, and would probably have been utilised by Aboriginal groups as a travelling route between these two areas. Yet given the reduced resources, the groups are not likely to have occupied the Tea Tree valley for any great length of time, but rather camped and hunted in the valley for short durations as part of moving through to the more resource rich zones. This assertion is supported to some degree by the archaeological record for the surrounding area which shows that recorded site densities are comparatively sparse within the Tea Tree Valley compared with recorded site densities in the main Coal River valley.

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 Aboriginal sites

One Aboriginal site was recorded during the present field survey (site AH13103). The site has 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 for 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 site AH13103.

A five tiered rating system has been adopted for the significance assessment; low, low-medium, medium, medium-high and high. Table 5 provides the summary details for significance ratings for site AH13103. A more detailed explanation for the assessment ratings are presented in sections 8.5 to 8.8.

Table 5: Summary significance ratings for registered Aboriginal site AH13103

AH Site Number	Site Type	Scientific Significance	Aesthetic Significance	Historic Significance	Social Significance
AH13103	Isolated artefact	Low	Low-medium	N/A	Medium

8.5 Scientific Significance for recorded sites

Site AH13103 is classified as an isolated artefact. Isolated artefacts and small artefact scatters are two of the most common site types recorded in the Southern Midlands Region, and more broadly, the State of Tasmania (as evidenced through the AHR search). 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.

Site AH13103 is situated in a moderate to highly disturbed landscape context, being located within a ploughed fire break, in a paddock that has been cleared of native vegetation and regularly ploughed in the past. This means that the integrity of the site has been impacted, reducing the research potential. The site is also assessed as having a limited potential to comprise additional undetected artefact deposits. This further reduces the research potential of the site.

The artefact associated with site AH13103 is classified as a chert flake. This stone material type and tool type is very common for the region, and as such the concept of rarity is not applicable for the site. On the basis of the above, site AH13103 is assessed as being of low scientific significance.

8.6 Aesthetic Significance for 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).

In this instance, sites AH13103 is situated within a modified rural landscape, being within an area that has been largely cleared of native grasses and used for pastoral and agricultural purposes for many decades. The modification of the landscape has to a large extent diminished the aesthetic significance of the site. However, in a broader setting, the hills to the south and north of the site, fringing the Teat Tree Valley, still remains largely unaltered by European pastoral activity, which elevates the aesthetic values of the site surrounds to Low-medium.

8.7 Historic Significance for 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 AH13103. As such the concept of historic significance is not applicable to this site.

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

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

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

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

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

Only one Aboriginal site (an isolated artefact) was identified during the survey assessment of the Buddhist cultural park study area. This artefact is located on the north boundary of the study area, and will be protected during development. An additional five rock overhangs were identified of the study area. The field team carried out a detailed inspection of each of these overhangs, but did not identify any evidence to indicate that these overhangs may have been occupied Aboriginal rock

shelter sites. As such, the overhangs have not been classified as Aboriginal sites. It appears that none of these five overhangs are situated within the proposed development footprint, and are therefore not under any direct threat of impact.

A search of the AHR shows that there are no registered Aboriginal sites that are located within the study area. On the basis of the above, it is clear that the proposed development will not impact on any known Aboriginal heritage sites, and there is a very low potential to impact undetected Aboriginal heritage. For this reason, the decision has been made not to distribute this report for Aboriginal community consultation. The report has been provided to AHT for review.

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 to the region of the project proposal. This provides a story or link for the Aboriginal community today, and facilitates the connection to social cultural heritage values, ethno history /story and the relationship pertaining to country. This is an integral part of regaining knowledge so it can be encapsulated and retained by the both individual Aboriginal people and for the Aboriginal community collectively.

One Aboriginal site was identified by us during the field survey, this being an isolated artefact (site AH13103). The site is located in a disturbed context being situated within a ploughed area, in a cleared farm paddock. Despite these disturbances, the site is still considered to be important to our people, as it represents a tangible link with our past ancestors. For this reason, efforts should be made to conserve this site in its' present location. Site AH13103 is located on the north boundary of the study area. It is my understanding that the site is not situated within the proposed development footprint of the Buddhist temple complex. It should therefore be possible to protect the site.

In addition, we identified a series of sandstone overhangs in the central portion of the study area. We did not identify any evidence that these overhangs had been occupied by Aboriginal people in the past. However, there is a possibility that some or all of the overhangs may have been used by our Ancestors. Again, it is my understanding that these overhangs are outside the proposed development footprint, and will not be impacted. This is to be encouraged.

Even if the site of the project proposal contains no evidence of Aboriginal heritage there is always the cultural resources (flora, fauna, aquaculture or any other resource values that the earth may offer) and the living landscape, which highlight the high significance to the Aboriginal cultural heritage values to the country. During our survey, I did note a range of bush tucker resources in the study area, mainly in the central and southern areas where there had been lees land clearing in the past. The development will impact on these bush resources.

10.0 Statutory Controls and Legislative Requirements

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

10.1 State Legislation

The protection of Aboriginal cultural heritage in Tasmania is principally governed by the *Aboriginal Relics Act 1975* (The Act), and this is the most relevant legislation to Aboriginal heritage sites dealt with in this report. It should be noted that this Act is presently under review. Under the Act, Aboriginal cultural heritage is defined as any place, site or object made or created by, or bearing the sign of the activities of the original inhabitants of Australia or descendants of such inhabitants on or before 1876.

The Department of Primary Industries, Parks, Water and the Environment (DPIPWE), through Aboriginal Heritage Tasmania (AHT) is the state government body that is responsible for administering the Act. The main provisions of the Act are as follows.

- All 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 cause an excavation to be made or any other work to be carried out on Crown Land for the purpose of searching for a relic without a permit.
- 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.
- Persons who own or have knowledge of a relic have an obligation to inform the Parks and Wildlife Service and to provide information regarding the location of the relic(s).
- Under Section 7 of the Act, the Minister may, on the recommendation of the Director, declare an area of land containing an Aboriginal relic to be a protected site.

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.*

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 1987* and the *Environment Protection and Biodiversity Conservation Act 1999*

Australian Heritage Council Act 2003 (Comm)

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

items recognised as possessing heritage significance to the Australian community. The Register of the National Estate, managed by the Australian Heritage Council, applies no legal constraints on heritage items included on this list.

***The Aboriginal and Torres Strait Islander Heritage Protection Act 1987*.**
This Federal Act is administered by the Department of Sustainability, Environment, Water, Populations and Communities (SEWPaC) with the Commonwealth having jurisdiction. The Act was passed to provide protection for the Aboriginal heritage, in circumstances where it could be demonstrated that such protection was not available at a state level. In certain instances the Act overrides relevant state and territory provisions.

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

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

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

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

- If the Federal Court, on application from the Commonwealth Minister, is satisfied that a person has engaged or is proposing to engage in conduct that breaches the 'Stop Order', it may grant an injunction preventing or stopping such a breach (s.26). Penalties for breach of a Court Order can be substantial and may include a term of imprisonment;
- If a person contravenes a declaration in relation to a significant Aboriginal area, penalties for an individual are a fine up to $10,000.00 and/or 5 years gaol and for a Corporation a fine up to $50,000.00 (s.22);
- If the contravention is in relation to a significant Aboriginal object, the penalties are $5,000.00 and/or 2 years gaol and $25,000.00 respectively (s.22);
- In addition, offences under s.22 are considered 'indictable' offences that also attract an individual fine of $2,000 and/or 12 months gaol or, for a Corporation, a fine of $10,000.00 (s.23). Section 23 also includes attempts, inciting, urging and/or being an accessory after the fact within the definition of 'indictable' offences in this regard.

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

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

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

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

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

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

11.0 Aboriginal Cultural Heritage Management Plan

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

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

The recommendations are aimed at minimising the impact of the proposed Tasmanian Chinese Buddhist Park of Australia development on the Aboriginal cultural heritage resources present within the study area.

Table 6 provides a summary overview of the management recommendations. The more detailed recommendations are presented below.

Table 6: Summary management recommendations for Aboriginal heritage sites and features identified as part of the Aboriginal heritage assessment

Site	Grid Reference (GDA 94)	Management Recommendations
AH13103	E532182 N5275515	- Erect temporary protective barricading around site, note location and avoid. - If it appears that site may be impacted then obtain Permit.
Sandstone Overhangs 1-5	E553500 N5230970	- Note location of the five sand stone overhangs and avoid impacts. If impacts on any of the five overhangs may occur, then liaise with AHT regarding further heritage requirements.

Site AH13103

The preferred management option for this isolated artefact is to retain the site in its' present location, and to avoid impacts to the site. To this end, the following management strategies should be implemented.

- The location of the site should be plotted onto planning maps of the study area.
- A 3m x 3m temporary barricade should be erected around the perimeter of the site. The temporary barricade should be removed at the completion of pipeline construction works.
- The development construction contractors should be made aware of the location of the site, and informed that the site is not to be impacted.

If it appears that it will not be possible to conserve this site in-situ then a Permit will be required in order to impact the site. This Permit will need to be obtained prior to development works commencing in the vicinity of the site.

Overhangs 1-5

Five separate sand stone overhangs have been recorded within the study area. These overhangs are all clustered along a sand stone cliff line in the central portion of the study area.

The field team carried out a detailed inspection of each of these overhangs, but did not identify any evidence to indicate that these overhangs may have been occupied Aboriginal rock shelter sites. As such, the overhangs have not been classified as Aboriginal sites. Three of the overhangs (Overhangs 1-4-5) are assessed as having a low-moderate potential for having been occupied by Aboriginal people in the past. This is based on ease of access to the overhangs, the size of the overhangs, the presence of a flat to gently sloping floor, and soil deposits on the floor. The other two overhangs (Overhangs 2 and 3) are assessed as having a low potential for having been the focus of Aboriginal occupation in the past. This is based on the difficulty of access to the overhangs, the sloping nature of the overhang floors and the absence of soil deposits on the floors.

It appears that none of these five overhangs are situated within the proposed development footprint, and are therefore not under any direct threat of impact. If the development footprint alters, and it appears that any of these overhangs may be impacted, then it is recommended that the proponent should liaise with AHT to ascertain what further heritage requirements would apply to these features.

General Recommendations

- Apart from Aboriginal site (AH13103) and the sandstone overhangs dealt with in the above management recommendations, no other Aboriginal features or areas of specific archaeological sensitivity were identified within the study area. There are therefore no further site or area specific management recommendations that apply to this project.

- If, during the course of the proposed development works, previously undetected archaeological sites or objects are located, the processes outlined in the Unanticipated Discovery Plan should be followed (see section 12).

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

12.0 Unanticipated Discovery Plan

The following section describes the proposed method for dealing with unanticipated discoveries of Aboriginal sites and objects. The plan provides guidance to the proponent and contractors so that they may meet their obligations with respect to heritage in accordance with the *Aboriginal Relics Act 197*5 and the *Coroners Act 1995*.

Please Note: There are two different processes presented for the mitigation of these unanticipated discoveries. The first process applies for the discovery of all cultural heritage sites or features, with the exception of skeletal remains (burials). The second process applies exclusively to the discovery of skeletal remains (burials).

Discovery of Cultural Heritage Items
Section 14 (1) of the *Aboriginal Relics Act 1975 states that "Except as otherwise stated in this Act, no person shall, otherwise than in accordance with the terms of a Permit granted by the Minister on the recommendation of the Director – destroy, damage, deface, conceal or otherwise interfere with a relic."*

Accordingly, the following processes should be implemented if a suspected relic is encountered.

Step 1
If any person believes that they have discovered or uncovered Aboriginal cultural heritage materials, 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 10m x 10m should be established around the suspected cultural heritage site or items. No unauthorised entry or earth disturbance will be allowed within this 'archaeological zone' until such time as the suspected cultural heritage items have been assessed, and appropriate mitigation measures have been carried out.

Step 3
Aboriginal Heritage Tasmania (AHT) in Hobart (ph 61653152) should be contacted immediately and informed of the discovery. AHT will make necessary arrangements for the further assessment of the discovery. Based on the findings of the assessment, appropriate management recommendations should be developed for the cultural heritage find.

Discovery of Skeletal Material

Step 1

Under no circumstances should the suspected skeletal remains be touched or disturbed. If these are human remains, then this area potentially is a crime scene. Tampering with a crime scene is a criminal offence.

Step 2

Any person discovering suspected skeletal remains should notify machinery operators that are working in the general vicinity of the area that earth disturbing works should stop immediately. Remember health and safety requirements when approaching machinery operators.

Step 3

A buffer protection zone of 50m x 50m should be established around the suspected skeletal remains. No unauthorised entry or earth disturbance will be allowed with this buffer zone until such time as the suspected skeletal remains have been assessed.

Step 4

The relevant authorities (police) will be contacted and informed of the discovery.

Step 5

Should the skeletal remains be suspected to be of Aboriginal origin, then Section 23 of the Coroners Act 1995 will apply. This is as follows:

1) The Attorney General may approve an Aboriginal organisation for the purposes of this section.
2) If, at any stage after a death is reported under section 19(1), a coroner suspects that any human remains relating to that death may be Aboriginal remains, the coroner must refer the matter to an Aboriginal organisation approved by the Attorney General (In this instance TALSC).
3) If a coroner refers a matter to an Aboriginal organisation approved by the Attorney-General –
   (a) The coroner must not carry out any investigations or perform any duties or functions under this Act in respect of the remains; and
   (b) The Aboriginal organisation must, as soon as practicable after the matter is referred to it, investigate the remains and prepare a report for the coroner.
4) If the Aboriginal organisation in its report to the coroner advises that the remains are Aboriginal remains, the jurisdiction of the coroner under this Act in respect of the remains ceases and this Act does not apply to the remains. In this instance the *Aboriginal Relics Act 1975* will apply, and relevant Permits will need to be obtained before any further actions can be taken.
5) If the Aboriginal organisation in its report to the coroner advises that the remains are not Aboriginal remains, the coroner may resume the investigation in respect of the remains.

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Glossary of Terms

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

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

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

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

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

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

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

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

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

Debitage
The commonly used term referring to the stone refuse discarded from knapping. The manufacturing of a single implement may result in the generation of a large number of pieces 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 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 bare most often quartz grains but may be chert or chalcedony or some other hard mineral particle. The mechanical properties and texture of silcrete are equivalent to the range exhibited by chert at the fine-grained end of the scale and with quartzite at the coarse-grained end of the scale. Silcrete was used by Aboriginal people throughout Australia for making stone tools.

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

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

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

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

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

Appendix 1

Gazetteer of Recorded Sites

Table 7: Summary details for Aboriginal site AH13103, identified during the course of survey assessment of the Study Area

AH No.	Grid Reference (GDA 94)	Site Type	Site Description
AH13103	E532182 N5275515	Isolated artefact	The site is located on the basal northern side slopes of a prominent hill, where the hill slopes interface with the flat valley floor of a small east-west trending valley system (Tea Tree Valley). The site was identified on a recently ploughed strip of land measuring approximately 80m in length (east-west) x 20m wide. The ploughed strip of land runs parallel to the southern edge of Tea Tree Road, right on the northern boundary of the study area. ***Artefact Details*** - Grey/brown chert flake (use-wear on distal margin) 36mm x 64mm x 7mm

Appendix 2

Detailed Site Descriptions

Site Name: AH13103
Site Type: Isolated artefact
Grid references: (GDA 94) E532182 N5275515

Site Description
Site AH13103 is classified as an isolated artefact. In terms of landscape setting, the site is located on the basal northern side slopes of a prominent hill, where the hill slopes interface with the flat valley floor of a small east-west trending valley system (Tea Tree Valley). This valley joins with the much larger Coal River valley system around 3km to the east of the site.

The small valley system is drained by Plummers Creek., which is an ephemeral water course that flows in an easterly direction, eventually emptying into the Coal River. The site is located approximately 50m to the south of the headwaters of Plummers Creek.

The majority of the native vegetation across the valley floor and lower hill slopes has been cleared as part of farming practices, and replaced with introduced grasses. Higher on the hill slopes there are extensive stands of open Eucalypt forests intermixed with casuarinas and acacias.

The site was identified on a recently ploughed strip of land measuring approximately 80m in length (east-west) x 20m wide. The ploughed strip of land runs parallel to the southern edge of Tea Tree Road, right on the northern boundary of the study area. The artefact is situated approximately 15m south of the southern verge of Tea Tree Road.

Surface visibility on the ploughed strip of land was typically good, averaging around 60%. Away from the ploughed strip, surface visibility was restricted to around 20%, due to thick grass cover. Given some constraints in surface there is a limited potential for additional undetected surface artefacts to be present in this area. However, based on the observed surface expression, artefact densities would be anticipated to be low to very low.

Soils in this area are brown sandy clay loams, which have sufficient depth to comprise sub-surface artefact deposits. Based on the surface expression, densities would be expected to be very low. Any deposits that are present will be in a moderate to highly disturbed context, through land clearing and farming activity.

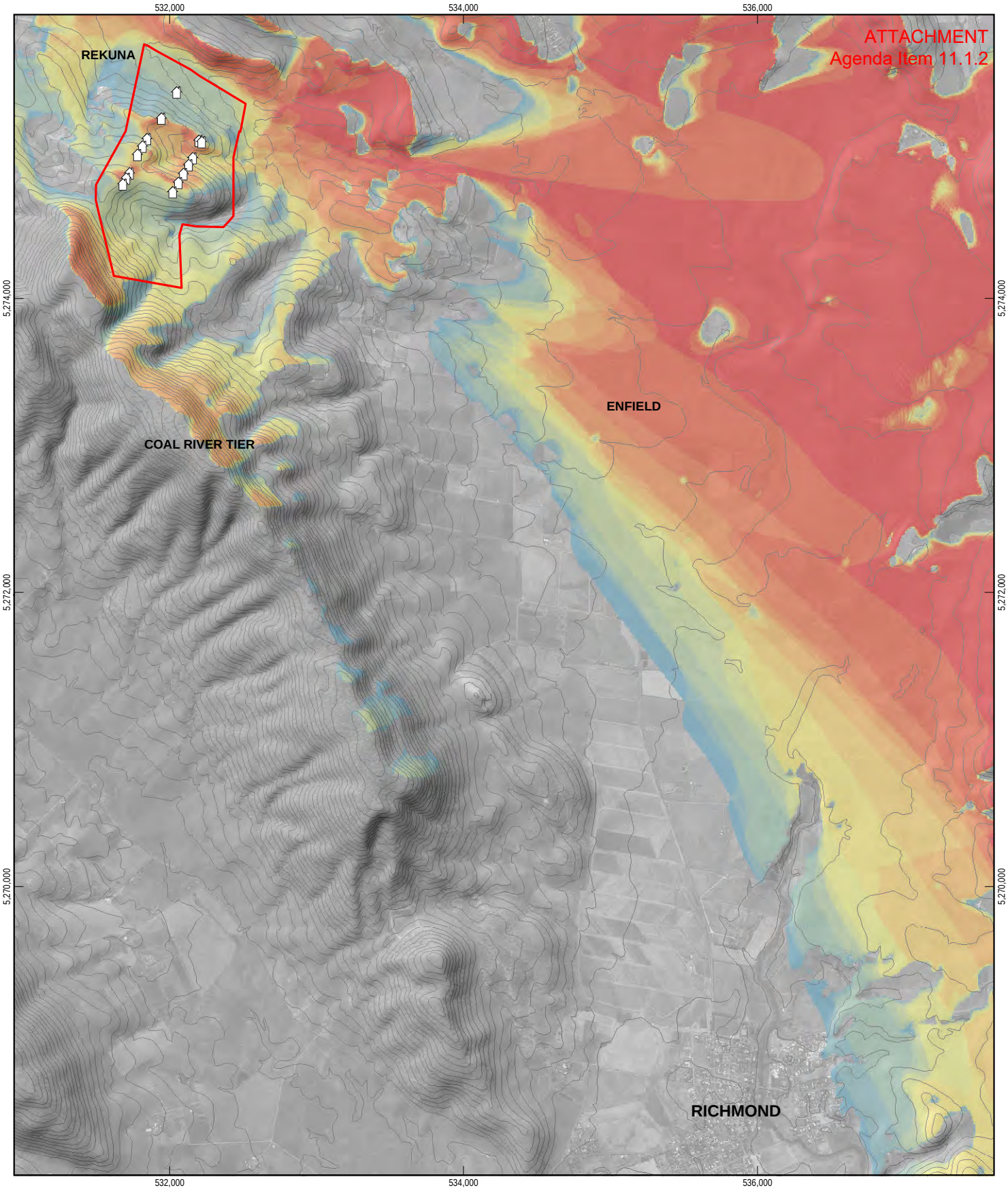
Artefact Details
- Grey/brown chert flake (use-wear on distal margin) 36mm x 64mm x 7mm

Plate 1: Artefact from site AH13103

Plate 2: view west at the location of site AH13103

Appendix I – Visual Impact Assessment

ATTACHMENT
Agenda Item 11.1.2



LEGEND

- Proposed Building
- Contour (10 m)
- Site Boundary

No. of Buildings Visible

15

1

Paper Size A4

0 0.25 0.5 1

Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

Holy Tantra Esoteric Buddhism Incorporated
Rezoning for Buddhist Cultural Park

Job Number 32-17605
Revision A
Date 03 Aug 2015

Visibility Analysis of Proposed Buildings

Figure 1

G:\32\17605\GIS\Maps\Deliverables\3217605_001_Viewshed_RevA.mxd
2 Salamanca Square Hobart TAS 7000 Australia **T** 61 3 6210 0600 **F** 61 3 6210 0601 **E** hbamail@ghd.com.au **W** www.ghd.com.au

Data source: DPIPWE, Contours, 2015; GHD, Veiwshed Analysis, 2015. Created by: JTOregan

Appendix J – Economic Impact Assessment

EIA of Tasmanian Buddhist Cultural Park

Final Report

Holy Tantra Esoteric Buddhism Inc.

July 2017

SGS Economics & Planning

Independent insight.

SGS Economics and Planning Pty Ltd
ACN 007 437 729
www.sgsep.com.au
Offices in Canberra, Hobart, Melbourne and Sydney

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EXECUTIVE SUMMARY

The Tasmanian Buddhist Cultural Park of Australia is proposed to be constructed at 1384 Tea Tree Road, Campania, which has a total site area of over a hundred hectares. The proposed Park is expected to be d a major educational and worship centre for all Holy Tantra Buddhist practitioners.

The Park will also be open to a wide array of visitors including international religious practitioners and students, academics and professionals, as well as locals and tourists. It is intended to be a significant site of cultural exchange and become an iconic tourist attraction for Tasmania.

Economic impact assessment

The results of the economic impact assessment highlight the economic impacts of the development during both the construction and operational phases.

During the first stage of **construction**, which includes the Gate Precinct, Hotel, and Great Hero Treasure Hall Precinct, the development will:

- Directly support approximately 103 full-time equivalent jobs in the Greater Hobart and Southern Midlands regional economy, and the region will gain the $18 million in direct value-added from the construction activity.

- When flow-on effects are incorporated the first stage construction phase of the development supports 295 full time equivalent jobs in the regional economy, and the region will gain $43.0 million in value-added from this construction activity.

- The long term impacts of all stages of the proposed Park (with a construction timeframe of up to 200 years) has the potential to generate a further $62 million worth of value add, and 425 FTE jobs which includes all flow-on effects. Impacting estimates over such a long time frame are highly uncertain and should only be considered as indicative.

During the **ongoing operation** and the attraction of students and visitors to the Park and Greater Hobart, and ongoing operation of the Hotel will structurally:

- In the short term (to the year 2025), directly support approximately 143 full-time equivalent jobs in the Greater Hobart and Southern Midlands economy, and the region will gain the $9.6 million in direct value-added per annum. In the medium term (2025-2040), as visitation and student numbers increase, the Park will directly support approximately 401 full-time equivalent jobs in the Greater Hobart and Southern Midlands economy, and the region will gain the $26.7 million in direct value-added per annum

- When flow-on effects are incorporated the development will support approximately 196 full time equivalent jobs in the Greater Hobart and Southern Midlands economy, and the region will gain $17.2 million in value-added per annum in the short term. In the medium term this increases to an annual value-added of $48.0 million and support for 550 full-time equivalent jobs.

Wider unquantified benefits

The above quantified economic impacts do not include wider unquantified social and cultural benefits, meaning the overall positive impact on the Southern Midlands and Greater Hobart, as well as all of Tasmania, would lie higher still. Important but unquantified benefits include:

- Enhanced cultural exchange and understanding
- Increased diversity in Tasmania's education sector
- Broadening of Hobart's and Tasmania's tourism offerings
- Enhanced worldwide exposure of the Tasmanian brand for tourism and trade

Qualified assessment

SGS has relied on data and information provided by the Holy Tantra Esoteric Buddhism Inc, and has not undertaken a detailed review of these estimates or checked their veracity.

1 INTRODUCTION

1.1 The project

The Tasmanian Buddhist Cultural Park of Australia is proposed to be constructed at 1384 Tea Tree Road, Campania, which has a total site area of over a hundred hectares.

The proposed complex will have ten main temples with various ancillary facilities and structures built in traditional Chinese imperial court Buddhist temple style. When finished it is expected to be a major educational and worship centre for all Holy Tantra Buddhist practitioners.

The Park will also be open to a wide array of visitors including international religious practitioners and students, academics and professionals, as well as locals and tourists, and is considered by the Holy Tantra as a spiritual gift dedicated to the country and people of Australia. It is intended to be a significant site of cultural exchange and becoming an iconic tourist attraction for Tasmania.

Specific components of the Temple will include a Buddhist cultural study centre, international conference centre, Buddhist scriptural library and accommodation, alongside:

- A museum, visitor information/interpretation centre and cafe incorporated within the front gate building. The gate structure is to 108 metres long, 36 metres high and 20 metres wide.
- A reception hall located to the immediate rear of front gate, accommodating a Buddha and providing a place for spiritual sublimation and self-reflection.
- Worldwide research and study centre (Jin-Gang-Dhyana University teaching Buddhist cultural theory and research).
- Community meeting spaces (for Buddhist cultural exchange/meetings)
- A Function Centre
- Residential use (student accommodation and other onsite residences)
- 100 rooms of visitor accommodation to a four-star standard
- Crematorium
- Visitor interpretation centre and gift shop.

1.2 Report context

The construction will be completed in different stages. The funding for the construction will come from the donations of Holy Tantra Esoteric Buddhism's worldwide devotees; therefore, depending on the availability of funding, it is estimated there will be 10-20 stages of construction over a 200-year period.

To analyse the economic impacts of the proposed development the impacts have been separated into phases, with a focus on only the first stage of construction works, and the operational impacts in the short and medium term. The report has therefore used these three time phases:

- The short term (2017-2025), where construction of stage one is completed, and students and visitors are attracted to the site.
- The medium term (2025-2040) sees the site mature and student numbers and visitors increase.
- The longer term refers to the full suite of construction works that are to be completed, possibly with a time frame of 200 years. No anticipated visitation has been calculated for this time period. The specific timing of the commencement of construction is dependent upon funding.

This report is intended to support an application for the rezoning of the land to a Particular Purpose Zone, which would allow the construction and opening up of the temple to scholars, pilgrims and

tourists resulting in significant positive economic impacts. Not only is this development significant for the Southern Midlands Council, but for all of Tasmania, therefore economic impacts have been estimated at regional level which includes the Southern Midlands and Greater Hobart.

1.3 The site

The parcel of land for the Buddhist Park is legally described as Certificate of Title 155148 Folio 1 and is situated within the Southern Midlands municipality.

Formerly used as grazing land, the subject land is relatively steep and is partly vegetated by native and exotic species. It is presently zoned Rural Resource under the Southern Midlands Interim Planning Scheme. An agricultural land capability assessment prepared in respect of the site found that the land was generally suitable only for grazing. Part of the site was considered of extremely limited agricultural capability on account of steep slope.

2 ECONOMIC IMPACT ANALYSIS

2.1 Introduction

An Economic Impact Analysis (EIA) measures the degree to which the economic stimulus associated with a project accumulates in total economic activity levels of a defined region, i.e. after measuring the cumulative impact of all the buyer/ supplier transactions that are induced in the region.

The basic steps in undertaking an EIA include:

1. Isolating how the project stimulates the regional economy (direct impacts).

2. Generating region specific econometric models and subsequently deriving economic multipliers for major regional industry groups.

3. Applying these multipliers (by relevant industry group) to the direct impacts to estimate total regional impacts in terms of regional (output) value added and employment.

SGS has developed and used a region-specific Input-Output model to assess economic impacts of the proposed Buddhist Park Development on the region of the Southern Midlands and Greater Hobart which includes the nearby Brighton and Clarence municipalities.

2.2 The Input-Output (I-O) Model

The Input-Output (I-O) Model is a tool which quantifies the linkages of all sectors in a given economy. A region specific model for the Southern Midlands area was utilised to assess economic impacts of the Project during the construction and operational phases. Multipliers derived from the model estimated three key measures:

- Output (or income);
- Value added Gross Regional Product (GRP); and
- Full time equivalent (FTE) jobs.

A region specific Input-Output Model was prepared to quantify economic contribution made by the Buddhist Park developments various operations to the local region. The model examines how the proposed Park affects an economy through all of the upstream and downstream linkages. The assessment traced all the flow on effects – 'production' and 'consumption' induced effects - in the local / regional economy, to estimate the direct and indirect effects of the turnover generated during the construction and operational phases. The economic impact in terms of output (or income), value added (GRP) and employment (FTE jobs) have been summarised in this chapter.

2.3 Economic stimuli (direct impacts)

The economic stimuli for the development of the Buddhist Park is split into three phases, the construction phase and short and medium term operating phases. The 'direct' regional impacts of each phase are assessed, with the aim to identify the degree to which the project's economic activity is 'new' to the region, as opposed to being a transfer of regional economic activity that would have otherwise

occurred. As the Buddhist Park development is internationally recognisable and will attract many visitors and students who would have otherwise not have been attracted to the Greater Hobart and Southern Midlands, the 'new' expenditure is estimated to be significant.

The economic stimuli of the proposed development include:

- Construction costs of the Park in the short term (Stage 1) which will directly impact on the Non-Residential Construction industry;
- Spending in the region by students and teachers (gurus) who are residing on-site on food, clothing, services, recreation, health, and transport costs.
- Spending by visitors and pilgrims at the Buddhist Park, and surrounding region, directly impacting a range of industries including the Food and Beverage industry and Retail.
- Recurrent expenditure at the on-site accommodation directly impacting on the Accommodation industry.

These stimuli are quantified and the impacts analysed in the remanded of this chapter.

2.4 Assessed economic impacts

Construction phase

The Tasmanian Chinese Cultural Park of Australia is proposed to have ten main temples with various ancillary facilities.

It is intended that the complex be built in series of stages over a very long time frame, possibly up to 200 years, as the availability of project funding becomes available. All project funding will come from offerings and contributions from Holy Tantra practitioners from around the world.

The first stage of the project is expected to be completed in the short term (the next ten years) and comprises of the Front Gate, Drum Tower and Bell Tower. A museum, visitor information/interpretation centre and cafe are all incorporated within the front gate building. The Sakyamuni Buddha Temple (the Great Hero Hall) will also be constructed during this stage. Supporting tourism facilities including a hotel are also to be added as the development progresses. As a preliminary start of the first stage of the project, the two Guardian Lions and Four Great Heavenly Devas have already been installed.

The expected construction cost of the first stage of the project is estimated at $127.9 million based on estimated made by Choice Location Strategists.

TABLE 1 CONSTRUCTION COSTS - STAGE ONE

Component	Size	Cost estimation	Total cost
Gate Precinct (remaining)	2,960 SQM	$18,000 per SQM	$53,280,000
Hotel	100 rooms	$260,000 per room	$26,000,000
Great Hero Treasure Hall Precinct	2,700 SQM	$18,000 per SQM	$48,600,000
Total first stage			**$127,880,000**

Source: Holy Tantra Esoteric Buddhism Inc., Choice Location Strategists (2016)

Given the intention that a proportion of the buildings will be manufactured off shore and many of the interior decorations will be sourced internationally, before being assembled on site, SGS has assumed that 50 percent of the value of construction and fit-out contracts for the construction and fit-out will be awarded to businesses in in the nearby region, with the rest being sourced from overseas.

The economic impacts generated by investment in construction works for phase 1 are summarised in Table 2 below.

The direct stimulus from the proposed construction and fit-out works is estimated at $64.0 million, which will be absorbed entirely by the Non-Residential Construction industry of the surrounding region of Southern Midlands and Greater Hobart.

In addition, the linkages to construction activity imply flow-on effects in other industries across Greater Hobart and the Southern Midlands, which are shown in the table below. When the flow-on effects are incorporated, this stimulus translates to a combined (direct and indirect) economic impact of:

- Output/income $123.0 million
- Value added $43.0 million
- Employment 295 full time equivalent jobs

TABLE 2. ECONOMIC IMPACTS – STAGE ONE CONSTRUCTION (SHORT TERM)

Source of Stimulus	Initial	Flow-On	Total
Construction activities (Capital Works)			
Output	$64,000,000	$59,000,000	**$123,000,000**
Value Added	$18,000,000	$25,000,000	**$43,000,000**
Employment	103	192	**295**

Source: SGS, 2017.

The possible long-term impacts of all the proposed stages have also been estimated. The construction of the remaining stages, including the Medicine Buddha Hall Precinct, Vajra Dharmadhatu Palace Precinct and Hall of Esoteric Buddhism Precinct is estimated to cost a further $91 million. This has the potential to generate an additional $176 million worth of output for the region, $62 million worth of value add, and 425 FTE jobs. Therefore the construction of the entire Buddhist Park complex will result in $105 million worth of value-added and the creation of 720 FTE jobs over the entire lifespan of construction (up to 200 years).

Operational phase

The SGS model is also used to estimate the economic impact of ongoing operations of the Buddhist Park.

The ongoing operation of the Park is expected to benefit the Southern Midlands and Greater Hobart in three significant ways:

1. The students and teachers (gurus) attracted by the learning centre spending money in the regional economy
2. The followers who perform a pilgrimage to the site spending money in the regional economy on their trip, and
3. Tourist visitation and spending at the temple and surrounding area.

Direct expected turnover is estimated as follows.

Worldwide Buddhist Learning Centre student and staff expenditure

The Tasmanian Chinese Cultural Park will offer courses at the highest level of Buddhism and will therefore be a magnet to scholars across the world, particularly from China. The study centre will disseminate the teachings of the Chinese Tantra classical academic system and meditative practice.

In 2011 Buddhists accounted for 2.5 per cent of Australia's population[1], up from 2.1% in 2006, reconfirming Buddhism's position as one of Australia's fastest growing religions[2]. This demonstrates

[1] ABS Census (2011) Factsheet - Religion Top 20 – Australia

[2] Barker, Michelle (2007) Investments in religious capital: an explorative case study of Australian Buddhists. Journal of Global Buddhism, 8. pp. 65-80.

Buddhism's rising prominence in Australia, and the growing demand for both places of worship and educational facilities.

At present there are 20 students on-site, after the construction of the first stage of works this number is expected to increase to approximately 200[3] students. It is intended that the student body grow incrementally to peak at around 600 over time as facilities become available[4]. Students will stay on site at provided accommodation facilities. An estimated 60 Elder Gurus to will also reside on site; this number is expected to increase in line with student numbers.

International students spend money on a range of different local products and services, such as food, housing, transport, clothing, tourism and hospitality. They are also the enablers of the visitor economy through the associated visiting of family and friends, and can be ambassadors for Tasmania in their home markets.[5]

A University of Queensland report[6] undertaking to estimate international student expenditure revealed the average weekly spend of international students on different items. Expenditure on items likely to have impacts on the local economy surrounding the development include[7]:

- Food and Groceries ($174 per week)
- Entertainment and recreation ($48)
- Retail including clothing, household items and gifts ($34)
- Car and transport costs ($31)
- Health costs ($21)
- Other expenses including haircuts and childcare services ($10)

Expenditure on housing and has been excluded as students are staying on campus with the revenue likely flowing out of the region. Other expenses such as telephone costs and insurance are excluded due to this money flowing out of the region to large national companies. In total the expected expenditure in the surrounding region by students is $318 per week. The expenditure of the Gurus is assumed to be in line with student expenditure.

Pilgrims and tourists

The temple complex will be a major educational and worship centre for all Holy Tantra Buddhist practitioners across the world. There is likely to be considerable visitation to the temple from overseas, in particular from China, where there are 600 million Buddhists. China is the fastest-growing tourism source market in the world and the top international tourism spender since 2012[8].

Alongside this is the fact that pilgrimage and religious tourism is one of the fastest growing forms of tourism worldwide with millions of pilgrims, many likely from the growing middle class of China, visiting sacred places like shrines, temples, churches, landscape features, and religious festivities.[9] Modern day pilgrimage isn't considered as much of a 'personal journey' as it once was, but now resembles quick and easy trips to the sacred sites, where people are visiting for short periods of time as they seek more than just spirituality but also look for leisure time and information.[10]

The Temple is intended to be internationally significant with many followers seeking to visit. A demonstration of future visitation is that already many passing motorists and dedicated followers are

[3] From consolation with the Holy Tantra, February 2017
[4] From consolation with the Holy Tantra, February 2017
[5] Department of State Growth (2015) International Education Position Paper
[6] University of Queensland (2005) Final Report of the Survey of International Students' Spending in Australia
[7] All dollar amounts inflated to 2017 terms using relevant ABS CPI
[8] United Nations World Tourism Organisation (2013) The Chinese Outbound Travel Market
[9] Shih, Miao Guang (2015). Modern Religious Tourism in Taiwan: A Case Study of Fo Guang Shan Buddha Memorial Center. FGS Institute of Humanistic Buddhism
[10] Shih, Miao Guang (2015). Modern Religious Tourism in Taiwan: A Case Study of Fo Guang Shan Buddha Memorial Center. FGS Institute of Humanistic Buddhism

eagerly trying to catch a glimpse of the complex on the verges of Tea Tree road. These possible guests are currently not allowed to be received on site as the zoning does not allow for tourism. Furthermore, at the already staged opening of the first components of stage one 200 Buddhist followers were present, alongside crowd of around 1,000 people. The complex has also already received five high ranking delegates from Beijing including the two vice presidents from the Chinese Buddhist Association and the Abbot of the Shaolin Temple.

The Park is also expected to be a beacon for inquisitive culture and history lovers who are not Buddhist, or even religious. The Park will showcase Buddhist history and culture by displaying sculptures, statues, architecture, arts, paintings and images.

The Temple is likely to contribute to tourism in nearby towns including Campania, Richmond or Brighton, and regionally including Hobart. For example Campania, located in the Southern Midlands LGA and only 5km from the Buddhist Park, can capitalise on the increase in tourists by attracting a portion into the town. Current attractions in town include notable examples of colonial architecture and the Flour Mill Park. The complex is also located in the Coal River Valley, one of the most important wine-producing regions of Tasmania, which would allow for increased visitation to rural attractions including vineyards and farm gates.

The Buddhist Park has the potential to become a significant tourist attraction for the Greater Hobart and Southern Midlands region. Table 3 provides a summary of visitor numbers to existing major cultural and historical attractions across Tasmania to guide estimating visitor numbers for the Buddhist Park.

TABLE 3 VISITORS TO EXISITING CULTURAL/HISTORICAL ATTRACTIONS (2016/17)

Major Tasmanian Attractions	Estimated visitors
Salamanca Market	427,334
MONA - Museum of Old and New Art	341,578
Port Arthur Historic Site	275,253
Tasmanian Museum & Art Gallery	136,146
Queen Victoria Museum & Art Gallery Inveresk	35,549

Source: Tourism Tasmania (2017). Tourism Visitor Survey

In the short term, after the completion of stage one of the works, visitation has been estimated at 50,000 per annum. In the medium-term (2025-2040) visitation has been estimated to grow to 130,000 as the site develops and matures, in-line with visitation to the Tasmanian Museum and Art gallery reflecting the Buddhist Park's rise to major attraction status.

According to Tourism Research Australia[11] data a visitor to the region of Hobart and the South spends on average $196 a day. 50% of visitors are assumed, for the purpose of the analysis, to have visited Greater Hobart with the purpose of visiting the Buddhist Park, and would have not otherwise come. It has been estimated that these visitors to the Park will spend three days[12] in total in the Greater Hobart region with a daily expenditure of $196.

On-site hotel accommodation

A portion of the followers and tourists can be expected to stay in the on-site, 100 room 4-star hotel accommodation. It has been estimated that initially the hotel occupancy will be 50% and then rising to 72%, the average occupancy in Hobart[13], in the medium term as visitor numbers increase. The room

[11] Tourism Research Australia (2016) Tourism Region Profiles – Hobart and the South

[12] The average length of time spent in the Hobart and the South tourist region is four days according to data from Tourism Research Australia (2016) Tourism Region Profiles; therefore three days is a conservative estimate

[13] Tourism Research Australia –Regional Profile

price has been estimated at $160[14]. This spending on accommodation has been deducted from the visitor spending calculated above to avoid double counting.

Results

The ongoing annual stimulus in the short term of students, teachers, pilgrims and tourists after the completion of the first tranche of works (around 2025) is estimated to generate $9.6 million in initial value add and directly support a total of 143 full time equivalent jobs in the Accommodation, Food and Beverage, Sports and Recreation, Professional Services, Health, and Retail industries of the Southern Midlands and Greater Hobart.

A breakdown of these economic impacts are provided in Table 4.

TABLE 4. ONGOING ANNUAL ECONOMIC IMPACTS – SHORT TERM

Source of Stimulus	Initial	Flow-On	Total
Expenditure from students, pilgrims and tourists			
Output	$19,100,000	$14,900,000	**$34,000,000**
Value Added	$9,600,000	$7,600,000	**$17,200,000**
Employment	143	53	**196**

Source: SGS, 2017

When the flow-on effects are incorporated, this operational stimulus translates to a combined (direct and indirect) economic impact of:

- Output/income $34.0 million per annum
- Value added $17.2 million per annum
- Employment 196 full time equivalent jobs per annum

In the medium term the temple matures and attracts greater numbers of students and staff (600 students plus 180 gurus) and visitors (130,000 per year). The ongoing annual stimulus in the medium term is estimated to generate $26.7 million in initial value add and directly support a total of 401 full time equivalent jobs in the impacted industries of the Southern Midlands and Greater Hobart.

TABLE 5 ONGOING ANNUAL ECONOMIC IMPACTS – MEDIUM TERM

Source of Stimulus	Initial	Flow-On	Total
Expenditure from students, pilgrims and tourists			
Output	$53,500,000	$41,600,000	$95,100,000
Value Added	$26,700,000	$21,300,000	$48,000,000
Employment	401	149	550

Source: SGS, 2017

When the flow-on effects are incorporated, this operational stimulus translates to a combined (direct and indirect) economic impact of:

- Output/income $95.1 million per annum
- Value added $48.0 million per annum
- Employment 550 full time equivalent jobs per annum

The operational impacts in the long-term (beyond 2040), when further stages of construction have occurred, have not been estimated due to the unreliability of any assumptions made around visitation forecasts and spending.

[14] Choice Location Strategists (2016)

The estimated economic impacts demonstrate the projects ability to facilitate economic development in the Southern Midlands and Greater Hobart and therefore supports a request for an amendment to the planning scheme per the requirements of the Land Use Planning and Approvals Act 1993.

2.5 Limitations

Though a cost-effective and widely used technique for economic impact analysis, I-O modelling has some limitations, as follows.

- The model assumes relationships between industries are static over the forecast period. That is, **productivity improvements are not factored in** and historic relationships are assumed to hold;

- The input output model derives relationships between industries using total production estimates. Consequently, the relationships are 'average', whereas the stimulus used as an input is 'marginal'. Such an approach **does not account for any 'underutilised capacity'** at the industry level or additional economies of scale that might ensue, as production expands from its existing base;

- The model assumes that there are **no supply constraints**. A drawback is that the model does not take into account the 'crowding out' of other sectors. This is recognition of the fact that there are scarce resources in an economy. Especially in the case of large construction projects there may be impacts in terms of availability of labour.

A feasible alternative to using I-O modelling for economic impact assessments is to utilise partial or general equilibrium econometric models. Having said this, general equilibrium models require an annual stimulus of >$100 million before the impacts start to be measurable across the economy.

3 OTHER UNQUANTIFIED BENEFITS

3.1 Wider unquantified benefits

The quantified construction and operational economic impacts do not include wider unquantified social and cultural benefits, meaning the overall impact on the Southern Midlands and Greater Hobart would lie higher still. These wider benefits have been assessed in qualitative terms in the following.

Cultural exchange and understanding

The Park will house a significant Chinese cultural museum and library with the entire complex being presented to the Tasmanian people as a spiritual gift for learning and exploring Buddhist culture. The library will be the largest library in Tasmania hosting 50,000 volumes, with access freely available to the University of Tasmania.

The Tasmanian Government[15] aims to develop a welcoming and cosmopolitan environment in the State through:

- Promoting cultural, religious and linguistic diversity as a social, cultural and economic asset
- Celebrating Tasmania's cultural heritage and identity, promoting multiculturalism and engaging all Tasmanians
- Making Tasmania welcoming as a strong, diverse and inclusive state
- Increasing cultural education among communities and community organisations
- Supporting initiatives to increase community cohesion, diversity, harmony and equality.

The development of the Buddhist Cultural Park advances these objectives considerably. Forms of cultural exchange will help towards strengthening multiculturalism in a modern Tasmania and allows for immigrant communities and visitors to feel welcome and included. The Park can improve social inclusion and can assist Tasmanians from varied backgrounds grow closer. With 1,000 attendees at the opening ceremony of the Guardian Lions and Heavenly Deva statues the Buddhist Park is already playing this role.

Increased diversity in Tasmania's education sector

The Buddhist Learning Centre will assist in providing an international dimension to Tasmania's education sector that benefits all students and institutions. Tasmanian students' education is supported and enhanced by distinct social networks with students from other countries allowing them to expand their horizons by experiencing different cultures, ways of thinking, and building personal connections.

The Buddhist Park development will also boost the number of international students coming to Tasmania to study. This is in line with the intentions of State Government to grow the international student population. The Department of State Growth's International Education Positioning Paper[16] aims to:

- Increase Tasmania's share of the Australian international student market
- Target an overall increase in international student numbers
- Support opportunities and migration pathways for international students
- Strengthen connections with existing and emerging markets, primarily in Asia
- Develop stronger international relationships

[15] Tasmanian Government (2014) Multicultural Policy
[16] Department of State Growth (2015) International Education Positioning Paper

- Encourage and support the entry and growth of new education providers where this will complement the Tasmanian market and its reputation
- Build community awareness and support for international students in Tasmania.

Once again the development of the Buddhist Cultural Park advances these Sate Government objectives considerably.

Broadening of the tourism market

The Temple complex provides an opportunity to broaden Tasmania's tourism offering further by including an internationally significant religious and cultural site alongside Tasmania other attractions based around Tasmania's natural values and MONA.

The Park will importantly draw tourists out of Hobart to less visited parts of the State, in the case the Southern Midlands and Coal River Valley, increasing both the overall impact of tourism but also spreading the benefits further.

Enhanced worldwide exposure of the Tasmanian brand for tourism and trade

The Buddhist Park will generate visitation and linkages with distant markets. These linkages with Tasmania's overseas markets can help growing new export markets and increasing tourism numbers. An example to substantiate this point is the increased interest in the State after the visit by the Chinese President in 2014. After the visit there was an immediate 38 percent increase in Chinese visitors in the following year, and university enrolments increased by 20 percent[17].

The temple complex can provide further exposure of Tasmania and Tasmania's products via the international students and followers attracted to the site and by hosting foreign dignitaries and special events.

3.2 Other considerations

Compatibility with the Council's Strategic Plan 2014-2023

This Strategic Plan for the Southern Midlands has been prepared as a 'blue print' for the future of the Southern Midlands local government area.

The Strategic Plan covers six strategic themes:

1. **Infrastructure**. The need to maintain, improve and maximise the Community benefit from infrastructure provided by Council
2. **Growth**. The need to increase the population in the municipality and to grow the level of agricultural, commercial and industrial activity
3. **Landscapes.** The need to maintain, improve and maximise the benefits of the existing heritage, natural and cultural landscapes of the Southern Midlands
4. **Lifestyle**. The need to increase the opportunities for improved health and well-being of those that live in the Southern Midlands
5. **Community**. The need to retain and build on the strong sense of Community that exists within the Southern Midlands
6. **Organisation**. The need to monitor and continuously improve the efficiency and effectiveness of the way the Council provides services to the Community

The development of the Buddhist Park aligns with many of the above strategic themes from the Plan, in particular the need for growth, the improvement of heritage and cultural landscapes, lifestyle improvements and building a strong sense of community.

[17] Hope, E. (2015) China strengthens Tasmania ties with another high-level visit. The Mercury, November 14 2015

The compatibility of the Buddhist Park with selected Council strategic aims and actions are explored in TABLE 6.

TABLE 6 COMPATIBILITY WITH COUNCIL'S STRATEGIC AIMS AND ACTIONS

Theme	Aim or Action	Compatibility
Growth - 2.1 Residential	2.1.1 Increase the resident, rate-paying population in the municipality	The Buddhist Park will increase the resident population of the Southern Midlands. New residents will arrive in the form of teachers and staff.
Growth – 2.2 Tourism	2.2.1 Increase the number of tourists visiting and spending money in the municipality	The Buddhist Park will increase tourism and spending in the municipality. Significant tourism spending will be attracted to both the Buddhist Park site and surrounding towns (eg. Campania) and attractions (eg Vineyards). In the sort-term it was estimated that after the completion of the stage one of the works visitation to the Park is estimated at 100,000 per annum and the expected tourism expenditure generated by the Park was $29.7 million per annum on-site and across Greater Hobart and the Southern Midlands.
Growth – 2.2 Tourism	2.2.1.1 Seek opportunities to support the development and growth of a wide range of tourism in the Southern Midlands	The development of the Buddhist Park offers itself as a unique and differentiated attraction as part of a 'wide range' of offerings in the Southern Midlands. It will also support the growth of tourism in the Southern Midlands by attracting visitors to other attractions who would not have otherwise visited the area.
Growth – 2.2 Tourism	2.2.1.3 Support the development of tourism products	The Council is seeking to support the development of tourism products, as such an internationally significant proposal such as the Buddhist Park is very well suited to this aim.
Growth – 2.2 Tourism	2.2.1.8 Investigate and encourage the development of a four star accommodation facility (min 30 beds)	The Buddhist Park will feature a 100 bed, 4-star Hotel.
Growth - 2.3 Business	2.3.1a Increase the number and diversity of businesses in the Southern Midlands and 2.3.1b Increase employment within the municipality	The expenditure in the region generated by the Buddhist Park, including by tourists, student s and teachers, will be spent across a range of industries supporting business and employment in the Municipality. For example student and teacher expenditure alone (estimated at $7.5 million in the short term) will flow to businesses in the food and beverage, retail, personal services, recreation and health industries; in total value adding $3.7 million to the regional economy and creating 43 FTE jobs. The significant tourism and construction expenditure will support even further employment and value added.
Landscape - 3.1 Heritage	3.1.1 Maintenance and restoration of significant public heritage assets	Increased rates revenue, and increased tourist expenditure in heritage towns such as nearby Campania which is home to significant colonial architecture, can assist in raising funds for maintenance and restoration works.

Landscape - 3.3 Cultural	3.3.1 Ensure that the Cultural diversity of the Southern Midlands is maximized.	According to the 2011 census 88.5% of residents in the Sothern Midlands were born in Australia, higher than the Tasmanian percentage (83.6%) and much higher than Australia as whole (69.8%). The Buddhist Park will contribute to creating cultural diversity with-in the Southern Midlands.
Landscape - 3.3 Cultural	3.3.1.4 Support the establishment and development of the Buddhist Cultural Park in an appropriate location in the Southern Midlands and encourage the State Government to declare the project to be a Project of Regional Significance recognising its scale, importance and the far reaching nature of its potential benefits and impacts.	Action 3.3.1.4 clearly articulates that the Strategic Plan of the Council supports the development of the Buddhist Park and that the project should receive support due to its importance and far reaching benefits.
Lifestyle – 4.10 Education	4.10.1 Increase the educational and employment opportunities available within the Southern Midlands	The Buddhist Park will increase the educational opportunities within the Southern Midlands both via the on-site Learning Centre, and by providing a museum were residents can be immersed in a different culture and history to their own.

Impacts on agricultural land and industries in surrounding rural resource zone

The municipal area of the Southern Midlands has a predominantly rural based economy. The Council's Strategic Plan[18] stipulates that the Council retain and enhance the development of the rural sector as a key economic driver in the Southern Midlands and will develop opportunities that enhance the Southern Midlands' role as a focal point for rural activity.

The independent assessment of the site by Soily Doyley Consulting concluded that none of the land is rated as Prime Agricultural Land as defined under the State Protection of Agricultural land Policy. The property is classified as predominantly Class 5 land for agricultural use, meaning there are slight to moderate limitations for pastoral use and the land is unsuitable for cropping. Importantly the site is not mapped within the area allocated to receive the benefit of the South East Irrigation Scheme, meaning there is no significant wasted future potential via the rezoning of the land from rural resource to particular purpose.

Due to the lack of agricultural potential, it is envisioned that the land will have a higher value to the community once rezoned and redeveloped by allowing the significant economic impacts to flow from the development of the Park. The construction of the Park is unlikely to have significant impacts specifically on agricultural industries as the majority of the manufacturing of the buildings (and therefore sourcing of raw materials) will occur offshore.

The ongoing increased tourist expenditure however is likely to have positive impacts for the people and industries located in the surrounding area as tourists are attracted to nearby agricultural attractions including vineyards, farm gates and local restaurants using local produce. It was estimated that $9.9 million worth of expenditure in the food and beverage industry a year across Greater Hobart would be enabled by the Buddhist Park, creating 109 FTE jobs. A portion of these impacts will flow to the Southern Midlands depending on how many tourists and visitors to the Park can be attracted to nearby attractions and towns in the Municipality.

[18] Council's Strategic Plan 2014-2023. Operation actions 2.4.1 and 2.4.1.1

Impacts on number of dwellings and visitor accommodation

The development of a four star hotel on-site meets one of the Council's strategic actions of encouraging the development of a four star hotel in the Municipality.

Due to the presence of on-site student and staff residencies and hotel accommodation facilities though it is envisaged that the Buddhist Park will not lead to an increase in dwellings and visitor accommodation in the Southern Midlands outside of the facilities provided on site. Those people who visit Tasmania for the Buddhist Park however will likely also visit other parts of the State. The development is therefore unlikely to lead to more demand within the local area, but will likely increase demand for accommodation elsewhere in the state.

During the construction phase dwellings for construction workers are also unlikely to be necessary due to the sites proximity to Hobart, where the construction workers are likely to be sourced from by the company in charge of construction.

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SGS Economics & Planning

Appendix K – PPZ

34 Particular Purpose Zone – Tasmanian Buddhist Cultural Park Zone

34.1 Zone Purpose

34.1.1 Zone Purpose Statements

34.1.1.1 To provide for the establishment of the Tasmanian Buddhist Cultural Park which will become a major tourist attraction, cultural and learning institution for the Southern Midlands Region and Tasmania.

3.1.1.2 To provide for use and development involving a large temple complex and associated buildings used for worship, teaching and research, cultural activities, healing, meeting and conference spaces including exhibition of historical and cultural material, a cemetery, crematorium, and residential and commercial activities ancillary to the operation of the Tasmanian Buddhist Cultural Park.

34.1.1.3 To facilitate a use and development that will involve an increase in intensity of use of the land and be viewed as a 'landmark' cluster of relatively substantial buildings and structures of Chinese Buddhist architectural style.[1]

34.1.1.4 To retain, or provide for, significant vegetation buffers between the Tasmanian Buddhist Cultural Park building footprint and adjacent use and development.

34.1.2 Local Area Objectives

The zone includes 3 local area precincts as shown in Figure 34.1.2 to this zone.

Temple, Cultural and Educational Precinct	To provide an area for the establishment of buildings and related structures used for worship, education and research, cultural activities, meeting and conference spaces, exhibition of historical and cultural artefacts, and related activities associated with visitation and use of the Tasmanian Buddhist Cultural Park. Buildings will reflect and be consistent with the Chinese Buddhist architectural style[1].
Mixed Use Precinct	To provide an area within which residential, visitor and commercial use and development can occur in support of the Tasmanian Buddhist Cultural Park. The buildings and structures will be responsive to the Chinese Buddhist architectural style.
Open Space Precinct	To ensure that the balance area within the zone is maintained for its ecological, aesthetic, and landscape values. It will be characterised by retention of the existing native vegetation, and may include recreational paths and trails.

[1]Chinese Buddhist architectural style is defined in Clause 34.5 Planning Terms and Definitions Table.

Figure 34.1.2 Tasmanian Buddhist Cultural Park Precinct Plan

34.2 Use Table

No Permit Required	
Use Class	**Qualification**
Natural and Cultural Values Management	
Passive Recreation	
Utilities	If minor utilities.
Permitted	
Business and Professional Services	If in the Temple, Cultural and Education Precinct or Mixed Use Precinct and related to an existing or proposed Community Meeting and Entertainment or Educational and Occasional Care use in the zone.
Community Meeting and Entertainment	If in the Temple, Cultural and Education Precinct. Not for function centre.
Educational and Occasional Care	If in the Temple, Cultural and Education Precinct.

	If not for childcare centre, day respite centre, kindergarten, primary or secondary school.
Food Services	If in the Mixed Use Precinct and related to an existing or proposed Community Meeting and Entertainment or Educational and Occasional Care use in the zone.
General Retail and Hire	If in the Mixed Use Precinct and related to an existing or proposed Community Meeting and Entertainment or Educational and Occasional Care use in the zone.
Visitor Accommodation	If in the Mixed Use Precinct and related to an existing or proposed Community Meeting and Entertainment or Educational and Occasional Care use in the zone.
Residential	If in the Temple, Cultural and Education Precinct, and related to an existing or proposed Community Meeting and Entertainment use or Educational and Occasional Care use in the zone by way of its co-location within the building or directly adjacent to, and for the purposes of caretaking or managing the facility.
Tourist Operation	If in the Temple, Cultural and Education Precinct or Mixed Use Precinct and related to an existing or proposed Community Meeting and Entertainment use or Educational and Occasional Care use in the zone.
Discretionary	
Community Meeting and Entertainment	If in the Mixed Use Precinct.
Crematoria and Cemeteries	If in the Temple, Cultural and Education Precinct.
Storage	If in the Temple, Cultural and Education Precinct, and Mixed Use Precinct.
Utilities	Unless no permit required and if related to an existing or proposed Community Meeting and Entertainment or Educational and Occasional Care use in the zone.
Prohibited	
All other defined uses	

34.3 Use Standards

Objective:
To ensure that use associated with the Tasmanian Buddhist Cultural Park: (a) Does not unreasonably confine or restrain the operation of uses on adjoining properties; (b) Is compatible with agricultural use and sited to minimize conversion of agricultural land; and (c) Does not unreasonably impact on residential amenity of adjoining dwellings.

Acceptable Solution	Performance Criteria
A1 Hours of operation must be within 6.00 am to 10.00 pm, except for Business and Professional Services or Visitor Accommodation uses.	P1 Hours of operation must not have an unreasonable impact upon residential amenity of adjoining dwellings through the timing, duration or extent of vehicle movements, noise associated with cultural or religious activities, or other emissions.
A2 Air conditioning, air extraction, heating or refrigeration systems or compressors must be located a minimum of 100 m from any adjoining property boundary.	A2 Noise generated must not cause unreasonable loss of amenity to adjoining residential uses, having regard to: a) The characteristics and frequency of any emissions generated; b) The nature of the proposed use; c) The topography of the site; and d) Any mitigation measures proposed.
A3 External lighting must be baffled to ensure it does not cause adverse impacts from emission of light onto adjoining properties.	A3 No performance criteria.
A4 Except for Visitor accommodation commercial vehicle movements, to or from a site must be within the hours of: a) 6:00 am to 10:00 pm Mondays to Fridays inclusive; b) 8:00 am to 12 noon Saturdays; c) Nil on Sundays and public holidays.	P4 Commercial vehicle movements (including loading and unloading and garbage removal) must not unreasonably impact on the amenity of nearby sensitive uses, having regard to: a) The extent and timing of traffic generation; b) The dispatch of goods and materials; c) The existing levels of amenity.

34.4 Development Standards

Clause 34.4.1 Building Design

Objective:
To control the design of buildings to: a) Ensure the Chinese Buddhist architectural style is implemented in the built form, colour palette, landscaping, and other building typologies used; b) Ensure exposed rock faces and other excavated areas are revegetated or screened from view from any road or public open spaces.

Acceptable Solution	Performance Criteria
A1 No acceptable solution	P1 Within the Temple, Cultural and Education Precinct: Building design must be consistent with the Local Area Objectives, unless it is a shed or garage which meets the requirements of clause 34.4.1 P2.
A2 No acceptable solution	P2 A shed or garage does not need to be compatible with the Local Area Objectives if all the following are met: (a) The shed or garage is to be exclusively used for storage and maintenance of equipment for use on the Site; and (b) The shed or garage is screened when viewed from Tea Tree Road by reason of it being: (i) Located behind topographical features or buildings or works; or (ii) Screened by landscaping and vegetation.
A3 No acceptable solution	P3 Within the Mixed Use Precinct: Building design must be responsive to the Local Area Objectives, unless it is a shed or garage which meets the requirements of clause 34.4.1 P4.
A4 No acceptable solution	P4 A shed or garage does not need to be responsive to the Local Area Objectives if all the following are met: (a) The shed or garage is to be exclusively used for storage and maintenance of equipment for use on the Site: and (b) The shed or garage is screened when viewed from Tea Tree Road by reason of it being: (i) Located behind topographical features or buildings or works; or (ii) Screened by landscaping and vegetation.

Acceptable Solution	Performance Criteria
A5 Not include cut or fill greater than 2 m from natural ground level.	P5 Buildings and works must be located to minimise depth of any fill or excavation required having regard to: (a) visual impact on the rural landscape values of the area; (b) the extent of vegetation removal and any remedial or mitigation measures or revegetation requirements; and (c) the management and treatment of the balance of the Site and opportunities to minimise rock exposure.

Clause 34.4.2 Building Setback and Height

Objective:
To control the siting and scale of buildings: a) to provide for development in accordance with the Tasmanian Buddhist Cultural Park Precinct Plan; b) to minimise land use conflict and fettering of use of rural land from sensitive uses; c) to maintain desirable characteristics of the rural landscape of the area; and d) to respect the environmental values of the balance land outside the Temple, Cultural and Education Precinct.

Acceptable Solution	Performance Criteria
A1 Building setback from a frontage must be no less than: 50 m.	P1 Building setback from frontages must maintain the desirable characteristics of the surrounding landscape and protect amenity of adjoining lots, having regard to all of the following: a) the topography of the site; b) the size and shape of the site; c) the prevailing setbacks of existing buildings on nearby lots; d) the location of buildings on the site; e) the proposed colours and external materials of the building; f) the visual impact of the building when viewed from an adjoining road; g) retention of vegetation; provided that any building setback from a frontage must be no less than 20 m.
A2 Building setback for a sensitive use must be separated from an Agricultural Zone a distance of: (a) Not less than 200 m.	P2 Building setback for a sensitive use from side and rear boundaries must: a) be sufficient to prevent potential for land use conflict that would fetter non-sensitive use of adjoining land; b) be no less than 100 m.

Acceptable Solution	Performance Criteria
A3 Building setback for uses from an Agricultural Zone a distance of: (a) Not less than 100 m for Community Meeting and Entertainment use and development; and (b) Not less than 100 m for a Tourist Operation use and development.	P3 Building setback from side and rear boundaries must: a) be sufficient to prevent potential for land use conflict that would fetter non-sensitive use of adjoining land.
A4 Building height must be no more than: Within the Temple, Cultural and Education Precinct a) 36 m Within the Mixed Use Precinct b) 15 m 10 m otherwise	P4 Building height must satisfy all of the following: a) Be consistent with the Local Area Objectives; b) Be sufficient to prevent unreasonable adverse impacts on residential amenity on adjoining lots by overlooking and loss of privacy; c) The height is necessary to achieve the Chinese Buddhist architectural style within the Temple, Cultural and Education Precinct

Clause 34.4.3 Natural and Cultural Management

Objective:
To minimize impacts of development on the sites natural and cultural values associated with the sandstone escarpment.

Acceptable Solution	Performance Criteria
A1 Buildings or works must be setback no less than: 50 m from the sandstone escarpment and related cliffs, caves, and overhangs at: Grid References: Overhang 1 E531900/N5275007 Overhang 2 E531903/N5275014 Overhang 3 E531942/N5274880 Overhang 4 E531957/N5274865 Overhang 5 E531981/N5274820 Overhang 6 E531987/N5274800 Overhang 7 E531994/N5274820 Overhang 8 E532062/N5274800 Overhang 9 E532030/N5274810	P1 Buildings or works within 50 m of the sandstone escarpment and related cliffs, caves, and overhangs must minimise impacts on the natural and cultural values associated with these structures, as assessed in a report by a suitably qualified person.

Clause 34.4.4 Outdoor Storage Areas

Objective:
Outdoor storage areas do not detract from the appearance of the site or surrounding area.

Acceptable Solution	Performance Criteria
A1 Outdoor storage areas must not be visible from any road or public open space adjoining the site.	P1 Outdoor storage areas must be located, treated or screened to not cause an unreasonable loss of visual amenity.

Clause 34.4.5 Site Landscaping

Objective:
To provide for landscaping[2] that: a) Complements the Local Area Objectives; b) Enhances the rural landscape values of the locality; c) Assists with integrating buildings and structures into the landscape.

Acceptable Solution	Performance Criteria
A1 Within the Temple, Cultural and Educational Precinct landscaping must be undertaken in accordance with a Landscape Master Plan approved by Council within six (6) months of the first use of the development.	P1 Landscaping must be provided to satisfy all of the following: a) Enhance the appearance of buildings and the site; b) Provide a range of plant and vegetation types, varying forms and heights to create diversity, interest, and amenity.
A2 Within the Mixed Use Precinct landscaping must be undertaken in accordance with a Landscape Master Plan approved by Council within six (6) months of the first use of the development.	P2 Landscaping must be provided to satisfy all of the following: a) Enhance the appearance of buildings and the site; b) Provide a range of plant and vegetation types, varying forms and heights to create diversity, interest, and amenity.

[2]Landscaping is defined in Clause 34.5 Planning Terms and Definitions Table.

Clause 34.4.5 Subdivision

Objective:	
To prevent further fragmentation and fettering	
Acceptable Solution	**Performance Criteria**
A1 A new lot is for public open space, a riparian or littoral reserve or to provide for a Utilities use class.	**P1** No performance criteria.

Clause 34.4.6 Services

Objective:	
To ensure services for future use and development of the land are provided	
Acceptable Solution	**Performance Criteria**
A1 Where required development must have connection to a reticulated potable water supply, where available.	**P1** Development must be provided with adequate potable water supply adequate for the future use and development of the land.
A2 Where required development must have connection to a reticulated sewerage system, where available.	**P2** Development must be capable of accommodating an onsite wastewater treatment system adequate for the future use and development of the land.

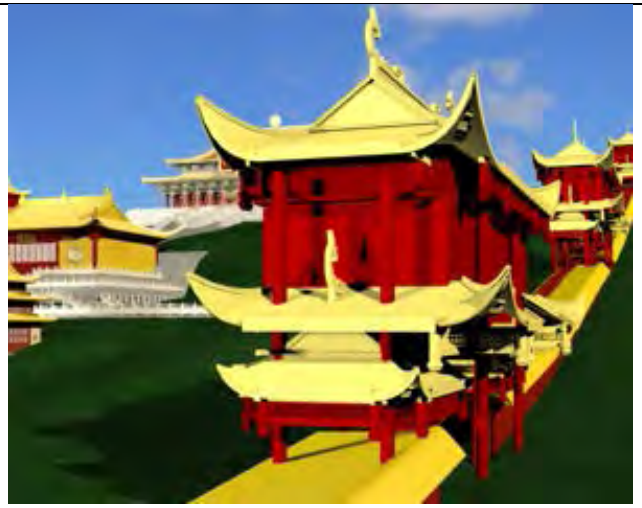
34.5 Planning Terms and Definitions Table

Term	Definition
Chinese Buddhist architectural style[3]	Architecture of the Tang-Song and Ming-Qing dynasties typically featuring large buildings with tiered roofs having traditional flared eaves with golden yellow amber roof tiles. Other architectural features include use of arches, towers, elaborate renderings including of Chinese dragons on roofs and associated beams and pillars, boundary walls, entry gates, pavilions, statues, walkways and courtyards, featuring use of colours such as imperial yellow, dark red, and white. Buildings will typically sit within classical Chinese gardens and landscaped areas using water and stone features, and plants and trees such as (but not limited to) Buddhist Pines (Podocarpus macrophyllus), Azaleas (Rhododendron spp), Tree peony (Paeonia suffruticosa), Chrysanthemum (Chrysanthemum grandifiorum), and Sweet Osmanthus (Osmanthus fragrans).

Term	Definition
Landscaping	The process of making a garden or piece of land more attractive by altering the existing conditions of the land, by adding ornamental features, planting of trees and shrubs, and placement of other elements consistent with the Chinese Buddhist architectural style.

[3] Examples of this style are contained in Table 34.5.1

Table 34.5.1 – Examples of Chinese Buddhist architectural style

Appendix L – Water Service RFI April

ATTACHMENT
Agenda Item 11.1.2

05 April 2018

Manager of Development and Environmental Services
Southern Midlands Council
PO Box 21
OATLANDS TAS 7120

Our ref: 3218476-83798
Your ref:

Attention David Cundall

Dear David

Tasmanian Chinese Buddhist Cultural Park Rezoning
Additional Information - Water Service

In response to your request for additional information around the Water Service for the site, we provide the following information. Subject to the comments herein including advice from TasWater, and the construction of suitable reservoir and pumping infrastructure within the development, there is sufficient water supply to provide for the proposed development.

1 Current Water Service

There is an existing DN200 CICL water main along Tea Tree Road servicing the property off the Rekuna Reservoir. The Top Water Level in the reservoir is approximately 171m AHD. This limits the area currently serviced to below this level less hydraulic losses. In order to provide 22m minimum pressure at the connection point, the anticipated maximum level of a connection would be around 145 – 150 m AHD.

2 Water Service Demand

A services enquiry was undertaken based on the following development and staging. At this early stage, it is not possible to determine the exact development or staging, however the intent below is provided for information.

- Museum
- Ceremonial buildings and spaces
- Research and study (Buddhist cultural theory and research)
- Community meeting (Buddhist cultural exchange / meeting areas)
- Function centre (to be held intermittently in various halls / conference rooms)
- Crematorium

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In support of the above temple complex a number of other uses will be developed, including:

- Visitor accommodation (to support the educational and community meeting uses);
- Residential (students and scholars, caretaker staff, others associated with the operation of the temple complex); and
- Visitor centre and food services (to form a subservient role to the main Buddhist Cultural Park use).

A conservative estimate of the proposed water demands spread over the site is included below.

Table 1 Proposed average water demand (Concept Only)

Description	ET[1]	Average Day Demand (kL/day)[2]
3 cottages + 500 visitors (peak)	3x1 + 500 x 0.009 = 7.5	5.1
2 cottages +500 visitors (peak)	2x1 + 500 x 0.009 = 6.5	4.5
100 bed hotel	100 x 0.3 = 300	20.6
4 cottages + 500 visitors (peak)	4x1 + 500 x 0.009 = 8.5	5.8
3 cottages + 500 visitors (peak)	3 x 1 + 500 x 0.009 =7.5	5.1
TOTAL	***60***	*41.1*

[1] ET = Equivalent Tenement. Has been calculated based on Appendix A of *TW supplement to Water Supply Code of Australia WSA 03 -2011-3.1 MRWA Edition V2.0*, Issue Number PUBLIC 04 (https://www.taswater.com.au/ArticleDocuments/337/TW%20Supplement%20WSA03-MRWA%20V2.0%20-%20Public%2004_Apr%202015.pdf.aspx, accessed 5/04/18 9:37am) for single dwelling, public entertainment, & conference centre.

[2] Average Day Demand (AD) based on 250 kL/ET (TW supplement clause 2.3.1).

Peak Demands are included below. These are again conservatively high.

Table 2 Proposed Peak Demand and Fire Flow

Description	Peak Day Demand (kL/day) [3]	Peak Hour Demand (L/s) [4]	Cumulative Fire Flow (L/s)
3 cottages + 500 visitors (peak)	12.8	0.30	10.20
2 cottages +500 visitors (peak)	11.3	0.26	10.37
100 bed hotel	51.5	1.19	21.17
4 cottages + 500 visitors (peak)	14.5	0.34	21.39
3 cottages + 500 visitors (peak)	12.8	0.30	21.59
TOTAL	*102.8*	*3.0*	21.98

[3] Peak Day Demand (PD) assumed conservatively 2.5 x AD for uses other than retirement village (2.25 x AD) – TW Supplement clause 2.3.4.2.

[4] Peak Hour Demand (PD) = 2.0 x PD (TW supplement clause 2.3.4.3)

3 Servicing Strategy

A concept servicing strategy has been developed in consultation with TasWater and is outlined below. Particular attention is paid to the staging of private reservoir (storage) and pumping infrastructure by the developer.

3.1 Reservoir Volumes

Rekuna Reservoir would supply the development. This provides limits on Connection Pressure (refer below). There are also limits on the volume of water to be provided by the existing reservoir. The current Reservoir has a volume of 0.45ML. The required Reservoir Volume as per TasWater Supplement clause 2.9.1 is maximum (1.33 x PD, 1xPD + 150kL). Cumulative required reservoir volumes are calculated below.

Table 3 Reservoir Requirements

Description	Peak Hour Demand (L/s)	Required Reservoir Volume (ML)	Minimum Private Reservoir Volume (ML)
3 cottages + 500 visitors (peak)	0.30	0.163	0.00
2 cottages +500 visitors (peak)	0.26	0.324	0.00
100 bed hotel	1.19	0.526	0.08
4 cottages + 500 visitors (peak)	0.34	0.690	0.24
3 cottages + 500 visitors (peak)	0.30	0.853	0.40
TOTAL	*3.0*	0.853	0.40

* A minimal reservoir will be required early in the development to provide sufficient pressure to the proposed development. Direct pressure boosting is not allowed by TasWater without a storage.

3.2 Connection Pressure

We understand as this is a new development, TasWater will require 25m pressure at the connection. Initial development can likely be serviced directly from existing TasWater infrastructure without additional pumping. This assumes:

- 875m pipe length from reservoir to connection;
- C=110 for CICL (TW Supplement clause 3.1.6.3);
- DN200 Pipe from GIS (assumed ID 200mm);
- Rekuna Reservoir:
    - TWL 171m AHD
    - BWL 167m AHD
    - 1/3 WL 168.3m AHD

Table 4 Water Pressure

Description	Peak Hour Demand (L/s)	Cumulative Fire Flow (L/s)	Friction Loss (m)	Max Connection Level (m AHD)*	Hydraulic Grade Line at Connection (m AHD)
3 cottages + 500 visitors (peak)	0.30	10.20	0.80	142.53	167.53
2 cottages +500 visitors (peak)	0.26	10.37	0.83	142.50	167.50
100 bed hotel	1.19	21.17	3.11	140.22	165.22
4 cottages + 500 visitors (peak)	0.34	21.39	3.17	140.16	165.16
3 cottages + 500 visitors (peak)	0.30	21.59	3.23	140.11	165.11
TOTAL	**3.0**	**21.98**	**3.34**	**140.00**	**165.00**

* assumes 25m head at connection.

3.3 Summary

Based on the above, we understand that TasWater are able to provide water service to the development although the Developer will need to undertake private works including:

1. Prior to exceeding Hydraulic Grade Line with development, provide a **private storage** (say 165kL) and pumpstation. Based on the concept staging, this would be early in the development depending on location on site. Note that the accommodation may be able to be developed without pressure boosting but a storage may still be required.

2. The onsite storage (reservoir) and pumpstation will need to be increased progressively with the development. Indicative storage volumes in accordance with TasWater's Supplement are included above in Table 3.

Should the development have water demands in addition to those listed herein, further infrastructure can be addressed at the time of the additional development to provide additional water supply.

We trust the above provides sufficient clarity on water supply for the proposed rezoning. Please contact the undersigned should you require any additional information.

Sincerely
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Document Status

Revision	Author	Reviewer		Approved for Issue		
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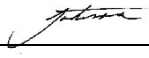
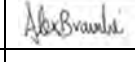
0	A Brownlie	A Johnson		A Brownlie		24/5/2018

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