



CITY OF HOBART

AGENDA

City Planning Committee Meeting

Open Portion

Monday, 22 August 2022

at 5:00 pm

Council Chamber, Town Hall

SUPPLEMENTARY ITEMS

ORDER OF BUSINESS

COMMITTEE ACTING AS PLANNING AUTHORITY 3

APPLICATIONS UNDER THE HOBART INTERIM PLANNING SCHEME 2015

7. 100 Pinnacle Road, Mount Wellington - Upgrade to Water
Infrastructure (Fern Tree Bower) 4

REPORTS

8. Significant Tree Nomination - Glenrose Park 110 Pottery Road,
Lenah Valley 331

The Chief Executive Officer reports:

“That in accordance with the provisions of Part 2 Regulation 8(6) of the *Local Government (Meeting Procedures) Regulations 2015*, these supplementary matters are submitted for the consideration of the Committee.

Pursuant to Regulation 8(6), I report that:

- (a) information in relation to the matter was provided subsequent to the distribution of the agenda;
- (b) the matter is regarded as urgent; and
- (c) advice is provided pursuant to Section 65 of the Act.”

COMMITTEE ACTING AS PLANNING AUTHORITY

In accordance with the provisions of Part 2 Regulation 25 of the *Local Government (Meeting Procedures) Regulations 2015*, the intention of the Committee to act as a planning authority pursuant to the *Land Use Planning and Approvals Act 1993* is to be noted.

In accordance with Regulation 25, the Committee will act as a planning authority in respect to those matters appearing under this heading on the agenda, inclusive of any supplementary items.

The Committee is reminded that in order to comply with Regulation 25(2), the Chief Executive Officer is to ensure that the reasons for a decision by a Council or Council Committee acting as a planning authority are recorded in the minutes.

**7. 100 PINNACLE ROAD, MOUNT WELLINGTON - UPGRADE TO WATER INFRASTRUCTURE (FERN TREE BOWER)
PLN-22-138 - FILE REF: F22/83944**

Address: 100 Pinnacle Road, Mount Wellington
Proposal: Upgrade to Water Infrastructure (Fern Tree Bower)
Expiry Date: 6 September 2022
Extension of Time: Not applicable
Author: Cameron Sherriff

RECOMMENDATION

That pursuant to the *Hobart Interim Planning Scheme 2015*, the Council approve the application for upgrade to water infrastructure (Fern Tree Bower), at 100 Pinnacle Road, Fern Tree 7054 for the reasons outlined in the officer's report and a permit containing the following conditions be issued:

GEN

The use and/or development must be substantially in accordance with the documents and drawings that comprise PLN-22-138 - 100 PINNACLE ROAD MOUNT WELLINGTON TAS 7054 - Final Planning Documents except where modified below.

Reason for condition

To clarify the scope of the permit.

THC

The use and/or development must comply with the requirements of the Tasmanian Heritage Council as detailed in the Notice of Heritage Decision, THC Works Ref: 7948 dated 18 August 2022, as attached to the permit.

Reason for condition

To clarify the scope of the permit.

ENG sw1

All stormwater from the proposed development (including but not limited to: roofed areas, ag drains, retaining wall ag drains and impervious surfaces such as driveways and paved areas) must be drained to the Council's stormwater infrastructure prior to first occupation or commencement of use (whichever occurs first).

Any private or private shared stormwater system passing through third-party land must have sufficient receiving capacity.

Advice:

Under section 23 of the Urban Drainage Act 2013 it is an offence for a property owner to direct stormwater onto a neighbouring property.

Reason for condition

To ensure that stormwater from the site will be discharged to a suitable Council approved outlet.

ENG 1

Any damage to council infrastructure resulting from the implementation of this permit, must, at the discretion of the Council:

1. Be met by the owner by way of reimbursement (cost of repair and reinstatement to be paid by the owner to the Council); or
2. Be repaired and reinstated by the owner to the satisfaction of the Council.

A photographic record of the Council's infrastructure adjacent to the subject site must be provided to the Council prior to any commencement of works.

A photographic record of the Council's infrastructure (e.g. existing property service connection points, roads, buildings, stormwater, footpaths, driveway crossovers and nature strips, including if any, pre-existing damage) will be relied upon to establish the extent of damage caused to the Council's infrastructure during construction. In the event that the owner/developer fails to provide to the Council a photographic record of the Council's infrastructure, then any damage to the Council's infrastructure found on completion of works will be deemed to be the responsibility of the owner.

Reason for condition

To ensure that any of the Council's infrastructure and/or site-related service connections affected by the proposal will be altered and/or reinstated at the owner's full cost.

ENV 9

All recommendations in section 4 of the Natural Values Assessment report by ERA Planning & Environment dated 2 November 2021 must be implemented.

Reason for condition

To ensure the use/development does not result in unnecessary or unacceptable loss of biodiversity values

ENV 1

Sediment and erosion control measures sufficient to prevent sediment from leaving the site must be installed prior to any disturbance of the site, and maintained until all areas of disturbance have been stabilized or re-vegetated.

Advice:

For further guidance in preparing a Soil and Water Management Plan – in accordance with Fact sheet 3 Derwent Estuary Program click [here](#).

Reason for condition

To avoid the sedimentation of roads, drains, natural watercourses, Council land that could be caused by erosion and runoff from the development, and to comply with relevant State legislation.

HER 12

Any fixings into the external walls of the water system bower infrastructure should be with noncorrosive materials and into the mortar joints rather than the face of the stone or brick units. Penetrations for cables or pipes should also be through mortar joints where possible.

Reason for condition

To ensure that development at a heritage place / landscape precinct is undertaken in a sympathetic manner which does not cause loss of historic cultural heritage significance.

HER 17a

The palette of exterior colours, materials and finishes must reflect the palette of colours, materials and finishes within the place / cultural landscape precinct. The electrical pilt service lids must be of a coloured finish similar to the track surface 'Tolosa Gold'.

Reason for condition

To ensure that development at a heritage place/ landscape precinct is undertaken in a sympathetic manner which does not cause loss of historic cultural heritage significance.

OPS s1

All recommendations and proposed methodologies in the Arboricultural Assessment by Element Tree Services dated 21 May 2021 must be implemented.

Before works commence, the tree protection zone extents of all swamp gums (*Eucalyptus regnans*) along the section of the Pipeline Track to be trenched, must be marked on the ground e.g. with flagging tape. Trenching must not to occur within these zones if at all possible. If it is unavoidable, trenching must be done by a vacuum truck not an excavator.

Within the marked tree protection zone areas there must be no:

- machine excavation including trenching;
- physical damage to the trees; excavation for silt fencing; storage;
- preparation of chemicals including cement products;
- parking of vehicles or machinery;
- placement of fill; or
- temporary or permanent installation of utilities or signs.

Reason for condition

Conservation of areas of significant vegetation or individual trees that have important aesthetic, heritage and environmental values.

OPS s2

A suitably qualified and experienced supervising arborist must be present during the trenching works. If roots are encountered, the trench is to be excavated using a vacuum truck. The arborist must also be present during excavation adjacent to the Fern Tree Bower box. Works must be done in accordance with the arborist's advice.

The supervising arborist must certify in writing that they were present during all relevant works and that the works were undertaken in accordance with the Element Tree Services Arboricultural Assessment. This certification must be submitted to Council within one week of the works being completed.

Reason for condition

Conservation of areas of significant vegetation or individual trees that have important aesthetic, heritage and environmental values.

ADVICE

The following advice is provided to you to assist in the implementation of the planning permit that has been issued subject to the conditions above. The advice is not exhaustive and you must inform yourself of any other legislation, by-laws,

regulations, codes or standards that will apply to your development under which you may need to obtain an approval. Visit the Council's [website](#) for further information.

Prior to any commencement of work on the site or commencement of use the following additional permits/approval may be required from the Hobart City Council.

BUILDING PERMIT

You may need building approval in accordance with the *Building Act 2016*. Click [here](#) for more information.

This is a Discretionary Planning Permit issued in accordance with section 57 of the *Land Use Planning and Approvals Act 1993*.

COUNCIL RESERVES





A Public Spaces By-law permit will be required for all Fern Tree Bower upgrade works occurring outside Wellington Park, for example the new cabling and signal box. Information about the permits, and the application form to undertake works in a public space, can be found [here](#).

WEED CONTROL

Effective measures are detailed in the Tasmanian Washdown Guidelines for Weed and Disease Control: Machinery, Vehicles and Equipment (Edition 1, 2004). The guidelines can be obtained from the Department of Primary Industries, Parks, Water and Environment [website](#).

DIAL BEFORE YOU DIG

Click [here](#) for dial before you dig information.

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|---------------|---|
| Attachment A: | PLN-22-138 - 100 PINNACLE ROAD MOUNT WELLINGTON
TAS 7054 - Planning Committee or Delegated Report ↓  |
| Attachment B: | PLN-22-138 - 100 PINNACLE ROAD MOUNT WELLINGTON
TAS 7054 - CPC Agenda Documents ↓  |
| Attachment C: | PLN-22-138 - 100 PINNACLE ROAD MOUNT WELLINGTON
TAS 7054 - Planning Referral Officer Cultural Heritage Report
↓  |
| Attachment D: | PLN-22-138 - 100 PINNACLE ROAD MOUNT WELLINGTON
TAS 7054 - Planning Referral Officer Environmental
Development Planner Report ↓  |

**APPLICATION UNDER HOBART INTERIM PLANNING SCHEME 2015**

Type of Report:	Committee
Council:	15 August 2022
Expiry Date:	6 September 2022
Application No:	PLN-22-138
Address:	100 PINNACLE ROAD , MOUNT WELLINGTON
Applicant:	Sarah Silva (ERA Planning and Environment) Level 1 125A Elizabeth Street
Proposal:	Upgrade to Water Infrastructure (Fern Tree Bower)
Representations:	Nil
Performance criteria:	Historic Cultural Heritage Code, Waterway and Coastal Protection Code, Wellington Park Specific Area Plan/Wellington Park Management Plan

1. Executive Summary

- 1.1 Planning approval is sought for Upgrade to Water Infrastructure (Fern Tree Bower), at 100 Pinnacle Road, Fern Tree.

- 1.2 Broadly, the intent of the proposal is to automate the Fern Tree Bower, so that it can be activated remotely, rather than on site. The Bower manages the flow of water into the drinking water system during high rainfall events. The following specific works are proposed:
- Installation of an actuated butterfly valve on the outlet of The Bower.
 - Installation of a turbidity measurement instrument at the Bower.
 - Construction of a 1.8m x 2.4m precast concrete pit to house the new equipment to a depth of 1.5m BGL.
 - Installation of a remote terminal unit (RTU) at the Bower to allow automatic and remote control of the actuated valve.
 - Installation of a 4G modem for communications at the meter panel location.
 - Installation of a power and communications supply to the Bower fed from a meter panel at the top of Clegg Road.
 - Installation of approximately seven electrical pits: three around the actual bower and four along the Pipeline Track up to the new meter panel cabinet (approximately one every 50 m).
 - The relocation of an existing interpretive sign relating to the Pipeline Track, currently located where the new meter panel is designated to go.
 - The relocation of three tree ferns in the vicinity of the bower currently sited within the footprint of the proposed infrastructure. These tree ferns will be located on the advice of Tasmanian Tree Care and will be replanted to screen the new infrastructure if possible.
- 1.3 The proposal relies on performance criteria to satisfy the following standards and codes:
- 1.3.1 Historic Heritage Code - Demolition, Building and Works to a Heritage Listed Place, Demolition, Building and Works within a Cultural Landscape Precinct, Demolition, Building and Works within a Place of Archaeological Potential
 - 1.3.2 Waterway and Coastal Protection Code - Buildings and Works
 - 1.3.3 Wellington Park Specific Area Plan/Wellington Park Management Plan - Flora and Fauna Conservation, Geoconservation and Natural Processes, Water quality and flow, Natural Hazards
- 1.4 No representations in relation to the proposal were received within the statutory advertising period between 4 and 18 July 2022.
- 1.5 The proposal is recommended for approval subject to conditions.
- 1.6 The final decision is delegated to the Council, because the proposal includes works on Council land that isn't a road.

2. Site Detail

- 2.1 The site is 100 Pinnacle Road, and more specifically the Fern Tree Bower that is located adjacent to the Pipeline Track.

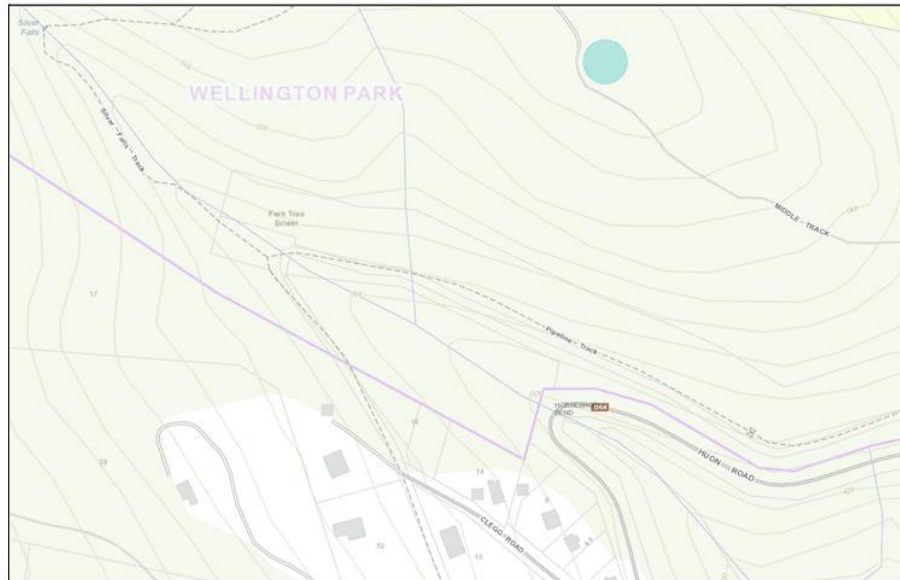


Figure 1: Topographic map showing the location of the Fern Tree Bower (notated).
Source: List Map.



Figure 2: Location plan with Fern Tree Bower indicatively shown by the red spot.
Source: HCC GIS.



Figure 3: The existing Fern Tree Bower. Source: ERA Planning Submission.

3. Proposal

- 3.1 Planning approval is sought for Upgrade to Water Infrastructure (Fern Tree Bower), at 100 Pinnacle Road, Fern Tree.

3.2 Broadly, the intent of the proposal is to automate the Fern Tree Bower, so that it can be activated remotely, rather than on site. The Bower manages the flow of water into the drinking water system during high rainfall events. The following specific works are proposed:

- Installation of an actuated butterfly valve on the outlet of The Bower.
- Installation of a turbidity measurement instrument at the Bower.
- Construction of a 1.8m x 2.4m precast concrete pit to house the new equipment to a depth of 1.5m BGL.
- Installation of a remote terminal unit (RTU) at the Bower to allow automatic and remote control of the actuated valve.
- Installation of a 4G modem for communications at the meter panel location.
- Installation of a power and communications supply to the Bower fed from a meter panel at the top of Clegg Road.
- Installation of approximately seven electrical pits: three around the actual bower and four along the Pipeline Track up to the new meter panel cabinet (approximately one every 50 m).
- The relocation of an existing interpretive sign relating to the Pipeline Track, currently located where the new meter panel is designated to go.
- The relocation of three tree ferns in the vicinity of the bower currently sited within the footprint of the proposed infrastructure. These tree ferns will be located on the advice of Tasmanian Tree Care and will be replanted to screen the new infrastructure if possible.

4. Background

- 4.1 The proposal is for works on Council owned land, as such, General Manager Consent to the lodging of the application was sought under GMC-22-20, and granted on 29 March 2022.
- 4.2 The works are also located in Wellington Park, and as such, the application was referred to the Wellington Park Management Trust. The Trust advised that a Park Activity Assessment for the works had been submitted and would be considered by the Trust. The Trust's response is provided at Attachment B to this report.

5. Concerns raised by representors

- 5.1 No representations were received during the statutory advertising period between 4 and 18 July 2022.

6. Assessment

- 6.1 The *Hobart Interim Planning Scheme 2015* is a performance based planning scheme. To meet an applicable standard, a proposal must demonstrate compliance with either an acceptable solution or a performance criterion. Where a proposal complies with a standard by relying on one or more performance criteria, the Council may approve or refuse the proposal on that basis. The ability to approve or refuse the proposal relates only to the performance criteria relied on.
- 6.2 The site is located within the Environmental Management Zone of the *Hobart Interim Planning Scheme 2015*.
- 6.3 The existing use is Utilities. Utilities is a permitted use in the zone. No change or intensification of use is proposed.
- 6.4 The proposal has been assessed against:
- 6.4.1 D29.0 Environmental Management Zone
 - 6.4.2 E7.0 Stormwater Code
 - 6.4.3 E10.0 Biodiversity Code
 - 6.4.4 E11.0 Waterway and Coastal Protection Code
 - 6.4.5 E13.0 Historic Heritage Code
 - 6.4.6 F3.0 Wellington Park Specific Area Plan/Wellington Park Management
- 6.5 The proposal relies on the following performance criteria to comply with the applicable standards:
- 6.5.1 Historic Heritage Code -

Demolition, Building and Works to a Heritage Listed Place, E13.7.1 P1, E13.7.2 P1, P2, P3
Demolition, Building and Works within a Cultural Landscape Precinct, E13.9.1 P1, E13.9.2 P1
Demolition, Building and Works within a Place of Archaeological Potential, E13.10.1 P1
 - 6.5.2 Waterway and Coastal Protection Code -

Buildings and Works, E11.7.1 P1

6.5.3 Wellington Park Specific Area Plan/Wellington Park Management Plan -

*Flora and Fauna Conservation, Geo-conservation and Natural Processes, Issue 2 P2.1**Water quality and flow, Issue 3 P3.2**Natural Hazards, Issue 8 P8.1*

6.6 Each performance criterion is assessed below.

6.7 Demolition, Building and Works to a Heritage Listed Place, E13.7.1 P1, E13.7.2 P1, P2, P3, Demolition, Building and Works within a Cultural Landscape Precinct, E13.9.1 P1, E13.9.2 P1, Demolition, Building and Works within a Place of Archaeological Potential, E13.10.1 P1

6.7.1 The proposal is to upgrade the Fern Tree Bower, which is heritage listed, and located within a Cultural Heritage Landscape Precinct, and a Place of Archaeological Potential. The Council's Cultural Heritage Officer has provided the following assessment of the proposal.

Fern Tree Bower, 100 Pinnacle Road, Wellington Park is a place of Archaeological Potential, located in a Cultural Landscape Precinct, and a Listed Place in HIPS 2015. Approval is sought by TAS Water to upgrade the water infrastructure to automate the Fern Tree Bower.

Proposal:

- Installation of an actuated butterfly valve on the outlet of The Bower.
- Installation of a turbidity measurement instrument at the Bower.
- Construction of a 1.8m x 2.4m precast concrete pit to house the new equipment to a depth of 1.5m BGL.
- Installation of a remote terminal unit (RTU) at the Bower to allow automatic and remote control of the actuated valve.
- Installation of a 4G modem for communications at the meter panel location.
- Installation of a power and communications supply to the Bower fed from a meter panel at the top of Clegg Road.
- Installation of approximately seven electrical pits: three around the actual bower and four along the Pipeline Track up to the new meter panel cabinet (approximately one every 50 m).
- The relocation of an existing interpretive sign relating to the Pipeline Track, currently located where the new meter panel is designated to go.
- The relocation of three tree ferns in the vicinity of the bower currently

sited within the footprint of the proposed infrastructure. These tree ferns will be located on the advice of Tasmanian Tree Care and will be replanted to screen the new infrastructure if possible.

Background Documents:

The applicant has provided a Heritage Impact Assessment by Purcell dated March 2022 which addresses the relevant HIPS 2015 Heritage Code Provisions.

The Conservation Management Plan for the Hobart Mountain Water Supply System provides the following conservation policies and recommendation for the Fern Tree Bower and associated infrastructure.

5.1 General Conservation Policy

- The Hobart Mountain Water Supply System will be managed in a manner which recognises the cultural significance of the System, recognises that the System has multiple values for historical recreational and operational reasons and strives to balance these multiple values in a sympathetic manner.

5.2 Recognition of multiple values

- The operational parts of the System, which continue to form part of Hobart's water supply system, take much of their significance from their continued function. Efforts will be made to accommodate that continued function in ways which minimise impacts to the historic natural and recreational values of the System.

5.3 Conservation of significant fabric

- Wherever possible, reasonable compromise will be made to keep operational parts of the System in service. Efforts will be made to keep operational changes within areas of the later phases of the System, wherever possible. This may involve the introduction of new fabric within historic areas to maintain function.
- Alterations to operational fabric will take into account heritage values and will seek to minimise impacts to those values.

Recommendation 3 – Retain the System in operation

A key aspect of the significance of the System is the fact that it continues to function nearly 150 years after its construction. While modified and added to, these modifications have generally not obscured the earlier phases of the System, allowing it to be understood as a functional whole. Retaining this function is critical to retaining the significance of the

System.

3.1 Retain the operational components of the Mountain Water Supply System in service, including intakes, weirs, pipe sections and other functional components wherever they can be sympathetically upgraded to meet operational, safety and water quality requirements.

3.3 Sympathetic modification to historic fabric is permissible when the alternative may be the decommissioning of an historic feature.

3.4 Any potential modifications should be reviewed for heritage impacts and those impacts should be minimised as much as possible during the design phase.

3.5 Modifications made to continue water supply operations should be sympathetic in terms of function and appearance and should not obscure historic fabric.

Recommendation 4 – Introduced fabric

4.1 New fabric should not disrupt the essentially natural and industrial character of the System and the Track.

Assessment:

E13.7 Development Standards for Heritage Places

E13.7.1 Demolition

Objective:

To ensure that demolition in whole or part of a heritage place does not result in the loss of historic cultural heritage values unless there are exceptional circumstances.

Performance Criteria 1

Demolition must not result in the loss of significant fabric, form, items, outbuildings or landscape elements that contribute to the historic cultural heritage significance of the place unless all of the following are satisfied;

- (a) there are, environmental, social, economic or safety reasons of greater value to the community than the historic cultural heritage values of the place;*
- (b) there are no prudent and feasible alternatives;*
- (c) important structural or façade elements that can feasibly be retained and reused in a new structure, are to be retained;*
- (d) significant fabric is documented before demolition.*

The proposal involves partial demolition of the internal mechanical elements of the Bower in order to automate it, these works will not be externally visible. The plans also show the removal of three man ferns which will be relocated to a suitable location nearby. It is considered that the proposed demolition component of the proposal satisfies Performance Criteria E13.7.1, the works will not result in the loss of significant fabric or elements that contribute to the cultural heritage significance of the place. The proposal is also in line with the CMP objective that operational parts of the system continue to form part of Hobart's water supply system, retaining this function is critical to retaining the significance of the system.

E13.7.2 Buildings and Works other than Demolition

Objective:

To ensure that development at a heritage place is:

- (a) undertaken in a sympathetic manner which does not cause loss of historic cultural heritage significance; and*
- (b) designed to be subservient to the historic cultural heritage values of the place and responsive to its dominant characteristics.*

Performance Criteria 1

Development must not result in any of the following:

- (a) loss of historic cultural heritage significance to the place through incompatible design, including in height, scale, bulk, form, fenestration, siting, materials, colours and finishes;*
- (b) substantial diminution of the historic cultural heritage significance of the place through loss of significant streetscape elements including plants, trees, fences, walls, paths, outbuildings and other items that contribute to the significance of the place.*

The proposed development responds to the dominant industrial character of the place, in keeping the CMPs guidance that new works 'should not disrupt the essentially natural and industrial character'. New fabric is readily identifiable as such, but has been designed to be discrete and visually recessive. Performance Criteria 1 of E13.7.2 is considered satisfied.

Performance Criteria 2

Development must be designed to be subservient and complementary to the place through characteristics including:

- (a) scale and bulk, materials, built form and fenestration;*
- (b) setback from frontage;*
- (c) siting with respect to buildings, structures and listed elements;*

(d) using less dominant materials and colours.

Service electrical pits are required every 50m, and are to be within the track alignment in order to cause minimal disruption and works outside of the developed track area. The track gravel type used within Wellington Park is 'Tolosa Gold' a condition has been applied to the permit that service pit lid covers (trafficable gatic lids) should be of a colour to match the track surfacing. This condition will be consistent with the CMP in that any required works should mitigate visual impacts. Performance Criteria 2 of E13.7.2 is considered satisfied.

Performance Criteria 3

Materials, built form and fenestration must respond to the dominant heritage characteristics of the place, but any new fabric should be readily identifiable as such.

The proposed works to the Bower are compatible in design in that they retain the industrial characteristics of the infrastructure. A Tas Networks meter panel cabinet is to be installed and painted in 'Jungle Green' with a matte finished. This is considered appropriate and the chosen colour will soften the visual impact of the cabinet on the surrounding natural setting. Performance Criteria 3 of E13.7.2 is considered satisfied.

E13.9 Development Standards for Cultural Landscape Precincts

Cultural Landscape Precinct Statement of Historic Cultural Heritage Significance

Pipeline Track Corridor

The Pipeline Track landscape consists of a winding track along the contour from Halls Saddle to Long Creek. The track is heavily canopied by forest with an under storey of scrub dominant along track sides. Shadows, shade and darker colours are characteristic. In damper wetter parts of the tracks or on south facing slopes or at creek crossings, a variety of mosses, lichens, liverworts, man-ferns, and other ferns are readily encountered making even the shortest walk quite a unique experience.

The significance of the landscape stems from its heritage value as an integral section of the Hobart Waterworks engineering structures that demonstrate a high degree of technical achievement and creative stonework design during the nineteenth century, the visual landscape qualities, scenic variation and an outstanding bushland character.

E13.9.1 Demolition

Objective:

To ensure that demolition in whole or in part of buildings or works within a Cultural Landscape Precinct does not result in the loss of historic cultural heritage values unless there are exceptional circumstances.

Performance Criteria 1

Demolition must not result in the loss of any of the following:

- (a) buildings or works that contribute to the historic cultural heritage significance of the precinct;*
- (b) fabric or landscape elements, including plants, trees, fences, walls, paths, outbuildings and other items, that contribute to the historic cultural heritage significance of the precinct; unless both of the following apply;*
 - (i) there are environmental, social, economic or safety reasons of greater value to the community than the historic cultural heritage values of the place;*
 - (ii) there are no prudent and feasible alternatives.*

The proposal involves partial demolition of the internal mechanical elements of the Bower in order to automate it, these works will not be externally visible. The plans also show the removal of three man ferns which will be relocated to a suitable location nearby. It is considered that the proposed demolition component of the proposal satisfies Performance Criteria E13.9.1, the works will not result in the loss of significant landscaping or elements that contribute to the heritage significance of the Cultural Landscape Precinct. The proposal is also in line with the CMP objective that operational parts of the system continue to form part of Hobart's water supply system, retaining this function is critical to retaining the significance of the system.

E13.9.2 Buildings and Works other than Demolition

Objective:

To ensure that development undertaken within a Cultural Landscape Precinct is sympathetic to the character of the precinct.

Performance Criteria 1

Design and siting of buildings and works must not result in detriment to the historic cultural heritage significance of the precinct, as listed in Table E13.3.

As stated in the Purcell report the proposed works to the Bower are compatible in design in that they are sympathetic to the engineering

characteristics of the Mountain Water Supply System. The proposed Tas Networks Meter Panel Cabinet at the end of Clegg Road and is on a portion of the track that passes through a semi-rural residential area. The proposed location at the end of Clegg Road contains residential infrastructure and the proposed Meter Panel Cabinet would not appear to be visually prominent in this section of Landscape Precinct. Performance Criteria 1 of E13.9.2 is considered satisfied.

E13.10 Development Standards for Places of Archaeological Potential

E13.10.1 Building, Works and Demolition

Objective:

To ensure that building, works and demolition at a place of archaeological potential is planned and implemented in a manner that seeks to understand, retain, protect, preserve and otherwise appropriately manage significant archaeological evidence.

Performance Criteria 1

Buildings, works and demolition must not unnecessarily impact on archaeological resources at places of archaeological potential, having regard to:

- (a) the nature of the archaeological evidence, either known or predicted;*
- (b) measures proposed to investigate the archaeological evidence to confirm predictive statements of potential;*
- (c) strategies to avoid, minimise and/or control impacts arising from building, works and demolition;*
- (d) where it is demonstrated there is no prudent and feasible alternative to impacts arising from building, works and demolition, measures proposed to realise both the research potential in the archaeological evidence and a meaningful public benefit from any archaeological investigation;*
- (e) measures proposed to preserve significant archaeological evidence 'in situ'.*

As stated in the Purcell Heritage Assessment it is noted that ground-penetrating radar (GPR) has been undertaken in many areas of the track previously, and that this track has been excavated during previous works. The archaeological potential for the site along the track alignment is considered to be low. Performance Criteria 1 of E13.10.1 is considered to be satisfied.

Conclusion:

In conclusion the proposed works are considered to satisfy the relevant

provisions of the Heritage Code E13 of HIPS 2015 subject to condition.

- 6.7.2 The proposal complies with the performance criteria, subject to conditions.

- 6.8 Buildings and Works, E11.7.1 P1, Flora and Fauna Conservation, Geo-conservation and Natural Processes, Issue 2 P2.1, Water quality and flow, Issue 3 P3.2, Natural Hazards, Issue 8 P8.1

- 6.8.1 The proposal is to upgrade the existing Fern Tree Bower, which is located within 30m of a watercourse, and within Wellington Park. The Council's Environmental Development Planner has provided the following assessment.

Assessment:

Approval is sought to upgrade the water infrastructure at the Fern Tree Bower, 100 Pinnacle Road, Wellington Park.

The scope of works identified in the PAA are:

- Installation of an actuated butterfly valve on the outlet of The Bower.
- Installation of a turbidity measurement instrument at the Bower.
- Construction of a 1.8m x 2.4m precast concrete pit to house the new equipment to a depth of 1.5m BGL.
- Installation of a remote terminal unit (RTU) at the Bower to allow automatic and remote control of the actuated valve.
- Installation of a 4G modem for communications at the meter panel location.
- Installation of a power and communications supply to the Bower fed from a meter panel at the top of Clegg Road.
- Installation of approximately seven electrical pits: three around the actual bower and four along the Pipeline Track up to the new meter panel cabinet (approximately one every 50 m).
- The relocation of an existing interpretive sign relating to the Pipeline Track, currently located where the new meter panel is designated to go.
- The relocation of three tree ferns in the vicinity of the bower currently sited within the footprint of the proposed infrastructure. These tree ferns will be located on the advice of Tasmanian Tree Care and will be replanted to screen the new infrastructure if possible.

The objective of the activity is to better manage the flow of water into the

drinking water system during high rainfall events, which currently results in high turbidity water entering the system. The submitted planning report states the following:

The proposal seeks to automate the Fern Tree Bower which will allow the flow at the bower to be turned out when turbidity increases to an unacceptable level, during medium and high rainfall events. Automation of the bower will reduce the need for an operator to visit site during these events to manually adjust the valve, thereby improving worker health and safety.

Power and communications lines are proposed from the end of Clegg Road along the Pipeline Track to the Bower. The part of the track closer to Clegg Road is outside Wellington Park and the part closer to the Bower is within Wellington Park.

The Biodiversity Code and Waterway and Coastal Protection Code provisions are applicable to the proposed works outside Wellington Park.

Biodiversity Code

The submitted planning report indicates that this is exempt under clause 5.2.7 but this is not the case as the Pipeline Track is heritage-listed and parts of the track are within 30m of a watercourse.

An arborist's assessment of potential damage to Swamp Gums along the Pipeline Track was submitted with the application. The assessment concludes '*although there is potential to damage some roots during these works, supervision and implementation of low impact excavation should ensure the trees are not critically impacted*'. A number of recommendations were made, including arborist supervision of excavation works.

Provided the works are carried out in accordance with the arborist recommendations, the Biodiversity Code is satisfied by the application (E10.7.1 A1(c)).

Waterway and Coastal Protection Code

Provided the development complies with the recommendations of the submitted Natural Values Assessment, the application satisfies the relevant standards of the Waterway and Coastal Protection Code (E11.7.1 P1).

Within Wellington park, the matters addressed by these Codes are covered by the Wellington Park Management Plan, which supersedes the planning scheme provisions, so only the WPMP will be considered.

Wellington Park Management Plan 2013

Exemption for minor utilities and infrastructure is not applicable within WP as the land is within 30m of a watercourse.

The relevant standards are contained in Table 8 'Standards for Use and Development'.

Issue 2: Flora and Fauna Conservation, Geoconservation and Natural Processes

Acceptable solution A2.1 states the following:

The proposal does not involve removal or damage to terrestrial or aquatic native vegetation which:
(a) is listed as significant in this Management Plan, or any planning strategy or Trust endorsed scientific assessment prepared in accordance with this Management Plan; or is a Threatened Vegetation Community under the *Nature Conservation Act 2002*.
(b) supports or forms habitat for any species of fauna listed in the *Threatened Species Protection Act 1995* or the *Environment Protection and Biodiversity Conservation Act 1999*]

The vegetation in Wellington Park supports some threatened species and there will be minor damage to some vegetation so the application does not comply with A2..

Performance criterion P2.1 states the following:

Any adverse affects on terrestrial or aquatic native vegetation or habitat values must be avoided, or remedied to ensure no long term impact on vegetation values.

Appropriate mitigation measures have been proposed/recommended in the arborist's report and natural Values Assessment. Compliance with these recommendations should be required by permit conditions.

Acceptable solution A2.2 states the following:

The proposal does not impact upon any threatened species listed under the *Threatened Species Protection Act 1995* or the *Environment Protection and Biodiversity Conservation Act 1999*.

It is unlikely that the development will directly impact on any threatened species.

Acceptable solution A2.3 states the following:

The proposal does not impact upon any sites which are listed as significant in this Management Plan or in a Trust endorsed scientific assessment, or listed on the Tasmanian Geoconservation Database.

Complies.

Issue 3: Water quality and flow

Acceptable solution A3.1 states the following:

- (a) Waste water, including grey water, must be connected to a reticulated or on-site waste treatment system approved by the Planning Authority; and
- (b) Stormwater must be drained to a detention basin, artificial wetland or infiltration area, or reused within the site, without causing erosion or pollution of existing surface or ground waters or other values of the Park.

No additional wastewater or stormwater generated.

Acceptable solution A3.2 states the following:

No land clearing, excavation, filling or other development must occur:

- within a water body, wetland or watercourse; or
- within a buffer area, as specified in accordance with this Management Plan, of a water body, wetland or watercourse,

except for the purpose of maintaining a water supply for fire fighting purposes, or vehicle access to that water supply in accordance with a Fire Management Strategy prepared in accordance with this Management Plan.

And

The use or development involves no extraction of water from any water body, wetland or watercourse except for use in fire fighting or carrying out planned burns in accordance with a fire management strategy prepared in accordance with this Management Plan.

The application does not comply with this acceptable solution.

Performance criterion P3.2 states the following:

Use and development must be designed and carried out to ensure that any adverse effects on natural drainage, flow regimes, erosion and sedimentation to and within any water body, wetland or watercourse will be avoided, or remedied to ensure no long term impact on any water body, wetland or watercourse.

The development would have no significant impact on flow regimes, erosion or sedimentation provided the recommendations of the Natural Values Report are complied with.

Issue 6: Noise

Acceptable solution A6.1 states the following:

Noise from point sources must not exceed 50 dB(A) at any point within 50m of the source.

Complies.

Issue 8: Natural Hazards

Acceptable solution A8.1 states the following:

Buildings and structures, other than walking tracks constructed in accordance with a walking track strategy, do not involve cut and fill of more than 1m and must not be located within a buffer area, specified in accordance with this Management Plan, of a water body, wetland or watercourse.

And

The proposed use or development is accompanied by a geotechnical report from a suitably qualified person stating that there is an acceptable risk of instability.

The application does not comply with this acceptable solution as excavation up to 1.5m BGL is proposed.

Performance criterion P8.1 states the following:

In areas where there is a risk of flooding or land instability, all buildings and structures, other than walking tracks constructed in accordance with a walking track strategy, must be sited, designed and constructed to, as minimum requirements, take account of future climate change and flood hazard potential, and to assess and mitigate risk in accordance with a hazard risk analysis as set out in the current Australian Geomechanics Society landslide risk management concepts and guidelines and Australian Standard – AS1726.

A Landslide Risk Assessment was submitted with the application. There is a risk of debris flow at the site. Risk was assessed as acceptable.

The development is not at risk from flooding as it is designed for a watercourse.

Acceptable solution A8.2 states the following:

Development of new or modified buildings must be in accordance with sections E1.6.3, E1.6.4 & E1.6.5 of Planning Directive No 5 (Bush Fire Prone Areas Code)

Not applicable.

- 6.8.2 The proposal complies with the performance criteria, subject to conditions.

7. Discussion

- 7.1 Planning approval is sought for Upgrade to Water Infrastructure (Fern Tree Bower), at 100 Pinnacle Road, Fern Tree.
- 7.2 The application was advertised and no representations were received.
- 7.3 The proposal has been assessed against the relevant provisions of the planning scheme and is considered to perform well.
- 7.4 The proposal has been assessed by other Council officers, including the Council's Senior Development Engineer, Cultural Heritage Officer, Environmental Development Planner, Stormwater Engineer, and Parks Planner. The officers have raised no objection to the proposal, subject to conditions.
- 7.5 Given the works are located in Wellington Park, the application was referred to the Wellington Park Management Trust. The Trust advised that a Park Activity Assessment for the works had been submitted and would be considered by the Trust. The Trust's response is provided at Attachment B to this report.
- 7.6 The proposal is recommended for approval.

8. Conclusion

- 8.1 The proposed Upgrade to Water Infrastructure (Fern Tree Bower), at 100 Pinnacle Road, Fern Tree satisfies the relevant provisions of the *Hobart Interim Planning Scheme 2015*, and as such is recommended for approval. .

9. Recommendations

That: Pursuant to the *Hobart Interim Planning Scheme 2015*, the Council approve the application for Upgrade to Water Infrastructure (Fern Tree Bower), at 100 Pinnacle Road, Fern Tree for the reasons outlined in the officer's report and a permit containing the following conditions be issued:

GEN

The use and/or development must be substantially in accordance with the documents and drawings that comprise PLN-22-138 - 100 PINNACLE ROAD MOUNT WELLINGTON TAS 7054 - Final Planning Documents except where modified below.

Reason for condition

To clarify the scope of the permit.

THC

The use and/or development must comply with the requirements of the Tasmanian Heritage Council as detailed in the Notice of Heritage Decision, THC Works Ref: 7948 dated 18 August 2022, as attached to the permit.

Reason for condition

To clarify the scope of the permit.

ENG sw1

All stormwater from the proposed development (including but not limited to: roofed areas, ag drains, retaining wall ag drains and impervious surfaces such as driveways and paved areas) must be drained to the Council's stormwater infrastructure prior to first occupation or commencement of use (whichever occurs first).

Any private or private shared stormwater system passing through third-party land must have sufficient receiving capacity.

Advice:

Under section 23 of the Urban Drainage Act 2013 it is an offence for a property owner to direct stormwater onto a neighbouring property.

Reason for condition

To ensure that stormwater from the site will be discharged to a suitable Council approved outlet.

ENG 1

Any damage to council infrastructure resulting from the implementation of this permit, must, at the discretion of the Council:

1. **Be met by the owner by way of reimbursement (cost of repair and reinstatement to be paid by the owner to the Council); or**
2. **Be repaired and reinstated by the owner to the satisfaction of the Council.**

A photographic record of the Council's infrastructure adjacent to the subject site must be provided to the Council prior to any commencement of works.

A photographic record of the Council's infrastructure (e.g. existing property service connection points, roads, buildings, stormwater, footpaths, driveway crossovers and nature strips, including if any, pre-existing damage) will be relied upon to establish the extent of damage caused to the Council's infrastructure during construction. In the event that the owner/developer fails to provide to the Council a photographic record of the Council's infrastructure, then any damage to the Council's infrastructure found on completion of works will be deemed to be the responsibility of the owner.

Reason for condition

To ensure that any of the Council's infrastructure and/or site-related service connections affected by the proposal will be altered and/or reinstated at the owner's full cost.

ENV 9

All recommendations in section 4 of the Natural Values Assessment report by ERA Planning & Environment dated 2 November 2021 must be implemented.

Reason for condition

To ensure the use/development does not result in unnecessary or unacceptable loss of biodiversity values

ENV 1

Sediment and erosion control measures sufficient to prevent sediment from leaving the site must be installed prior to any disturbance of the site, and maintained until all areas of disturbance have been stabilized or re-vegetated.

Advice:

For further guidance in preparing a Soil and Water Management Plan – in accordance with Fact sheet 3 Derwent Estuary Program click [here](#).

Reason for condition

To avoid the sedimentation of roads, drains, natural watercourses, Council land that could be caused by erosion and runoff from the development, and to comply with relevant State legislation.

HER 12

Any fixings into the external walls of the water system bower infrastructure should be with noncorrosive materials and into the mortar joints rather than the face of the stone or brick units. Penetrations for cables or pipes should also be through mortar joints where possible.

Reason for condition

To ensure that development at a heritage place / landscape precinct is undertaken in a sympathetic manner which does not cause loss of historic cultural heritage significance.

HER 17a

The palette of exterior colours, materials and finishes must reflect the palette of colours, materials and finishes within the place / cultural landscape precinct. The electrical pilt service lids must be of a coloured finish similar to the track surface 'Tolosa Gold'.

Reason for condition

To ensure that development at a heritage place/ landscape precinct is undertaken in a sympathetic manner which does not cause loss of historic cultural heritage significance.

OPS s1

All recommendations and proposed methodologies in the Arboricultural Assessment by Element Tree Services dated 21 May 2021 must be implemented.

Before works commence, the tree protection zone extents of all swamp gums (*Eucalyptus regnans*) along the section of the Pipeline Track to be trenched, must be marked on the ground e.g. with flagging tape. Trenching must not occur within these zones if at all possible. If it is unavoidable, trenching must be done by a vacuum truck not an excavator.

Within the marked tree protection zone areas there must be no:

- machine excavation including trenching;
- physical damage to the trees;
- excavation for silt fencing;
- storage;
- preparation of chemicals including cement products;
- parking of vehicles or machinery;
- placement of fill; or
- temporary or permanent installation of utilities or signs.

Reason for condition

Conservation of areas of significant vegetation or individual trees that have important aesthetic, heritage and environmental values.

OPS s2

A suitably qualified and experienced supervising arborist must be present during the trenching works. If roots are encountered, the trench is to be excavated using a vacuum truck. The arborist must also be present during excavation adjacent to the Fern Tree Bower box. Works must be done in accordance with the arborist's advice.

The supervising arborist must certify in writing that they were present during all relevant works and that the works were undertaken in accordance with the Element Tree Services Arboricultural Assessment. This certification must be submitted to Council within one week of the works being completed.

Reason for condition

Conservation of areas of significant vegetation or individual trees that have important

aesthetic, heritage and environmental values.

ADVICE

The following advice is provided to you to assist in the implementation of the planning permit that has been issued subject to the conditions above. The advice is not exhaustive and you must inform yourself of any other legislation, by-laws, regulations, codes or standards that will apply to your development under which you may need to obtain an approval. Visit the Council's [website](#) for further information.

Prior to any commencement of work on the site or commencement of use the following additional permits/approval may be required from the Hobart City Council.

BUILDING PERMIT

You may need building approval in accordance with the *Building Act 2016*. Click [here](#) for more information.

This is a Discretionary Planning Permit issued in accordance with section 57 of the *Land Use Planning and Approvals Act 1993*.

COUNCIL RESERVES

A Public Spaces By-law permit will be required for all Fern Tree Bower upgrade works occurring outside Wellington Park, for example the new cabling and signal box. Information about the permits, and the application form to undertake works in a public space, can be found [here](#).

WEED CONTROL

Effective measures are detailed in the Tasmanian Washdown Guidelines for Weed and Disease Control: Machinery, Vehicles and Equipment (Edition 1, 2004). The guidelines can be obtained from the Department of Primary Industries, Parks, Water and Environment [website](#).

DIAL BEFORE YOU DIG

Click [here](#) for dial before you dig information.



(Cameron Sherriff)

Development Appraisal Planner

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.



(Ben Ikin)

Senior Statutory Planner

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.

Date of Report: 27 July 2022

Attachment(s):

Attachment B - CPC Agenda Documents

Attachment C - Planning Referral Officer Cultural Heritage Report

Attachment D - Planning Referral Officer Environmental Development Planner Report



Tasmanian Heritage Council
GPO Box 618 Hobart Tasmania 7000
Tel: 1300 850 332
enquiries@heritage.tas.gov.au
www.heritage.tas.gov.au

PLANNING REF: PLN-22-138
THC WORKS REF: 7948
REGISTERED PLACE NO: 11227
APPLICANT: ERA Planning and Environment
DATE: 18 August 2022

NOTICE OF HERITAGE DECISION

(Historic Cultural Heritage Act 1995)

The Place: Hobart Mountain Water Supply System,
100 Pinnacle Road, Wellington Park.
Proposed Works: Upgrade to water infrastructure (Fern Tree Bower).

Under section 39(6)(b) of the *Historic Cultural Heritage Act 1995*, the Heritage Council gives notice that it consents to the discretionary permit being granted in accordance with the documentation submitted with Development Application PLN-22-132, advertised on 04/07/2022, subject to the following conditions:

1. **All trenching and excavation work must be overseen by a suitably qualified historical archaeologist, and where potentially significant archaeological features and/or deposits are revealed by this work:**
 - (i) the excavation works must cease for such time as enables proper archaeological recording and recovery of artefacts; and,
 - (ii) further work must proceed with appropriate caution and at a rate that enables the archaeologist to properly record any potentially significant archaeological features and/or deposits; and,
 - (iii) a report detailing the findings, in digital format, must be submitted to Heritage Tasmania within three months of commencement of the works involving ground disturbance.

Reason for condition

To ensure that the archaeological values of the place are appropriately managed, in accordance with the Tasmanian Heritage Council's current Practice Note 2 *Managing Historical Archaeological Significance in the Works Process*.

2. **The works must be carried out in accordance with the advice contained in the Arboricultural Assessment by Element Tree Services dated 21/05/2021, including the implementation of tree protection measures and the overseeing of trenching and excavation work by a suitably qualified arborist. Any tree ferns that require removal must be appropriately relocated nearby.**

Reason for condition

To ensure that the natural and aesthetic values that contribute to the heritage values of the place are conserved.

- 3. To the extent reasonably possible, the final position and finish of all new installations must have minimal impact on the place's heritage fabric and its aesthetic values. In particular, the new electrical pit covers and the cover for the new precast concrete pit must be visually discreet and compatible with the existing character of the Pipeline Track.**

Reason for condition

To ensure that the new work is compatible with the heritage values of the place.

- 4. All fixings into external walls must be of non-corrosive materials and, to the extent reasonably possible, into mortar joints rather than the face of the stone or brick units.**

Reason for condition

To ensure that impacts to the fabric of the place are minimised and that the new work is reversible.

- 5. Final documentation for the project must be provided to Heritage Tasmania and must be to the satisfaction of the Works Manager prior to the commencement of works. The final documentation must identify any variance from the documentation provided at the discretionary permit stage and must address the requirements of Conditions 1, 2, 3 and 4.**

Reason for condition

To allow Heritage Tasmania the opportunity to review the final documentation and to ensure the conditions of approval will be appropriately complied with.

Should you require clarification of any matters contained in this notice, please contact Deirdre Macdonald on 1300 850 332.



Ian Boersma
Works Manager – Heritage Tasmania
Under delegation of the Tasmanian Heritage Council

Planning #253006

Property

100 PINNACLE ROAD MOUNT WELLINGTON TAS 7054

**People****Applicant ***

ERA Planning and Environment
Sarah Silva
Level 1
125A Elizabeth Street
HOBART TAS 7000
03 6165 0443
sarah@eraplanning.com.au

Owner *

City of Hobart

GPO Box 503
HOBART TAS 7001
03 6238 2711
coh@hobartcity.com.au

Entered By

SARAH SILVA
127 A ELIZABETH STREET
HOBART TAS 7000
6165 0443
sarah@eraplanning.com.au

Use

Utilities

Details

Have you obtained pre application advice?

☒ No

If YES please provide the pre application advice number eg PAE-17-xx

Are you applying for permitted visitor accommodation as defined by the State Government Visitor Accommodation Standards? Click on help information button for definition. If you are not the owner of the property you MUST include signed confirmation from the owner that they are aware of this application. *

☒ No

Is the application for SIGNAGE ONLY? If yes, please enter \$0 in the cost of development, and you must enter the number of signs under Other Details below. *

☒ No

If this application is related to an enforcement action please enter Enforcement Number

Details

What is the current approved use of the land / building(s)? *

utilities

Please provide a full description of the proposed use or development (i.e. demolition and new dwelling, swimming pool and garage) *

TasWater upgrades to Fern tree Bower

Estimated cost of development *

750000.00

Existing floor area (m2)

Proposed floor area (m2)

Site area (m2)

Carparking on Site

Total parking spaces

Existing parking spaces

N/A

☒ Other (no selection chosen)**Hours of Business**

Are the proposed hours of business different from the existing?

What days and hours of operation are proposed for the business?

Existing Proposed

Monday to Friday

From

To

Monday to Friday

From

To

Saturday

From

To

Saturday

From

To

Sunday

From

To

Sunday

From

To

Number of Employees

List the total number of people who will be working on the site.

Proposed number of employees

Existing number of employees

Goods Deliveries

Will there be any commercial vehicles accessing the site?

Type of Vehicle	Trips per Week
Very Large (Semi trailer)	<input type="text"/>
Large	<input type="text"/>
Medium	<input type="text"/>
Small	<input type="text"/>

Outdoor storage / seating / number of beds

Is outdoor storage proposed?

Other Details

Does the application include signage? *

☒ No

How many signs, please enter 0 if there are none involved in this application? *

Tasmania Heritage Register

Is this property on the Tasmanian Heritage Register?

Documents

Required Documents

Title (Folio text and Plan and Appendix A - FolioText and Plan -109047-1.pdf Schedule of Easements) *	
Plans (proposed, existing) * Appendix C - Development Plans.pdf	
GM or Crown consent Appendix B - Land Owner Consent.pdf	

Supporting Documents

Planning Report	Supporting Planning Report 18.03.2022_FINAL.pdf
Heritage Report	Appendix D - Heritage Impact Assessment.pdf
Flora and Fauna Report	Appendix E - Natural Values Assessment.pdf
Flora and Fauna Report	Appendix F - Arborist Assessment.pdf
Parks Activity Assessment	Appendix G - Parks Activity Assessment.pdf

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

SEARCH OF TORRENS TITLE

VOLUME 109047	FOLIO 1
EDITION 2	DATE OF ISSUE 26-Jun-2015

SEARCH DATE : 24-Feb-2022

SEARCH TIME : 10.12 AM

DESCRIPTION OF LAND

City of HOBART

Lot 1 on Diagram 109047

Being the land described in Indenture 5/2883

Derivation : Part of Lot 488, 250 acres, Granted to Alfred Hall

Derived from A12515

SCHEDULE 1

HOBART CITY COUNCIL

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

B720037 CAVEAT by Michael Dixon (Wellington Park Act 1993)

Registered 07-Jan-1994 at noon

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

RECORDED OF TITLES

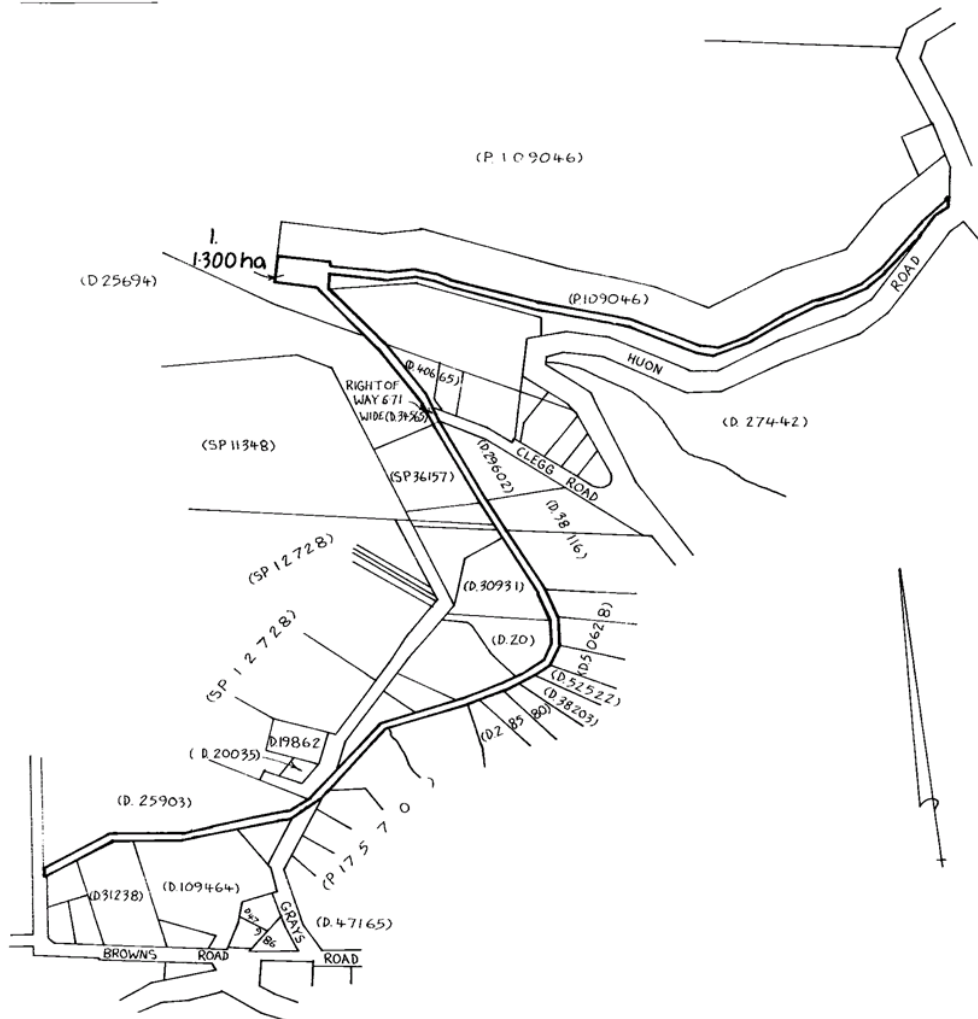
Issued Pursuant to the Land Titles Act 1980



FILE No. A 12515		<h1>CONVERSION PLAN</h1> <p>LOCATION</p> <p>CITY OF HOBART</p> <p>CONVERTED FROM 5/2883</p> <p>NOT TO SCALE LENGTHS IN METRES</p>		<p>REGISTERED NUMBER</p> <h2>D 109047</h2> <p>APPROVED - 9 DEC 1993</p> <p><i>[Signature]</i> Recorder of Titles</p>
TASMAP SHEET No. 21	LAST UPI No.	ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN		DRAWN BY: CGW

SKETCH BY WAY OF ILLUSTRATION ONLY

~~"EXCEPTED LANDS"~~





Enquiries to: City Life
Phone: (03) 6238 2711
Email: coh@hobartcity.com.au

29 March 2022

Scott Burley (TasWater)
GPO Box 1393
HOBART TAS 7001

mailto: scott.burley@taswater.com.au

Dear Sir/Madam

**100 PINNACLE ROAD, MOUNT WELLINGTON - WORKS ON COUNCIL LAND NOTICE
OF LAND OWNER CONSENT TO LODGE A PLANNING APPLICATION - GMC-22-20**

Site Address:

100 Pinnacle Road, Mount Wellington

Description of Proposal:

Works on Council Land - Fern Tree Bower on the Pipeline Track

Applicant Name:

Scott Burley
TasWater

PLN (if applicable):

N/A

I write to advise that pursuant to Section 52 of the *Land Use Planning and Approvals Act 1993*, I grant my consent on behalf of the Hobart City Council as the owner/administrator of the above land for you to make application to the City for a planning permit for the development described above and as per the attached documents. I granted consent pursuant to delegation, a copy of which is enclosed.

Please note that the granting of the consent is only for the making of the application and in no way should such consent be seen as prejudicing any decision the Council is required to make as the statutory planning authority.

Hobart Town Hall
50 Macquarie Street
Hobart TAS 7000

Hobart Council Centre
16 Elizabeth Street
Hobart TAS 7000

City of Hobart
GPO Box 503
Hobart TAS 7001

T 03 6238 2711
F 03 6234 7109
E coh@hobartcity.com.au
W hobartcity.com.au

CityofHobartOfficial
ABN 39 055 343 428
Hobart City Council

This consent does not constitute an approval to undertake any works and does not authorise the owner, developer or their agents any right to enter or conduct works on any Council managed land whether subject to this consent or not.

If planning approval is granted by the planning authority, you will be required to seek approvals and permits from the City as both landlord, land manager, or under other statutory powers (such as other legislation or City By-Laws) that are not granted with the issue of a planning permit under a planning scheme. This includes the requirement for you to reapply for a permit to occupy a public space under the City's Public Spaces By-law if the proposal relates to such an area.

Accordingly, I encourage you to continue to engage with the City about these potential requirements.

Yours faithfully



(Glenn Doyle)

HEAD OF CITY PROJECTS

Relevant documents/plans:

DA-22-12101 - Drawing GA-0001 to GA-0005 dated 15 March 2022



City of Hobart

INSTRUMENT OF DELEGATION

General Delegation

Head of Intergovernmental Relations and Partnerships

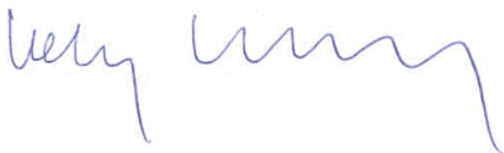
Section 64 of the Local Government Act 1993

I, Kelly Grigsby, Chief Executive Officer, being the General Manager as appointed by Council pursuant to Section 61 of the *Local Government Act 1993 (Tas)* ("the Act") hereby delegate pursuant to Section 64 of the Act, the following powers and functions to the Head of City Projects:

1. to sign an application; and
2. to provide written permission to make an application;

pursuant to section 52(1B) of the *Land Use Planning and Approvals Act 1993*, except where an application pursuant to that section is recommended for refusal by Council officers.

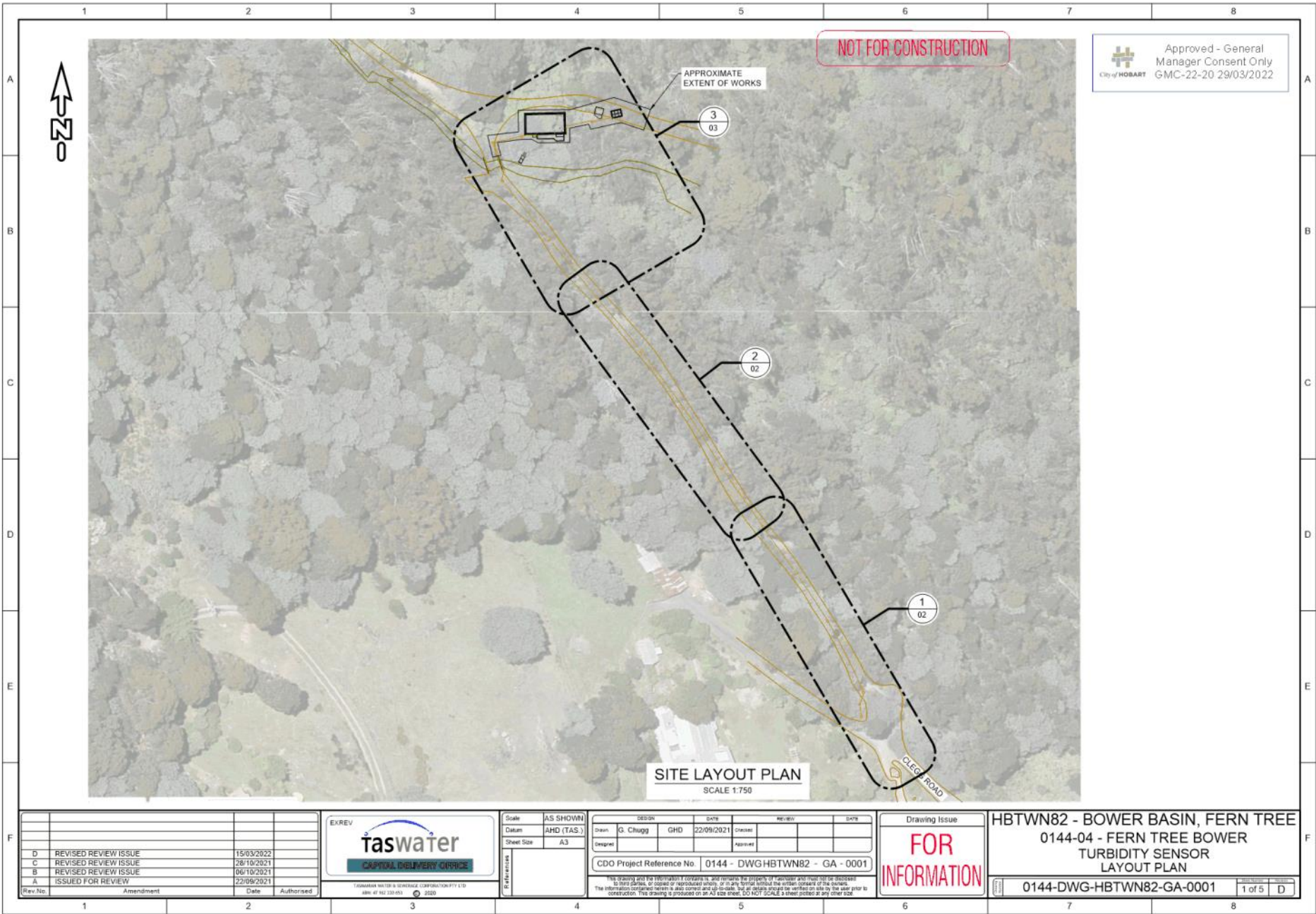
Dated this 24th day of February 2022

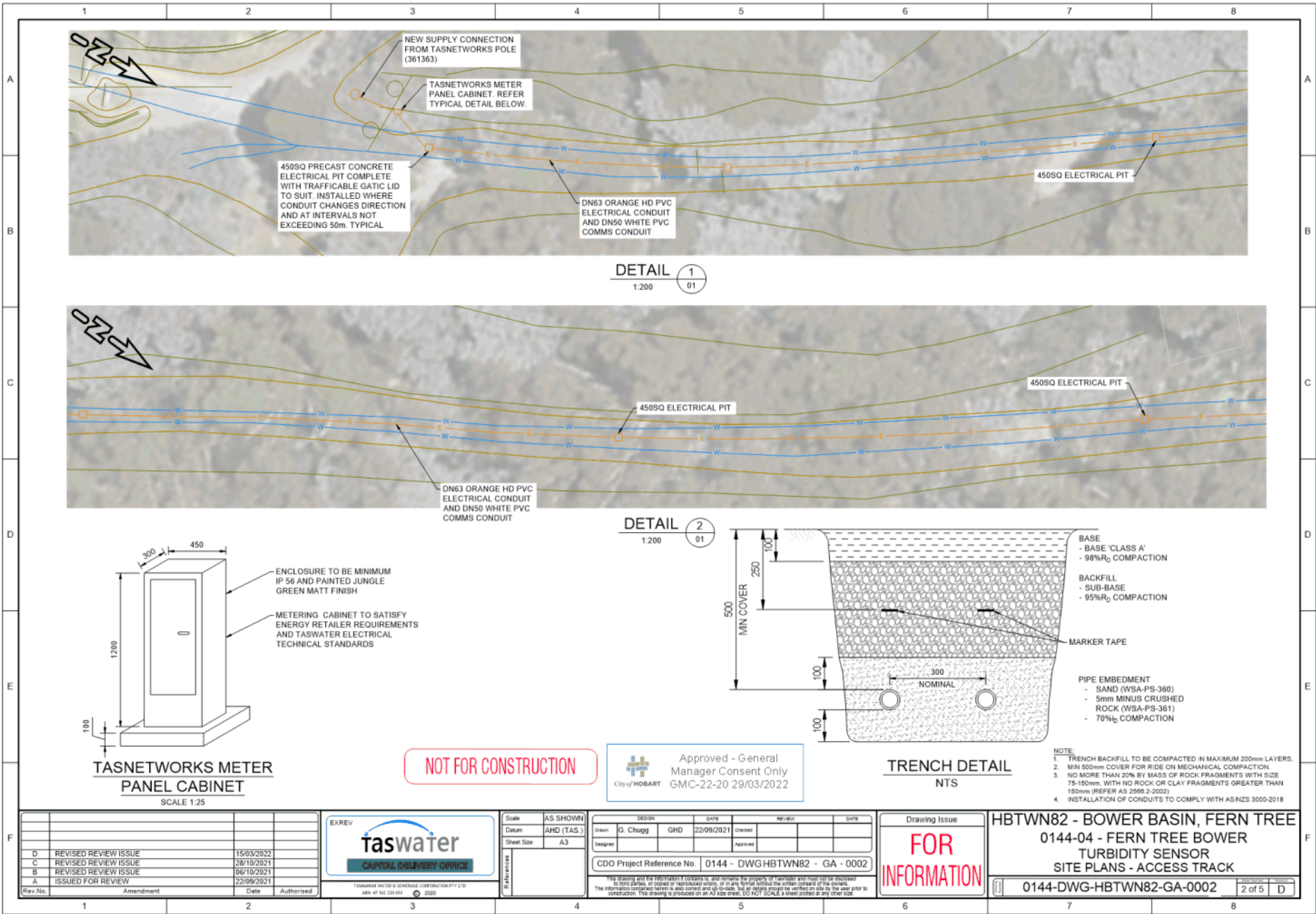


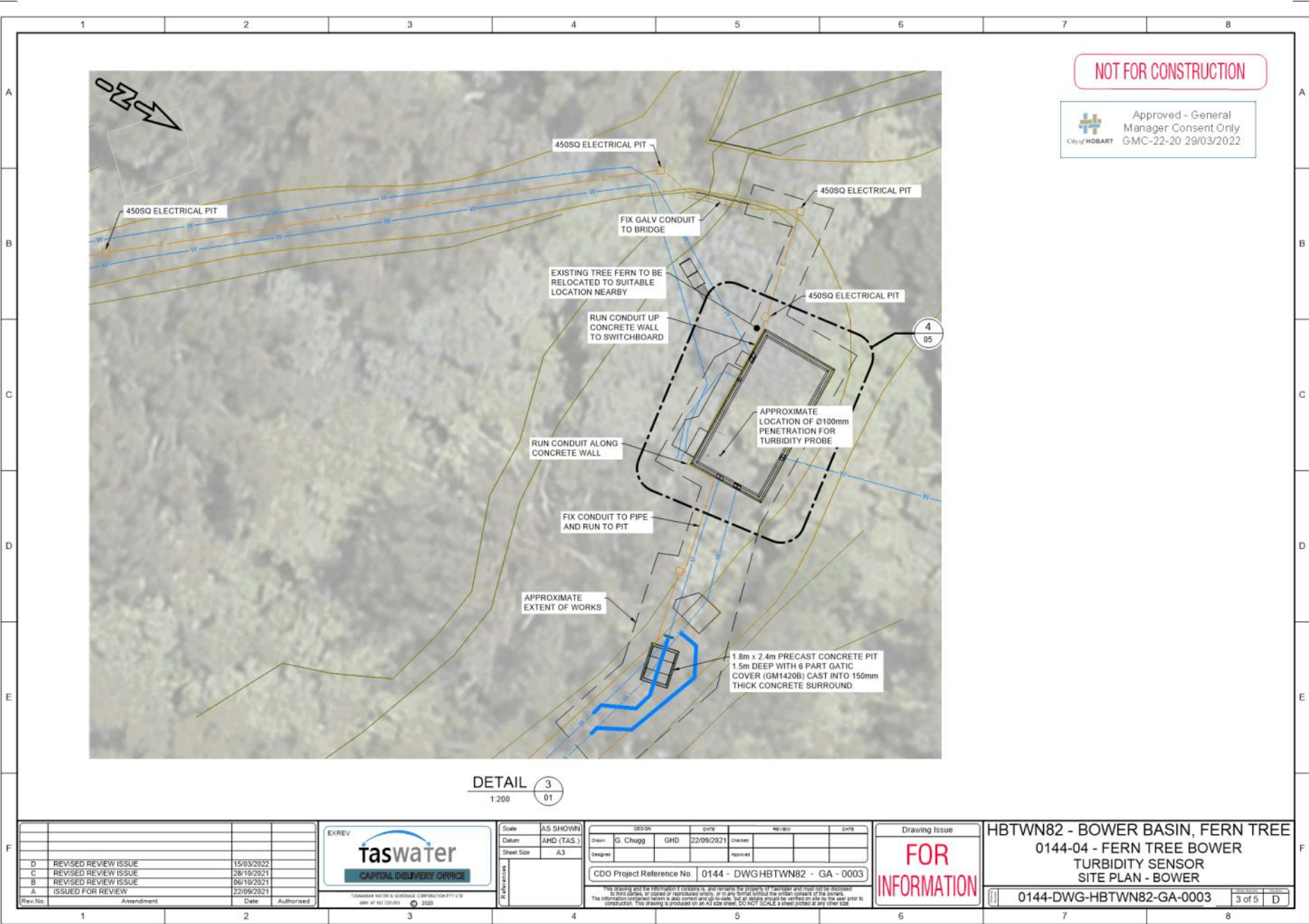
SIGNED

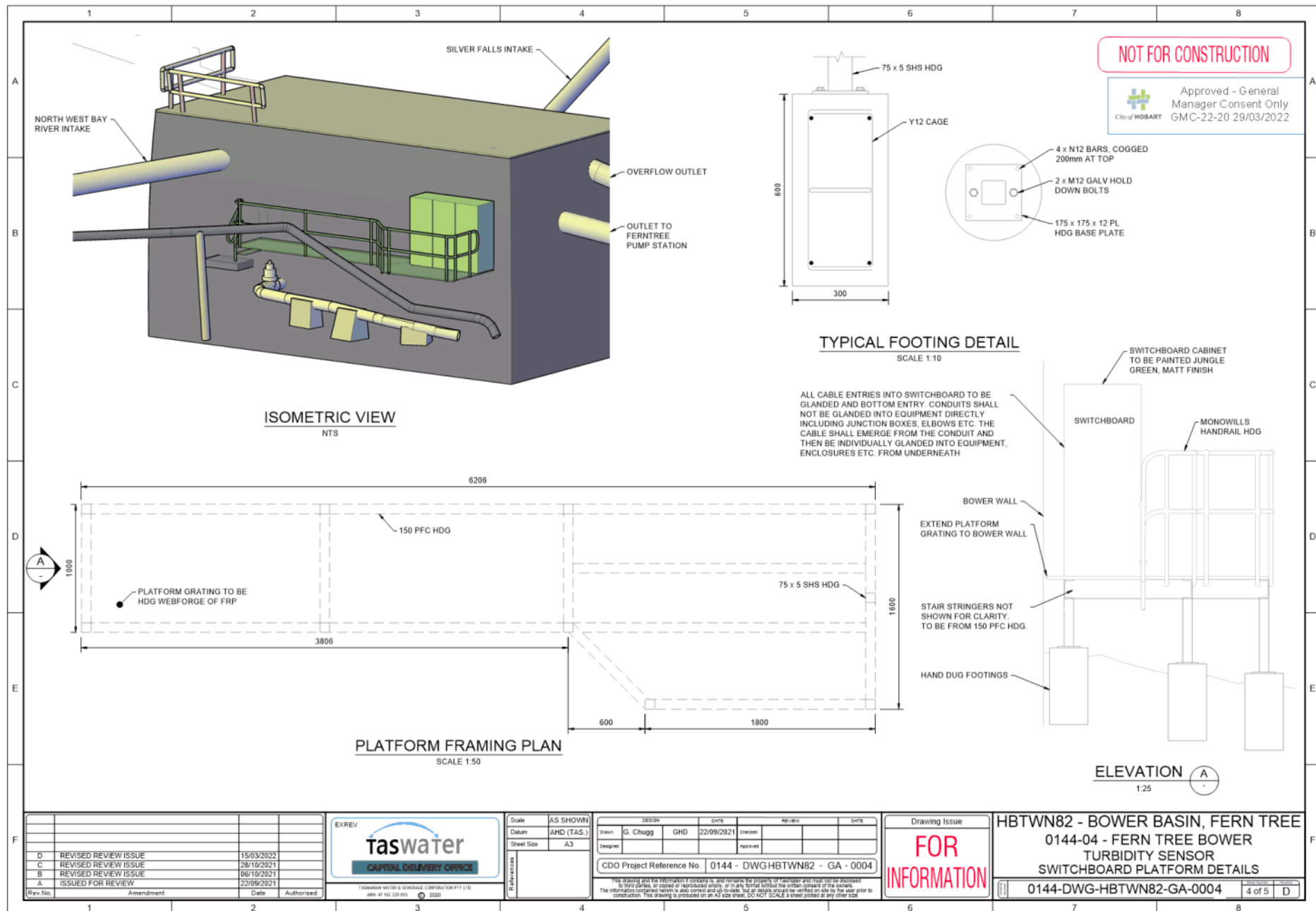
Kelly Grigsby
(Chief Executive Officer)

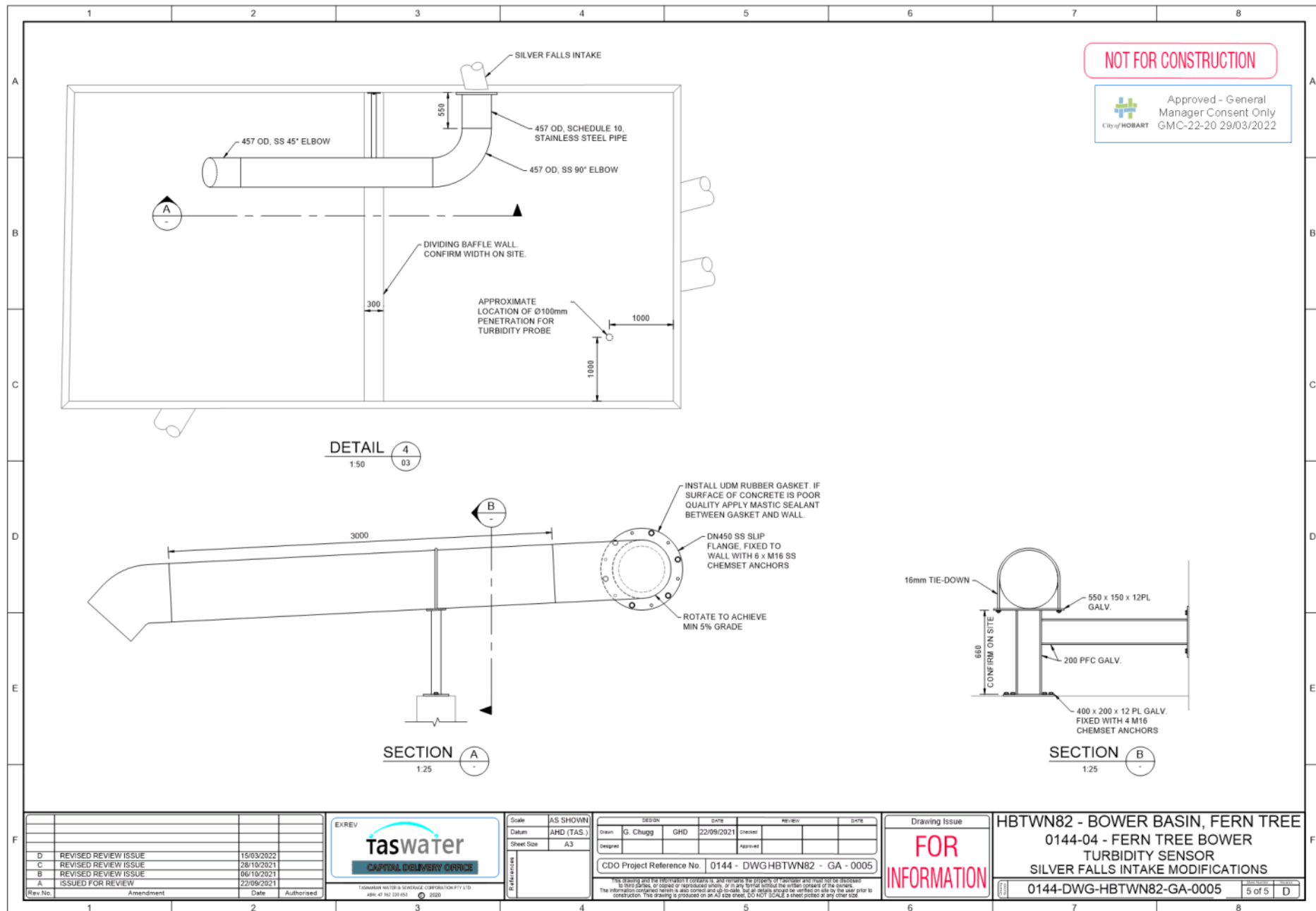
Being the General Manager as appointed by Council pursuant to section 61 of the *Local Government Act 1993 (Tas)*













TasWater Infrastructure Upgrades - Fern Tree Bower Planning permit application

Supporting Planning Report

29 April 2022



ERA Planning Pty Ltd trading as ERA Planning and Environment

ABN 67 141 991 004

This document may only be used for the purposes for which it was commissioned and in accordance with the Terms of Engagement for the commission. Unauthorised use of this document in any form whatsoever is prohibited.

Job Number: 2122-006**Document Status**

Document Version	Date	Author	Reviewer
DRAFT_V1	24 February 2022	Sarah Silva	Clare Hester
DRAFT_V2	25 February 2022	Sarah Silva	Client
FINAL	18 March 2022	Sarah Silva	submission
FINAL V2	14 April 2022	Sarah Silva	Clare Hester/Emma Riley

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Appendix A Certificate of Title

Appendix B Council land owner consent

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Appendix F Arborist Assessment

Appendix G Parks Activity Assessment

1 Introduction

1.1 Purpose of the report

ERA Planning and Environment have been engaged by TasWater to seek a planning permit for upgrades to existing TasWater infrastructure at Fern Tree Bower, Wellington Park. This report provides a supporting planning submission providing relevant background material, project details and an assessment against the relevant planning statutory controls.

The proposal seeks to automate the Fern Tree Bower which will allow the flow at the bower to be turned out when turbidity increases to an unacceptable level, during medium and high rainfall events. Automation of the bower will reduce the need for an operator to visit site during these events to manually adjust the valve, thereby improving worker health and safety.

1.2 Name of Planning Authority

The Planning Authority is both the City of Hobart and the Wellington Park Management Trust. The purpose of this report is to obtain planning approval from City of Hobart. Separate approval will be sought concurrently through the Wellington Park Management Trust through the Park Activity Assessment process; a copy of the Parks Activity Statement is at **Appendix G** of this report for information.

1.3 Statutory controls

The site is subject to the provisions of the *Hobart Interim Planning Scheme 2015* (the planning scheme) and the *Wellington Park Management Plan 2013* (the management plan).

The management plan is given effect through Clause F3.0 Wellington Park Specific Area Plan as well as section 52A of the *Land Use Planning and Approvals Act 1993*. The use and development standards in the management plan are contained in Chapter 8.

Where the management plan provides for the assessment of a matter through its provisions and therefore creates an inconsistency or duplicate (either directly or indirectly) with the provisions of the planning scheme (such as zone or code standards), no separate assessment under the conflicting planning scheme provision is required. The displacement between the management plan and the planning scheme is approached on the basis that where an issue is dealt with in the management plan then, as the specific instrument applying to land in Wellington Park, that provision 'covers the field' to the extent of any concurrently operating general provision of the planning scheme. Most of the works are contained within the Environmental Management Zone under the planning scheme (refer to Figure 1).

The proposed development includes some works outside of the Wellington Park area, within the Rural Living Zone of the planning scheme. These works are also within a section of the Pipeline Track (approximately 80 m) from Clegg Road towards the Fern Tree Bower and include a meter panel cabinet and the installation of electrical cabling. These works do not clearly fit within the definition of 'prescribed works' under the *Water and Sewerage Industry Act 2008*, although are exempt pursuant to Clause 5.2.7 Provision of Linear and Minor Utilities and Infrastructure of the planning scheme¹.

¹ Clause 5.2.7 provision of linear and minor utilities and infrastructure of the planning scheme states that these works can exempt 'if by or on behalf of the State Government, a Council, a Statutory authority, or a corporation all the shares of which are held by or on behalf of the State or by a Statutory authority, of electricity, gas, sewerage, and water reticulation to individual streets, lots or buildings, unless there is:

It is noted that, as the landowner, permission is still required for these works from the City of Hobart, as the authority responsible for the management of the public land. This will be through an application for a Public Spaces By-law Permit, which will be sought separately by TasWater and after the PAA and planning permit have been issued.



Figure 1: Zoning map (Source: <https://www.thelist.tas.gov.au/>, 25.02.2022)

The management plan applies to all of Wellington Park (see Figure 2).

-
- (a) a code in this planning scheme which lists a heritage place or precinct and requires a permit for the use or development that is to be undertaken;
 - (b) disturbance of more than 1m² of land that has been affected by a potentially contaminating activity;
 - (c) excavation or fill of more than 0.5m depth in a salinity hazard area or landslip hazard area shown in the planning scheme;
 - (d) the removal of any threatened vegetation; or
 - (e) land located within 30m of a wetland or watercourse.

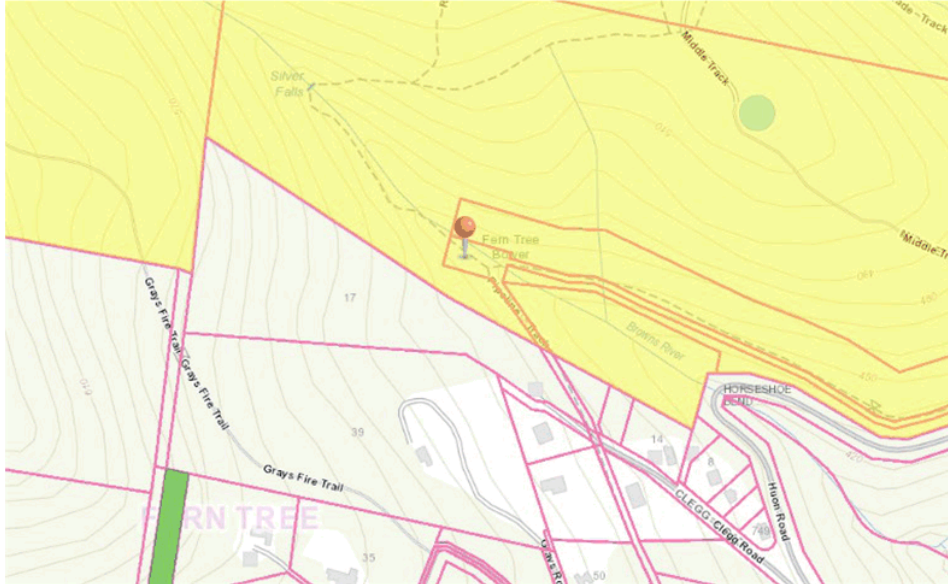


Figure 2: Wellington Park Management plan boundaries relative to the proposed works – the management plan boundaries are highlighted in yellow (Source: Wellington Park Management Plan 2013)

Title documentation is attached at **Appendix A**. Owner's consent from the City of Hobart as required by Section 52(1B) of the *Land Use Planning and Approvals Act 1993* is provided within **Appendix B**.

1.4 Specific area plan

The F3.0 Wellington Park Specific Area Plan applies to the proposal. The purpose of this specific area plan is to ensure that use and development in Wellington Park is undertaken in accordance with the *Wellington Park Management Plan 2013*.

The site is in the Recreation Zone of the Management plan (refer to Figure 3). The proposed works are assessed against Section 8 of the management plan. An assessment of the development against the management plan is provided in section 4 of this report.

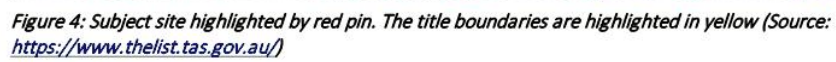


Figure 3: Wellington Park Management Zones. Recreation Zone shaded in blue - yellow star indicates the approximate location of works (Source: Wellington Park Management plan 2013)

1.5 Subject site

The subject site known as Fern Tree Bower located at 100 Pinnacle Road, Wellington Park (CT109047/1, 109046/2). Key details of the site are provided in the following figures:

- The subject site is highlighted in **Error! Reference source not found..**
- The location of the proposed works can be seen in Figure 5: Location of proposed works (Source: TasWater)
- A photo of the existing manual valve is at Figure 6.
- The section of Pipeline Track between the bower and Clegg Road is at Figure 7.
- The existing bower structures are at Figure 8, Figure 9, and Figure 10.



The subject site contains existing TasWater infrastructure which controls water flow at the bower enabling water to be turned out when turbidity increases to an unacceptable level during medium and high rainfall events. This action is necessary to ensure the quality of the water entering Ridgeway Dam is managed safely and efficiently. This is currently performed manually by TasWater staff when required at any time of the day or night.



Figure 6: Existing manual valve



Figure 7: Section of Pipeline Track between the bower and Clegg Road



Figure 8: Existing Bower (source: Heritage Impact Assessment, Purcell)



Figure 9: Bower wall nominated for the addition of a platform and switchboard (source: Heritage Impact Assessment, Purcell)



Figure 10: Existing Bower infrastructure with area nominated for precast concrete pit and gatic cover (source: Heritage Impact Assessment, Purcell)

1.6 Enquiries

Enquiries relating to this planning report should be directed to:

Sarah Silva

Senior Planner

ERA Planning and Environment

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Mail: as above

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2 The proposal

2.1 Overview of works

The proposed development involves upgrade works to existing TasWater infrastructure at Fern Tree Bower; an existing 'utilities'² use. The works involve installing infrastructure to allow for automation of a valve in the vicinity of Fern Tree Bower, and would generally involve the following:

- Installation of an actuated butterfly valve on the outlet of The Bower.
- Installation of a turbidity instrument at the Bower with waste stream fed back into the raw water supply.
- Excavation to a depth of 1.5m will be required to install a 1.8m x 2.4m precast concrete pit to house the new equipment. The gatic cover to the new precast concrete pit will be either galvanised steel or aluminium, which will discolour rapidly in the environment like other covers on the pipeline track, will sit flush with the ground and will be engineered to suit trafficable areas.
- Installation of a Mains Power feed from a new meter panel located at the top of Clegg Road. Communications is located to the outside network from this point.
- Installation of a Remote Terminal Unit (RTU) at the bower to allow automatic and remote control of the actuated valve. This includes the addition of a platform and switchboard.
- Installation of a 1.3 m high Meter Panel proximate to Clegg Road. A 4G modem from the Meter Panel location.
- Installation of approximately seven electrical pits: three around the actual bower and four along the Pipeline Track up to the new meter panel cabinet (approximately one every 50 m). The pit covers will be concrete.
- The relocation of an existing interpretive sign relating to the Pipeline Track, currently located where the new meter panel is designated to go.
- The relocation of three tree ferns in the vicinity of the bower. These tree ferns will be located on the advice of Tasmanian Tree Care and will be replanted to screen the new infrastructure if possible.

It is noted that with the only works that are to be above ground level will be the installation of the Meter Panel Cabinet near Clegg Road, a raised platform adjacent to the existing bower, and conduit that will be attached to the existing bower structure. All other works will be below ground. While the seven electrical pit covers and gatic cover to the new precast concrete pit will be all at grade and initially visible to the public users of the Pipeline

² The planning scheme defines 'utilities' as meaning 'use of land for utilities and infrastructure including:

- (a) telecommunications;
- (b) electricity generation;
- (c) transmitting or distributing gas, oil, or power;
- (d) transport networks;
- (e) collecting, treating, transmitting, storing or distributing water; or collecting, treating, or disposing of storm or floodwater, sewage, or sullage.

Examples include an electrical sub-station or powerline, gas, water or sewerage main, optic fibre main or distribution hub, pumping station, railway line, retarding basin, road, sewage treatment plant, storm or flood water drain, water storage dam and weir.'

Track, over time the lids are expected to fill up with dirt, leaves etc. and subsequently be barely visible to the public.

The colour of the meter panel cabinet is proposed to be 'jungle green' to blend into the surrounding vegetation. Likewise proposed colours of any new fixtures and external services, will be selected to blend into the surrounding environment and will be finalised at the detailed design stage.

The existing pipeline at the bower will be uncovered using a pipe sucker truck. The new pit will be constructed around the existing pipe. Within the pit, the pipe will be connected to the new valve, which will require cutting and welding of the pipe to new in-pit flanges.

The automation of the bower infrastructure is important given the safety risks to staff attending the site physically during high rainfall events. By providing for an automated system, the water can be turned out from the main TasWater headquarters, negating the need for attending the site in person and greatly reducing the time to turn out the water, providing additional protection for the water entering Ridgeway Dam and subsequently Hobart's drinking water supply.

2.2 Supporting documentation

Supporting documents included with the application include:

- Heritage Impact Statement, prepared by Purcell and dated 25 February 2022 – see **Appendix D**.
- A Natural Values Assessment, prepared by ERA Planning & Environment and dated 21 November 2021 - see **Appendix E**.
- Arboriculture Assessment, prepared by Element Tree Services and dated 21 May 2021 – see **Appendix F**.
- Parks Activity Assessment, Wellington Park Management Trust, prepared by ERA and 25/01/2022 – see **Appendix G**.

3 Wellington Park Management Plan 2013

3.1 Purpose of the Management plan

An assessment under the *Wellington Park Management Plan 2013* is required as works are proposed within the Wellington Park Specific Area Plan of the planning scheme. Notwithstanding any other provision of the planning scheme, any use or development of land in Wellington Park must be undertaken in accordance with the provisions of the Management plan³.

The Wellington Park is reserved for the following purposes:

- a. *The provision of recreational and tourism uses and opportunities consistent with the purposes specified in paragraphs (b) to (e);*
- b. *The preservation or protection of the fauna or flora contained in or on the land;*
- c. *The preservation or protection of the natural beauty of the land or of any features of the land of natural beauty or scenic interest.*
- d. *The preservation or protection of any features of the land being features of historical, Aboriginal, archaeological, scientific, architectural or geomorphological interest; and*
- e. *The protection of water catchment values of the land.*

Planner Response

The proposed works are to upgrade existing TasWater infrastructure to enable its automatic operation to control the turbidity of water within the Fern Tree Bower. The infrastructure is existing, and the current operation will remain the same, however the existing valve (shown in Figure 3 above) will be bypassed by the electronic system. All works within the Wellington Park Management Area will be underground with the exception of conduit to be attached to the outside of the existing Fern Tree

- Three tree ferns will need to be relocated to accommodate the upgrades. These tree ferns will be located on the advice of Tasmanian Tree Care and will be replanted to screen the new infrastructure if possible.
- The colours of any external materials (being conduit, gatic lid over the precast concrete pit, and concrete lids over the electrical pits) will be chosen to blend into the environment either immediately (jungle green conduit) or overtime through oxidation and through being covered by leaves and debris.
- The subject area surrounding the Fern Tree Bower itself has been highly disturbed and has been excavated in the past including by both TasWater and the Tasmania Fire Service. For this reason, it is unlikely that any significant archaeological or Aboriginal artifacts remain. Aboriginal Heritage Tasmania (AHT) has completed a search of the Aboriginal Heritage Register regarding the proposed TasWater infrastructure upgrades and advised that is no known Aboriginal heritage recorded within the works area. This is to be carefully

³ Wellington Park means:

- (a) the area of land indicated as bounded by a heavy black line on Plan No. 2789 in the Central Plan Register, a reduced copy of which is set out, by way of illustration only, in Schedule 1 (Wellington Park Act 1993); or
 - (b) that area of land as varied pursuant to sections 6, 7 and 8 of the *Wellington Park Act 1993*.
- Management plan means any management plan approved under section 23 (Wellington Park Act 1993) and for the time being in force in respect of Wellington Park.

monitored during the construction phase and the works will be guided by the AHT Unanticipated Discovery Plan. Much of the excavation will be undertaken using a pipe sucker truck.

- While public access to the Pipeline Track will be disturbed during the construction phase, after the works are complete, the appearance of the Pipeline Track will largely be unchanged. It is noted that the external surface of the larger gatic lid will be chosen to be non-slip to any walkers / bike riders that go over it.
- The primary purpose of the project is to allow turbid water to leave the bower at a faster rate, to minimise negative impacts to the quality of drinking water.

For the reasons discussed above, it is considered that the works align with the purpose statements of the management plan.

3.2 Recreation Zone objectives

The management objectives for the recreation zone include the following:

- Provide relatively high levels of nature based tourism and recreational day use and enjoyment of the area.
- Preserve environmental and cultural features and values.
- Provide education about, and promote the values of the Park via high quality signs, interpretation and visitor activities.
- Develop key visitor services and facilities in the Zone appropriate to the allowable level and type of use.
- Protect the scenic qualities of the Zone when viewed from within the Zone and outside the Park.

Planner Response

The proposed development will not impact the existing recreational uses of the Pipeline Track. With the exception of a number of electrical pit covers and conduit, the area will otherwise be unchanged. Any Tree Ferns that require removal are to be relocated within the vicinity of the site. Any interpretive signage that requires removal to accommodate the works will be reinstated. The works will not be visible outside of the Recreation Zone nor outside of the Park. No visitor services will be affected by the development.

For the reasons discussed above, the proposal is not considered to conflict with any of the Recreation Zone objectives.

3.3 Exempt use and development

Table 4 – Exempt Use and Development (Chapter 8, Section 8.5.7) of the *Wellington Park Management plan 2013* states the following:

use or development described in subclause (a) is exempt from requiring a permit under the Land Use Planning and Approvals Act, unless it involves:

- *A place or precinct listed in a heritage code that is part of this Management plan;*
- *Disturbance of more than 1 m² of land that had been affected by a potentially contaminating activity;*
- *Excavation or fill of more than 0.5 m depth in a landslip hazard area shown a relevant planning scheme;*
- *The removal of any threatened vegetation; or*
- *Land located within 30 m of a wetland or watercourse.*

(a) *The by or on behalf of the State Government, a Council, a statutory authority, or a corporation all the shares of which are held by or on behalf of the State or by a statutory authority, of the following utilities and infrastructure:*

- *electricity, gas, sewerage, stormwater and water reticulation to individual streets, lots buildings;*
- and*

The works are upgrades to the existing water reticulation system at Fern Tree Bower on behalf of TasWater, a statutory authority. However, these works can't exempt from the management plan as the works are located within 30 m of a watercourse and within a place listed in a heritage code that is part of this management plan.

3.4 Standards for use and development

The proposed works are upgrades to an existing utilities land use. As this use is not listed within Table 3 of Section 8 of the management plan, the use is subject to the approval of the Trust. Refer to the assessment against the Recreation Zone purpose and objectives above.

Section 8 of the Management plan includes Table 5 – Standards for Use and Development, which is taken to override the use and development standards of the Environmental Management Zone. The application is assessed against the Section 8, Table 5 of the Management plan below.

WELLINGTON PARK MANAGEMENT PLAN 2013 REQUIREMENTS	
Issue 1: Subdivision	
Acceptable Solution	Acceptable Solution
A1.1 There is no acceptable solution for this element.	P1.1 Subdivision must be for a purpose consistent with all of the objectives for the relevant management zones(s) and with the Management plan.
<u>Planner Response</u> No subdivision is proposed. A1.1 is not applicable.	
Issue 2: Flora and Fauna Conservation, Geoconservation and Natural Processes	
Acceptable Solution	Acceptable Solution
A2.1 Native Vegetation. The proposal does not involve the removal of damage to terrestrial or aquatic native vegetation which: <ul style="list-style-type: none"> (a) is listed as significant in this Management plan, or any planning strategy or Trust endorsed scientific assessment prepared in accordance with this Management plan; or 	P2.1 Native Vegetation Any adverse effects on terrestrial or aquatic native vegetation or habitat values must be avoided, or remedied to ensure no long term impact on vegetation values.

<p>is a Threatened Vegetation Community under the <i>Nature Conservation Act 2002</i>.</p> <p>(b) Supports or forms habitat for any species of fauna listed in the threatened <i>Species Protection Act 1995</i> or the <i>Environment Protection and Biodiversity Conservation Act 1999</i>.</p>	
<p><u>Planner Response</u></p> <p>The proposal involves the relocation of three tree ferns (<i>Dicksonia antarctica</i>) in the vicinity of the bower. This species is not listed as significant in the management plan, or any planning strategy or Trust endorsed scientific assessment prepared in accordance with this Management plan. Nor is it a Threatened Vegetation Community under the <i>Nature Conservation Act 2002</i>. This species is not known to form habitat for any species of fauna listed in the <i>Threatened Species Protection Act 1995</i> or the <i>Environment Protection and Biodiversity Conservation Act 1999</i>. A Natural Values Assessment, prepared by ERA Planning & Environment is at Appendix E. Nonetheless, these tree ferns will be located on the advice of Tasmanian Tree Care and will be replanted to screen the new infrastructure if possible.</p> <p>A2.1 is met.</p>	
<p>A2.2 Threatened Species</p> <p>The proposal does not impact upon any threatened species listed under the <i>Threatened Species Protection Act 1995</i> or the <i>Environmental Protection and Biodiversity Conservation Act 1999</i>.</p>	<p>P2.2 Threatened Species</p> <p>Any adverse impacts on nationally or State Listed rare, threatened or endangered species, communities or habitats must be avoided or remedied to ensure no long term impacts on vegetation values.</p>
<p><u>Planner Response</u></p> <p>The proposal does not impact upon any threatened species listed under the <i>Threatened Species Protection Act 1995</i> or the <i>Environmental Protection and Biodiversity Conservation Act 1999</i>.</p> <p>A2.2 is met.</p>	
<p>A2.3 Geoheritage</p> <p>The proposal does not impact upon any sites which are listed as significant in this Management plan or in a Trust endorsed scientific assessment, or listed on the Tasmanian Geoconservation Database.</p>	<p>P2.3 Geoheritage</p> <p>Any adverse impacts on geoheritage values must be avoided, remedied or mitigated.</p>
<p><u>Planner Response</u></p> <p>The proposal will not impact upon a site with geoheritage value.</p> <p>A2.3 is met.</p>	
<p>Issue 3: Water quality and flow</p>	

Acceptable Solution	Acceptable Solution
<p>A3.1 Water Quality.</p> <p>(a) Wastewater, including grey water, must be connected to a reticulated or-on-site waste treatment system approved by the Planning Authority; and</p> <p>(b) Stormwater must be drained to a detention basin, artificial wetland or infiltration area, or reused within the site, without causing erosion or pollution of existing surface or ground waters or other values of the Park.</p>	<p>P3.1 Water Quality.</p> <p>Wastewater, including greywater, stormwater, or other contaminants must not prejudice the achievement of the water quality objectives for surface or ground waters established under the State Policy on Water Quality Management 1997 or the water quality objectives of this Management plan.</p>
<p><u>Planner Response</u></p> <p>The proposal will not create any wastewater. The development involves the addition of a 4.32 m² galvanised steel / aluminium gatic lid (to cover a new precast concrete pit) and approximately seven electrical pit covers; three around the actual bower and four along the Pipeline Track up to the new meter panel cabinet (approximately one every 50 m). As a result, any stormwater runoff is expected to be negligible, particularly given that some stormwater will absorb into any cracks or holes within the lids. Any small excess will infiltrate into the existing Pipeline Track and surrounds. Given the small surface area of each surface, erosion is very unlikely.</p> <p>A3.1 is met.</p>	
<p>A3.2 Water Bodies, Wetlands and Watercourses</p> <p>No land clearing, excavation, filling or other development must occur:</p> <ul style="list-style-type: none"> - Within a waterbody, wetland or watercourse; or - Within a buffer area , as specified in accordance with this Management plan, of a water body wetland, or watercourse, except for the purpose of maintaining water supply for firefighting purposes, or vehicle access to that water supply in accordance with a Fire management Strategy prepared in accordance with this Management plan. <p>and</p> <p>The use or development involves no extraction of water from any water body, wetland, or watercourse except for use in firefighting or carrying out planned burns in accordance with a fire management strategy. Prepared in accordance with this Management plan.</p>	<p>P3.2 Water Bodies, Wetlands and Watercourses</p> <p>Use and development must be designed and carried out to ensure that any adverse impacts upon natural drainage, flow regimes, erosion and sedimentation to and within any water body, wetland or watercourse will be avoided, or remedied to ensure no long term impact on any water body, wetland or water course.</p>

Planner Response

No works are proposed within a waterbody, wetland or watercourse although there will be works within the associated buffer area and these works need to be considered against P3.2. Most of the works will occur on the actual Pipeline Track (trenches for the installation of electrical cabling and 6.48 m³ infrastructure pit). There will be works around the existing bower basin, which is closer to Browns River, including the relocation of three Tree Ferns and the installation of one electrical pit, although most other works are to the existing structure itself such as the installation of a switch boards and electrical conduit. The natural drainage of Browns River will not be impeded and will remain as existing. The automated valve will release turbid water just as the existing manual valve operates. Soil and water management procedures are to be adhered to during the construction works. Most excavation will be using a pipe sucker truck to minimise impacts to the surrounding area. Given the small addition of any impervious surface, any stormwater run off will be negligible and likely to absorb directly into any new pit or surrounding Pipeline Track and is unlikely to reach the watercourse.

For the reasons discussed it is considered that **P3.2** can be achieved.

A3.3 Drinking Water Catchment Zones

TasWater has advised that the use or development will have no negative impact upon drinking water quality and quantity.

P3.3 Drinking Water Catchment Zones

All use and development is in accordance with the objectives and permitted activities of the Drinking Water Catchment Zones, and is in accordance with a water quality risk assessment prepared by a suitably qualified person.

Planner Response

The proposed works are to be undertaken by TasWater to protect the existing drinking water quality and quantity.

A3.3 is met.

Issue 4: Cultural Heritage Values**A4.1 Aboriginal Cultural Heritage**

The proposal does not involve an Aboriginal relic as defined under the *Aboriginal Relics Act 1975*, or Aboriginal Heritage site or precinct identified in accordance with the Management plan.

P4.1 Aboriginal Cultural Heritage

Any impacts on any heritage precincts or sites of Aboriginal value must be avoided, mitigated or remedied so that no long term loss of Aboriginal cultural heritage values occurs. Any works shall conform with any relevant standards and guidelines prepared by Aboriginal Heritage Tasmania and comply with the *Aboriginal Relics Act 1975*.

Planner Response

The proposed works will in an area that has been disturbed previously through excavation by both TasWater, TasFire, and Council through the establishment of the Pipeline Track. A desktop assessment is currently lodged with Aboriginal Heritage Tasmania to investigate the potential for Aboriginal relics, Heritage sites or precincts in the vicinity of the proposed works.

In the event that A4.1 is not met, the proposal can satisfy P4.1**A4.2 Historic Cultural Heritage**

The proposal does not involve a place: listed on the Tasmanian Heritage Register under the Historic Cultural Heritage Act 1995; or listed in a Heritage Code of a Planning Scheme.

P4.2 Historic Cultural Heritage

All works shall conform with any relevant standards and guidelines produced by Heritage Tasmania to ensure that any adverse effects on historic cultural values and any heritage precincts or sites will be avoided, mitigated or remedied, and to ensure no long term loss of historic cultural heritage values occurs. All actions that impact on identified historic cultural values must be in accordance with any relevant Trust endorsed conservation policies and prescriptions, and with the Burra Charter (Australia ICOMOS, 1999). The reconstruction or presentation of elements of historic heritage fabric must be carried out in accordance with the Trust endorsed conservation policy or plan. Note: 'Reconstruction is appropriate only where a place is incomplete through damage or alteration, and only where there is sufficient evidence to reproduce an earlier state of the fabric (Burra Charter, Australia ICOMOS, 1999).

Planner Response

The Fern Tree Bower is a listed Heritage Place in the planning scheme (Ref. No. 3285, Table E13.1 Other Structures), due to potential for archaeological remains. Additionally, the site falls within a Fern Tree Cultural Landscape Precinct. For these reasons the proposal needs to be considered against P4.2. A Heritage Impact Statement, prepared by Purcell is included in Appendix D of this report. The Heritage Impact Statement provides an assessment of the proposal against the best practice management framework for historic sites contained in:

- The Burra Charter: 'The Australia ICOMOS Charter for Places of Cultural Significance', 2013.
- Heritage Tasmania, 'Works Guidelines for Historic Heritage Places', for the Tasmanian Heritage Council, November 2015.

This report concludes that 'subject to the resolution of minor detailing and design refinement the service upgrade Proposal will not adversely impact on the historic cultural heritage significance or values of the Place or Site'.

For the reasons discussed it is considered that **P4.2** can be achieved.

Issue 5: Landscape, visual quality and amenity**Acceptable Solution****A5.1 Visual Sensitivity**

Buildings and structures (other than park furniture or park signage) are not located within areas identified

Acceptable Solution**P5.1 Visual Sensitivity**

Buildings and structures (other than park furniture or replacement of an existing building or structure of

as of High or Moderate Visual Sensitivity shown in Map 4 of this Management plan.	the same size and location) in prominent locations visible from within or outside of the park, or identified as of High or Moderate Visual Sensitivity in Map 4 of this Management plan, must be designed and sited to minimise or remedy any loss of visual values or impacts on the visual character of the affected area. Note: Satisfaction of this Performance Criterion may include a Visual Impact Analysis, prepared by a suitably qualified person, demonstrating how the building or structure can be designed and located to harmonise with the site.
<p><u>Planner Response</u></p> <p>Structures are proposed within an area identified as having Moderate Visual Sensitivity shown in Map 4 of the Management plan. For this reason, the proposal needs to be considered against P5.1.</p> <p>The only works that are to be above ground level within the Moderate Visual Sensitivity area will be a raised platform with switchboard (to be located behind the existing bower basin and conduit that will be attached to the existing bower structure. All other works will be below ground. The seven electrical pit covers and gatic cover to the new precast concrete pit will be expected to fill up with dirt, leaves etc overtime and eventually be barely visible to the public. The external colours of any new fixtures and external services, will be selected to blend into the surrounding environment and will be finalised at the detailed design stage.</p> <p>For the reasons discussed it is considered that P5.1 can be achieved.</p>	
<p>A5.2 Building Design and Light Effects</p> <p>The maximum building height is 3.5 m and any building is not more than one-storey, and is designed in accordance with the requirements of the relevant Management Zone and this Management plan, and the Trust's Design and Infrastructure Manual where relevant. Associated services, access and parking must not be prominent. External lighting must assist orientation only and will be focused towards the ground.</p>	<p>P5.2 Building Design and Light Effects</p> <p>Development must be designed to harmonise with the visual landscape and natural qualities of the site in terms of appearance, scale and proportions and follow the Trust's Design and Infrastructure Manual where relevant. Lighting and reflection must be managed to avoid adverse impacts on natural and cultural values.</p>
<p><u>Planner Response</u></p> <p>No proposed structure will be higher than 3.5m. No external lighting is proposed.</p> <p>A5.2 is met.</p>	
Issue 6: Noise	
Acceptable Solution	Acceptable Solution
<p>A6.1 Noise</p> <p>Noise from point sources must not exceed 50dB(A) at any point within 50 m of the source.</p>	<p>P6.1 Noise</p> <p>Activities which could have an adverse effect on the quiet enjoyment of natural and cultural values must</p>

	be avoided or remedied to prevent loss of acoustic amenity in the Park.
<u>Planner Response</u> The proposed upgrades will not create any additional noise than the existing situation. There may be a noise when the valve opens to release turbid water, although this will be barely audible and will only occur in medium and high rainfall events, when it is unlikely that the public track will be in use. A6.1 is met.	
Issue 7: Public access, infrastructure and safety	
Acceptable Solution	Acceptable Solution
A7.1 Road Access The design capacity and construction of any public road or access are in accordance with Australian Roads Standards (Austroads) appropriate to a public road in a mountain environment. And Road speed controls or other measures are utilised to minimise road kill. And The design and maintenance of any fire trails meets the standards required by a Bushfire Management Strategy prepared and in accordance with this Management plan.	P7.1 Road Access Where use or development involves a new or upgraded road or access, or increased use of an existing access, appropriate measures must be put in place, in consultation with the relevant road authority, to ensure that the free movement and safety of traffic, people and wildlife will be protected.
<u>Planner Response</u> No road is proposed. Not applicable.	
A7.2 Pedestrian Access Use and development does not interfere with (existing or potential) formal public pedestrian access with or into the Park.	P7.2 Pedestrian Access Existing formal public pedestrian access within the Park must be maintained and enhanced except where public safety or protection of natural and cultural values would be at risk.
<u>Planner Response</u> During construction the Pipeline Track will need to be closed to the public for approximately two weeks. This is necessary for public safety and access will be reinstated once works are complete and will have no impact on the continued long term public enjoyment of the track. It is considered P7.2 can be achieved.	
A7.3 Recreation Track Construction	P7.3 Recreation Track Construction

There is no Acceptable Solution for this element.	Recreation tracks must be constructed , located and maintained in accordance with any policies, objectives and standards contained in this Management plan and in a Recreation Strategy prepared in accordance with this Management plan (or, in the absence of a Recreation Strategy, a Walking Track Strategy or Bike Strategy endorsed by the Trust.
<p><u>Planner Response</u></p> <p>No new track is proposed.</p> <p>Not applicable.</p>	
Issue 8: Natural Hazards	
Acceptable Solution	Acceptable Solution
<p>A8.1 Hazard Avoidance and Mitigation</p> <p>Buildings and structures, other than walking tracks constructed in accordance with a walking track strategy, do not involve cut and fill of more than 1 m and must not be located within a buffer area, specified in accordance with this Management plan, of a waterbody, wetland or watercourse.</p> <p>And</p> <p>The proposed use or development is accompanied by a geotechnical report from a suitable qualified person stating that there is an acceptable risk of instability.</p>	<p>P8.1 Hazard Avoidance and Mitigation</p> <p>In areas where there is a risk of flooding or land instability, all buildings and structures, other than walking tracks constructed in accordance with a walking strategy, must be sited, designed and constructed to, as minimum requirements, take account of future climate change and flood hazard potential, and to assess and mitigate risk in accordance with a hazard risk analysis as set out in the current Australian Geomechanics Society landslide risk management concepts and guidelines and Australian Standard – AS1726.</p>
<p><u>Planner Response</u></p> <p>The proposed works do involve a small amount of excavation to a depth of approximately 1.5 m, which will be within 30 m of a waterway. The site of the works has been extensively excavated in the past to facilitate existing TasWater infrastructure.</p> <p>Excavation to a depth of 1.5m will be required to install a 1.8m x 2.4m precast concrete pit to house the new equipment. As the depth of excavation is more than 1 m from natural ground level, the performance criteria must be considered.</p> <p>The excavation is to be within an existing walking trail (Pipeline Track) that has been excavated previously. The gatic cover to the new precast concrete pit will be either galvanised steel or aluminium, which will both discolour rapidly in the environment like other covers on the Pipeline Track, and can be engineered to suit trafficable areas. Once complete, the ground levels of the existing site will be as existing and the gatic lid will become less visible over time through age and the settlement of debris. There are no adjoining residential properties in proximity to the excavation and no subsequent privacy concerns. The amount of excavation is minimal and with the addition of a pre-cast concrete pit, there is expected to be no impact on land stability.</p>	

Given the works are minor with an excavation of only 6.48 m³, the excavated area will be reinforced with the installation of a concrete pit, and that the works are adjacent to existing TasWater infrastructure, the risk is considered acceptable.

For the reasons discussed, it is considered that P8.1 can be achieved.

A8.2 Bushfire

Development of new or modified buildings must be in accordance with sections E1.6.3, E1.6.4 & E1.6.5 of Planning Directive No 5 (Bushfire Prone Areas Code).

P8.2 Bushfire

There are no Performance Criteria for this issue.

Planner Response

The existing use of the site for 'utilities' is not changing and is neither vulnerable nor hazardous. For this reason, the Bushfire Prone Area Code is not triggered and no further assessment is required.

P8.2 is met.

4 Environmental Management Zone

4.1 Zone purpose

The property is located in the Environmental Management Zone under the interim planning scheme. The zone purpose statements as per Clause 29.1.1 are:

29.1.1.1 - To provide for the protection, conservation and management of areas with significant ecological, scientific, cultural or aesthetic value, or with a significant likelihood of risk from a natural hazard.

29.1.1.2 - To only allow for complementary use or development where consistent with any strategies for protection and management.

29.1.1.3 To facilitate passive recreational opportunities which are consistent with the protection of natural values in bushland and foreshore areas.

29.1.1.4 To recognise and protect highly significant natural values on private land.

29.1.1.5 To protect natural values in un-developed areas of the coast.

Planner Response

As the works are associated with a permitted use, no assessment of the zone purpose statements is required.

4.2 Local area objectives

There are no local area objectives for the zone.

4.3 Desired future character statements

There are no desired future character statements for the Zone.

4.4 Use status

Section 8 of the management plan includes a use table which prevails over Table 29.3 in the planning scheme.

4.5 Use standards

The application is assessed against the use standard Clause 29.3.1 Use Standards for Reserved Land of the planning scheme below.

PLANNING SCHEME REQUIREMENT	
Acceptable Solutions	Performance Criteria
29.3.1 Use Standards for Reserved Land	
A1 Use is undertaken in accordance with a reserve management plan.	P1 Use must satisfy all of the following: (a) be complementary to the use of the reserved land;

PLANNING SCHEME REQUIREMENT	
Acceptable Solutions	Performance Criteria
	<ul style="list-style-type: none"> (b) be consistent with any applicable objectives for management of reserved land provided by the <i>National Parks and Reserves Management Act 2002</i>; (c) not have an unreasonable impact upon the amenity of the surrounding area through commercial vehicle movements, noise, lighting or other emissions that are unreasonable in their timing, duration or extent.
<p><u>Planner Response</u></p> <p>Section 8 of the Management plan includes a use table which is taken to override this use clause within the Environmental Management Zone.</p> <p>Not applicable.</p>	

4.6 Development standards for buildings and works

The application is assessed against Clause 29.4 of the planning scheme as below.

PLANNING SCHEME REQUIREMENT	
Acceptable Solutions	Performance Criteria
29.4.1 Building Height	
<p>A1</p> <p>Building height comply with any of the following:</p> <ul style="list-style-type: none"> (a) as prescribed in an applicable reserve management plan; (b) be no more than 7.5 m. 	<p>P1</p> <p>Building height must satisfy all of the following:</p> <ul style="list-style-type: none"> (a) be consistent with any Desired Future Character Statements provided for the area or, if no such statements are provided, have regard to the landscape of the area; (b) be sufficient to prevent unreasonable adverse impacts on residential amenity on adjoining lots by: <ul style="list-style-type: none"> (i) overlooking and loss of privacy; (ii) visual impact when viewed from adjoining lots, due to bulk and height; (c) be reasonably necessary due to the slope of the site or for the functional requirements of infrastructure.

PLANNING SCHEME REQUIREMENT	
Acceptable Solutions	Performance Criteria
<p><u>Planner Response</u></p> <p>Section 8 of the Management plan includes provisions for building height, which override this standard.</p> <p>Not applicable.</p>	
29.4.2 Setback	
<p>A1</p> <p>Building setback from frontage must comply with any of the following:</p> <ul style="list-style-type: none"> (a) as prescribed in an applicable reserve management plan; (b) be no less than 30 m. 	<p>P1</p> <p>Building setback from frontage must satisfy all of the following:</p> <ul style="list-style-type: none"> (a) be consistent with any Desired Future Character Statements provided for the area or, if no such statements are provided, have regard to the landscape; (b) minimise adverse impact on the landscape as viewed from the road; (c) be consistent with the prevailing setbacks of existing buildings on nearby lots; (d) minimise loss of native vegetation within the front setback where such vegetation makes a significant contribution to the landscape as viewed from the road.
<p><u>Planner Response</u></p> <p>There are no replacement standards for frontage setbacks in Section 8 of the Management plan and subsequently this clause is applicable. There are no proposed structures within 30m of any frontage.</p> <p>The Acceptable solutions A1 is met.</p>	
<p>A2</p> <p>Building setback from side and rear boundaries must comply with any of the following:</p> <ul style="list-style-type: none"> (a) as prescribed in an applicable reserve management plan; (b) be no less than 30 m. 	<p>P2</p> <p>Building setback from side and rear boundaries must satisfy all of the following:</p> <ul style="list-style-type: none"> (a) be consistent with any Desired Future Character Statements provided for the area or, if no such statements are provided, have regard to the landscape;

PLANNING SCHEME REQUIREMENT	
Acceptable Solutions	Performance Criteria
	<ul style="list-style-type: none"> (b) be sufficient to prevent unreasonable adverse impacts on residential amenity on adjoining lots by: (i) overlooking and loss of privacy; (ii) visual impact, when viewed from adjoining lots, through building bulk and massing.
<p><u>Planner Response</u></p> <p>There are no replacement standards for side and rear setbacks in Section 8 of the Management plan and subsequently this clause is applicable. Technically there are proposed new structures within 30 m of the side boundary of CT 109047/1 and the performance criteria must be considered.</p> <p>There are no Desired Future Character Statements provided for the area. The proposed works are contained within the Pipeline Track boundaries and will be additions to existing TasWater infrastructure. The proposed external colours and materials are intended to blend into the landscape either initially (colours) or over time through oxidation and debris settlement. Works will not be visible from any neighbouring residential property as the nearest house is located more than 100 m from the site. For this reason, there will be no overlooking or loss of privacy, noting that the proposal is for upgrades to an existing utility.</p> <p>It is considered that P2 is satisfied.</p>	
<p>A3</p> <p>Buildings and works must be setback from land zoned Environmental Living no less than 30 m.</p>	<p>P2</p> <p>Buildings and works must be setback from land zoned Environmental Living to satisfy all of the following:</p> <ul style="list-style-type: none"> (a) there is no unreasonable impact from the development on the environmental values of the land zoned Environmental Living; (b) the potential for the spread of weeds or soil pathogens onto the land zoned Environmental Living is minimised; (c) there is minimal potential for contaminated or sedimented water runoff impacting the land zoned Environmental Living; (d) there are no reasonable and practical alternatives to developing close to land zoned Environmental Living;
<p><u>Planner Response</u></p> <p>There are no replacement standards for frontage setbacks in Section 8 of the Management plan and subsequently this clause is applicable. There are no Environmental Living areas within 30m of the site.</p> <p>The acceptable solution A3 is satisfied.</p>	

PLANNING SCHEME REQUIREMENT	
Acceptable Solutions	Performance Criteria
29.4.3 Design	
A1 The location of buildings and works must comply with any of the following: <ul style="list-style-type: none"> (a) be located on a site that does not require the clearing of native vegetation and is not on a skyline or ridgeline; (b) be located within a building area, if provided on the title; (c) be an addition or alteration to an existing building; (d) as prescribed in an applicable reserve management plan. 	P1 The location of buildings and works must satisfy all of the following: <ul style="list-style-type: none"> (a) be located in an area requiring the clearing of native vegetation only if: <ul style="list-style-type: none"> (i) there are no sites clear of native vegetation and clear of other significant site constraints such as access difficulties or excessive slope (ii) the extent of clearing is the minimum necessary to provide for buildings, associated works and associated bushfire protection measures; (iii) the location of clearing has the least environmental impact; (b) be located on a skyline or ridgeline only if: <ul style="list-style-type: none"> (i) there are no sites clear of native vegetation and clear of other significant site constraints such as access difficulties or excessive slope; (ii) there is no significant impact on the rural landscape; (iii) building height is minimised; (iv) any screening vegetation is maintained. (c) be consistent with any Desired Future Character Statements provided for the area or, if no such statements are provided, have regard to the landscape.
<u>Planner Response</u> Section 8 of the Management plan includes standards for the location of buildings and works and for this reason this standard is not applicable. Not applicable	
A2	P2 No performance criteria.

PLANNING SCHEME REQUIREMENT	
Acceptable Solutions	Performance Criteria
Exterior building surfaces must be coloured using colours with a light reflectance value not greater than 40 percent.	
<p><u>Planner Response</u></p> <p>There are no replacement standards in Section 8 of the Management plan and this standard is deemed to apply. Exterior building surfaces will be selected to blend into the surrounding environment and will have a light reflectance value not greater than 40 percent.</p> <p>The acceptable solution A2 is met.</p>	
<p>A3</p> <p>Fill and excavation must comply with all of the following:</p> <ul style="list-style-type: none"> (a) height of fill and depth of excavation is no more than 1 m from natural ground level, except where required for building foundations; (b) extent is limited to the area required for the construction of buildings and vehicular access. 	<p>P3</p> <p>Fill and excavation must satisfy all of the following:</p> <ul style="list-style-type: none"> (a) there is no adverse impact on natural values; (b) does not detract from the landscape character of the area; (c) does not impact upon the privacy for adjoining properties; (d) does not affect land stability on the lot or adjoining land.
<p><u>Planner Response</u></p> <p>Section 8 of the Management plan includes standards for excavation and fill and for this reason this standard is not applicable.</p> <p>Not applicable.</p>	

5 Codes

The following codes have been considered:

- Bushfire Prone Areas Code.
- Landslide Code.
- Parking and Access Code.
- Stormwater Management Code.
- Biodiversity Code.
- Historic Heritage Code.

5.1 E1.0 Bushfire Prone Areas Code

Section 8 of the management plan includes standards for bushfire management and therefore the code is substituted by the management plan provisions.

5.2 E3.0 Landslide Code

Section 8 of the management plan includes standards for land instability and therefore the code is substituted by the management plan provisions.

5.3 E6.0 Parking and Access Code

The management plan includes some standards for parking and access. While some standards of the Parking and Access Code still apply, there is no change to any parking and access arrangement for the site the Parking and Access Code is not triggered, and no further assessment is required.

5.4 E7.0 Stormwater Management Code

Section 8 of the management plan includes standards for the quality of stormwater and therefore the code is partially substituted by the management plan provisions. In relation to quantity, the development involves the addition of a 4.32 m² galvanised steel / aluminium gatic lid (to cover a new precast concrete pit) and approximately seven electrical pit covers. As a result, any stormwater runoff is expected to be negligible and easily managed on-site, particularly given that some stormwater will absorb into any cracks or holes within the lids. Any small excess will infiltrate into the existing Pipeline Track and surrounds.

5.5 E10.0 Biodiversity Code

Section 8 of the Management plan includes standards for biodiversity (flora, fauna, and vegetation communities) and therefore the code is substituted by the management plan provisions.

5.6 E13.0 Historic Heritage Code

Section 8 of the management plan includes some standards for heritage places therefore the code is partially substituted by the management plan provisions.

While the management plan includes standards relating to Cultural Heritage and these substitute some of the standards in the Historic Heritage Code, the standards relating to archaeology and cultural landscape remain relevant.

The Fern Tree Bower is a listed Heritage Place in the planning scheme (Ref. No. 3285, Table E13.1 Other Structures), due to potential for archaeological remains. Additionally, the site falls within a Fern Tree Cultural Landscape Precinct, which also requires assessment against the Historic Heritage Code.

A Heritage Impact Statement, prepared by Purcell is included in **Appendix D** of this report. The Heritage Impact Statement provides an assessment of the proposal against the Development Standards and specific Performance Criteria for Heritage Places in Clause E13.7 and Cultural Landscape Precincts in Clause E13.9 of the Historic Heritage Code. This report concludes that:

“Subject to the resolution of minor detailing and design refinement the service upgrade Proposal will not adversely impact on the historic cultural heritage significance or values of the Place or Site’ and makes the following ‘recommendations intended to further mitigate the potential impacts of the proposal:

- *The installation must be as unobtrusive as possible, design to be minimal impact on the aesthetics of the heritage listed Mount Wellington Water Supply System,²⁸ as per the Project scope.*
- *In line with the Works Guidelines,²⁹ any fixings into the external walls should be with noncorrosive materials and into the mortar joints rather than the face of the stone or brick units. Penetrations for cables or pipes should also be through mortar joints where possible.*
- *Hobart City Council or the Heritage Advisory Group may consider usage of the TasNetworks Meter Panel Cabinet for interpretive or other artwork at a later stage to mitigate any potential impacts.*
- *The works should be continually monitored with appropriate hold and witness points to ensure sound heritage outcomes.*
- *As built documentation should be maintained by agency records to inform future management and maintenance.”*

6 Conclusion

The proposed service upgrades to TasWater infrastructure will automate the control of a valve to turn out turbid water during periods of medium and heavy rainfall. The works are considered necessary to ensure the quality of the water entering Ridgeway Dam is managed safely and efficiently. The works are considered relatively minor and external materials will be designed to blend into the existing environment to mitigate any visual impacts to public users of the site.

The proposal relies upon the following performance criteria:

Wellington Park Management Plan 2013

- P3.2 Water Bodies, Wetlands and Watercourses
- P4.2 Historic Cultural Heritage
- P5.1 Visual Sensitivity
- P7.2 Pedestrian Access
- P8.1 Hazard Avoidance and Mitigation

Hobart Interim Planning Scheme 2015

- 29.4.2 P2 (Setback)
- E7.7.1 P1 (Stormwater Drainage and Disposal)
- E13.9.1 P1 (Demolition)
- E13.9.2 P1 (Buildings and Works other than Demolition)

The proposal has been assessed against the corresponding performance criteria and is considered acceptable for the below reasons:

- The works are minor with an excavation of only 6.48 m³, the risk is considered acceptable, given the site has been excavated in the past and that the excavated area will be reinforced with the installation of a concrete pit.
- Any additional stormwater runoff will be negligible and easily managed within the surrounding pervious area.
- A Heritage Impact Assessment has been prepared by Purcell in response to the Historic Heritage Code. This assessment outlines recommendations intended to mitigate potential impact to the significance and values of the place. This assessment is at **Appendix D** of this report.
- A Natural Values Assessment has been prepared by ERA Planning & Environment to identify environmental values associated with the site and assesses the potential impacts on the values that may result from the project. The assessment also provides recommendations for avoidance and or mitigation measures to reduce any potential impacts identified. This assessment is at **Appendix E** of this report.
- An Arboriculture Assessment has been prepared by Element Tree Services outlining recommendations intended to mitigate potential native tree impacts with proximity to the works. This assessment is at **Appendix F** of this report.

- A Parks Activity Assessment, Wellington Park Management Trust has been prepared by ERA Planning & Environment to describe the nature of the activity and why it is being proposed. This assessment is at **Appendix G** of this report.

While the application is discretionary, the applicable development standards and codes have been addressed in this report and found to be acceptable. The application is recommended for approval.

Appendix A Certificate of Title

Appendix B Council land owner consent

Appendix C Development plans

Appendix D Heritage Impact Assessment

Appendix E Natural Values Assessment

Appendix F Arborist Assessment

Appendix G Parks Activity Assessment



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4 May 2022

Ben Ikin
Senior Statutory Planner
City Life

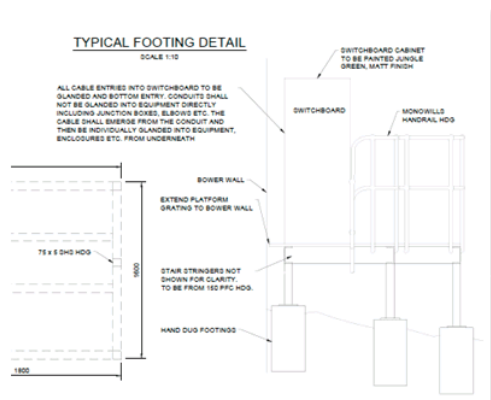
By email: coh@hobartcity.com.au

Dear Ben,

**RESPONSE TO REQUEST FOR FURTHER INFORMATION
FERN TREE BOWER**

Please find the response to the request for further information issued by Council on 7 April 2022.

1. Updated plans are provided.
2. Updated plans and revised report have been provided. The only above ground structure will be the switchboard, platform and associated conduit (see image below). Everything else will be either internal within the Bower structure or below ground and only the lids (electrical pit and gatic) will be visible. It is expected these will be less visible over time through oxidation, the settlement of debris etc.



3. Stormwater - The planning report has been updated to include an assessment against Section 8 of the management plan. It is considered that, due to the small amount of additional impervious surface, a stormwater management plan is not warranted in this instance. The development involves the addition of a 4.32 m² galvanised steel / aluminium gatic lid (to cover a new precast concrete pit) and approximately seven electrical pit covers. As a result, any stormwater runoff is expected to be negligible and easily managed on-site, particularly given that some stormwater will absorb into any cracks or holes within the lids. Any small excess will infiltrate into the existing Pipeline Track and surrounds.

p2

4. Noise - The planning report has been updated to include this information. Noise emissions from the proposed new equipment will not exceed 50dB(A). The proposed upgrades will not create any additional noise than the existing situation. There may be a noise when the valve opens to release turbid water, although this will be barely audible and will only occur in medium and high rainfall events, when it is unlikely that the public track will be in use.

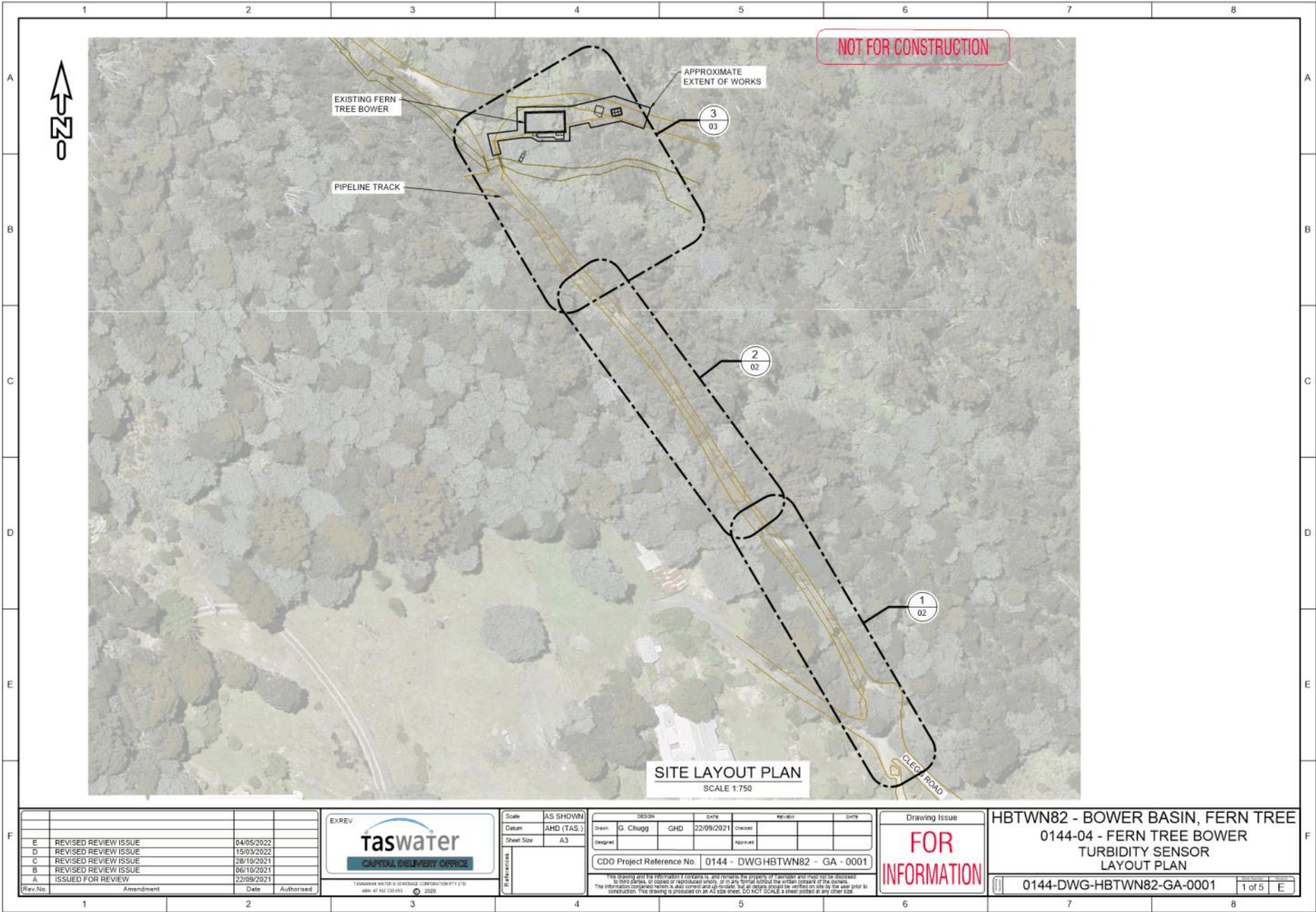
5. Natural Hazards. The planning report has been updated to include this information. The proposed works do involve a small amount of excavation to a depth of approximately 1.5 m, which will be within 30 m of a waterway. The site of the works has been extensively excavated in the past to facilitate existing TasWater infrastructure. Given the works are minor with an excavation of only 6.48 m³, the excavated area will be reinforced with the installation of a concrete pit, and that the works are adjacent to existing TasWater infrastructure, the risk is considered acceptable.

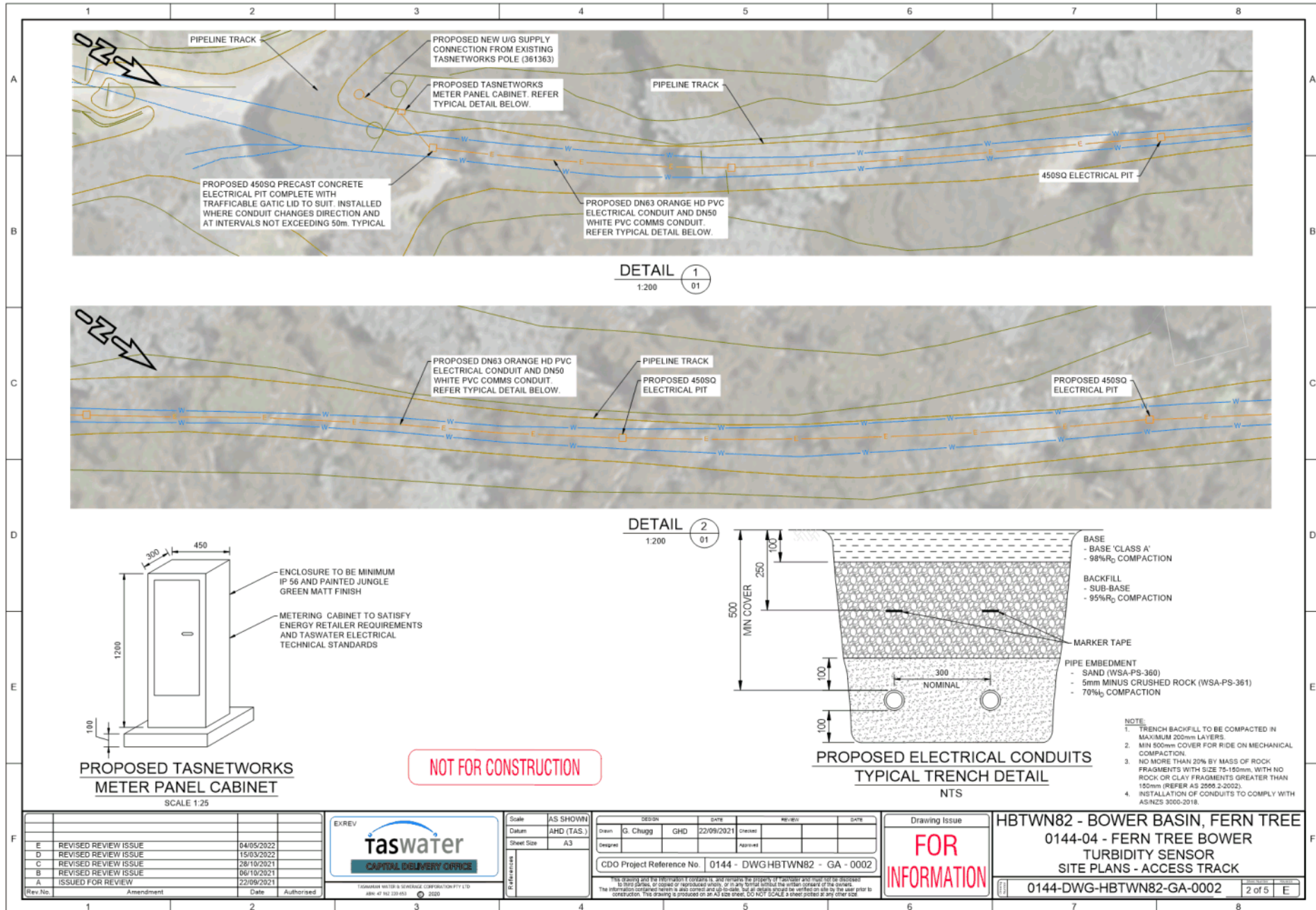
Please feel free to call me if any further clarification is required. I am also happy to meet on-site if you want to run through the proposal, including the works to the existing structure.

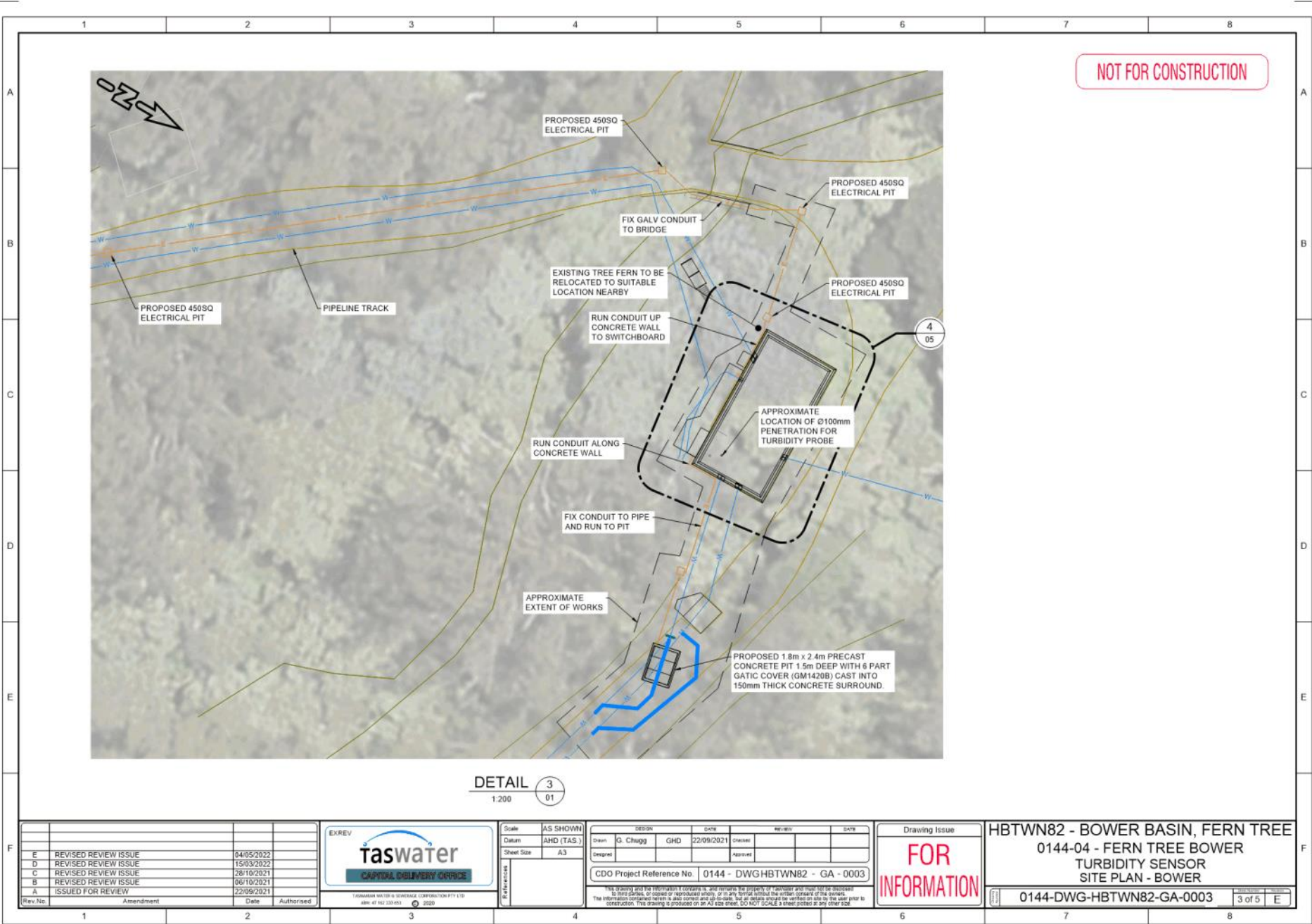
Yours sincerely,

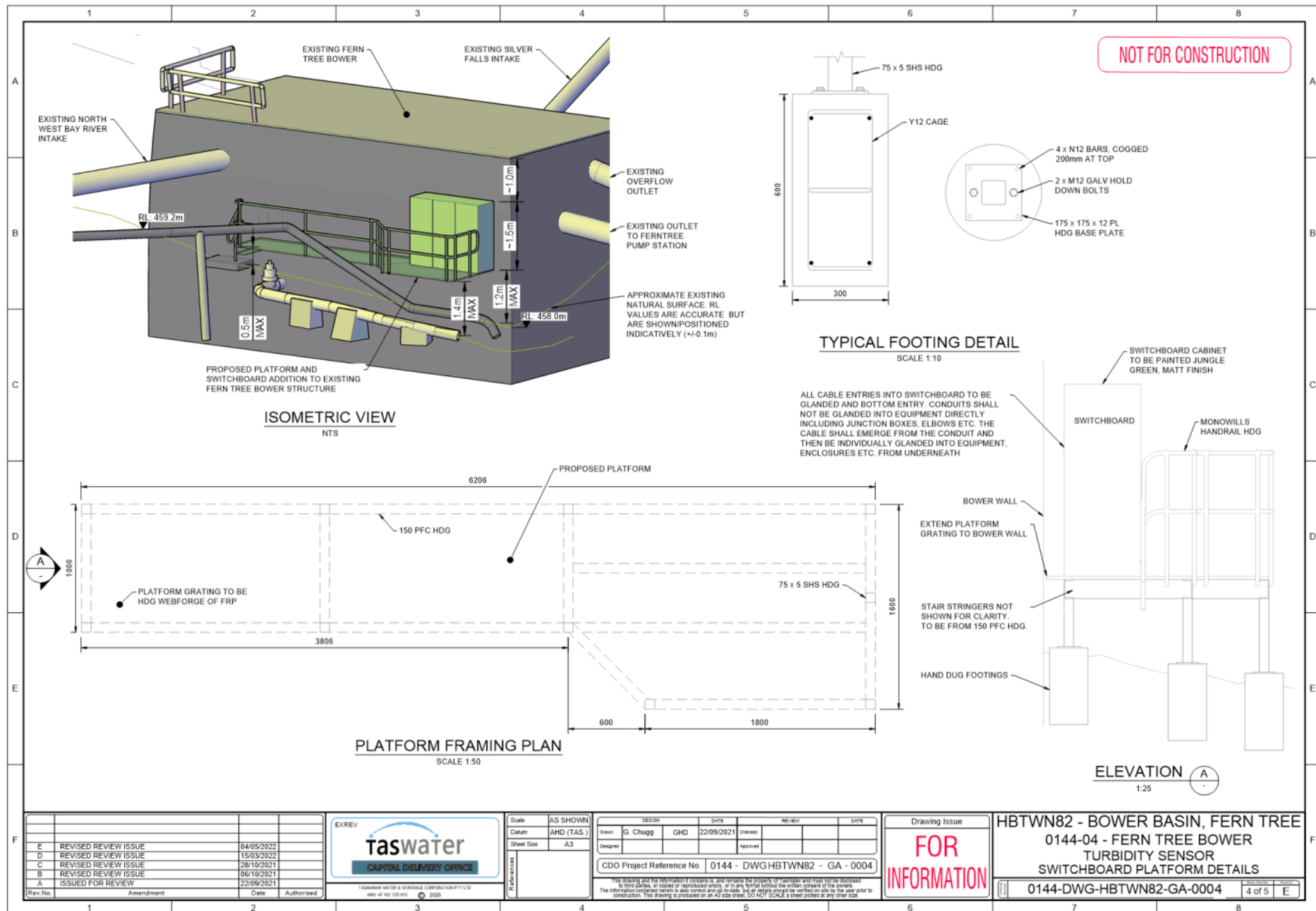


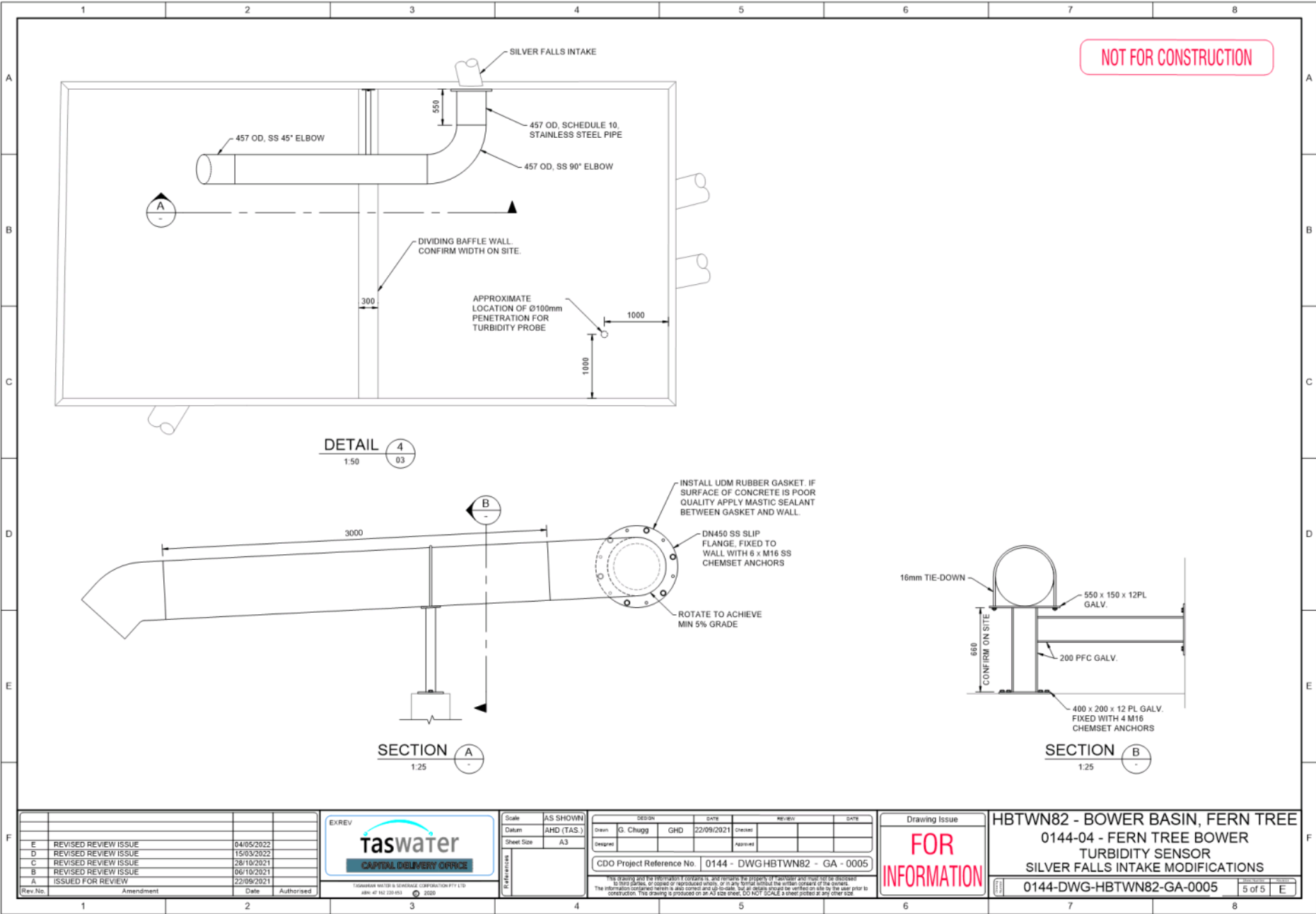
Sarah Silva
Senior Planner











From: aboriginal@heritage.tas.gov.au
To: [Sarah Silva](#)
Subject: Application for an Aboriginal Heritage Desktop Review
Date: Thursday, 28 April 2022 1:36:05 PM
Attachments: [AHT Fact Sheet - Stone Artefacts.PDF](#)
[Unanticipated Discovery Plan.pdf](#)

RE: ABORIGINAL HERITAGE DESKTOP REVIEW

Upgrades TasWater Infrastructure - Fern Tree Bower

Dear Sarah,

Aboriginal Heritage Tasmania (AHT) has completed a search of the Aboriginal Heritage Register regarding the proposed TasWater infrastructure upgrades at Fern Tree Bower. AHT can advise that there is no known Aboriginal heritage recorded within the works area. Based on previous reports and the works being predominantly within areas of existing infrastructure (e.g. the Pipeline track and water pipeline), it is believed that the area has a low likelihood of Aboriginal heritage being present. Accordingly, AHT advise that the works should be guided by the attached Unanticipated Discovery Plan.

Please be aware, however, that previous reports for the wider area indicate that Aboriginal heritage sites (consisting largely of stone artefacts) are present within Wellington Park, but due to low ground surface visibility they are often not readily identifiable. Vigilance should therefore be exercised particularly during ground disturbance works and associated any vegetation clearance as this is the most likely time Aboriginal heritage will be encountered.

Please be aware that all Aboriginal heritage is protected under the *Aboriginal Heritage Act 1975*. If at any time during works Aboriginal heritage is suspected, the process outlined in the Unanticipated Discovery Plan should be immediately implemented. We recommend that a copy of the Unanticipated Discovery Plan is kept on hand during any ground disturbing works. Also attached for your reference is a stone artefact fact sheet, which provides a general description of the common type of Aboriginal heritage in the surrounding area.

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

Kind regards,

Billy Paton-Clarke

Aboriginal Heritage Tasmania
Heritage and Land Tasmania
Natural Resources and Environment
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Fern Tree Bower

Natural Values Assessment

2 November 2021



ERA Planning Pty Ltd trading as ERA Planning and Environment

ABN 67 141 991 004

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Job Number: 2122-006

Document Status

Document Version	Date	Author	Reviewer
DRAFT_V1	28 October 2021	James Hill	Dan Elson
FINAL_V1	02 December 2021	James Hill	

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Appendix D Weed and Disease Planning and Hygiene Guidelines

1 Introduction

1.1 Project overview

The TasWater CDO have identified upgrades required to the water infrastructure located at the Fern Tree Bower to better manage the flow of water into the drinking water system during high rainfall events, which currently results in high turbidity water entering the system.

ERA have been engaged to undertake a Natural Values Assessment of the site to identify environmental values associated with the site and assesses the potential impacts on the values that may result from the project. The assessment also provides recommendations for avoidance and or mitigation measures to reduce any potential impacts identified. In addition, this assessment will inform the production of a Parks Activity Assessment (PAA) that will be required for works proposed inside of the boundary of the Wellington Park.

1.2 Study area

The study area is detailed in Figure 1 and is primarily contained within or adjacent to the existing Pipeline Track and Fern Tree Bower infrastructure. Cadastral parcels associated with the study site are PID: 5587226, Title Reference 109047/1 and PID:5597226 Title Reference 109046/2. The properties are inside the boundary of the Wellington Park and are managed by the Wellington Park Management Authority.

The majority of the study area is zoned as Environmental Management with a small section on the southern section zoned Environmental Living under the Hobart Interim Planning Scheme 2015.

1.3 Potential impact areas

The current proposal impacts are relatively limited with some upgrades to the existing infrastructure and installation of various pipework, with the majority of works situated within the existing pipeline track or the downhill side of the existing infrastructure. The proposed works footprint is shown in *Figure 1* and *Figure 2*.

1.4 Purpose of this report

The primary aim of this document is to:

- Describe the vegetation, fauna and flora of the study area and the broader area where relevant;
- Identify listed ecological values within the study site and identify areas of high ecological value that would preferably be avoided by proposed works;
- Gauge the proposed project against any relevant ecological legislation and policy; and
- Provide recommendations and approaches to minimise impacts from the project on ecological values.

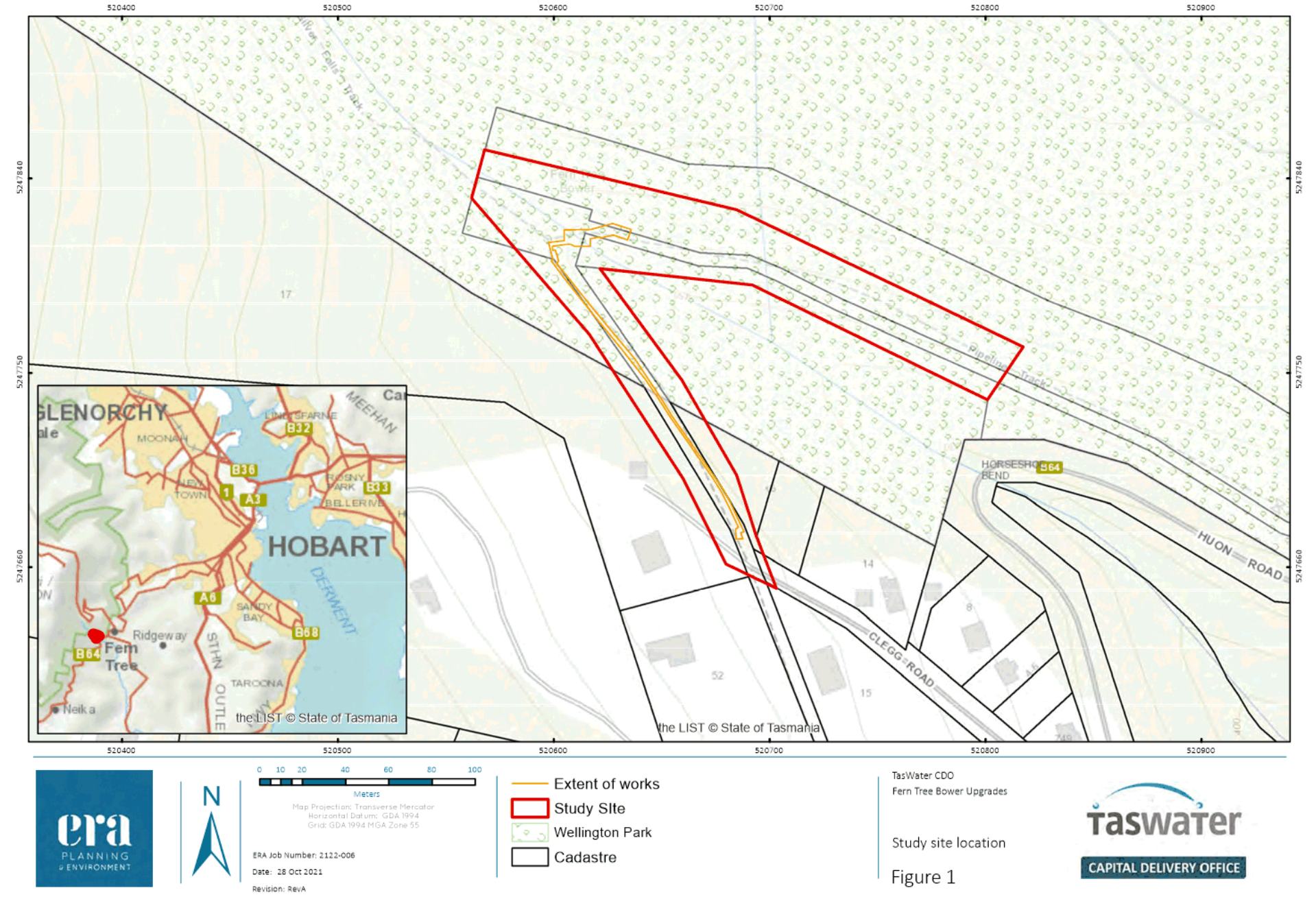
1.5 Limitations

The site assessment was undertaken on 20 October 2021. This is considered an optimal time for survey of annual species, many of which are visible or flower only during spring and/or summer periods. However, many plant species have seasonal and ephemeral growth habits and flowering may be confined to a shorter period annually. Some species also exhibit patchy distributions and as such it is possible that they were not observed during the survey window.

The survey focused on assessing all variables of habitat within the study area to maximise the likelihood that the majority of species would be recorded. For the species that have limited flowering periods outside of the time that this survey was conducted but are thought possible to occur, a discussion is provided on the presence of appropriate habitat and an assessment of the probability that the species is present.

This survey was limited to vascular plant species and excluded mosses, lichens and liverworts.

The fauna survey was limited to the assessment of potential habitat for threatened terrestrial species and the quality of that habitat, along with observations of tracks, scats or other informative evidence. Targeted fauna surveys were not undertaken.



2 Methods

2.1 Background research

The desktop research component for this project was primarily conducted utilising the following tools:

- The Natural Values Atlas (NVA) database (BCB 2020) – which provides a NVA Report identifying threatened fauna and flora records within 500 m and 5000 m of the study area (produced 09 August 2021).
- The *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) Protected Matters Search Tool (PMST) (Australian Government 2020) – which provides a PMST Report that identifies any matters listed under the EPBCA within a 5000 m buffer around the study area (produced 09 August 2021).
- The Land Information System Tasmania (LIST) database (Service Tasmania 2020) – which provides information on the location of vegetation communities according to TASVEG 4.0 (2020), including the location of threatened vegetation (accessed 09 August 2021).
- The DPIPWE website – which contains links to biological and ecological information on many of the State's threatened species (available online at: <http://dPIPWE.tas.gov.au/conservation/threatened-species-and-communities/lists-of-threatened-species/full-list-of-threatened-species> accessed 09/08/2021).

2.2 Field survey

A field survey was undertaken of the study area on 12 October 2021 by an ERA Senior Ecologist. The survey was conducted on foot utilising the general principles outlined in NCHD (2015) for terrestrial ecological survey. All locations were recorded utilising a handheld GPS unit with accuracy at the time of approximately 3 m.

2.3 Nomenclature and assessment of significance

All plants were identified in accordance with A Census of the Vascular Plants of Tasmania (Baker & de Salas, 2018). Flora and fauna conservation significance was determined in accordance with the Tasmanian *Threatened Species Protection Act 1995* (TSPA) and the Commonwealth EPBCA.

Vegetation communities were assessed against Kitchener and Harris (2013). Conservation significance of vegetation communities was assessed in accordance with TASVEG 2020 (DPIPWE, 2020). Conservation significance of ecological communities was determined in accordance with the Tasmanian *Nature Conservation Act 2002* and the Commonwealth EPBCA.

3 Results

The following sections provide an overview of the results of the desktop and field assessment. Reports generated from the NVA and the PMST are provided in Appendix A and Appendix B respectively.

3.1 Underlying geology and soils

According to desktop review, the underlying geology within the study site is unfossiliferous glaciomarine interbedded non-fissile and fissile siltstone and silty sandstone, with common bioturbation and lonestones, rare pebbly beds and fossiliferous beds; top beds of laminated grey to brown siltstone.

3.2 Geoconservation sites within 1000 m

The NVA report indicates that the study site borders one geoconservation site, Wellington Range Periglacial Terrain, the most extensive and well-developed high altitude periglacial terrain in Tasmania without glacial influence.

3.3 Raptor nests within 5000 m

Desktop research indicates there are no raptor nests within 500 m of the study area. However, there are eight nest records within 5000 m; six of these nests are for the Tasmanian wedge-tailed eagle (*Aquila audax* subsp. *fleayi*) and two associated with the masked owl (*Tyto novaehollandiae*). The closest nest record is 2.9 kms to the south of the site. There were no raptor nests identified in the field survey.

3.4 Acid sulfate soils

No acid sulfate soils are known or previously mapped within 1000 m of the study site.

3.5 Reserves

The study area borders Wellington Park which is a dedicated formal reserve managed under the Wellington Park Management Plan. Any activities within the park require approval by the Wellington Park Management Trust via the submission of a PAA.

3.6 Nationally Important and RAMSAR Wetlands

No RAMSAR Wetlands or nationally significant wetlands were identified by desktop research within or adjacent to the study site.

3.7 Vegetation

3.7.1 Vegetation communities identified by desktop research

According to the LIST and NVA results the study area contains the following TASVEG 4.0 mapping units:

- *Eucalyptus obliqua* wet forest (undifferentiated) (WOU)
- *Eucalyptus regnans* forest (WRE)

- *Acacia dealbata* forest (NAD)
- *Eucalyptus delegatensis* dry forest and woodland (DDE)

3.7.2 Vegetation communities mapped during field assessments

Three native vegetation communities were recorded within the study site during the ecological assessment (refer to Figure 2), these are detailed along with area occupied in Table 1. Some of the study area contains areas of walking tracks and the infrastructure itself, however due to scale of mapping and the small size of these components these areas have been included in the broader native vegetation mapping units. Note that the proposed works are located in these areas of walking tracks and existing infrastructure.

Table 1 Vegetation community areas

Vegetation type	Area (m ²)
<i>Eucalyptus obliqua</i> forest with broadleaf shrubs (WOB)	5,267
<i>Eucalyptus regnans</i> forest (WRE)	4,615
<i>Acacia dealbata</i> forest (NAD)	2,627
Total area of the study site	12,509

The study area is in a relatively natural condition with regards to floristics, with a low representation of exotic species present and no declared weeds recorded. In general, it has a relatively low floristic diversity which is representative of the particular vegetation communities present. The canopy of the larger trees has a high percentage cover reducing the available light to the understorey species therefore generating the broadleaf understorey component of low light tolerant flora.

The vegetation mapping of the study area is provided in **Figure 2**.

***Eucalyptus obliqua* forest with broad-leaf shrubs (WOB)**

This community is a tall to very tall forest with a broad-leaf, wet sclerophyll understorey. It is widely distributed in moderate to high rainfall areas on a variety of substrates. The understorey is typically composed of broad-leaved shrubs, most commonly including *Pomaderris apetala*, *Nematolepis squamea* and *Olearia argophylla*, with a high proportion of ground ferns.

Within the study area this vegetation was characterised by *Eucalyptus obliqua* trees up to approximately 25 m in some areas with an understorey of primarily *Bedfordia salicina* (tasmanian blanketleaf), *Pomaderris apetala* (dogwood), *Nematolepis squamea* subsp. *squamea* (satinwood) and *Dicksonia antarctica* (soft treefern).



Plate 1 *Eucalyptus obliqua* forest with broad-leaf shrubs

***Eucalyptus regnans* forest (WRE)**

This forest community is characterised by emergent *Eucalyptus regnans* trees over a wet sclerophyll or rainforest understorey. The community is dominated by *E. regnans* and is typically in single-aged stands because the trees are sensitive to fire and will not re-sprout after a hot fire. *E. regnans* is a very tall tree, generally between 40 and 70 m, with some recorded over 90 m (the tallest species of hardwood in the world). The stem is straight and the bole is generally more than two thirds of the total height. The crown is relatively small and sparse. The tall shrub layer is typically dense, and includes *Pomaderris apetala*, *Pittosporum bicolor* and *Olearia argophylla*. Ground ferns are common. With increasing moisture and absence of fire, rainforest elements are intermixed with the broad-leaved shrubs. When it occurs as a mixed forest, the understorey is callidendrous rainforest.

Within the study area this vegetation community was characterised by tall *Eucalyptus regnans* trees up to 40 m in height in some areas with a very low diversity understorey of *Pomaderris apetala* (dogwood), *Nematolepis squamea* subsp. *squamea* (satinwood) and the occasional *Acacia dealbata* subsp. *dealbata* on the margins of the community in the transition zone between this community and the *Acacia dealbata* forest (NAD). *Dicksonia antarctica* (soft treefern) was present in the drainage depressions.

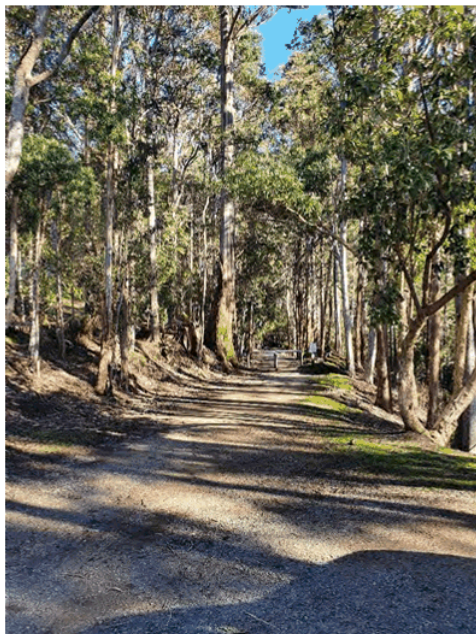


Plate 2 *Eucalyptus regnans* forest (WRE) either side of photo with the pipeline track in the centre

***Acacia dealbata* forest (NAD)**

Acacia dealbata forest (NAD) is a successional community found on disturbed sites, e.g. on old areas of improved pasture, stream banks and riparian corridors subject to flood disturbance and replaces wet forests and damp sclerophyll forest after fire. The canopy is variable in cover but is most often composed purely of *Acacia dealbata* trees, that can reach 20 m in height. The understorey is variable, reflecting the diverse disturbance situations in which the community arises. This community is most common on sites disturbed by fire, past vegetation clearing, or floods. Generally, stands are less than 5 ha in size but are occasionally more extensive. The community occupies sites from flats to steep slopes and ridges on a variety of substrates, but most often is found on relatively fertile areas. Understoreys are variable and range from *Pteridium esculentum* and shrub species, representative of disturbed sites, to regenerating wet forest species such as *Olearia lirata* and *O. argophylla*, to rainforest species such as *Nothofagus cunninghamii*. The understorey often reflects the vegetation present before the disturbance.

Within the study area the community occurs in the Northern zone as shown in **Figure 2**. The canopy species was primarily *Acacia dealbata* (silver wattle) with the occasional emergent eucalypts in some areas. The canopy height is approximately 15 m in height with a very depauperate understory diversity with very occasional *Pomaderris apetala* (dogwood) and *Dicksonia antarctica* (soft treefern) occurring throughout.



Plate 3 *Acacia dealbata* forest (NAD)

3.8 Flora

3.8.1 Threatened Flora identified by desktop research

Table 1 provides an overview of threatened flora that have previously been recorded within or near to the study site. Habitat descriptions and the likelihood that certain species may occur within or adjacent to the study site is discussed.

Table 2 Threatened flora previously recorded within 500 meters and 5000 m of the study area

Species Name scientific/common	Status state/commonwealth	Habitat requirements	Likelihood to occur within study area
Threatened flora records within 500 m			
No threatened flora previously recorded within 500 m of the study area			
Threatened flora records within 5000 m			
<i>Allocasuarina duncanii</i> (conical sheoak)	r/-	Most sites are on dolerite rock plates or shallow soils over dolerite, typically in association with either <i>Eucalyptus delegatensis</i> or <i>Eucalyptus coccifera</i> . Two small sites are on quartzitic sandstone. The species is found from 230 to 1000 m above sea level, with most plants above 500 m.	Possible , some marginal habitat, not recorded during the field assessment
<i>Asperula scoparia</i> subsp. <i>scoparia</i> (prickly woodruff)	r/-	The species is widespread but only occasionally found. It has been recorded from grassy woodland and tall eucalypt forest.	Possible , study area may be considered possible habitat, not recorded during the field assessment
<i>Australina pusilla</i> subsp. <i>muelleri</i> (shade nettle)	r/-	It is known from the southern flanks of Mount Wellington in deeply shaded gullies within wet eucalypt forest.	Possible , some suitable habitat, not recorded during the field assessment
<i>Aurolistipa bigeniculata</i> (doublejointed speargrass)	r/-	The species is found mainly in the southeast and Midlands in open woodlands and grasslands, where it is often associated with <i>Aurolistipa nodosa</i> .	Unlikely , no suitable habitat
<i>Brachyscome radicata</i> (spreading daisy)	r/-	It has been recorded from the foothills of Mt Wellington in Hobart and from montane grassland near Cradle Mountain and the Central Plateau. Its habitat also extends to shrubby forest and wet sclerophyll forest in the east.	Unlikely , no appropriate habitat.

Species Name scientific/common	Status state/commonwealth	Habitat requirements	Likelihood to occur within study area
<i>Caladenia caudata</i> (tailed spider-orchid)	v/VU	Occurs in heathy and open eucalypt forest and woodland, often with sheoaks, and in heathland on sandy and loamy soils. It is most often found on sunny north-facing sites.	Unlikely , no suitable habitat
<i>Caladenia filamentosa</i> (daddy longlegs)	r/-	Occurs in lowland heathy and sedgy open eucalypt forest and woodland on sandy soils.	Unlikely , no suitable habitat
<i>Caladenia sylvicola</i> (forest fingers)	e/CR	The species has been found at 2 sites, the first in well-drained gravelly loam overlying mudstone in heathy/shrubby <i>Eucalyptus tenuiramis</i> forest on a highly insolated hillside at about 240 m elevation and the second at a slightly lower elevation (160 m) on a moist, sheltered slope (on a similar substrate), growing among leaf litter and dense shrubs in tall open dry sclerophyll forest dominated by <i>Eucalyptus obliqua</i> .	Unlikely , no appropriate habitat
<i>Carex gunniana</i> (mountain sedge)	r/-	Grows in wet eucalypt forest and sandy heathlands, by the sides of streams, littoral sands and shingle with seepage.	Possible , some suitable habitat, not recorded during the field assessment.
<i>Carex longebrachiata</i> (drooping sedge)	r/-	Grows along riverbanks, in rough grassland and pastures.	Unlikely , no appropriate habitat
<i>Centropappus brunonis</i> (Tasmanian daisytree)	r/-	Occurs amongst boulders and talus in sub-alpine vegetation at altitudes of up to 900 m.	Unlikely , no suitable habitat.
<i>Corunastylis nuda</i> (tiny midge-orchid)	r/-	Occurs in a wide range of habitats including scrub, subalpine grassland, heathy open forest, open rock plates among forest, shrubby dry sclerophyll forest and open wet sclerophyll forest, from near sea level to 1000 m elevation on a range of different soil types and parent geologies.	Unlikely , no suitable habitat.

Species Name scientific/common	Status state/commonwealth	Habitat requirements	Likelihood to occur within study area
<i>Corunastylis nudiscapa</i> (bare midge-orchid)	e/-	Open forests and woodlands dominated by <i>Eucalyptus tenuiramis</i> (silver peppermint) or <i>Eucalyptus obliqua</i> (stringybark), with a heathy ground layer of varying density; associated shrubs may include <i>Pultenaea gunnii</i> var. <i>baeckiioides</i> (delicate golden bushpea), <i>Pultenaea juniperina</i> (prickly beauty), <i>Aotus ericoides</i> (golden pea), <i>Acacia myrtifolia</i> (redstem wattle), <i>Epacris impressa</i> (common heath), <i>Tetratheca labillardierei</i> (glandular pinkbells), <i>Acacia terminalis</i> (sunshine wattle) and <i>Exocarpos cupressiformis</i> (native cherry); on Permian mudstones on well-insolated slopes and crests with northwest to northeast aspects, at elevations between 120 to 250 m above sea level.	Unlikely , no suitable habitat
<i>Dianella amoena</i> (grassland flaxlily)	r/EN	Occurs mainly in the Midlands, where it grows in native grasslands and grassy woodlands.	Unlikely , no suitable habitat
<i>Discaria pubescens</i> (spiky anchorplant)	e/-	Most strongly associated with native grasslands and grassy woodlands, often occurring on banks, roadside batters, sandy and gravelly soil on basalt talus slopes, and amongst fractured dolerite outcrops and flood channels.	Unlikely , the record is very old (1840) and likely accuracy of the record is suspect. The study area is not considered appropriate habitat.
<i>Diuris palustris</i> (swamp doubletail)	e/-	Occurs in coastal areas in grassy open eucalypt forest, sedgy grassland and heathland with tea-tree and paperbark on poorly to moderately-drained sandy peat and loams, usually in sites that are wet in winter.	Unlikely , no suitable habitat

Species Name scientific/common	Status state/commonwealth	Habitat requirements	Likelihood to occur within study area
<i>Epacris virgata</i> (Kettering) pretty heath)	pv/-	Occurs among foothills in southeastern Tasmania in dry sclerophyll forest on hilly terrain at elevations of 10 to 300 m above sea level, mainly on Jurassic dolerite, though sometimes close to the geological boundary of dolerite and Permian mudstone.	Unlikely , no suitable habitat
<i>Euphrasia gibbsiae</i> subsp. <i>wellingtonensis</i> (Mt Wellington eyebright)	r/-	Occurs in a variety of vegetation types on Mount Wellington, including sphagnum bogs, bolster heath and open montane shrubbery.	Unlikely , no suitable habitat
<i>Euphrasia scabra</i> (yellow eyebright)	e/-	Occurs in moist herb/sedge communities in grassy leads in marshes or in drier open grassy areas on hills at the headwaters of creeks. Its habitat is associated with gaps created by grazing, flooding or other disturbance.	Possible , some marginal habitat within the study area, not recorded during the site assessment.
<i>Isolepis habra</i> (wispy clubsedge)	r/-	The habitat of <i>Isolepis habra</i> is poorly understood and variable as it occurs from lowland to highland sites in forest and non-forest habitats. Wet sclerophyll and riparian habitats may be preferred.	Possible , some of the study area may be considered appropriate habitat, not recorded during the site assessment.
<i>Juncus vaginatus</i> (clustered rush)	r/-	Found in localised patches predominantly in the south-east, but also around Launceston, in the west and on King Island. This species is generally found near margins of streams or in permanently wet soakage areas of marshes.	Unlikely , no suitable habitat
<i>Lepidosperma tortuosum</i> (twisting rapiersedge)	r/-	Usually found in open heathland and eucalypt woodland in the south-east, on the East Coast and in the north-east near sea level to approximately 460 m altitude.	Unlikely , no suitable habitat

Species Name scientific/common	Status state/commonwealth	Habitat requirements	Likelihood to occur within study area
<i>Pimelea flava</i> subsp. <i>flava</i> (yellow riceflower)	r/-	<i>Pimelea flava</i> ssp. <i>flava</i> prefers moderately fertile sites, such as shrubby <i>Eucalyptus amygdalina</i> (black peppermint) damp sclerophyll forest with co-dominants of <i>Eucalyptus obliqua</i> (stringy bark), <i>Eucalyptus ovata</i> (black gum) and <i>Eucalyptus pulchella</i> (white peppermint) or scrubby <i>Eucalyptus amygdalina</i> forest on dolerite in sub coastal areas.	Unlikely , no suitable habitat
<i>Pomaderris elachophylla</i> (small-leaf dogwood)	r/-	Occurs in wet sclerophyll forests to wet shrubby woodlands at elevations of 100 m to 800 m, on flat to gently sloping land often over a granite or dolerite bedrock.	Possible , some marginal habitat within the study area, not recorded during the site assessment.
<i>Prasophyllum amoenum</i> (dainty leek-orchid)	v/EN	On Snug Tiers, <i>Prasophyllum amoenum</i> occurs in buttongrass moorland habitat on damp stony loam. On Mt Wellington, the species is found in and near cushion plants in alpine moorland.	Unlikely , no suitable habitat
<i>Pterostylis squamata</i> (ruddy greenhood)	v/-	The species has a scattered distribution, occurring in the northeast, east, southeast and Midlands. The species grows in open forest, woodland and heathland with a sparse to dense heathy to grassy understorey, often in proximity to rock outcrops.	Unlikely , no suitable habitat
<i>Ranunculus pumilio</i> var. <i>pumilio</i> (ferny buttercup)	r/-	Occurs mostly in wet places from sea level to altitudes of 800- 900 m.	Possible , some marginal habitat within the study area, not recorded during the site assessment.
<i>Rhodanthe anthemoides</i> (chamomile sunray)	r/-	The Tasmanian distribution of <i>Rhodanthe anthemoides</i> includes montane grasslands, heath and heathy scrub in central and north-western Tasmania.	Unlikely , no suitable habitat

Species Name scientific/common	Status state/commonwealth	Habitat requirements	Likelihood to occur within study area
<i>Scleranthus fasciculatus</i> (spreading knawel)	v/-	Vegetation at most of the sites is silver tussock grassland/grassy woodland. It appears to need gaps between the tussock spaces for its survival and both fire and stock grazing maintain the openness it requires.	Unlikely , no suitable habitat
<i>Senecio squarrosus</i> (leafy fireweed)	r/-	This species is associated with dry sclerophyll forest.	Unlikely , no suitable habitat
<i>Thelymitra inflata</i> (inflated sun-orchid)	e/-	Usually grows in dry to moist woodlands and open forests, often in disturbed, winter-wet sites on clay loam soils, 10 to 350 m in altitude.	Unlikely , no suitable habitat
<i>Viola curtisiae</i> (montane ivyleaf violet)	r/-	Has been recorded from Mount Field National Park (between Lake Dobson and the Mawson Plateau) and the Wellington Range (Big Bend, The Lactern).	Unlikely , no suitable habitat
<i>Vittadinia burbridgeae</i> (smooth new-holland-daisy)	r/-	This species is known from the driest and most fertile soils in the Hobart area and extending up into the Midlands.	Unlikely , no suitable habitat
<i>Vittadinia cuneata</i> var. <i>cuneata</i> (fuzzy new-holland-daisy)	r/-	Occurs in areas of low precipitation on both fertile and infertile soils. Predominantly found in dry sclerophyll forest around Hobart, into the midlands and extending up into the north-east.	Unlikely , no suitable habitat
<i>Vittadinia muelleri</i> (narrowleaf new-holland-daisy)	r/-	This species is known from the driest and most fertile soils in the Hobart area and extending up into the Midlands.	Unlikely , no suitable habitat
<i>Westringia angustifolia</i> (narrowleaf westringia)	r/-	Found predominantly in dry, shrubby understorey, often on dolerite and associated with other endemic species from 300 to 900 m. It is often associated with riverbanks.	Unlikely , no suitable habitat
<i>Xerochrysum bicolor</i> (eastcoast paperdaisy)	r/-	This species is recorded from heathland near the coast in the north-east, and in alpine situations.	Unlikely , no suitable habitat

Species listed above are listed as rare (r), vulnerable (v), provisionally vulnerable (pv), endangered (e), or extinct (x) on the Tasmanian TSPA; vulnerable (VU), endangered (EN), critically endangered (CR) or extinct (EX) on the Commonwealth EPBCA.

3.8.2 Flora recorded during field assessments

There were 17 flora species recorded across the site, divided in to 15 native and 2 exotic/introduced species. No flora species recorded are listed as rare under the Tasmanian TSPA or the Commonwealth EPBCA. The full list of flora recorded during the field assessment is provided in Appendix C.

Several of the listed flora species outlined in Table 2 have the potential to occur within the study area but were not located during the survey. Given the timing of the survey (Spring) and the vegetation communities and site conditions encountered it is considered unlikely that these species do occur and have been overlooked

None of the introduced species recorded are declared weeds under the Tasmanian *Weed Management Act 1999*.

3.9 Fauna

3.9.1 Threatened fauna identified by desktop research

Table 3 provides a summary of historical threatened fauna records identified by desktop research. Marine threatened species identified in the NVA report or the PMST report have been excluded from this assessment.

Table 3 Historical fauna observations

Species Name scientific/common	Status state/Commonwealth	Habitat requirements	Likelihood to occur within study area
Threatened fauna records within 500 m			
<i>Accipiter novae-hollandiae</i> (grey goshawk)	e/-	The species nests in mature wet forest, usually in the vicinity of a watercourse. However, birds can also be seen in more open woodland and around urban fringes.	Possible , the study site is located near a watercourse, albeit a small creek, at the headwaters of Browns Rivulet, no nests are known or were observed within or near to the study site

Species Name scientific/common	Status state/Commonwealth	Habitat requirements	Likelihood to occur within study area
<i>Aquila audax</i> subsp. <i>fleayi</i> (Tasmanian wedge-tailed eagle)	e/EN	Can be found across a wide range of habitats, from the coast to highland areas. It defends a large territory, nesting in patches of mature forests with sheltered aspects throughout Tasmania (including large offshore islands).	Possible , may forage within the area however not considered likely to nest due to the proximity to residential areas and the general aspect of the site is not considered appropriate for nest establishment.
<i>Dasyurus viverrinus</i> (eastern quoll)	-/EN	It is commonly associated with dry grassland and forest mosaics which are bounded by agricultural land, particularly where pasture grubs are common. Animals sleep in dens made under rocks, in underground burrows or fallen logs.	Unlikely , no suitable habitat
<i>Perameles gunnii</i> (eastern barred bandicoot)	-/VU	Occurs in open habitats including woodlands and open forests with a grassy understorey, and native and exotic grasslands. It needs understorey plants to provide shelter, nest sites and food.	Unlikely , no suitable habitat
<i>Sarcophilus harrisii</i> (Tasmanian devil)	e/E	Denning habitat for daytime shelter (e.g. dense vegetation, hollow logs, burrows or caves); hunting habitat (open understorey mixed with patches of dense vegetation); breeding den habitat (areas of burrowable, well-drained soil or sheltered overhangs such as cliffs, rocky outcrops, knolls, caves and earth banks, free from risk of flooding; windrows and log piles may also be used).	Unlikely , with regards to denning as no appropriate habitat observed within the study area during the site assessment. May forage within the study area

Species Name scientific/common	Status state/Commonwealth	Habitat requirements	Likelihood to occur within study area
<i>Tyto novaehollandiae</i> subsp. <i>castanops</i> (masked owl (Tasmanian))	e/VU	The Tasmanian masked owl hunts at night for small mammals and birds in a range of habitats which contain some mature forest, usually below 600 m altitude - these include native forests and woodlands as well as agricultural areas with a mosaic of native vegetation and pasture.	Possible , for foraging purposes, no appropriate hollows observed during the field assessment.
Threatened fauna records within 5000 m			
<i>Antipodia chaostola</i> (chaostola skipper)	e/EN	Dry lowland vegetation supporting the food plants <i>Gahnia radula</i> and/or <i>G. microstachya</i> , on relatively infertile substrates derived from sandstones, mudstones, siltstones, granites or windblown sands	Unlikely , no suitable habitat
<i>Dasyurus maculatus</i> subsp. <i>maculatus</i> (spotted tailed quoll)	r/VU	Most common in cool temperate rainforest, wet sclerophyll forest and coastal scrub along the north and west coasts of the state.	Possible , some suitable habitat, however the study area is not in the general range of the species
<i>Discocharopa vogens</i> (Ammonite Pinwheel Snail)	e/CR	The species occurs in a variety of forest habitats but has only been found under dolerite rocks. There are currently only two extant populations known, with an area of occupancy of 2 ha and a total population size of as little as 200 individuals.	Unlikely , no suitable habitat

Species Name scientific/common	Status state/Commonwealth	Habitat requirements	Likelihood to occur within study area
<i>Haliaeetus leucogaster</i> (white-bellied sea-eagle)	v/-	Is found in coastal habitats (especially those close to the seashore) and around terrestrial wetlands in tropical and temperate regions of mainland Australia and its offshore islands. The habitats occupied by the sea-eagle are characterised by the presence of large areas of open water (larger rivers, swamps, lakes, the sea). Birds have been recorded in (or flying over) a variety of terrestrial habitats. Is mostly recorded in coastal lowlands but can occupy habitats up to 1400 m above sea level on the Northern Tablelands of NSW and up to 800 m above sea level in Tasmania and South Australia.	Unlikely , no suitable habitat
<i>Lathamus discolor</i> (swift parrot)	e/CR	During the breeding season, nectar from Tasmanian blue gum (<i>Eucalyptus globulus</i>) and black gum (<i>Eucalyptus ovata</i>) flowers is the primary food source for the species.	Unlikely , no suitable habitat
<i>Lissotes menalcas</i> (Mount Mangana stag beetle)	v/-	Includes the following elements: a broad range of wet forest communities from old-growth mixed forest to 20-year-old wet silvicultural regrowth forest; the species may also occur in rainforest; preferred habitats appear to occur below 650 m a.s.l., and annual rainfall between 700 mm and 1200 mm; the essential habitat element for the species is large decaying eucalypt logs in wet forest in which they spend almost their entire life.	Unlikely , no suitable habitat

Species Name scientific/common	Status state/Commonwealth	Habitat requirements	Likelihood to occur within study area
<i>Pardalotus quadragintus</i> (forty-spotted pardalote)	e/EN	Habitat characteristics for the forty-spotted pardalote include the following: forest containing white gum trees, with either a grassy or shrubby understorey; TASVEG communities include white gum grassy forest (DVG), white gum coastal shrubby forest on Holocene sand (DVC), dry stringybark forest (DOB), white peppermint-blue gum-white gum grassy shrubby dry sclerophyll forest (DPU), black gum-white gum forest (DOV), black peppermint forest on a sandstone substrate (DAS), and East Coast wet viminalis (WVI).	Unlikely , no suitable habitat
<i>Podiceps cristatus</i> (great crested grebe)	v/-	Lives in large, deep open bodies of fresh water, including river, lagoons, lakes, swamps, reservoirs, estuaries and bays. It nests in emergent aquatic vegetation, or sometimes on floating vegetation in deep water.	Unlikely , no suitable habitat
<i>Prototroctes maraena</i> (Australian grayling)	v/VU	The species occurs in coastal rivers and streams in New South Wales, Victoria and Tasmania. In Tasmania, the Australian Grayling has been found in northern, eastern and western rivers, but has so far not been recorded from the south-west. Adults live and breed in freshwater rivers, and the larvae are swept downstream into coastal waters. Juveniles then remain in marine waters for about six months before returning to the freshwater adult habitat.	Unlikely , no suitable habitat

Species Name scientific/common	Status state/Commonwealth	Habitat requirements	Likelihood to occur within study area
<i>Roblinella agnewi</i> (Silky Pinwheel Snail)	r/-	Appears to be restricted to areas between 600 m – 1000 m in subalpine wet eucalypt forest in leaf litter and under rocks. Herbivorous and prefer to feed on the rare local tree daisy <i>Brachyglottis brunonis</i> .	Unlikely , no suitable habitat

Species listed above are listed as rare (r), vulnerable (v), provisionally vulnerable (pv), endangered (e), or extinct (x) on the Tasmanian TSPA; vulnerable (VU), endangered (EN), critically endangered (CR) or extinct (EX) on the Commonwealth EPBCA.

3.9.2 Fauna habitat values

The site provides some quality habitat for many fauna species including birds, mammals and invertebrates. The study site is part of the broader Wellington Park Reserve and the park does provide significant habitat for a large number of fauna species.

The following summaries are for the species identified in Table 3 occurring or having a likelihood to occur within and around the study site and provides some commentary of the potential for impact.

***Aquila audax* subsp. *fleayi* (Tasmanian wedge-tailed eagle)**

The wedge tailed eagle may forage within the study area however it is not considered prime foraging habitat due to the relatively closed nature of the tree canopy. In addition, the site is relatively close to areas of residences and open vegetation where it is more likely to forage. The probability of nesting within the study area is considered moderate according to the wedge tailed eagle nesting habitat prediction model. It is considered very unlikely that the project would have any measurable impact to the species as there is no vegetation clearing or tree removal proposed.

***Dasyurus maculatus* subsp. *maculatus* (spotted tailed quoll)**

This species is likely to forage within and surrounding the study area, no dens were observed during the field assessment and therefore is not considered to be denning onsite. As the proposed disturbance of the project is very low and very little vegetation is to be removed then the project is not likely to have any measurable impact on the species.

***Tyto novaehollandiae* subsp. *castanops* (masked owl (Tasmanian))**

The masked owl is likely to use the area for foraging as it contains forest and adjoining open grassy areas that the species generally requires for foraging purposes. There were no appropriate trees containing hollows appropriate for the species to nest observed during the field assessment and therefore the area is only likely to be utilised for foraging purposes.

3.9.3 Fauna recorded during the field assessment

One bird species, and two amphibian species were recorded during the field survey:

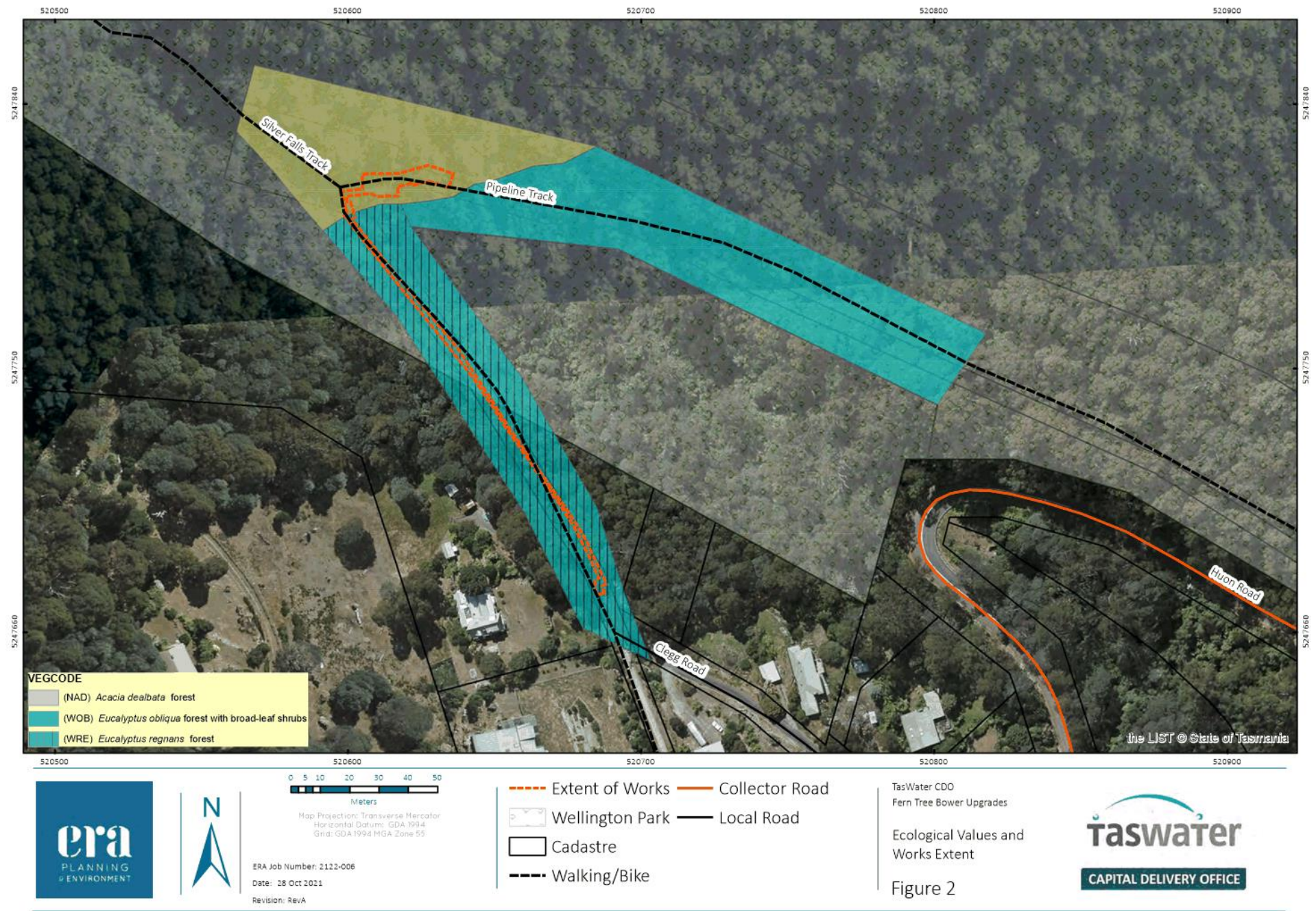
- yellow-tailed black cockatoo (*Zanda funerea*)
- Bennetts wallaby (*Notamacropus rufogriseus*)

None of the fauna species observed during the survey are listed under either the Tasmanian TSPA or the Commonwealth EPBCA. Several of the above species are protected under the Tasmanian *Wildlife (General) Regulations 2010*; however, as the project will not directly “take” any of the species or their products (e.g. dens/nests) then approval under the regulations is not required.

3.10 Weed and Pathogens

No flora species listed as Declared Weeds under the Tasmanian *Weed Management Act 1999* were recorded in the study site. Only two introduced flora species were recorded, an indication that the study area is generally weed free and in a pristine condition. Therefore, weed management is paramount with regards to contamination of the site and stringent hygiene measures should be incorporated into the Construction Environmental Management Plan (CEMP) for the project to ensure that weed species are not brought to the site via civil construction equipment or materials required as part of the project.

In addition, appropriate weed and pathogen management protocols should also be included in any construction activities onsite to reduce the probability of introducing further exotic species.



4 Conclusions and Recommendations

The study area in general is considered to be in pristine condition with regards to floristics, evidenced by the relatively low numbers of introduced flora observed. As the project is located in the Wellington Park, all efforts to minimise disturbance and the introduction of exotic flora should be undertaken.

The following conclusions and recommendations are based on the current understanding of the proposed development (as delineated in **Figure 2**) and may need to be revised if the impact area is changed.

4.1 Flora and Vegetation Communities

The site is occupied by three TASVEG 4.0 mapping unit communities. None of the communities are listed as threatened under either the Tasmanian NCA or the Commonwealth EPBCA.

The entire area is considered to be in pristine condition with very low representation of exotic flora

Recommendation 1: Ensure disturbance to the vegetation onsite is kept to a minimum.

4.2 Fauna

It is considered unlikely that the proposed works would have a measurable impact on fauna values as there is no significant removal of vegetation proposed.

The general area provides reasonable quality habitat for several threatened, and many non-threatened fauna species, particularly bird species. There was no direct evidence of threatened fauna occurring on site, however, the area is likely to provide some foraging habitat for bird and mammal species.

Given the relatively small area of clearance, and if the recommendations below are implemented, the proposed project is considered unlikely to have any significant impact to fauna habitat values.

Recommendation 2: Include appropriate sedimentation and erosion control measures within the CEMP.

4.3 Weeds and Diseases

As the study area is essentially weed free then all attempts should be made to ensure weeds are not imported to site via equipment and materials.

It is considered appropriate that a Weed and Hygiene Management Plan be prepared for the site prior to commencement of construction activities, in particular civil works. This plan should address weed management and hygiene controls during and post construction. Post-construction weed control is likely to be required in some areas to limit the potential for imported weed species via vehicles and civil construction equipment. Earth moving and construction equipment should adhere to principles detailed in "Weed and Disease Planning and Hygiene Guidelines", DPIPWE (attached as Appendix D).

Recommendation 3: Develop a Weed and Hygiene Management Plan for the site to cover pre, during and post construction phases along with ongoing monitoring.

4.4 Required permits and approvals

4.4.1 Planning Scheme

There are no specific requirements with regards to ecological values under the Hobart Interim Planning Scheme 2015 as there is minimal vegetation removal associated with the project and the majority of works will be located within the existing walking track and bower location.

4.4.2 Other ecological approvals

Ecological approvals are not required for the project with the exception of a PAA for works within the Wellington Park.

- A permit to take under the TSPA will not be required for the project as there were no listed species recorded within the study area.
- A permit for wildlife, and products of wildlife, under the NCA would not be required as no direct impacts are expected to products of wildlife, which includes nests and dens.
- No threatened vegetation communities are present onsite and therefore impacts to threatened vegetation communities will not trigger the NCA and approval is not required
- Referral under the Commonwealth EPBCA is not required from an ecological perspective as the proposal is not considered likely to significantly impact on any matters of National Environmental Significance.
- A Reserve Activity Assessment (RAA) will not be required as no activities are occurring in reserves managed by the Tasmanian Parks and Wildlife Service.
- A PAA will be required for works within the Wellington Park.

5 References

Kitchener, A. & Harris, S., 2013: *From Forest to Fjaeldmark: Descriptions of Tasmania's Vegetation*, Edition 2. Department of Primary Industries, Parks, Water and Environment, Hobart. Available online at: [http://dipwe.tas.gov.au/conservation/flora-of-tasmania/fromforest-to-fjaeldmark-descriptions-of-tasmanias-vegetation-\(edition-2\)](http://dipwe.tas.gov.au/conservation/flora-of-tasmania/fromforest-to-fjaeldmark-descriptions-of-tasmanias-vegetation-(edition-2)).

Department of Primary Industries, Parks, Water and Environment. *TASVEG 4.0*, Released July 2020. Tasmanian Vegetation Monitoring and Mapping Program, Natural and Cultural Heritage Division.

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University of Tasmania, 2019: *Key to Tasmanian Vascular Plants*. Available online at: <http://www.utas.edu.au/dicotkey/dicotkey/key.htm>.

Wapstra, H., Wapstra, A. & Gilfedder, L., 2005: *The Little Book of Common Names for Tasmanian Plants*. Available online at: http://dipwe.tas.gov.au/Documents/Common_names_booklet.pdf

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

Appendix A Natural Values Atlas Report

Natural Values Atlas Report

Authoritative, comprehensive information on Tasmania's natural values.

Reference: Fern Tree Bower

Requested For: TasWater CDO (via ERA Planning and Environment)

Report Type: Summary Report

Timestamp: 12:36:37 PM Monday 09 August 2021

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



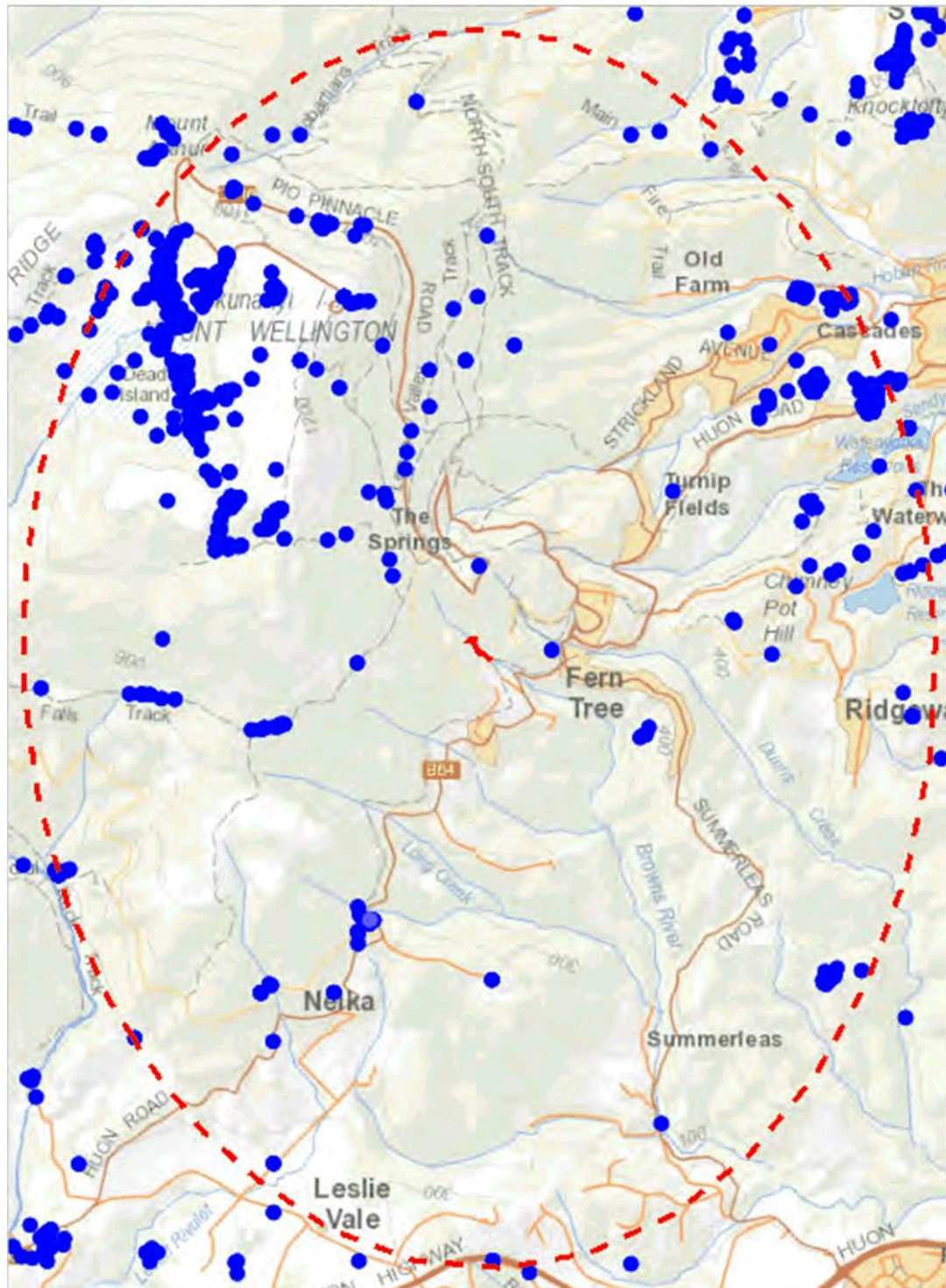
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Property: 5587226

*** No threatened flora found within 500 metres ***

Threatened flora within 5000 metres

524432, 5253183



516617, 5242603

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
<i>Allocasuarina duncani</i>	conical sheoak	r		e	18	19-Dec-2020
<i>Asperula scoparia</i> subsp. <i>scoparia</i>	prickly woodruff	r		n	1	11-Nov-1981
<i>Australina pusilla</i> subsp. <i>muelleri</i>	shade nettle	r		n	15	18-Dec-2015
<i>Austrostipa bigeniculata</i>	doublejointed speargrass	r		n	1	21-Feb-2017
<i>Brachyscome radicata</i>	spreading daisy	r		t	3	01-Apr-1913
<i>Caladenia caudata</i>	tailed spider-orchid	v	VU	e	5	24-Sep-2017
<i>Caladenia filamentosa</i>	daddy longlegs	r		n	2	30-Oct-2016
<i>Caladenia sylvicola</i>	forest fingers	e	CR	e	7	26-Oct-2009
<i>Carex gunniana</i>	mountain sedge	r		n	1	01-Jan-1985
<i>Carex longibrachata</i>	drooping sedge	r		n	1	01-Jan-1893
<i>Centropappus brunonis</i>	tasmanian daisytree	r		e	79	31-Oct-2017
<i>Corunastylis nuda</i>	tiny midge-orchid	r		n	27	24-Mar-2018
<i>Corunastylis nudiscapa</i>	bare midge-orchid	e		e	150	18-Feb-2021
<i>Dianella amoena</i>	grassland flaxlily	r	EN	n	2	01-Jan-1896
<i>Discaria pubescens</i>	spiky anchorplant	e		n	1	01-Jan-1840
<i>Diuris palustris</i>	swamp doubletail	e		n	1	22-Oct-1939
<i>Epacris virgata</i> (Kettering)	pretty heath	pv		e	14	27-Nov-2014
<i>Euphrasia gibbsiae</i> subsp. <i>wellingtonensis</i>	mt wellington eyebright	r		e	227	24-Mar-2020
<i>Euphrasia scabra</i>	yellow eyebright	e		n	3	29-Nov-1973
<i>Isolepis habra</i>	wispy clubsedge	r		n	3	06-Mar-1974
<i>Juncus vaginatus</i>	clustered rush	r		n	1	14-Mar-2001
<i>Lepidosperma tortuosum</i>	twisting rapier-sedge	r		n	1	01-Jun-1894
<i>Pimelea flava</i> subsp. <i>flava</i>	yellow riceflower	r		n	5	28-Apr-2007
<i>Pomaderris elachophylla</i>	small-leaf dogwood	v		n	3	27-Jan-1980
<i>Prasophyllum amoenum</i>	dainty leek-orchid	v	EN	e	206	19-Feb-2017
<i>Pterostylis squamata</i>	ruddy greenhood	v		n	2	01-Mar-1907
<i>Ranunculus pumilio</i> var. <i>pumilio</i>	ferny buttercup	r		n	2	04-Jan-1984
<i>Rhodanthe anthemoides</i>	chamomile sunray	r		n	1	15-Jan-1898
<i>Scleranthus fasciculatus</i>	spreading knawel	v		n	2	16-Sep-2005
<i>Senecio squarrosus</i>	leafy fireweed	r		n	20	03-Dec-2012
<i>Thelymitra inflata</i>	inflated sun-orchid	e		n	1	16-Dec-1992
<i>Viola curtisiae</i>	montane ivyleaf violet	r		e	27	24-Mar-2020
<i>Vittadinia burbridgeae</i>	smooth new-holland-daisy	r		e	2	17-Feb-2011
<i>Vittadinia cuneata</i> var. <i>cuneata</i>	fuzzy new-holland-daisy	r		n	1	01-Nov-1984
<i>Vittadinia muelleri</i>	narrowleaf new-holland-daisy	r		n	2	22-Feb-2011
<i>Westringia angustifolia</i>	narrowleaf westringia	r		e	16	22-Sep-2020
<i>Xerochrysum bicolor</i>	eastcoast paperdaisy	r		n	1	02-Apr-1997

Unverified Records

Species	Common Name	SS	NS	Bio	Observation Count
<i>Westringia angustifolia</i>	narrowleaf westringia	r		e	1

For more information about threatened species, please contact Threatened Species Enquiries.

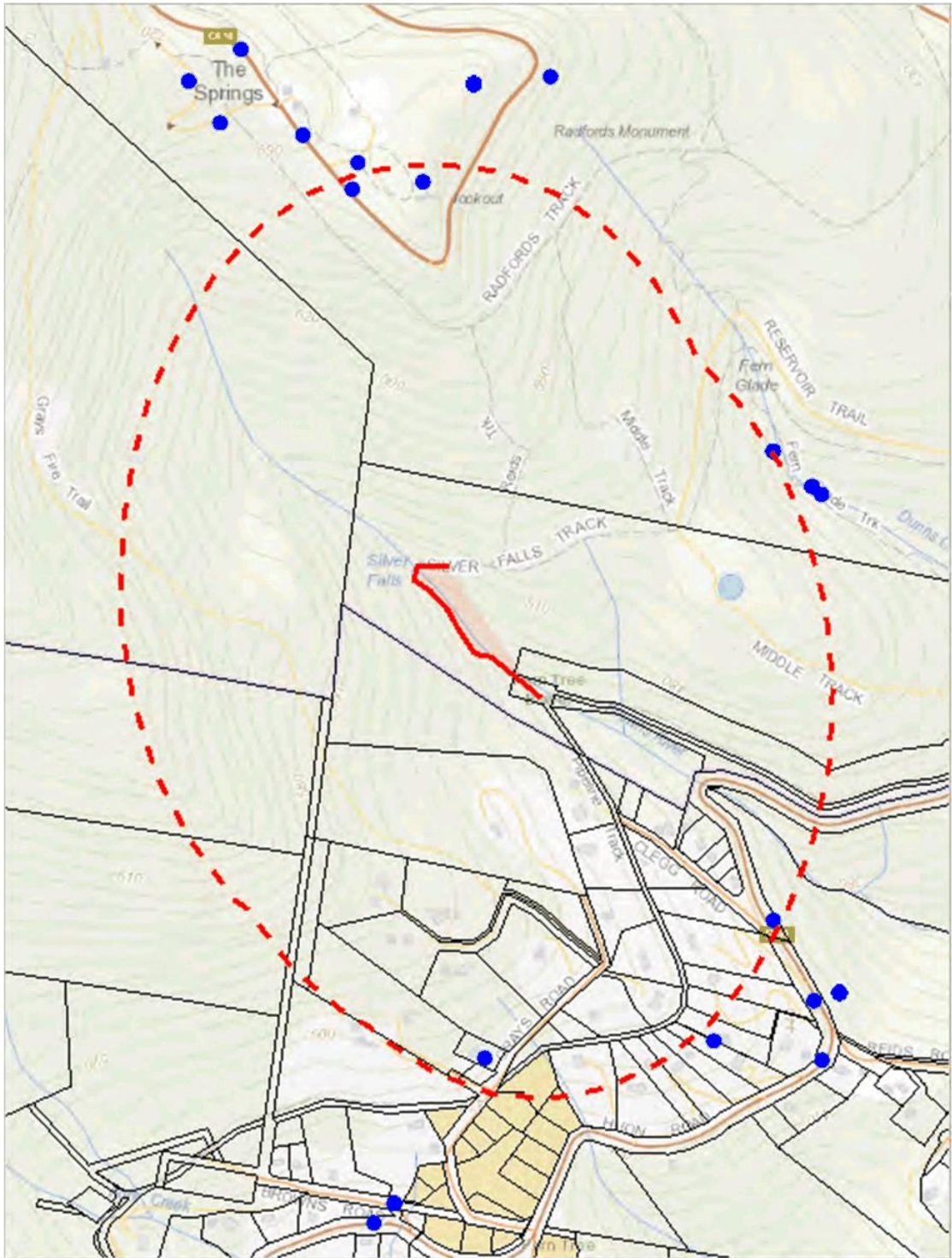
Telephone: 1300 368 550

Email: ThreatenedSpecies.Enquiries@dpipwe.tas.gov.au

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

Threatened fauna within 500 metres

521111, 5248677



519925, 5247111

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
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- Polygon Verified
- Polygon Unverified

Legend: Cadastral Parcels



Threatened fauna within 500 metres

Verified Records

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
<i>Accipiter novaehollandiae</i>	grey goshawk	e		n	2	02-Oct-2017
<i>Aquila audax</i>	wedge-tailed eagle	pe	PEN	n	2	14-Feb-2005
<i>Dasyurus viverrinus</i>	eastern quoll		EN	n	1	01-Jan-1994
<i>Perameles gunnii</i>	eastern barred bandicoot		VU	n	3	29-Aug-2018
<i>Sarcophilus harrisii</i>	tasmanian devil	e	EN	e	1	04-Oct-2015
<i>Tyto novaehollandiae</i> subsp. <i>castanops</i>	masked owl (Tasmanian)	e	VU	e	1	29-Feb-2020

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
<i>Roblinella agnewi</i>	Silky Pinwheel Snail	r			1	1	0
<i>Lathamus discolor</i>	swift parrot	e	CR	mbe	1	0	1
<i>Dasyurus maculatus</i> subsp. <i>maculatus</i>	spotted-tail quoll	r	VU	n	1	0	0
<i>Prototroctes maraena</i>	australian grayling	v	VU	ae	1	0	0
<i>Antipodia chaostola</i>	chaostola skipper	e	EN	ae	1	0	0
<i>Pseudemoia pagenstecheri</i>	tussock skink	v		n	1	0	0
<i>Tyto novaehollandiae</i> subsp. <i>castanops</i>	masked owl (Tasmanian)	e	VU	e	1	0	1
<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle	v		n	2	0	0
<i>Accipiter novaehollandiae</i>	grey goshawk	e		n	1	0	1
<i>Sarcophilus harrisii</i>	tasmanian devil	e	EN	e	1	0	0
<i>Lissotes menalcas</i>	mount mangana stag beetle	v		e	1	1	0
<i>Aquila audax</i> subsp. <i>fleayi</i>	tasmanian wedge-tailed eagle	e	EN	e	1	0	0
<i>Dasyurus viverrinus</i>	eastern quoll		EN	n	0	0	1

For more information about threatened species, please contact Threatened Species Enquiries.

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

524432, 5253183



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

Threatened fauna within 5000 metres

Legend: Verified and Unverified observations

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

Legend: Cadastral Parcels



Threatened fauna within 5000 metres

Verified Records

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
Accipiter novaehollandiae	grey goshawk	e		n	57	26-Jul-2020
Alcedo azurea subsp. diemenensis	azure kingfisher or azure kingfisher (tasmanian)	e	EN	e	1	01-Jan-2007
Antipodia chaostola subsp. leucophaea	chaostola skipper	e	EN	e	1	27-Nov-2011
Aquila audax	wedge-tailed eagle	pe	PEN	n	44	24-Aug-2018
Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	e	EN	e	24	11-Apr-2020
Dasyurus maculatus	spotted-tail quoll	r	VU	n	8	11-Sep-2020
Dasyurus maculatus subsp. maculatus	spotted-tail quoll	r	VU	n	2	08-May-1991
Dasyurus viverrinus	eastern quoll		EN	n	116	19-Feb-2020
Discocharopa vigens	Ammonite Pinwheel Snail	e	CR		19	25-Aug-2020
Hadronyche pulvinator	cascade funnel-web spider	x		eH	2	01-Jan-1926
Haliaeetus leucogaster	white-bellied sea-eagle	v		n	17	15-Jun-2018
Hirundapus caudacutus	white-throated needletail		VU	n	19	24-Mar-2018
Lathamus discolor	swift parrot	e	CR	mbe	106	28-Nov-2019
Lissotes menalcas	mount mangana stag beetle	v		e	4	09-Dec-2001
Pardalotus quadragintus	forty-spotted pardalote	e	EN	e	3	09-Feb-2018
Perameles gunnii	eastern barred bandicoot		VU	n	256	31-Mar-2021
Podiceps cristatus	great crested grebe	v		n	1	06-Feb-2016
Prototroctes maraena	australian grayling	v	VU	ae	1	26-Nov-1972
Roblinella agnewi	Silky Pinwheel Snail	r			37	28-Feb-2020
Sarcophilus harrisii	tasmanian devil	e	EN	e	116	18-Mar-2021
Tyto novaehollandiae	masked owl	pe	PVU	n	35	15-May-2018
Tyto novaehollandiae subsp. castanops	masked owl (Tasmanian)	e	VU	e	2	31-Jan-2021

Unverified Records

Species	Common Name	SS	NS	Bio	Observation Count
Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	e	EN	e	1
Dasyurus viverrinus	eastern quoll		EN	n	1
Perameles gunnii	eastern barred bandicoot		VU	n	12
Sarcophilus harrisii	tasmanian devil	e	EN	e	5

Threatened fauna within 5000 metres
(based on Range Boundaries)

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

For more information about threatened species, please contact Threatened Species Enquiries.

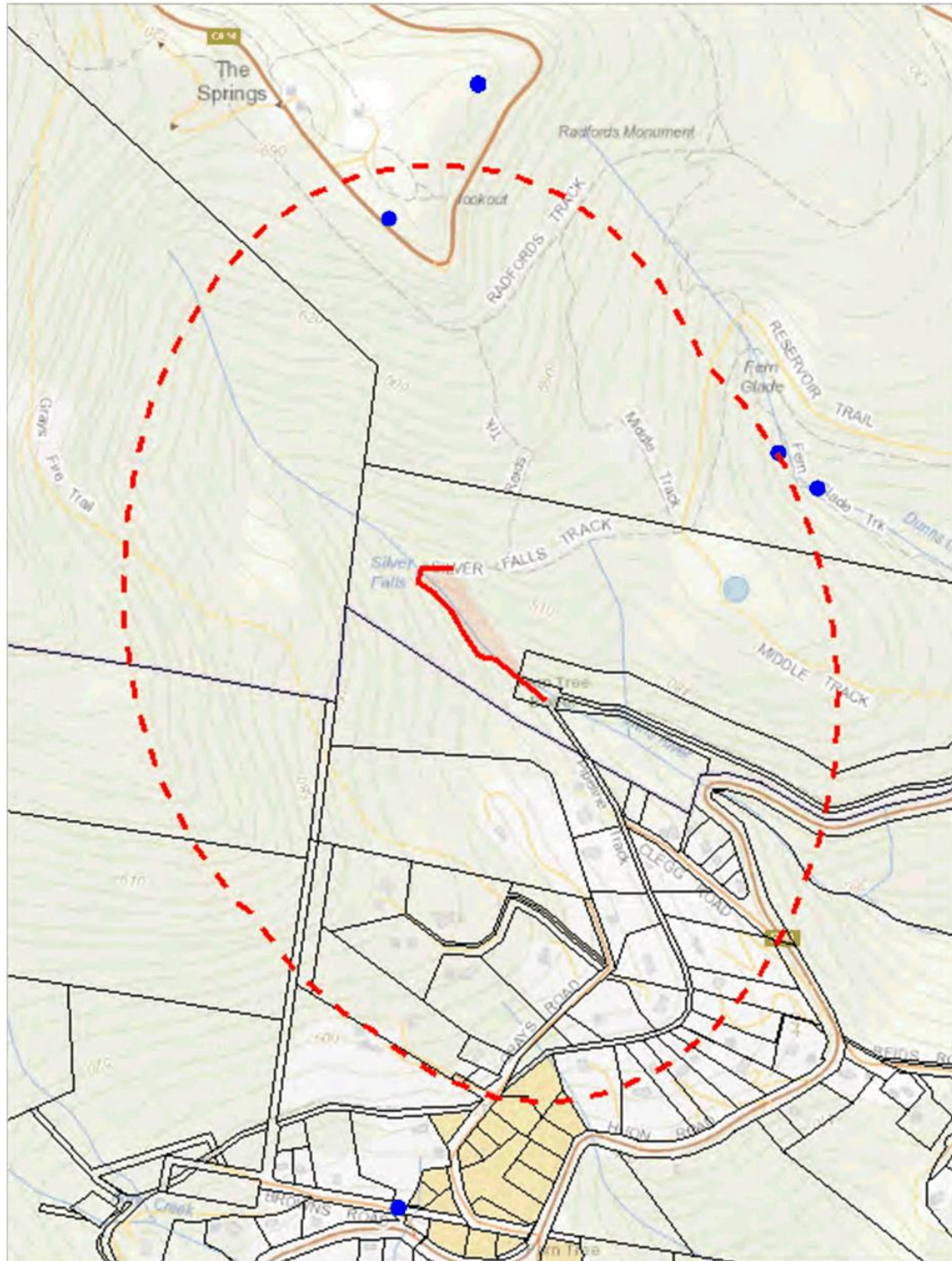
Telephone: 1300 368 550

Email: ThreatenedSpeciesEnquiries@dpipwe.tas.gov.au

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

Raptor nests and sightings within 500 metres

521111, 5248677



519925, 5247111

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

Raptor nests and sightings within 500 metres

Legend: Verified and Unverified observations

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

Legend: Cadastral Parcels



Raptor nests and sightings within 500 metres

Verified Records

Nest Id/Location Foreign Id	Species	Common Name	Obs Type	Observation Count	Last Recorded
	Accipiter novaehollandiae	grey goshawk	Not Recorded	2	02-Oct-2017
	Aquila audax	wedge-tailed eagle	Not Recorded	2	14-Feb-2005
	Falco peregrinus	peregrine falcon	Not Recorded	1	01-Jan-1900

Unverified Records

No unverified records were found!

Raptor nests and sightings within 500 metres
(based on Range Boundaries)

Species	Common Name	SS	NS	Potential	Known	Core
Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	e	EN	1	0	0
Accipiter novaehollandiae	grey goshawk	e		1	0	1
Haliaeetus leucogaster	white-bellied sea-eagle	v		2	0	0

For more information about raptor nests, please contact Threatened Species Enquiries.

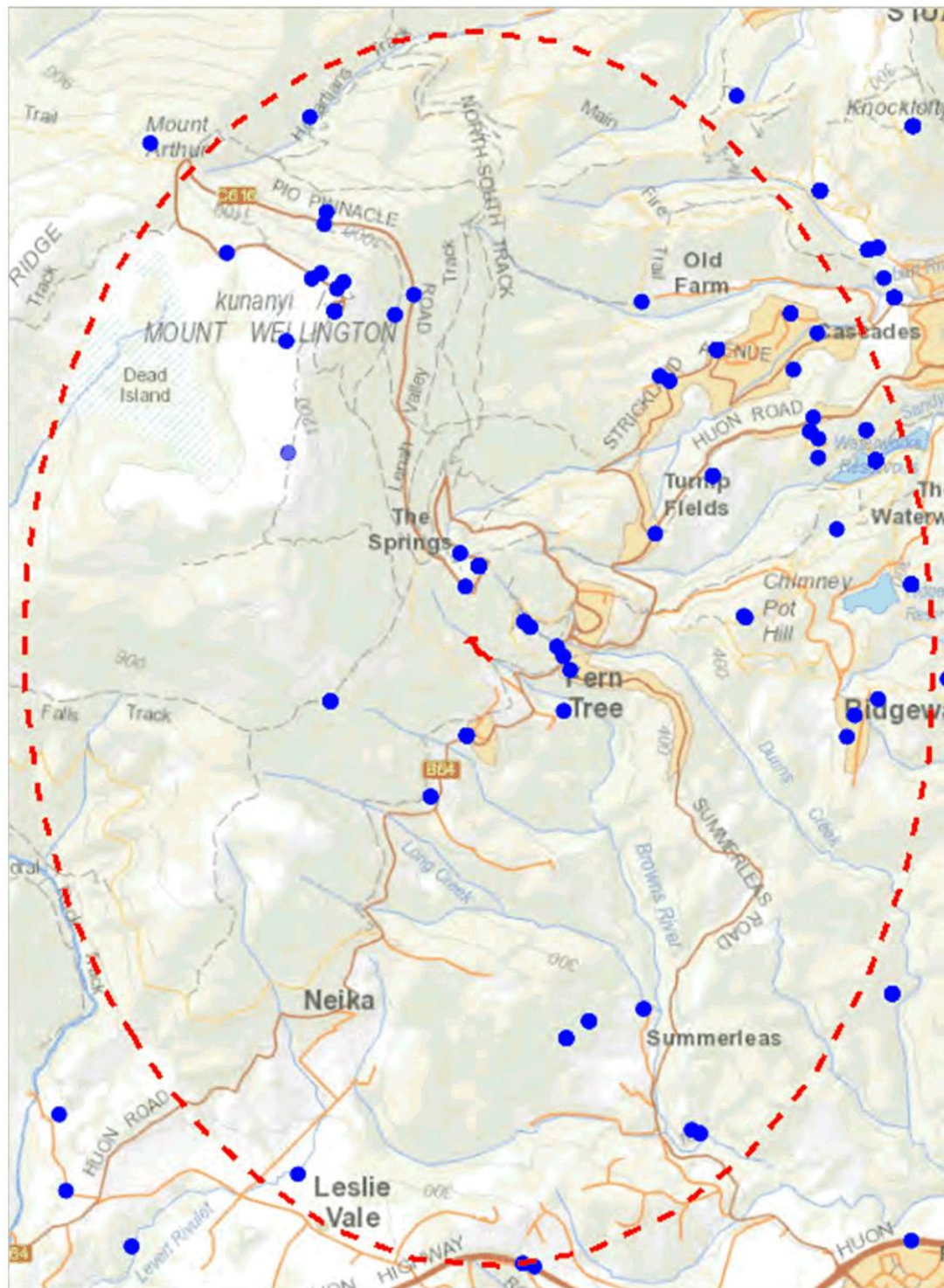
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Raptor nests and sightings within 5000 metres

524432, 5253183



516617, 5242603

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Raptor nests and sightings within 5000 metres

Legend: Verified and Unverified observations

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

Legend: Cadastral Parcels



Raptor nests and sightings within 5000 metres

Verified Records

Nest Id/Location Foreign Id	Species	Common Name	Obs Type	Observation Count	Last Recorded
1607	Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	Nest	2	17-Jan-2008
1677	Accipiter novaehollandiae	grey goshawk	Nest	1	27-Jul-2008
2803	Accipiter novaehollandiae	grey goshawk	Nest	1	30-Jun-2020
386	Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	Nest	5	27-Nov-2014
625	Tyto novaehollandiae	masked owl	Nest	1	01-Jan-1985
628	Tyto novaehollandiae	masked owl	Nest	1	01-Jan-1985
	Accipiter novaehollandiae	grey goshawk	Not Recorded	34	29-Jul-2018
	Accipiter novaehollandiae	grey goshawk	Sighting	21	26-Jul-2020
	Aquila audax	wedge-tailed eagle	Not Recorded	36	24-Aug-2018
	Aquila audax	wedge-tailed eagle	Sighting	8	06-Sep-2016
	Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	Sighting	17	11-Apr-2020
	Falco cenchroides	nankeen kestrel	Sighting	1	30-Jul-1977
	Falco longipennis	australian hobby	Sighting	2	24-Feb-1979
	Falco peregrinus	peregrine falcon	Not Recorded	6	04-Mar-2016
	Falco peregrinus	peregrine falcon	Sighting	8	26-Feb-2017
	Haliaeetus leucogaster	white-bellied sea-eagle	Not Recorded	14	15-Jun-2018
	Haliaeetus leucogaster	white-bellied sea-eagle	Sighting	3	18-Jan-2018
	Tyto novaehollandiae	masked owl	Carcass	1	13-Jun-2007
	Tyto novaehollandiae	masked owl	Not Recorded	21	19-Mar-2017
	Tyto novaehollandiae	masked owl	Sighting	11	15-May-2018

Unverified Records

Nest Id/Location Foreign Id	Species	Common Name	Obs Type	Observation Count
	Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	Sighting	1

Raptor nests and sightings within 5000 metres
(based on Range Boundaries)

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

For more information about raptor nests, please contact Threatened Species Enquiries.

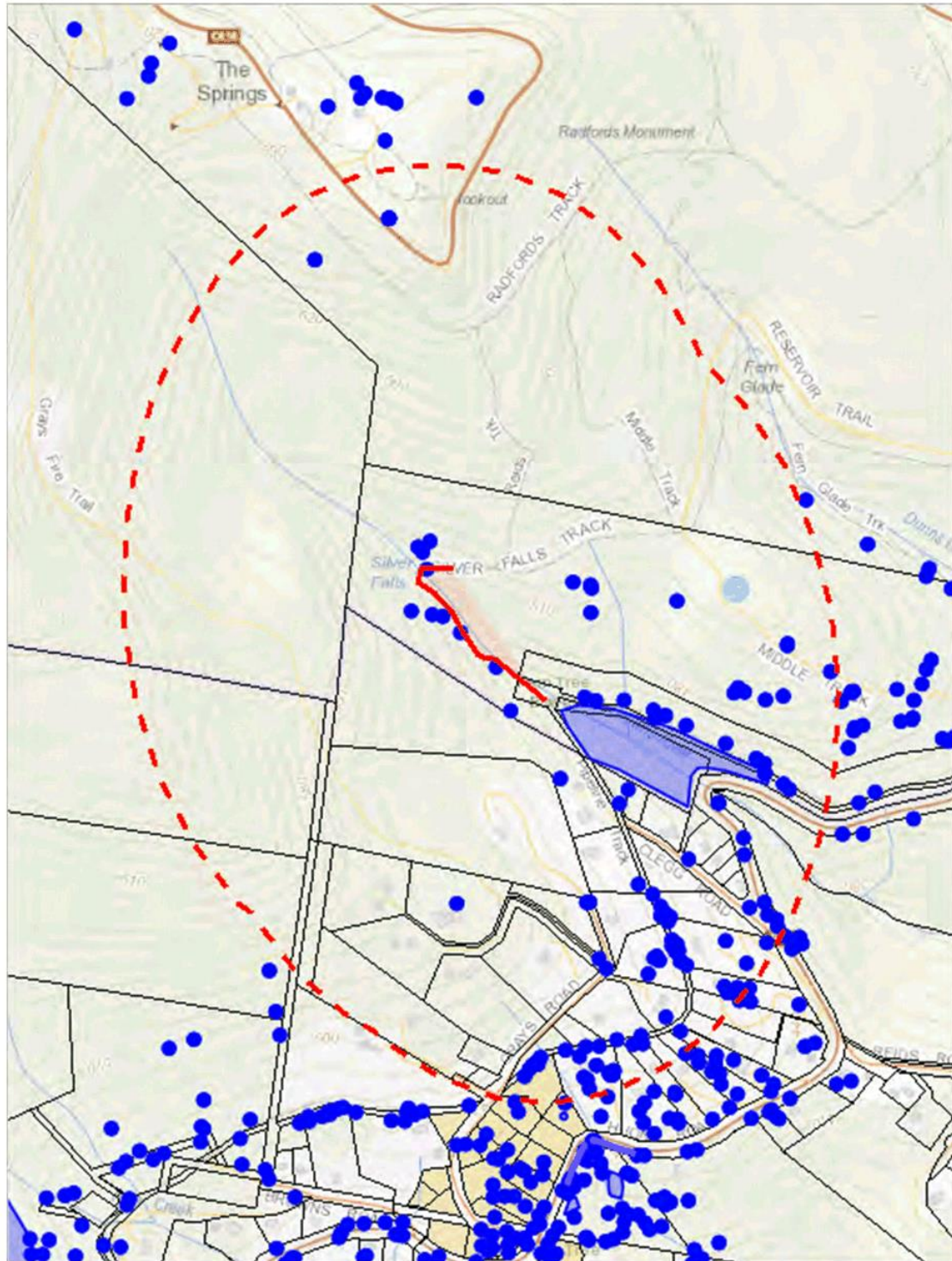
Telephone: 1300 368 550

Email: ThreatenedSpeciesEnquiries@dpipwe.tas.gov.au

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

Tas Management Act Weeds within 500 m

521111, 5248677



519925, 5247111

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
<i>Berberis darwinii</i>	darwins barberry	17	16-Oct-2014
<i>Calluna vulgaris</i>	heather	1	01-Jan-1600
<i>Coprosma robusta</i>	karamu	38	26-Jun-2020
<i>Cytisus scoparius</i>	english broom	1	16-Oct-2014
<i>Erica arborea</i>	tree heath	1	02-Feb-2019
<i>Erica lusitanica</i>	spanish heath	1	26-Jun-2020
<i>Genista monspessulana</i>	montpellier broom	4	16-Oct-2014
<i>Ilex aquifolium</i>	holly	22	16-Oct-2014
<i>Leycesteria formosa</i>	himalayan honeysuckle	4	07-Mar-2012
<i>Pilosella aurantiaca</i> subsp. <i>aurantiaca</i>	orange hawkweed	64	01-Apr-2020
<i>Rubus fruticosus</i>	blackberry	2	16-Oct-2014
<i>Senecio jacobaea</i>	ragwort	1	24-Jan-2019

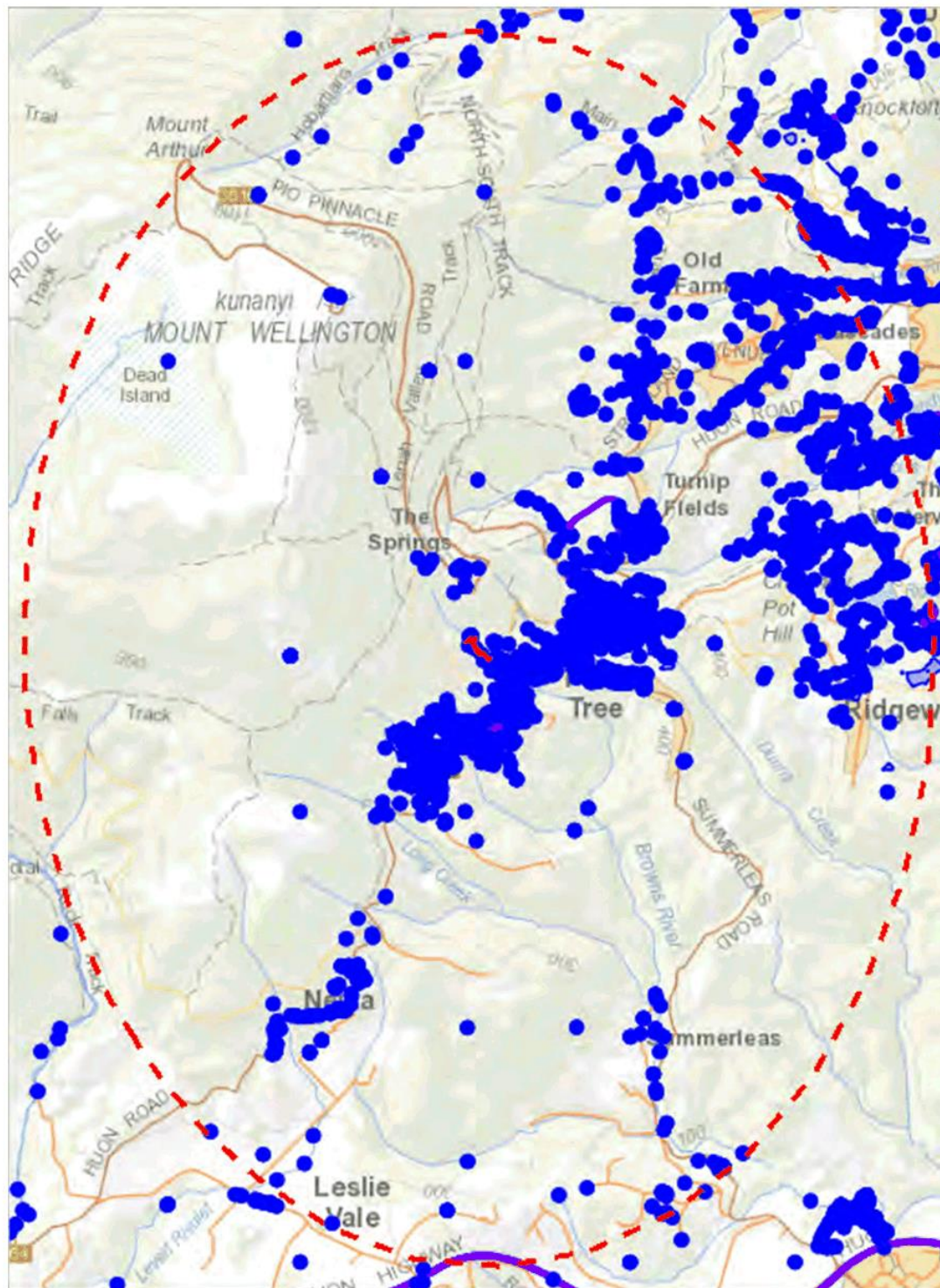
Unverified Records

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

<https://www.dpipwe.tas.gov.au/invasive-species/weeds>

Tas Management Act Weeds within 5000 m

524432, 5253183



516617, 5242603

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
<i>Anthemis cotula</i>	stinking chamomile	2	01-Jun-2014
<i>Austroderia richardii</i>	toe-toe pampasgrass	3	03-Apr-2014
<i>Berberis darwinii</i>	darwins barberry	58	22-Sep-2020
<i>Calluna vulgaris</i>	heather	39	06-Mar-2021
<i>Carduus pycnocephalus</i>	slender thistle	1	23-Mar-1980
<i>Carduus tenuiflorus</i>	winged thistle	2	30-Oct-2019
<i>Carthamus lanatus</i>	saffron thistle	1	30-Apr-1942
<i>Cenchrus macrourus</i>	african feathergrass	6	20-Mar-2018
<i>Chrysanthemoides monilifera</i> subsp. <i>monilifera</i>	boneseed	196	03-Feb-2021
<i>Cirsium arvense</i>	californian thistle	1	21-Mar-1966
<i>Cirsium arvense</i> var. <i>arvense</i>	creeping thistle	28	17-May-2021
<i>Coprosma robusta</i>	karamu	129	17-May-2021
<i>Cortaderia jubata</i>	pink pampasgrass	4	03-Apr-2014
<i>Cortaderia seloana</i>	silver pampasgrass	17	28-Jan-2020
<i>Cortaderia</i> sp.	pampas grass	26	15-Apr-2020
<i>Cytisus scoparius</i>	english broom	101	17-May-2021
<i>Datura stramonium</i>	common thornapple	12	12-Mar-2019
<i>Echium plantagineum</i>	patersons curse	3	31-May-2018
<i>Erica arborea</i>	tree heath	6	02-Feb-2019
<i>Erica baccans</i>	berryflower heath	10	22-Sep-2020
<i>Erica lusitanica</i>	spanish heath	667	17-May-2021
<i>Foeniculum vulgare</i>	fennel	27	17-May-2021
<i>Genista monspessulana</i>	montpellier broom	113	03-Feb-2021
<i>Hypericum perforatum</i>	perforated st johns-wort	20	17-May-2021
<i>Hypericum perforatum</i> subsp. <i>veronense</i>	perforated st johns-wort	2	15-Jan-2008
<i>Ilex aquifolium</i>	holly	276	17-May-2021
<i>Lantana camara</i>		1	01-Feb-2007
<i>Leycesteria formosa</i>	himalayan honeysuckle	29	17-May-2021
<i>Marrubium vulgare</i>	white horehound	1	06-Nov-1937
<i>Nassella tenuissima</i>	mexican feather grass	1	21-Jun-2002
<i>Nassella trichotoma</i>	serrated tussock	2	08-Jan-2020
<i>Onopordum acanthium</i>	scotch thistle	4	11-Dec-2020
<i>Pilosella aurantiaca</i> subsp. <i>aurantiaca</i>	orange hawkweed	792	01-Apr-2020
<i>Rubus anglocandicans</i>	blackberry	2	03-Jan-2002
<i>Rubus fruticosus</i>	blackberry	339	17-May-2021
<i>Rubus leucostachys</i>	blackberry	6	22-Feb-2005
<i>Rubus vestitus</i>	blackberry	1	01-Jan-1900
<i>Salix caprea</i>	goat willow	2	17-May-2021
<i>Salix cinerea</i> subsp. <i>cinerea</i>	grey willow	6	13-Apr-2007
<i>Salix x fragilis</i> nothovar. <i>fragilis</i>	crack willow	171	17-May-2021
<i>Senecio jacobaea</i>	ragwort	2	03-Feb-2019
<i>Ulex europaeus</i>	gorse	446	17-May-2021
<i>Urospermum dalechampii</i>	false dandelion	3	23-Nov-2000

Unverified Records

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

<https://www.dpipwe.tas.gov.au/invasive-species/weeds>

521111, 5248677



Department of Primary Industries, Parks, Water and Environment
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Priority Weeds within 500 m

Legend: Verified and Unverified observations

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

Legend: Cadastral Parcels



Priority Weeds within 500 m

Verified Records

Species	Common Name	Observation Count	Last Recorded
Prunus laurocerasus	cherry laurel	5	26-Jun-2020

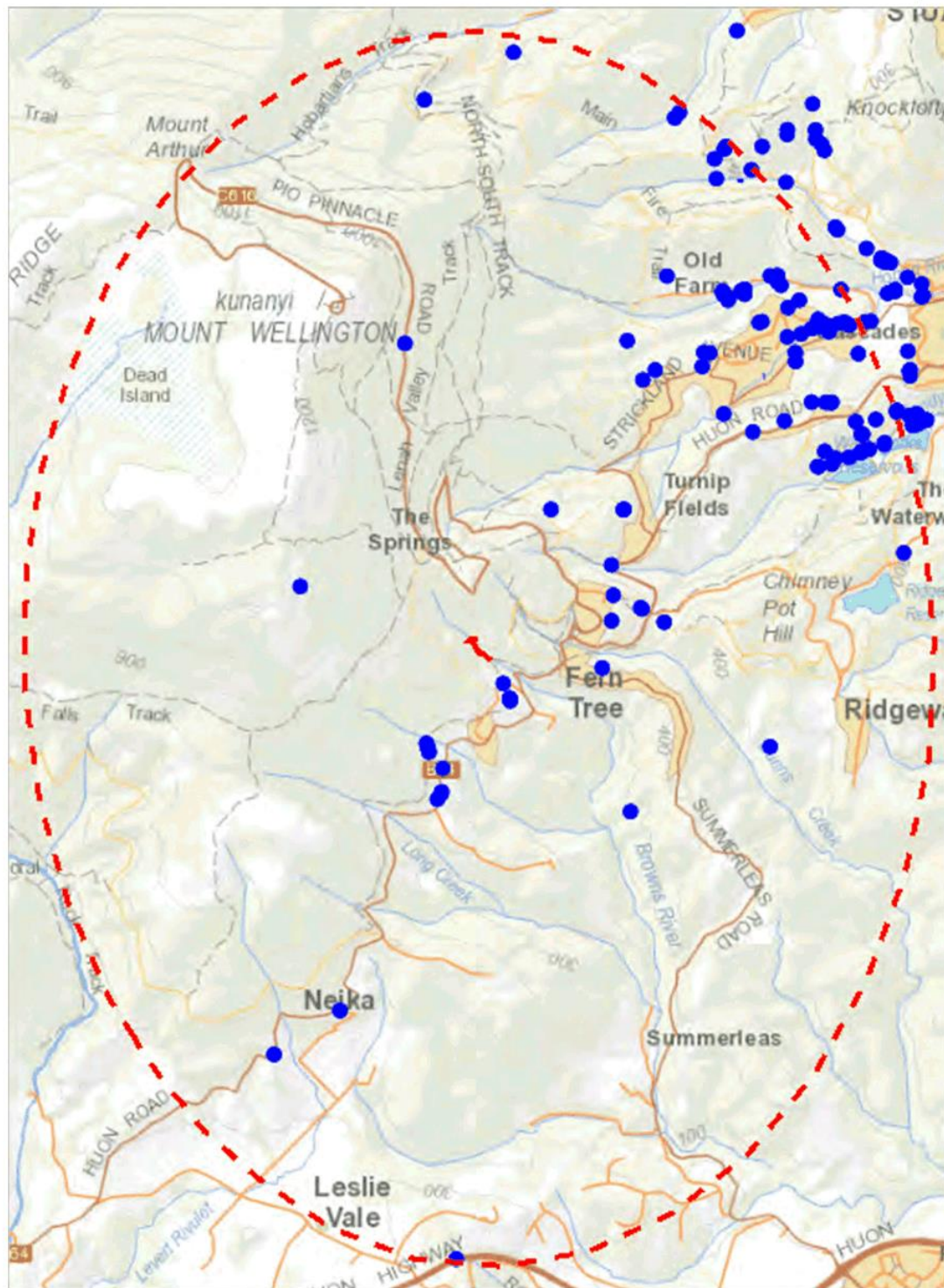
Unverified Records

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

<https://www.dpipwe.tas.gov.au/invasive-species/weeds>

Priority Weeds within 5000 m

524432, 5253183



516617, 5242603

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	2	03-Feb-2021
Acacia howittii	sticky wattle	5	25-Jun-2015
Billardiera heterophylla	bluebell creeper	1	03-Feb-2021
Cenchrus clandestinus	kikuyu grass	1	23-Jan-1986
Dipsacus fullonum	wild teasel	1	01-Apr-1924
Echium candicans	pride-of-madeira	2	25-Jun-2015
Grevillea rosmarinifolia	rosemary grevillea	2	17-May-2021
Pittosporum undulatum	sweet pittosporum	108	17-May-2021
Prunus laurocerasus	cherry laurel	34	17-May-2021
Reseda luteola	weld	7	03-Feb-2021
Salix x pendulina var. pendulina	weeping willow	1	30-Jun-1986
Tradescantia fluminensis	wandering creeper	2	01-Jun-2013
Verbascum thapsus	great mullein	7	03-Feb-2021

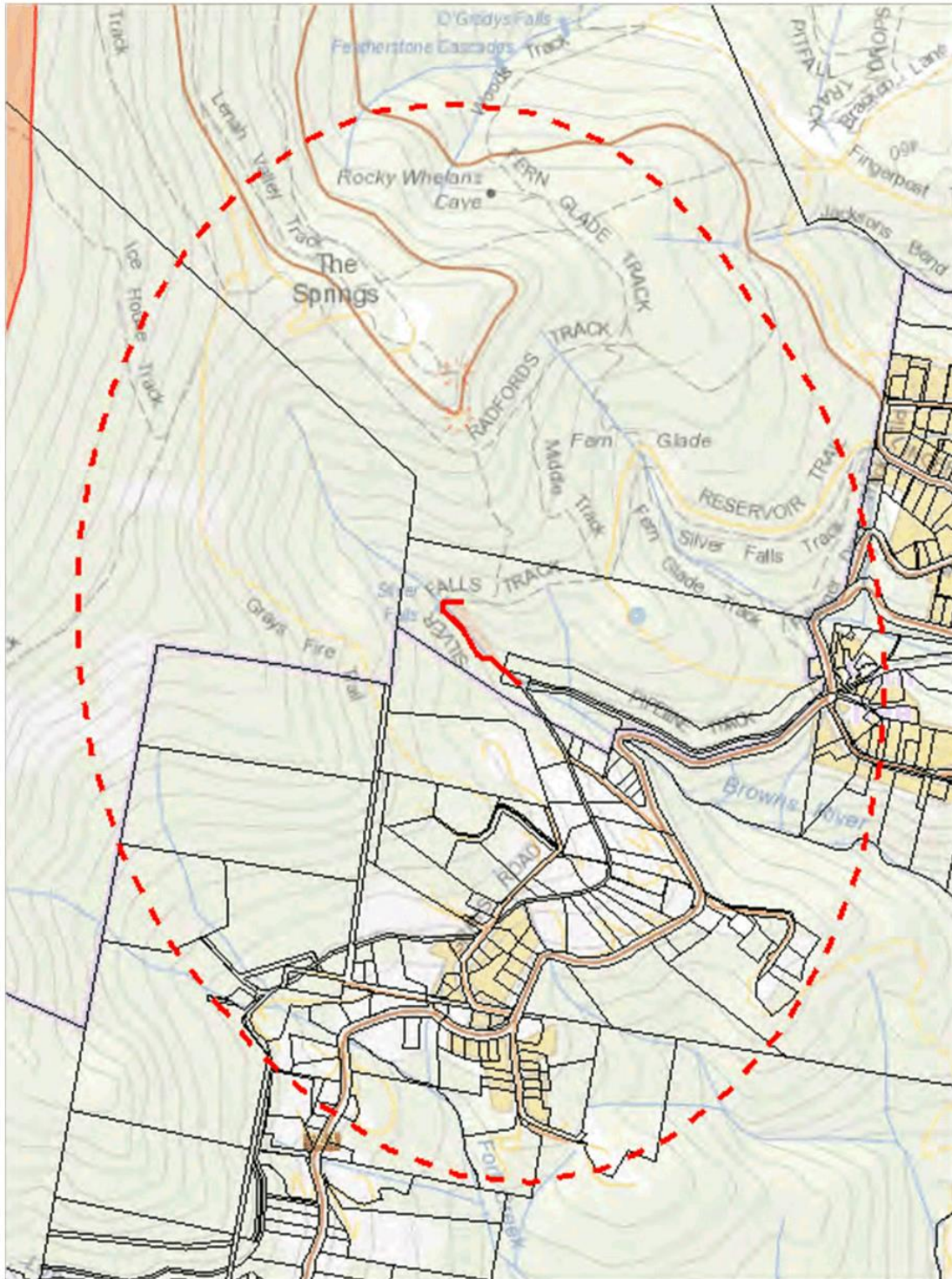
Unverified Records

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

<https://www.dpipwe.tas.gov.au/invasive-species/weeds>

Geoconservation sites within 1000 metres

521480, 5249177



519558, 5246610

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

Geoconservation sites within 1000 metres

Legend: Geoconservation (NVA)



Legend: Cadastral Parcels



Geoconservation sites within 1000 metres

Id	Name	Statement of Significance	Significance Level	Status
2227	Wellington Range Periglacial Terrain	The most extensive and well-developed high altitude periglacial terrain in Tasmania without glacial influence.	State	Listed

For more information about the Geoconservation Database, please visit the website: <https://dppw.tas.gov.au/conservation/geoconservation> or contact the Geoconservation Officer:

Telephone: (03) 6165 4401

Email: Geoconservation.Enquiries@dppw.tas.gov.au

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

*** No Acid Sulfate Soils found within 1000 metres ***

TASVEG 4.0 Communities within 1000 metres

521480, 5249177



519558, 5246610

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

TASVEG 4.0 Communities within 1000 metres

Legend: TASVEG 4.0

-  (AAP) Alkaline pans
-  (AHF) Freshwater aquatic herbland
-  (AHL) Lacustrine herbland
-  (AHS) Saline aquatic herbland
-  (ARS) Saline sedgeland / rushland
-  (ASF) Fresh water aquatic sedgeland and rushland
-  (ASP) Sphagnum peatland
-  (ASS) Succulent saline herbland
-  (AUS) Saltmarsh (undifferentiated)
-  (AWU) Wetland (undifferentiated)
-  (DAC) Eucalyptus amygdalina coastal forest and woodland
-  (DAD) Eucalyptus amygdalina forest and woodland on dolerite
-  (DAM) Eucalyptus amygdalina forest on mudstone
-  (DAS) Eucalyptus amygdalina forest and woodland on sandstone
-  (DAZ) Eucalyptus amygdalina inland forest and woodland on Cainozoic deposits
-  (DBA) Eucalyptus barberi forest and woodland
-  (DCO) Eucalyptus coccifera forest and woodland
-  (DCR) Eucalyptus cordata forest
-  (DDE) Eucalyptus delegatensis dry forest and woodland
-  (DDP) Eucalyptus dalrympleana - Eucalyptus pauciflora forest and woodland
-  (DGL) Eucalyptus globulus dry forest and woodland
-  (DGW) Eucalyptus gunnii woodland
-  (DKW) King Island Eucalypt woodland
-  (DMO) Eucalyptus morrisbyi forest and woodland
-  (DMW) Midlands woodland complex
-  (DNF) Eucalyptus nitida Furneaux forest
-  (DNI) Eucalyptus nitida dry forest and woodland
-  (DOB) Eucalyptus obliqua dry forest
-  (DOV) Eucalyptus ovata forest and woodland
-  (DOW) Eucalyptus ovata heathy woodland
-  (DPD) Eucalyptus pauciflora forest and woodland on dolerite
-  (DPE) Eucalyptus perriniana forest and woodland
-  (DPO) Eucalyptus pauciflora forest and woodland not on dolerite
-  (DPU) Eucalyptus pulchella forest and woodland
-  (DRI) Eucalyptus risdonii forest and woodland
-  (DRO) Eucalyptus rodwayi forest and woodland
-  (DSC) Eucalyptus amygdalina - Eucalyptus obliqua damp sclerophyll forest
-  (DSG) Eucalyptus sieberi forest and woodland on granite
-  (DSO) Eucalyptus sieberi forest and woodland not on granite
-  (DTD) Eucalyptus tenuiramis forest and woodland on dolerite
-  (DTG) Eucalyptus tenuiramis forest and woodland on granite
-  (DTO) Eucalyptus tenuiramis forest and woodland on sediments
-  (DVC) Eucalyptus viminalis - Eucalyptus globulus coastal forest and woodland
-  (DVF) Eucalyptus viminalis Furneaux forest and woodland
-  (DVG) Eucalyptus viminalis grassy forest and woodland
-  (FAC) Improved pasture with native tree canopy
-  (FAG) Agricultural land
-  (FMG) Marram grassland
-  (FPE) Permanent easements
-  (FPF) Pteridium esculentum fernland
-  (FPH) Plantations for silviculture - hardwood
-  (FPS) Plantations for silviculture - softwood
-  (FPU) Unverified plantations for silviculture
-  (FRG) Regenerating cleared land
-  (FSM) Spartina marshland
-  (FUM) Extra-urban miscellaneous
-  (FUR) Urban areas
-  (FWU) Weed infestation
-  (GCL) Lowland grassland complex

Department of Primary Industries, Parks, Water and Environment

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TASVEG 4.0 Communities within 1000 metres






































	(GHC) Coastal grass and herbfield
	(GPH) Highland Poa grassland
	(GPL) Lowland Poa labillardierei grassland
	(GRP) Rockplate grassland
	(GSL) Lowland grassy sedgeland
	(GTL) Lowland Themeda triandra grassland
	(HCH) Alpine coniferous heathland
	(HCM) Cushion moorland
	(HHE) Eastern alpine heathland
	(HHW) Western alpine heathland
	(HSE) Eastern alpine sedgeland
	(HSW) Western alpine sedgeland/herbland
	(HUE) Eastern alpine vegetation (undifferentiated)
	(MBE) Eastern buttongrass moorland
	(MBP) Pure buttongrass moorland
	(MBR) Sparse buttongrass moorland on slopes
	(MBS) Buttongrass moorland with emergent shrubs
	(MBU) Buttongrass moorland (undifferentiated)
	(MBW) Western buttongrass moorland
	(MDS) Subalpine Diplarrena latifolia rushland
	(MGH) Highland grassy sedgeland
	(MRR) Restionaceae rushland
	(MSW) Western lowland sedgeland
	(NAD) Acacia dealbata forest
	(NAF) Acacia melanoxylon swamp forest
	(NAL) Allocasuarina littoralis forest
	(NAR) Acacia melanoxylon forest on rises
	(NAV) Allocasuarina verticillata forest
	(NBA) Bursaria - Acacia woodland
	(NBS) Banksia serrata woodland
	(NCR) Callitris rhomboidea forest
	(NLA) Leptospermum scoparium - Acacia mucronata forest
	(NLE) Leptospermum forest
	(NLM) Leptospermum lanigerum - Melaleuca squarrosa swamp forest
	(NLN) Subalpine Leptospermum nitidum woodland
	(NME) Melaleuca ericifolia swamp forest
	(OAQ) Water, sea
	(ORO) Lichen lithosere
	(OSM) Sand, mud
	(RCO) Coastal rainforest
	(RFE) Rainforest fernland
	(RFS) Nothofagus gunnii rainforest scrub
	(RHP) Lagarostrobos franklinii rainforest and scrub
	(RKF) Athrotaxis selaginoides - Nothofagus gunnii short rainforest
	(RKP) Athrotaxis selaginoides rainforest
	(RKS) Athrotaxis selaginoides subalpine scrub
	(RKX) Highland rainforest scrub with dead Athrotaxis selaginoides
	(RML) Nothofagus - Leptospermum short rainforest
	(RMS) Nothofagus - Phyllocladus short rainforest
	(RMT) Nothofagus - Atherosperma rainforest
	(RMU) Nothofagus rainforest (undifferentiated)
	(RPF) Athrotaxis cupressoides - Nothofagus gunnii short rainforest
	(RPP) Athrotaxis cupressoides rainforest
	(RPW) Athrotaxis cupressoides open woodland
	(RSH) Highland low rainforest and scrub
	(SAL) Acacia longifolia coastal scrub
	(SBM) Banksia marginata wet scrub
	(SBR) Broad-leaf scrub
	(SCA) Coastal scrub on alkaline sands
	(SCH) Coastal heathland
	(SCL) Heathland on calcareous substrates

Department of Primary Industries, Parks, Water and Environment

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TASVEG 4.0 Communities within 1000 metres

-  (SED) Eastern scrub on dolerite
-  (SHS) Subalpine heathland
-  (SHW) Wet heathland
-  (SKA) Kunzea ambigua regrowth scrub
-  (SLG) Leptospermum glaucescens heathland and scrub
-  (SLL) Leptospermum lanigerum scrub
-  (SLS) Leptospermum scoparium heathland and scrub
-  (SMM) Melaleuca squamea heathland
-  (SMP) Melaleuca pustulata scrub
-  (SMR) Melaleuca squarrosa scrub
-  (SRE) Eastern riparian scrub
-  (SRF) Leptospermum with rainforest scrub
-  (SRH) Rookery halophytic herbland
-  (SSC) Coastal scrub
-  (SSK) Scrub complex on King Island
-  (SSW) Western subalpine scrub
-  (SSZ) Spray zone coastal complex
-  (SWR) Western regrowth complex
-  (SWW) Western wet scrub
-  (WBR) Eucalyptus brookeriana wet forest
-  (WDA) Eucalyptus dalrympleana forest
-  (WDB) Eucalyptus delegatensis forest with broad-leaf shrubs
-  (WDL) Eucalyptus delegatensis forest over Leptospermum
-  (WDR) Eucalyptus delegatensis forest over rainforest
-  (WDU) Eucalyptus delegatensis wet forest (undifferentiated)
-  (WGL) Eucalyptus globulus King Island forest
-  (WGL) Eucalyptus globulus wet forest
-  (WNL) Eucalyptus nitida forest over Leptospermum
-  (WNR) Eucalyptus nitida forest over rainforest
-  (WNU) Eucalyptus nitida wet forest (undifferentiated)
-  (WOB) Eucalyptus obliqua forest with broad-leaf shrubs
-  (WOL) Eucalyptus obliqua forest over Leptospermum
-  (WOR) Eucalyptus obliqua forest over rainforest
-  (WOU) Eucalyptus obliqua wet forest (undifferentiated)
-  (WRE) Eucalyptus regnans forest
-  (WSU) Eucalyptus subcrenulata forest and woodland
-  (WVI) Eucalyptus viminalis wet forest

Legend: Cadastral Parcels



TASVEG 4.0 Communities within 1000 metres

Code	Community	Canopy Tree
DCO	(DCO) Eucalyptus coccifera forest and woodland	
DDE	(DDE) Eucalyptus delegatensis dry forest and woodland	
DOB	(DOB) Eucalyptus obliqua dry forest	
DPU	(DPU) Eucalyptus pulchella forest and woodland	
FPS	(FPS) Plantations for silviculture - softwood	
FPU	(FPU) Unverified plantations for silviculture	
FRG	(FRG) Regenerating cleared land	
FUR	(FUR) Urban areas	
NAD	(NAD) Acacia dealbata forest	
ORO	(ORO) Lichen lithosere	
WOOU	(WOOU) Eucalyptus obliqua wet forest (undifferentiated)	
WRE	(WRE) Eucalyptus regnans forest	
WSU	(WSU) Eucalyptus subcrenulata forest and woodland	

For more information contact: Coordinator, Tasmanian Vegetation Monitoring and Mapping Program.

Telephone: (03) 6165 4320

Email: TVMIMPSupport@dpipwe.tas.gov.au

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

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

521480, 5249177



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

Legend: Cadastral Parcels

☐

☒ Bushfire

Fire History (All) within 1000 metres

Incident Number	Fire Name	Ignition Date	Fire Type	Ignition Cause	Fire Area (HA)
600564	Wellington Park Campfire 1	09-Oct-2016	Bushfire	Accidental	5.9E-7
600567	Wellington Park Campfire 2	09-Oct-2016	Bushfire	Accidental	4.7E-7
600568	Wellington Park Campfire 3	09-Oct-2016	Bushfire	Accidental	7.6E-7
600586	Fern Tree Reservoir #1	18-Dec-2016	Bushfire	Accidental	4.026000000000000004E-5
600587	Fern Tree Reservoir #2	18-Dec-2016	Bushfire	Accidental	2.339E-5
600625	The Springs #1 Wellington Park	28-Mar-2017	Bushfire	Accidental	0.00250411
600626	Th Springs #3 Wellington Park	28-Mar-2017	Bushfire	Accidental	0.00516376
600627	The Springs #3 Wellington Park	28-Mar-2017	Bushfire	Accidental	0.02021836
600628	The Springs #4 Wellington Park	28-Mar-2017	Bushfire	Accidental	0.01964948
600629	The Springs #5 Wellington Park	28-Mar-2017	Bushfire	Accidental	0.0059748
600631	Upper Springs Carpark, Wellington Park	22-Jul-2017	Bushfire	Accidental	1.0675E-4
	1967 Fire	07-Feb-1967	Bushfire	Undetermined	198780.41788592
	Ridgeway	17-Jan-1998	Bushfire	Accidental	3166.7162194

For more information about Fire History, please contact the Manager Community Protection Planning, Tasmania Fire Service.

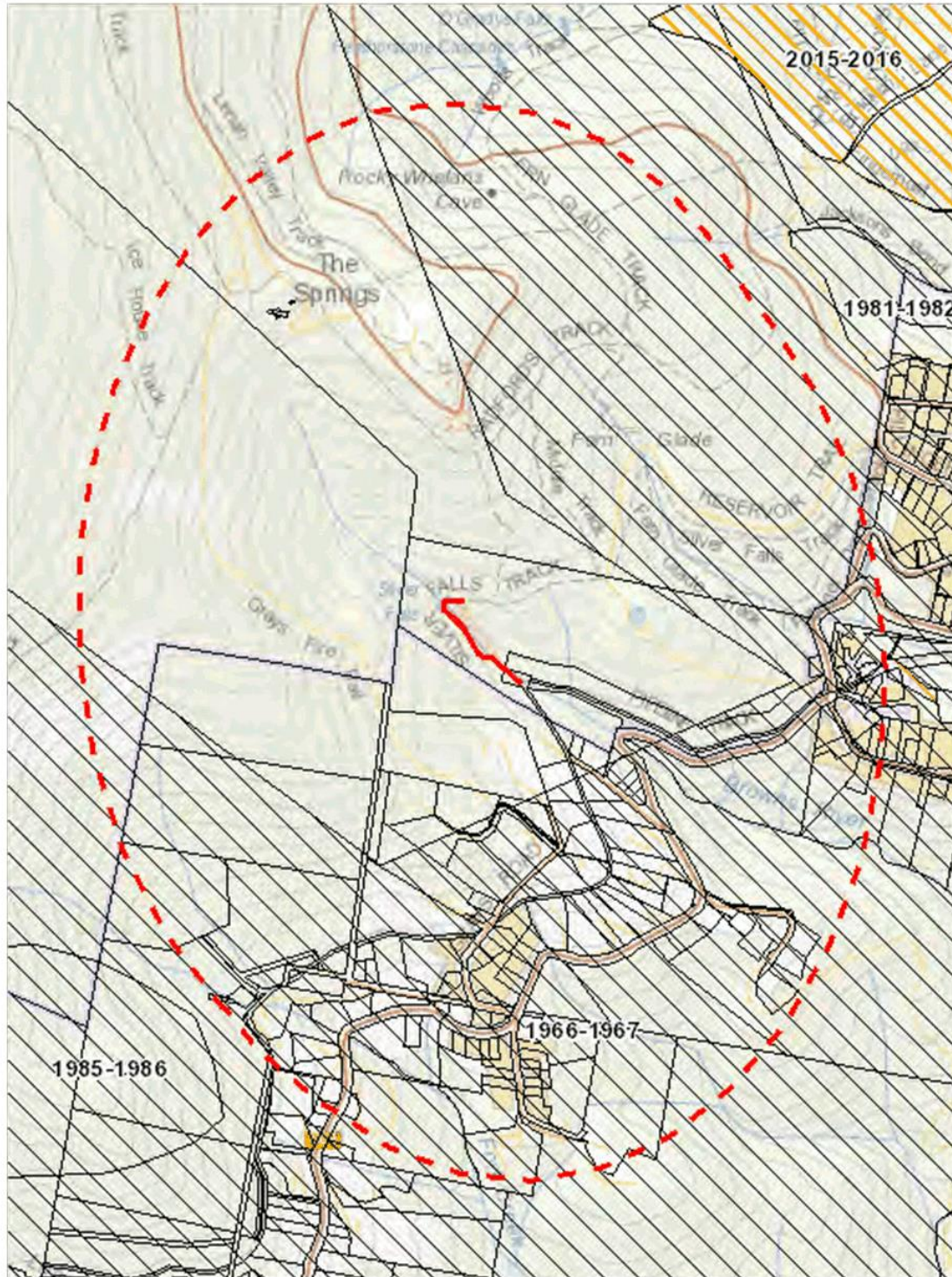
Telephone: 1800 000 699

Email: planning@fire.tas.gov.au

Address: cnr Argyle and Melville Streets, Hobart, Tasmania, Australia, 7000

Fire History (Last Burnt) within 1000 metres

521480, 5249177





519558, 5246610

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
-  Completed Planned Burn

 Bushfire

Legend: Cadastral Parcels



Fire History (Last Burnt) within 1000 metres

Incident Number	Fire Name	Ignition Date	Fire Type	Ignition Cause	Fire Area (HA)
600586	Fern Tree Reservoir #1	18-Dec-2016	Bushfire	Accidental	4.0260000000000000004E-5
600587	Fern Tree Reservoir #2	18-Dec-2016	Bushfire	Accidental	2.339E-5
600625	The Springs #1 Wellington Park	28-Mar-2017	Bushfire	Accidental	0.00250411
600626	Th Springs #3 Wellington Park	28-Mar-2017	Bushfire	Accidental	0.00516376
600627	The Springs #3 Wellington Park	28-Mar-2017	Bushfire	Accidental	0.02021836
600628	The Springs #4 Wellington Park	28-Mar-2017	Bushfire	Accidental	0.01964948
600629	The Springs #5 Wellington Park	28-Mar-2017	Bushfire	Accidental	0.0059748
600631	Upper Springs Carpark, Wellington Park	22-Jul-2017	Bushfire	Accidental	1.0675E-4
	1967 Fire	07-Feb-1967	Bushfire	Undetermined	198780.41788592
	Ridgeway	17-Jan-1998	Bushfire	Accidental	3166.7162194

For more information about Fire History, please contact the Manager Community Protection Planning, Tasmania Fire Service.

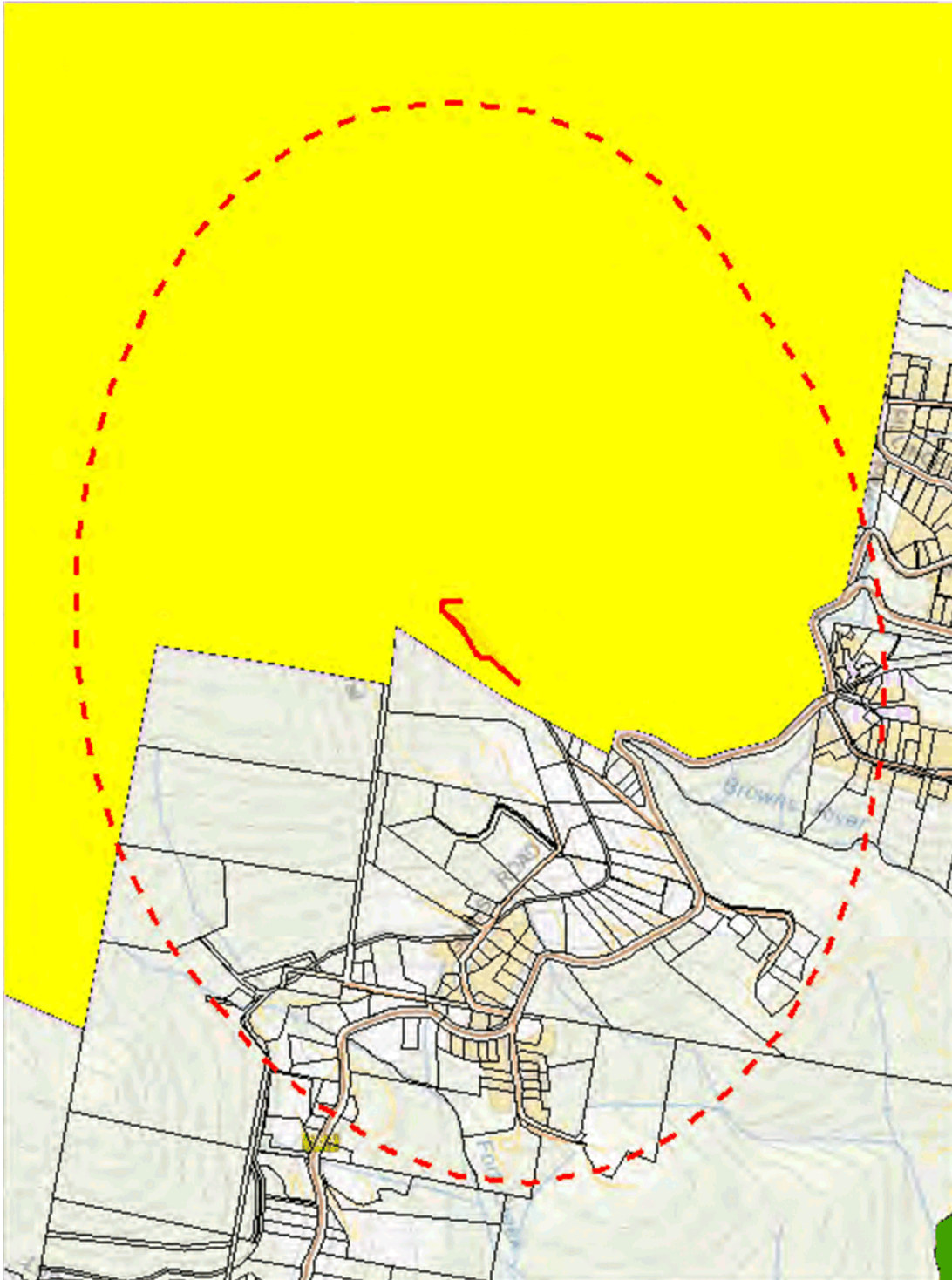
Telephone: 1800 000 699

Email: planning@fire.tas.gov.au

Address: cnr Argyle and Melville Streets, Hobart, Tasmania, Australia, 7000

Reserves within 1000 metres

521480, 5249177




























519558, 5246610

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

Reserves within 1000 metres

Legend: Tasmanian Reserve Estate

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

Legend: Cadastral Parcels



Reserves within 1000 metres

Name	Classification	Status	Area (HA)
Wellington Park	Wellington Park	Dedicated Formal Reserve	18011.04180 46

For more information about the Tasmanian Reserve Estate, please contact the Sustainable Land Use and Information Management Branch.

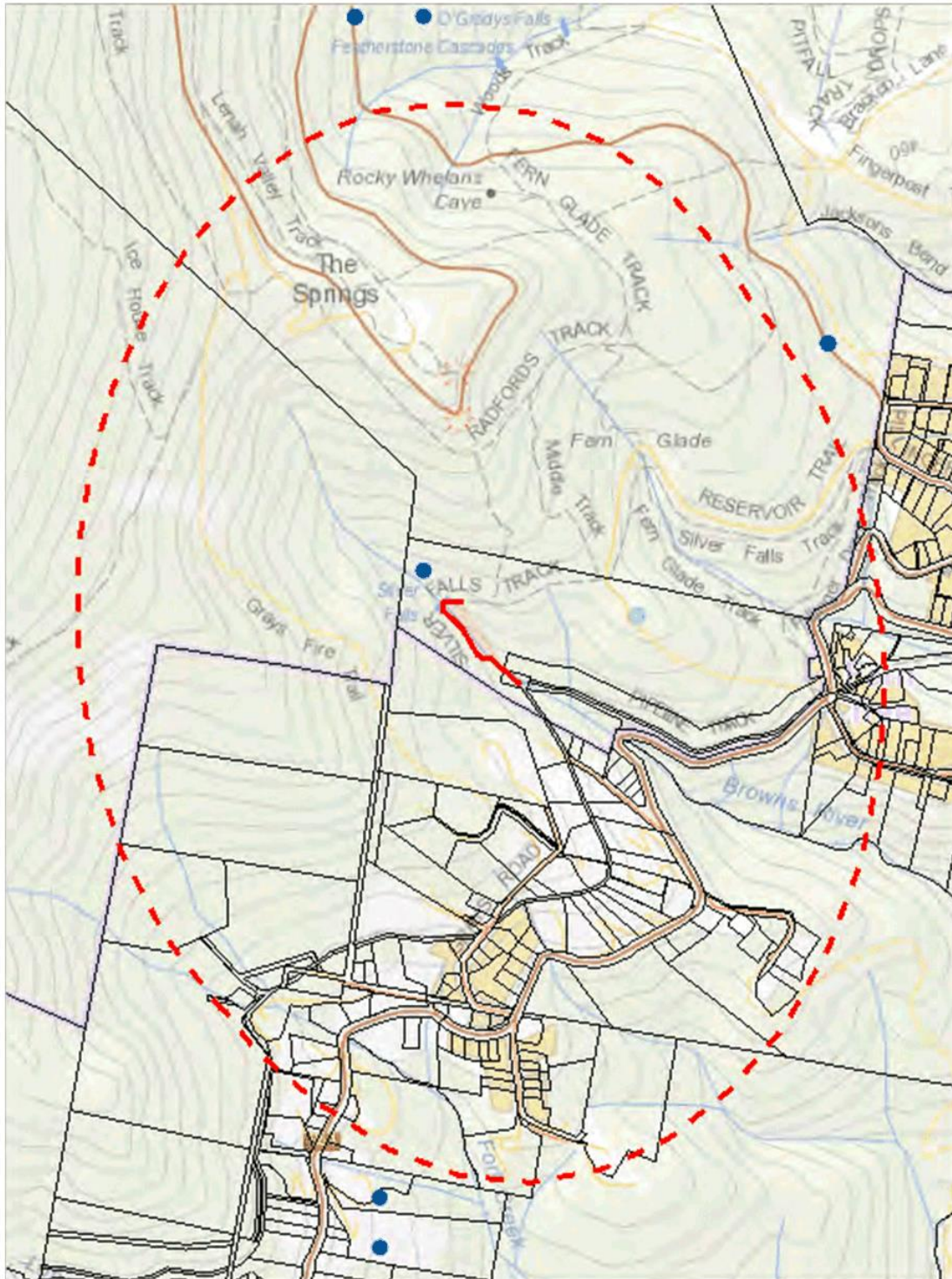
Telephone: (03) 6777 2224

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

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

Known biosecurity risks within 1000 meters

521480, 5249177



519558, 5246610

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

■ Polygon Verified
- Point Unverified

■ Polygon Unverified
- Line Verified
- Line 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 norvegicus	brown rat		1	01-Jan-1951
Rattus rattus	black rat		5	01-Aug-2011

Unverified Species of biosecurity risk

No unverified species of biosecurity risk found within 1000 metres

Generic Biosecurity Guidelines

The level and type of hygiene protocols required will vary depending on the tenure, activity and land use of the area. In all cases adhere to the land manager's biosecurity (hygiene) protocols. As a minimum always Check / Clean / Dry (Disinfect) clothing and equipment before trips and between sites within a trip as needed <https://www.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 <https://www.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 <https://www.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 through a treatment or septic system. Always keep disinfectant well away from natural water systems.
- Securely contain any high risk pest / pathogen / weed species that must be collected and moved e.g. biological samples.

Hygiene Infrastructure

No known hygiene infrastructure found within 1000 metres

Appendix B Protected Matters Search Tool Report



Australian Government
Department of Agriculture,
Water and the Environment

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: 09/08/21 12:39:48

[Summary](#)

[Details](#)

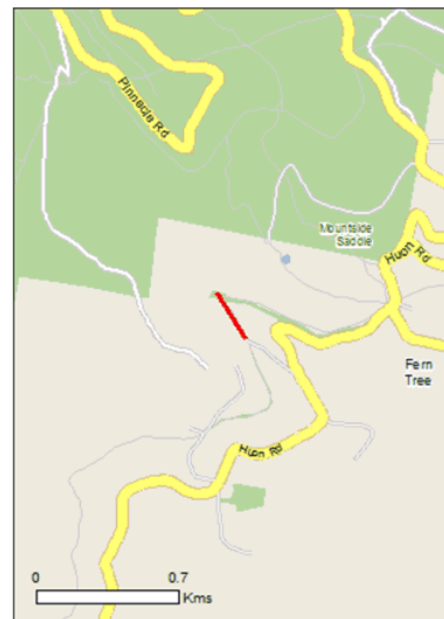
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

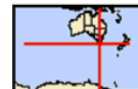
[Acknowledgements](#)



This map may contain data which are
©Commonwealth of Australia
(Geoscience Australia), ©PSMA 2015

[Coordinates](#)

Buffer: 0.0Km



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:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	23
Listed Migratory Species:	10

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:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	14
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	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:	34
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

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

Name	Status	Type of Presence
Tasmanian Forests and Woodlands dominated by black gum or Brookers gum (Eucalyptus ovata / E. brookeriana)	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	Species or species habitat likely 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
Ceyx azureus diemenensis		
Tasmanian Azure Kingfisher [25977]	Endangered	Species or species habitat may occur within area
Hirundapus caudacutus		
White-throated Needletail [682]	Vulnerable	Species or species habitat known to 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
Sternula nereis nereis		
Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area
Thinornis cucullatus cucullatus		
Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat may occur within area
Tyto novaehollandiae castanops (Tasmanian population)		
Masked Owl (Tasmanian) [67051]	Vulnerable	Breeding known to occur within area

Name	Status	Type of Presence
Fish		
<u>Prototroctes maraena</u>		
Australian Grayling [26179]	Vulnerable	Species or species habitat may occur within area
Insects		
<u>Antipodia chaostola leucophaea</u>		
Tasmanian Chaostola Skipper, Heath-sand Skipper [77672]	Endangered	Species or species habitat may occur within area
Mammals		
<u>Dasyurus maculatus maculatus (Tasmanian population)</u>		
Spotted-tail Quoll, Spot-tailed Quoll, Tiger Quoll (Tasmanian population) [75183]	Vulnerable	Species or species habitat known to occur within area
<u>Dasyurus viverrinus</u>		
Eastern Quoll, Luaner [333]	Endangered	Species or species habitat known to occur within area
<u>Perameles gunnii gunnii</u>		
Eastern Barred Bandicoot (Tasmania) [66651]	Vulnerable	Species or species habitat known to occur within area
<u>Sarcophilus harrisii</u>		
Tasmanian Devil [299]	Endangered	Species or species habitat likely to occur within area
Other		
<u>Ammoniropa vigens</u>		
Ammonite Pinwheel Snail [90200]	Critically Endangered	Species or species habitat may occur within area
Plants		
<u>Caladenia caudata</u>		
Tailed Spider-orchid [17067]	Vulnerable	Species or species habitat may occur within area
<u>Colobanthus curtisiae</u>		
Curtis' Colobanth [23961]	Vulnerable	Species or species habitat likely to occur within area
<u>Epacris virgata</u>		
Pretty Heath, Dan Hill Heath [20375]	Endangered	Species or species habitat may occur within area
<u>Prasophyllum apoxychilum</u>		
Tapered Leek-orchid [64947]	Endangered	Species or species habitat likely to occur within area
<u>Xerochrysum palustre</u>		
Swamp Everlasting, Swamp Paper Daisy [76215]	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		
<u>Apus pacificus</u>		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
<u>Hirundapus caudacutus</u>		
White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
<u>Myiagra cyanoleuca</u>		
Satin Flycatcher [612]		Species or species habitat known to occur within area
Migratory Wetlands Species		

Name	Threatened	Type of Presence
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 likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

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 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 likely to occur within area

Name	Threatened	Type of Presence
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known 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
Thinornis rubricollis rubricollis Hooded Plover (eastern) [66726]	Vulnerable*	Species or species habitat may occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Wellington Park	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 Resources Audit, 2001.

Name	Status	Type of Presence
Birds		
<i>Acridotheres tristis</i> Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
<i>Alauda arvensis</i> Skylark [656]		Species or species habitat likely to occur within area
<i>Anas platyrhynchos</i> Mallard [974]		Species or species habitat likely to occur within area
<i>Carduelis carduelis</i> European Goldfinch [403]		Species or species habitat likely to occur within area
<i>Carduelis chloris</i> European Greenfinch [404]		Species or species habitat likely to occur

Name	Status	Type of Presence
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		within area 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
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
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 africanus Climbing Asparagus, Climbing Asparagus Fern [66907]		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
Asparagus scandens Asparagus Fern, Climbing Asparagus Fern		Species or species

Name	Status	Type of Presence
[23255]		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 linifolia Flax-leaved Broom, Mediterranean Broom, Flax Broom [2800]		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
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

-42.923363 147.253483,-42.921886 147.252174

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.

Appendix C Flora species list

Job number	2122-006			
Project	Fern Tree Bower Upgrades			
Client	TasWater BAU			
Surveyed by	James Hill – ERA Planning and Environment Senior Environmental Scientist			
Date of survey	12 October 2021			
Plant collection permit number	DA 20077			
Key to status of species				
State Legislation (<i>Threatened Species Protection Act 1995</i>)				
r	rare			
v	vulnerable			
e	endangered			
Commonwealth Legislation (<i>Environment Protection and Biodiversity Conservation Act 1999</i>)				
VU	Vulnerable			
EN	Endangered			
CR	Critical Endangered			
Species		Common name	Introduced species or declared weed i = introduced D = declared weed n = naturalised	Status
Native Flora				
<i>Acacia dealbata</i> subsp. <i>dealbata</i>		silver wattle		-
<i>Bedfordia salicina</i>		tasmanian blanketleaf		-
<i>Blechnum nudum</i>		fishbone waterfern		-
<i>Blechnum wattsii</i>		hard waterfern		-

<i>Dicksonia antarctica</i>	soft treefern		-
<i>Eucalyptus regnans</i>	giant ash		-
<i>Eucalyptus obliqua</i>	stringy bark		-
<i>Hymenophyllum flabellatum</i>	filmy fern		-
<i>Grammitis magellanica</i>			-
<i>Grammitis billardieri</i>			-
<i>Coprosma quadrifida</i>	native currant		-
<i>Nematolepis squamea</i> subsp. <i>squamea</i>	satinwood		-
<i>Polystichum proliferum</i>	mother shieldfern		-
<i>Pomaderris apetala</i>	dogwood		-
<i>Senecio linearifolius</i> var. <i>linearifolius</i>	common fireweed groundsel		-
Introduced Flora			
<i>Hypochaeris radicata</i>	rough catsear	l, n	
<i>Valerianella locusta</i>	lambs lettuce	i	

Appendix D Weed and Disease Planning and Hygiene Guidelines



Weed and Disease Planning and Hygiene Guidelines

***Preventing the spread of weeds and diseases in
Tasmania.***

Invasive Species Branch
Department of Primary Industries, Parks, Water and Environment

Acknowledgements

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For further details, refer to www.egovernment.tas.gov.au

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I. Introduction

The *Weed and Disease Planning and Hygiene Guidelines* are a tool to provide guidance to those undertaking developments in Tasmania that may result in the introduction, spread and establishment of weeds and diseases. These guidelines aim to ensure that effective management programs are developed that consider and mitigate weed and disease risk.

Weeds and diseases are a serious threat to our environment, agriculture and community. Weeds alone cost Australians more than \$4 billion dollars every year, not including the impacts to natural assets and the environment. These guidelines are an important and necessary tool to assist in the protection of Tasmania's sustainable productive capacity and natural ecosystems.

The guidelines aim to:

- Improve weed and disease management planning in Tasmania.
- Increase the number of industry based plans covering weed and hygiene management that are being implemented.
- Improve weed and disease hygiene practices at the planning and operational level.
- Provide the necessary tools to allow for effective and informed planning tailored to the situation.

In the context of these guidelines:

A '**weed**' is considered a plant (or plant like organism e.g. algae) that requires some form of action to reduce its harmful effects on the environment, economy, human health and/or amenity.

A '**pathogen**' is a living microorganism such as bacterium, virus or fungi that causes diseases in plants and animals. Examples include cinnamon fungus (*Phytophthora cinnamomi*), myrtle rust (*Puccinia psidii*), fire blight (*Erwinia amylovora*) and chytrid fungus (*Batrachochytrium dendrobatidis*).

'**Developments**' or '**works**' are those activities that may result in disturbance to the land, including major development projects, subdivisions, road construction, quarries, and infrastructure construction for irrigation, dams, power, telecommunication and water supply. These developments can occur on either public or private land.

'**Other activities**' are those that may be smaller in scale and result in potentially less disturbance to the landscape but still pose some level of risk in relation to the introduction, spread and establishment of weeds and diseases. The consequences of such activities can still be significant. 'Other activities' include:

- movement of machinery and vehicles,
- agricultural and forestry practices,
- parks and reserve maintenance,
- land rehabilitation
- road and utility maintenance,
- transport of stock, soil or other quarry materials,
- scientific research and monitoring programs and visiting remote areas where access is limited to boat, helicopter or light aircraft.

Who are these guidelines and templates designed for?

These guidelines are applicable to:

- State and local government authorities responsible for review and assessment of development projects,

- Developers and consultants responsible for producing a Development Proposal and Environmental Management Plan (DEMP) and / or a Construction and Environmental Management Plans (CEMP).

Industry has an important role in preventing the introduction and spread of weeds and diseases. Contractors and other operational staff can reduce the impacts of weeds and diseases by implementing effective machinery and equipment hygiene practices.

These guidelines can be used to inform a range of other land managers in planning works or activities that involve the potential introduction, spread and establishment of weed and diseases. This includes State Government Reserve Activity Assessments (RAAs), local government planning and approvals, community weed management plans and property based management plans.

Related Documents

[Keeping it Clean](#) – A Tasmanian field hygiene manual to prevent the spread of freshwater pests and pathogens.

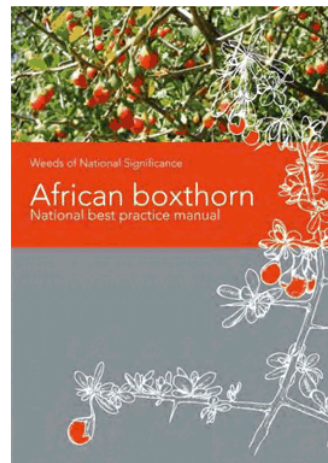
This manual provides information on how to prevent the spread of freshwater pests and pathogens in Tasmanian waterways, wetlands, swamps and boggy areas. It is intended primarily for people who work in these areas, but will also help recreational visitors to understand the risks and act accordingly.

The manual complements these guidelines, which covers a broader range of situations (terrestrial and freshwater) and is principally targeted at developments.



[Weeds of National Significance \(WoNS\) best practice manuals](#)

Best practice manuals have been produced for the majority of WoNS species (e.g. African boxthorn). These manuals provide information on the ecology and biology of the weed, planning, general information on management and control and case studies. Whilst some of the best practice manuals relate to species not present in Tasmania, they still contain information that may be useful for a particular development, such as with aquatic weeds.



These guidelines relate to you if:

<p>You are producing a DP&EMP*</p> <p><i>Weeds have been identified as an issue and there is a requirement to:</i></p> <ul style="list-style-type: none"> • Identify declared and significant environmental weeds. • Identify initial weed management issues. • Recommend hygiene protocols relevant to the development. <p><i>Disease has been identified as an issue and there is a requirement to:</i></p> <ul style="list-style-type: none"> • Identify diseases and pathogens. • Identify initial disease and pathogen issues. • Recommend hygiene protocols relevant to the development 	<p>You are producing a CEMP*</p> <p><i>Required to develop a weed and disease management plan.</i></p> <ul style="list-style-type: none"> • Prepare detailed information about presence and distribution. • Prepare detailed information on control and management. • Communicate information to site managers, contractors and other staff. <p><i>Required to develop a weed and disease hygiene plan.</i></p> <ul style="list-style-type: none"> • Prepare detailed information about hygiene issues. • Prepare detailed hygiene protocols. • Communicate information to site managers, contractors and other staff. 	<p>You are producing a plan for a property, business or local area.</p> <p><i>Do you manage a quarry or topsoil and gravel business, and need to:</i></p> <ul style="list-style-type: none"> • Identify weed and disease issues within the business footprint. • Develop a weed management and weed hygiene plan. • Implement a control program for declared and environmental weeds. • Quarantine areas or material that is infected with pathogens such as phytophthora • Provide cleandown equipment. • Maintain a log detailing destination of soil, gravel and sand. <p><i>Are you developing a property management plan, and need to:</i></p> <ul style="list-style-type: none"> • Identify declared and significant environmental weeds. • Map identified weeds and important agricultural assets or environmental values. • Develop management and control prescriptions. • Develop a hygiene plan for the property addressing the movement of vehicles, machinery and materials. • Implement a control program and hygiene plan and monitor success <p><i>Are you developing a local area weed management plan, and need to:</i></p> <ul style="list-style-type: none"> • If working on public land seek the necessary permissions. • Identify and map weed and disease issues. • Seek advice on appropriate control and management options. • Develop weed management and hygiene plan. • Implement plan and monitor outcomes.
<p>*DP&EMP = Development Proposal and Environmental Management Plan</p>	<p>*CEMP = Construction and Environmental Management Plan</p>	

2. Legislative Responsibilities

The following section describes the relevant legislation and codes of practice relating to the control, management and use of declared weeds, and risks associated with the spread of pathogens.

Relevant government policy, legislation and codes of practice

Weed Management Act 1999

The *Weed Management Act 1999* (WMA) is the primary legislation relating to weeds in Tasmania. The legislation provides for the control and eradication of declared weeds to minimise the deleterious effects of weeds on the sustainability of Tasmania's productive capacity and natural ecosystems. The WMA and other Acts mentioned can be viewed at the Tasmanian Legislation Online website - <http://www.thelaw.tas.gov.au>

[Sections 56 and 57](#) (see box on next page) of the WMA are particularly relevant to developments and the potential risk of spreading declared weeds – with 56(1c) and 56(1g) being the most relevant. Section 57 applies to anyone intending to bring machinery or equipment into Tasmania that might be used on developments.

Permits (Weed Management Act) –

A permit may be required in order to undertake a specific activity that may contravene the WMA, for example transporting declared weeds for disposal. DPIPWE can issue permits and these will be assessed and issued on a case by case basis incorporating any relevant conditions.

Each declared weed has a statutory weed management plan that details the regulatory framework for the control and eradication of that weed under the WMA. The plans identify zones (containment or eradication) and industry specific hygiene measures that should be implemented in relation to a particular species. For example, hygiene and weed management requirements for aquatic weeds are different to those weeds that may be spread through stock feed. Copies of the statutory weed management plans can viewed via the Weeds Index on the DPIPWE web site at <http://www.dpipwe.tas.gov.au/weeds>

Those involved in developments or other activities have a responsibility to take measures to ensure that any declared weeds present on the site are controlled and that such weeds are not spread further within or off the site. For example, when introducing material such as gravel and soil to a site, all measures must be taken to ensure that this material is free of any weed propagules. These guidelines will be useful in providing instruction to prioritise the management of declared weeds.

[Section 3](#) has further information about declared weeds.

Seeds Act 1985

The *Seeds Act 1985* lists a range of prohibited seeds and regulates and controls their production, supply and sale. It also provides for the testing of seed lots for contamination.

56. Sale, purchase, propagation, use, & c., of declared weed prohibited**(1) A person must not –**

- (a) sell a declared weed or any material or thing containing or carrying a declared weed; or
- (b) purchase or offer to purchase a declared weed or any material or thing containing or carrying a declared weed; or
- (c) grow, propagate or scatter a declared weed; or
- (d) store a declared weed or any material or thing containing or carrying a declared weed; or
- (e) hire or offer for hire any material or thing containing or carrying a declared weed; or
- (f) use a declared weed or any material or thing containing or carrying a declared weed; or
- (g) deal with a declared weed or any material or thing containing or carrying a declared weed in any manner that is likely to result in the spread of the declared weed.

57. Importation of declared weed

- (1) A person must not import or allow to be imported into Tasmania any declared weed.
- (2) A person must not import or allow to be imported into Tasmania, otherwise than in accordance with any prescribed measures, any feed grain for animals that may be carrying a declared weed.
- (3) A person must not import or allow to be imported into Tasmania, otherwise than in accordance with any prescribed measures, any livestock that may be carrying a declared weed.

Plant Quarantine Act 1997

The *Plant Quarantine Act 1997* (PQA) provides for the border control of plants, pests and diseases that are prohibited from entry into Tasmania. Inspections and surveillance to ensure compliance with the Act are undertaken by Biosecurity Tasmania at all points of entry into Tasmania. This includes the clearance of passengers, cargo, mail, plants/plant products, animals/animal products, aircraft and ship waste.

Those bringing in vehicles, machinery and materials into the State are to ensure that there is no contamination by a weed, pest or disease prohibited under the PQA. Lists of all pests and diseases prohibited under the PQA are published in the [Plant Biosecurity Manual](#) which is updated regularly and available on the DPIPWWE Biosecurity Tasmania website. Weed species declared under the *Weed Management Act 1999* are duplicated in the PQA manual.

Permits (eg *Land Use & Planning Appeals Act 1993*, *Environmental Management and Pollution Control Act 1994*)

Environmental pathogens are not specifically covered under legislation. However, the regulator, at State or local government level may require as a permit condition that an assessment to identify the presence or the risk of introduction of a pathogen is undertaken. The permit may also require actions to mitigate any introduction or spread to be developed.

Industry Codes of Practice

You may also need to refer to a Codes of Practice or standard operating procedures for the relevant industry. These prescribe the manner in which certain activities should be conducted so as to protect the environment. Examples include: the [Forest Practice Code](#) (2000), [Quarry Code of Practice](#) (1999) and [Mineral Exploration Code of Practice](#) (2012).

3. Weeds, Diseases and Pathogens – Key Issues

Declared weeds

A declared weed is a plant species that has been listed under Tasmania's *Weed Management Act 1999*. There are currently 115 species listed.

Not all declared weeds are present in Tasmania. There are species that have been assessed as having the potential to cause harm to Tasmania's environment and agricultural productivity if they were to establish in the State. Such species are known on the mainland and could easily be introduced to the state through contaminated vehicles and machinery and feed and fodder. Some examples include creeping knapweed (*Acroptilon repens*), silver-leaf nightshade (*Solanum elaeagnifolium*) and heliotrope (*Heliotropium europaeum*). Additionally, some of the weeds are declared as part of national agreements to limit the sale and trade of species between states.

Some of the declared weeds are naturalised and limited in their distribution within the State. There is an opportunity to eradicate or reduce the future impact of these weeds. These weeds are regarded as high priorities for control and include Chilean needle grass (*Nassella neesiana*), cut-leaf nightshade (*Solanum triflorum*), African feather grass (*Pennisetum macrourum*) and orange hawkweed (*Pilosella aurantiaca*).

Around a third of the declared weeds are present across the state in varying degrees of density. Some examples include Spanish heath (*Erica lusitanica*), gorse (*Ulex europaeus*), Californian thistle (*Cirsium arvense*) and ragwort (*Senecio jacobaea*). There are areas in the state, such as the World Heritage Area, national parks, reserves and conservation areas and agricultural areas where many of these species are not present. Effective weed hygiene practices are important to ensure that such species are not spread further and allowed to establish in new areas.

A list of the declared weeds can be found at <http://dpiwwe.tas.gov.au/invasive-species/weeds/weeds-index/declared-weeds-index>



Cut-leaf nightshade



Bathurst burr



Ragwort

Paterson's curse





St Johns wort



Spanish heath



Gorse



Nodding thistle



Variegated thistle



Cotton thistle



African feather grass



Serrated tussock

Chilean needle grass



Aquatic weeds

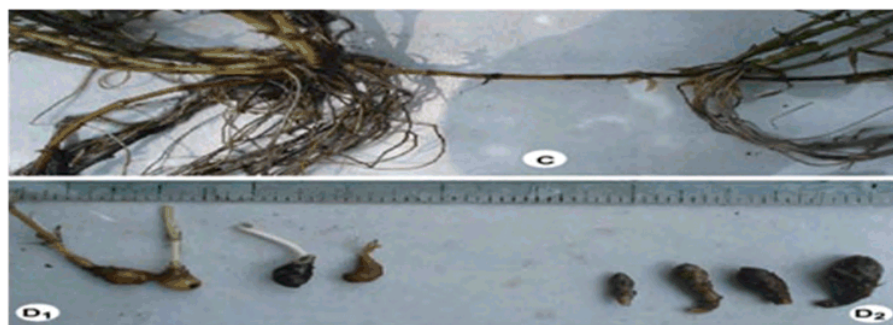
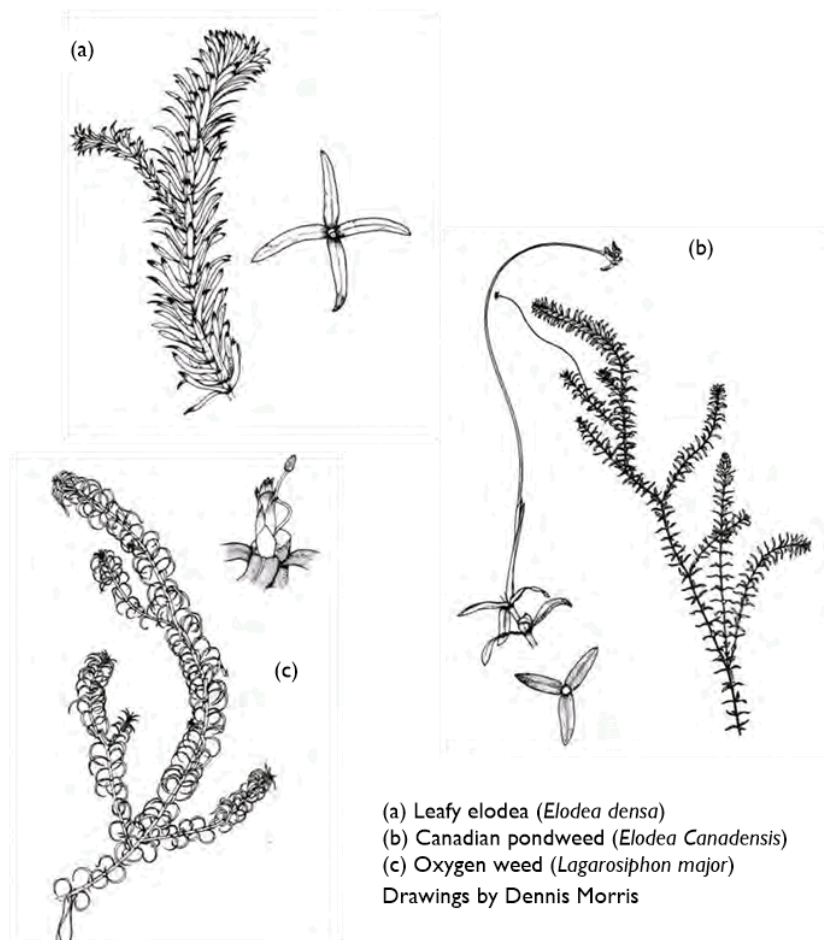
Tasmanian rivers are relatively free of serious aquatic weed problems. Two aquatic plants, the common Canadian pondweed (*Elodea canadensis*) and less common parrot's feather (*Myriophyllum aquaticum*) are found in Tasmania. However there are a number of other aquatic weeds that cause problems on the Australian mainland and in New Zealand that are currently not known to occur in Tasmania, but if introduced could become serious problems. These include hydrilla (*Hydrilla verticillata*), Brazilian waterweed (*Egeria densa*) and lagarosiphon (*Lagarosiphon major*). All are declared under the Tasmanian Weed Management Act 1999.

These aquatic weeds are particularly difficult to manage because they are able to propagate via a number of different mechanisms including seeds, but more commonly, tubers, turions (apical or axillary growing tips), stolons and stem fragments (see examples on following page). Some of this vegetative material is able to survive in sediments and germinate when conditions are suitable.

There are many different ways that aquatic weeds can be spread in Tasmania. They have been introduced through the ornamental and aquarium trade, usually as a result of the dumping of unwanted fish tank water. Aquatic weed material can attach to fishing gear, boating equipment, trailers and even within clothing. This material can be transferred along irrigation drains and in pipelines, both within or between catchments. Once established, the weeds can out-compete native species, choking waterways, lakes and dams. Plant material can also block irrigation pipes, pumps and alter the waterway's nutrient and light regimes.



Parrots feather



Aquatic weeds - Examples of vegetative propagules: (C) Two double-nodes separated by 6 short internodes in *Egeria densa*, (D1) Germinating tuber of *H. verticillata*, (D2) Growing buds of *E. densa*. (Source: Alfasane, 2010)

**Environmental or troublesome weeds
that are not declared**

Non-declared 'environmental' weeds refer to weed species not listed under the *Weed Management Act 1999*. Many of these species can have impacts on the natural environment, agricultural values and the community and so it is appropriate to manage these weeds through effective hygiene practices and control measures.

Environmental weed examples include many species originally introduced as ornamentals such as blue periwinkle (*Vinca major*), foxglove (*Digitalis purpurea*) and watsonia (*Watsonia meriana*) that have spread into natural areas from the illegal dumping of garden waste. Many of these species are the subject of volunteer community weed control programs.

Other non-declared weeds include species that impact on cropping, grazing and other agricultural enterprises, including being toxic to stock. These include capeweed (*Arctotheca calendula*), hemlock (*Conium maculatum*) and spear thistle (*Cirsium vulgare*).



Montbretia

Photo: English Country Garden

Foxglove





Capeweed



Periwinkle



Watsonia

Pathogens and plant-like pests

Pathogens and the diseases that result can be very difficult to eradicate, and once detected, containment may be the only practical management solution. Prevention is the most effective management strategy, and that can be best achieved by having strong biosecurity and hygiene measures in place.

Phytophthora

Phytophthora ('fy-toff-thora') root rot is also known as cinnamon fungus; jarrah dieback; wildflower dieback and by its scientific name *Phytophthora cinnamomi*. It is a water mould (like a fungus) that attacks the roots of susceptible plants, in many cases killing the plants. In some native plant communities, epidemic disease can develop causing the death of large numbers of plants.

It is believed to have been introduced to Tasmania following European settlement and is now well established in many areas of moorland, heathland and dry eucalypt forest in the state. *Phytophthora* has the potential to alter the ecology of these vegetation types. Many different species of plants are affected by *Phytophthora* root rot, such as grass trees, white waratah and Christmas bells.

Some threatened plant species in Tasmania are known to be declining as a result of *Phytophthora* and more threatened species could also be affected should the pathogen spread.

Phytophthora may spread with the movement of infected soil or plant material by people or animals and may be transported by water moving through the soil or in creeks. People can transport the pathogen to new areas on dirt adhering to vehicles, items they are carrying or footwear. Unfortunately this pathogen is hidden from view within plant roots and its symptoms can be difficult to recognise in the field.

Information Source: DPIPWE Website
<http://dPIPWE.tas.gov.au/biosecurity-tasmania/plant-biosecurity/pests-and-diseases/phytophthora>

Additional information can be found in the *Keeping It Clean* manual.



Native grass trees affected by *Phytophthora* (Photo: Tim Rudman)

Chytrid frog disease

Chytrid (pronounced kit-rid) fungus (*Batrachochytrium dendrobatidis*) causes the disease known as chytridiomycosis or chytrid infection which currently threatens Tasmania's native amphibians. The fungus infects the skin of frogs destroying its structure and function, and can ultimately cause death. Sporadic deaths occur in some frog populations, and 100 per cent mortality occurs in other populations.

Chytrid infection has been devastating to frog species causing extinctions worldwide. The international trade of frogs probably brought the fungus to Australia from Africa. The disease has now been recorded in four regions in Australia - the east coast, southwest Western Australia, Adelaide, and more recently Tasmania. In mainland Australia chytrid has caused the extinction of one frog species, and has been associated with the extinction of three others. In addition, the threatened species status of other frogs has worsened through severe declines in numbers.

The movement of infected frogs, tadpoles and water are known to be key agents of spread. The fungus (or infected frogs or tadpoles) can be spread by people in water and mud on boots, camping equipment and vehicle tyres, as well as in water used for drinking, or spraying on gravel roads or fighting fires.

Information source: DPIPWE (website).
<http://dPIPWE.tas.gov.au/biosecurity-tasmania/animal-biosecurity/animal-health/wildlife/frog-disease-chytrid-fungus>

For more information on chytrid frog disease and its distribution visit the DPIPWE website or read the Keeping It Clean manual.

Platypus mucor disease

Mucor amphibiorum is a native Australian fungus previously restricted to mainland Australia but has spread widely in northern Tasmania since 1982. It is likely that the fungus was introduced to Tasmania via infected frogs transported from the mainland. It causes a deadly ulcerative infection in Tasmanian platypuses.

It is currently not known how the mucor disease is spread and the risk of spread through movement of contaminated water or soil while undertaking activities and fieldwork in wetlands and waterways is unclear. However it is recommended that when handling platypus in the field specific hygiene protocols be applied. These protocols and further information about the mucor disease can be found on the DPIPWE website or in the *Keeping it Clean* manual.

Information Source: DPIPWE Website -
<http://dPIPWE.tas.gov.au/wildlife-management/fauna-of-tasmania/mammals/echidnas-and-platypus/platypus/platypus-fungal-disease>



Platypus mucor disease
(Photo: Annie Phillips)

Plant-like Pests - Didymo

Didymo (*Didymosphenia geminata*) is a freshwater algae (diatom) that is native in the northern hemisphere, but has now established in New Zealand's South Island and Chile. Didymo starts life as a microscopic, single cell organism that forms stalked colonies and rapidly multiplies to form dense mats on the streambed. Once established it is extremely difficult to eradicate. It can be transported on gear that is used in contaminated streams and lakes – boat gear, fishing gear, waders, felt boots, packs and kayaks.

The dense mats that are formed alter the stream ecology, affecting the river's health, degrading the fishing quality of the river and fouling equipment such as motors, pumps and traps.

Information Source: DPIPWE Website
[http://dPIPWE.tas.gov.au/biosecurity-tasmania/aquatic-pests-and-diseases/aquatic-biosecurity-threats/didymo-\(rock-snot\)](http://dPIPWE.tas.gov.au/biosecurity-tasmania/aquatic-pests-and-diseases/aquatic-biosecurity-threats/didymo-(rock-snot))

For additional information on Didymo and its distribution visit the DPIPWE website or read the *Keeping It Clean* manual.



A didymo frustule
(Photo: Sarah Spaulding)



Live cell of *Didymosphenia geminata* showing the mucilage stalk (Photo: Sarah Spaulding)



Didymo coating rocks and river bed in NZ.
(Photo: Sarah Graham)

4. Developing a Management Plan for Weeds and Diseases

What is a Weed and Disease Management Plan?

A weed and disease management plan covers the management and control of weeds and diseases for a particular area or site. It identifies relevant issues and specifies actions to be taken in order to remove or reduce the threat. Management plans may need to be produced for developments (eg. subdivisions, irrigation, roads, mines etc.), reserves, farms, quarries and residential properties.

Do you need a Management Plan?

It is in your interest to consider whether you need a management plan. If there are potential weed or disease issues, dealing with them in a timely and effective manner will save money and resources into the future. Depending on the issues at your site and the proposed activities, you may only need a weed or a disease management plan.

Generally, if the weed or disease issue is not complex then the plan may be relatively simple. The more complex the

issues, the more detail usually required.

In deciding if you need a management plan, consider whether there is an existing weed or disease problem (this may require a detailed survey), and whether the development or activity itself could create a problem. Remember that soil disturbance can lead to germination of weeds, while importing materials (for example, soil, gravel, water, plant material) can bring weeds and diseases onto a site.

If there are declared weeds at the site, or there is a potential that declared weeds could be spread to the site (eg. from a quarry) then the land manager and contractors will have a legal obligation to control those weeds and prevent any spread. Whilst there is no legislation covering the spread of environmental pathogens, permit conditions may require that the developer consider the hygiene and management issues.

A template for weed management plans can be found in [Appendix 1](#) and guidance on hygiene management in [Appendix 2](#).

A Weed and Disease Management Plan should cover as a minimum:

- Over-arching set of objectives
- Assessment of the distribution of declared and environmental weeds and diseases.
- Accurate map of weeds and diseases
- An assessment of the potential impact of the weeds and diseases
- Short and longterm priorities for management and control of weeds and diseases.
- Strategies for managing weeds and disease spread associated with the development.
- Strategies for ongoing monitoring and control of weeds associated with the development.
- Identification of appropriate herbicides and other methods for weed control.
- Methods to prevent disease spread (see also *Keeping it Clean – A Tasmanian field hygiene manual*).

Producing a Management Plan

Production of a management plan may be the responsibility of the landholder or land manager, the proponent of a development or the project officer coordinating activities. Whilst there is no set design for a management plan, all management plans will have similar elements:

Description of project, development or activity and site

Describe the proposed activity, development or land use, (eg. roadwork, dam, farm, mine, quarry) and detail the aims and objectives of the management plan.

Site description and location

Describe the site, including operational areas, stockpiling areas, cleardown areas and other ancillary and administrative areas. Most of these areas can be shown on maps, although some may need to be accompanied with detailed descriptions. There should also be maps that show the general location of the development, showing north, clear legends and the location relative to Tasmania as a whole.

Weed and disease issues

Identify and document existing and potential weed and disease issues at the site. The plan should provide a summary of declared weeds and significant non-declared weeds.

This should include an inventory of any previously recorded weeds and diseases via database searches and previous reports. In most situations a detailed onground survey of weeds and visual assessment for evidence of disease at the site will be required.

Timing of the survey needs to be considered, as some weeds are either not present (eg. annual weeds) or are not easily identifiable (eg. not flowering) all year. All survey work should be undertaken by a competent specialist in the field.

Recording and mapping of existing weed and disease distribution

Weed and/or disease locations should be shown on maps as well as being documented in a spreadsheet with coordinates (this table would be found in the appendices of the plan). Maps should be clear, contain obvious features such as roads, towns, hills and rivers to help identify locations.

Map of existing assets to be protected

Weeds and disease maps should be overlayed on to maps showing assets and areas requiring protection. This could include areas of ecological or conservation significance or important agricultural values. Advice should be sought as to appropriate permits that may be required in relation to values present and works proposed.

Things to remember:

- Identify known weed and disease issues through literature and database searches (this should include records for adjoining areas).
- Survey the relevant area and document observed weeds and diseases.
- Where required collect soil and or water samples to detect disease pathogens.
- Prioritise weeds – declared weeds; significant environmental weeds.
- Check identification of weed or disease symptom if uncertain.
- Be careful not to spread the weeds or disease when surveying.

Assess and document weed and disease risks and impacts

Once weed and disease surveys have been completed, an assessment of the potential impacts of those threats will help in establishing priorities for management and control. For example, if there is a Zone A declared weed growing in an area where construction work may cause it to be spread, then it would be a priority for control. A risk assessment tool is provided in [Appendix 2](#).

Setting short and long term priorities

Using collected information for species or diseases present, distribution, density, impacts, legislative responsibilities, determine short and long term management priorities – what weed species (or diseases) should be controlled and what are of less concern.

Relevant legislation

There is a range of legislation, legislative instruments and codes of practice in Tasmania which may be relevant to your project. The plan should list all legislation, permit conditions, codes of practice and technical documents relevant to the plan and how they have been addressed. The summary of weeds present at the site should also include the listings of the weeds within the *Weed Management Act 1999*.

See [Section 2](#) for further information about legislation.

Legislated priorities – declared weed zoning

Management requirements for declared weeds vary between weed species and municipality. All declared weeds are categorized as either Zone A or Zone B and these are listed in the statutory management plans for each declared weed. In general, a Zone A weed would be a higher priority for control than a Zone B weed. The statutory weed management plans can be viewed on the DPIPWE website:

DPIPWE Website:

<http://dipwwe.tas.gov.au/invasive-species/weeds/weeds-index/declared-weeds-index>

Zone A municipality – Eradication is required. Land managers should be actively eradicating the weed on their properties.

Zone B municipality – Containment is required. Land managers must take efforts to prevent the weed from spreading from their properties.

Other relevant documents or strategies

Other strategies such as Weeds of National Significance (WONS) strategies and best practice manuals, regional or municipal weed plans may be useful to refer to. There may also be other technical documents relevant to the specific site and/or development that have been produced from previous surveys. Property management plans, rivercare plans and vegetation management plans can all be sources of useful information.



Example of Spanish heath Zone A and Zone B areas in northwest Tasmania

Hygiene management activities

The weed and disease management plan should identify any potential hygiene management issues. For example, if there is likely to be vehicle and machinery moving on and off site or if materials such as soil, sand or gravel imported onto or exported from the site then there is a risk of spreading weeds or diseases. If this is likely to be the case then a hygiene management plan should be developed.

The development of a hygiene management plan is covered in [Section 5](#) of this guideline.

Strategies for managing the weeds and diseases

Control information can be detailed in tabular form and should describe methods for control (eg. herbicides, physical removal, burning, cultivation, etc), timing of control activities and frequency, methods for checking/monitoring infestations to determine effectiveness, and any follow-up measures.

If weed material cannot be safely disposed of on-site (eg. deep burial) then alternative means of disposal should be identified. This may involve arranging for incineration, deep burial or composting at a refuse centre. Where this material requires transportation from one site to another a permit may be required.

Operational management zones

For sites with more complex weed infestations, such as multiple weed species spread across a number of areas, management zones will need to be developed and documented on maps. Weed management zones may reflect the presence or absence of particular weeds, different management and control priorities, short term and long term priorities, and stockpiles.

The plan should also delineate all quarantine areas, traffic control zones and cleandown areas. The means by which zones are to be sign-posted and maintained on the ground (eg. signs, barriers, fencing) should also be detailed. Once weeds and diseases have been identified for a site or area management and control strategies can be developed. This should include appropriate removal methods and information on the type of herbicides and how they are to be used (see following map).

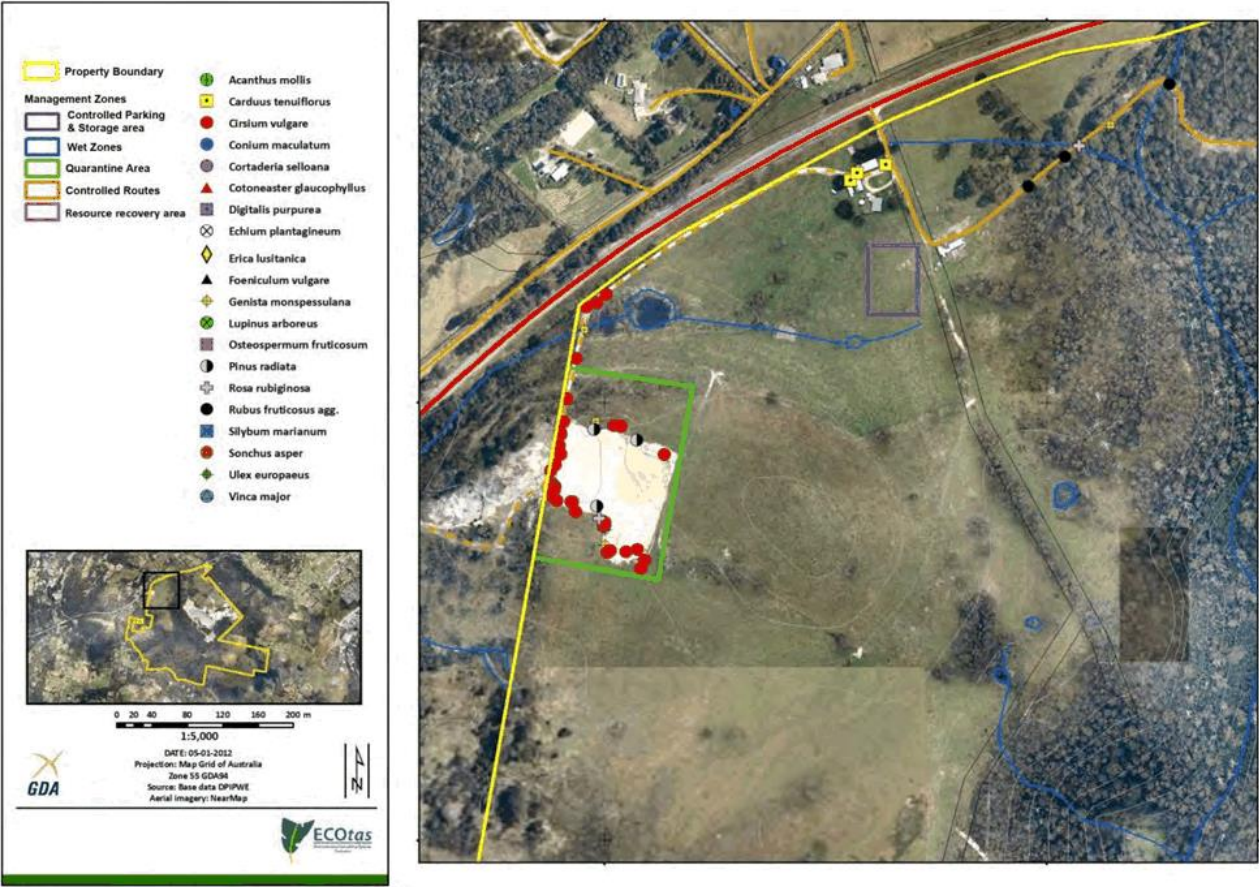
Monitoring and review

Addressing weed and disease management issues at a site does not stop with the completion of a development and associated works. A management plan needs to consider ongoing monitoring at a site. Post-development monitoring is particularly important where there has been soil disturbance, importation of materials (soil, gravel, sand, etc.), changes to drainage patterns, or removal of vegetation. Any of these actions can lead to the germination of dormant seed, or to the establishment of wind-blown weeds/seeds on recently exposed soil.

The timeframe for monitoring will vary depending on factors such as the presence of soil seed banks, the possibility for complete eradication of infestations and the likelihood of re-infestation from adjoining areas. Monitoring at a site may have no specified end date and be ongoing.

A monitoring program should identify:

- Personnel involved;
- Frequency and time-of-year of inspections;
- Reporting protocols;
- Response to weed or disease incursions.



Weed map showing management zones (Source: EcoTas)

5. Developing a Hygiene Plan

We all have a responsibility not to spread weeds and diseases. Weed seeds and pathogens can travel sight unseen in materials such as soil, sand, gravel and water, in mud on footwear, or lodged in nooks and crannies on machinery, vehicles and other equipment.

Prevention is the most cost-effective form of management.

It is easy to overlook the risk of accidentally spreading weeds and diseases; however this can lead to long-term and expensive consequences. Failure to carry out adequate hygiene measures can result in crop losses, stock damage or permanent environmental degradation, often incurring substantial cost to the land owner or manager.

What is a hygiene plan?

A hygiene plan addresses the potential introduction and spread of weeds and/or diseases as a consequence of a development or activity. It identifies specific actions in order to avoid, mitigate and reduce the potential spread of weeds and diseases. A hygiene plan targets:

- Vehicles, machinery and equipment
- Materials such as soil or gravel
- Recreational equipment and clothing
- Feed and fodder

Examples where a hygiene plan might be needed include developments or work sites, conservation reserves, farms, and quarries. In fact, any site which can be clearly delineated in area and which has an existing or potential weed or disease problem, and where activities may lead to the spread of those weeds, should have a hygiene plan.

The hygiene plan can be a stand-alone document or it could be included as part of a weed management plan.

A template for developing a weed and disease management plan, which includes hygiene management, can be found in [Appendix 1](#). Operational considerations for hygiene management are in [Appendix 2](#).

A Weed and Disease Hygiene Plan should cover as a minimum:

- Cleandown protocols when travelling between clean and contaminated areas within the development footprint.
- Cleandown protocols for vehicles and machinery entering or leaving the site.
- Location and management of cleandown areas and facilities, including management of effluent.
- Logbooks detailing adherence to hygiene protocols.
- Material hygiene (soils, gravel, plant material etc.) – ensuring that no materials contaminated with weed propagules (seed, propagative vegetative material), pathogens or other pests are imported into or exported from the site.

Do you need a hygiene plan?

It is in your interest to consider the issue of hygiene management. Remember, you may be the one who has to deal with any weed and disease problems on a site into the future. Always be conservative with respect to hygiene measures and potential weed and disease problems, and always think long term.

If your development or activity has identified any existing or potential weed or disease issues then it is likely you will need to develop a hygiene plan. The type and scale of this plan will depend on the complexity of your project.

If there are declared weeds at the site, or there is a potential that declared weeds could be spread to the site (eg. from a quarry) then the land manager and contractors will have a legal obligation to prevent any spread.

The project may involve bringing machinery in from the mainland and may therefore be the subject of requirements under the *Plant Quarantine Act* (refer to the current [Plant Biosecurity Manual](#)).

Planning ahead

Development of a hygiene plan allows you to consider:

- Type of hygiene issues that need to be managed.
- Possible alternatives to avoid hygiene problems.
- Coordination and timing of works and hygiene management actions.
- Site access issues and vehicular and machinery movements.
- Development of works schedule - working from clean to dirty areas.
- Identify no-go areas to avoid disturbance and weed infestations.
- Selection of appropriate equipment and machinery.
- Identification of stockpile sites.
- Identification of cleandown sites and methods.
- On site resources, ie access to water and other facilities.

- Communications and training for staff, contractors and other visitors.

Producing a hygiene plan

Production of a hygiene plan may be the responsibility of the landholder or land manager, the proponent of a development or the project officer for a specific activity. Each hygiene plan will differ depending on the nature and size of the site or development, and on the weed and disease problems involved.

Elements of a hygiene plan**Identify weed and disease risks**

This could be in a table format, and should identify issues, such as:

- vehicle and machinery movement,
- import and export of materials such as soils, sand or gravel and other products,
- disturbance to sites and vegetation,

where they occur and state how (where possible) they will be managed. Solutions might include sourcing soil and sand from accredited sources, sourcing pathogen free water (eg. from treated systems, rainwater tanks), designated parking and storage areas, minimising disturbance, fencing areas including vegetation etc..

Identify hygiene management zones

Maps should clearly identify the location of all hygiene related infrastructure including:

- clean down areas,
- effluent drains and sumps,
- quarantine zones,
- stockpile areas,
- solid waste storage areas,
- work areas, traffic routes, parking and storage areas.

Stockpile areas refer to areas where soil, gravel and sand is stored prior to use at the site or for removal from the site. Waste storage areas refer to the storage of weed material or other material that is contaminated with weeds or diseases and is to be appropriately disposed of or treated.

Operational Procedures

Operational hygiene protocols for each zone and the works site in general need to be documented. These include:

- Staff and contractor induction procedures.
- Cleandown protocols for vehicle, machinery and equipment movement between clean and contaminated areas within the site and also entering or leaving the site.
- Vehicle and machinery inspection procedures.
- Logbook to document sources and movement of material on or off site (soils, gravel etc.).
- Logbooks to document vehicle and machinery cleandown activities.
- Other issues specific to project.

Operational information relating to hygiene management can be found in [Appendix 2](#).

Avoiding the importation of contaminated materials

Raw materials such as soil, sand, gravel and water may be contaminated with weed seed or with plant and animal pathogens. Material from a quarry infested with gorse may well contain gorse seed which can remain dormant for many years, leading to the spread of the weed to other sites. Similarly, water sourced from ponds or dams containing the amphibian fungal disease chytrid can lead to the spread of this disease to un-contaminated water bodies.

Because many weed seeds and most plant and animal pathogens are either inconspicuous or invisible to the naked eye, it is extremely difficult to know whether a given load of material is contaminated or clean. Thorough testing of the source material to exclude contamination, or sterilising is often not feasible.



Temporary cleandown area

Nevertheless, the chance of importing contaminated material to a site can be significantly reduced by keeping in mind the following:

What you can do to reduce contamination risks -

- Ensure that there are no declared weeds and significant environmental weeds on the site from where you are obtaining material. There is a high risk of contamination of material such as sand, gravel, soil and water when sourced from a site which is clearly infested with a particular weed or disease.
- Keep in mind that the presence of some weeds and most pathogens will not always be obvious. For example, a weed may be present at a site as dormant seed in the soil or as tiny propagules in water, or present but not conspicuous (for example, not in flower).
- Investigate the hygiene measures in place at a prospective quarry or other source-point for raw materials. Shop around for the safest option.
- Wherever possible, source material from companies or sites which have been subject to some form of assessment for weed and disease hygiene. Don't be shy to ask questions of the supplier. Some industry groups have sought accreditation to demonstrate that their operations maintain sound hygiene practices. Where possible request a vendor declaration demonstrating their product is free of weeds or pathogens.
- Where there is a known risk or plants or animals sensitive to disease present, water should either be treated or sourced from rainwater tanks.
- If you encounter a problem with imported materials carrying weeds or diseases, inform the source company of the problem immediately and notify any relevant authorities.

6. Communicating the plan

Communicating your hygiene plan

The key to implementing a weed management and hygiene plan is to be able to effectively communicate it to everyone who will be involved in the operational components of a development. These include site managers and supervisors, on-site staff and contractors using vehicles operating machinery and equipment. The information needs to be easily understood and readily accessible, and may need to be produced in different forms depending on the target audience.

Training

Training is a key requirement for ensuring staff are aware of their different levels of responsibility and aware of the relevant aspects of weed and disease hygiene management. This training can be provided through external organisations or even facilitated through the relevant Government or Natural Resource Management organisations. Training needs to be tailored towards the needs of the organisation, their legislative responsibilities and the roles and responsibilities of staff.

Induction

Contractors and other visitors to a site need to be aware of the hygiene protocols operating at that site. As part of the general site induction process, new visitors to a site need to be made aware of the site hygiene protocols, exclusion areas and cleandown procedures.



Toolbox training

Many organisations have weekly toolbox meetings where they discuss issues such as work place health and safety and other matters relating to operational activities. These meetings also provide an opportunity to inform staff and reinforce requirements relating to weed and disease hygiene management protocols and how they should be implemented.

What documents need to be provided to operational staff?

A hygiene management plan forms the overarching document and contains all of the relevant information required to manage weed and disease hygiene at a site. However the plan may be a large, complex document that doesn't lend itself to be easily implemented by individual staff. Consequently, a subset of documents based on the plan will need to be provided to staff, including:

- Summary of hygiene protocols.
- Check lists.
- Maps detailing cleandown locations, quarantine areas and treatment areas.
- List of available cleandown resources and their locations.
- Information on cleandown procedures for specific machinery and vehicles (kept with the relevant machinery and vehicles).

Log books should be kept with vehicles, and depending on the nature of business and the vehicle/machinery use detail:

- Driver details and dates of travel
- Incoming and outgoing soil, gravel and sand delivery details (source and delivery locations; type of material; known contaminants).
- Record of cleandown activities for the vehicle/machinery

7. Case Studies

Case Study I

Weed hygiene - Underground Powerline

An infrastructure project undertaken by power company Jemena (now Zinfra) through Launceston's eastern suburbs in winter 2011 provides a good example of practical weed management through project planning and vehicle, machinery and equipment hygiene. A power cable was to be laid underground across a floodplain in winter. During the planning phase, consultants identified weeds, potential plant pathogens and threatened flora and fauna as issues. Additional information for the area was collected from DPIPW's Natural Values Atlas and DPIPW's Regional Invasive Species Management Section regarding other potential weed management issues.

DPIPW also provided information on best practice weed management procedures. Out of this came a practical approach from Jemena and the contractors for vehicle and machinery movement that limited the spread of weeds within the project and adjoining areas.

Using the weed presence and density maps the planners and project manager identified management zones within which any weed infested area, such as a gorse patch, could be isolated from neighbouring weed free areas. Each zone had a single entry/exit point and vehicles going in and out through this point had to be inspected.

Where a vehicle or machine had remained on the constructed road surface in good weather it required no more than a quick inspection. However, any piece of equipment or machinery that had direct contact with weeds or soil was treated as potentially carrying propagules that might be transferred from one site to another. These items were subjected to cleandown. The degree of cleandown was determined by the level of contamination. Site conditions were also important in determining the degree of cleandown. Where the site was dry and firm and there was little or no standing weed presence a machine may have needed no more than a brush / blow down or light hosing.



Cleaning down digging machinery

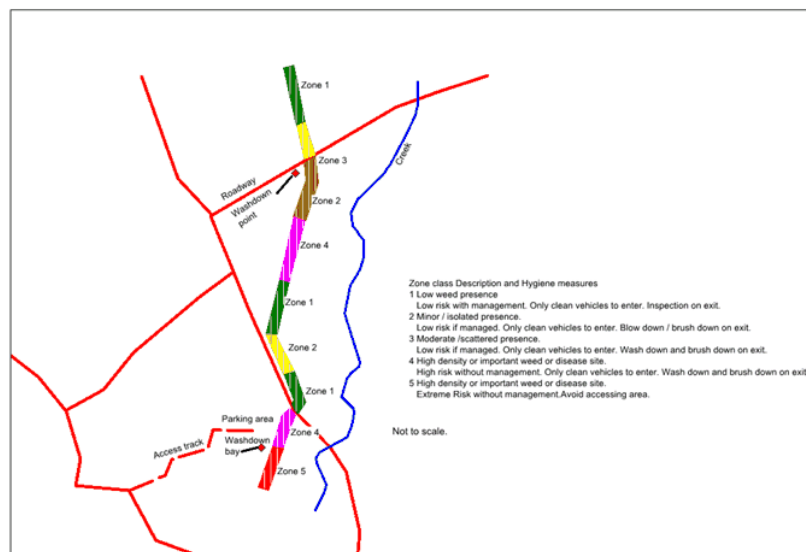
For the most part, Jemena's project was implemented through winter, much of it on an already wet floodplain alongside the North Esk River. To cope with this Jemena and the contractor installed temporary cleandown bays at the entry/exit points of each of the management zones (see site map). The cleandown bays consisted of a pad of heavy, coarse roadbase material built up about 300mm and big enough to fit a cleandown rig and any large machine used in the project. This pad drained into a sump lined with geofabric constructed at its downslope edge to catch run-off and sediment. When full, the sump was pumped out and material disposed of at Launceston City Council's refuse landfill. At completion of works, the roadbase pads were removed and disposed of as landfill. Cleandown bay locations can be monitored over time and any weeds controlled.



Top photo: Temporary cleandown bay

Bottom photo: Geofabric lined cleandown sump

Example site map: work zones based on weed and disease risk



Case Study 2

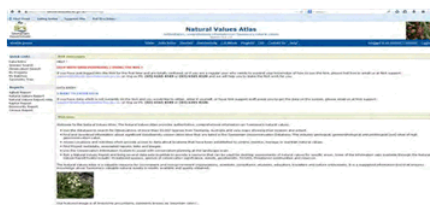
Weed management and hygiene plans for a residential development.

In 2010 Waverley Tasmania Pty Ltd purchased a derelict timber mill site at St Leonards on the south-eastern fringe of Launceston with a view to developing the site as urban residential land. The site of approximately 40 hectares includes a gully which adjoins park land managed by Launceston City Council. The north side of the property bounds residential development, while its southern neighbours include several peri-urban grazing/lifestyle blocks.

Weed management and hygiene planning was a requirement of the local government's planning permit for the demolition phase of the property development. This case study is based on the weed management plan developed for the site (Povey, 2010).

Development of the Weed Management Plan

The initial phase of the project involved a desk top study and field investigation to identify the natural values and potential threats to these values, such as weeds. Background information came from a search of the DPIPWE [Natural Values Atlas](#) (NVA); from review of the Statutory Weed Management Plans (SWMP) for each of the declared weeds present and from discussion with the relevant specialists. The second phase of work involved detailed site inspections to identify and record site features including weed presence and density.



DPIPWE's NVA Home Page
(new users can register at site)

The mill weed management plan summarises information from relevant SWMPs into a table identifying:

- the name of the weed;
- it's status within the site (whether declared or not);
- its zoning under the *Weed Management Act 1999*; and consequently
- the objective for each weed within the municipality.

A Natural Values Atlas (NVA) report provides information on the presence of native flora and fauna, weeds, phytophthora and chytrid at a site and areas adjacent to the site. This information should be accessed as part of the impact assessment and construction planning components of a development. The NVA database can be accessed via DPIPWE's web site.

Setting objectives for weeds at the site

Six significant weed species were identified by the plan. Five of these are declared weeds (which property managers are required by law to control) and one, hawthorn, is a non-declared significant environmental weed. The declared weeds present are:

- Paterson's curse
- Gorse
- Blackberry
- English broom
- Canary broom

The woody weeds occurred predominantly within a degraded woodland area surrounding the old sawmill. Paterson's curse infested road edges, and any cleared land amongst the bush and across open spaces between the mill and bushland and was identified as a significant weed on the site. The SWMP for Paterson's curse identifies Launceston Municipality as a "Zone A" area ie. an eradication zone. The St Leonards area is one of relatively few areas of intense infestation of this aggressive weed in the state. Eradication from this site will contribute to its eventual eradication from St Leonards.

One of the first steps in the control of Paterson's curse is to prevent spread through preventing seed set of plants germinating on site and to ensure that Paterson's curse material does not leave this site (e.g. as seed in soil). This last point, in particular, is a critical reason for the development of the accompanying weed hygiene plan.

Each of the remaining declared weeds are classified as Zone B in the municipality and therefore containment is the primary objective. It should be noted that where a weed can be eradicated from a site, regardless of its zoning, this should be attempted. Broom is an example of this, where its eradication is feasible due to low presence and density on the property. The plan also provides objectives for the significant, non-declared environmental weeds. Again all are summarised in a table identifying:

- The weed;
- its extent on the property; and
- objectives for control on the site.

Weed Survey

The location of weeds found during flora and fauna surveys were recorded using a handheld GPS.

A map was then produced identifying site features, native vegetation and weed infestations. Each infestation was assigned a density. Density classes were those used for monitoring Weeds of National Significance (WONS), as tabled in *A Field Manual for Surveying and Mapping Nationally Significant Weeds* (McNaught et al, 2006):

Density Class Number	Percent Cover Range or Description
1	Absent
2	Less than 1%
3	1 – 10%
4	11 – 50%
5	Greater than 50%
6	Present (density unknown)
7	Not known (or uncertain)
8	Not assessed

Weed Control Strategies and Methods

The plan provides a brief weed control strategy for each of the major weeds. The control strategies are linked to the SWMP objectives to eradicate or contain the weed; the density of the weed on the site; and its location and proximity to neighbouring properties.

For Paterson's curse this means control across the entire property, at least annually. For a "Zone B" weed, like gorse, control areas are prioritised according to the objectives of the SWMP (e.g. proximity to boundaries). A key priority is to protect and improve over time, the condition of any area of native bush being retained at the site.

Many of the weed species on the site are known to have long seed viability making regular monitoring and follow-up control a key to success in these works. The plan also recommends and describes a range of different methods to control each species. Additional information is provided from DPIPW's website including permits and suitable, registered herbicides.

Timeline and Budget

The plan provides a timeline, in table form, for actions and likely costs for particular areas e.g. a separate timeline for Paterson's curse; the urban development area; and the areas of native vegetation. The table identifies weed control actions that need to

start prior to demolition at the site. Importantly, each timeline includes reference to relevant sections within the plan and to actions from the hygiene plan that will need to be implemented concurrently.

Tasmanian Weed Management Act 1999

The mill plan makes reference to the *Weed Management Act 1999* including landholder responsibility to 'take all reasonable measures to control the impact and spread of a weed...' and makes particular mention of the offences identified under [Section 56](#) of the Act (including that it is an offence to... 'grow, propagate, scatter or transport a declared weed (including "deal with ... any material or thing ... carrying the weed in any manner that is likely to result in the spread of the declared weed", such as soil). This highlights the proponents responsibilities to prevent the spread of declared weeds.

Development of the Weed Hygiene Plan

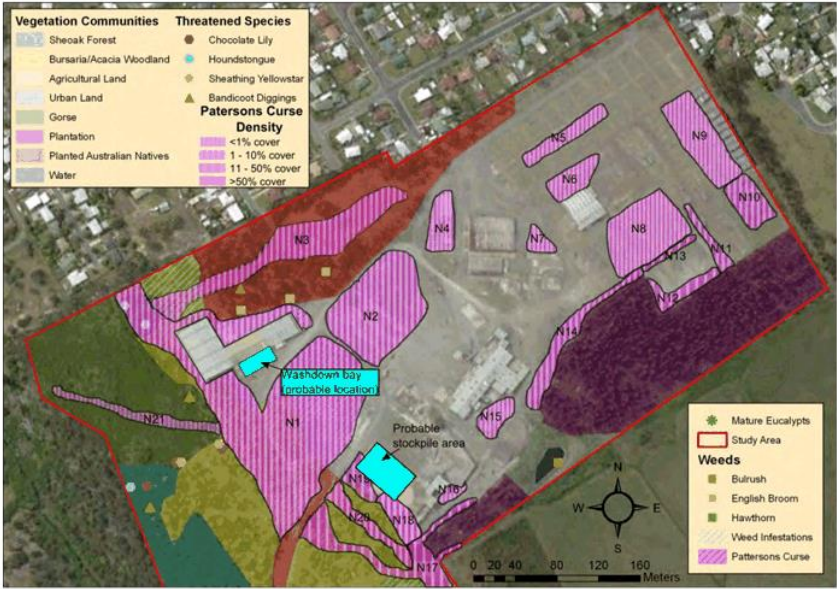
A weed hygiene plan was developed to reduce the risk of weeds being introduced onto or exported off the site. The hygiene plan is a key document that ensures that the *Weed Management Act 1999* is not contravened.

It is a succinct, practical document that requires all consultants and contractors to follow. The document is designed to be included in site inductions for all people entering the site.

It is essential that hygiene plans are easy to understand and easily communicated to a range of people, which this plan achieves. There is a very heavy presence of Paterson's curse across the whole site including the demolition area. The area includes a lot of bare soil and degraded pasture containing a large soil seed bank. The potential for machinery, vehicles, footwear, clothing and equipment to carry viable weed seed off site, particularly in soil and mud, is very high.

To avoid this happening, prescriptions are provided for frequency of cleandown, management of effluent, keeping of records, stockpiling and handling soil and demolition refuse, on-site and off-site disposal (requiring a permit to transport weed material from DPIPWE). A general, stepwise, cleaning inspection and cleandown procedure is provided together with checklists for systematic inspection and cleaning of the various kinds of machinery and equipment likely to be used on site.

A weed map of the site is included and helps personnel identify areas to be avoided, locations for stockpiling refuse and spoil prior to on-site burial and/or off-site disposal and includes the location of the on-site cleandown facility. In this case the cleandown facility will be located adjacent to previous infrastructure to utilise existing water points. A large area of concrete pad exists which can be drained to a central collection point. Material can then be disposed of by collection and burial.



Site map – The Old Mill – St Leonards, Launceston (courtesy Bushways Environmental Consultancy)

Paterson's curse
rosettes at the
St Leonards site
(Photo: Anna
Povey)



8. Appendices

[Appendix One:](#) Weed Management Plan Template

[Appendix Two:](#) Hygiene as Part of Weed and Disease Management Planning



Paterson's curse (*Echium plantagineum*) - drawing Dennis Morris

APPENDIX ONE: WEED MANAGEMENT PLAN TEMPLATE

COMPANY NAME

Name of Project

Weed and Disease Management Plan (including
options for hygiene management)

AUTHOR

Date

Type the abstract of the document here. The abstract is typically a short summary of the contents of the document

I Document History and Distribution

Version Control

Version	Date	Author	Notes

Distribution

Version	Recipient	Date	Notes

USE OF TEMPLATE (DELETE IN YOUR DOCUMENT)

This template outlines the structure of a Weed and Disease Management Plan with options for including hygiene management. In particular circumstances, the plan may only focus on weeds or diseases, not necessarily both. The format of the template consists of a text box that details the information that should be included for that section and an example of the sort of information that could be provided in italics after the text box, for example:

- *suggested wording where possible to ensure inclusion of important elements and reduce time spent on preparing the report;*

Text in boxes are guidance to the type of project related information that needs to be included in that section.

This template is intended as an example of a weed management plan - ultimately, the content and structure of a weed management plan will be driven by the nature of the development and the legal requirements of the development permits.

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I. INTRODUCTION

This section should include a summary of the project, description of the location, nature and size of the project and provide sufficient detail of the various stages of the project so that it can be clearly understood. A map of the site(s) with legend and geographic locators should also form part of this section.

I.1 Purpose and Scope

*The purpose of this Weed and Disease Management Plan (WDMP) is to detail requirements for the management of weeds associated with the construction of **Name of Project**. The WDMP identifies site specific mitigation measures and environmental controls for weed management to ensure weeds and diseases are effectively managed during works and into the future. The WDMP identifies measures to control, eradicate and prevent the spread of declared weeds and environmental weeds.*

I.2 Background, Aims and Objectives

Describe the proposed activity (development or land use, roadwork, dam, farm, mine, quarry etc).

This WDMP aims to provide a detailed methodology for mitigating and managing impacts associated with the presence, emergence and spread of weeds, throughout the project.

The objectives of the Weed and Disease Management Plan are to:

- *Record the distribution of weeds declared under the Weed Management Act 1999.*
- *Record the distribution of significant, non-declared, environmental and agricultural weed species.*
- *Record the presence and distribution of pathogens.*
- *Provide control measures for identified weeds and pathogens and prevent new weeds and pathogens from establishing and spreading.*
- *Establish an ongoing monitoring and control program for weeds and pathogens into the future for the site.*

I.3 Site Description and Location

Describe the site, including operational areas, stockpiling areas, cleandown areas and other ancillary and administrative areas. These areas should be shown on maps, although some may need to be accompanied with detailed descriptions. The maps should also show the general location of the development, showing north, clear legends and the location relative to Tasmania as a whole (See template [Appendix a](#)).

I.4 Supporting Documents and Consultation

You should refer to sources and documents including desktop studies eg. NVA reports, botanical surveys, field investigations and consultation undertaken in relation to the project.

I.5 Glossary

EXAMPLE ONLY Table 1. Glossary

Abbreviations	Definitions
DPIPWE	Department of Primary, Industries, Water and Environment
EPA	Environment Protection Agency
WoNS	Weed of National Significance
NVA	DPIPWE's Natural Values Atlas

2 LEGISLATION, STRATEGIES AND PLANS

There are a range of legislative and regulatory instruments and codes of practice in Tasmania which may be relevant to your project. The plan should list all relevant legislation, codes of practice and technical documents and how they apply to the plan.

Other strategies such as Australian Government Weeds of National Significance (WONS) strategies and best practice manuals as well as regional or municipal weed plans may also be relevant. Previous weed management or vegetation management reports for the site or adjacent areas as well as property management plans and rivercare plans may contain relevant information.

DPIPWE's Natural Values Atlas contains distributional data for weeds, *Phytophthora*, chytrid and native flora and fauna. There is a public access point, but users need to register. It's important to note that the absence of records for a site does not mean that there are no weeds there, rather that no one has surveyed the area or put the data into the NVA.

EXAMPLE ONLY - Table 2. Legislation, strategies and plans

Legislation, Strategy, Code of Practice	Application
Eg. Weed Management Act 1999	The Weed Management Act 1999 is the primary legislation relating to declared weeds in Tasmania
Eg. Cradle Coast Regional Weed Management Strategy	Principal framework for weed management in the Cradle Coast region with the aim of identifying priorities and weed management actions within the region
Eg. Keeping it Clean – A Tasmanian field hygiene manual to prevent the spread of freshwater pests and pathogens	Provide guidance on hygiene management and to reduce the risk of spreading environmental diseases

3 EXISTING AND POTENTIAL WEED AND DISEASE ISSUES

Weeds, diseases and other pests have the potential to establish and/or spread across the project site during construction. Increased weed colonisation could potentially have some impact on the ecological values of adjacent remnant vegetation through displacement of native species and degradation of fauna habitat.

Weeds may be introduced and spread by construction vehicles or by contaminated soil or materials brought into the construction area (eg. Vehicles, machinery, equipment, clothing and boots)

3.1 Recorded Weed Species

A weed assessment was undertaken on behalf of the project proponent in (DATE). The following areas were surveyed and distribution of weeds shown on Map XX. Each of the recorded species was classified according to their status under the Weed Management Act 1999, and (where appropriate) as per the following strategies (eg. Weeds of National Significance, Regional Weed Management Strategy, priority environmental weeds etc.).

Declared weeds:

This information should go in the appendices of the plan with a brief summary here. Any significant weed species or weeds requiring special management attention should be discussed here.

Declared weeds in Tasmania are plants that have been declared under the Weed Management Act 1999. The legislation requires that these species be controlled or eradicated according to the relevant statutory management plan.

XX number of declared weeds were recorded during the survey and/or identified from other sources. Detailed management strategies for environmental weeds are provided in template [Appendix b.](#)

Environmental weeds:

This information should go in the appendices of the plan with a brief summary here. Any significant weed species or weeds requiring special management attention should be discussed here.

Although many common weeds are not listed under legislation, and are therefore not legally required to be controlled they have the potential to pose a threat to the ecological and agricultural assets present in the project area and interfere with different stages of the development. Common 'non-declared' weeds include species such as cape weed (*Arctotheca calendula*) and scotch thistle (*Cirsium vulgare*).

XX number of environmental weeds were recorded during the survey and/or identified from other sources. Detailed management strategies for environmental weeds are provided in template [Appendix b](#).

Weed distribution should be shown on maps as well as being documented in a list, usually in the appendices. Data, including coordinates, that has been collected should be made available to the Natural Values Atlas. Maps should be clear, contain obvious features such as roads, towns, hills and rivers to help identify locations.

3.2 Recorded Diseases or Symptoms

Appropriate site controls (**provide detail**) will be implemented to ensure that causing pathogens such as *Phytophthora cinnamomi* (*Phytophthora*) and amphibian chytrid fungus (*Chytrid*) are not introduced to the project area, and if detected, within the project area, that quarantine measures will be instigated to ensure that it is contained.

The main activities at risk of introducing or spreading *Phytophthora* and *Chytrid* include:

- Through soil, sand gravel or other materials attached to vehicles and machinery used as part of the development works.
- Importing water or soil, sand, and gravel material for construction purposes (eg. roading, landscaping, filling, bedding etc.).
- Spreading the pathogen/disease from infected sites (contaminated) to uninfected (clean) sites.

4 IDENTIFY MANAGEMENT PRIORITIES

Once the weed and disease surveys have been completed, an assessment of the potential impacts of those threats will help to identify priorities for management and control. For example, if there is a declared weed growing in an area that will allow it to be easily spread as part of the construction work, then it would be a high priority for control and a focus on hygiene management.

Priorities for weed control, that is, which species are high, medium or low priorities, should be detailed in the schedules for weed management, (template [Appendix c](#)). Those priorities should also be clearly shown on the weed management maps (as zones).

5 MANAGEMENT AND CONTROL OF WEEDS AND DISEASES

Once weeds and diseases have been identified for a site or area, management and control strategies can be developed. This includes appropriate removal methods (including herbicide use information). Different weeds require different approaches to control, including the type of herbicides to be used. These should be documented.

Control information can be detailed in tabular form (template [Appendix c](#)) and should describe methods for:

- Weed control in detail (e.g. herbicides, physical removal, burning, cultivation, etc.);
- timing and frequency of control activities;
- strategy for monitoring infestations to determine effectiveness, and any necessary follow-up measures into the future.

If weed material cannot be safely disposed of on-site (e.g. deep burial) then alternative means of disposal should be identified. This may involve arranging for incineration, deep burial or composting at a refuse centre. If declared weeds require transportation from one site to another a permit may be required.

Hygiene measures to prevent spread of weeds and diseases should be incorporated into the plan - detailed information on hygiene management is contained in [Appendix 2](#).

6 COMMUNICATION AND REPORTING

The key to successful implementation of a weed management plan is ensuring that staff, contractors and visitors are all aware of their responsibilities in relation to weed management and hygiene. The weed management plan needs to be easily understood and be accessible to those who have responsibilities in relation to weed management. Tool box meetings and other workplace information sessions (eg induction) provide an opportunity to inform people on the site of their responsibilities. Signs, posters and maps also help to inform people.

Regular reporting and logging of weed control activities; vehicle, machinery and soil/sand/gravel movement into and out of the site; cleandown activities; and incidents ensures accountability and an ability to trace the source of a problem, allowing for quick mitigation to occur.

7 MONITORING

Rarely does the need for weed management finish when the development is completed. The presence of weed propagules, disturbance created and the movement of vehicles and materials all have the potential to encourage the persistence of weeds. A monitoring and control program should be developed and indicate:

- Personnel involved;
- frequency and time-of-year of inspections;
- reporting protocols;
- response to weed or disease discoveries (e.g. responsibility and procedure for control).

Ongoing weed control maybe the responsibility of the developer or the management of the development. The key point is that the responsibility to control declared weeds does not finish when the development has been completed.

Post-development monitoring is essential and particularly important where there has been soil disturbance, importation of materials (water, soil, gravel, sand, etc.), changes to drainage patterns, or removal of vegetation. Any of these actions can lead to the germination of dormant seed, or to the establishment of wind-blown weeds/seeds on recently exposed soil. Importation of materials can also result in the establishment of pathogens.

The timeframe for monitoring will vary depending on factors such as the presence of soil seed banks, the possibility for complete eradication of infestations and the likelihood of re-infestation from adjoining areas. Monitoring at a site may have no specified end date and be ongoing.

As an example:

The following weed and disease monitoring activities will be undertaken at areas directly impacted by construction within the project area. These activities will involve:

- *Monitoring and weed control measures undertaken by a licensed weed contractor at least four times (early spring, late spring, summer, autumn) in the first year following construction of the project.*
- *Monitoring and weed control measures undertaken by a licensed weed contractor twice per year (mid-late spring, mid-late autumn) in the subsequent four years following the project.*
- *Monitoring vegetation condition and collecting soil samples to detect signs of Phytophthora once every two years in autumn.*

Appendix a: Weed Management Plan – Site Plan

- Include site map and any other relevant maps eg: proposed routes for pipelines or roads, location of threatened species or vegetation communities.
- Ensure the map/site plan has a legend, north arrow and contextual reference for the location of the site.
- Show all relevant weed management and hygiene management points:
 - entry and exit points
 - cleandown areas
 - quarantine/exclusion zones
 - Control points/areas
 - traffic ways
 - designated parking areas
 - material storage areas for soil, sand and gravel

SITE PLAN

Appendix b: Recorded Declared and Environmental Weed Species**Example Only**

Common Name	Scientific Name	Status*	Municipal Zone A or B	Map Zones
gorse	<i>Ulex europaeus</i>	Declared	B	Zones 1, 6 & 8
boneseed	<i>Chrysanthemoides monilifera</i>	Declared	A	Zones 3, 4 & 7
sweet pittosporum	<i>Pittosporum undulatum</i>	Environmental	n/a	Zones 2, 6, & 7

*Declared or non-declared (eg environmental, agricultural)

Appendix c: Options for Weed Management.**Example Only**

Management Zone*	Weed	Control method	Chemical	Timing	Frequency of control
1	Gorse	Cut and paint with herbicide	Glyphosate	Spring to early summer	1 treatment with follow up and monitor and respond in subsequent years
1	Pampas grass	Foliage spray	Glyphosate	Spring, summer or autumn to actively growing plants	1 treatment with follow up
2	Spanish heath	Cut and paint with herbicide	Glyphosate	Prior to seed set	1 treatment with follow up
2	Ragwort	Boom spray, foliar application	Lontrel, marker dye, surfactant	Nov – Feb	1 treatment with follow up
3	Slender thistle	Boom spray - rosette	MCPA	April to September	2 treatments throughout this time period
3	Gorse	Spot spray, foliar application	Grazon Extra, marker dye and surfactant	Spring to early summer	2 treatments throughout this time period
Etc.					

*Based on priorities for weed management

APPENDIX 2: Hygiene as Part of Weed and Disease Management Planning

As part of the planning for your specific activity or development you will have identified existing and potential weed and disease issues. The next step will be to determine which activities pose a risk of spreading these weeds and diseases. Of these activities, what can and cannot be avoided?

The level of risk associated with a particular activity will influence how and when hygiene measures will need to be applied. The risk matrix table on the following page will help assess the level of risk for a particular activity and the degree to which hygiene measures should be applied. From this you can develop a list or table of actions to implement to either avoid the spread of a weed and disease or mitigate the risk.

EXAMPLE

A construction site that is heavily infested with gorse requires an excavator on site. Risk assessment identifies that there is a high risk of machinery contamination via soil and plant material. To avoid contamination the following actions are prescribed:

- excavator cleaned down on site at completion of the job;
- all other vehicles allocated a specific parking area away from infested area and work zone;
- control access of other vehicles on site.

As long as these prescriptions are followed, only the excavator will require to be cleaned down. This saves time and money by not needing to clean down other vehicles - these may only need a visual check.

High risk situations and activities where weed spread must be avoided:

- Working within a specified quarantine area.
- Visiting locations known to be free of weeds and diseases
- Visiting areas containing significant values
- Visiting a remote area where access is only by boat, helicopter or light plane
- Transporting machinery to an island
- Operating machinery along roadsides or along river banks
- Operating in an area affected by a weed or disease that has been assessed as a high priority and should be contained
- Transporting weeds or materials (ie soil or gravel) known (or assessed as likely) to be contaminated with weed propagules or diseases.
- Moving machinery out of a local area of operation
- Moving machinery between properties

All of the above activities would require some kind of kind of hygiene measure to be implemented before, during or after the activity has taken place. This may involve cleaning of vehicles and machinery, equipment, clothing and people. The frequency of clean down operations (thus decreasing costs and time) can be reduced by planning and coordinating timing and order of works or activities.

Risk Assessment Matrix

Recommended actions for grades of risk	
Grade	Risk mitigation actions
A	Mitigation actions, to reduce the likelihood and seriousness, to be identified and implemented as soon as the project commences as a priority.
B	Mitigation actions, to reduce the likelihood and seriousness, to be identified and appropriate actions implemented during project execution.
C	Mitigation actions, to reduce the likelihood and seriousness, to be identified and costed for possible action if funds permit.
D	To be noted - no action is needed unless grading increases over time.
N	To be noted - no action is needed unless grading increases over time.

Rating for Likelihood and Seriousness for each risk			
L	Rated as Low	E	Rated as Extreme (Used for Seriousness only)
M	Rated as Medium	NA	Not Assessed
H	Rated as High		

Grade: Combined effect of Likelihood/Seriousness					
		Seriousness			
Likelihood		low	medium	high	EXTREME
	low	N	D	C	A
	medium	D	C	B	A
	high	C	B	A	A

Change to Grade since last assessment			
NEW	New risk	↓	Grading decreased
—	No change to Grade	↑	Grading increased

Source: Tasmanian Government Project Management Guidelines

Selecting a cleandown site

Cleaning down aims to prevent the spread of weeds or plant and animal pathogens. It is most effective where access can be managed with entry points, roads or tracks under controlled use restrictions. In selecting a site, consider the following:

- Locating the clean down site at the edge, or nearby, to any areas where weeds or pathogens need to be contained. Choose sites where land slopes back into an infested area or away from areas susceptible to infestation or the pathogen.
- Ensuring run-off will not enter any watercourse or water body - a buffer of at least 30m is desirable.
- Avoiding sensitive vegetation or wildlife habitat eg. remnant native vegetation and threatened species.
- Selecting mud free sites (e.g. well grassed, gravel, bark or timber corded) which are gently sloped to drain effluent away from the clean down area.
- Allow adequate space to move tracked vehicles
- Potential hazards, eg. powerlines
- Consultation with landowner and/or site manager.

****Note that low loaders are not a suitable platform for cleaning machinery.***

Wherever there are large quantities of effluent or there is a risk of runoff, the clean down area should be bunded and a sump constructed to safely dispose of the effluent. Take particular care where the effluent is likely to be contaminated with oils.

Mark or record the clean down sites with the landowner or manager for subsequent monitoring and weed control.

Consider your safety

Before undertaking any clean down work you will need to inspect the site or area for anything that will endanger personnel safety. Vehicles and machinery should be immobilised prior to cleaning down - check ignition, brakes and wheel chocks. Lower implements to ground and secure hatches. Wear appropriate Personnel Protective Equipment (PPE).

Equipment for vehicle and machinery inspections

Where regular vehicle and machinery inspections are required, it is useful to keep a set of tools to assist you with the task. Weed seeds, plant material and soil can become lodged in areas that are hard to see and difficult to access. The following tools may help you:

- Mirrors
- Tools to remove covers or guards (eg sockets, spanners)
- Torch
- Probe or rod
- Wire
- Safety glasses
- Gloves
- Tray and bags for contaminated material
- Books or identification guides
- Checklist for critical inspection points
- Camera

Cleandown equipment***Personal and small tool wash equipment***

Where work is being undertaken in sensitive areas, especially where plant or animal pathogens are a known risk, portable wash baths for washing footwear and small tools should be used. Wash baths can be made from a fish box (or other suitably sized plastic box) fitted with an open weave plastic doormat, a scrubbing brush, pair of safety gloves, glasses, detergent or fungicide, and a container of clean water. For backpacking, a 2 litre bottle, scrubbing brush, safety gloves and glasses can be used for small tools and boot washing.

See page 42 for further detail about detergents and fungicides



Where field clean down is a regular practice, equipment should be carried for that purpose. Large commercial wash units are available, though in many instances small self-assembled systems will be adequate. In industries that use bushfire slip-on units, these are ideal, allowing more flexible choice of clean down sites. Small fire pumps or portable high pressure wash units are suitable. A shovel, crow bar and stiff brush are also required. Farm workshops should also have suitable clean down equipment. Where a blowdown only is required, onboard compressors or portable blower vacuum may be used along with a small brush.

Vehicle wash bays

Purpose built wash bays should be used whenever possible. These clean down facilities include effective effluent management systems to protect the environment. Commercial clean down facilities are available at most major towns and a few livestock sale yards.

***Portable vehicle wash equipment***



Clean down standards and procedures

General check of clothing and boots for mud, seeds and other plant material

(For more detail, refer to the *Keeping it Clean* manual)

Small tools and portable wash baths

1. Site the washbath just outside the infected area or at the departure point for the vehicle or aircraft.
2. Remove all loose mud and dirt from the object to be cleaned.
3. Use the recommended safety equipment if washing with a fungicide (safety gloves and glasses).
4. Part fill the washbath with clean water, a depth of about 4cms is adequate for boot washing. Mix a solution of detergent or fungicide as required (see below).
5. Clean boots, gaiters and equipment with the scrubbing brush.
6. Effluent containing registered products such as fungicides must be disposed of in accordance with label recommendations. Otherwise wherever possible contain the effluent for appropriate off-site disposal. Small quantities of effluent not containing registered chemical products may be spread away from watercourses at the site of soiling.
7. A final rinse or wipe with fungicide or methylated spirits can be used for sterilisation of scientific equipment.

For vehicles and machinery:

Note: DO NOT apply water to harvesters or other equipment that may be damaged by water.

1. Locate site and surface or construct bunding (if required).
2. Safely park the vehicle free of any hazards eg electrical power lines.
3. Check the vehicle, inside and out, for where dirt, plant material including seeds are lodged. Pay attention to the underside, radiators, spare tyres, foot wells and bumper bars.
4. Remove any guards, covers or plates as required.
5. Knock off large clods of mud, use a crow bar if required and sweep out the cabin.
6. Use a vacuum or compressed air where available for removing dried plant material like weed seeds and chaff in radiators and other small spaces where this material lodges. Brush off dry material if no other facilities are available.
7. Clean down with a high pressure hose and stiff brush/crowbar. Use only freshwater, preferably from a treated source or rainwater tank, if washing down in the field.
8. Start with the underside of the vehicle, wheel arches, wheels (including spare). Next do the sides, radiator, tray, bumper bars etc and finally upper body. Some vehicles may need to be moved during clean down e.g. tracked machinery.
9. If using vehicle ramps, ensure ramps load rating matches the vehicle, are placed on a hard level surface, cannot slide forward when mounting and that the handbrake is on and grounded wheels are chocked when in use.
10. Clean any associated implements, e.g. buckets.

11. Check there is no loose soil or plant material that could be readily dislodged or removed.
12. In wash bays, steam treat or rinse off vehicle with clean water.
13. Wash effluent away from vehicle.
Do not drive through wash effluent.

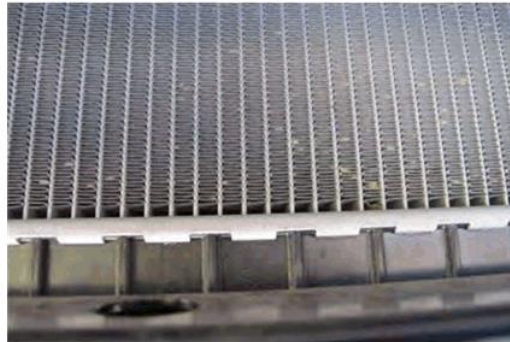
Custom standards

Customised clean down standards may be required under particular management plans or job specifications where the control of a serious weed or pathogen is required. For example, particular disinfectants may need to be applied and greater attention to soil accumulation behind protective plates and covers may be specified. Similarly landholders and managers may require specific clean down requirements.

Sometimes contamination is obvious, other times not so obvious.



An inspection will help you determine if your vehicle or machine requires cleaning. Save time and identify and clean only contaminated parts of the machine.



Vehicle cleandown - the less obvious places weeds hide in, including vehicle radiators



Portable washdown unit



Sump to drain cleandown effluent

Disinfectant Guide (see also the Keeping it Clean manual)

Water disinfection for *Phytophthora* root rot and chytrid frog disease

Water Tankers (fire fighting, cleandown)

Where water for operational activities is bought into *Phytophthora* or chytrid management zones or other areas of native vegetation sensitive to *Phytophthora* the water should be disinfected to prevent the introduction of these diseases. This situation will normally only occur during fire fighting operations where water is drawn from a different catchment.

Disinfection of water is most easily undertaken using a product containing a quaternary ammonium compound (quat) such as benzalkonium chloride (a general name for a variety of different compounds of alkyldimethylbenzylammonium chlorides). Examples include Phytoclean™ or F10™. These products should be used in accordance with the manufacturer's safety instructions and mix rates. The concentration of the mixture can be tested using quat check papers such as Hydriion.

Note: These chemicals should not be mixed with other chemicals. It is especially dangerous to mix chlorine based compounds, eg. chlorine bleach, with any ammonia-based compounds, including quats as toxic vapours can result.

The mixed solution should be allowed to stand a few minutes for disinfection to be completed. Fire fighting need not be delayed as there will be adequate time for disinfection on route to the fire. Where chlorine-based products are used, equipment should be rinsed with fresh water following use as chlorine is corrosive.

Note: Fire fighting foams or detergents will neutralise chlorine treatments. This will not be a problem provided that tanks do not become contaminated with foam or detergent is not added to the tanks to make "wet water". Sterilisation will occur in the tank prior to foam induction.

Clothing and field equipment

Fungicides such as Phytoclean™ or F10™ should be added to washbaths to control the spread of *Phytophthora cinnamomi* or chytrid if:

- sterilising tools used for *P. cinnamomi* or chytrid sampling
- entering or washing down within a *P. cinnamomi* or chytrid management zone
- entering a population of threatened species that is susceptible to *P. cinnamomi*.

DPIPWE (website). **Phytophthora**
<http://dPIPWE.tas.gov.au/biosecurity-tasmania/plant-biosecurity/pests-and-diseases/phytophthora>



**Didymo cleaning procedures
(Herbourg 2009; NZ Ministry for
Primary Industries website):**

Removal of plant fragments or dirt should either take place when leaving the site or in a location where run-off is not going into a water body. DO NOT clean the gear with water from the site you are leaving as you might just re-contaminate it, unless you use additional disinfection procedures afterwards. DO clean your gear BEFORE you leave to go to a freshwater area.

**Level 1: General disinfection
procedures followed whenever
possible as you move to a new site:**

- When leaving a waterbody, remove any visible plants and animals from your gear and boat.
- Remove any mud and dirt since they might contain Didymo
- Eliminate water from any conceivable item before you leave the visiting area

**Level 2: Field gear disinfection
procedures:**

To disinfect your waders, nets, sieves, buckets, floats, gloves, etc., use **ONE** of the following procedures. Make sure that all parts of the equipment get fully submerged or soaked for the whole time period required:

Non-absorbent items

Submerge all gear in hot water (45°C plus - uncomfortable to touch) for at least 20 minutes, or until soaked through.

OR

Soak in a 2% solution of household bleach for 1 minute (one small cup or 200mls with water added to make 10 litres)

OR

Soak or spray all surfaces for at least one minute in 5% dishwashing detergent or nappy cleaner (two large cups or 500mls with water added to make 10 litres);

Absorbent items

Felt-soled waders or other absorbent materials need to soak (45°C plus) for 45 minutes

Hot water plus detergent: soak for 30 minutes in hot water kept above 45 °C containing 5% dishwashing detergent or nappy cleaner;

OR (non-absorbent or absorbent items)
Freeze all gear until solid (> 4hrs)

***NOTE – bleaches are not always appropriate as they can be corrosive on some materials and require rinsing because they foam.**

There are a number of commercial disinfectant products that will kill Didymo and are being used in sensitive areas in Tasmania, these include:

Phytoclean® at a 2% solution or F10® Super Concentrate at a 1% solution. Check the Material Safety Data Sheets to check that they are suitable for the intended use. For further information refer to the *Keeping It Clean* manual.

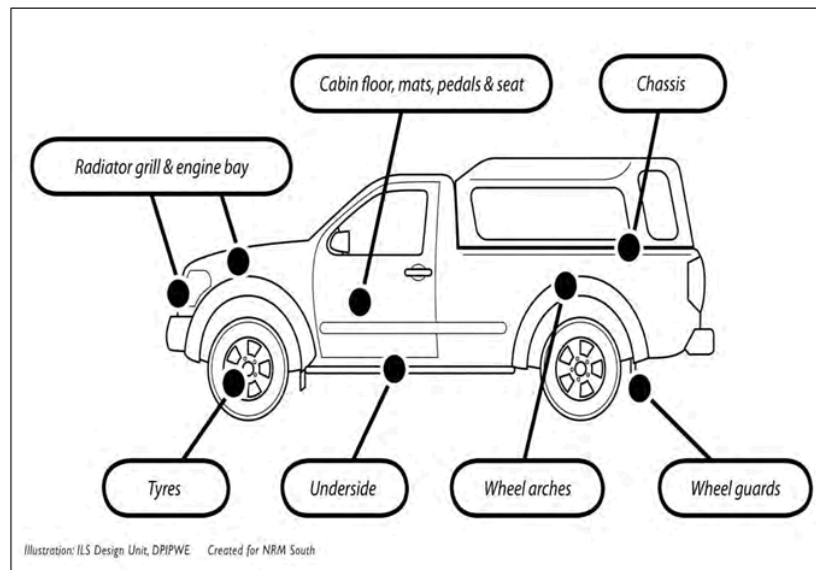
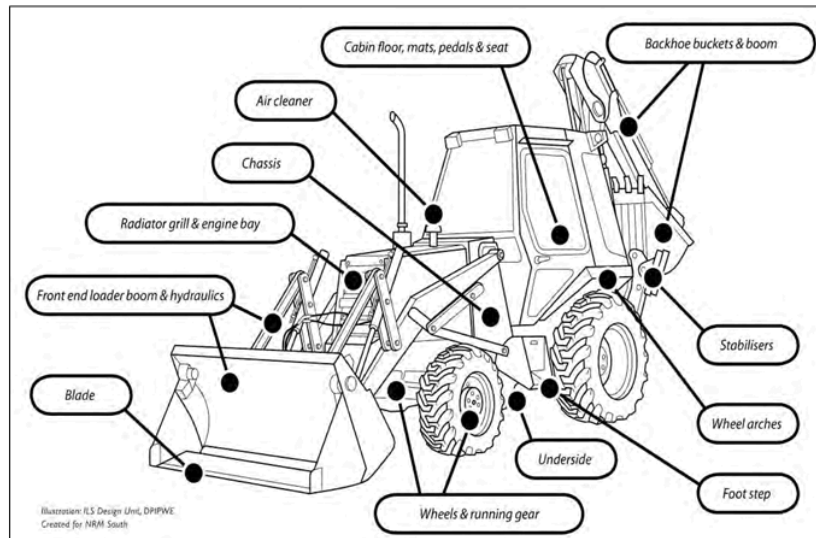
***NOTE - this advice is intended for didymo. The measures listed here may not be effective for other invasive aquatic pests.**

Cleandown check lists for specific vehicles and machinery

(Based on:

Far North Coast Weeds (NSW) Machinery and Vehicle cleandown checklist;

Queensland Dept. Natural Resources - Queensland checklist for Inspection Procedures)

**Examples of cleaning points - Excavator and 4wd (source: Keeping it Clean manual)**

CLEANING/INSPECTION LIST FOR UTILITY/4WD				
Date:			Site:	
Vehicle:			Registration/ID:	
Area	Contamination point	Inspected	Cleaned	Method
Engine bay	Front grill			
	Radiator and other cooling cores or fins			
	Grill or recess under wipers			
	Engine mounts			
	Top of gearbox			
	Battery recess/tray			
	Any recesses on engine or manifold			
	Air cleaner (including element)			
Cabin	Footwells			
	Carpets and mats			
	Seats			
	Tool boxes			
	Air vents			
Wheels and arches	Tyre treads			
	Rims and wheel caps			
	Wheel arches			
	Mud flaps and brackets			
	Brakes			
Tray	Body of tray (especially any recesses)			
	Mats and toolboxes			
	Around fuel tank caps			
Under carriage	Chassis rails			
	Struts and stabilisers			
	Steering components			
	Axels and differentials			
	Spare tyre and mounts			
	Guards			
	Fuel Tank			
Attachments	Bull bar			
Cleaning method: Mechanical (M), Compressed Air (CA), Vacuum (V), High Pressure Water (HPW), Low Pressure Water (LPW)				
Inspected by:		Signature:		
Cleaned by:		Signature:		

CLEANING/INSPECTION LIST FOR AN EXCAVATOR				
Date:			Site:	
Vehicle:			Registration/ID:	
Area	Contamination point	Inspected	Cleaned	Method
Engine bay	Engine bay floor			
	Fan shroud and radiator cores			
	Air filters (shake/tap filters to determine if clean)			
	Glacier plate (near radiator)			
Cabin	Footwells			
	Carpets and mats			
	Seats			
	Tool boxes			
	Air vents			
Excavation body	Hollow section chassis channels			
	Channels for hydraulic hoses from driven motor			
	Counterweight void spaces			
	Removable track adjuster guards and lubrication points			
	Turret pivot area			
	Arms/booms - pivot points			
Bucket/Blade	Between teeth of adapters			
	Wear plates			
Rear blade (Stabiliser)	Wear plates			
	Hollow section arms			
	Hollow section blade			
Cleaning method: Mechanical (M), Compressed Air (CA), Vacuum (V), High Pressure Water (HPW), Low Pressure Water (LPW)				
Inspected by:			Signature:	
Cleaned by:			Signature:	

CLEANING/INSPECTION LIST FOR TRACK TYPE DOZERS				
Date:	Site:			
Vehicle:	Registration/ID:			
Area	Contamination point	Inspected	Cleaned	Method
Engine	Check radiator core and engine area for residues.			
	Remove and check the air filter/cleaner (these often require destruction where they are clogged with QRM).			
	Check carefully the void space between the oil and radiator cores.			
	Battery Box - Lift/remove the battery to check for contamination (battery box may be at side/rear or under seat).			
Drivers cab	Check externally under and around driver's cab.			
	Check under mats in cab.			
	Remove/lift seat; remove/lift floor pans to allow checking to top of transmission.			
	Check air conditioner filter (if fitted) – shake/tap filter to check if clean			
	Check externally under and around driver's cab.			
	Check under mats in cab.			
Body	Belly plates should be removed to allow inspection and cleaning			
	Rear plates at back of dozer should be removed to allow inspection and cleaning.			
	Hydraulic cover plates should be removed to allow inspection and cleaning.			
Tracks/track frame	Examine tracks carefully.			
	Ensure inspection/cover plates are removed to allow inside track area.			
	Check idler wheels (these support the tracks).			
Fuel cells	Are removable therefore dirt etc can pack between the tank and the frame.			
Blade	Ensure that edge of blade top/bottom is not split – this allows soil to be packed very tightly in the hollow.			
	Check cutter points/wear blades.			
	Check carefully the pivot points and adaptors at the rear of the front blade – these allow the blade to change height and angle. Sometimes soil has compacted and is difficult to dislodge.			

Area	Contamination point	Inspected	Cleaned	Method
	Check trunction arms			
	Check all hollow sections			
Ripper support frame is usually hollow	Check carefully if any contaminants have entered this section. The tynes may need to be removed.			
Tynes	Tynes need careful inspection. Contamination may often be removed by water blasting, but tynes may need to be removed in some cases.			
Ripper points	A pin holds on the ripper points. Dirt can compact under the ripper points.			
All areas	Check if any sections or channels are hollow and determine if there is a possible entry point for contamination. Check if plates are covering a compartment or space that may have collected dirt/trash.			
Cleaning method: Mechanical (M), Compressed Air (CA), Vacuum (V), High Pressure Water (HPW), Low Pressure Water (LPW)				
Inspected by:		Signature:		
Cleaned by:		Signature:		

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[illegible]

Useful Resources and References

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Declared Weed Information – legislation, weed identification and control options:
www.dpipwe.tas.gov.au/weeds

Department of Primary Industries, Parks, Water and Environment
Plant Biosecurity Manual:
<http://dpiwwe.tas.gov.au/biosecurity-tasmania/plant-biosecurity/plant-biosecurity-manual>

Ministry for Primary Industries - Information on didymo including cleaning equipment:
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Weeds of National Significance Best Practice Manuals.
<http://weeds.ala.org.au/WoNS/>

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<http://www.dpi.nsw.gov.au/agriculture/pests-weeds/weeds/publications/weeds-crc-pubs>

Glossary

Control: involves actions to remove a weed infestation or to contain it and prevent spread to other areas.

Containment: preventing a weed or disease from spreading to a new area, perhaps with quarantine measures enforced in order to prevent further spread. Containment may be an adjunct to or an approach used in an eradication campaign.

Declared weed: Plant species that is declared under the *Tasmanian Weed Management Act 1999*.

Developments or works: activities that may result in disturbance to the land, including major development projects, subdivisions, road construction, quarries, and infrastructure construction for irrigation, dams, power, telecommunication and water supply. These developments can occur on either public or private land.

Disease: is the result of an infection by a pathogen that adversely affects an organism. Examples include dieback (*Phytophthora cinnamomi*), fire blight on fruit (*Erwinia amylovora*), chytridiomycosis or chytrid frog disease (*Batrachochytrium dendrobatidis*), myrtle rust (*Puccinia psidii*).

Environmental weed: Plant species that have an adverse impact on the environment, including native flora and fauna.

Eradication: the elimination of a weed incursion species from an area. Eradication requires that the seed bank is eliminated and the species is no longer being detectable.

Establishment: the weed incursion species persists, for the foreseeable future, within any area and where it is not feasible (whether in terms of technical feasibility or a cost: benefit analysis) to eradicate the weed species.

Incursion: the detection of a species in a place where it has not previously been found.

Infested area: declared under the *Weed Management Act 1999* to prevent the spread of a weed into a new area. Includes powers to control access and movement.

Invasive species: an exotic species that establishes a wild population and spreads beyond the place of introduction and becomes abundant.

Native species: a species found within its native range (in Australia this means that it is indigenous to Australia).

Naturalised species: a species with a free-living self-sustaining population outside its native range.

Pathogen: a living microorganism such as bacterium, virus or fungi that causes diseases in plants and animals. Examples include *Phytophthora cinnamomi*, *Puccinia psidii* (myrtle rust), *Erwinia amylovora* (fire blight) and *Batrachochytrium dendrobatidis* (chytrid frog disease).

Propagule: spores, seeds, fruits or vegetative parts capable of producing a new plant.

Quarantine area: established under the *Plant Quarantine Act 1997* in order to prevent the spread of a pest to new areas. Includes powers to control access and movement.

Rehabilitation: actions that seek to quickly repair damaged ecosystem function, particularly productivity. Indigenous species and ecosystem structure and function are the targets for rehabilitation.

Weed: a plant (or plant like organism eg. algae) that requires some form of action to reduce its harmful effects on the environment, economy, human health and/or amenity.





ARBORICULTURAL ASSESSMENT

Taswater – Fern tree Bower Automation

21st May 2021

For: Scott Burley
Project Supervisor
Tas Water

1. Terms of Reference

This report was requested by Scott Burley, Project Supervisor at Taswater, to assess the impacts on trees growing adjacent to the Pipeline Track which are subject to potential trenching. A visual inspection was completed from the ground on the 17th of May 2021.

The report will include survey data, approximate locations¹ (appendix 1) and management recommendations for completing the works without critically damaging the trees.

2. Site Findings

The inspection collected data on the larger trees growing adjacent to the track from Cleggs Road terminating at the existing bower. All of the trees were mature swamp gum (*Eucalyptus regnans*), a dominant species at this altitude.

A visual inspection from the ground revealed that they appear healthy and do not include any significant tree risk features that would result in an elevated risk. Based on this outcome, the risk posed by these trees is considered acceptable and no maintenance or removal is recommended.

The existing track is comprised of a compacted aggregate which is less desirable for the development of roots, particularly fine feeder roots. A fire main also runs along the entirety of this track, but the installation and age of these services is unclear.

3. Development Proposal

The current proposal requires a power conduit to be installed along the Pipeline Track from Cleggs Road to the existing bower. New plumbing infrastructure will also be installed to the east of the bower and the existing valves decommissioned.

The conduit will need to be installed at 500mm below ground level which has the potential to be within the horizon of the structural root zone of some trees.

To avoid major root damage, the current proposal is to trench under supervision and vacuum excavate through areas of root congestion and structural root zones. A mini excavator using a small bucket, potentially as wide as 230mm, will be employed for the trenching works.

¹ Locations captured on handheld GPS. Due to weather conditions, accuracy was as low as 20m. The map is indicative only.

4. Development Impacts

The following table will provide data on the species, tree protection zone (TPZ) and structural root zone (SRZ) of each tree.

TREE	SPECIES	DAB ²	SRZ	DBH	TPZ	TPZ AREA	NOTES
G1	<i>Eucalyptus regnans</i>	0.66	2.78	0.49	5.88	108.6M ²	
G2	<i>Eucalyptus regnans</i>	1.5	3.92	1.18	14.16	629.9M ²	
G3	<i>Eucalyptus regnans</i>	0.59	2.65	0.59	7.08	157.5M ²	
G4	<i>Eucalyptus regnans</i>	0.6	2.67	0.47	5.64	99.9M ²	Copse of 4 trees in close proximity. Largest tree will cover the group SRZ and TPZ requirement
G5	<i>Eucalyptus regnans</i>	1.56	3.99	1.24	14.88	695.6M ²	
G6	<i>Eucalyptus regnans</i>	1.26	3.65	0.98	11.76	434.5M ²	
G7	<i>Eucalyptus regnans</i>	1.63	4.06	1.34	15.00	706.9M ²	
G8	<i>Eucalyptus regnans</i>	1.42	3.83	1.11	13.32	557.4M ²	
G9	<i>Eucalyptus regnans</i>	1.18	3.55	0.89	10.68	358.3M ²	
G10	<i>Eucalyptus regnans</i>	1.86	4.29	1.69	15.00	706.9M ²	
G11	<i>Eucalyptus regnans</i>	0.94	3.22	0.81	9.72	296.9M ²	
G12	<i>Eucalyptus regnans</i>	2.27	4.67	1.84	15.00	706.9M ²	

To reduce the impact of development, there should be no traditional excavation within the SRZ. It is expected that there should be adequate scope to alter the alignment through the track to avoid this occurring, but the exact tree locations will need to be overlaid to ensure this can occur.

To reduce the likelihood that there are no long term impacts, the excavation should be overseen by an arborist, and where roots are encountered, vacuum excavation completed.

The plumbing³ that is to be installed near the existing valve will potentially encounter some roots, but this appears to be well outside the SRZ. The excavation required for this may be as large as 6m², which is a small incursion into the TPZ. Like the remainder of the works within the TPZ's, this should be completed under supervision.

5. Discussion

As drilling at 500mm may result in structural root zone damage, the proposed excavation method is likely to result in a reduced impact. As many of the trees are growing well below the track, and the surface is compacted, there may be a reduced number of roots growing in the proposed alignment.

² DAB diameter at base, DBH diameter at 1.4m.

³ This plumbing is encased and will result in the removal of roots, if they are present.

The plumbing near the bower may encounter some roots, of which these will have to be pruned out to install the infrastructure which will be encased. If this is outside the SRZ it will only result in a minor incursion.

6. Tree Protection Measures

If the current proposal proceeds, tree protection measures will have to be implemented. Due to the size of the alignment, flagging along each side of the track should be sufficient. These zones should be erected, and signage installed prior to the commencement of works.

It is important to keep the TPZ's free from the following activities:

- Machine excavation including trenching;
- Excavation for silt fencing;
- Cultivation;
- Storage;
- Preparation of chemicals, including preparation of cement products;
- Parking of vehicles and plant;
- Refuelling;
- Dumping of waste;
- Wash down and cleaning of equipment;
- Placement of fill;
- Lighting of fires;
- Soil level changes;
- Temporary or permanent installation of utilities and signs, and
- Physical damage to the tree(s).

7. Conclusion

- Although there is potential to damage some roots during these works, supervision and implementation of low impact excavation should ensure the trees are not critically impacted.

Yours sincerely,



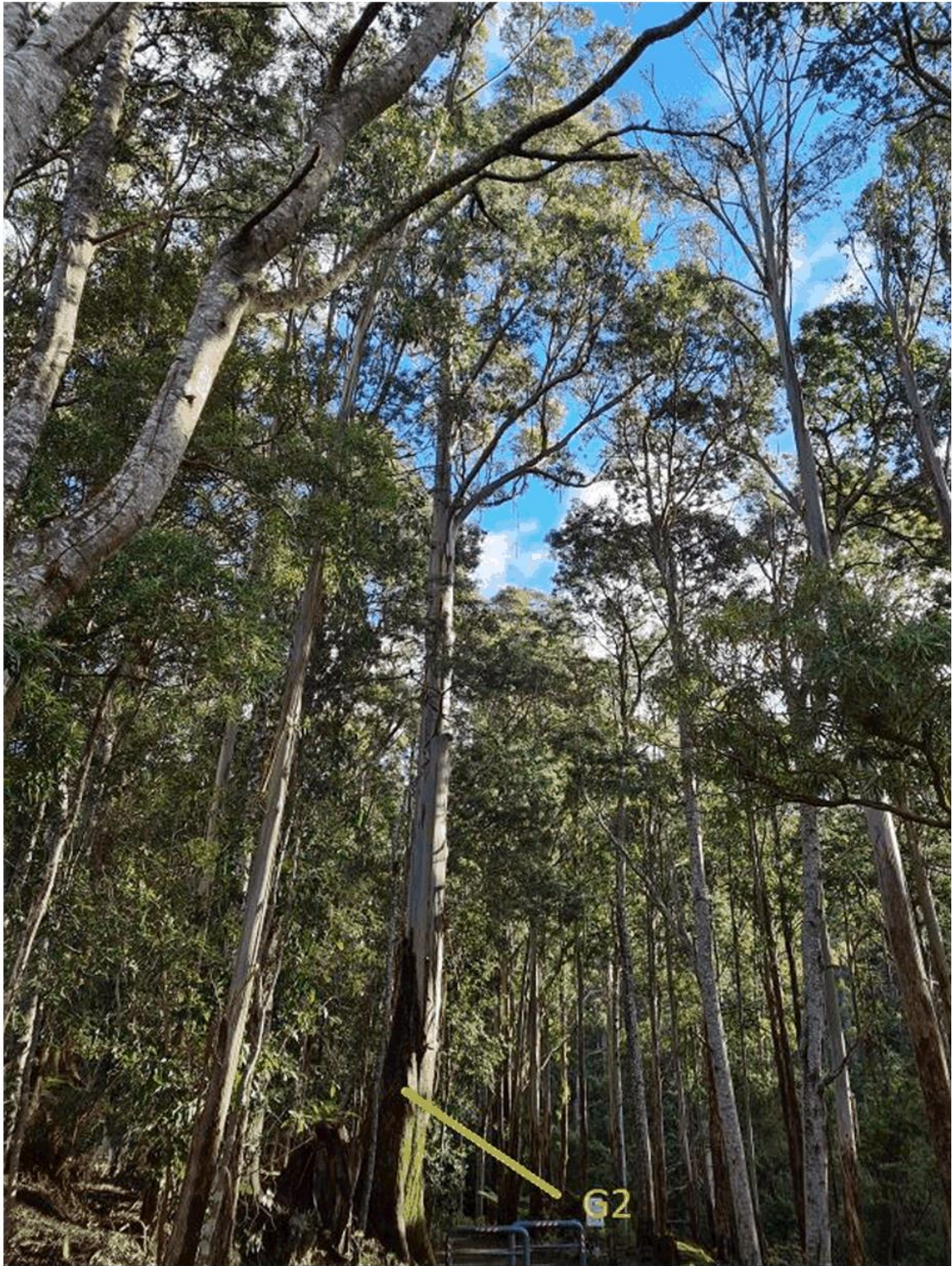
Alister Hodgman

Appendix 1 – Tree Locations (overlaid on a google earth image)



Appendix 2 – Selected images



















PURCELL

FERN TREE BOWER

HERITAGE IMPACT ASSESSMENT

MARCH 2022



Author	Date	Revision	By	Checked
PURCELL	28/02/2022	Draft for client review	LM/LBS	LBS
GPO Box 37 Hobart, TAS 7001 Australia	01/03/2022	Final Draft for client approval	LM	LBS
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HERITAGE IMPACT ASSESSMENT

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ACKNOWLEDGEMENT OF COUNTRY

We acknowledge the Traditional Custodians of Country throughout Australia and pay our respects to Elders past, present and emerging. Purcell acknowledges the Muwinina people, who are the original and current inhabitants, the traditional owners and custodians of the land this Proposal is on.

INTRODUCTION

BACKGROUND

Era Planning and Environment commissioned Purcell to prepare this Heritage Impact Assessment (HIA) on behalf of TASWATER Project Delivery Group (PDG) to accompany a Development Application for the proposed design, install, and commission, service upgrade (Proposal) at Fern Tree Bower, Fern Tree (Site), forming part of the Hobart Mountain Water Supply System (Place). The proposed service upgrade is to provide for automatic and remote control of a valve at the Site to prevent high turbidity water from entering the water supply following medium to high rainfall events.¹

The Place, which includes the Site, is Permanently Registered on the Tasmanian Heritage Register (THR) with THR ID Number: 11227.² The Place is included in Table E13.1 of the *Hobart Interim Planning Scheme 2015* (HIPS 2015, Ref No. 3285) as being of local significance.³ The Site is also within the Pipeline Track Corridor listed in Table E13.3 and outlined in Figure E13.3.1 of the HIPS 2015.⁴

The following documentation details the Proposal assessed in this HIA (see Appendix A for details):

- TASWATER Capital Delivery Office (CDO), HBTWN82 - Bower Basin, Fern Tree 0144-04 - Fern Tree Bower, Revised Review Issue B, 06/10/2021.
- TASWATER CDO, Automation of Fern Tree Bower - Minor Works Program Definition Statement, 9/11/2020.

Lucy Burke-Smith, (Associate Partner) and Linda Mott, (Heritage Consultant) of Purcell prepared this report. Lucy Burke-Smith visited the Site on Tuesday 23 November 2021 and 24 January 2022 and completed a physical inspection of the Site and its context. Unless otherwise cited, all images were taken at this site visit.

LIMITATIONS

This HIA is limited to an assessment of the potential statutory built heritage impacts of the Proposal to the setting, context, and significant fabric of the registered built features on the Place. It is based on the current statutory heritage and development controls, and non-statutory guidelines, applicable to the heritage listed Place located at Fern Tree Bower, Fern tree. Desk-based research, and client-provided information to date, form the basis of this report, no new archival research was undertaken. It does not consider the proposed works' responsiveness to the wider provisions of the *Hobart Interim Planning Scheme, 2015*, beyond that of built heritage.

All references to heritage, or heritage impacts, are to registered, built heritage only. This report does not consider other potential heritage impacts of the Proposal, including, without limitation, to landscape, vegetation, sub-surface, archaeological, moveable or indigenous heritage.

The assessment is limited by the status of the design development and program. While the principal objectives and overarching design proposal can be assessed based on available documentation there is a level of design interface, detailing and specification that will be required to further assess direct impacts to fabric and appropriate mitigating measures. This is especially the case with the proposed design, installation and commissioning tender procurement methodology. As such this Assessment outlines recommendations to mitigate impacts through further design and construction.

TERMINOLOGY

The conservation terminology used in this report is of a specific nature and is defined within The Burra Charter: '[The Australia ICOMOS Charter for Places of Cultural Significance](#)', 2013, (the Burra Charter).

¹ TASWATER Capital Delivery Office (TCDO), '20201113 - Automation of Fern Tree Bower - Minor Works Program Definition Statement', 9th November 2020, p. 1.

² Heritage Tasmania, '[Search the Tasmanian Heritage Register](#)', website, as at January 2021, accessed 26 November 2021.

³ *Hobart Interim Planning Scheme 2015* (HIPS 2015), updated 16 September 2020, Part E13.0, Table E13.1.

⁴ HIPS 2015, Part E13.0, Table E13.3.

INTRODUCTION

REFERENCES

This HIA references the following documents:

- *Historic Cultural Heritage Act 1995*, current from 5 December 2021;
- Historic Heritage Code of the *Hobart Interim Planning Scheme, 2015* (HIPS 2015); and
- Futurepast , 'Hobart Mountain Water Supply System, Conservation Management Plan', prepared for, 2012.

UNDERSTANDING THE SITE

LOCATION

Fern Tree Bower is located at 467975E 654575N within Wellington Park, west of Fern tree, and southwest of Hobart. Fern Tree Bower forms part of the Hobart Mountain Water Supply System. The Place is included on Central Plan Register CCCC (see Appendix B, page 17).

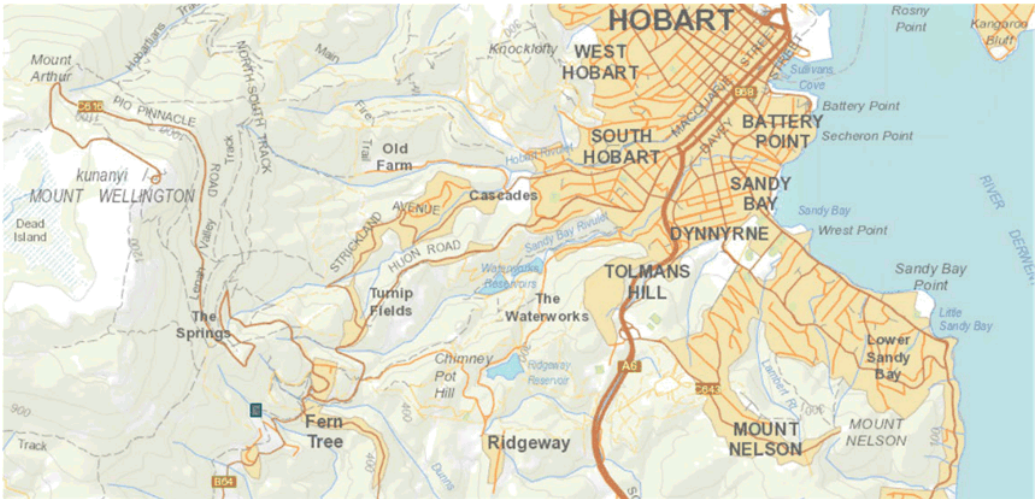


Figure 1: The Place's approximate location indicated as a blue square. (Source: [ListMap](#))

DESCRIPTION

The Description from the Tasmanian Heritage Register (THR) Datasheet is:

The original Fern Tree Bower was both part of the water supply and a destination for recreational visitors, with a mix of formal plantings and bush surrounding the site. The area was completely washed out in the 1960 flood, and the present vegetation is native regrowth complemented by some plantings (including tree ferns) that were made along the track soon after the flood. Following the floods the date stone was recovered from the creek and relocated to its present position.⁵

5 THC, THR Datasheet, THR ID 11227.

UNDERSTANDING THE SITE

CURRENT SITE IMAGES



Figure 2: Access track nominated for water and electrical services trench excavation in previously disturbed area.



Figure 3: Bower and area nominated for electrical pits



Figure 4: Bower wall nominated for the addition of a platform and switchboard



Figure 5: Existing Bower infrastructure with area nominated for precast concrete pit and gatic cover.



Figure 6: End of Clegg Street, where the pipeline track crosses (blue dotted line approximates the crossing). Proposed location of the TasNetworks Meter Panel Cabinet to the bottom right, approximately where the Pipelin Track sign is.

UNDERSTANDING THE SITE

STATUTORY LISTINGS AND OVERVIEW OF SIGNIFICANCE

Historic Cultural Heritage Act (TAS) 1995

Fern Tree Bower forms part of the Hobart Mountain Water Supply System, which is permanently registered on the Tasmanian Heritage Register, with THR ID 11227. The THR Datasheet identifies that the Site meets the following criteria from the *Historic Cultural Heritage Act 1995*:⁶

- a) *The place is important to the course or pattern of Tasmania's history*
- b) *The place possesses uncommon or rare aspects of Tasmania's history.*
- c) *The place has the potential to yield information that will contribute to an understanding of Tasmania's history.*
- d) *The place is important in demonstrating the principal characteristics of a class of place in Tasmania's history.*
- e) *The place is important in demonstrating a high degree of creative or technical achievement.*
- f) *The place has a strong or special association with a particular community or cultural group for social or spiritual reasons.*
- g) *The place has a special association with the life or works of a person, or group of persons, of importance in Tasmania's history.*

The Hobart Mountain Water Supply System non-statutory summary Statement of Significance is:

The Hobart Mountain Water Supply System is a substantially intact work of engineering with surviving elements that span the major phases of expansion between the 1860s and the 1920s. It is unique amongst the water supply systems for major Australian cities as the system is still largely connected and can still be experienced as an entire system from the furthest- flung intakes at North West Bay River and on Mount Wellington to the major reservoirs at Waterworks Reserve and Ridgeway Park, which still service the city of Hobart. This survival is largely due to the rugged topography the original system followed; this has not been significantly encroached upon by urban and suburban development, as has occurred in other capital cities.

While many of the early elements of the system have been bypassed, almost all of the key original elements of the system survive and can be understood in terms of their function within the system. The presence of the sandstone troughing, visible above ground for much of the lower part of the system, and the Pipeline Track itself, provide a linking element that does not exist in the systems of Sydney, Melbourne and Brisbane. The system is of high aesthetic and recreational value, due to the bushland setting, residential, and parkland areas through which the system flows and the robust but attractive examples of the early waterworks technology, exemplified by structures such as Reservoirs Nos 1 and 2, the Receiving House, Gentle Annie Falls, the Pipe-Head Well and the Aqueducts spanning Longhill and Sassafras Creeks. The system also has limited potential for archaeological research, and throughout its history has had a strong association with Hobart City Council.⁷

Hobart Interim Planning Scheme 2015

The Place is identified as Locally Significant in Table E13.1 of the HIPS 2015 (Ref. No. 3285). Table E13.1 includes a general description of 'Archaeological Remains'.⁸ The Site is not identified in Table E13.2 as being within a Heritage Precinct.

The Site is included as Map E13.1 'Fern Tree Cultural Landscape Precinct' as shown in Figure 7. The Fern Tree Cultural Landscape Precinct is not listed in Table E13.3 of the HIPS 2015.⁹

6 THC, THR Datasheet, THR ID 11227.

7 THC, THR Datasheet, THR ID 11227

8 HIPS 2015, updated 18 November 2021, Part E13.0, Table E13.1.

9 HIPS 2015, updated 18 November 2021, Part E13.0, Table E13.3

UNDERSTANDING THE SITE

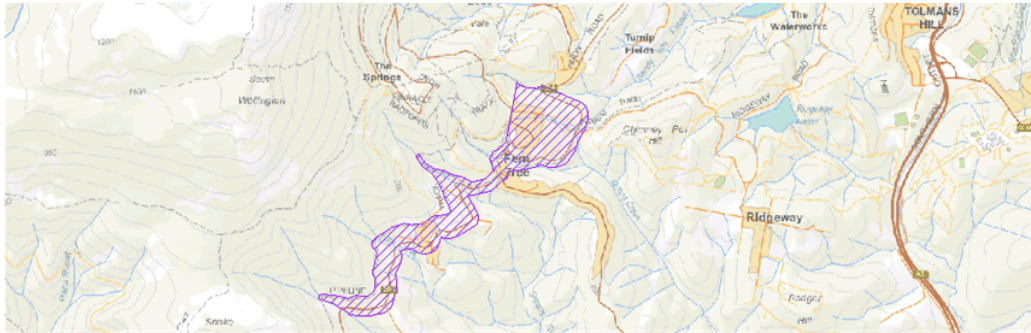


Figure 7: 'Fern Tree Cultural Landscape Precinct'. (Source: HIPS 2015, Map E13.1).

The Site is within the 'Pipeline Track Corridor' (Ref. No. 3) in Table E13.3 (Cultural Landscape Precincts) and included in Figure E13.3.1 (Fern Tree Cultural Landscape Precinct) of the HIPS 2015.

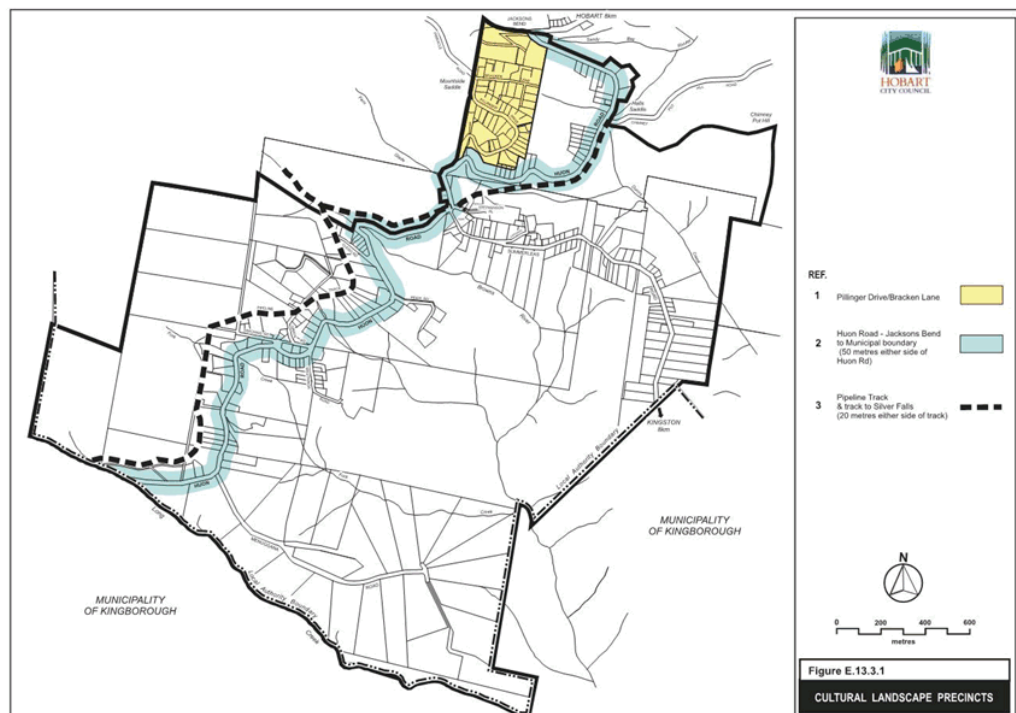


Figure 8: Map E13.1 'Fern Tree Cultural Landscape Precinct'. (Source: HIPS 2015, Map E13.1).

The Statement of Historic Cultural Heritage Significance for the 'Pipeline Track Corridor' included in Table E13.3 is:

The Pipeline Track landscape consists of a winding track along the contour from Halls Saddle to Long Creek. The track is heavily canopied by forest with an under storey of scrub dominant along track sides. Shadows, shade and darker colours are characteristic. In damper wetter parts of the tracks or on south facing slopes or at creek crossings, a variety of mosses, lichens, liverworts, man-ferns, and other ferns are readily encountered making even the shortest walk quite a unique experience.

The significance of the landscape stems from its heritage value as an integral section of the Hobart Waterworks engineering structures that demonstrate a high degree of technical achievement and creative stonework design

UNDERSTANDING THE SITE

during the nineteenth century, the visual landscape qualities, scenic variation and an outstanding bushland character.¹⁰

Table E13.3 has no Design Criteria / Conservation Policies, Particular Exemptions from listing or Particular Exempt Development Criteria for the Pipeline Trace Corridor.

NON-STATUTORY LISTINGS

Fern Tree Bower is not included on the Register of the National Trust of Australia, nor the Register of the National Estate, (non-statutory archive).

CONSERVATION MANAGEMENT PLAN

The Conservation Management Plan for the Hobart Mountain Water Supply System notes the Fern Tree Bower as:

... a popular recreational spot due to its picturesque nature and many small shacks were built in the area as holiday retreats for the residents of Hobart. Only archaeological traces of this residential use remain and much of the Bower itself was destroyed in a flood in 1960.¹¹

The weir and its surroundings have been heavily modified with the addition of a sluice gate and a considerable area of ground has been concreted. Fern Tree Bower is perhaps the place with the highest social significance along the pipeline route as for many years it was a popular recreation spot and a place that people from Hobart would go throughout the late 19th and early 20th century to picnic among the large fern trees. The area was however heavily damaged by a flood in 1960 and much of the original fabric and vegetation was lost at that time. The flood is commemorated via a monument on the site. The area was later revegetated by Hobart City Council.¹²

The Bower as it currently stands bears little resemblance to its pre-1960 configuration. At present, the Bower feels overgrown and enclosed, providing little in the way of areas for recreation or picnicking use. All that survives of the original Bower construction is the date stone which was relocated following the floods.¹³

The following policies¹⁴ and recommendations¹⁵ are relevant to the Proposal:

5.1 General Conservation Policy

- The Hobart Mountain Water Supply System will be managed in a manner which recognises the cultural significance of the System, recognises that the System has multiple values for historical recreational and operational reasons and strives to balance these multiple values in a sympathetic manner.

5.2 Recognition of multiple values

...

- The operational parts of the System, which continue to form part of Hobart's water supply system, take much of their significance from their continued function. Efforts will be made to accommodate that continued function in ways which minimise impacts to the historic natural and recreational values of the System.

5.3 Conservation of significant fabric

...

- Wherever possible, reasonable compromise will be made to keep operational parts of the System in service. Efforts will be made to keep operational changes within areas of the later phases of the System, wherever possible. This may involve the introduction of new fabric within historic areas to maintain function.
- Alterations to operational fabric will take into account heritage values and will seek to minimise impacts to those values.

¹⁰ HIPS 2015, updated 18 November 2021, Part E13.0, Table E13.3

¹¹ Futurepast, 'Hobart Mountain Water Supply System Conservation Management Plan' (CMP), Report for Hobart City Council, March 2021, p 18.

¹² Futurepast, 'CMP', p 58.

¹³ Futurepast, 'CMP', p 18.

¹⁴ Futurepast, 'CMP', pp 96-97.

¹⁵ Futurepast, 'CMP', p 99

UNDERSTANDING THE SITE

Recommendation 3 – Retain the System in operation¹⁶

A key aspect of the significance of the System is the fact that it continues to function nearly 150 years after its construction. While modified and added to, these modifications have generally not obscured the earlier phases of the System, allowing it to be understood as a functional whole. Retaining this function is critical to retaining the significance of the System.

- 3.1 Retain the operational components of the Mountain Water Supply System in service, including intakes, weirs, pipe sections and other functional components wherever they can be sympathetically upgraded to meet operational, safety and water quality requirements.
- 3.3 Sympathetic modification to historic fabric is permissible when the alternative may be the decommissioning of an historic feature.
- 3.4 Any potential modifications should be reviewed for heritage impacts and those impacts should be minimised as much as possible during the design phase.
- 3.5 Modifications made to continue water supply operations should be sympathetic in terms of function and appearance and should not obscure historic fabric.¹⁷

Recommendation 4 – Introduced fabric¹⁸

- 4.1 New fabric should not disrupt the essentially natural and industrial character of the System and the Track.

¹⁶ Futurepast, 'CMP', pp 99-100

¹⁷ Futurepast, 'CMP', p 99

¹⁸ Futurepast, 'CMP', p 100

HERITAGE IMPACT ASSESSMENT

PROPOSED WORKS

The scope of works is summarised as:¹⁹

Project Scope of Works

Design, installation and commissioning of the following:

- a Mains Power power supply to the Bower fed from a meter panel at the top of Clegg Road;
- an actuated butterfly valve on the outlet of The Bower;
- a turbidity instrument at the Bower, with waste stream fed back into the raw water supply;²⁰
- excavation to a depth of 1.5m will be required to install a 1.8m x 2.4m precast concrete pit to house the new equipment. The gatic cover to the new precast concrete pit will be either galvanised steel or aluminium, which will discolour rapidly in the environment like other covers on the pipeline track, will sit flush with the ground and will be engineered to suit trafficable areas;²¹
- an Remote Terminal Unit (RTU) Turbidity Monitoring Cabinet at the Bower to allow automatic and remote control of the actuated valve (communications to the outside network is from this point);²²
- A 4G located in Metering cabinet at the top of Clegg Road;
- Installation of approximately seven electrical pits: three around the actual bower and four along the Pipeline Track up to the new meter panel cabinet (approximately one every 50 m). The pit covers will be concrete and, over time the lids are expected to fill up with dirt, leaves etc. and subsequently be barely visible to the public users of the track.
- The relocation of an existing interpretive sign relating to the Pipeline Track, currently located where the new meter panel is designated to go.²³
- Design shall include a Hazop/Design Review Workshop.
- Engineering & Drafting – Mechanical, Electrical and SCADA/Communications (if required)
- All other works may be undertaken as Design and Construct.

The drawing package (see Appendix A) includes a switchboard and platform to be attached to the existing Bower wall (see Figure 4), modifications to existing pipes, connection of existing pipes to the proposed precast concrete pit with gatic cover.

A sucker truck will be used to uncover the existing pipe. The condition of the pipe will be assessed once uncovered, to ascertain if the pipe will be suitable for use. The new pit will be constructed around the existing pipe, and the existing pipe will be cut and welded to in-pit flanges to connect it to the new valve.²⁴

Additional requirements for the proposed works include:

- The installation must be as unobtrusive as possible, design to be minimal impact on the aesthetics of the heritage listed Mount Wellington Water Supply System.²⁵

TASWATER Capital Delivery Office (CDO), HBTWN82 - Bower Basin, Fern Tree 0144-04 - Fern Tree Bower, Revised Review Issue B, 06/10/2021, and TASWATER CDO, Automation of Fern Tree Bower - Minor Works Program Definition Statement, 9/11/2020, of the DA package have further details of the proposal (see Appendix A for details).

19 TASWATER CDO, Automation of Fern Tree Bower - Minor Works Program Definition Statement, 9/11/2020

20 TCDO, '20201113 - Automation of Fern Tree Bower', p 2.

21 Era Planning and Environment (era), 'TasWater Infrastructure Upgrades - Fern Tree Bower Planning permit application', Draft_V1, 25/02/2022, p 3.

22 TCDO, '20201113 - Automation of Fern Tree Bower', p 2.

23 Era Planning and Environment (era), 'TasWater Infrastructure Upgrades - Fern Tree Bower Planning permit application', Draft_V1, 25/02/2022, p 3.

24 TASWATER, email, dated 17/2/2022.

25 TCDO, '20201113 - Automation of Fern Tree Bower', p 2.

HERITAGE IMPACT ASSESSMENT

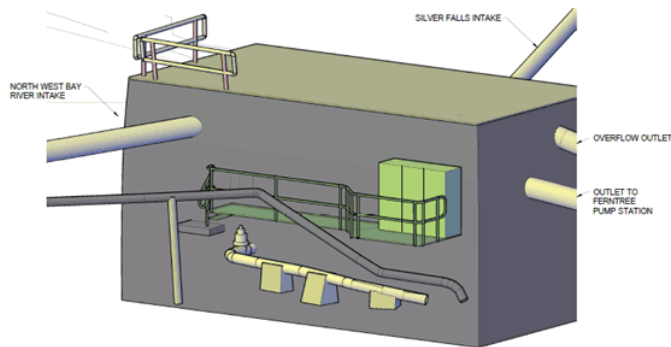


Figure 9: Isometric view, indicative proposed platform. (Source: TASWATER CDO Drawing, 0144-DWG-HBTWN82-GA-00014, Rev B, 06/10/2021)



Figure 10: Indicative example of electrical pitcovers (source: TASWATER, email, dated 17/2/2022)

GUIDANCE DOCUMENTATION

This assessment follows the best practice management framework for historic sites contained in:

- The Burra Charter: 'The Australia ICOMOS Charter for Places of Cultural Significance', 2013.
- Heritage Tasmania, 'Works Guidelines for Historic Heritage Places', for the Tasmanian Heritage Council, November 2015.

ASSESSMENT METHODOLOGY

This assessment follows the provision of preliminary heritage advice through an iterative design process, intended to mitigate potential impact to the significance and values of the place. It is based on observations made during a site visit and a review of the design proposal. The assessment considers the potential for detrimental impacts as a result of the proposal, as well as all mitigation measures proposed, within the context of the *Historic Cultural Heritage Act 1995* and the Historic Heritage Code, HIPS 2015. Proposed works have been assessed for their impact to the heritage value of the Heritage Place as identified in its Statement of Significance, and the place's setting and context. The Proposal has also been considered against non-statutory guidelines published by Australia ICOMOS. Direct (fabric) and indirect (visual) impacts are both considered in this assessment.

HERITAGE IMPACT ASSESSMENT

ASSESSMENT AGAINST HISTORIC HERITAGE CODE PROVISIONS OF THE HIPS 2015

The Site is listed in Table E13.1 as a Heritage Place, and in Table E13.3 as being within the 'Pipeline Track Corridor' Cultural Landscape Precinct listed in Table E13.3 and outlined in Figure E13.3.1 of the HIPS 2015. The following tables assess the responsiveness of the proposal against the Development Standards and specific Performance Criteria for Heritage Places in E13.7 and Cultural Landscape Precincts in Table E13.9 of the Historic Heritage Code.

E13.7 DEVELOPMENT STANDARDS FOR HERITAGE PLACES	
E13.7.1 Demolition Objective: To ensure that demolition in whole or part of a heritage place does not result in the loss of historic cultural heritage values unless there are exceptional circumstances.	
PI Demolition must not result in the loss of significant fabric, form, items, outbuildings or landscape elements that contribute to the historic cultural heritage significance of the place unless all of the following are satisfied: <ul style="list-style-type: none"> (a) there are, environmental, social, economic or safety reasons of greater value to the community than the historic cultural heritage values of the place; (b) there are no prudent or feasible alternatives; (c) important structural or façade elements that can feasibly be retained and reused in a new structure, are to the retained; (d) significant fabric is documented before demolition. 	The proposal involves partial demolition of the Bower which will not be visible. These works are required for environmental and safety reasons and will ensure the continued function of the infrastructure in accordance with the policies and recommendations of the CMP (see Conservation Management Plan section, page 7). The Proposal does not result in the loss of historic cultural heritage values. It is consistent with the CMP objective that operational parts of the System continue to form part of Hobart's water supply system. ²⁶
E13.7.2 Buildings and Works other than Demolition Objective: To ensure that development at a heritage place is: <ul style="list-style-type: none"> (a) undertaken in a sympathetic manner which does not cause loss of historic cultural heritage significance; and (b) designed to be subservient to the historic cultural heritage values of the place and responsive to its dominant characteristics. 	
PI Development must not result in any of the following: <ul style="list-style-type: none"> (a) loss of historic cultural heritage significance to the place through incompatible design, including in height, scale, bulk, form, fenestration, siting, materials, colours and finishes; (b) substantial diminution of the historic cultural heritage significance of the place through loss of significant streetscape elements including plants, trees, fences, walls, paths, outbuildings, and other items that contribute to the significance of the place. 	The proposed development responds to the dominant industrial character of the place, in keeping the CMPs guidance that new works 'should not disrupt the essentially natural and industrial character'. New fabric is readily identifiable as such. The proposed works to the Bower are compatible in design in that they retain the industrial characteristics of the infrastructure. Engineering and Site requirements will determine the number and locations of some equipment, which, wherever possible, will be sited to mitigate visual impacts. In this respect the Proposal is consistent with the following policies of the CMP:
P2 Development must be designed to be subservient and complementary to the place through characteristics including: <ul style="list-style-type: none"> (a) scale and bulk, materials, built form and fenestration; (b) setback from frontage; (c) siting with respect to buildings, structures, and listed elements; (d) using less dominant materials and colours 	<ul style="list-style-type: none"> • Modifications made to continue water supply operations should be sympathetic in terms of function and appearance and should not obscure historic fabric. • New fabric should not disrupt the essentially natural and industrial character of the System and the Track.²⁷

²⁶ Futurepast, 'CMP', p 96.

²⁷ Futurepast, 'CMP', pp 99-100.

HERITAGE IMPACT ASSESSMENT

P3	Materials, built form and fenestration must respond to the dominant heritage characteristics of the place, but any new fabric should be readily identifiable as such.	Visual impacts to the place are mitigated by the discrete siting and placement of infrastructure on the face of the bower not fronting the path network.
P4	Extensions to existing buildings must not detract from the historic cultural heritage significance of the place.	The Proposal does not result in substantial diminution of the historic cultural heritage significance of the place. There will be no impact to significant plants, trees, fences or paths. Potential impacts to other plants and trees are to be mitigated through construction methodology which requires a hierarchy and flexibility of methodology.
P5	New front fences and gates must be sympathetic in design, (including height, form, scale, and materials), to the style, period, and characteristics of the building to which they belong.	Not applicable.
P6	The removal of areas of landscaping between a dwelling and the street must not result in the loss of elements of landscaping that contribute to the historic cultural significance of the place	Not applicable.
E13.7.3 Subdivision		
Objective: To ensure that subdivision of part of a heritage place maintains cohesion between the elements that collectively contribute to an understanding of historic cultural heritage values, and protects those elements from future incompatible development.		
PI	A proposed plan of subdivision must show that historic cultural heritage significance is adequately protected by complying with all of the following: (a) ensuring that sufficient curtilage and contributory heritage items (such as outbuildings or significant plantings) are retained as part of any title containing heritage values; (b) ensuring a sympathetic pattern of subdivision; (c) providing a lot size, pattern and configuration with building areas or other development controls that will prevent unsympathetic development on lots adjoining any titles containing heritage values, if required.	Not directly applicable. Tree ferns potentially impacted by the works are nominated for replanting in a suitable nearby location.
E13.9 DEVELOPMENT STANDARDS FOR CULTURAL LANDSCAPE PRECINCTS		
E13.9.1 Demolition		
Objective: To ensure that demolition in whole or part of buildings or works within a Cultural Landscape Precinct does not result in the loss of historic cultural heritage values unless there are exceptional circumstances.		
PI	Demolition must not result in the loss of the following: (a) buildings or works that contribute to the historic cultural heritage significance of the precinct; (b) fabric or landscape elements, including plants, trees, fences, walls, paths, outbuildings and other items that contribute to the historic cultural heritage significance of the precinct; unless both of the following apply: i. there are environmental, social, economic or safety reasons of greater value to the community	The proposal involves partial demolition of the Bower which will not be visible. These works do not result in loss of buildings or works which contribute to the historic cultural significance of the precinct. While noting that the Place is not listed for its landscape significance, which is considerably altered since the 1960s flood, tree ferns potentially impacted by the works are nominated for replanting in a suitable nearby location. Overall the Proposal does not result in the loss of historic cultural heritage values. It is consistent with the CMP

HERITAGE IMPACT ASSESSMENT

<p>than the historic cultural heritage values of the place; ii there are no prudent or feasible alternatives.</p>	<p>objective that operational parts of the System continue to form part of Hobart's water supply system.²⁸</p>
<p>E13.9.2 Buildings and Works other than Demolition</p> <p>Objective:</p> <p>To ensure that development undertaken within a Cultural Landscape Precinct is sympathetic to the character of the precinct.</p>	
<p>P1 Design and siting of buildings and works must not result in detriment to the historic cultural heritage significance of the precinct, as listed in Table E13.3.</p>	<p>The proposed works to the Bower are compatible in design in that they are sympathetic to the industrial characteristics of the existing infrastructure.</p> <p>The proposed TasNetworks Meter Panel Cabinet at the end of Clegg Road is on a portion of the track that passes through a semi-rural residential area. The proposed location at the end of Clegg Road (see Figure 6) contains driveways, letterboxes, fences and gates, the asphalt road surface, electrical poles and wires, and remnant portions of vegetation. This section of the track exhibits few of the significant features identified in the Statement of Historic Cultural Heritage Significance for the 'Pipeline Track Corridor' included in Table E13.3 of the HIPS 2015, being:</p> <p><i>The significance of the landscape stems from its heritage value as an integral section of the Hobart Waterworks engineering structures that demonstrate a high degree of technical achievement and creative stonework design during the nineteenth century, the visual landscape qualities, scenic variation and an outstanding bushland character.</i></p> <p>It is our opinion that it will result in no detriment to the historic cultural heritage significance of the precinct as listed in Table E13.3. Should the potential impacts of this infrastructure be of concern consideration could be given to a role with respect to interpretation or visitor information.</p> <p>Engineering and Site requirements will determine the size, number and locations of some equipment, which, wherever possible, will be sited to mitigate visual impacts. In this respect the Proposal is consistent with the following policies of the CMP:</p> <ul style="list-style-type: none"> • <i>Modifications made to continue water supply operations should be sympathetic in terms of function and appearance and should not obscure historic fabric.</i> • <i>New fabric should not disrupt the essentially natural and industrial character of the System and the Track.²⁹</i>
<p>P2 Design and siting of buildings and works must comply with any relevant design criteria / conservation policy listed in Table E13.3.</p>	<p>No relevant design criteria / conservation policy is listed in Table E13.3.</p>

²⁸ Futurepast, 'CMP', p 96.

²⁹ Futurepast, 'CMP', pp 99-100.

HERITAGE IMPACT ASSESSMENT

E13.9.3 Subdivision		
Objective:		
To ensure that subdivision within a Cultural Landscape Precinct retains the character of the precinct and does not increase the likelihood of incompatible development.		
P1	Subdivision must not result in any of the following: Subdivision must not result in any of the following: (a) detriment to the historic cultural heritage significance of the precinct, as set out in Table E13.3; (b) a pattern of subdivision unsympathetic to the historic cultural heritage significance of the precinct; (c) potential for a confused understanding of the development of the precinct; (d) an increased likelihood of future development that is incompatible with the historic cultural heritage significance of the precinct	Not applicable. The proposal does not make an application for subdivision.
P2	Subdivision must comply with any relevant design criteria / conservation policy listed in Table E13.3.	

ASSESSMENT AGAINST THE WORKS GUIDELINES FOR HISTORIC HERITAGE PLACES

The Site is identified as a Heritage Place under the *Historic Cultural Heritage Act 1995*. The following table assesses the Proposal against the relevant Works Guidelines for Historic Heritage Places, 2015.

9.	ALTERATIONS, ADDITIONS AND EXTENSIONS	
9.1	Internal Partitions	Not applicable
9.2	Alterations to significant structures	All significant characteristics of the Bower Wall are retained, and the proposed works are reversible. Engineering and Site requirements will determine the number and locations of some equipment, which, wherever possible, will be sited to mitigate visual impacts. Generally the Proposal is in line with the appropriate outcomes of this guideline.
9.3	Works to nonsignificant structures (ie: modern buildings, sheds, garages)	Not applicable
9.3	Internal alterations– (generally)	Not applicable
9.5	Additions or extensions	Not applicable
11.	NEW SERVICES	
11.1	New services– (generally)	Engineering and Site requirements will determine the number and locations of some equipment, which, wherever possible, will be sited to mitigate visual impacts. The proposed works are reversible. Generally the Proposal is in line with the appropriate outcomes of this guideline.

HERITAGE IMPACT ASSESSMENT

SUMMARY OF ASSESSMENT

The Proposal documentation has been prepared for a design, installation and commissioning tender. The documentation provided at this time is therefore indicative, rather than definitive. Engineering, services co-ordination, design detailing and specification will follow the guidance in the provided documentation, but will also respond to Site requirements. A full assessment of potential fabric impacts and mitigating measures is therefore not possible at this stage. Notwithstanding, the principal objective of this assessment is to determine if the Proposal is likely to impact the historic cultural heritage significance and setting of Fern Tree Bower. In this regard our assessment is definitive.

Subject to the resolution of minor detailing and design refinement the service upgrade Proposal will not adversely impact on the historic cultural heritage significance or values of the Place or Site. The Proposal to provide automatic and remote control of a valve to safely and efficiently ensure the quality of the water entering Ridgeway Dam, is consistent with the CMP objectives included under 'Conservation Management Plan' (at page 7), and the Burra Charter Article 7.1: 'Where the use of a place is of cultural significance it should be retained'.

It is our assessment that the Proposal allows for the continuation of the historic and significant operation of the Hobart Mountain Water Supply System as a whole. This represents a positive heritage outcome for the Site and the Place.

The following recommendations are intended to further mitigate the potential impacts of the proposal:

- The installation must be as unobtrusive as possible, design to be minimal impact on the aesthetics of the heritage listed Mount Wellington Water Supply System,³⁰ as per the Project scope.
- In line with the Works Guidelines,³¹ any fixings into the external walls should be with noncorrosive materials and into the mortar joints rather than the face of the stone or brick units. Penetrations for cables or pipes should also be through mortar joints where possible.
- Hobart City Council or the Heritage Advisory Group may consider usage of the TasNetworks Meter Panel Cabinet for interpretive or other artwork at a later stage to mitigate any potential impacts.
- The works should be continually monitored with appropriate hold and witness points to ensure sound heritage outcomes.
- As-built documentation should be stored in agency records to inform future management and maintenance.

While it is noted that ground-penetrating radar (GPR) has been undertaken in many areas of the track previously, and that this track has been excavated during previous works. The Place's THR listing, non-statutory summary statement of significance also notes that 'The system also has limited potential for archaeological research'.³² The following recommendation is offered:

- All in ground works should be guided by the Tasmanian Heritage Council Practice Note 2 *Managing Historical Archaeological Significance in the Works Process* and any conditions of consent deemed appropriate to manage potential impact to archaeology.

30 TCDO, '20201113 - Automation of Fern Tree Bower', p 2.

31 Heritage Tasmania, 'Works Guidelines for Historic Heritage Places', for the Tasmanian Heritage Council, November 2015, p 48.

32 THC, THR Datasheet, THR ID 11227.

APPENDICES

APPENDIX A REFERENCED DOCUMENTS AND DRAWINGS LIST

TASWATER Capital Delivery Office (CDO), HBTWN82 - Bower Basin, Fern Tree 0144-04 - Fern Tree Bower, Revised Review Issue B, 06/10/2021

Author	Drawing Name	No.	Rev	Date
TASWATER	Turbidity Sensor Layout Plan	0144-DWG-HBTWN82-GA-0001	B	2/09/2021
	Turbidity Sensor Site Plans - Access Track	0144-DWG-HBTWN82-GA-0002	B	2/09/2021
	Turbidity Sensor Site Plan - Bower	0144-DWG-HBTWN82-GA-0003	B	2/09/2021
	Turbidity Sensor Switchboard Platform Details	0144-DWG-HBTWN82-GA-0004	B	2/09/2021
	Turbidity Sensor Silver Falls Intake Modifications	0144-DWG-HBTWN82-GA-0005	B	2/09/2021
TASWATER	Automation of Fern Tree Bower - Minor Works Program Definition Statement	0001-FRM-PD-0009_2		9/11/2020

APPENDICES

APPENDIX B CENTRAL PLAN REGISTER CCCC

CPR CCCC, 'Hobart Mountain Water Supply System Section C, Ferntree To Neika', prepared by Heritage Tasmania for the Tasmanian Heritage Council, 20 April, 2011.

Purcell Tasmania:

PO Box 37,
Hobart, TAS 7001
Nominated Architect:
Lucy Burke-Smith ARN 898 CC6606

Purcell Victoria:

Level 3, 124 Exhibition Street,
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Architect Director:
Tracey Skovronek 20440
ARBV Architectural Company Registration: C51926

Purcell New South Wales:

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20-40 Meagher Street,
Chippendale, NSW 2008
Nominated Architect NSW:
Tracey Skovronek 11029

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*Hong Kong, Bristol, Cambridge, Canterbury,
Cardiff, Colchester, Leeds, London,
Manchester, Norwich, Oxford, York*



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23 June 2022

Ben Ikin
Senior Statutory Planner
City Life

By email: coh@hobartcity.com.au

Dear Ben,

RESPONSE TO REQUEST FOR FURTHER INFORMATION
FERN TREE BOWER (PLN-22-138)

Please find a landslide risk analysis, prepared by Tasman Geotechnics, and submitted in response to the further information request issued by Council on 16 May 2022.

I trust that this will satisfy the further information response and the application can proceed to advertising. Please feel free to call me if any further clarification is required.

Yours sincerely,

A handwritten signature in black ink, appearing to be 'Sarah'.

Sarah Silva
Senior Planner



21 June 2022

TasWater CDO
GPO Box 139
HOBART 7001

Attention: Matthew Palmer

RE: Landslide Risk Assessment
Automated Valve Infrastructure
Fern Tree Bower, Fern Tree

1 INTRODUCTION

Tasman Geotechnics were commissioned by TasWater CDO to undertake an assessment of landslide risk at the Fern Tree Bower in the context of proposed upgrade works, following a request from the Hobart City Council and based on the requirements of the Wellington Park Management Plan.

The Fern Tree Bower is located adjacent to Browns River, about 175m northwest of the northern termination of Clegg Road at Fern Tree, within Wellington Park.

Wellington Park is set aside as a reserve under the Wellington Park Act (1993) and the Wellington Park Management Plan (2013) provides objectives, policies and actions related to the management of the reserve.

2 BACKGROUND INFORMATION

2.1 Management Plan Requirements

The Wellington Park Management Plan (2013) provides standards for Use and Development, and specifically Issue 8 (page 147) addresses Natural Hazards.

The Objective is that:

Areas subject to natural hazards will be managed to protect life, property and land, and to minimise the need for remedial or engineering works and long term impacts on the Park's values

The Acceptable Solutions are:

A8.1 Hazard Avoidance and Mitigation

Buildings and structures, other than walking tracks constructed in accordance with a walking track strategy, do not involve cut and fill of more than 1m and must not be located within a buffer area, specified in accordance with this Management Plan, of a water body, wetland or watercourse

Tasman Geotechnics Pty Ltd ABN 96 130 022 589
16 Herbert Street, Invermay
PO Box 4026, Invermay TAS 7248
T 6338 2398
E office@tasmangeotechnics.com.au

Reference: TG22118/1 - 01letter

And

The proposed use or development is accompanied by a geotechnical report from a suitably qualified person stating that there is an acceptable risk of instability.

2.2 Fern Tree Bower

In common usage the term 'bower' refers to a shady garden shelter or retreat. The phrase 'Fern Tree Bower' may be used on maps and in texts as a reference to the location itself, which has been used as a picnic area/tourist attraction since at least the mid 1860's. A water collection point was established at the Bower in the 1800's, and over time the infrastructure itself (particularly the concrete tank) has also taken on the name 'Fern Tree Bower'. For the purposes of this report, the term 'Fern Tree Bower' refers to the TasWater infrastructure (particularly the tank) at the site, and not to the general locality unless otherwise specified.

The infrastructure consists of a rectangular concrete tank (c. 5 x 9m) with an internal divider which receives (piped) inflows from the North West Bay River and Silver Falls (Browns River), which is then piped out to the Fern Tree pump station. Overflow is discharged back into Browns River. If the turbidity of the water becomes excessive, a valve may be manually closed to prevent the water from the Bower from flowing to the pump station.

2.3 Acceptable Risk

In the context of landslides, risk may refer to a risk to life, risk to property or more commonly both. The Fern Tree Bower is neither habitable, nor is it manned in the sense that people are frequently or regularly at the site, and hence there is no credible risk to life associated with the Bower.

Accordingly, the risk to be considered is the risk to property only.

Acceptable levels of risk for property loss are rarely quoted in literature. AGS (2007d) suggests the acceptable qualitative risk to a property may be based on the Importance Level of the Structure, which is in turn derived from the Building Council of Australia (BCA) Guidelines. For a Level 1 Structure (buildings or structures generally presenting a low risk to life and property, including other property) the suggested upper limit of acceptable qualitative risk to property is Moderate for all slopes (including existing landslides).

Hence, a Moderate level of property risk is adopted as an acceptable risk for the purposes of this assessment.

2.4 Geology

The Mineral Resources Tasmania Digital Geological Atlas, 1:25,000 Series, Taroona sheet, shows the surface geology at the site is mapped as Permian aged sedimentary rocks of the Lower Parmeener Supergroup, described as "*Generally unfossiliferous glaciomarine interbedded non-fissile and fissile siltstone and silty sandstone, with common bioturbation and limestones, rare pebbly beds and fossiliferous beds; top beds of laminated grey to brown siltstone...*".

The site is located at about 460m elevation (AHD). Above about 540m elevation the geology passes (conformably or semi-conformably) into Upper Parmeener Supergroup rocks. There are areas of Quaternary aged talus (largely derived from the Upper Parmeener Supergroup rocks) mapped on the east facing slopes on the southern side of the Browns River valley relatively close to the site, but these are not mapped as extending into the stream course or onto the area of the Bower itself.

2.5 Topographic Setting

The site is located in a south-east trending valley west of Fern Tree, one of several similarly orientated valleys containing streams draining the foothills on the south-eastern flank of kunanyi/Mt Wellington. The site is densely vegetated with eucalypt forest (both wet and dry forest types occur in the area).

Browns River flows through the valley in a south-easterly direction, and the slopes are mostly locally steeply south facing (on the northern side of the stream) or east facing (on the southern side of the

stream). The tank is located about 10m north of the stream, and several meters vertically above the stream. Walking tracks (the Pipeline Track and Silver Falls Track) cross the area.

2.6 Landslide Mapping

The Tasmanian Landslide Hazard Map Series - Potential Debris Flow Hazard Map (1:25,000 scale, Hobart sheet) shows the site is located in a potential debris flow runout area.

Landslide ID 1716 (The Fern Tree Bower Debris Flow) is mapped over a 10-25m wide zone centred on Browns River immediately south of the Bower and extending both up- and downstream of the Bower. The Fern Tree Bower Debris Flow occurred in April 1960 following torrential rains. An earlier event (in June of 1954) had also caused a debris flow at the site, but it was apparently less destructive than the later event.

The 1960 event was reported to have caused the course of Browns River to shift somewhat between Silver Falls and the Bower.

Historic reports of damage to piping around the Bower are associated with falling trees, possibly associated with the landslide events and also following a substantial bush fire in 1914.

No other known landslides (deep-seated or shallow slides) are mapped in the area.

2.7 Proposed Works

The proposed upgrade to the Bower is the automation of the valve used for turbidity control. This requires the installation of power and communications (SCADA) cables, new valving, a switchboard and access platform and associated items (e.g., a precast concrete pit and meter panel cabinet). Power will be tapped from an existing line at the termination of Clegg Road and the power and communications cables will be buried in a shallow trench (~0.5m depth) over c. 180m length along the Pipeline Track between Clegg Road and the Bower.

The switchboard and platform will be mounted adjacent to the southern side of the existing concrete tank, and the new valving will be installed east of the tank.

The design life of the proposed upgrades to the Bower is taken to be 100 years.

3 LANDSLIDE RISK ASSESSMENT

3.1 General

Risk assessment and management principles applied to slopes can be interpreted as answering the following questions:

- What might happen? (HAZARD IDENTIFICATION).
- How likely is it? (LIKELIHOOD).
- What damage or injury might result? (CONSEQUENCE).
- How important is it? (RISK EVALUATION).
- What can be done about it? (RISK TREATMENT).

The risk is a combination of the likelihood and the consequences for the hazard in question. Thus, both likelihood and consequences are taken into account when evaluating a risk and deciding whether treatment is required.

The qualitative likelihood, consequence and risk terms used in this report for risk to property are attached and are based on the Landslide Risk Management Guidelines, published by Australian Geomechanics Society (AGS, 2007). The risk terms are defined by a matrix that brings together different combinations of likelihood and consequence. Risk matrices help to communicate the results of risk assessment, rank risks, set priorities and develop transparent approaches to decision making.

3.2 Geotechnical Model

The Fern Tree Bower is located in a relatively narrow, steep sided valley cut into Permian aged sedimentary rocks. Weathered rock is exposed in some locations at surface around the site, and probable colluvial soils are exposed elsewhere. It is likely that the colluvium is relatively thin. A permanent stream (Browns River) flows immediately south of the Bower.

Two known debris flows have occurred in the valley in the mid-20th century, following heavy rainfall events.

3.3 Potential Hazards

Based on the site observations and available information discussed in the sections above, the following landslide hazards are identified for the site:

Debris flow. The Browns River valley has been site of two known debris flows in the mid-20th century, which were associated with heavy rainfall events. These events have been reported to cause damage to the area around the Bower, but apparently not to the tank itself.

The likelihood of further debris flows at the site over the design life of the new infrastructure is assessed to be Possible. The debris flow hazard exists at present, and the proposed works will neither increase nor decrease the likelihood of further debris flow events.

No other landslide hazards are identified at the site, either specifically arising from (or being exacerbated by) the proposed works or otherwise.

The identification of the potential hazards considers both the site and nearby properties, and is necessary to address stability issues that may negatively impact upon the site and influence the risk to property.

3.4 Risk to Property

The following table summarizes the risk to property of the landslide events in relation to the proposed development as described in Section 2.7.

Table 1. Landslide risk profiles

Scenario	Likelihood	Consequence	Risk Profile
Debris flow	Possible	Minor to Medium: the structure could be moderately damaged, or require significant reinstatement works.	Moderate

The assessment shows that the site has a Moderate level of risk, which will not be modified (increased or decreased) by the proposed works.

3.5 Risk Evaluation

Risk to Property

The risk to property is assessed to be Moderate. If the Moderate risk profile is adopted as the acceptable level of risk as per Section 2.3, then the risk assessment shows that the development has an acceptable risk (to property) of instability.

Risk to Life

In the absence of a credible risk to life, the development has an acceptable risk (to life) of instability by default.

Should you require clarification of any aspect of this report, please contact undersigned.

For and on behalf of Tasman Geotechnics Pty Ltd



Dr Wayne Griffioen

Principal Geotechnical Engineer

Attachments: Landslide Risk Matrix (2 pages)



Terminology for use in Assessing Risk to Property

These notes are provided to help you understand concepts and terms used in Landslide Risk Assessment and are based on the “Practice Note Guidelines for Landslide Risk Management 2007” published in *Australian Geomechanics* Vol 42, No 1, 2007.

Likelihood Terms

The qualitative likelihood terms have been related to a nominal design life of 50 years. The assessment of likelihood involves judgment based on the knowledge and experience of the assessor. Different assessors may make different judgments.

Approximate Annual Probability	Implied indicative Recurrence Interval	Description	Descriptor	Level
10^{-1}	10 years	The event is expected to occur over the design life	Almost Certain	A
10^{-2}	100 years	The event will probably occur under adverse conditions over the design life	Likely	B
10^{-3}	1000 years	The event could occur under adverse conditions over the design life	Possible	C
10^{-4}	10,000 years	The event might occur under very adverse conditions over the design life	Unlikely	D
10^{-5}	100,000 years	The event is conceivable but only under exceptional circumstances over the design life	Rare	E
10^{-6}	1,000,000 years	The event is inconceivable or fanciful for the design life	Barely Credible	F

Qualitative Measures of Consequence to Property

Indicative Cost of Damage	Description	Descriptor	Level
200%	Structure(s) completely destroyed and/or large scale damage requiring major engineering works for stabilisation. Could cause at least one adjacent property major consequential damage.	Catastrophic	1
60%	Extensive damage to most of structure, and/or extending beyond site boundaries requiring significant stabilisation works. Could cause at least one adjacent property medium consequential damage	Major	2
20%	Moderate damage to some of structure, and/or significant part of site requiring large stabilisation works. Could cause at least one adjacent property minor consequential damage.	Medium	3
5%	Limited damage to part of structure, and/or part of site requiring some reinstatement stabilisation works	Minor	4
0.5%	Little damage.	Insignificant	5

The assessment of consequences involves judgment based on the knowledge and experience of the assessor. The relative consequence terms are value judgments related to how the potential consequences may be perceived by those affected by the risk. Explicit descriptions of potential consequences will help the stakeholders understand the consequences and arrive at their judgment.

Qualitative Risk Analysis Matrix – Risk to Property

Likelihood		Consequences to Property				
	Approximate annual probability	1: Catastrophic	2: Major	3: Medium	4: Minor	5: Insignificant
A: Almost Certain	10 ⁻¹	VH	VH	VH	H	L
B: Likely	10 ⁻²	VH	VH	H	M	L
C: Possible	10 ⁻³	VH	H	M	M	VL
D: Unlikely	10 ⁻⁴	H	M	L	L	VL
E: Rare	10 ⁻⁵	M	L	L	VL	VL
F: Barely credible	10 ⁻⁶	L	VL	VL	VL	VL

NOTES:

1. The risk associated with Insignificant consequences, however likely, is defined as Low or Very Low
2. The main purpose of a risk matrix is to help rank risks and set priorities and help the decision making process.

Response to Risk

In general, it is the responsibility of the client and/or regulatory and/or others who may be affected to decide whether to accept or treat the risk. The risk assessor and/or other advisers may assist by making risk comparisons, discussing treatment options, explaining the risk management process, advising how others have reacted to risk in similar situations and making recommendations. Attitudes to risk vary widely and risk evaluation often involves considering more than just property damage (eg environmental effects, public reaction, business confidence etc).

The following is a guide to typical responses to assessed risk.

Risk Level		Example Implications
VH	Very High	Unacceptable without treatment. Extensive detailed investigation and research, planning and implementation of treatment options essential to reduce risk to Low; may be too expensive and not practical. Work likely to cost more than the value of the property.
H	High	Unacceptable without treatment. Detailed investigation, planning and implementation of treatment options required to reduce risk to Low. Work would cost a substantial sum in relation to the value of the property.
M	Moderate	May be tolerated in certain circumstances (subject to regulator's approval) but requires investigation, planning and implementation of treatment options to reduce the risk to Low. Treatment options to reduce to Low risk should be implemented as soon as practicable.
L	Low	Usually accepted by regulators. Where treatment has been required to reduce the risk to this level, ongoing maintenance is required.
VL	Very Low	Acceptable. Manage by normal slope maintenance procedures

WELLINGTON PARK MANAGEMENT TRUST

PARK ACTIVITY ASSESSMENT - LEVEL 1

File Number: 

1. Activity Title: Fern Tree Bower Upgrades

Date Submitted: 25/01/2022

2. Activity Summary

Contact Details

Applicant (entity): TasWater Project Delivery Group
Contact Person: Scott Burley

Address: 169 Main Road, Moonah, TAS 7009
Phone: 0419 781 384 Email: scott.burley@taswater.com.au

Activity Location

Agency Management Area(s): City of Hobart

Zone(s): Recreation zone

Tenure(s): City of Hobart

Municipality: City of Hobart

Grid Ref (GDA) - Easting: 520606 E Northing: 5247813 N

Location Description: Fern Tree Bower and Pipeline Track

Area/Length of Affected Area: maximum of 420 m2

Is the proposed activity in a drinking water catchment? ☐ Yes ☒ No

Activity Description: (including the nature of the activity and why it is being proposed; proposed start date and duration; the equipment to be used; whether any facilities need to be closed and duration)

The TasWater Project Delivery Group have identified upgrades required to the water infrastructure located at the Fern Tree Bower .. Where possible, the footprint will be limited to the location of the existing infrastructure and no native or threatened vegetation is to be removed. If some vegetation is required to be removed it would be limited in scope to only enable the works.

Scope of Works:

- An actuated butterfly valve on the outlet of The Bower
- A power and communications supply to the Bower – Mains Power and communications fed from a meter panel at the top of Clegg Road is preferred option. Solar is not an option given the tree cover and batteries will require frequent changing that is not desirable
- A turbidity instrument at the Bower, ideally this would have its waste stream fed back into the raw water supply – this instrument is monitoring raw water and should be carefully selected (similar to the Fern Tree pump Station would be appropriate)
- An RTU Cabinet at the Bower to allow automatic and remote control of the actuated valve
- A 4G modem for communications to and from site.

Activity Objective/s:

The objective of the activity is to better manage the flow of water into the drinking water system during high rainfall events, which currently results in high turbidity water entering the system. TasWater Operators Safety managing the water supply

Activity Benefits/Outcomes:

TasWater operators Safety managing the water supply To enable increase flexibility/Safety in the management of high turbidity water entering the drinking water system particularly the Ridgeway Dam where elevated turbidity increase challenges in providing Australian Drinking Water Quality to receivers in the Kingborough and upper hobart area.

What are the consequences of not undertaking the activity?

Non compliance in to delivery of drinking water to the receivers of water from the Wellington Catchment and TasWater operators Safety managing the water supply

3. Alternative Ways of Meeting the Objectives

Have alternative means of achieving the activity objectives been considered? ☒ No, ☐ Yes → Please detail the options considered, their assessed effectiveness and any consequences of implementing them. Please consider if some or all of the following categories provide an alternative solution –

- 1) **Eliminate:** what would happen if the service or facility was no longer provided?
- 3) **Engineer:** Alternative designs and ways of building/engineering a solution.

- 2) **Isolate/Substitute:** different ways of conducting the activity eg changing the timing; utilising alternative locations, facilities or routes.
- 4) **Administrate:** education/interpretation or regulation, rather than an infrastructure option. Eg using interpretation or patrolling in conjunction with regulatory signs.

Alternatives Considered	Category (see above)	Effectiveness (can it achieve the activity objective/s)	Consequences (what will be the consequences of implementing the alternative)

4. Land Owner Consent

Does the proposal have the in-principle consent of the land owner? ☐ No, ☒ Yes → Attach written consent if the applicant is not the land owner

5. Legislation, Planning and Other Permits**Legislation and Planning**

Is the proposed activity compliant and consistent with all legislative requirements, the Management Plan, management zoning and other approved strategies? ☒ Yes, ☐ Potentially yes, with controls, ☐ No

Relevant Provisions of the Management Plan or Park Planning Strategy (including other internal/external planning documents relevant to the activity).

Plan/Document Name:	Details: (State relevant sections and page numbers)
Natural Values Assessment - Prepared by ERA Planning and Environment October 2021	Hobart Interim Planning Scheme 2015 and Wellington Park Management Plan
Arboricultural Assessment - prepared by Element Tree Services May 2021	
The Fern Tree Entry Area Historic Heritage Assessment - prepared by Anne McConnell (Wellington Park Management Trust)	
Memorandum of Heritage Advice: Fern Tree Bower - Prepared by Luch Burke-Smith - Purcell	

Other Permits

Is a LUPAA permit required? (Refer chapter 8, 8A & 8B in the Management Plan): ☒ No, ☐ Yes → ☐ Permitted, ☐ Discretionary

Are any other legislative approvals required? ☒ No, ☐ Yes → List below: Eg *Threatened Species Protection Act*

6. Impact Assessment and Proposed Management

Part 1: Potential Negative Impact (also consider incremental impacts) <i>Please add/delete potential Impacts as required.</i> <i>Refer Attachment 1 – PAA Risk Assessment Matrix</i> <i>For the probability, consequence and risk rating please use the 3 letter abbreviations in Attachment 1.</i> <i>NOTE: For any potential impact that is not relevant to your proposal write N/A in the Rating box.</i>		Initial impact assessment without mitigation measures			Part 2: Proposed Mitigation Measures <i>The following are examples of matters for consideration during the development of mitigation measures:</i> - activity design/location; - route design; - access to minimal impact guidelines to managers and - staff; - infrastructure development; - monitoring regime; and - training and follow up. <i>Possible Mitigation Measures and any supporting information will be considered by the Trust, in consultation with the relevant Trust member agencies and professional experts (when required)</i>		Residual risk when mitigation measures are implemented		
		Probability	Consequence	Risk Rating			Probability	Consequence	Risk Rating
1. Natural Values									
1.1 Flora <i>(includes impact of fire)</i>	1.1.1 The activity may negatively impact: <ul style="list-style-type: none">Flora species of high conservation value	Rar	Ins	Low	The project is generally located in unvegetated areas and the arboricultural assessment indicates a very low likelihood of impacts and recommends that if roots are encountered during excavation then supervision by the arboriculturalist should be instigated and vacume excavation methods used. Refer to Aborcultural assessment report.				
	<ul style="list-style-type: none">Native vegetation that is known to have a slow recovery rate after disturbance	NA	NA	NA	Not applicable as there are no known native vvegetation communities of this type within the project area, refer to the Natural Values Assessment Report undertaken by ERA Planning and Environment.				
	<ul style="list-style-type: none">Native plant communities of high conservation value (threatened or poorly reserved plant communities)	NA	NA	NA	Not applicable as there are no known native vvegetation communities of this type within the project area, refer to the Natural Values Assessment Report undertaken by ERA Planning and Environment.				
	<ul style="list-style-type: none">Vegetation that is known to provide important habitat for local fauna species	Rar	Ins	Low	The natual values assesment report indicats that the potential for impacts to local fauna species is very low.				
	1.1.2 Exotic flora species may be introduced due to activity	Rar	Ins	Low	Recommendations in the Natural values assessmnet report is to follow the appropriate Weed and Hygine Mangement priciples and included in the Construction Environmental Management Plan (CEMP) for the project..				
	1.1.3 Plant pathogens eg <i>Phytophthora cinnamomi</i> , may be introduced or spread	Rar	Ins	Low	As for exotic flora.				

1.2 Fauna	1.2.1 The activity may negatively impact: <ul style="list-style-type: none"> Fauna/fauna habitat (including waterways and geomorphologic features) 	Rar	Ins	Low	No mitigation necessary			
	<ul style="list-style-type: none"> Fauna/fauna habitat that is known to have a slow recovery rate after disturbance 	Rar	Ins	Low	No mitigation necessary			
	<ul style="list-style-type: none"> Fauna species of high conservation value (threatened species) 	Rar	Ins	Low	No mitigation necessary			
	<ul style="list-style-type: none"> Non-threatened fauna species of scientific and/or regional significance 	Rar	Ins	Low	No mitigation necessary			
	<ul style="list-style-type: none"> Fauna species restricted to Wellington Park 	Rar	Ins	Low	No mitigation necessary			
	1.2.2 Exotic fauna species may be introduced due to the activity	Rar	Ins	Low	Appropriate vehicle and machinery wash down facilities and protocols to occur.			
	1.2.3 Fauna pathogens eg Chytrid fungus, may be introduced or spread	Rar	Ins	Low	Appropriate vehicle and machinery wash down facilities and protocols to occur.			
1.3 Geoheritage	1.3.1 The activity may negatively impact: <ul style="list-style-type: none"> Geological and/or geomorphological features 	Rar	Ins	Low	No mitigation necessary - has been taken into account through the design	-		
	<ul style="list-style-type: none"> Features of geoconservation significance 	Rar	Ins	Low	No mitigation necessary			
1.4 Soils	1.4.1 Increased risk of soil erosion or mass movement during and/or after the activity	Rar	Ins	Low	Soil and water management plan to be prepared as part of working documentation and included in the CEMP			
	1.4.2 Risk of soil contamination	Rar	Ins	Low	Appropriate vehicle and machinery wash down facilities and protocols to occur.			
	1.4.3 Activity may change soil fertility (increase or decrease)	Rar	Ins	Low	No mitigation necessary			
	1.4.4 Activity may damage soil structure	Rar	Ins	Low	No mitigation necessary			
2. Hazards								
	2.1 Slope stability may be reduced during and/or after the activity	Rar	Ins	Low	No mitigation necessary			
	2.2 Risk of fires starting or spreading may be increased during and/or after the activity	Rar	Ins	Low	No mitigation necessary			
	2.3 Ability of fire fighters to access and control fires may be reduced during and/or after the activity	Rar	Ins	Low	No mitigation necessary			
	2.4 Risk of flooding may increase during and/or after the activity	Rar	Ins	Low	No mitigation necessary			
	2.5 Activity may increase the risk of storm damage during or after the activity	Rar	Ins	Low	No mitigation necessary			

	2.6 Staff and visitors may face an increased risk of injury during or after the activity either directly or indirectly (safety risks may arise from the activity itself or from the activity triggering, contributing to, or increasing potential damage from other hazards eg fire, storm, flood, landslip, falling trees or branches)	Rar	Ins	Low	No mitigation necessary			
3. Visual Values								
	3.1 Activity may create or result in visual intrusions:	Pos	Ins	Low	No mitigation necessary - has been taken into account through the design			
	<ul style="list-style-type: none"> For visitors within Wellington Park 							
	<ul style="list-style-type: none"> When viewed from outside Wellington Park 	Rar	Ins	Low	No mitigation necessary - will not be visible outside of Wellington Park			
4. Water								
	4.1 The activity may:	Rar	Ins	Low	No mitigation necessary			
	<ul style="list-style-type: none"> Increase streambank erosion and/or sediment runoff into watercourses (impacting upon water quality) 							
	<ul style="list-style-type: none"> Increase likelihood of biological contamination of water 	Rar	Ins	Low	No mitigation necessary			
	<ul style="list-style-type: none"> Increase the risk of chemicals adversely affecting water quality 	Rar	Ins	Low	No impact on water quality. No mitigation necessary			
	<ul style="list-style-type: none"> Impact upon existing water supply infrastructure and/or access 	Rar	Ins	Low	The project is improvements to water infrastructure that is managed by TasWater			
	<ul style="list-style-type: none"> Alter the water yield from a drinking water catchment 	Rar	Ins	Low	The works are not within a drinking water catchment. No mitigation necessary			
	4.2 The activity may impact habitat values of any waterway	Rar	Ins	Low	There will be no impact on waterways. No mitigation necessary			
5. Cultural Heritage								
5.1 Aboriginal	5.1.1 Sites or areas of Aboriginal heritage significance may be negatively impacted due to the activity (including through the promotion of the site)	Unl	Ins	Low	The site is a previously disturbed site and the works will be undertaken in accordance with an Unanticipated Discovery Plan.			
5.2 Non-Aboriginal	5.2.1 Sites or areas of historic significance may be negatively impacted due to the activity (including through the promotion of the site)	Unl	mod	Mod	The site has heritage significance and has been assessed accordingly in the Heritage Impact Assessment and Historic Heritage Survey. Various mitigation measures are proposed in the document prepared by Wellington Park Trust to minimise the potential impact along with the design alignments and works avoiding any heritage elements.	Rar	mod	Low
5.3 Quality of Visitor Experience	5.3.1 Experience of Park visitors may be negatively impacted due to the activity in the form of:	Unl	Ins	Low	No mitigation necessary			
	<ul style="list-style-type: none"> Visual intrusions 							
	<ul style="list-style-type: none"> Excessive smells 	Rar	Ins	Low	No mitigation necessary			

	• Excessive noise	Unl	Ins	Low	No mitigation necessary			
	5.3.2 Accessibility to public space and/or facilities within Wellington Park may be negatively impacted during and/or after the activity	Rar	Ins	Low	It is likely that the public will be required to be excluded from the works area during the construction period, particularly when there is civil machinery in operation. However once the works are complete then access will be as per usual. The duration of works should be relatively short 2 to 4 weeks and during normal working hours where access to the site will be available to the public out of normal working hours.			
6. Commercial Services								
	6.1 Economic viability and access of licensed commercial operators to Park resources or facilities may be negatively impacted during and/or after the activity	Rar	Ins	Low	Unlikely			
7. Park Management Agencies								
	7.1 Activity (including the implementation of mitigation measures) may negatively impact management agencies through demands on resources eg special signs, requires extra funding, pressure put on otherwise low priorities	Rar	Ins	Low	No mitigation necessary.			
8. Regulation								
	8.1 Activity will result in increased potential for unauthorised activities	Rar	Ins	Low	No mitigation necessary.			

Impact Description

Applicants shall provide a brief description of the specific aspects of the works that have a Moderate, High or Extreme risk rating without mitigation measures.

Issue Reference	Initial Risk Rating	Description of specific activities identified as having a Moderate, High or Extreme risk
5.5.2	Mod	There is some risk to surrounding heritage values if works were outside of the proposed project area. however the project plan will identify mechanisms to reduce any risk by clearly identifying any values to staff onsite and any sites within close proximity to any works. Sites will be clearly marked with appropriate bunting etc

4. Economic Assessment

Is the activity for a commercial purpose? ☒ No, ☐ Yes → Proposal must include a detailed business and financial plan demonstrating economic viability over at least a five-year period (refer section 8.5.1.4)

Does the activity involve private investment? ☒ No, ☐ Yes → Yes → Consult with landowner regarding consent processes.

Economic Questions

What is the source of the funding? **N/A**

Is there sufficient funding for ongoing maintenance of any new assets constructed as a result of the proposal?

8. Additional Information/Attachments

Reference	Description/Details of Attachment eg maps, plans, photos, reports
1	Natural Values Assessment - ERA Planning and Environment
2	Arbourcultural Assessment - Element Tree Services
3	Construction and Design Plans
4	Owners Consent - City of Hobart
5	Memorandum of Heritage Advice: Fern Tree Bower

9. Circulation (WPMT to complete)

Date Circulated:

Response Required by:

Agency	Comment
GCC	
HCC	
PWS	
TasWater	
Tourism	

10. Determination (WPMT to complete)**Activities Not Requiring a LUPAA Permit**

☐ Activity Approved (No additional conditions, activity can be implemented immediately)

☐ Activity Approved with Conditions (see below and/or attached Permit)

Conditions resulting from circulation of document

Source	Condition	Details
	1	
	2	
	3	
	4	

Activities Requiring a LUPAA Permit

☐ Wellington Park Permit granted (see separate permit)

Activity Not Approved

Reason	Details
<input type="checkbox"/> The proposed activity is likely to cause unacceptable environmental impacts.	
<input type="checkbox"/> The proposed activity is likely to cause unacceptable economic impacts.	

<input type="checkbox"/> Other	
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Authorised by:

Signed:

Name:

Position:

Date:

11. Notification and Implementation

Internal proposals: An approved PAA indicates to agencies that the proposal can be implemented, subject to any conditions stated in the approval at Section 10 or a separate Permit.

External proposals: the Trust provides written authority including any conditions to external proponents. Following notification and the fulfilment of any pre-conditions the activity proceeds.

Attachment 1: PAA Risk Assessment Matrix

Note: the following steps are for the consideration of the Potential Impacts only.

Once the Impacts have been considered, applicants should consult with the Trust to determine the level of information required to support any Proposed Mitigation Measures.

It should be noted that not all Potential Impacts are quantifiable, and thus may need a Mitigation Measure even if assessed as low risk.

Step 1: Applicant to consider the Probability of identified Impact occurring

Probability: the *likelihood* that the identified impacts will occur during or as a consequence of the activity

Rare (Rar)	Very low probability of occurring but not impossible. Would only occur in exceptional circumstances. Less than 10% chance of occurring.
Unlikely (Unl)	Could occur but not expected. Has a 10-30% chance of occurring.
Possible (Pos)	Could occur. Has a 40-60% chance of occurring.
Likely (Lik)	Will probably occur in most circumstances. Has a 60-90% chance of occurring.
Almost Certain (A/C)	Is expected to occur in most circumstances. Has a greater than 90% chance of occurring.

Step 2: Applicant to Rate the Consequence of the identified Impact occurring

Note: Many activities may have negative consequences in more than one rating category. In this case use the highest rating in any of the four columns in the risk assessment.

Consequence: the potential negative effects of the impact occurring

Rating	Natural Values/Assets	Cultural Values/Assets	Personal Safety
Insignificant (Ins)	No or Limited damage to a small area of land of limited natural value. No or limited reduction in water quality outside drinking water catchments No reduction in water quality within drinking water catchments. No or limited risk of soil damage or contamination No increase in the risk of natural hazards	Limited damage to structures/buildings or other cultural assets of no significance. Any negative changes to recreational opportunities/settings not noticeable. No negative impact on existing recreational or cultural use of a site.	No or minimal risk of injury.
Minor (Min)	Minor damage to the environment or natural values of the area that can be contained on-site. Damage may occur but is fully recoverable with no permanent effect on natural values/assets. It will take less than 6 months for the resource to fully recover or it will only require minor repair. Reduction in water quality in natural waterways outside a drinking water	Minor damage to a heritage asset or area that is immediately contained on-site. The assets would only require minor repair. Damage may occur but is fully recoverable with no permanent effect on historic cultural values.	Some risk of minor injuries.

Rating	Natural Values/Assets	Cultural Values/Assets	Personal Safety
	<p>catchment for a short period but unlikely to have a negative effect on riparian flora and fauna.</p> <p>Minor, short-term reduction in water quality in drinking water catchments that will not adversely affect the quality of the water for the user.</p> <p>Possible short-term increase in the risk of natural hazards during the activity.</p> <p>Short-term adverse changes to soil structure and fertility, or long-term adverse changes limited to an area of less than 20 square metres. Minor contamination that can be remediated or removed as part of the works.</p>	<p>Temporary loss of recreational opportunity or cultural use of a site during works.</p>	
Moderate (Mod)	<p>Short term, moderate damage to natural values/assets, which is repairable or does not affect long term their local significance/value.</p> <p>Temporary reversible damage not affecting any significant flora/fauna.</p> <p>Water quality of natural waterway affected which exceeds background limits and will take over 6 months to fully recover.</p> <p>Fuel/oil spill up to 2,000 L to land or water outside drinking water catchments.</p> <p>Increased risk of natural hazards during the activity.</p> <p>Medium-term changes to soil structure and fertility, or contamination of soils, or long term changes over an area of less than 2 ha.</p>	<p>Short-term or small changes to social, cultural, recreational and/or aesthetic values of a site.</p> <p>A change in a recreational opportunity for a small number of users.</p> <p>Temporary loss of recreational or cultural use of a site (up to 6 months).</p> <p>Short term, moderate damage to cultural values/assets, which is repairable or does not affect long term their local significance/value.</p>	<p>Risk of minor injuries, major injuries possible.</p>
Major (Maj)	<p>Loss of biodiversity on a local scale. Loss of ecological functioning with which will take more than 10 years to recover.</p> <p>Significant damage is caused to significant natural values from which it will take more than 10 years to recover.</p> <p>Temporary pollution of a natural waterway/area which will take up to a year to fully recover.</p> <p>Fuel/oil spill up to 10,000 L to land or water outside drinking water catchments.</p> <p>High risk of natural hazards during and/or for a short period after the activity</p> <p>Major long-term or permanent changes to soil structure and fertility, or contamination of soils, over an area of 2 to 10 ha.</p>	<p>Permanent change in quality or use of a major recreational or cultural site of regional significance.</p> <p>Irreversible and extensive damage is caused to a asset with heritage value but is not listed</p> <p>Significant damage is caused to a Heritage Listed area or asset that involves either extensive remediation or will take more than 10 years to recover.</p> <p>Significant change to high quality wilderness recreational values.</p>	<p>Risk of major injuries, fatalities unlikely.</p>
Severe (Sev)	<p>Loss of biodiversity on a regional scale.</p> <p>Loss of ecological functioning without recovery to pre-activity conditions.</p> <p>Irreversible and extensive damage is caused to a Matter of National Environmental Significance under the <i>EPBC Act</i>: (eg. endangered or vulnerable</p>	<p>Irreversible changes and loss of social, cultural, recreational and/or aesthetic values of a region.</p> <p>Permanent loss of a major recreational opportunity of</p>	<p>Risk of major injuries and fatalities.</p>

Rating	Natural Values/Assets	Cultural Values/Assets	Personal Safety
	<p>species, Ramsar wetland, Commonwealth marine environment). Irreversible impact to natural values/assets of national significance.</p> <p>Irreversible damage to a species or community listed under the Tasmanian <i>Threatened Species Protection Act 1995</i>, <i>Nature Conservation Act 2002</i>, or priority forest community listed under the RFA or non-forest communities.</p> <p>Pollution of natural waterway/area which will take more than 10 years to recover.</p> <p>Fuel/oil spill greater than 10,000L to land or water outside drinking water catchments.</p> <p>High risk of natural hazards during and/or for an extended period after the activity.</p> <p>Major long-term or permanent changes to soil structure and fertility, or contamination of soils, over an area of more than 10 ha.</p>	<p>national significance affecting a significant number of users.</p> <p>Irreversible impact to cultural values/assets of national significance.</p> <p>Irreversible and extensive damage is caused to a World Heritage Listed Area value, a Commonwealth Heritage Listed Site or a National Heritage Listed Site.</p> <p>Loss of high quality wilderness recreational values.</p>	

Step 3: Applicant to determine the resultant Risk Level

Risk Level Rating		Consequences			
Probability	Insignificant	Minor	Moderate	Major	Severe
Rare	Low	Low	Low	Moderate (Mod)	High (Hig)
Unlikely	Low	Low	Moderate (Mod)	Moderate (Mod)	High (Hig)
Possible	Low	Moderate (Mod)	Moderate (Mod)	High (Hig)	Extreme (Ext)
Likely	Low	Moderate (Mod)	High (Hig)	Extreme (Ext)	Extreme (Ext)
Almost Certain	Low	High (Hig)	High (Hig)	Extreme(Ext)	Extreme (Ext)

Step 4: Applicant to consider Response and discuss information requirements and Proposed Mitigation Measures with Trust

Response	
Low	Little or no additional control actions are needed.
Moderate	Consider additional control actions.
High	Control actions required to minimise adverse impacts. Ensure alternative strategies have been considered. Ensure documentation is of high standard. Carefully weigh benefits of the activity against risks before approving.
Extreme	Ensure documentation is of high standard for elements that pose an extreme risk. Ensure alternative strategies have been considered. Control actions required to minimise adverse impacts and checked by relevant specialists. Do not approve activity if impacts cannot be ameliorated or benefits do not far outweigh the risks.

Application Referral Cultural Heritage - Response

From:	Allie Costin
Recommendation:	Proposal is acceptable subject to conditions.
Date Completed:	
Address:	100 PINNACLE ROAD, MOUNT WELLINGTON
Proposal:	Upgrade to Water Infrastructure (Fern Tree Bower)
Application No:	PLN-22-138
Assessment Officer:	Cameron Sherriff,

Referral Officer comments:

Fern Tree Bower, 100 Pinnacle Road, Wellington Park is a place of Archaeological Potential, located in a Cultural Landscape Precinct, and a Listed Place in HIPS 2015. Approval is sought by TAS Water to upgrade the water infrastructure to automate the Fern Tree Bower.

Proposal:

- Installation of an actuated butterfly valve on the outlet of The Bower.
- Installation of a turbidity measurement instrument at the Bower.
- Construction of a 1.8m x 2.4m precast concrete pit to house the new equipment to a depth of 1.5m BGL.
- Installation of a remote terminal unit (RTU) at the Bower to allow automatic and remote control of the actuated valve.
- Installation of a 4G modem for communications at the meter panel location.
- Installation of a power and communications supply to the Bower fed from a meter panel at the top of Clegg Road.
- Installation of approximately seven electrical pits: three around the actual bower and four along the Pipeline Track up to the new meter panel cabinet (approximately one every 50 m).
- The relocation of an existing interpretive sign relating to the Pipeline Track, currently located where the new meter panel is designated to go.
- The relocation of three tree ferns in the vicinity of the bower currently sited within the footprint of the proposed infrastructure. These tree ferns will be located on the advice of Tasmanian Tree Care and will be replanted to screen the new infrastructure if possible.

Background Documents:

The applicant has provided a Heritage Impact Assessment by Purcell dated March 2022 which addresses the relevant HIPS 2015 Heritage Code Provisions.

The Conservation Management Plan for the Hobart Mountain Water Supply System provides the following conservation policies and recommendation for the Fern Tree Bower and associated infrastructure.

5.1 General Conservation Policy

- The Hobart Mountain Water Supply System will be managed in a manner which recognises the cultural significance of the System, recognises that the System has multiple values for historical recreational and operational reasons and strives to balance these multiple values in a sympathetic manner.

5.2 Recognition of multiple values

- The operational parts of the System, which continue to form part of Hobart's water supply system, take much of their significance from their continued function. Efforts will be made to accommodate that continued function in ways which minimise impacts to the historic natural and recreational values of the System.

5.3 Conservation of significant fabric

- Wherever possible, reasonable compromise will be made to keep operational parts of the System in service. Efforts will be made to keep operational changes within areas of the later phases of the System, wherever possible. This may involve the introduction of new fabric within historic areas to maintain function.

- Alterations to operational fabric will take into account heritage values and will seek to minimise impacts to those values.

Recommendation 3 – Retain the System in operation

A key aspect of the significance of the System is the fact that it continues to function nearly 150 years after its construction. While modified and added to, these modifications have generally not obscured the earlier phases of the System, allowing it to be understood as a functional whole. Retaining this function is critical to retaining the significance of the System.

3.1 Retain the operational components of the Mountain Water Supply System in service, including intakes, weirs, pipe sections and other functional components wherever they can be sympathetically upgraded to meet operational, safety and water quality requirements.

3.3 Sympathetic modification to historic fabric is permissible when the alternative may be the decommissioning of an historic feature.

3.4 Any potential modifications should be reviewed for heritage impacts and those impacts should be minimised as much as possible during the design phase.

3.5 Modifications made to continue water supply operations should be sympathetic in terms of function and appearance and should not obscure historic fabric.

Recommendation 4 – Introduced fabric

4.1 New fabric should not disrupt the essentially natural and industrial character of the System and the Track.

Assessment:

E13.7 Development Standards for Heritage Places

E13.7.1 Demolition

Objective:

To ensure that demolition in whole or part of a heritage place does not result in the loss of historic cultural heritage values unless there are exceptional circumstances.

Performance Criteria 1

Demolition must not result in the loss of significant fabric, form, items, outbuildings or landscape elements that contribute to the historic cultural heritage significance of the place unless all of the following are satisfied;

- (a) *there are, environmental, social, economic or safety reasons of greater value to the community than the historic cultural heritage values of the place;*
- (b) *there are no prudent and feasible alternatives;*
- (c) *important structural or façade elements that can feasibly be retained and reused in a new structure, are to be retained;*

(d) significant fabric is documented before demolition.

The proposal involves partial demolition of the internal mechanical elements of the Bower in order to automate it, these works will not be externally visible. The plans also show the removal of three man ferns which will be relocated to a suitable location nearby. It is considered that the proposed demolition component of the proposal satisfies Performance Criteria E13.7.1, the works will not result in the loss of significant fabric or elements that contribute to the cultural heritage significance of the place. The proposal is also in line with the CMP objective that operational parts of the system continue to form part of Hobart's water supply system, retaining this function is critical to retaining the significance of the system.

E13.7.2 Buildings and Works other than Demolition

Objective:

To ensure that development at a heritage place is:

- (a) undertaken in a sympathetic manner which does not cause loss of historic cultural heritage significance; and*
- (b) designed to be subservient to the historic cultural heritage values of the place and responsive to its dominant characteristics.*

Performance Criteria 1

Development must not result in any of the following:

- (a) loss of historic cultural heritage significance to the place through incompatible design, including in height, scale, bulk, form, fenestration, siting, materials, colours and finishes;*
- (b) substantial diminution of the historic cultural heritage significance of the place through loss of significant streetscape elements including plants, trees, fences, walls, paths, outbuildings and other items that contribute to the significance of the place.*

The proposed development responds to the dominant industrial character of the place, in keeping the CMPs guidance that new works 'should not disrupt the essentially natural and industrial character'. New fabric is readily identifiable as such, but has been designed to be discrete and visually recessive. Performance Criteria 1 of E13.7.2 is considered satisfied.

Performance Criteria 2

Development must be designed to be subservient and complementary to the place through characteristics including:

- (a) scale and bulk, materials, built form and fenestration;*
- (b) setback from frontage;*
- (c) siting with respect to buildings, structures and listed elements;*
- (d) using less dominant materials and colours.*

Service electrical pits are required every 50m, and are to be within the track alignment in order to cause minimal disruption and works outside of the developed track area. The track gravel type used within Wellington Park is 'Tolosa Gold' a condition has been applied to the permit that service pit lid covers (trafficable gatic lids) should be of a colour to match the track surfacing. This condition will be consistent with the CMP in that any required works should mitigate visual impacts. Performance Criteria 2 of E13.7.2 is considered satisfied.

Performance Criteria 3

Materials, built form and fenestration must respond to the dominant heritage characteristics of the place, but any new fabric should be readily identifiable as such.

The proposed works to the Bower are compatible in design in that they retain the industrial characteristics of the infrastructure. A Tas Networks meter panel cabinet is to be installed and painted in 'Jungle Green' with a matte finished. This is considered appropriate and the chosen colour will soften the visual impact of the cabinet on the surrounding natural setting.

Performance Criteria 3 of E13.7.2 is considered satisfied.

E13.9 Development Standards for Cultural Landscape Precincts

Cultural Landscape Precinct Statement of Historic Cultural Heritage Significance

Pipeline Track Corridor

The Pipeline Track landscape consists of a winding track along the contour from Halls Saddle to Long Creek. The track is heavily canopied by forest with an under storey of scrub dominant along track sides. Shadows, shade and darker colours are characteristic. In damper wetter parts of the tracks or on south facing slopes or at creek crossings, a variety of mosses, lichens, liverworts, man-ferns, and other ferns are readily encountered making even the shortest walk quite a unique experience.

The significance of the landscape stems from its heritage value as an integral section of the Hobart Waterworks engineering structures that demonstrate a high degree of technical achievement and creative stonework design during the nineteenth century, the visual landscape qualities, scenic variation and an outstanding bushland character.

E13.9.1 Demolition

Objective:

To ensure that demolition in whole or in part of buildings or works within a Cultural Landscape Precinct does not result in the loss of historic cultural heritage values unless there are exceptional circumstances.

Performance Criteria 1

Demolition must not result in the loss of any of the following:

- (a) buildings or works that contribute to the historic cultural heritage significance of the precinct;*
- (b) fabric or landscape elements, including plants, trees, fences, walls, paths, outbuildings and other items, that contribute to the historic cultural heritage significance of the precinct; unless both of the following apply;*
 - (i) there are environmental, social, economic or safety reasons of greater value to the community than the historic cultural heritage values of the place;*
 - (ii) there are no prudent and feasible alternatives.*

The proposal involves partial demolition of the internal mechanical elements of the Bower in order to automate it, these works will not be externally visible. The plans also show the removal of three man ferns which will be relocated to a suitable location nearby. It is considered that the proposed demolition component of the proposal satisfies Performance Criteria E13.9.1, the works will not result in the loss of significant landscaping or elements that contribute to the heritage significance of the Cultural Landscape Precinct. The proposal is also in line with the CMP objective that operational parts of the system continue to form part of Hobart's water supply system, retaining this function is critical to retaining the significance of the system.

E13.9.2 Buildings and Works other than Demolition

Objective:

To ensure that development undertaken within a Cultural Landscape Precinct is sympathetic to the character of the precinct.

Performance Criteria 1

Design and siting of buildings and works must not result in detriment to the historic cultural heritage significance of the precinct, as listed in Table E13.3.

As stated in the Purcell report the proposed works to the Bower are compatible in design in that they are sympathetic to the engineering characteristics of the Mountain Water Supply

System. The proposed Tas Networks Meter Panel Cabinet at the end of Clegg Road and is on a portion of the track that passes through a semi-rural residential area. The proposed location at the end of Clegg Road contains residential infrastructure and the proposed Meter Panel Cabinet would not appear to be visually prominent in this section of Landscape Precinct. Performance Criteria 1 of E13.9.2 is considered satisfied.

E13.10 Development Standards for Places of Archaeological Potential

E13.10.1 Building, Works and Demolition

Objective:

To ensure that building, works and demolition at a place of archaeological potential is planned and implemented in a manner that seeks to understand, retain, protect, preserve and otherwise appropriately manage significant archaeological evidence.

Performance Criteria 1

Buildings, works and demolition must not unnecessarily impact on archaeological resources at places of archaeological potential, having regard to:

- (a) the nature of the archaeological evidence, either known or predicted;*
- (b) measures proposed to investigate the archaeological evidence to confirm predictive statements of potential;*
- (c) strategies to avoid, minimise and/or control impacts arising from building, works and demolition;*
- (d) where it is demonstrated there is no prudent and feasible alternative to impacts arising from building, works and demolition, measures proposed to realise both the research potential in the archaeological evidence and a meaningful public benefit from any archaeological investigation;*
- (e) measures proposed to preserve significant archaeological evidence 'in situ'.*

As stated in the Purcell Heritage Assessment it is noted that ground-penetrating radar (GPR) has been undertaken in many areas of the track previously, and that this track has been excavated during previous works. The archaeological potential for the site along the track alignment is considered to be low. Performance Criteria 1 of E13.10.1 is considered to be satisfied.

In conclusion the proposed works are considered to satisfy the relevant provisions of the Heritage Code E13 of HIPS 2015 subject to condition.

Allie Costin
Cultural Heritage Officer
25th of July 2022

Application Referral Environmental Development Planner - Response

From:	Rowan Moore EDP 6/7/22
Recommendation:	Proposal is acceptable subject to conditions.
Date Completed:	
Address:	100 PINNACLE ROAD, MOUNT WELLINGTON
Proposal:	Upgrade to Water Infrastructure (Fern Tree Bower)
Application No:	PLN-22-138
Assessment Officer:	Cameron Sherriff,

Referral Officer comments:

Assessment:

Approval is sought to upgrade the water infrastructure at the Fern Tree Bower, 100 Pinnacle Road, Wellington Park.

The scope of works identified in the PAA are:

- Installation of an actuated butterfly valve on the outlet of The Bower.
- Installation of a turbidity measurement instrument at the Bower.
- Construction of a 1.8m x 2.4m precast concrete pit to house the new equipment to a depth of 1.5m BGL.
- Installation of a remote terminal unit (RTU) at the Bower to allow automatic and remote control of the actuated valve.
- Installation of a 4G modem for communications at the meter panel location.
- Installation of a power and communications supply to the Bower fed from a meter panel at the top of Clegg Road.
- Installation of approximately seven electrical pits: three around the actual bower and four along the Pipeline Track up to the new meter panel cabinet (approximately one every 50 m).
- The relocation of an existing interpretive sign relating to the Pipeline Track, currently located where the new meter panel is designated to go.
- The relocation of three tree ferns in the vicinity of the bower currently sited within the footprint of the proposed infrastructure. These tree ferns will be located on the advice of Tasmanian Tree Care and will be replanted to screen the new infrastructure if possible.

The objective of the activity is to better manage the flow of water into the drinking water system during high rainfall events, which currently results in high turbidity water entering the system. The submitted planning report states the following:

The proposal seeks to automate the Fern Tree Bower which will allow the flow at the bower to be turned out when turbidity increases to an unacceptable level, during medium and high rainfall events. Automation of the bower will reduce the need for an operator to visit site during these events to manually adjust the valve, thereby improving worker health and safety.

Power and communications lines are proposed from the end of Clegg Road along the Pipeline Track to the Bower. The part of the track closer to Clegg Road is outside Wellington Park and the part closer to the Bower is within Wellington Park.

The Biodiversity Code and Waterway and Coastal Protection Code provisions are applicable to the proposed works outside Wellington Park.

Biodiversity Code

The submitted planning report indicates that this is exempt under clause 5.2.7 but this is not the case as the Pipeline Track is heritage-listed and part so the track are within 30m of a watercourse.

An arborist's assessment of potential damage to Swamp Gums along the Pipeline Track was submitted with the application. The assessment concludes '*although there is potential to damage some roots during these works, supervision and implementation of low impact excavation should ensure the trees are not critically impacted*'. A number of recommendations were made, including arborist supervision of excavation works.

Provided the works are carried out in accordance with the arborist recommendations, the Biodiversity Code is satisfied by the application (E10.7.1 A1(c)).

Waterway and Coastal Protection Code

Provided the development complies with the recommendations of the submitted Natural Values Assessment, the application satisfies the relevant standards of the Waterway and Coastal Protection Code (E11.7.1 P1).

Within Wellington park, the matters addressed by these Codes are covered by the Wellington Park Management Plan, which supersedes the planning scheme provisions, so only the WPMP will be considered.

Wellington Park Management Plan 2013

Exemption for minor utilities and infrastructure is not applicable within WP as the land is within 30m of a watercourse.

The relevant standards are contained in Table 8 'Standards for Use and Development'.

Issue 2: Flora and Fauna Conservation, Geoconservation and Natural Processes

Acceptable solution A2.1 states the following:

The proposal does not involve removal or damage to terrestrial or aquatic native vegetation which:

(a) is listed as significant in this Management Plan, or any planning strategy or Trust endorsed scientific assessment prepared in accordance with this Management Plan; or is a Threatened Vegetation Community under the *Nature Conservation Act 2002*.

(b) supports or forms habitat for any species of fauna listed in the *Threatened Species Protection Act 1995* or the *Environment Protection and Biodiversity Conservation Act 1999*.

The vegetation in Wellington Park supports some threatened species and there will be minor damage to some vegetation so the application does not comply with A2..

Performance criterion P2.1 states the following:

Any adverse affects on terrestrial or aquatic native vegetation or habitat values must be avoided, or remedied to ensure no long term impact on vegetation values.

Appropriate mitigation measures have been proposed/recommended in the arborist's report and natural Values Assessment. **Compliance with these recommendations should be required by permit conditions.**

Acceptable solution A2.2 states the following:

The proposal does not impact upon any threatened species listed under the *Threatened Species Protection Act 1995* or the *Environment Protection and Biodiversity Conservation Act 1999*.

It is unlikely that the development will directly impact on any threatened species.

Acceptable solution A2.3 states the following:

The proposal does not impact upon any sites which are listed as significant in this Management Plan or in a Trust endorsed scientific assessment, or listed on the Tasmanian Geoconservation Database.

Complies.

Issue 3:Water quality and flow

Acceptable solution A3.1 states the following:

- (a) Waste water, including grey water, must be connected to a reticulated or on-site waste treatment system approved by the Planning Authority; and
- (b) Stormwater must be drained to a detention basin, artificial wetland or infiltration area, or reused within the site, without causing erosion or pollution of existing surface or ground waters or other values of the Park.

No additional wastewater or stormwater generated.

Acceptable solution A3.2 states the following:

No land clearing, excavation, filling or other development must occur:

- within a water body, wetland or watercourse; or
- within a buffer area, as specified in accordance with this Management Plan, of a water body, wetland or watercourse,

except for the purpose of maintaining a water supply for fire fighting purposes, or vehicle access to that water supply in accordance with a Fire Management Strategy prepared in accordance with this Management Plan.

And

The use or development involves no extraction of water from any water body, wetland or watercourse except for use in fire fighting or carrying out planned burns in accordance with a fire management strategy prepared in accordance with this Management Plan.

The application does not comply with this acceptable solution.

Performance criterion P3.2 states the following:

Use and development must be designed and carried out to ensure that any adverse effects on natural drainage, flow regimes, erosion and sedimentation to and within any water body, wetland or watercourse will be avoided, or remedied to ensure no long term impact on any water body, wetland or watercourse.

The development would have no significant impact on flow regimes, erosion or sedimentation provided the recommendations of the Natural Values Report are complied with.

Issue 6: Noise

Acceptable solution A6.1 states the following:

Noise from point sources must not exceed 50 dB(A) at any point within 50m of the source.

Complies.

Issue 8: Natural Hazards

Acceptable solution A8.1 states the following:

Buildings and structures, other than walking tracks constructed in accordance with a walking track strategy, do not involve cut and fill of more than 1m and must not be located within a buffer area, specified in accordance with this Management Plan, of a water body, wetland or watercourse.

And

The proposed use or development is accompanied by a geotechnical report from a suitably qualified person stating that there is an acceptable risk of instability.

The application does not comply with this acceptable solution as excavation up to 1.5m BGL is proposed.

Performance criterion P8.1 states the following:

In areas where there is a risk of flooding or land instability, all buildings and structures, other than walking tracks constructed in accordance with a walking track strategy, must be sited, designed and constructed to, as minimum requirements, take account of future climate change and flood hazard potential, and to assess and mitigate risk in accordance with a hazard risk analysis as set out in the current Australian Geomechanics Society landslide risk management concepts and guidelines and Australian Standard – AS1726.

A Landslide Risk Assessment was submitted with the application. There is a risk of debris flow at the site. Risk was assessed as acceptable.

The development is not at risk from flooding as it is designed for a watercourse.

Acceptable solution A8.2 states the following:

Development of new or modified buildings must be in accordance with sections E1.6.3, E1.6.4 & E1.6.5 of Planning Directive No 5 (Bush Fire Prone Areas Code)

Not applicable.

**8. Significant Tree Nomination - Glenrose Park 110 Pottery Road,
Lenah Valley
File Ref: F22/75860**

Report of the Strategic Planner | Urban Futures and the Director City Life
of 19 August 2022 and attachment.

Delegation: Council

**REPORT TITLE: SIGNIFICANT TREE NOMINATION - GLENROSE
PARK 110 POTTERY ROAD, LENA VALLEY****REPORT PROVIDED BY:** Strategic Planner | Urban Futures
Director City Life**1. Report Purpose and Community Benefit**

- 1.1. The purpose of this report is to consider one of the nominations for the Significant Tree Register that was received from a member of the community between September and November 2021.
- 1.2. This report does not consider all nominated trees, only the hawthorn trees adjoining the creek within Glenrose Park at 110 Pottery Road, Lenah Valley, as works involving these trees have been planned by the City's Bushland Biodiversity and Waterways Unit.
 - 1.2.1. The significant tree nomination process benefits the community by ensuring that trees of value to residents and visitors are adequately protected.

2. Report Summary

- 2.1. The proposal is to consider whether the hawthorn trees adjoining the creek within Glenrose Park at 110 Pottery Road, Lenah Valley should be pursued for listing as a significant tree.
- 2.2. There were 127 valid significant tree nominations submitted during the public nomination period between 13 September and 8 November 2021.
- 2.3. The hawthorn trees were nominated by a member of the community during this period. The qualities noted in the nomination included being a beautiful backdrop for the playground, fragrance of the blossom, its attraction to birds and insects as well as the shade the trees provided.
- 2.4. Assessment of each of these trees is ongoing; however, the subject trees are proposed to be removed as part of planned waterway works by the City's Bushland Biodiversity & Waterways Unit to improve water quality from increased stormwater inputs.
- 2.5. Consideration of these trees at an earlier stage will provide certainty about whether or not the trees are intended to be listed in the Significant Tree Register.
- 2.6. The City's Tree Assessment Panel assessed the tree against the Significant Tree Assessment Criteria (**Attachment A**); the panel recommendation is that the tree does not meet the criteria.

- 2.7. The nominated trees adjoining the creek within Glenrose Park at 110 Pottery Road, Lenah Valley are not recommended for listing as significant trees.

3. Recommendation

That:

- 1. That the nominated trees adjoining the creek within Glenrose Park at 110 Pottery Road, Lenah Valley not be listed as significant trees in the Significant Tree Register, and the Significant Tree Code of the Hobart Interim Planning Scheme 2015.***
- 2. That the nominee be advised of Council's decision.***

4. Background

- 4.1. At its meeting on 18 December 2017, Council considered a report on 'Significant Trees – Vegetation Management'. One of Council's resolutions following this report was that:

'Nominations for additions to the Significant Tree List in the *Hobart Interim Planning Scheme 2015* be invited through a public process commencing in February 2018 and that in future nominations be sought from the public every 3 years.'

- 4.2. The previous round of nominations, which commenced in 2018, resulted in the inclusion of 77 additional listings for trees and hedges in the Significant Tree Register.
- 4.3. Trees that are listed in this register are also inserted into the Significant Tree Code list of the *Hobart Interim Planning Scheme 2015*. Trees on the list are subject to the controls of the Significant Tree Code, which requires that a permit be granted for lopping, pruning, removal or destruction of the tree unless:
- The tree has died of natural causes;
 - The works are necessary for emergency access;
 - The works are emergency works by a public authority;
 - The tree poses an immediate danger to persons or property;
 - The pruning of a tree is to improve its health or appearance, provided its normal growth habit is not retarded.
- 4.4. The current round of nominations was open between 13 September 2021 and 8 November 2021.
- 4.5. There were 127 valid nominations submitted for individual trees, groups of trees, or hedges. Some of these nominations were made by more than one person.
- 4.6. Assessment of the nominations is still ongoing, given the number of nominations received and the detailed assessment process. A full report on all of the nominations is likely to be presented to Council proceeding the care taker period.
- 4.7. The nominated trees that are the subject of this report include 22 *Crataegus monogyna* (hawthorns) adjoining the creek within Glenrose Park at 110 Pottery Road, Lenah Valley (refer to image and map below).



Hawthorn trees at the rear of the playground at Glenrose Park



Nominated hedge of Hawthorn trees outlined in yellow

- 4.8. The following background information is relevant to the trees:
- 4.8.1. Removal of the trees would be exempt from requiring a planning permit.
 - 4.8.2. The hawthorn trees were nominated by a member of the community during the public call for nominations to the Significant Tree Register.
 - 4.8.3. The trees are subject to planned works by the City's Bushland Biodiversity & Waterways for their removal and replacement with native vegetation. The Hawthorn, *Crataegus monogyna*, is considered a high risk and priority weed to be removed from the City's waterways. The unit has identified the higher catchment areas such as Glenrose Park as important in managing the spread of weeds throughout the City's waterways. The Bushland Biodiversity & Waterways has provided the following response in respect of the project:

"The purpose of the planned works on the waterway at Glenrose Park is to improve water quality from increased stormwater inputs due to development in the area. The scope of the project includes improving the amenity of the waterway by revegetating the currently degraded riparian zone using native trees, shrubs and grasses. The vegetation and landscaping component will also assist by supporting an increase in

biodiversity, habitat and resilience for the local wildlife. Aesthetically, the playground area will benefit by having more opportunity to interact with and appreciate the City's waterways. This project aims to realign our commitment with protecting natural values and celebrating the potential of our lovely waterways."

5. Proposal and Implementation

- 5.1. The proposal is to determine whether the nominated hawthorn trees adjoining the creek within Glenrose Park at 110 Pottery Road, Lenah Valley should be listed as a significant tree in the Significant Tree Register, and the Significant Tree Code of the *Hobart Interim Planning Scheme 2015*.

Assessment of Nominated Tree

- 5.2. A Tree Assessment Panel (the Panel) consisting of a City of Hobart (City) Strategic Planner, City Program Leader Arboriculture and Nursery, City Cultural Heritage Officer and City Urban Design Officer has assessed the tree.
- 5.3. The Panel has inspected the tree and made an assessment, based on whether it is considered that the tree meets any of the ten criteria under the Significant Tree Assessment Criteria (**Attachment A**):
- 5.4. The nomination and assessment comments are detailed in Table 1 (below).

Table 1

Nominator's reasons for nomination	Significant Tree Assessment Panel comments
<p>This natural unpruned hawthorn hedge runs along a little creek right behind the small park and playground known as Glenrose Park. It provides a beautiful backdrop to the playground and now in the Spring the blossoms are lovely to see and also fragrant. Also great for bees and other insects. In Autumn the berries are food for many birds, both native and introduced. The hedge is very old and the trees are large by hawthorn standards. It provides shade to those in the park, and shelter to pademelons outside the park. In winter the bare, twisting branches have a visual poetry. It's really nice to alight from the bus there at the bus stop, and catch the sweet scent of the blossoms. It is outstanding in the environment due to its venerable age as a lot of the surrounding area is relatively recent in development.</p>	<p>These trees are not considered to meet the threshold for listing under the Significant Tree Assessment Criteria.</p> <p>While they contribute to the visual amenity of the park, likely particularly when in flower, it is not considered that they have outstanding streetscape significance, and it is likely another form of vegetation could similarly contribute to the visual amenity of the site.</p> <p>The hawthorns are not maintained as a hedge, and it is possible at least some of them are self-seeded. They are not considered to have heritage significance given they are not associated with historical boundaries and are not maintained in hedge form.</p> <p>Hawthorn trees are considered to be highly invasive. This is particularly problematic given the location of these trees adjacent to a waterway. Council's Environmental Scientist - Stormwater Assets has identified these hawthorns as a risk in terms of seed dispersal and weed spread downstream.</p>

- 5.5. This recommendation has been made objectively on whether the tree meets the Significant Tree Assessment criteria.
- 5.6. The panel applies a consistent approach to assessing trees, only recommending those that meet a relatively high threshold of significance.

Panel Response

- 5.7. In response to the nomination, it is noted that the Panel has assessed the trees and determined they do not meet the Significant Tree Assessment Criteria. It is therefore recommended that the hawthorn trees at Glenrose Park are not listed as significant trees.

6. Strategic Planning and Policy Considerations

- 6.1. The proposal is consistent with the objectives of the Capital City Strategic Plan 2019-29, in particular the following outcomes:
- 6.1.1. Hobart keeps a strong sense of place and identity, even after the city changes;
 - 6.1.2. Hobart's cityscape reflects the heritage, culture and natural environment that make it special;
 - 6.1.3. In City decision-making, we consider how different aspects of Hobart life connect and contribute to sense of place;
 - 6.1.4. The natural environment is part of the city and biodiversity is preserved, secure and flourishing.

7. Financial Implications

- 7.1. Funding Source and Impact on Current Year Operating Result
- 7.1.1. None.
- 7.2. Impact on Future Years' Financial Result
- 7.2.1. None.
- 7.3. Asset Related Implications
- 7.3.1. None.

8. Legal, Risk and Legislative Considerations

- 8.1. The tree is not recommended for listing as a significant tree in the Significant Tree Register and the Significant Tree Code of the *Hobart Interim Planning Scheme 2015*. Therefore no legislative processes apply.

9. Environmental Considerations

- 9.1. The proposal considers the contribution these trees make to the environment. The trees are not recommended for listing as significant trees in the Significant Tree Register and the Significant Tree Code of the *Hobart Interim Planning Scheme 2015*. If the Council supports this recommendation, the City's Bushland, Biodiversity and Waterways Unit will be able to proceed with planned works for the trees removal in line with the strategic plan to remove high risk and priority weeds from the City's waterways. The trees' removal and revegetation with a variety of

native species as part of the Glenrose Park Creek remediation, will remove the risk of seed dispersal downstream, which is considered an improved environmental outcome.

10. Social and Customer Considerations

- 10.1. The proposal is not considered to have any negative impact on social inclusion.

11. Marketing and Media

- 11.1. The significant tree nomination process was promoted to the community through the City News newsletter, Facebook, the City's website and in an article in the Mercury newspaper.

12. Community and Stakeholder Engagement

- 12.1. No further community or stakeholder engagement is considered necessary for this proposal.

13. Delegation

- 13.1. This matter is delegated to Council.

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.



Tristan Widdowson
**STRATEGIC PLANNER | URBAN
FUTURES**



Neil Noye
DIRECTOR CITY LIFE

Date: 19 August 2022
File Reference: F22/75860

Attachment A: Significant Tree Assessment Criteria ↓ 

CATEGORIES OF SIGNIFICANCE

Significant Tree Assessment Criteria

Category	Description
1. Trees of outstanding aesthetic significance.	These are trees whose form, seasonal beauty and/or placement is such that they are not only magnificent examples of their species but are also a significant aesthetic component of the streetscape, park, garden or natural landscape in which they grow
2. Trees of outstanding dimensions in height, trunk circumference or canopy spread.	The biggest, tallest, widest examples of any species will always attract attention and admiration. For example an outstanding example of the species in form, structure and health.
3. Trees that are very old or venerable.	These trees may not be particularly beautiful but their age and associated links to the past, makes them significant to the community. For example trees which reveal previous landscapes or land use such as estate boundaries or orchards.
4. Trees that commemorate, or are reminders of, cultural practices, historic events or famous people.	<p>These trees are not necessarily old but have cultural significance through association with a significant person or event. This can include:</p> <ul style="list-style-type: none"> • Trees that have strong associations with specific community or cultural groups for spiritual, cultural, religious or other associated reasons. • Trees planted by royalty, political figures or community leaders or to commemorate significant international or local events. • Trees that have a recognised association with aboriginal culture or heritage or are valued for continuing and developing cultural traditions.
5. Trees that are recognised as a significant component of a natural landscape, historic site, town, park or garden.	These are trees that enhance the unique character of a natural landscape, streetscape, park or town and whose loss would fundamentally alter that character. These trees are also those identified as contributing to the state or local significance of a historic site, private garden or estate.



6. Trees that have local significance.	These trees are trees that, as a component of a streetscape, park or garden, are important to the local community and are recognised features of the immediate landscape or provide a sense of place. The loss of these trees may impact on the local community.
7. Trees of a species or variety that is rare or of very localised distribution.	These trees have important scientific ecological or horticultural significance. For example trees that are endangered as a species or unique in distribution or position in the natural landscape. This can include remnant native vegetation that indicates the former extent of the species, rare/threatened species or those at the edge of their natural range, or locally uncommon species.
8. Trees that are of horticultural or genetic value.	These trees could provide important and valuable propagating stock for scientific research, forestry or horticulture industries because their genetic characteristics differ from the type. For example trees that: <ul style="list-style-type: none"> • Are a source of seed from a local gene pool • Are particularly resistant to disease or climate extremes • Have a particular growth form • Have a tolerance to pests or disease
9. Trees that have a significant contribution to the integrity of an ecological community.	These trees are remnant native species which provide significant habitat for rare, threatened or locally uncommon or common native species. For example trees that provide breeding and foraging habitat, roosting sites and refuge.
10. Trees that are significant for reasons that are difficult to categorise.	Very simply, these trees are significant because they are interesting! Whether they are examples of the art of topiary or simply growing in extraordinary circumstances, they will immediately catch the attention of the passer by. For example interesting growth forms, outgrowths, branch fusion or pruning.