



CITY OF HOBART

AGENDA

Planning Committee Meeting
Open Portion
Wednesday, 29 March 2023
at 5:00 pm
Council Chamber, Town Hall



City of **HOBART**

THE MISSION

Working together to make Hobart a better place for the community.

THE VALUES

The Council is:

| | |
|----------------------------------|--|
| People | We care about people – our community, our customers and colleagues. |
| Teamwork | We collaborate both within the organisation and with external stakeholders drawing on skills and expertise for the benefit of our community. |
| Focus and Direction | We have clear goals and plans to achieve sustainable social, environmental and economic outcomes for the Hobart community. |
| Creativity and Innovation | We embrace new approaches and continuously improve to achieve better outcomes for our community. |
| Accountability | We are transparent, work to high ethical and professional standards and are accountable for delivering outcomes for our community. |

ORDER OF BUSINESS

Business listed on the agenda is to be conducted in the order in which it is set out, unless the committee by simple majority determines otherwise.

APOLOGIES AND LEAVE OF ABSENCE

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Planning Committee Meeting (Open Portion) held Wednesday, 29 March 2023 at 5:00 pm in the Council Chamber, Town Hall.

This meeting of the Planning Committee is held in accordance with a Notice issued by the Premier on 31 March 2022 under section 18 of the *COVID-19 Disease Emergency (Miscellaneous Provisions) Act 2020*.

The title Chief Executive Officer is a term of reference for the General Manager as appointed by Council pursuant s.61 of the *Local Government Act 1993* (Tas).

COMMITTEE MEMBERS

Apologies:

Alderman S Behrakis (Chairman)
Lord Mayor Councillor A M Reynolds
Deputy Lord Mayor Councillor H Burnet
Alderman M Zucco
Councillor W F Harvey
Councillor M Dutta
Councillor Dr Z Sherlock
Councillor J Kelly
Councillor L Elliot
Alderman L Bloomfield
Councillor R Posselt
Councillor B Lohberger

Leave of Absence: Nil

1. CONFIRMATION OF MINUTES

The minutes of the Open Portion of the Planning Committee meeting held on [Wednesday, 15 March 2023](#), are submitted for confirming as an accurate record.

2. CONSIDERATION OF SUPPLEMENTARY ITEMS

Ref: Part 2, Regulation 8(6) of the *Local Government (Meeting Procedures) Regulations 2015*.

Recommendation

That the Committee resolve to deal with any supplementary items not appearing on the agenda, as reported by the Chief Executive Officer.

3. INDICATIONS OF PECUNIARY AND CONFLICTS OF INTEREST

Ref: Part 2, Regulation 8(7) of the *Local Government (Meeting Procedures) Regulations 2015*.

Members of the Committee are requested to indicate where they may have any pecuniary or conflict of interest in respect to any matter appearing on the agenda, or any supplementary item to the agenda, which the Committee has resolved to deal with.

4. TRANSFER OF AGENDA ITEMS

Regulation 15 of the *Local Government (Meeting Procedures) Regulations 2015*.

A Committee may close a part of a meeting to the public where a matter to be discussed falls within 15(2) of the above regulations.

In the event that the Committee transfer an item to the closed portion, the reasons for doing so should be stated.

Are there any items which should be transferred from this agenda to the closed portion of the agenda, or from the closed to the open portion of the agenda?

5. PLANNING AUTHORITY ITEMS - CONSIDERATION OF ITEMS WITH DEPUTATIONS

In accordance with the requirements of Part 2 Regulation 8(3) of the *Local Government (Meeting Procedures) Regulations 2015*, the Chief Executive Officer is to arrange the agenda so that the planning authority items are sequential.

In accordance with Part 2 Regulation 8(4) of the *Local Government (Meeting Procedures) Regulations 2015*, the Committee by simple majority may change the order of any of the items listed on the agenda, but in the case of planning items they must still be considered sequentially – in other words they still have to be dealt with as a single group on the agenda.

Where deputations are to be received in respect to planning items, past practice has been to move consideration of these items to the beginning of the meeting.

RECOMMENDATION

That in accordance with Regulation 8(4) of the *Local Government (Meeting Procedures) Regulations 2015*, the Committee resolve to deal with any items which have deputations by members of the public regarding any planning matter listed on the agenda, to be taken out of sequence in order to deal with deputations at the beginning of the meeting.

6. 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.

6.1 APPLICATIONS UNDER THE HOBART INTERIM PLANNING SCHEME 2015

6.1.1 220 WATERWORKS ROAD, DYNMYRNE - NEW SHARED TRACK AND ASSOCIATED WORKS INCLUDING VEGETATION REHABILITATION PLN-22-665 - FILE REF: F23/28580

Address: 220 Waterworks Road, Dynmyrne

Proposal: New Shared Track and Associated Works including Vegetation Rehabilitation

Expiry Date: 31 March 2023

Extension of Time:

Author: Adam Smee

RECOMMENDATION

That pursuant to the *Hobart Interim Planning Scheme 2015*, the Planning Committee, in accordance with the delegations contained in its terms of reference, approves the application for new shared track and associated works including vegetation rehabilitation at 220 Waterworks Road, Dynmyrne, 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-22-665 - 220 WATERWORKS ROAD DYNMYRNE TAS 7005 - 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: 8009 dated 2 December 2022, as attached to the permit.

Reason for condition

To clarify the scope of the permit.

ENV 8

All recommended risk mitigation measures in section 3.3 of the landslide risk management report by William C Cromer Pty Ltd dated March 2022 must be implemented prior to the commencement of use and must be maintained for the life of the use/development, unless otherwise agreed in writing by Council's Environmental Development Planner based on advice from a suitably qualified person as defined under the Landslide Code.

Reason for condition

To reduce the risk to life and property, and the cost to the community, caused by landslides.

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.

ENV s1

All recommended control measures in the rockfall risk management plan (no author or date provided) must be

implemented prior to the commencement of use and must be maintained for the life of the use/development, unless otherwise agreed in writing by Council's Environmental Development Planner based on advice from a suitably qualified person as defined under the Landslide Code.

Reason for condition

To reduce the risk to life and property, and the cost to the community, caused by landslides.

HER s2

New work for the viewing decks, fencing, handrails and barriers at the Pipe Well Head must demonstrate compliance with the Design Guidelines Hobart Mountain Water Supply System.

Detailed plans must be submitted and approved as a Condition Endorsement, demonstrating the designs are in accordance with the above requirement. The documentation must:

- 1. show specific measurements and design details, and**
- 2. colours, materials and finishes as specified in the Design Guidelines Hobart Mountain Water Supply System, dated 2013.**

All work required by this condition must be undertaken in accordance with the approved detailed plans and drawings.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

Reason for condition

Ensure that the heritage listed Mountain Water Supply System has a continuity of design and presents as a single heritage entity.

OPS 4

All recommendations listed in the Natural Values Report (ENVIRO-DYNAMICS, March 2022, pp.21-22) are to be implemented.

Reason for condition

To minimise the loss of identified threatened native vegetation communities and threatened flora species.

OPS 5

Tree protection measures must be undertaken in accordance with the following recommendations from the Natural Values Report (ENVIRO- DYNAMICS, March 2022).

Significant trees are mature blue gums (*E. globulus*) DBH>60 cm, mature stringybarks (*E. obliqua*) DBH>100 cm, old growth eucalypt trees in the DTO community and dead stags with potential hollows.

For the significant trees as defined above, no roots are to be cut >100 mm within the Structural Root Zone (SRZ) and >75 mm within the Tree Protection Zone (TPZ).

The track is to be built up and over roots of the above sizes, to a minimum of 100 mm and maximum of 300 mm depth, with soil, gravel and/or rock as applicable.

Any build-up of track formation > 300 mm requires a permeable foundation such as rock or gravel, to allow aeration of the soil below.

Where track alteration to avoid roots is not possible, a 10% incursion limit as per AS1490-2009 into the TPZ applies.

Clearly mark out a protection zone around all significant trees prior to works, to aid in following the above protocols.

Reason for condition

To conserve identified threatened fauna species by minimising clearance of important habitat and managing environmental impact.

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.

CONDITION ENDORSEMENT

If any condition requires that further documents are submitted and approved, you will need to submit the relevant documentation to satisfy the condition via the Condition Endorsement Submission on Council's [online services e-planning portal](#). Detailed instructions can be found [here](#).

Once approved, the Council will respond to you via email that the condition has been endorsed (satisfied).

Where building approval is also required, it is recommended that documentation for condition endorsement be submitted well before submitting documentation for building approval. Failure to address condition endorsement requirements prior to submitting for building approval may result in unexpected delays.

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*.

STORMWATER

Please note that in addition to a building and/or plumbing permit, development must be in accordance with the Hobart City Council's Infrastructure By law. Click [here](#) for more information.

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](#).

FEES AND CHARGES

Click [here](#) for information on the Council's fees and charges.

- | | |
|---------------|--|
| Attachment A: | PLN-22-665 - 220 WATERWORKS ROAD DYNNYRNE TAS 7005 - Planning Committee or Delegated Report ↓ |
| Attachment B: | PLN-22-665 - 220 WATERWORKS ROAD DYNNYRNE TAS 7005 - Attachment B - Planning Committee Agenda Documents ↓ |
| Attachment C: | PLN-22-665 - 220 WATERWORKS ROAD DYNNYRNE TAS 7005 - Attachment C - Planning Referral Officer - Senior Cultural Heritage Officer Report ↓ |
| Attachment D: | PLN-22-665 - 220 WATERWORKS ROAD DYNNYRNE TAS 7005 - Attachment D- Planning Referral Officer Environmental Development Planner Report ↓ |

**APPLICATION UNDER HOBART INTERIM PLANNING SCHEME 2015**

| | |
|-----------------------|--|
| Type of Report: | Committee |
| Committee: | 29 March 2023 |
| Expiry Date: | 31 March 2023 |
| Application No: | PLN-22-665 |
| Address: | 220 WATERWORKS ROAD , DYNMYRNE |
| Applicant: | Bree Hunter (City of Hobart) GPO Box 503 |
| Proposal: | New Shared Track and Associated Works including Vegetation Rehabilitation |
| Representations: | No representations. |
| Performance criteria: | Landslide Code: <ul style="list-style-type: none">• Buildings and Works, other than Minor Extensions Electricity Transmission Infrastructure Protection Code: <ul style="list-style-type: none">• Development within the electricity transmission corridor Biodiversity Code: <ul style="list-style-type: none">• Buildings and Works Historic Heritage Code: <ul style="list-style-type: none">• Demolition, and• Buildings and Works other than Demolition. |

1. Executive Summary

- 1.1 Planning approval is sought for a new shared track and associated works including vegetation rehabilitation at 220 Waterworks Road, Dynmyrne.

- 1.2 More specifically the proposal includes realignment of an existing section of shared track from above Gentle Annie Falls on the Pipeline Track to the Waterworks Reserve. The proposal also includes works to highlight an historic heritage feature, Pipe Head Well, which is currently not publicly accessible, including modification of an existing viewing platform. The new track will be a shared use track and approximately 2.3 km long.
- 1.3 The proposal relies on performance criteria to satisfy the following standards and codes:
 - 1.3.1 E3.0 Landslide Code - E3.7 Development Standards for Buildings and Works
 - 1.3.2 E8.0 Electricity Transmission Infrastructure Protection Code - E8.7 Development Standards for Buildings and Works
 - 1.3.3 E10.0 Biodiversity Code - E10.7 Development Standards
 - 1.3.4 E13.0 Historic Heritage Code - E13.7 Development Standards for Heritage Places
- 1.4 No representations were received during the statutory advertising period between 17 November and 1 December 2022.
- 1.5 The proposal is recommended for approval subject to conditions.
- 1.6 The final decision is delegated to the Planning Committee, because the application includes development on Council land.

2. Site Detail

- 2.1 The site is within the Ridgeway Park, which is an area of Council maintained land at the south-western edge of the city. The site is adjacent to a part of the park that is known as Waterworks Reserve. The site is bushland and includes several trails. The site is mostly surrounded by bushland although there are cleared areas and a reservoir within the reserve to the north-east.



Figure 1: aerial view of site and surrounding land (property boundaries in blue).

3. Proposal

- 3.1 Planning approval is sought for new shared track and associated works including vegetation rehabilitation at 220 Waterworks Road, Dynnyrne.

- 3.2 More specifically the proposal includes realignment of an existing section of shared track from above Gentle Annie Falls on the Pipeline Track to the Waterworks Reserve. The proposal also includes works to highlight an historic heritage feature, Pipe Head Well, which is currently not publicly accessible, including modification of an existing viewing platform. The new track will be a shared use track and approximately 2.3 km long.

4. Background

- 4.1 Background information and the rationale for the proposed track replacement project are provided in the covering letter provided within the application.

5. Concerns raised by representors

- 5.1 No representations were received during the statutory advertising period.

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 of the site is for passive recreation. The existing use is a permitted use in the above zone. The proposed development would be associated with the existing use.
- 6.4 The proposal has been assessed against:
- 6.4.1 29.0 Environmental Management Zone
 - 6.4.2 E3.0 Landslide Code
 - 6.4.3 E8.0 Electricity Transmission Infrastructure Protection Code

- 6.4.4 E10.0 Biodiversity Code
- 6.4.5 E13.0 Historic Heritage Code
- 6.5 The proposal relies on the following performance criteria to comply with the applicable standards:
 - 6.5.1 E3.0 Landslide Code:
 - E3.7.1 Buildings and Works, other than Minor Extensions*
 - 6.5.2 E8.0 Electricity Transmission Infrastructure Protection Code:
 - E8.7.1 Development within the electricity transmission corridor*
 - 6.5.3 E10.0 Biodiversity Code:
 - E10.7.1 Buildings and Works*
 - 6.5.4 E13.0 Historic Heritage Code:
 - E13.7.1 Demolition*
 - E13.7.2 Buildings and Works other than Demolition P1, P2, and P3*
- 6.6 Each relevant performance criterion is assessed below.
- 6.7 *E3.7.1 Buildings and Works, other than Minor Extensions*
 - 6.7.1 There is no acceptable solution for clause *E3.7.1* which applies where buildings and works are proposed in a Landslide Hazard Area.
 - 6.7.2 The proposal includes buildings and works and the site is within a Landslide Hazard Area.
 - 6.7.3 As there is no acceptable solution for the above clause the proposal therefore relies upon assessment against the below performance criterion.
 - 6.7.4 The performance criterion at clause *E3.7.1* provides as follows:
 - Buildings and works must satisfy all of the following:*
 - (a) no part of the buildings and works is in a High Landslide Hazard*

Area;

(b) the landslide risk associated with the buildings and works is either:

(i) acceptable risk; or

(ii) capable of feasible and effective treatment through hazard management measures, so as to be tolerable risk.

- 6.7.5 Council's Environmental Development Planner has assessed the proposal against the above performance criterion and provided the following comments:

"The proposal does not include track works in a high landslide hazard area. A landslide risk management report by William C Cromer Pty Ltd dated March 2022 provides an assessment of landslide risk associated with the proposal. None of the hazards present an unacceptable risks to life to individual track users, construction workers, or maintenance crews. However, without suitable hazard management measures, the report notes that the potential risk to society is unacceptable at one section of the track (site 25 in the report). To manage risk at site 25 to a tolerable level, the report recommends that the track be shortened by approximately 20 m in this location. It is noted that the report was completed prior to track alignment concept being finalised, and several of the realignment recommendations in the report have already been implemented by the proposal. The shortening near site 25 has not. Therefore, accordance with recommendations of the report, risk mitigation measures must be implemented to meet the performance criterion. Following implementation of the mitigation measures, the landslide risk associated with the proposal, and ongoing use of the track, is considered acceptable and/or tolerable. Subject to condition, the proposal meets the performance criterion".

- 6.7.6 The proposal complies with the above performance criterion.

6.8 *E8.7.1 Development within the electricity transmission corridor*

- 6.8.1 The acceptable solution at clause *E8.7.1* requires development to not be within a registered electricity easement.
- 6.8.2 The proposal includes development within a registered electricity easement.
- 6.8.3 The proposal does not comply with the above acceptable solution and therefore relies upon assessment against the below performance criterion.

- 6.8.4 The performance criterion at clause *E8.7.1* provides as follows:

Development must be located an appropriate distance from electricity transmission infrastructure, having regard to all of the following:

- (a) the need to ensure operational efficiencies of electricity transmission infrastructure;*
- (b) the provision of access and security to existing or future electricity transmission infrastructure;*
- (c) safety hazards associated with proximity to existing or future electricity transmission infrastructure;*
- (d) the requirements of the electricity transmission entity.*

- 6.8.5 Council's Environmental Development Planner has assessed the proposal against the above performance criterion and provided the following comments:

"The use and development of the track will result in very low impact on existing and future electricity infrastructure. Given the duration of stay, whereby track users will momentarily traverse in proximity to the electricity corridor, there is not considered to be any safety hazards posed by existing or potential electricity infrastructure on track users. The application has been referred to the electricity transmission entity for review and comment, who raised no objections to the proposal. The proposal meets the performance criterion".

- 6.8.6 The proposal complies with the above performance criterion.

6.9 *E10.7.1 Buildings and Works*

- 6.9.1 There is no applicable acceptable solution for clause *E10.7.1* which applies where clearance and conversion or disturbance within a Biodiversity Protection Area is proposed.
- 6.9.2 The proposal includes clearance and conversion or disturbance within a Biodiversity Protection Area.
- 6.9.3 As there is no applicable acceptable solution for the above clause the proposal therefore relies upon assessment against the below performance criterion.
- 6.9.4 The relevant sub-clause of the performance criterion at

clause E10.7.1 provides as follows:

(c) if high priority biodiversity values:

(i) development is designed and located to minimise impacts, having regard to constraints such as topography or land hazard and the particular requirements of the development;

(ii) impacts resulting from bushfire hazard management measures are minimised as far as reasonably practicable through siting and fire-resistant design of habitable buildings;

(iii) remaining high priority biodiversity values on the site are retained and improved through implementation of current best practice mitigation strategies and ongoing management measures designed to protect the integrity of these values;

(iv) special circumstances exist;

6.9.5 Council's Environmental Development Planner has assessed the proposal against the above performance criterion and provided the following comments:

"The proposal includes clearance and conversion of native vegetation in a vegetation community of high priority biodiversity value (*E. tenuiramis* forest on sediments - DTO). Although most of the track is outside the DTO community, to minimise disturbance, track switchbacks are avoided through this community unless traversing a section of heritage track. This significantly shortens the track distance through DTO. Given the narrow 1.5m wide track width, most of the clearance and conversion is also expected to be limited to understorey vegetation and immature trees. The track alignment also avoid a Tasmanian Devil den and provides 30m works exclusion zone.

A natural values assessment prepared by Enviro-dynamic Pty Ltd dated March 2022 has been submitted with the proposal documents. The assessment makes several recommendations regarding track alignment, weed management, construction methodology, and tree protection measures. These recommendations must be implemented. Subject to condition, the proposal meets the performance criterion".

6.9.6 The proposal complies with the above performance criterion.

6.10 *E13.7.1 Demolition*

- 6.10.1 There is no acceptable solution for clause *E13.7.1* which applies where demolition is proposed on a heritage place.
- 6.10.2 The proposal includes demolition and the site is listed as a heritage place in Table E13.1 of the planning scheme.
- 6.10.3 As there is no acceptable solution for the above clause the proposal therefore relies upon assessment against the below performance criterion.
- 6.10.4 The performance criterion at clause *E13.7.1* provides as follows:

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.*

- 6.10.5 Council's Senior Cultural Heritage Officer has assessed the proposal against the relevant provisions of the Historic Heritage Code. the SCHO's report is included as an attachment. The SCHO's comments regarding the proposal when considered against the above performance criterion are as follows:

"The proposed works do not involve the demolition of fabric or elements that are of heritage significance being elements of recent landscaping and other visitor facilities in and around the carpark next to site 9. The proposal satisfies *E13.7.1 Demolition P1*".

- 6.10.6 The proposal complies with the above performance criterion.

6.11 *E13.7.2 Buildings and Works other than Demolition P1, P2, and P3*

- 6.11.1 There are no applicable acceptable solutions for clause *E13.7.2* which

applies where buildings and works other than demolition are proposed on a heritage place.

- 6.11.2 The proposal includes buildings and works other than demolition and the site is listed as a heritage place in Table E13.1 of the planning scheme.
- 6.11.3 As there are no applicable acceptable solutions for the above clause the proposal therefore relies upon assessment against the below performance criteria.
- 6.11.4 The relevant performance criteria at clause E13.7.2 provide as follows:

P1

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.*

P2

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.*

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.

- 6.11.5 Council's Senior Cultural Heritage Officer has assessed the proposal against the above performance criteria and provided the following comments:

"The new work, with a condition of permit will ensure the resultant new work is consistent with the already designed and installed elements elsewhere on the Hobart Mountain Water Supply System.

On this basis, the works will satisfy *E13.7.2 Building and Works other than Demolition* P1, P2, and P3 of the Historic Heritage Code of the Scheme".

6.11.6 The proposal complies with the above performance criteria.

7. Discussion

- 7.1 Planning approval is sought for new shared track and associated works including vegetation rehabilitation at 220 Waterworks Road, Dynnryne.
- 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 comply.
- 7.4 The proposal has been assessed by other Council officers, including the Council's Environmental Development Planner and its Senior Cultural Heritage Officer. The officers have raised no objection to the proposal, subject to conditions.
- 7.5 The proposal is recommended for approval.

8. Conclusion

- 8.1 The proposed new shared track and associated works including vegetation rehabilitation at 220 Waterworks Road, Dynnryne, satisfies the relevant provisions of the *Hobart Interim Planning Scheme 2015* and is recommended for approval.

9. Recommendations

That: Pursuant to the *Hobart Interim Planning Scheme 2015*, the Planning Committee, in accordance with the delegations contained in its terms of reference, approves the application for new shared track and associated works including vegetation rehabilitation at 220 Waterworks Road, Dynnyrne, 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-22-665 - 220 WATERWORKS ROAD DYNMYRNE TAS 7005 - 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: 8009 dated 2 December 2022, as attached to the permit.

Reason for condition

To clarify the scope of the permit.

ENV 8

All recommended risk mitigation measures in section 3.3 of the landslide risk management report by William C Cromer Pty Ltd dated March 2022 must be implemented prior to the commencement of use and must be maintained for the life of the use/development, unless otherwise agreed in writing by Council's Environmental Development Planner based on advice from a suitably qualified person as defined under the Landslide Code.

Reason for condition

To reduce the risk to life and property, and the cost to the community, caused by landslides.

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.

ENV s1

All recommended control measures in the rockfall risk management plan (no author or date provided) must be implemented prior to the commencement of use and must be maintained for the life of the use/development, unless otherwise agreed in writing by Council's Environmental Development Planner based on advice from a suitably qualified person as defined under the Landslide Code.

Reason for condition

To reduce the risk to life and property, and the cost to the community, caused by landslides.

HER s2

New work for the viewing decks, fencing, handrails and barriers at the Pipe Well Head must demonstrate compliance with the Design Guidelines Hobart Mountain Water Supply System.

Detailed plans must be submitted and approved as a Condition Endorsement, demonstrating the designs are in accordance with the above requirement. The documentation must:

1. **show specific measurements and design details, and**
2. **colours, materials and finishes as specified in the Design Guidelines**

Hobart Mountain Water Supply System, dated 2013.

All work required by this condition must be undertaken in accordance with the approved detailed plans and drawings.

Advice: This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

Reason for condition

Ensure that the heritage listed Mountain Water Supply System has a continuity of design and presents as a single heritage entity.

OPS 4

All recommendations listed in the Natural Values Report (ENVIRO-DYNAMICS, March 2022, pp.21-22) are to be implemented.

Reason for condition

To minimise the loss of identified threatened native vegetation communities and threatened flora species.

OPS 5

Tree protection measures must be undertaken in accordance with the following recommendations from the Natural Values Report (ENVIRO-DYNAMICS, March 2022).

Significant trees are mature blue gums (*E. globulus*) DBH>60 cm, mature stringybarks (*E. obliqua*) DBH>100 cm, old growth eucalypt trees in the DTO community and dead stags with potential hollows.

For the significant trees as defined above, no roots are to be cut >100 mm within the Structural Root Zone (SRZ) and >75 mm within the Tree Protection Zone (TPZ).

The track is to be built up and over roots of the above sizes, to a minimum of 100 mm and maximum of 300 mm depth, with soil, gravel and/or rock as applicable.

Any build-up of track formation > 300 mm requires a permeable foundation

such as rock or gravel, to allow aeration of the soil below.

Where track alteration to avoid roots is not possible, a 10% incursion limit as per AS1490-2009 into the TPZ applies.

Clearly mark out a protection zone around all significant trees prior to works, to aid in following the above protocols.

Reason for condition

To conserve identified threatened fauna species by minimising clearance of important habitat and managing environmental impact.

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.

CONDITION ENDORSEMENT

If any condition requires that further documents are submitted and approved, you will need to submit the relevant documentation to satisfy the condition via the Condition Endorsement Submission on Council's [online services e-planning portal](#). Detailed instructions can be found [here](#).

Once approved, the Council will respond to you via email that the condition has been endorsed (satisfied).

Where building approval is also required, it is recommended that documentation for condition endorsement be submitted well before submitting documentation for building approval. Failure to address condition endorsement requirements prior to submitting for building approval may result in unexpected delays.

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*.

STORMWATER

Please note that in addition to a building and/or plumbing permit, development must be in accordance with the Hobart City Council's Infrastructure By law. Click [here](#) for more information.

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](#).

FEES AND CHARGES

Click [here](#) for information on the Council's fees and charges.



(Adam Smee)

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: 21 March 2023

Attachment(s):

Attachment B - Planning Committee Agenda Documents


Attachment C - Planning Referral Officer - Senior Cultural Heritage Officer Report

Attachment D - Planning Referral Officer Environmental Development Planner Report

 PLN-22-665 - 220 WATERWORKS ROAD

Application Information

▼ Application Details

PLN-22-665 New Shared Track and Associated Works including Vegetation Rehabilitation 

Submitted on: 06/10/2022
Accepted as Valid on: 06/10/2022
Target Time Frame: 42 Days.
Elapsed Time: 35 Days (*Stopped: 10 Days*) = 25 Days Expiry date: 27/11/2022
Officer: Adam Smee

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. *

 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)? *

environmental management

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

Construction of shared use track

Estimated cost of development *

250000.00

Existing floor area (m2)

0.00

Proposed floor area (m2)

Site area (m2)

Carparking on Site

Total parking spaces

0

Existing parking spaces

0

N/A

☒ Other (no selection chosen)

Other Details

Does the application include signage? *

No

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

0

Tasmania Heritage Register

Is this property on the Tasmanian Heritage Register?

Yes

Edit



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-22-665
THC WORKS REF: 8009
REGISTERED PLACE NO: 112270
APPLICANT: Bree Hunter
DATE: 02 December 2022

NOTICE OF HERITAGE DECISION

(Historic Cultural Heritage Act 1995)

The Place: Hobart Mountain Water Supply System, 220 Waterworks Rd, Ridgeway.
Proposed Works: New shared track and associated works including vegetation rehabilitation.

Under section 39(6)(a) 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-22-665, advertised on 17/11/2022, subject to the following conditions:

1. **A site induction protocol must be prepared by a suitably qualified heritage consultant and must be implemented for all contractors working within or adjacent to the registered place. The induction protocol must explain the heritage values of the place, including archaeological matters, and the terms of Condition 2.**

Reason for condition

To ensure that the heritage values of the place are appropriately understood, considered and managed.

2. **(i) Where it transpires that the proposed work, including the final alignment for the new tracks and the new viewing platform, may impact heritage features, advice on impact mitigation should be obtained from a suitably qualified heritage consultant.**
(ii) The heritage consultant's advice and recommended actions to mitigate heritage impacts must be adhered to.

Reason for condition

To ensure that the heritage values of the place are appropriately considered and managed.

Advice

It is recommended that interpretation of key heritage features is included as part of the new work, based on the conservation policies included in the *Hobart Mountain Water Supply System Conservation Management Plan* (Futurepast 2012).

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

Pipeline Track Improvements – Gentle Annie Falls

Pipeline Track Improvements – Gentle Annie Falls

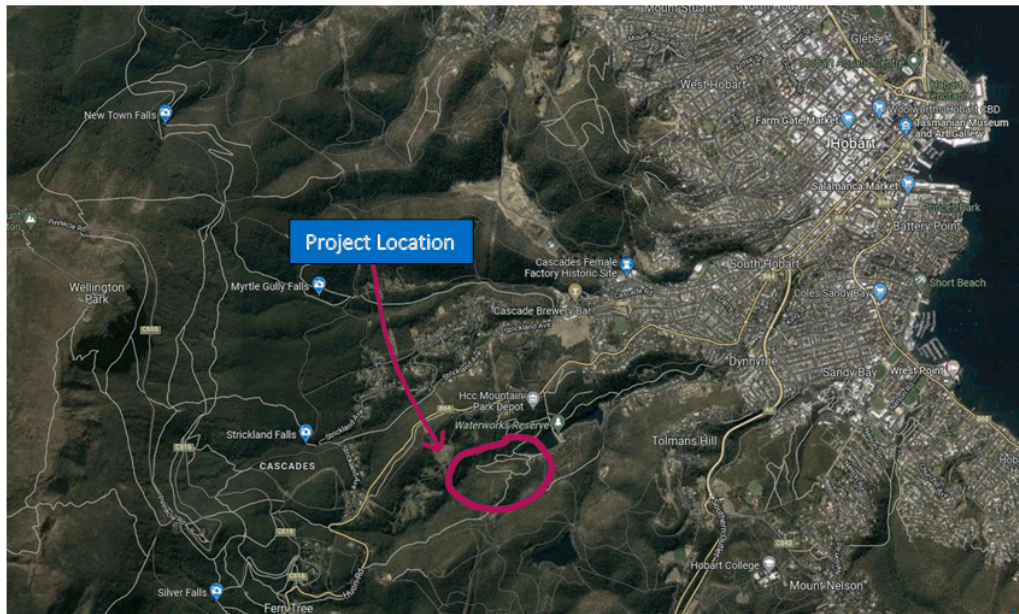
Cover letter

The Pipeline Track is a popular recreational track that stretches from Waterworks Reserve in Dynnyrne to the North West Bay River in Neika.

The section of track closest to Waterworks Reserve (located in the suburb of Dynnyrne) is restricted by steep and narrow (Class 4) steps at the Gentle Annie Falls heritage site. Map 1 provides an overview of the projects location in relation to Hobart and nearby suburbs.

In its current state, the steepness of this section of the pipeline track restricts access to a large proportion of potential users, including young families and mountain bike riders.

Therefore, a Class 2/Easy shared use track is proposed, averaging 1.5m in width, with an average gradient of $\leq 5\%$. The track will allow for improved access for a wider range of user types and ability levels, and better highlight the heritage features within the area of Waterworks Reserve and the Mountain Water Supply System.

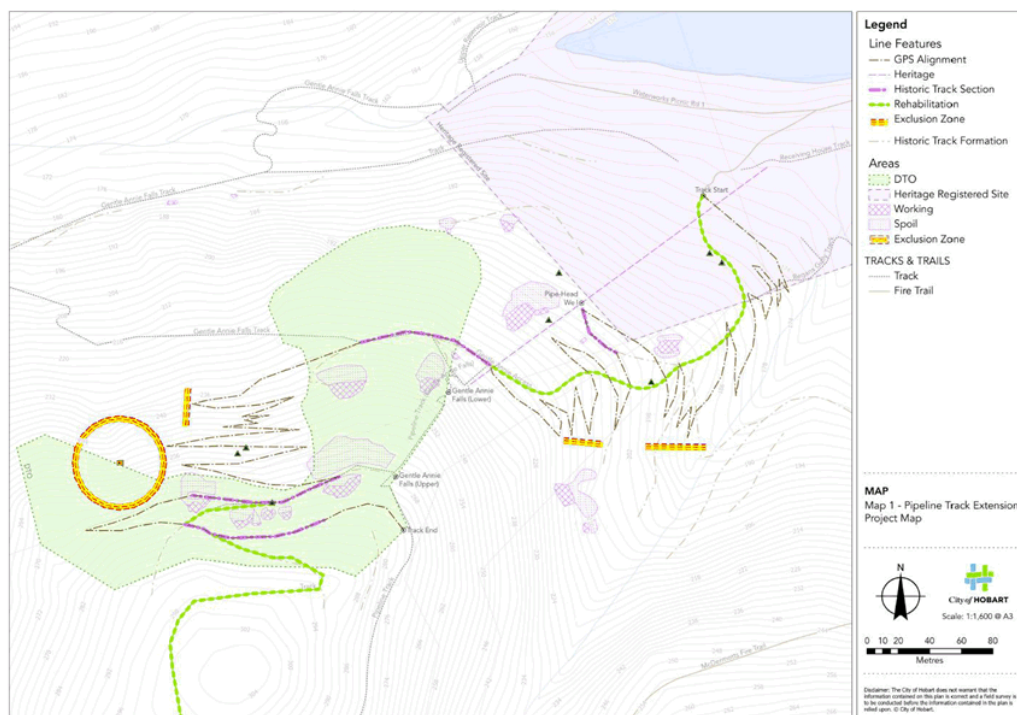


Map 1: Location of proposed works

The proposed project will enable the Pipeline Track to become an iconic visitor experience, with an obvious and accessible entry point within Waterworks Reserve.

Map 2 provides an overview of the proposed alignment and important information obtained from various project assessments; natural values, cultural, heritage and geotechnical.

Pipeline Track Improvements – Gentle Annie Falls

**Map 2: Overview of proposed track alignment**

Attached to this cover letter are the following documents:

- Cover Letter
- Map of proposed track improvements
- Designs
- Heritage Assessment
- Heritage Impact Assessment (HIA)
- Aboriginal Heritage Assessment
- Natural Values Assessment (and weed management)
- Advice Re: final alignment and natural values
- Geotechnical Risk Assessment
- Rockfall Risk Management Plan
- CEHMP

Background

Pipeline Track is a Class 2 shared use track providing wide, easy recreational use from the top of Gentle Annie Falls to beyond Wellington Falls. Current access from Pipeline Track to Waterworks Reserve is restricted by steep and narrow (Class 4) steps at the Gentle Annie Falls heritage site. In effect, this creates an abrupt change in track difficulty from Easy to Difficult, and restricts bicycle and pram access into Waterworks Reserve from this location. Access from the base of the Gentle Annie Falls site is either along the Class 3 walking track Gentle Annie Falls Track, or the Gentle Annie Falls Access Fire Trail (effectively the beginning of the Pipeline Track), a wide route with a steep alignment and loose soils.

Pipeline Track Improvements – Gentle Annie Falls

The improvement of this section of track has been identified as a priority through the Recreational Network Gaps project. It is also identified as a high (5/5) priority capital works project in the *Conservation and Management Plan for the Pipeline Track (1994)*. Despite the age of this plan, the recommendation has not been implemented.

There are several prominent heritage features located within the project area. This includes the Gentle Annie Falls feature, the Mountain Water Supply System pipeline (the namesake of the Pipeline Track), the significant sandstone structure of the pipe-head well, numerous benched trail remnants and quarry sites of varying sizes.

The vegetation in the project area is primarily listed as Dry Eucalypt Forest and Woodland on a northern aspect (*E. obliqua* and *E. amygdalina*), and is relatively open throughout the area, except for wetter gullies to the east and west.

The geology is dominated by sandstone, siltstone and mudstone. Several significant cliff lines bisect the area, running east to west. These vary in height and profile up to an estimated 10m high.

The Pipeline Track is a listed heritage site, and its management is overseen by the multi-agency Pipeline Track Management Committee. Waterworks Reserve is also a heritage listed site.

Proposed Works

It is proposed that a dual direction, shared use track linking the Waterworks Site 9 area with the top of Gentle Annie Falls be constructed to a AS2156.1-2001 Class 2/TDRS Easy (Green) standard. The track will be surfaced with an imported mudstone or red gravel and have an average width of 1.5m. This track would in effect be a continuation of the Pipeline Track, providing a recreational link from Waterworks Reserve to kunanyi / Mount Wellington and the wider recreational track and trail network, suitable for a wide range of users of varying ability.

Beginning at the Waterworks Site 9 car park, the track will ascend through the parcel of bushland between Site 9 and the base on Gentle Annie Falls, intersecting with key heritage locations along its length. The alignment will be influenced by heritage requirements, as well as the local terrain, which may restrict the available corridor.

The track will continue from the base of Gentle Annie Falls, climbing to the west of the existing steps and joining the Pipeline Track at the lookout located at the top of the Falls site.

If a suitable track alignment is able to intersect with the pipe-head well feature, works will be undertaken to ensure the viewing platform at this location meets appropriate safety standards, and that public access to the feature itself is restricted in an appropriate manner.

Interpretation signage will be investigated (separate to this project) for inclusion at key locations, such as the track entrance, the pipe-head well, quarry site(s), and Gentle Annie Falls.

The fire trail will be converted to a dormant fire trail, allowing for natural rehabilitation of the alignment.

The gentle gradient and suitable construction techniques will provide a sustainable track, with adequate drainage at regular intervals, and hardening of the surface where necessary.

Community Benefits

This project will establish the Pipeline Track as an iconic visitor experience, with an obvious entry point at its Waterworks Reserve terminus. It will also provide the following:

Pipeline Track Improvements – Gentle Annie Falls

- Establish a fit-for-purpose shared use track that forms a key link in the wider recreational network, and allows for recreational access by a wider range of users.
- Significantly improve visitor safety by providing an alternative route to allow visitors to avoid the Gentle Annie Falls steps
- Retain a consistent class/difficulty for the entire length of the Pipeline Track
- Improve access for cyclists between Gentle Annie Falls and McDermotts Saddle
- Allow access for young families, less abled visitors, and those pushing prams

Strategic Alignment

This project will complete and/ or contribute to multiple recommendations and vision points within the *Conservation and Management Plan for the Pipeline Track (1994)*, including the following

- Provide a safe relocated walking track between the Receiving House and the top of Gentle Annie Falls, no steeper than 1:7, that maximises the experience of cultural and natural assets (p35)
- Improve the drainage between the Receiving House and the top of Gentle Annie Falls in order to minimise surface run off; preventing soil erosion and protect the sandstone troughing and cast iron pipes (p35)
- Provide a 'Sense of Entry' at the start of the Track near the Receiving House at Waterworks Reserve (p37)
- Replace viewing platform with an appropriate structure (p37) [Note: Replacement unlikely within budget, but improved access will increase replacement priority]
- Allow the Pipeline Track to '...prosper by attracting visitors and expanding its constituency.' (p50)
- Raise the level of public awareness about the Track and the various sites and features on it (p53-54)

This project is being undertaken in accordance with the *Capital City Strategic Plan 2019-2029*, where it supports the achievement of numerous outcomes under *Pillar 6: Natural Environment*, in particular through the following strategies:

6.1.2

Strengthen open space connectivity, in partnership with stakeholders, prioritising links between the river, bushland and the mountain, through acquisitions and other opportunities.

6.2.1

Support initiatives for residents and visitors to build their connection to nature.

6.5.4

Develop and enhance the network of walking, cycling, mountain biking and other recreational tracks and trails throughout the City's open space network.

Project Impacts

Natural Values

A Natural Values Assessment (NVA) has been undertaken, with a survey area encompassing the proposed track corridor and surrounding area. The summary of the NVA report is as follows:

Two threatened vegetation communities, *Eucalyptus tenuiramis* forest and woodland on sediments (DTO) and *Eucalyptus amygdalina* forest and woodland on sandstone (DAS), listed under the *Nature Conservation Act 2002* occur in the survey area. The proposed track extension does not impact the *Eucalyptus amygdalina* forest and woodland on sandstone (DAS). The proposed track will traverse a short section of DTO but is considered to have less overall impact overall than going around this vegetation community. Sections of existing tracks and clear areas will be utilised wherever possible, and the clearing of understorey vegetation will be minimised and steep gradients will be avoided to reduce the extent of earthworks.

No known significant habitat for threatened fauna species will be impacted by the proposed works, providing trees are not removed or damaged. No significant impacts on natural values is anticipated from track construction or use by walkers and cyclists.

No threatened flora species were observed during the initial on-ground survey although records of the threatened species, bare midge-orchid, intersect the proposed track alignment (within an area bisected by the existing track). A summer survey for this species was carried out and no plants were recorded.

Tasmanian devil habitat and potential owl roost were observed in the southwestern corner of the survey area. The initial proposed alignment has been moved in order to avoid this area.

As per the recommendations in the NVA report, significant trees will be avoided wherever possible. Where impacts are unavoidable the following protocols will minimize impacts. This applies to mature blue gums (*E. globulus*) DBH>60 cm, mature stringybarks (*E. obliqua*) DBH>100 cm, old growth eucalypt trees in the DTO community and dead stags with potential hollows.

For the significant trees as defined above, no roots are to be cut >100 mm within the SRZ and >75 mm within the TPZ.

The track will be built up and over roots of the above sizes, to a minimum of 100 mm and maximum of 300 mm depth, with soil, gravel and/or rock as applicable.

Any build-up of track formation > 300 mm will require a permeable foundation such as rock or gravel to allow aeration of the soil below.

Where track alteration to avoid roots is not possible, a 10% incursion limit as per AS1490-2009 into the TPZ applies.

The protection zones around all significant trees will be clearly marked out prior to work commencing to aid in following these protocols.

Pipeline Track Improvements – Gentle Annie Falls

Land Stability

The proposed 2,300m long, zig-zagging track improvements near Gentle Annie Falls are exposed to various geotechnical hazards – observed and potential – but all hazards present acceptably low or very low risks to property (track infrastructure).

These acceptably low levels of risk to the track require no unusual construction techniques (appropriate construction methods are assumed) or unusual ongoing maintenance. Nevertheless, the initial proposed alignment has been altered in response to the geotechnical assessment.

During track construction or maintenance, risk to life assessments presented in this report suggest that crews will be at acceptably low risks from the identified hazards. Individual members of the public using the track will similarly be at an acceptably low level of risk to life. Track construction will potentially increase rockfall hazard. Mitigating this risk is adequately addressed in HCC's *Rockfall Risk Management Plan*.

Geotechnical risks to infrastructure and track users for this project are probably not dissimilar to risks associated with existing City of Hobart tracks in similar terrain.

Aboriginal Heritage

A desktop review of previous site records, heritage reports and management documents relating to the study area. This was followed by a field survey, undertaken by a Consulting Archaeologist and an Aboriginal Heritage Officer.

No Aboriginal heritage sites were found during the current assessment, consequently no specific site impacts have been identified. The potential for impacts to undiscovered artefacts and other site types is considered low.

Due to the steep ground slope, mobile surface soils and degree of historic disturbance, the potential for undiscovered cultural deposits to be present within the study area is considered low and no potential areas of sensitivity were designated.

If at any time during works personnel suspect Aboriginal heritage, works will cease immediately and staff are to follow the AHT Unanticipated Discovery Plan.

European Heritage

Waterworks Park and elements of the Pipeline Track are listed on the Tasmanian Heritage Register as part of the Hobart Mountain Water Supply System (ID 11227). The accompanying CPR identifies the listed area as encompassing a 6m wide alignment centred on the Pipeline Track containing the masonry toughing leading to the falls, and an area from 60-90m wide on the face of Gentle Annie falls spur centred on the conveyance from the falls to the Receiving House including the Pipe Head Well, and some of the closer quarry sites and associated access track.

The study area intersects one place, Waterworks Park (ID 3202), listed in Table E13.1 (Heritage Places) in the Historic Heritage Code of the Hobart Interim Planning Scheme. The boundaries of the listed place are not provided in the Code but are assumed to be the same as in the City of Hobart Open Space Parks spatial dataset. The summary of assessment results begins with the following:

Pipeline Track Improvements – Gentle Annie Falls

Previous researchers have defined/classified the historic heritage values within the current study area in terms of eleven features or complexes. These include two historic roads that predate the Hobart Mountain Water Supply System (RH/H2, RP/H15), eight features/complexes associated with the system (Features 2-9) and a house site (Feature 1) the post-dates the system. One of the eight water supply complexes (Feature 8B-F, 8J-O) comprises fifteen previously recorded quarry sites, eleven of which are located within the study area.

Ten of the eleven previously described historic features (RP/H2, RP/H15 & Features 1-8), including the eleven (Feature 8B-F, 8J-O) quarry sites were re-inspected to identify proximity and potential sensitivity to the proposed new track works. Detailed archaeological re-recording of features was not carried out due to the extent of previous work.

An additional four small workings (Feature 8S - 8V) and twelve tracks (Tracks 1-12) that do not appear to have been previously assessed were identified and documented to the level of previous records, while six tracks associated with previously recorded quarry sites (8A, 8B, 8K and 8M) were also assessed.

The proposed new track alignment avoids the majority of identified historic heritage features and with relatively minor localised adjustments should have minimal impact on the physical heritage of the Hobart Mountain Water Supply System.

The Historic Heritage Assessment outlines the four recommendations which have led the final alignment and design of the proposed track. Below are these recommendations along with a management action:

RECOMMENDATION 1

Redesign selected track turns to avoid intersecting quarry spoil heaps. Where full avoidance is not possible (such as at 8B (Q2), minimise the disturbance footprint and refer to relevant construction controls.

MANAGEMENT ACTION 1

Adhere to *Track Construction on Archaeological Sensitive Areas*.

RECOMMENDATION 2

Consider selectively realigning new track sections to make better use of/respect original track segments, notably Tracks 4 and 5 in the Regans Gully portion and 8A (Q1) and Track 11 at the upper falls. New works should be centred, protect underlying surface deposits and build up rather than reduce ground levels to achieve desired grades.

MANAGEMENT ACTION 2

The track has been aligned to run along the existing formation.

RECOMMENDATION 3

Do not use resident quarry waste for track fills, armouring or general landscaping works. The only potential exception to this rule is where track crossings cannot avoid waste dumps entirely and some re-profiling is necessary, in which case waste rocks may be re-purposed at that location, subject to any relevant heritage approval.

Pipeline Track Improvements – Gentle Annie Falls

MANAGEMENT ACTION 3

Quarry waste will not be used for track fills, armouring or general landscape works (except as per the exception noted above).

RECOMMENDATION 4

Review the concept design for a proposed new viewing platform and design/construction drawings for the final track alignment to confirm heritage mitigation requirements. The results of this review, which will consider design responses to this assessment report, should be included as supporting documents for planning and heritage approval.

MANAGEMENT ACTION 4

Drawings were submitted to the Heritage consultant for comment. The results have been included as supporting documents for planning and heritage approval.

Summary

The Pipeline Track is one of the City's iconic walks and it provides an outstanding resource for both the local community and visitors. The improvement of recreational access to and from Waterworks reserve is considered to have a significant long term social and community benefit that is environmentally sustainable.



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

29 September 2022

Bree Hunter (City of Hobart, Bushland, Biodiversity and Waterways) [mailto: hunterb@hobartcity.com.au](mailto:hunterb@hobartcity.com.au)
PO Box 503
HOBART TAS 7000

Dear Sir/Madam

**220 WATERWORKS ROAD, DYNMYRNE - NEW SHARED TRACK AND ASSOCIATED
WORKS INCLUDING VEGETATION REHABILITATION NOTICE OF LAND OWNER
CONSENT TO LODGE A PLANNING APPLICATION - GMC-22-64**

Site Address:

220 Waterworks Road

Description of Proposal:

New Shared Track and Associated Works including Vegetation Rehabilitation

Applicant Name:

Bree Hunter
City of Hobart, Bushland, Biodiversity and Waterways

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

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

way should such consent be seen as prejudicing any decision the Council is required to make as the statutory planning authority.

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

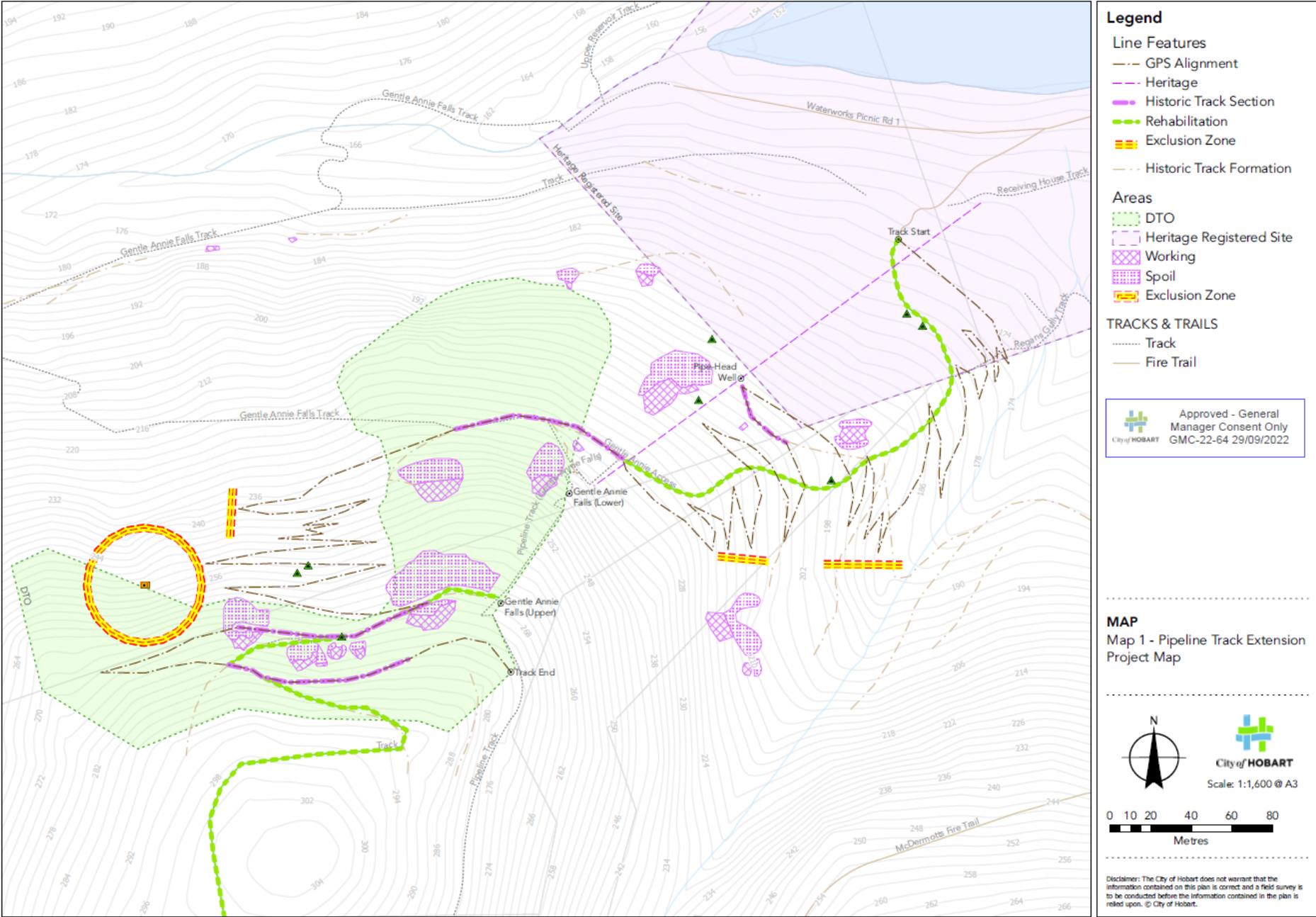


(Glenn Doyle)

HEAD OF CITY PROJECTS

Relevant documents/plans:

Pipeline Track Extension Project Map



**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

SEARCH OF TORRENS TITLE

| | |
|------------------|------------------------------|
| VOLUME 108899 | FOLIO 1 |
| EDITION 2 | DATE OF ISSUE 25-Jun-2015 |

SEARCH DATE : 05-Sep-2022

SEARCH TIME : 03.35 PM

DESCRIPTION OF LAND

City of HOBART
Lot 1 on Plan 108899
Being the land described in Indenture 6/7262
Derivation : For grantees see plan
Derived from A12528

SCHEDULE 1

HOBART CITY COUNCIL

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



SEARCH OF TORRENS TITLE

| VOLUME | FOLIO |
|---------|---------------|
| 108896 | 4 |
| EDITION | DATE OF ISSUE |
| 3 | 25-Jun-2015 |

SEARCH DATE : 05-Sep-2022

SEARCH TIME : 03.37 PM

DESCRIPTION OF LAND

City of HOBART
Lot 4 on Plan 108896
Being the land described in Indenture 11/3329
Excepting thereout Certificate of Title 2390/42 (17/33
Buckingham) 7A-2R-19Ps & the land described in Conv 40/3320.
Derivation : For grantees see plan
Derived from A12494

SCHEDULE 1

HOBART CITY COUNCIL

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

D10562 CAVEAT by Tasmanian Water and Sewerage Corporation
(Southern Region) Pty Limited (affecting that portion
of land described as Lot 1 and measuring 4190m2 as
detailed on the plan annexed thereto) Registered
06-May-2011 at noon

D10563 CAVEAT by Tasmanian Water and Sewerage Corporation
(Southern Region) Pty Limited (affecting that portion
of land described as Lot 1 and measuring 17.9 ha as
detailed on the plan annexed thereto) Registered
06-May-2011 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

SEARCH OF TORRENS TITLE

| | |
|------------------|------------------------------|
| VOLUME 108896 | FOLIO 10 |
| EDITION 2 | DATE OF ISSUE 25-Jun-2015 |

SEARCH DATE : 05-Sep-2022

SEARCH TIME : 03.37 PM

DESCRIPTION OF LAND

City of HOBART
Lot 10 on Plan 108896
Being the land described in Indenture 7/7549
Derivation : For grantees see plan
Derived from A12529

SCHEDULE 1

HOBART CITY COUNCIL

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
D10577 CAVEAT by Tasmanian Water and Sewerage Corporation
(Southern Region) Pty Limited (affecting that portion
of land described as Lot 1 and measuring 13 ha as
detailed on the plan annexed thereto) Registered
06-May-2011 at noon

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

SEARCH OF TORRENS TITLE

| | |
|------------------|------------------------------|
| VOLUME 108896 | FOLIO 3 |
| EDITION 2 | DATE OF ISSUE 25-Jun-2015 |

SEARCH DATE : 05-Sep-2022

SEARCH TIME : 03.36 PM

DESCRIPTION OF LAND

City of HOBART

Lot 3 on Plan 108896

Being the land thirdly described in Indenture 18/7238

Derivation : For grantees see plan

Derived from A12492

SCHEDULE 1

HOBART CITY COUNCIL

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

SEARCH OF TORRENS TITLE

| | |
|------------------|------------------------------|
| VOLUME 108896 | FOLIO 12 |
| EDITION 2 | DATE OF ISSUE 25-Jun-2015 |

SEARCH DATE : 13-Oct-2022

SEARCH TIME : 02.38 PM

DESCRIPTION OF LAND

City of HOBART
Lot 12 on Plan 108896
Being the land described in Indenture 5/2101
Derivation : For grantees see plan
Derived from A12538

SCHEDULE 1

HOBART CITY COUNCIL

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
D10577 CAVEAT by Tasmanian Water and Sewerage Corporation
(Southern Region) Pty Limited (affecting that portion
of land described as Lot 1 and measuring 13 ha as
detailed on the plan annexed thereto) Registered
06-May-2011 at noon

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

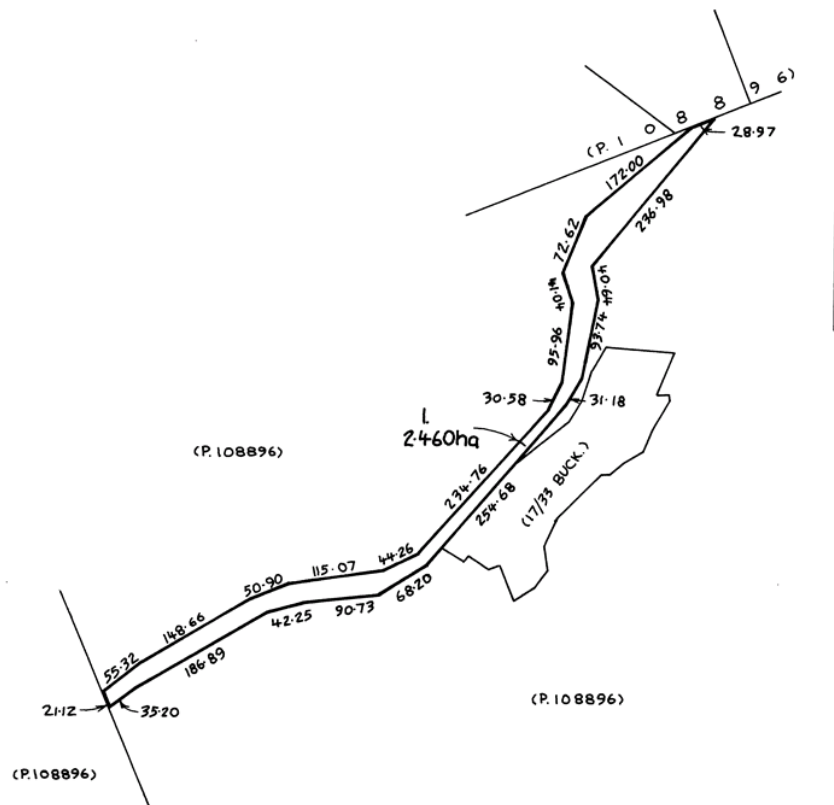
**FOLIO PLAN**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



| | | | | |
|--|-------------------|--|--|--|
| FILE No. A.125 28 | | CONVERSION PLAN | | REGISTERED NUMBER |
| GRANTEE PART OF 54.0Ac, GTD TO ROBERT LATHROP MURRAY | | LOCATION CITY OF HOBART | | D 108899 |
| | | CONVERTED FROM 6/7262 | | APPROVED 30 NOV 1993 |
| | | NOT TO SCALE LENGTHS IN METRES | | <i>Michael Dim</i> Recorder of Titles |
| TASMAP SHEET No. 21 | LAST UPI No. 7920 | ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN | | DRAWN BY: CGW |

SKETCH BY WAY OF ILLUSTRATION ONLY"EXCEPTED LANDS"



FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



| | |
|--|--|
| APPROVED 30 NOV 1993 <i>Michael Dine</i> | REGISTERED NUMBER P 108896 |
| RECORDED OF TITLES | CONVERSION PLAN |
| FILE NUMBER A 12492, A 12494, A 12510, A 12511, A 12512, A 12513, A 12514, A 12529, A 12532, A 12578 & A 12591 | GRANTEE PART OF 340 AC 1433 AC & 1000 AC GTD TO ROBERT LATHROP MURRAY & PART OF 2000 AC GTD TO PETER DEGRAVIS |
| | DRAWN C.G.W. |

SKETCH BY WAY OF ILLUSTRATION ONLY

CONVERTED FROM: 18/12/88, 11/3329, 5/2315, 5/436, 4/9582, 4/9483, 5/1862, 7/2547, 2/2012, 5/2101 & 5/2404

CITY/TOWN OF HOBART

LAND DISTRICT OF

PARISH OF

LENGTHS ARE IN METRES NOT TO SCALE

HATCHING IN BRACKETED AREAS INDICATES EXCEPTED LANDS

EXCEPTED LANDS

LOT 2

CT 2264/74 (P1737) C.O.F.

PART OF F.R.116877/1

LOT 4:

C.T. 2390/42 (17/33 BUCK) 7A.2R.19P

CONV. 40/3320 17A 1R 21P

LOT 2 AMENDED PURSUANT
TO SEC.139 OF THE LAND
TITLES ACT 1980.*Michael Dine*

RECORDER OF TITLES

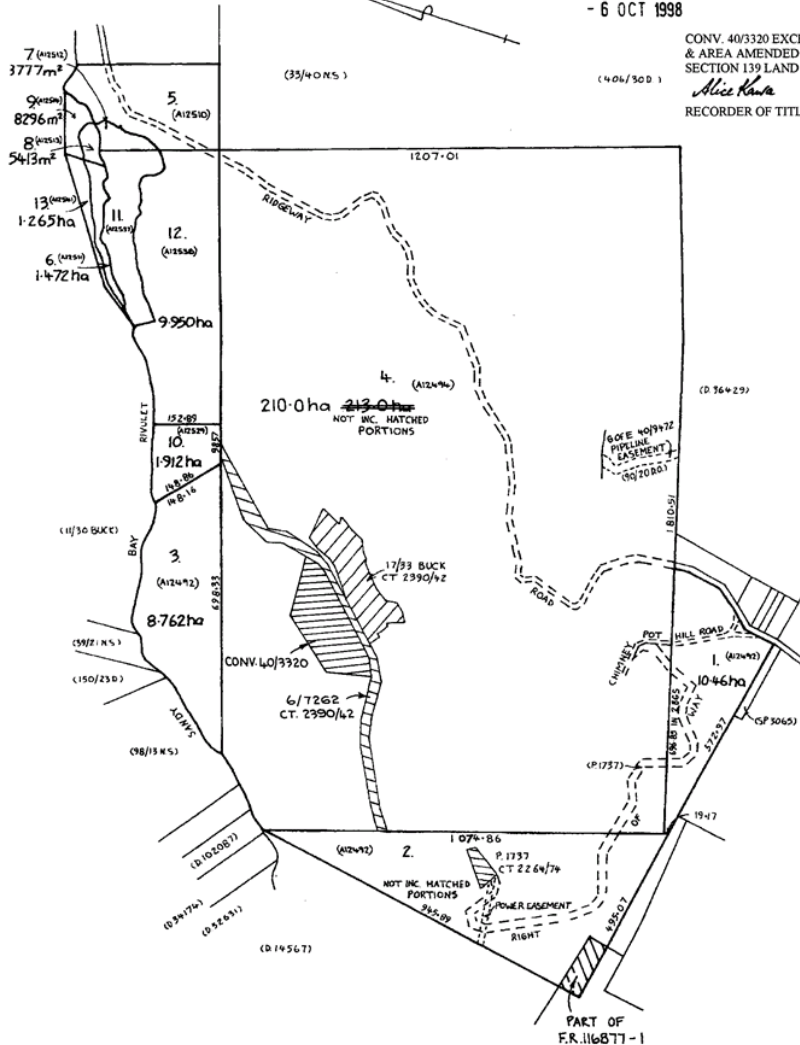
- 6 OCT 1998

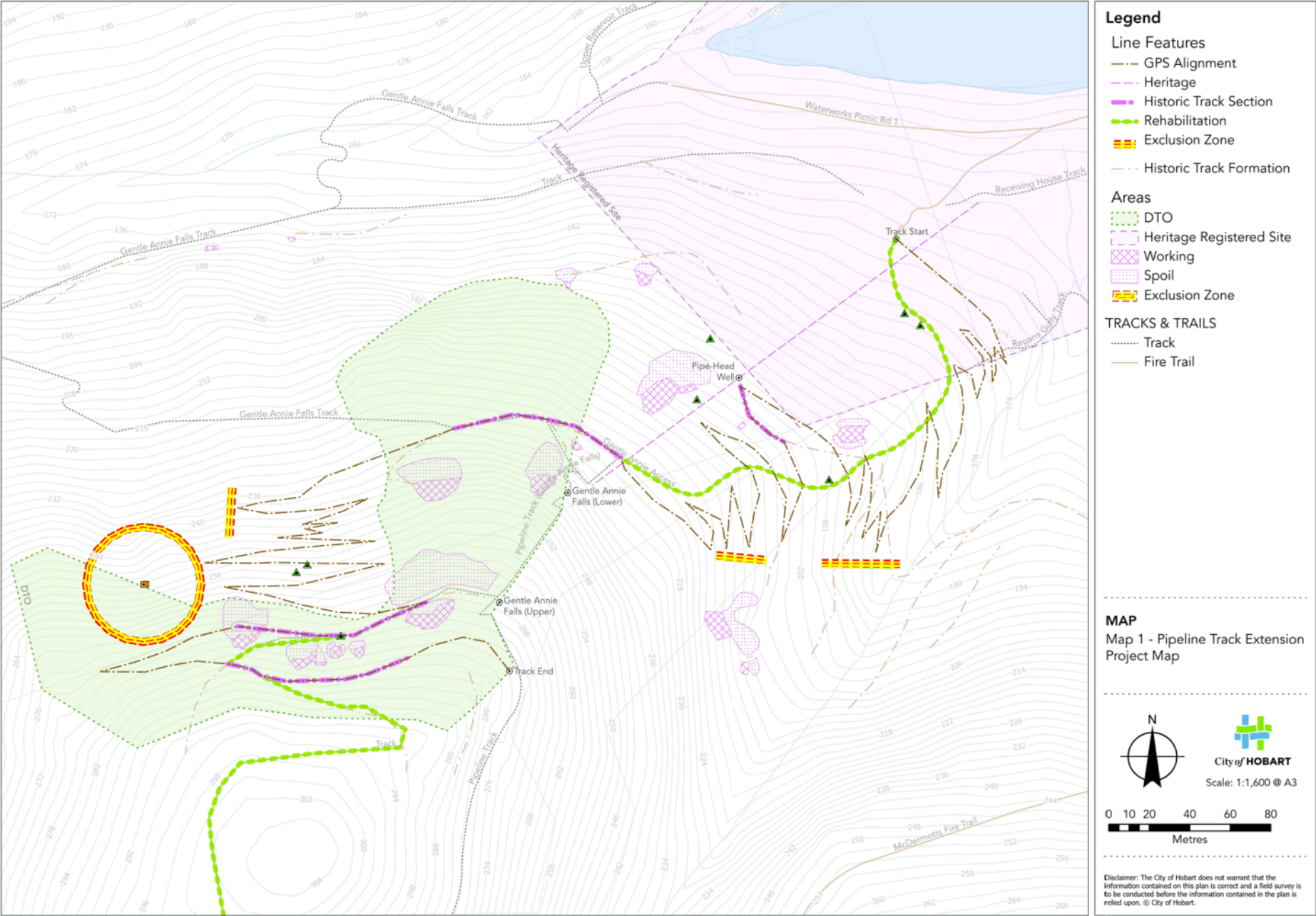
CONV. 40/3320 EXCEPTED FROM LOT 4
& AREA AMENDED PURSUANT TO
SECTION 139 LAND TITLES ACT 1980*Alice Kwa*

RECORDER OF TITLES

07 FEB 2002

DATE







**Cover photo**

A small section of the proposed re-alignment of the Pipeline Track is on steep, southeast facing slopes.

Photo: Bill Cromer, 2 November 2021

Refer to this report as

Cromer, W. C. (2022). *Geotechnical Risk Assessment of improvements to the Gentle Annie Falls Section of the Pipeline Track*. Unpublished report for Hobart City Council by William C. Cromer Pty Ltd, 27 March 2022.

Limitations of this geotechnical report

Site investigations for geotechnical reports usually but not always involve digging test holes and taking samples, at locations thought appropriate based on site conditions and general experience. The reports only apply to that part of the site actually tested, and in no way should the results be extrapolated to other adjacent areas.

The main aim of most investigations is to reasonably determine the variability in subsurface conditions at the time of inspection. For other investigations, it may be sufficient to inspect surface (not subsurface) conditions at selected sites. The number and location of test sites, and the number and types of tests done and samples collected, will vary from site to site. Subsurface conditions may change laterally and vertically between test sites, so discrepancies may occur between what is described in the reports, and what is exposed by subsequent excavations. No responsibility is therefore accepted for (a) any differences between what is reported, and actual site and soil conditions for parts of an investigation site not assessed at the time of inspection, and (b) subsequent activities on site by others, and/or climate variability (eg rainfall), which may alter subsurface conditions at the sites assessed at the time of inspection.

Report Disclaimer

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SUMMARY

A proposed new re-alignment of part of the Pipeline Track near Gentle Annie Falls in South Hobart is about 2,300m long. It traverses moderate-steep north-, northeast- and east-facing slopes underlain by subhorizontal Triassic-age sandstone bedrock. Hillsides are draped with varying thickness of colluvium. Sandstone boulders litter many slopes and the bases of numerous cliff sections.

A review of published geotechnical information, and site inspections, indicate that various types of slope instability are or could potentially be present. These include landsliding, rockfalls and topples, and debris flows.

The risks to the track itself is judged to be low to very low, and acceptable with or without treatment of the hazards. Nevertheless, some relatively minor track realignments are suggested to mitigate risks further. The Hobart City Council Rockfall Risk Management Plan prepared for the construction of the track is an appropriate way to address risks which might be increased by construction activities.

None of the hazards presents unacceptable risks to life to individual track users, or individual construction and/or maintenance crews. However, 10,000 or so walkers use the Pipeline Track each year, and the new easier-walking track-section will probably cater for more. When these annual usages are considered, the societal risks of some of the hazards are of marginal acceptability, or are unacceptable.

This situation probably applies to other walking tracks in similar terrains and geology in the district, and elsewhere. A review of societal risk assessments for this and other tracks, and possible management options, is recommended.

A range of general and site-specific treatments are recommended to mitigate risks of life.





1 INTRODUCTION

1.1 Background

In September 2021, Hobart City Council (HCC) commissioned William C. Cromer Pty. Ltd. (WCC) to undertake a geotechnical (landslide) risk assessment of proposed track improvements to the Gentle Annie Falls section of the Pipeline Track, on the eastern flanks of kunanyi / Mt. Wellington (Figure 1 and Attachment 1).

The improvements involve a realignment of the Pipeline Track between Waterworks Site 9 and the top of Gentle Annie Falls. The realignment will be a 1.5m wide zig-zag track some 2,300m long.

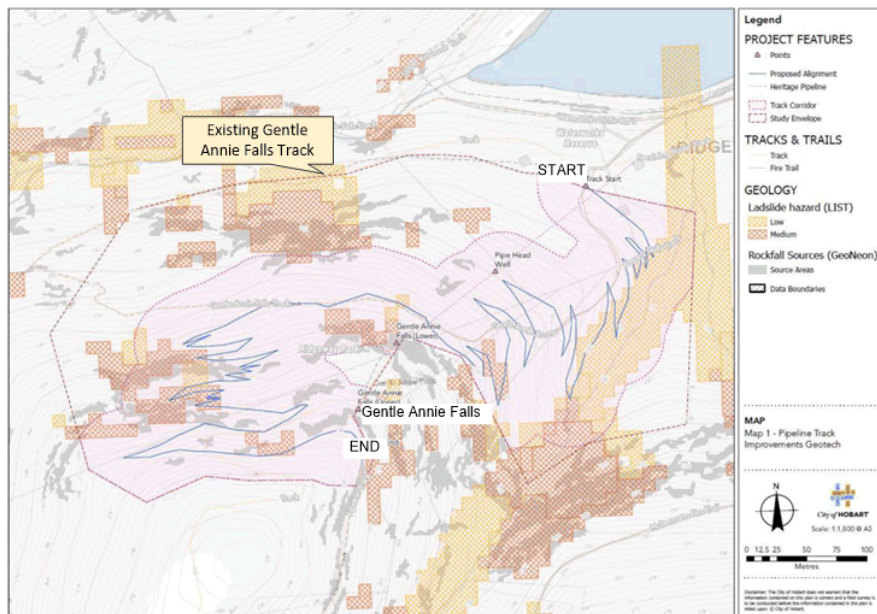


Figure 1. Location map of the proposed new walking track (zig-zag blue line) within a designated study area (pink shading) nominally 40m either side of the track. Source: HCC.

1.2 Brief and scope of works

1.2.1 Brief

The Brief for this report was included in a *Request for Quotation* from HCC to WCC dated 2 September 2021:

- a) "Undertake a thorough site assessment of the proposed track corridor (40 metres either side of the proposed alignment) as well as any know areas of interest within the study envelope that could pose a risk if the track were to be extend (sic) outside of the proposed corridor.
- b) Undertake a landslip risk management assessment that is in accordance with the Practice Note Guidelines for Landslip (sic) Risk Management 2007 (Ref AGS, 2007c) in relation to the potential impact pertaining to the construction and use of the proposed track as per the application requirements of the Hobart Interim Planning Scheme 2015 (Part E3.0 Landslide Code, E3.5 Application Requirements).





- *Risk to be assessed in relation to:*
 - *debris flow, rock fall and deep seated landslide potential due to construction activities associated with track development, such as vegetation removal, changes to drainage and minor works*
 - *the ongoing risk to track users (walking, running and mountain biking)*
- c) *The report is also to provide advice as to whether the following construction activities will negatively impact the level of instability risk:*
 - *the re-purposing of stone/rock found on the floor and surrounding quarry sites to build track feature such as walls etc.*
 - *the crossing of spoil mounds which are scattered throughout the study area.*
- d) *The consultant is to provide advice as to whether the Rockfall (sic) Risk Management Plan (RRMP) drafted by COH Officers will adequately manage the level of risk associated with the proposed construction activities. Where the assessment finds additional control measures that (sic) may be required, they are to be added to the RRMP."*

The report (with appropriate maps) is to include assessment methodology, findings, the level of instability risk of the proposed track and study area, and recommendations and safeguards to minimise or avoid identified geotechnical risks.

1.2.2 Scope of works

To address the Brief, the geotechnical scope included:

- a desk-top review of HCC-provided information, and a compilation of geological, geotechnical hazard and slope stability maps from on-line sources,
- two site inspections, and
- data review and report compilation.

1.3 Date of inspection and personnel involved

The tracks were inspected on 2 and 3 November 2021 by WCC Principal and engineering geologist Bill Cromer, assisted by consultant geologist Genevieve Bremner and field assistant Richard Mackintosh. A draft site location map (with geotechnical risk interpretations) and tabulated site-specific field notes were compiled for the client, and a second field inspection to review the initial work was completed by WCC (Cromer, Bremner and Mackintosh) and HCC (Bree Hunter and Mischa Pringle) on 29 November 2021.

1.4 The format of this report

Text in the body of this report is kept to a minimum. Supporting information is presented in Attachments. Field observations are summarised in the accompanying Excel spreadsheet.

Attachment 3 is an interpretative geotechnical risk map of the study area, showing the existing and proposed tracks, and numbered site locations along or adjacent to them. Most (but not all) sites are associated with a particular geotechnical issue, and these are colour-coded on the map. Sections of the map were ground-truthed on the second site inspection with HCC on 29 November 2021.

For ease of reading, Attachment 3 is repeated here in the body of the report as Figure 2.





2 RESULTS

2.1 Desk top review

2.1.1 Topography and surface drainage

The study area exhibits moderate – locally steep north-, northeast- and east-facing slopes (Attachment 1). Average slope angles are about 20°, but shorter segments adjacent to an un-named creek flowing northeast past the study area are in the 30 – 40° range. Some short cliff sections are subvertical or locally overhanging.

The study area is bounded by Sandy Bay Rivulet in the north (flowing into the Upper Reservoir) and the un-named creek to the southeast. Both are intermittent.

The now-defunct Gentle Annie Falls water pipeline and infrastructure trends north-northeast down to the Upper Reservoir, bisecting the study area.

2.1.2 Landslide hazard bands

Numerous small areas of Medium landslide hazard band occur in the study area (Attachment 1). A Low band extends up the un-named creek to the southeast.

2.1.3 Published bedrock geology

The geology of the district¹ is shown in Attachment 1. The predominant bedrock type is cross-bedded Triassic-age sandstone with minor siltstone dipping shallowly southeast and south-southeast.

The Triassic rocks have been intruded by Jurassic-age dolerite which crops out in the higher extreme southern parts of the study area as a concordant (shallowly southeast- and south-southeast-dipping) sheet.

Both bedrock types have been faulted.

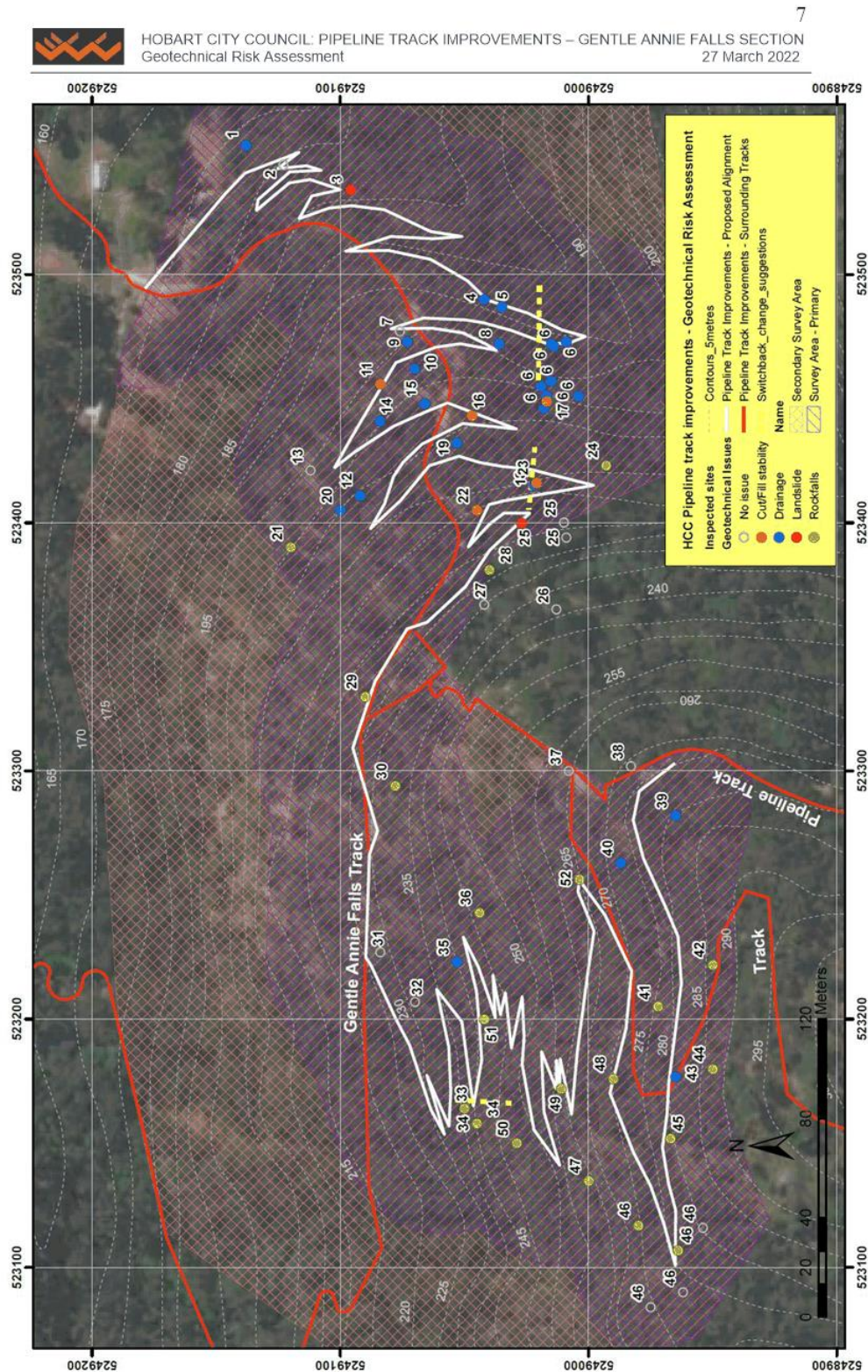
2.1.4 Mineral Resources Tasmania Landslide Hazard Maps

On the Mineral Resources Tasmania Landslide Hazard Maps in Attachment 2,

- There are no known instances of current or recent slope instability along the route of the proposed new track. Slope angles are depicted mostly in the 20 – 30° range, with smaller areas in the 30 – 40° range.
- Most watercourses in the Hobart area (including Sandy Bay Rivulet), and the un-named creeks in the eastern part of the study area, are regarded as either source areas or run-out areas for debris flows. Sections of the track are located within the source area.
- The proposed track is shown as at potential risk of rockfalls in several locations, due to the relatively steep slopes and numerous outcrops of sandstone (many as small cliff sections).
- the land is shown to be not at risk of deep seated landsliding.

¹ Calver, C. R. and Latinovic, M. (compilers). 2002. Digital Geological Atlas 1:25,000 Scale Series. *Taroona*. Mineral Resources Tasmania.





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2.1.5 Mineral Resources Tasmania Landslide database

There are no recorded landslides (MRT database; www.thelist.tas.gov.au) within the study area. However, landslides 881 and 882 are recorded about 1.7km west and 0.5km northwest respectively.

Landslide 881 is at 344 Strickland Avenue, and is a very small earthslide in fill on the outer embankment of the road². It was first recorded in 1978.

Landslide 882 is on the lower side of Turnip Fields Road. No published details are available.

2.2 Field observations

2.2.1 Topographic irregularities and drainage

Topographic irregularities along and adjacent to the route of the proposed new track include several small sandstone quarries and associated spoil heaps, old disused hand-dug drainage channels and/or cut-off drains, numerous old cart tracks, and (see below) two landslides and localised tunnel erosion.

2.2.2 Observed bedrock geology

Triassic-age sandstone is common in the study area, as low-lying subcrops at and near ground level, as small cliff-segments several metres across and up to about 2 – 3m high, and as relatively substantial cliffs up to 10+m high extending 50+m or so subparallel to topographic contours.

Jurassic-age dolerite, which overlies the Triassic sandstone on higher ground, was not observed during site investigations.

2.2.3 Soils and colluvium

Quaternary-age gravelly sand with well-graded angular-subangular sandstone clasts (from small cobbles up to boulder size) drape the hillside slopes and obscure much of the underlying bedrock. This colluvial soil is expected to vary considerably in thickness, from almost zero up to several metres. Colluvium thickness probably increases downslope.

2.2.4 Recent fill

Recent fill (ie probably dating from the 1800's to the present) includes the outer embankment of tracks, and spoil heaps associated with quarrying. Some spoil heaps (eg near site 48) are substantial structures more than 50m long and 10m high, with outer downslope embankments near the angle of repose (c.35 – 40°) of the sand/gravel/cobble/boulder material.

2.2.5 Slope instability

Various forms of slope instability were observed during the site inspection (Figure 2):

Landslides

Two landslides (earthslides) were identified (sites 3 and 25 in Figure 2). Site 3 (Plate 1 in Attachment 4) is a very small, translational landslide in colluvium adjacent to the un-named

² I reported on this landslide and an adjacent (MRT un-recorded) one in Cromer, W. C. (2021). *Landslide Report, 344 Strickland Avenue, South Hobart*. Unpublished report for Hobart City Council by William C. Cromer Pty. Ltd., 5 July 2021.





creek. The second (with a headscarp near site 25; Plate 4 in Attachment 4) is a larger translational feature, also in colluvium, which has a subdued headscarp about 20m wide and which extends at least 75m downslope. It probably includes the tunnel eroded area near its toe and may reach the un-named creek.

The activity of both landslides is “unknown” (ie they do not appear to be currently active). The presence of mature eucalypts growing vertically within each suggest no activity in the past century or so.

The proposed track is within a few metres of the smaller landslide at site 3, and the track runs across the face of the larger landslide below site 25.

Rockfalls

Cobbles and boulders of sandstone litter most slopes in the study area, and the bases of most cliff-like outcrops of bedrock where they are more common. The occurrences are the run-outs and source areas respectively of rockfalls. Rockfalls (and cliffs) are most common in the western parts of the study area (green-coded sites in Figure 2).

The ages of the rockfalls are of course variable, but a few cobbles and boulders show fresh faces indicative of quite recent falls.

Most boulders are less than a metre or so in diameter, but some are up to about two metres or more in size.

The shapes of most cobbles and boulders range from roughly equidimensional to irregular and angular. The shapes and sizes reflect the pattern and intensity of jointing at the source. Larger joint blocks may break up on impact.

Travel distances of fallen rocks are a function of rock shape and size, and slope angle. Many distances – including those for relatively large boulders – are limited to few metres from the source, but there is evidence of some boulders travelling downslope 50m or more.

Perhaps the most precarious potential rockfall is at site 30 (Plates 6 and 7 in Attachment 4).

The proposed track at and near sites 28, 30, 33, 34 and 49 passes relatively close to potential rockfall sources, or is on steep, boulder-littered slopes where some boulders may potentially reactivate (Plates 8, 9 and 10 in Attachment 4). The likelihood of dislodging boulders will be increased during track construction.

Tunnel erosion

Collapsed tunnels and (at the time of observation, minor) seepages are numerous near site 6 (Plate 2 in Attachment 4). They are indicative of dispersive soils³, and are probably related to drainage near the toe of the upslope landslide.

No evidence of tunnel erosion was noted elsewhere in the study area.

Grab soil samples from sites 6, 9, 14, 37 and 43 were tested for dispersion⁴. Results show little or no dispersion and it is concluded (albeit on the basis of limited testing) that other than at and near site 6, dispersive soils are not a significant geotechnical issue for the proposed track.

³ Dispersive soils are sodic soils with exchangeable sodium (ESP) greater than 6%. They can cause tunnel erosion. Tunnels may locally collapse, producing a line of open channels and/or potholes. These are widespread in southern Tasmania, and particularly on soils developed on Triassic-age rocks. See the Tasmanian DPIW *Dispersive Soils and their Management*. Tunnels in dispersive soils typically result from human-caused ground disturbance. They affect soil strength, and cause erosion, undermining, sedimentation, and loss of amenity and property values. Once started, they are difficult to manage. For very useful information, go to http://www.lanfaxlabs.com.au/aggregate_stability.htm

⁴ The dispersion test on disturbed samples is a slightly modified version of the method described in Section E7 of AS/NZS1547:2012 *On-site domestic wastewater management*. In separate containers, duplicate peds of a soil





Cut-and-fill sites

Small quarries and associated spoil heaps are oversteepened slopes potentially at increased risk of instability. Most exposed quarry faces (eg sites 7, 21, 24, 26, 41 and the Upper and Lower Gentle Annie Falls sites) appear to be relatively stable, but one (next to site 48) is strongly subvertically jointed with continuing minor rockfalls off its c.2m high faces. This site is adjacent to the existing/proposed new track.

3 GEOTECHNICAL RISK AND ITS MANAGEMENT

3.1 Conceptual hydrogeological model

Figure 3 is a conceptual hydrogeological model for the study area. Its main features are:

- Triassic sandstone bedrock dipping at low angles into the hillsides, extending at depth, and underlying the full length of the proposed new track,
- a veneer of Quaternary non-plastic colluvium of variable thickness (up to several metres or more?) comprising a silty sand matrix and varying amounts of sandstone gravel, cobbles and boulders,
- the absence of a permanent water table in the surface 10 – 15m or more, and
- various forms of observed and potential slope instability including shallow translational landslides in colluvium, shallow- and deep-seated landslides in bedrock, rock falls/topples from bedrock outcrops, reactivated rock rolls on slopes, debris flows⁵, and track embankment failures (hazard types A – H).

Existing tracks and the proposed new track criss-cross this conceptual model.

3.2 Geotechnical risk assessment for hazard types A – H

3.2.1 Methodology of risk assessment

Appendix 5 outlines generalised *Australian Geomechanics Society* (AGS) guidelines for landslide risk management (LRM) assessments. The LRM for the geotechnical hazard types in Figure 3 is done in general accord with AGS (2007c) *Landslide Risk Management*. Two types of risks are considered:

- risks to property (ie proposed new track infrastructure), and
- risk to life for users of the track.

It is important in LRM assessments to detail the methodology so that other assessors can review the work⁶. This is particularly true of risk to life assessments, and in this regard this

sample (one set air dried, the other remoulded) are immersed in water for 24 hours and their performance assessed. The behavior of the peds may be (a) nothing (b) slaking (c) dispersion to produce Emerson Class No. 1 – 8. Estimating the degree of dispersion of a sample to obtain its Emerson Class Number can be subjective. Note also that the test as described does not distinguish between Emerson Class 4, 5 and 6. The laboratory work for dispersion testing was done in the W. C. Cromer Pty. Ltd. laboratory. The laboratory is not NATA-registered for the test.

⁵ Most watercourses in southeastern Tasmania (at least) are at risk of debris flows because of the elevated terrain and potential for unusually heavy rain events. For recent discussion, see Mazengarb *et. al* (2021). Debris Flow Hazards in Tasmania, Australia. *Australian Geomechanics*, V56:4; December 2021.

⁶ Some aspects of the LRM are quite technical, but an attempt has been made to explain them in a step-by-step manner, with clearly stated assumptions and calculations. Also, risks derived from Likelihood and Consequence are unavoidably subjective. It is readily acknowledged that different assessors may arrive at different risk levels for the same hazards.





report draws heavily on guidelines from Golder (2020)⁷, which were recently prepared for the NSW Parks and Wildlife Service and which are specifically applicable to walkers on tracks in parks and reserves. Golder (2020) is firmly based on the fundamentals of AGS(2007c).

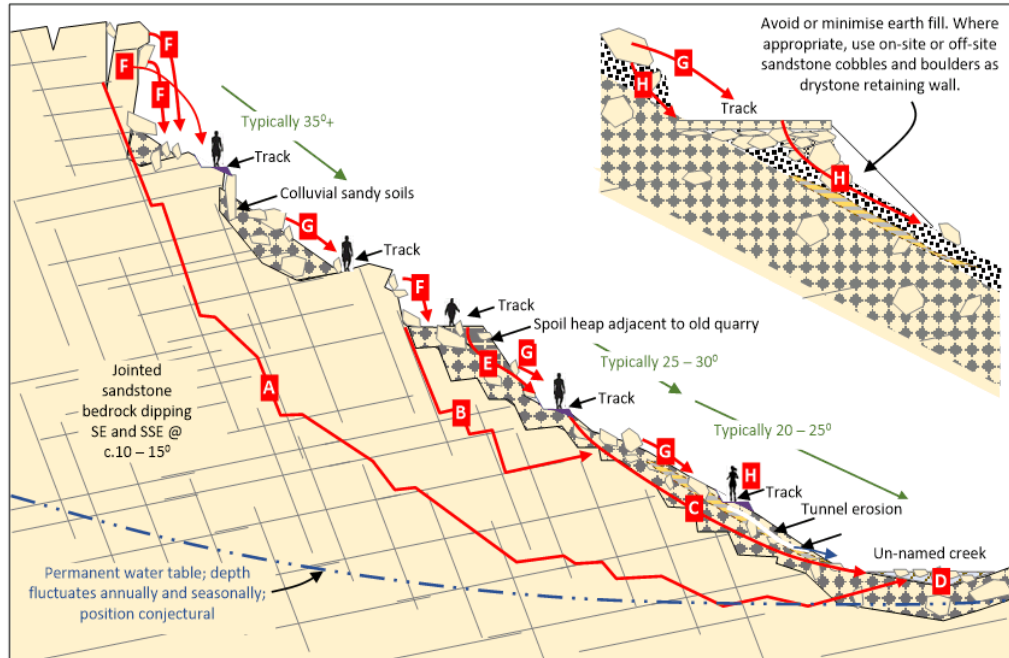


Figure 3. Conceptual hydrogeological model for the study area used for landslide risk assessment. See Tables 1 – 7 for summary descriptions and estimated likelihoods of observed and potential hazard types A – H.

3.2.2 Description and likelihood of the geotechnical hazards

Tables 1 – 7 characterise the observed and potential hazard types A – H depicted in the conceptual geological model.

- In Tables 1 and 3, hazard types A and B (deep and shallow landslides in bedrock; Table 1) and D (debris flow; Table 3) potentially affect users of the walking track, but are larger features than (and are accordingly not linked to) individual numbered sites depicted in Figure 2,
- In Table 2, hazard type C (shallow landslides) is represented by two examples (C1 at Site 3 and C2 at Site 25),
- In Table 4, hazard type E (landslides in spoil heaps) is represented by Site 48,
- In Table 5, hazard F (rockfalls) is represented by four examples (F1, F2, F3 and F4) at Sites 28, 30, 33 and 34 respectively,
- In Table 6, hazard type G (reactivated rock rotations on existing slopes) is represented by Site 49, and

⁷ Golder (2020). *Guidelines for Quantitative Risk to Life Calculations for Landslides*. Report prepared by Golder Associates Pty. Ltd. for New South Wales National Parks and Wildlife Service, 16 January 2020.

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- In Table 7, hazard H (embankment failure on the new track) is represented by the steep slopes at and near Site 23.

Figure 4 explains the size and velocity terminology adopted in this report.

3.2.3 Risks to property (new track infrastructure)

Table 8 is derived from Tables 1 – 7, and shows the estimated likelihoods, consequences and resulting risks to property (the new track) presented by hazard types A – H before treatment (risk management) and after treatment.

The main results from Table 8 are:

- the likelihoods of the hazards range from Barely Credible (Hazard A) to Almost Certain (Hazard F2 at Site 30); moreover, the likelihoods remain the same with or without the recommended treatments,
- the consequences of the Hazards range from Major (Hazard A) to mostly Insignificant (C1, C2, E, F1 – F4, G and H).
- the resulting risks to property (likelihood and consequence combined) are Very Low for all hazards except for Hazard D (debris flow; Low risk); recommended treatment in Table 8 does not reduce risk but is a judicious approach to track construction,

| Description | Typical velocity (mm/sec) | Typical velocity | Description | Size (m ²) |
|-----------------|---------------------------|------------------|-------------|------------------------|
| Extremely rapid | | | Very small | 0.01 |
| Very rapid | 5×10^3 | 5m/sec | Small | 10 |
| Rapid | 5×10^1 | 3m/min | Medium | 1,000 |
| Moderate | 5×10^{-1} | 1.8m/hour | Large | 100,000 |
| Slow | 5×10^{-3} | 13m/month | Very large | 1,000,000 |
| Very slow | 5×10^{-5} | 1.6m/year | | |
| Extremely slow | 5×10^{-7} | 15mm/year | | |

From Figure B3 of AGS (2007c)

Figure 4. Terminology adopted for landslide velocity and size.





Table 1. Characterisation and likelihood of occurrence of Hazards A and B. See Figure 3 for the geological model schematically depicting the hazards.

| | Hazard | Site # | GDA94 | | Description | Size, volume, velocity and run-out distance | Likelihood | | Consequences of impacts | |
|----------|--|--------|----------|-----------|--|--|--------------------------|-----------|---|---|
| | | | Eastings | Northings | | | Likelihood of occurrence | $P_{(H)}$ | To walkers | To construction and/or maintenance crew |
| A | Deep-seated trans-lational landslide in bedrock | | | | Failure surface <10m depth; these scenarios where a deep landslide is failing on fractured bedrock are extremely rare. | Landslide would probably involve a significant part of the hillside and the proposed track; extremely slow | Harely credible | 1E-06 | Because of the extremely slow to slow velocity, landslide movement is likely to be un-noticeable; very low impacts on walkers | Because of the extremely slow velocity, landslide movement is likely to be un-noticeable; very low impacts on crews |
| B | Shallow seated trans-lational landslide in bedrock | | | | Failure surface <10m depth; these scenarios where a landslide is failing on fractured bedrock are rare. | | Rare | 1E-05 | | |

See the Landslide Risk Management (LRM) in Attachment 5. The descriptive terms for "Likelihood of occurrence" are formal terms explained in Attachment 6. The quantitative equivalent $P_{(H)}$ is the estimated annual probability that the hazard will occur. It is combined with quantitative estimates of "Consequences" to estimate risks to life for track users.





Table 2. Characterisation and likelihood of occurrence of Hazard C. See Figure 3 for the geological model schematically depicting the hazard.

| | Hazard | Site # | GDA94 | | Description | Size, volume, velocity and run-out distance | Likelihood | | Consequences of impacts | |
|----------|-----------|--------------------------------|---------|----------|--|---|--------------------------|------------------|---|--|
| | | | Easting | Northing | | | Likelihood of occurrence | P _(H) | To walkers | To construction and/or maintenance crew |
| C | C1 | Site 3 (Plate 1, Attach 4) | 523534 | 5249096 | Very small landslide below mature eucalypt. Tree has curved trunk. Landslide approx. 2m long extends to creek. Gradual break of slope 5m up from tree. Hazard is potential regression of headscarp towards and beneath proposed track. | Head scarp could develop approx. 5m wide x 1m deep under track, and new failure could extend 10m downslope; slow to rapid | Possible | 0.001 | A walker faced by a rapid moving landslide near this site may not have sufficient time to avoid the hazard. | Crew members would be attending the failure and would be versed in safety measures. No adverse impacts expected. |
| | C2 | Site 25 (Plate 4, Attach 4) | 523400 | 5249027 | Old landslide head about 20m wide. Some curves on mature tree trunks - see photos. Landslide joins up with gully below - all one feature. Main issue is reactivation of existing landslide, or development of new one on steep slopes (Plate 3, Attachment 4) in vicinity. | Small to Moderate size: 20m wide x 50m long x 1m deep; Slow to Rapid; run-out could extend to un-named creek | Possible | 0.005 | A walker faced by a slow-moderate moving landslide near this site would have sufficient time to avoid the hazard. | Crew members would be attending the failure and would be versed in safety measures. No adverse impacts expected. |

See the Landslide Risk Management (LRM) in Attachment 5. The descriptive terms for "Likelihood of occurrence" are formal terms explained in Attachment 6. The quantitative equivalent P_(H) is the estimated annual probability that the hazard will occur. It is combined with quantitative estimates of "Consequences" to estimate risks to life for track users.





Table 3. Characterisation and likelihood of occurrence of Hazard D. See Figure 3 for the geological model schematically depicting the hazard.

| | Hazard | Site # | GDA94 | | Description | Size, volume, velocity and run-out distance | Likelihood | | Consequences of impacts | |
|----------|-------------|--------|---------|----------|--|--|--------------------------|-----------|--|--|
| | | | Easting | Northing | | | Likelihood of occurrence | $P_{(H)}$ | To walkers | To construction and/or maintenance crew |
| D | Debris flow | N/A | | | <p>Landslides like hazard C coupled with unusually heavy/prolonged rain events can cause debris flows in adjacent creeks. Almost all creeks in the Hobart area (and elsewhere in Tasmania) are at similar risk.</p> <p>Mazengarb (2021) reports Mineral Resources Tasmania has records of some 400 debris flows statewide since European occupation (say, 2 per year statewide).</p> | <p>Relatively small volume because of small catchment area upslope. Debris would probably be confined to no more than (say) twice the existing channel width and hence would be unlikely to reach the proposed track. Rapid flow. Would occur during or soon after unusually heavy rain so likelihood of people being on track in vicinity would presumably be lower than usual.</p> | Unlikely | 0.0001 | <p>A walker impacted by a debris flow would almost certainly be swept away and most likely killed.</p> | <p>A crew member impacted by a debris flow would almost certainly be swept away and most likely killed, but the chances of the member being at the location is regarded as very low.</p> |

See the Landslide Risk Management (LRM) in Attachment 5. The descriptive terms for "Likelihood of occurrence" are formal terms explained in Attachment 6. The quantitative equivalent $P_{(H)}$ is the estimated annual probability that the hazard will occur. It is combined with quantitative estimates of "Consequences" to estimate risks to life for track users.





Table 4. Characterisation and likelihood of occurrence of Hazard E. See Figure 3 for the geological model schematically depicting the hazard.

| | Hazard | Site # | GDA94 | | Description | Size, volume, velocity and run-out distance | Likelihood | | Consequences of Impacts | |
|----------|--|---------|----------|-----------|---|---|--------------------------|-----------|--|--|
| | | | Eastings | Northings | | | Likelihood of occurrence | $P_{(H)}$ | To walkers | To construction and/or maintenance crew |
| E | Trans-lational or rotational landslide in spoil heaps adjacent to small sandstone quarries | Site 48 | 523176 | 5248990 | Adjacent to disused quarry. Spoil heap trends along track 50m to 097°. Outer face with numerous angular sandstone cobbles and boulders. Slopes at 35 to 40°. Relatively high risk of rockfalls and rock rolls to proposed new track below. Adjacent natural slope boulder-strewn. | Failure of uncontrolled loose quarry spoil (soil + cobbles and boulders) at this site could involve single cobbles/boulders, or groups. Size would probably be very small to small (ie not involving whole spoil heap; say 5m wide); rapid velocity; run-out to track near Site 49. | Possible | 0.001 | Failure on the outer edge of the spoil heap would probably not impact a walker on the track alongside. The risk is to walkers on the downslope track section (see Site 49) | Failure on the outer edge of the spoil heap would probably not impact maintenance or construction crew on the track alongside. The risk is to walkers on the downslope track section (see Site 49) |

See the Landslide Risk Management (LRM) in Attachment 5. The descriptive terms for "Likelihood of occurrence" are formal terms explained in Attachment 6. The quantitative equivalent $P_{(H)}$ is the estimated annual probability that the hazard will occur. It is combined with quantitative estimates of "Consequences" to estimate risks to life for track users.





Table 5. Characterisation and likelihood of occurrence of Hazard F. See Figure 3 for the geological model schematically depicting the hazard.

| | Hazard | Site # | GDA94 | | Description | Size, volume, velocity and run-out distance | Likelihood | | Consequences of impacts | |
|----------|-----------|---|----------|-----------|--|---|--------------------------|------------------|--|---|
| | | | Eastings | Northings | | | Likelihood of occurrence | P _(H) | To walkers | To construction and/or maintenance crew |
| F | F1 | Site 28 (Plate 5 in Attach 4) | 523381 | 5249040 | Small sandstone cliff up to 2m high. Above Gentle Annie track and proposed new track. Some small boulders dislodged up to 0.5m diameter possibly from older track-making above. Local local outcrop? up to 1m high. | Outcrop is c. 10m long. Very small scale, rapid rockfall; probably involving individual boulders up to about 0.5m diam falling from outcrop; run-out likely restricted to 0-5m based on existing fallen boulders. | Possible | 0.001 | Boulder of these sizes with enough velocity to reach the track would impact one or perhaps two crew members in its path but may not cause death. | Boulder of these sizes with enough velocity to reach the track would impact a walker in its path but may not cause death. |
| | F2 | Site 30 (Plates 6 and 7 in Attach 4) | 523294 | 5249078 | Sandstone cliff section 6m high. Sandstone mid-strength, cross bedded. Dips into slope. Orthogonal joint sets 0.5 to 1m apart - some recently open. Active sloughing of joint blocks. Some joint blocks overhanging c.1m. Large tree growing out of outcrop destabilises it. High likelihood of further falls. | Outcrop is c.5m wide. Potential rockfalls of angular fragments up to 1m ³ . Outcrop is c.40m upslope from track; Fallen boulders likely to break up on impact. Unlikely to reach track. | Almost Certain | 0.1 | Boulder of these sizes with enough velocity to reach the track would impact a walker in its path but may not cause death. | Boulder of these sizes with enough velocity to reach the track would impact a walker in its path but may not cause death. |
| | F3 | Site 33 (Plate 8 in Attach 4) | 523164 | 5249050 | Close to western switchback, 15m below cliff sections. Several large toppled boulders (1-3m wide) near proposed track. Higher risk than further east. | Cliff line is c. 20m long. Failure would involve individual boulders up to 2m across. Would be rapid velocity with likelihood of reaching track. | Likely | 0.01 | A boulder of this size would most likely cross over the track and would seriously injure or kill one or possibly more crew members in its path. | A boulder of this size would most likely cross over the track and would seriously injure or kill one or possibly more crew members in its path. |
| | F4 | Site 34 (Plate 9 in Attach 4) | 523158 | 5249045 | At base of cliff. Jointing sub vertical, orthogonal. Some loose overhanging sections. Cobbles and boulders at base of cliff line. | As above | Likely | 0.01 | A boulder of this size would most likely cross over the track and would seriously injure or kill one or possibly more crew members in its path. | A boulder of this size would most likely cross over the track and would seriously injure or kill one or possibly more crew members in its path. |

See the Landslide Risk Management (LRM) in Attachment 5. The descriptive terms for "Likelihood of occurrence" are formal terms explained in Attachment 6. The quantitative equivalent P_(H) is the estimated annual probability that the hazard will occur. It is combined with quantitative estimates of "Consequences" to estimate risks to life for track users.





Table 6. Characterisation and likelihood of occurrence of Hazard G. See Figure 3 for the geological model schematically depicting the hazard.

| Hazard | Site # | GDA94 | | Description | Size, volume, velocity and run-out distance | Likelihood | | Consequences of impacts | |
|----------|--|---------|----------|---|---|--------------------------|-----------|--|--|
| | | Easting | Northing | | | Likelihood of occurrence | $P_{(H)}$ | To walkers | To construction and/or maintenance crew |
| G | Reactivated rockfall, Site 49 rotation of (Plate cobbles and boulders on existing slopes | 523172 | 5249011 | Upslope from small (3m high) sandstone cliff 10m long trending 260°. Boulder-strewn natural slope extends c.50m downslope from spoil heap at Site 48. | Risk of individual boulders up to 0.7m rolling onto track; very small scale; rapid velocity; run out over track | Likely | 0.01 | A boulder of this size with enough velocity to reach the track would impact one or perhaps two crew members in its path but may not cause death. | A boulder of this size with enough velocity to reach the track would impact one or perhaps two crew members in its path but may not cause death. |

See the Landslide Risk Management (LRM) in Attachment 5. The descriptive terms for "Likelihood of occurrence" are formal terms explained in Attachment 6. The quantitative equivalent $P_{(H)}$ is the estimated annual probability that the hazard will occur. It is combined with quantitative estimates of "Consequences" to estimate risks to life for track users.





Table 7. Characterisation and likelihood of occurrence of Hazard H. See Figure 3 for the geological model schematically depicting the hazard.

| | Hazard | Site # | GDA94 | | Description | Size, volume, velocity and run-out distance | Likelihood | | Consequences of impacts | |
|----------|---|--|---------|----------|---|---|--------------------------|-----------|--|---|
| | | | Easting | Northing | | | Likelihood of occurrence | $P_{(H)}$ | To walkers | To construction and/or maintenance crew |
| H | Embankment failure on outer edge of new constructed track on slopes steeper than (say) 30°. | Site 2/3 and nearby slopes (Plate 3 in Attach 1) | 523400 | 5249010 | Track is to be nom. 1.5m wide. Construction will generally be half cut and half fill, with varying forms of cut and fill slope stabilisation. | Very small scale failure, possibly very slow to slow moving evidenced by cracking/subsidence in gravel pathway. Very small run-out. | Possible | 0.005 | Impact would be minor, and probably be restricted to a walker stumbling or toppling over the edge. | Impact would be insignificant because the maintenance crew would have prior warning of the failure. |

See the Landslide Risk Management (LRM) in Attachment 5. The descriptive terms for "Likelihood of occurrence" are formal terms explained in Attachment 5. The quantitative equivalent $P_{(H)}$ is the estimated annual probability that the hazard will occur. It is combined with quantitative estimates of "Consequences" to estimate risks to life for track users.





Table 8. Characterisation, likelihood, consequence and risk to property (track infrastructure) for hazards A – H for the proposed track improvements in the study area, during and after construction, and before and after risk treatment (management).

| | | Proposed new track (Gentle Annie Section) | | | | | | | |
|--------|--|---|---------------------------------|-----------------------------------|----------------------------|--|---------------------------------|-----------------------------------|----------|
| | | During/post construction | | | Recommended risk treatment | During/post construction | | | |
| | | No treatment | | | | With treatment | | | |
| Hazard | Site | Likelihood of occurrence | Consequence to property (track) | Level of risk to property (track) | | Likelihood of occurrence | Consequence to property (track) | Level of risk to property (track) | |
| A | Deep-seated landslide in bedrock | N/A | Barely credible | Major | Very Low | None | Barely credible | Major | Very Low |
| B | Shallow landslide in bedrock | N/A | Rare | Medium | | | Rare | Medium | |
| C1 | Shallow translational landslide in colluvium | 3 | Possible | Insignificant | | | Possible | Insignificant | |
| C2 | | 25 | | | | | | | |
| D | Debris flow | N/A | Unlikely | Medium | Low | Employ standard methods of track construction in accordance with AS2156.1 - 2001 Class 2/Auscycling Trail Difficulty Rating System Easy. Remove obvious loose/unstable boulders from immediately adjacent (ie up to say 2-3m) rock faces above track. Avoid excessively steep switchbacks as recommended in this report. | Unlikely | Medium | Low |
| E | Landslide in spoil heaps | 48 | Possible | Insignificant | Very Low | | Possible | Insignificant | Very Low |
| F1 | Rockfalls and topples | 28 | Almost Certain | | | | Almost Certain | | |
| F2 | | 30 | Likely | | | | Likely | | |
| F3 | | 33 | | | | | | | |
| F4 | | 34 | | | | | | | |
| G | Reactivated rocks on existing slopes | 49 | | | | | | | |
| H | Embankment failure on new track | 23 | Possible | | | Possible | | | |

In this Table, Consequence to property (ie the full length of proposed new track) is based on the Table QUANTITATIVE MEASURES OF CONSEQUENCES TO PROPERTY in Appendix C of AGS (2007c): Catastrophic = Remediation costs more than (eg up to 200% of) full initial construction costs; Major = 60 – 200% of initial costs; Medium = 30 – 60%; Minor = 5 – 20%; Insignificant = 0.5 – 5%.

3.2.4 Quantitative risks to life for people using, maintaining and constructing the track

Elements at risk

The track users (“elements”) at risk to life are judged to be:

- individual users (walkers/runners/cyclists): these are “mobile elements”
- track construction and maintenance crews (these are “stationary” elements)





Individual most at risk

The individual most at risk to life is the person who, over the course of a year, spends the most time on the new track.

Assumptions for quantitative risk to life assessments

Number of traverses of the track by the mobile individual most at risk

It is assumed that this individual walks the 2,300m length of the new section of track twice a year ($n_t = 2$ in Column 4 of Table 9).

Width of track affected by the hazard

The proposed width of track is 1.5m. It is assumed that for all but Hazard H, each hazard will affect the full width ($w = 1$ ie 100% in Table 9). For Hazard H (embankment failure of the track), half the width is assumed to be affected ($w = 0.5$ in Column 5).

Probability of individual being present when the hazard occurs

For simplicity, it is assumed that the individual most at risk is present on the track when the hazard occurs ($f = 1$ in Column 6 of Table 9). For Hazard D (debris flow) which would most likely be triggered by unusually prolonged and/or heavy rain, the chances of a walker or construction crew member being on the track during such weather conditions would be substantially reduced. Assume in this instance $f = 0.05$. For Hazard E (failure in spoil heap at Site 48), the failure would most likely be several metres from the track on its downslope outer edge. Assume $f = 0.3$, to account for the assumption that 30% of walkers would stop, move to the edge of the spoil heap, and admire the view.

Length of track affected by each hazard

The length of track (d in Column 7 of Table 9) affected by each hazard is estimated in Tables 1 – 7, and listed in Table 9.

Speed of mobile track users

It is assumed that each mobile track user walks at 3km/hour (s_i in Column 8 of Table 9).

Annual usage of the new track

No usage figures are of course available for the yet-to-be-constructed track. However, the existing Pipeline Track criss-crosses the proposed track. It is understood from HCC that while no accurate numbers are available, it is estimated that 20 – 30 people walk the former each day. This is approximately 10,000 people per year. Since the new track-section is designed as a considerably easier walk, it is reasonable to assume that it will cater for more than 10,000 people per year. In Table 9, societal risks of life⁸ are calculated for 5,000, 10,000, 20,000 and 30,000 people per year. Societal risk increases as the number of people exposed to the hazards each year increases. In this report, the risks are expressed as (F,N) pairs⁹ and can be plotted on societal risk graphs (Figure 5).

Construction crew exposure to the hazards

It is assumed that a construction crew (a static element) will consist of a relatively small group of people (Column 10 in Table 10) who will spend a different number of days (Column 8 in Table

⁸ Golder (2020) explains “societal risk” as “The risk of multiple fatalities or injuries in society as a whole: one where society would have to carry the burden of a landslide causing a number of deaths. In this guideline, assessment of societal risk is recommended where the population exposed to the landslide hazard is 10 or more.”

⁹ Golder (2020) states (page A4) that F is the probability of impact to the exposed population resulting in the death of N or more people. Fc is the probability of loss of life of N or more people from multiple hazards.





10) building the new track past each hazard. Each day worked will comprise a set number of hours (Column 9 in Table 10).

Maintenance crew exposure to the hazards

It is assumed that a maintenance crew (a static element) will consist of a relatively small group of people (Column 10 in Table 10) who will spend a different number of days (Column 8 in Table 10) maintaining the track at each hazard.. Each day worked will comprise a set number of hours (Column 9 in Table 10).

Quantitative risk to life assessments

Tables 9 and 10 summarise the calculated risk to life [$R_{(LOL)}$] for (a) mobile individuals and (b) static crews respectively, for each hazard for the stated assumptions.

For individual mobile track users (Table 9)

$R_{(LOL)}$ for an individual most at risk is less than 10^{-8} for each hazard except Hazard C2 (landslide at Site 25), where the risk is 2.1×10^{-7} .

When the risks from all 12 hazards are combined for the individual most at risk, the total risk $R_{(LOLC)}$ is 2.2×10^{-7} .

Societal risks for mobile track users (Table 9)

Societal risk to life for each separate hazard ranges from:

- about $10^{-3} - 10^{-8}$ for up to 5,000 track users per year (Column 10),
- about $2 \times 10^{-3} - 3 \times 10^{-8}$ for up to 10,000 track users per year (Column 11),
- about $4 \times 10^{-3} - 5 \times 10^{-8}$ for up to 20,000 track users per year (Column 12), and
- about $6 \times 10^{-3} - 8 \times 10^{-8}$ for up to 30,000 track users per year (Column 13).

and the societal risks to life (F,N pairs; Note 3 of Table 9) for all combined hazards are:

- 1.1×10^{-3} for up to 5,000 track users per year,
- 2.2×10^{-3} for up to 5,000 track users per year,
- 4.4×10^{-3} for up to 5,000 track users per year,
- 6.6×10^{-3} for up to 5,000 track users per year,

where in all four cases $N = 1$ because it is assumed that people walk along the track in single file so that a hazard affects only one person at a time.

Risks to life for static track users (construction and maintenance crews; Table 10)

An individual crew member is exposed to different risks to life [$R_{(LOL)}$] for each of the 12 hazards.

A construction crew is presented with a roughly 6x risk at each hazard compared to a maintenance crew. This is due to the longer period of time spent at each site.

Risks for construction crews for separate hazards range from 5×10^{-5} (Site 30) to 8.6×10^{-11} (Hazard A).

The combined risks to an individual crew member from all 12 hazards is 1.5×10^{-5} for a maintenance worker, to 9.9×10^{-5} for a construction worker.





Table 9. Risks to life (Column 9) for individual mobile track users (walkers, etc.) for each of the 12 hazards in Figure 3, and societal risks to life for varying number of track users per year (Columns 10 – 13). Note 1 provides the Golder (2021) equation [derived from AGS (2007c)] for calculating risks in Column 9. The combined risks from all hazards for the individual most at risk is given in Note 2. The societal risks from all combined hazards for different numbers of people are given in Note 3.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|--------|------------|------------------|----------------|-----|------|-----|----------------|--------------------|------------------|----------|----------|----------|
| | | | | | | | | | Walkers per year | | | |
| | | | | | | | | | 5,000 | 10,000 | 20,000 | 30,000 |
| Hazard | Site # | P _(H) | n _i | w | f | d | s _i | R _(LOL) | F, N = 1 | F, N = 1 | F, N = 1 | F, N = 1 |
| A | N/A | 1E-06 | 2 | 1 | 1 | 5 | 3 | 2.7E-12 | 1.3E-08 | 2.7E-08 | 5.3E-08 | 8.0E-08 |
| B | N/A | 1E-05 | 2 | 1 | 1 | 5 | 3 | 2.7E-11 | 1.3E-07 | 2.7E-07 | 5.3E-07 | 8.0E-07 |
| C | C1 Site 3 | 0.001 | 2 | 1 | 1 | 5 | 3 | 2.7E-09 | 1.3E-05 | 2.7E-05 | 5.3E-05 | 8.0E-05 |
| | C2 Site 25 | 0.005 | 2 | 1 | 1 | 20 | 3 | 2.1E-07 | 1.1E-03 | 2.1E-03 | 4.3E-03 | 6.4E-03 |
| D | N/A | 1E-04 | 1 | 1 | 0.05 | 50 | 3 | 6.7E-10 | 3.3E-06 | 6.7E-06 | 1.3E-05 | 2.0E-05 |
| E | Site 48 | 0.001 | 2 | 1 | 0.3 | 5 | 3 | 8.0E-10 | 4.0E-06 | 8.0E-06 | 1.6E-05 | 2.4E-05 |
| F | F1 Site 28 | 0.001 | 2 | 1 | 1 | 0.5 | 3 | 2.7E-11 | 1.3E-07 | 2.7E-07 | 5.3E-07 | 8.0E-07 |
| | F2 Site 30 | 0.1 | 2 | 1 | 1 | 0.5 | 3 | 2.7E-09 | 1.3E-05 | 2.7E-05 | 5.3E-05 | 8.0E-05 |
| | F3 Site 33 | 0.01 | 2 | 1 | 1 | 0.5 | 3 | 2.7E-10 | 1.3E-06 | 2.7E-06 | 5.3E-06 | 8.0E-06 |
| | F4 Site 34 | 0.01 | 2 | 1 | 1 | 0.5 | 3 | 2.7E-10 | 1.3E-06 | 2.7E-06 | 5.3E-06 | 8.0E-06 |
| G | Site 49 | 0.01 | 2 | 1 | 1 | 0.5 | 3 | 2.7E-10 | 1.3E-06 | 2.7E-06 | 5.3E-06 | 8.0E-06 |
| H | Site 25 | 0.005 | 2 | 0.5 | 1 | 0.5 | 3 | 6.7E-11 | 3.3E-07 | 6.7E-07 | 1.3E-06 | 2.0E-06 |

Notes

1. For mobile individual elements most at risk of loss of life, the risk for each hazard is:

$$R_{(LOL)} = P_{(H)} \times n_i w f d^2 \times 1.6 \times 10^{-7} / s_i$$

2. Combined risk to the individual most at risk considering all 12 hazards along the proposed new tra

$$R_{(LOLC)} = 1 - ((1 - R_{(LOLA)}) * (1 - R_{(LOLB)}) * (1 - R_{(LOLH)}))$$

$$R_{(LOLC)} = 2.2E-07$$

3. Combined frequency (F_c) of at least one fatality (N = 1) considering all 12 hazards along the proposed new track

$$F_c = 1 - ((1 - F_A) * (1 - F_B) * (1 - F_H))$$

$$F_c = 1.1E-03 \text{ for 5,000 walkers per year}$$

$$F_c = 2.2E-03 \text{ for 10,000 walker per year}$$

$$F_c = 4.4E-03 \text{ for 20,000 walkers per year}$$

$$F_c = 6.6E-03 \text{ for 30,000 walkers per year}$$

3.2.5 Acceptability of risks to property and life

General comment

Section 8.2 of AGS (2007c) states: "The regulator is to establish the Tolerable Risk Criteria for loss of life and property loss."

Acceptability of risks for loss of life

Table 1 of the same AGS Section suggests acceptability criteria for loss of life, and is repeated here as Table 11. Table 12 provides some AGS explanatory comments for Table 11.

The proposed track is a "new development". The suggested Tolerable Loss of Life Risk for the person most at risk is 10⁻⁵ per annum.





Table 10. Risks to life (Column 13) for individual mobile track users (construction and maintenance crews) for each of the 12 hazards in Figure 3. Societal risk is not appropriate since the number of possibly affected people is less than 10. Note 2 provides the Golder (2021) equation [derived from AGS (2007c)] for calculating risks in Column 13. The combined risks from all hazards for the individual crew member most at risk is given in Note 3.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | |
|-------------------|---------|-------------------|-------------------|------|------------------|--|---------------|---------------|------------|--------------------|--------------------|--------------------|---------|
| | | | | | | | Crew activity | | | | | | |
| | Site # | Elements at risk | l (m) | d(m) | P _(H) | P _(S:H) | Days at site | Hours per day | No. people | P _(T:S) | V _(D:T) | R _(LOI) | |
| A | N/A | Construction crew | 5 | 5 | 0.000001 | 0.5 | 200 | 6 | 6 | 8.2E-01 | 0.01 | 4.1E-09 | |
| | | Maintenance crew | 5 | 5 | 0.000001 | 0.5 | 10 | 5 | 3 | 1.7E-02 | 0.01 | 8.6E-11 | |
| B | N/A | Construction crew | 5 | 5 | 0.00001 | 0.5 | 200 | 6 | 6 | 8.2E-01 | 0.01 | 4.1E-08 | |
| | | Maintenance crew | 5 | 5 | 0.00001 | 0.5 | 10 | 5 | 3 | 1.7E-02 | 0.01 | 8.6E-10 | |
| C | C1 | Site 3 | Construction crew | 5 | 5 | 0.001 | 0.5 | 2 | 6 | 6 | 8.2E-03 | 0.1 | 4.1E-07 |
| | | Maintenance crew | 5 | 5 | 0.001 | 0.5 | 0.5 | 5 | 3 | 8.6E-04 | 0.1 | 4.3E-08 | |
| | C2 | Site 25 | Construction crew | 20 | 20 | 0.005 | 0.5 | 10 | 6 | 6 | 4.1E-02 | 0.1 | 1.0E-05 |
| | | Maintenance crew | 20 | 20 | 0.005 | 0.5 | 2 | 5 | 3 | 3.4E-03 | 0.1 | 8.6E-07 | |
| D | N/A | Construction crew | 50 | 50 | 0.0001 | 0.5 | 10 | 6 | 6 | 4.1E-02 | 1 | 2.1E-06 | |
| | | Maintenance crew | 50 | 50 | 0.0001 | 0.5 | 2 | 5 | 3 | 3.4E-03 | 1 | 1.7E-07 | |
| E | Site 48 | Construction crew | 50 | 5 | 0.001 | 0.5 | 1 | 6 | 6 | 4.1E-03 | 0.1 | 2.1E-08 | |
| | | Maintenance crew | 50 | 5 | 0.001 | 0.5 | 1 | 5 | 3 | 1.7E-03 | 0.1 | 8.6E-09 | |
| F | F1 | Site 28 | Construction crew | 10 | 1 | 0.001 | 0.5 | 2 | 6 | 6 | 8.2E-03 | 0.2 | 8.2E-08 |
| | | Maintenance crew | 10 | 1 | 0.001 | 0.5 | 0.5 | 5 | 3 | 8.6E-04 | 0.2 | 8.6E-09 | |
| | F2 | Site 30 | Construction crew | 2 | 1 | 0.1 | 0.5 | 1 | 6 | 6 | 4.1E-03 | 0.5 | 5.1E-05 |
| | | Maintenance crew | 2 | 1 | 0.1 | 0.5 | 0.5 | 5 | 3 | 8.6E-04 | 0.5 | 1.1E-05 | |
| | F3 | Site 33 | Construction crew | 10 | 2 | 0.01 | 0.5 | 4 | 6 | 6 | 1.6E-02 | 1 | 1.6E-05 |
| | | Maintenance crew | 10 | 2 | 0.01 | 0.5 | 1 | 5 | 3 | 1.7E-03 | 1 | 1.7E-06 | |
| | F4 | Site 34 | Construction crew | 10 | 2 | 0.01 | 0.5 | 4 | 6 | 6 | 1.6E-02 | 1 | 1.6E-05 |
| | | Maintenance crew | 10 | 2 | 0.01 | 0.5 | 1 | 5 | 3 | 1.7E-03 | 1 | 1.7E-06 | |
| G | Site 49 | Construction crew | 20 | 1 | 0.01 | 0.5 | 4 | 6 | 6 | 1.6E-02 | 0.5 | 2.1E-06 | |
| | | Maintenance crew | 20 | 1 | 0.01 | 0.5 | 1 | 5 | 3 | 1.7E-03 | 0.5 | 2.1E-07 | |
| H | Site 25 | Construction crew | 20 | 2 | 0.005 | 0.5 | 3 | 6 | 6 | 1.2E-02 | 0.1 | 3.1E-07 | |
| | | Maintenance crew | 20 | 2 | 0.005 | 0.5 | 1 | 5 | 3 | 1.7E-03 | 0.1 | 4.3E-08 | |
| Assumptions | | | People | Days | Hours | Combined risk for individual construction worker | | | | | | 9.9E-05 | |
| Construction crew | | | 6 | 200 | 6 | Combined risk for individual maintenance worker | | | | | | 1.5E-05 | |
| Maintenance crew | | | 3 | 10 | 5 | | | | | | | | |

Notes

1. In Column 4, l in metres is the length of track affected by the hazard. In Column 5, d in metres is the width of the hazard (eg the diameter of a boulder)

2. For static individual crew elements most at risk of loss of life, the risk for each hazard is:

$$R_{(LOI)} = P_{(H)} \times P_{(S:H)} \times P_{(T:S)} \times V_{(D:T)}$$

3. Combined risk to the individual crew member most at risk considering all 12 hazards along the proposed new track

$$R_{(LOI)} = 1 - ((1 - R_{(LOI)1}) \times (1 - R_{(LOI)2}) \times (1 - R_{(LOI)3}) \times \dots \times (1 - R_{(LOI)12}))$$

$$\text{Combined risk for individual construction worker} = 9.9E-05$$

$$\text{Combined risk for individual maintenance worker} = 1.5E-05$$

Table 11. Suggested Tolerable loss of life for individual risk. See Table 12 for an explanation of existing and new developments.

Source: Table 1 of AGS (2007c).

| Situation | Suggested Tolerable Loss of Life Risk for the person most at risk |
|--|---|
| Existing Slope (1) / Existing Development (2) | 10^{-4} / annum |
| New Constructed Slope (3) / New Development (4) / Existing Landslide (5) | 10^{-5} / annum |





Table 12. Notes to accompany Table 11.

Source: Table 1 of AGS (2007c).

1. “Existing Slopes” in this context are slopes that are not part of a recognizable landslide and have demonstrated non-failure performance over at least several seasons or events of extended adverse weather, usually being a period of at least 10 to 20 years.
2. “Existing Development” includes existing structures, and slopes that have been modified by cut and fill, that are not located on or part of a recognizable landslide and have demonstrated non-failure performance over at least several seasons or events of extended adverse weather, usually being a period of at least 10 to 20 years.
3. “New Constructed Slope” includes any change to existing slopes by cut or fill or changes to existing slopes by new stabilisation works (including replacement of existing retaining walls or replacement of existing stabilisation measures, such as rock bolts or catch fences).
4. “New Development” includes any new structure or change to an existing slope or structure. Where changes to an existing structure or slope result in any cut or fill of less than 1.0m vertical height from the toe to the crest and this change does not increase the risk, then the Existing Slope / Existing Structure criterion may be adopted. Where changes to an existing structure do not increase the building footprint or do not result in an overall change in footing loads, then the Existing Development criterion may be adopted.
5. “Existing Landslides” have been considered likely to require remedial works and hence would become a New Constructed Slope and require the lower risk. Even where remedial works are not required per se, it would be reasonable expectation of the public for a known landslide to be assessed to the lower risk category as a matter of “public safety”.

Acceptable risks are usually considered to be one order of magnitude lower than the Tolerable Risks.

It is important to distinguish between “acceptable risks” and “tolerable risks”.

Tolerable Risks are risks within a range that society can live with so as to secure certain benefits. It is a range of risk regarded as non-negligible and needing to be kept under review and reduced further if practicable.

Acceptable Risks are risks which everyone affected is prepared to accept. Action to further reduce such risk is usually not required unless reasonably practicable measures are available at low cost in terms of money, time and effort.

AGS suggests that for most development in existing urban area criteria based on Tolerable Risks levels are applicable because of the trade-off between the risks, the benefits of development and the cost of risk mitigation.

Acceptability of risks to life to construction and maintenance crews

A comparison of Table 10 with Table 11 suggests that the risks to life to crews construction or maintaining the track are acceptably low.

Societal risk graph for hazards A – H

Figure 5 plots the societal risks from Columns 10 – 13 in Table 9 for the 12 hazards in Figure 3. Each vertical group of four circles with a hazard label represents the increasing risks of 5,000, 10,000, 20,000 and 30,000 people using the track each year.

These four assumed populations generate four risks for each hazard, plotted vertically. These are colour-coded green, orange or red depending on whether they plot in the Acceptable, Tolerable (ALARP = As Low As Reasonably Practical) or Unacceptable fields:

Acceptable societal risks of life

- Hazards A, B, F1 and H

Tolerable (ALARP) societal risks to life

- Hazards C1, D, E, F2, F3, F4 and G

Unacceptable risks to life

- Hazard C2

The combined societal risk to life plots in the Unacceptable field.



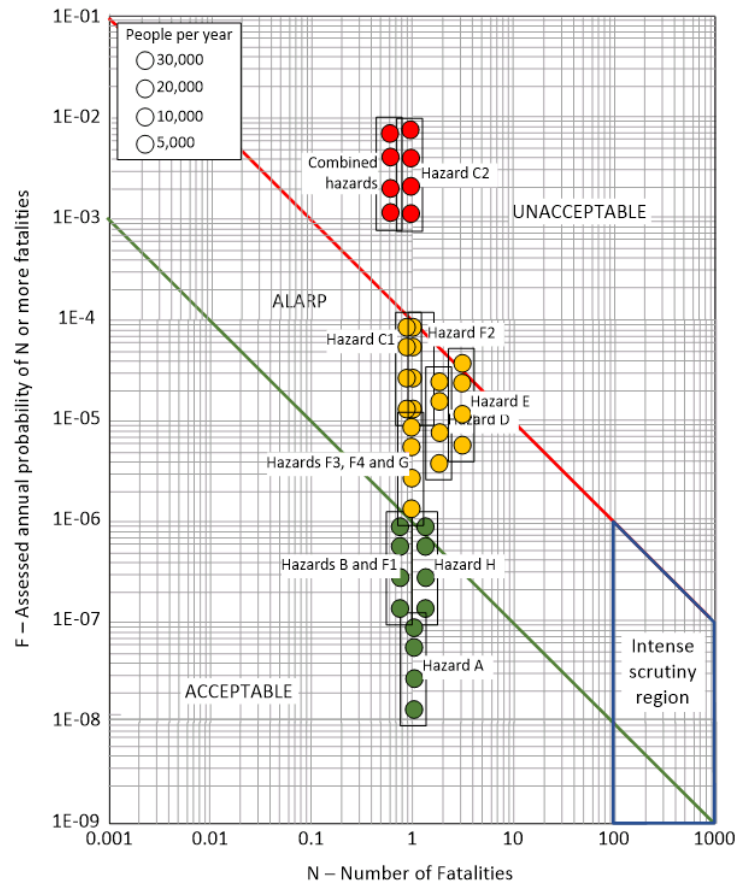


Figure 5. Societal risk graph for the new proposed track (a new development) for the F-N pairs estimated for individual mobile track users for each hazard (and the combined hazards) in Figure 3 and Table 9, for 5,000, 10,000, 20,000 and 30,000 track users per year. (N = 1 because the track users walk in single file so that only one fatality occurs. All hazards plot at N = 1 but some have been moved sideways for clarity.)

3.3 Risk management and mitigation

3.3.1 Risk to property

This report has demonstrated that risk to property (the new track) presented by the identified hazards is Low to Very Low with or without management. In this regard, it is suggested that track construction and maintenance in accord with AS2156-1 – 2001 (modified to suit specific local conditions; Table 13) is sufficient practice.

3.3.2 Risks to life

Decisions relating to acceptability of the risks to life arising from this report are the sole responsibility of HCC. Some management options include:

- accepting the predicted levels of risk and managing the track in a manner similar to other tracks in the area,





- reducing the likelihood of future failures,
- reducing the consequences of future failures, or
- avoiding or transferring the risk.

In Tables 13, some general and site-specific treatments to mitigate likelihood and consequence are suggested for the new track.

In relation to societal risk to life, the risks estimated in this report and their possible marginal acceptability or unacceptability ought to be reviewed in discussion with HCC.

Table 13. Suggested risk treatments to mitigate geotechnical risk to property and life on the proposed new track. Modifications to some treatments may be appropriate after discussion with Council.

| | | Hazard | Site # | GDA94 | | Suggested risk treatments | | |
|---|--|--|--------------|----------------|--|---|----------------------------------|---|
| | | | | Easting | Northing | General treatments | Site-specific treatments | |
| A | Deep-seated translational landslide in bedrock | | N/A | | Unusually heavy and/or prolonged rain is recognised as a trigger for slope instability events (landslides, rockfalls, debris flows, etc.). It is suggested that Council should consider adopting a policy of track closure during and for a period after such events. Rainfall criteria could be adopted to guide closure and reopening decisions. | In acknowledgement of some risks, the principles of ALARP should be adopted. For example, (a) appropriate signage warning of rockfall hazard should be installed on the new track at entry and exit points and elsewhere as appropriate, and (b) regular inspections (with photographic records) should be undertaken as part of an overall monitoring program. | No landslide mitigation required | |
| B | Shallow-seated trans-lational landslide in bedrock | | N/A | | | | No landslide mitigation required | |
| | | Drainage issues with tunnel-eroded areas near site 6 | 6 | 523472 | | | 5249015 | Relocation of switchbacks |
| C | C1 | Shallow translational landslide in colluvium | Site 3 | 523534 | | | 5249096 | Construct appropriate supporting outer wall of switchback. |
| | C2 | | Site 25 | 523400 | | | 5249027 | Suggest track is shortened by c.20m |
| D | | Debris flow | N/A | Un-named creek | | | See main treatment at left. | |
| E | | Translational or rotational landslide in spoil heaps adjacent to small sandstone quarries | Site 48 | 523176 | | | 5248990 | No landslide risk management suggested |
| F | F1 | Rock topple(s) and rock falls from cliff(s) of all heights in Triassic sandstone | Site 28 | 523381 | | | 5249040 | No landslide risk management suggested |
| | F2 | | Site 30 | 523294 | | | 5249078 | |
| | F3 | | Site 33 | 523164 | | | 5249050 | Suggest track relocated and shortened by 10-15m to approx 523164E 5249050N. |
| | F4 | | Site 34 | 523158 | | | 5249045 | |
| G | | Reactivated rockfall, rotation of cobbles and boulders on existing slopes | Site 49 | 523172 | | | 5249011 | Use larger boulders from spoil and/or adjacent slope to form low, dry rock walls above track for protection. |
| H | | Embankment failure on outer edge of new constructed track on slopes steeper than (say) 30 ^o . | Site 23 etc. | 523400 | | | 5249010 | Track construction to be to AS2156-1 – 2001 and/or as modified to suit site conditions. Site-sensitive construction methods may be required in some steeper track sections unrelated to the listed hazards. |





3.4 Effect of construction activities on geotechnical risk

3.4.1 Re-purposing of on-site or near-site rocks for track construction

Re-use of loose rocks is not likely to increase geotechnical (ie rockfall) risk adjacent to track construction, and indeed is recommended in Figure 3 and Table 13. There is one general exception: removal of a significant proportion of loose cobbles and boulders from the bases of spoil embankments is to be avoided since it might undermine the embankments.

It is assumed that due care is taken in moving cobbles and boulders on steep slopes.

3.4.2 Track crossings of spoil mounds

This approach is not likely to compromise the stability of any spoil heaps.

3.5 HCC Rockfall Risk Management Plan (RRMP)

The RRMP anticipates that rockfall hazard presents a significant geotechnical risk for construction crews and members of the public.

This is not at odds with the findings of the current report that rockfall risk to individual track users is probably acceptably low; track construction by its very nature has the potential to increase existing risks.

The RRMP control measures to mitigate rockfall risk are appropriate, and no amendments to the document are required.





4 CONCLUSIONS

The proposed 2,300m long, zig-zagging track improvements near Gentle Annie Falls are exposed to various geotechnical hazards – observed and potential – but all hazards present acceptably low or very low risks to property (track infrastructure).

These acceptably low levels of risk to the track require no unusual construction techniques (appropriate construction methods are assumed) or unusual ongoing maintenance. Nevertheless, it would be judicious to make some minor track realignments to avoid or mitigate tunnel erosion, excessively steep slopes, and rockfall risk.

During track construction or maintenance, risk to life assessments presented in this report suggest that crews will be at acceptably low risks from the identified hazards. Individual members of the public using the track will similarly be at an acceptably low level of risk to life.

The current annual number of track users is estimated to be about 10,000. The new and easier-walk track is expected to carry higher numbers. Societal risks to life increase with increasing annual numbers of users.

Geotechnical risks to infrastructure and track users for this project are probably not dissimilar to risks associated with existing City of Hobart tracks in similar terrain.

Track construction will potentially increase rockfall hazard. Mitigating this risk is adequately addressed in HCC's *Rockfall Risk Management Plan*.

W. C. Cromer
Principal

This report is accompanied by and must not be separated from the following Attachments:

- Attachment 1. Topography and landslide hazard bands, aerial imagery, published geology, hillshading, track study area and *GeoNeon* rockfall sources map (5 pages)
- Attachment 2. Tasmanian Landslide Hazard Maps in relation to the study area (4 pages)
- Attachment 3. Geotechnical assessment sites and hazard identification (1 page)
- Attachment 4. Site photographs (2 and 3 November 2021) (6 pages)
- Attachment 5. Procedures for landslide risk assessment (6 pages)
- Attachment 6. Qualitative terminology used in assessing risk to property/infrastructure (2 pages)

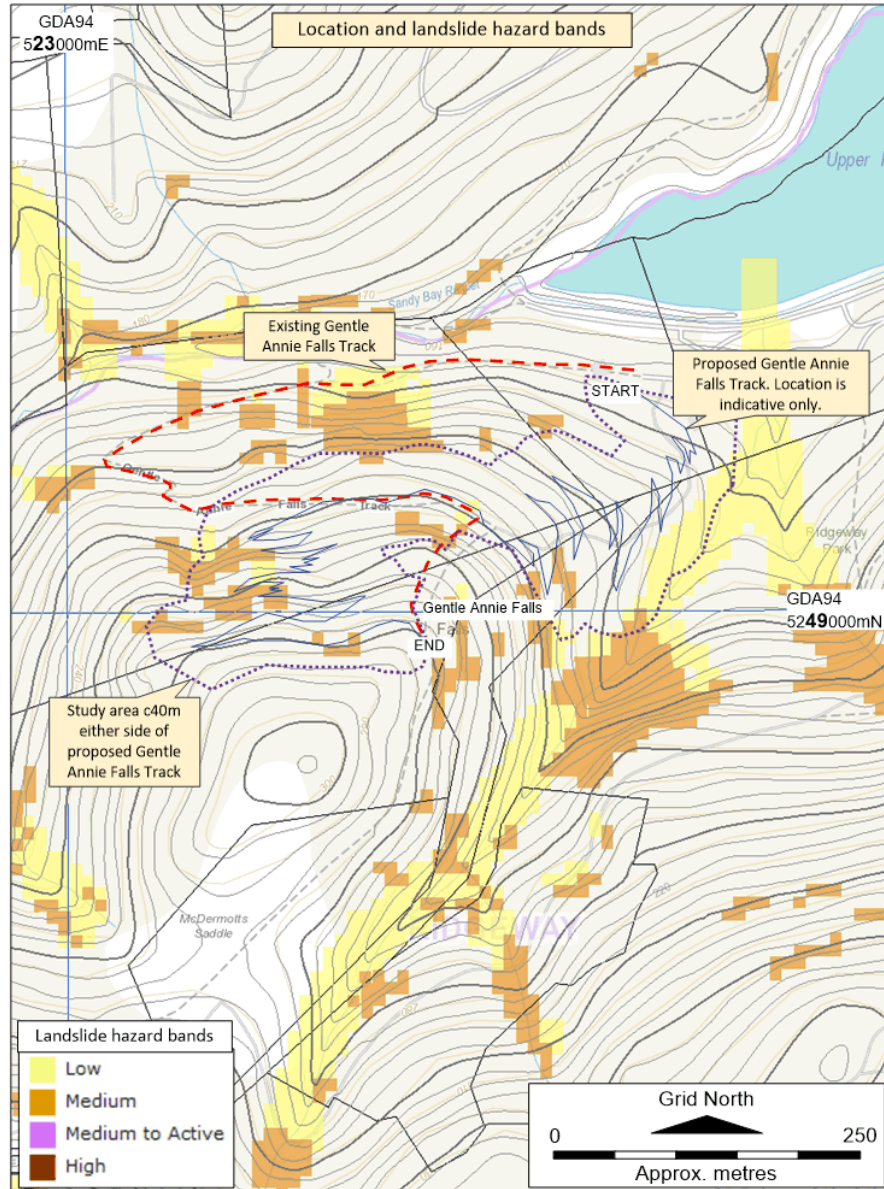


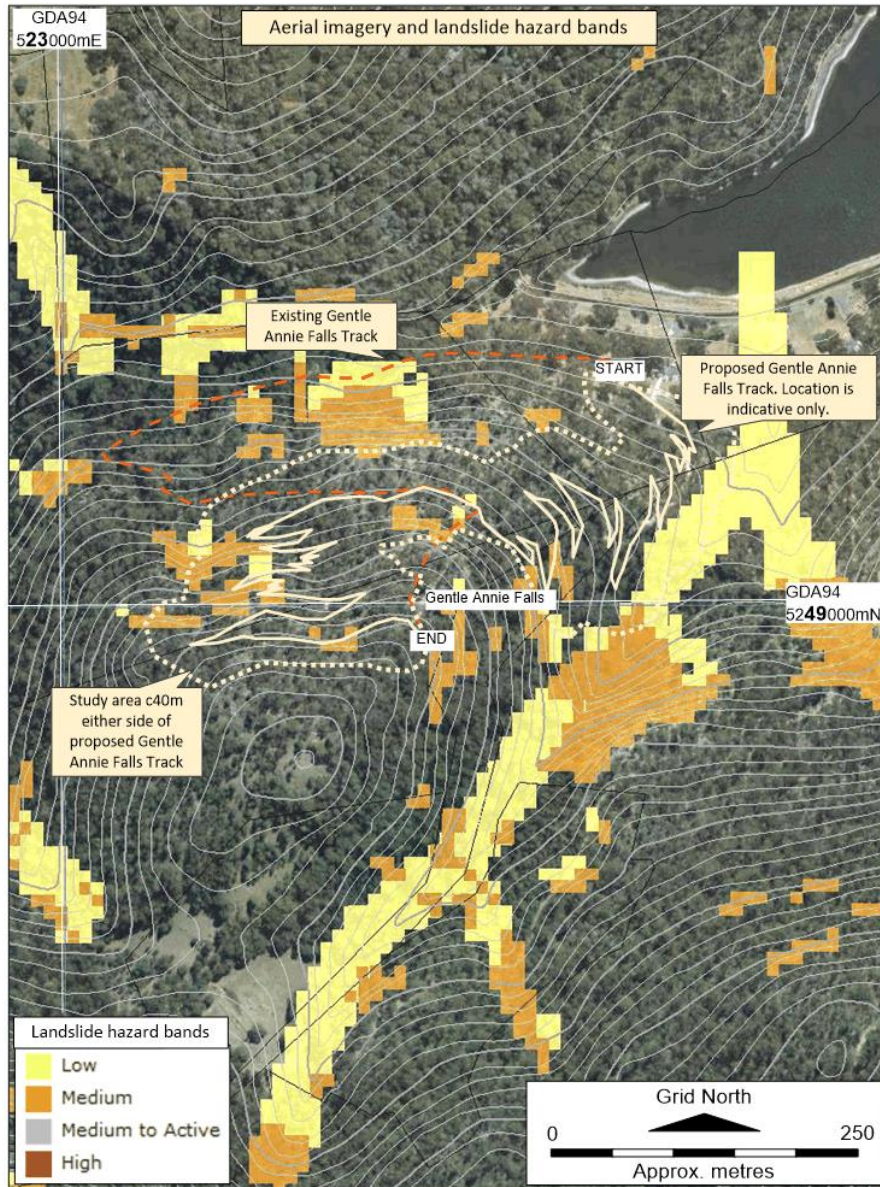


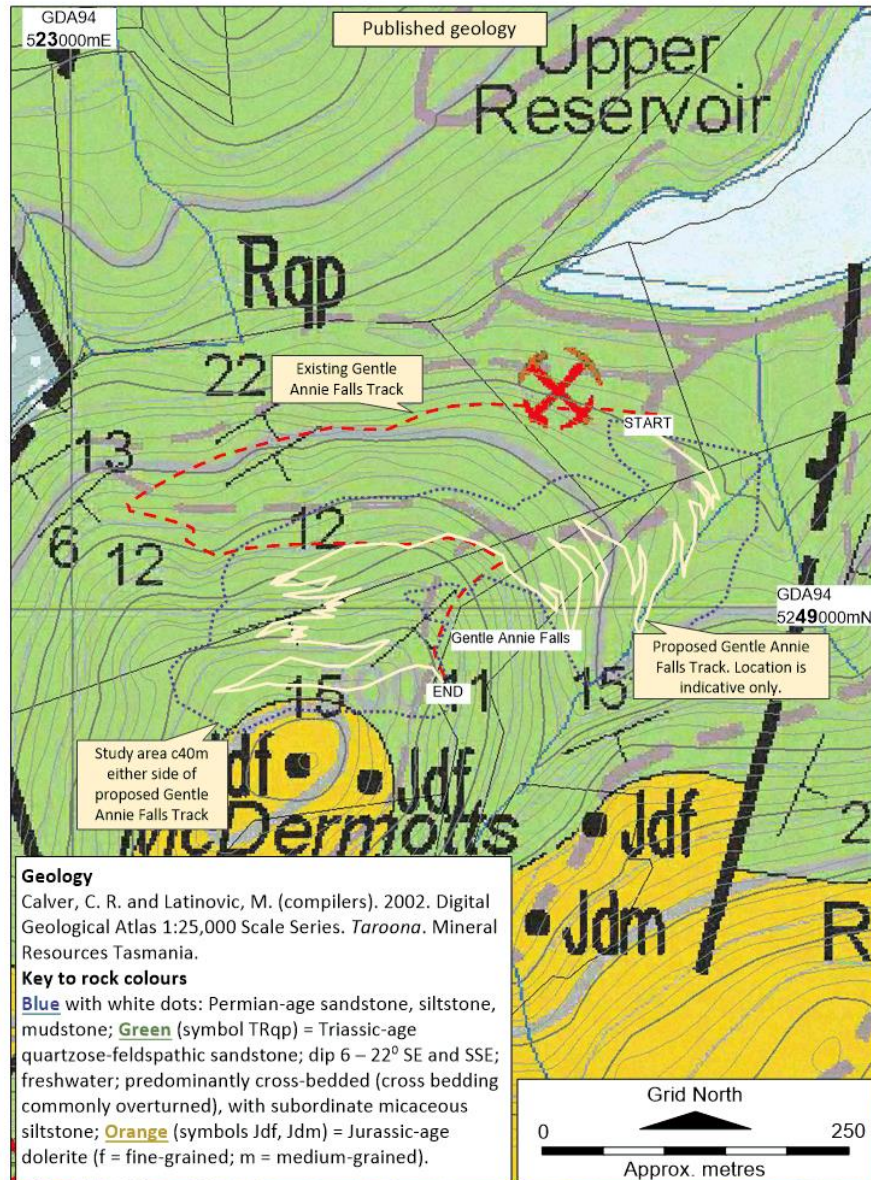
Attachment 1

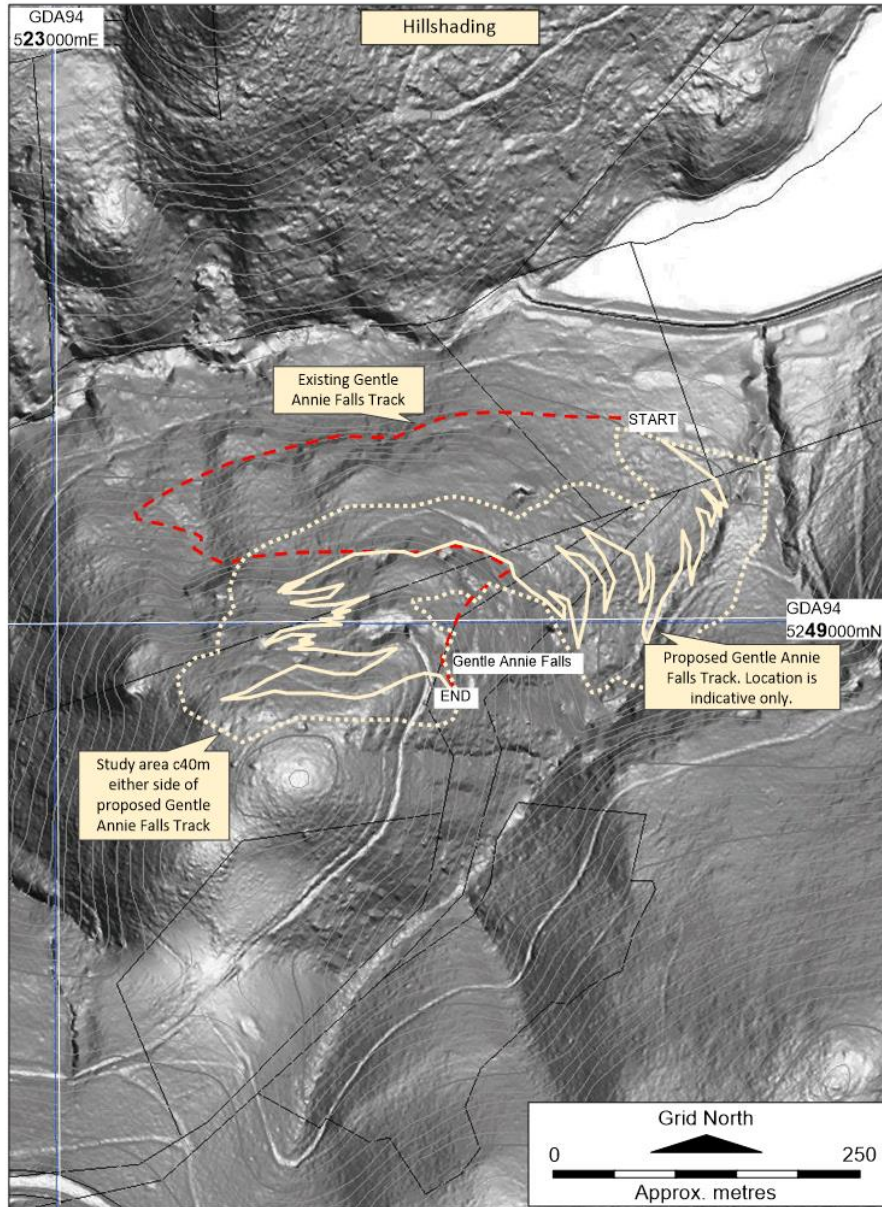
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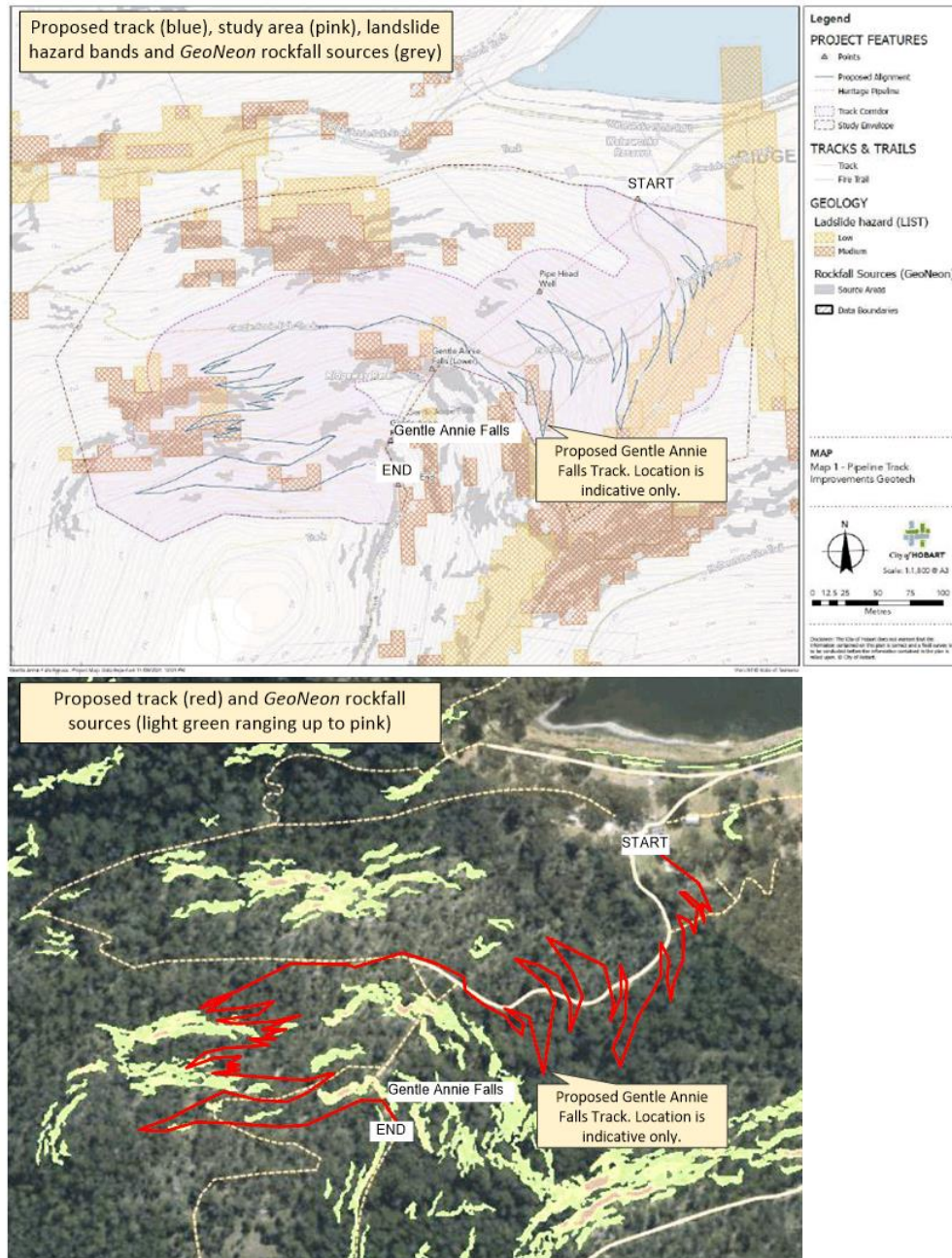
**Topography and landslide hazard bands, aerial imagery,
 published geology and hillshading**
 (Source of base maps: www.theist.tas.gov.au)













Attachment 2

(4 pages)

Tasmanian Landslide Hazard Maps in relation to the study area

Notes

This Attachment shows the study area in relation to four landslide hazard maps issued by Mineral Resources Tasmania. A portion of each map covering the proposed new track and part of the Key to the map, are shown.

The maps are:

- Map 1: Landslide Inventory and Geomorphology
- Map 3: Potential Debris Flow Hazard
- Map 4: Potential Rockfall Hazard
- Map 5: Potential Deep Seated Landslide Hazard

Map 2 is the geological map of the area, part of which is reproduced in Attachment 1.

The following extract from the explanatory notes to Map 5 explains the purpose and limitations of the maps.

Deep Seated Landslide Hazard

Background, Aim and Purpose

Large tracts of land throughout Tasmania are subject to slope instability and about 60 houses have been destroyed by landslides since the 1950s. Fortunately only minimal loss of life has occurred in this time but such events are highly traumatic to those directly affected and the financial cost to individuals, organisations and the State runs into many millions of dollars. Recent disasters such as the Thredbo Landslide in New South Wales, serve to remind society of the potential for loss of life even from relatively small landslides. Fortunately, landslide damage can be avoided when ground conditions are properly understood before construction proceeds and, in already developed areas, this understanding can be used to mitigate the hazard through various measures.

Regional landslide hazard maps are produced to provide an insight into the natural hazards that may potentially affect the area concerned. Mineral Resources Tasmania, in partnership with the Hobart City Council has produced the first of a new landslide hazard map series in Tasmania, using Hobart as a pilot study area. The information provided is in the public domain and anyone is free to use it provided they read and understand the caveats for use.

Hazard and Risk

According to the joint Australian/New Zealand Standard (AS/NZS 4360:1999) risk is defined as the chance of something happening that will impact upon objectives. It is measured in terms of consequences and likelihood.

The definition of risk is often expressed by the following equation:

RISK = Hazard x Vulnerability x Elements at Risk

A hazard is defined as a source of potential harm or a situation with a potential to cause loss. A hazard, such as a landslide can be measured in terms of location, volume (or area), type, velocity and likelihood with time. Vulnerability refers to the susceptibility and resilience of structures, community and the environment to the hazard. The 'elements at risk' refers to the number of those structures, people, etc exposed to the hazard.

A hazard map attempts to portray the processes operating in an area, conveying all or some of the hazard parameters, generally in a qualitative to semi-quantitative manner. Because of the uncertainties involved, the translation of regional hazard maps into risk maps is challenging and seldom precise. An indication of the likely risk level is provided for each hazard at a regional scale but this will vary in detail. However, provided the limitations of the maps are understood, hazard maps can be used for many purposes in order to achieve the overall goal of safe and resilient communities.





Caveats for Use

The following caveats shall apply to the maps.

- The hazards identified are based on imperfect knowledge of ground conditions and models to represent our current understanding of the landslide process. As this knowledge improves our perception of the hazard and the depiction of the zones on the map may also change.
- These maps can be used as a guide (or flag) to the need for specific assessment in potential hazard areas.
- Planning decisions should not be made solely on the basis of the hazard zones delineated on the map.
- The scale limitations of the data should be considered at all times as exceeding this limit could lead to inaccurate decisions about the hazard.
- Specific assessment of landslide hazard and risk should be undertaken by suitably qualified and experienced practitioners in the fields of engineering geology and geotechnical engineering.
- Practitioners undertaking specific assessments should read the text and appendices attached to the maps and obtain a thorough understanding of the methodology and limitations of the maps.
- Areas where no hazard is shown can still have issues with slope instability.
- Anthropogenic influence on slopes cannot be predicted and the occurrence of slope instability resulting from the influence of human actions is specifically excluded from these maps.
- The identification and performance of cut and filled slopes have not been specifically considered in map production and their scale is such that they often cannot be resolved on the maps. The presence of such slopes should always be considered in specific assessments.



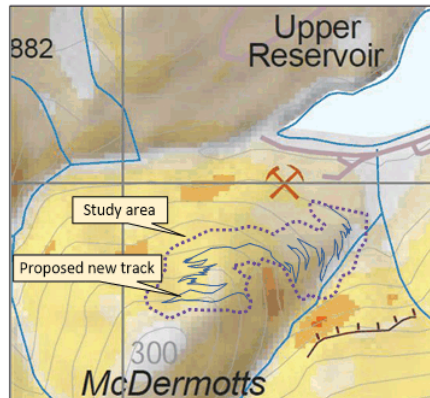


Map 1. Landslide Inventory and Geomorphology.

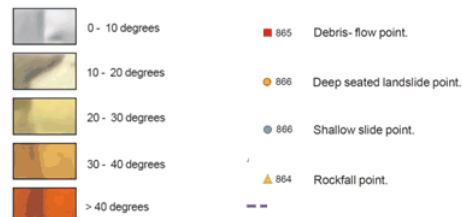
Mazengarb, C. (2004). Map 1, Hobart – Landslide Inventory and Geomorphology. Tasmanian Landslide Hazard Series. Mineral Resources Tasmania

There are no known instances of current or recent slope instability along the route of the proposed new track. Slope angles are depicted mostly in the 20 – 30° range, with smaller areas in the 30 – 40° range.

Landslide Inventory and Geomorphology

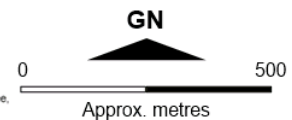
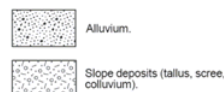


Slope Data



Note: The techniques used to create the slope layer tends to underestimate values along cliffs.

Depositional Type

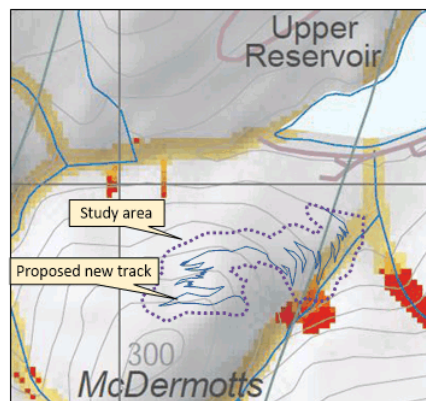


Map 3. Potential Debris Flow Hazard

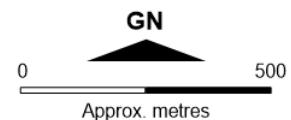
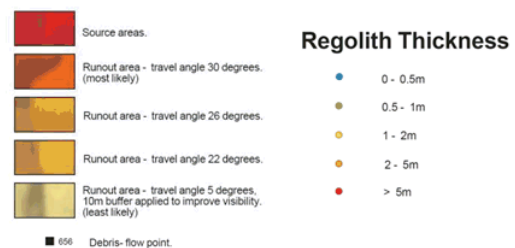
Mazengarb, C. (2004). Map 3, Hobart – Potential Debris Flow Hazard. Tasmanian Landslide Hazard Series. Mineral Resources Tasmania

Most watercourses in the Hobart area (including Sandy Bay Rivulet), and the un-named creeks in the eastern part of the study area, are regarded as either source (red) areas or run-out (yellow) areas for debris flows. Sections of the track are located within the source area. The risk of debris flows to users of the track is regarded as acceptably low because the creek is a very minor watercourse.

Potential Debris Flow Hazard



Modelled Debris- Flow Hazard Zones



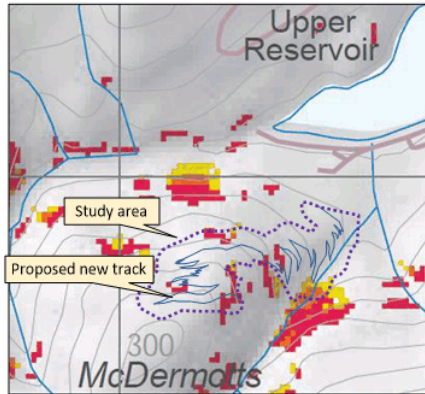


Map 4. Potential Rockfall Hazard

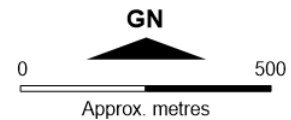
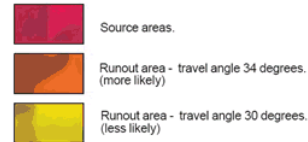
Mazengarb, C. (2004). Map 4, Hobart – Potential Rockfall Hazard. Tasmanian Landslide Hazard Series. Mineral Resources Tasmania

The proposed track is shown as at potential risk of rockfalls in several locations, due to the relatively steep slopes and numerous outcrops of sandstone (many as small cliff sections).

Potential Rockfall Hazard



Modelled Rockfall Hazard Zones

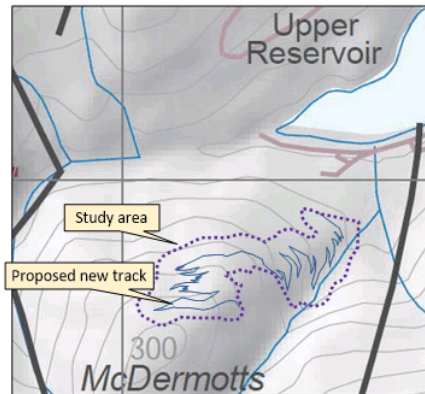


Map 5. Potential Deep Seated Landslide Hazard

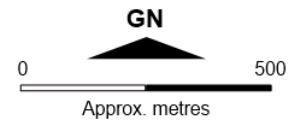
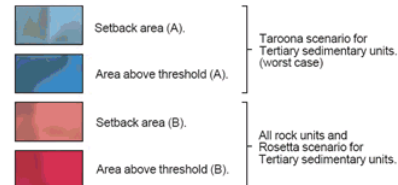
Mazengarb, C. (2004). Map 5, Hobart – Potential Deep Seated Landslide Hazard. Tasmanian Landslide Hazard Series. Mineral Resources Tasmania

The land is shown to be not at risk of deep seated landsliding. The straight black lines are geological faults.

Potential Deep Seated Landslide Hazard



Modelled Deep Seated Landslide Hazard





Attachment 3

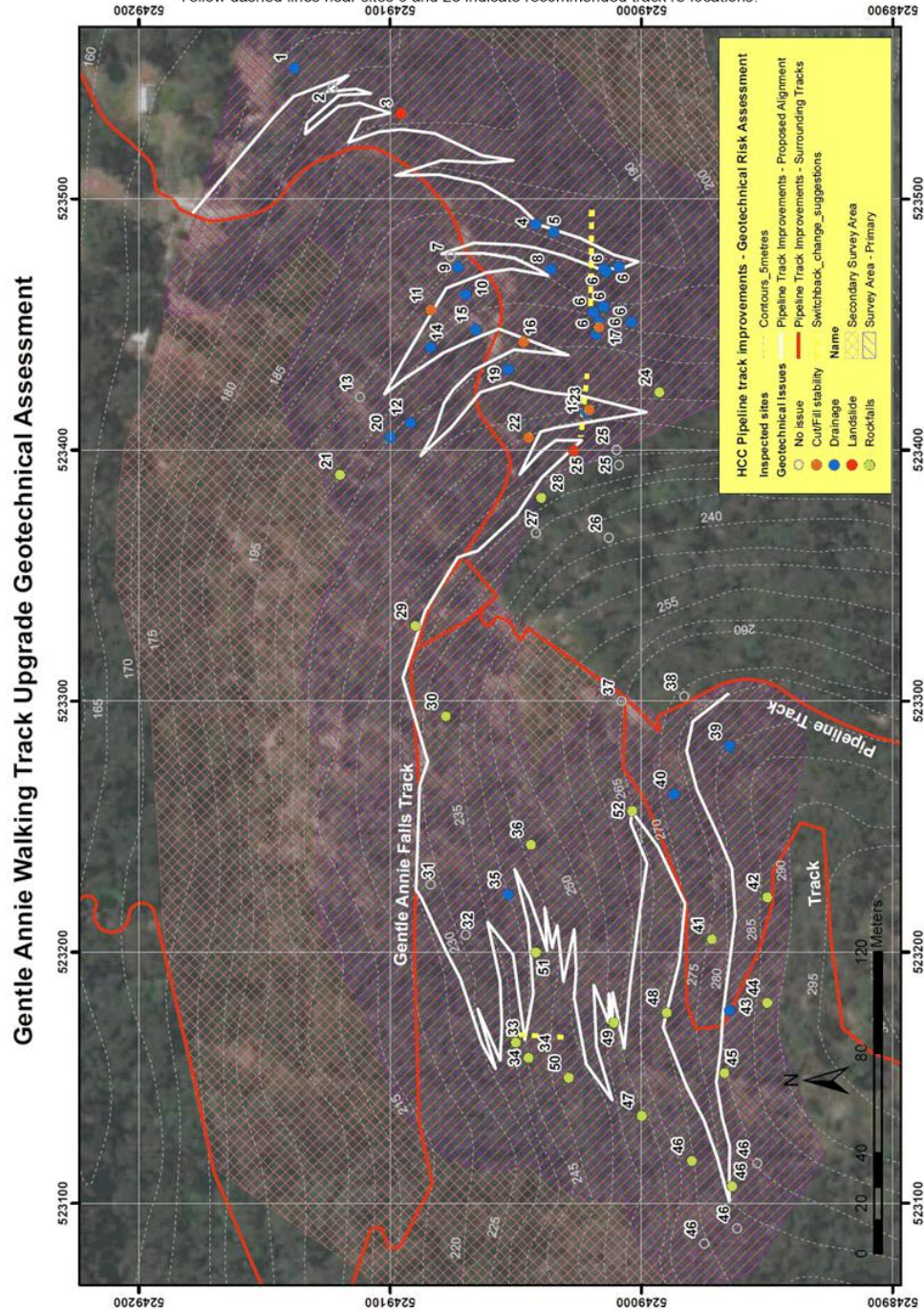
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Geotechnical assessment sites and hazard identification

Source of shape files: HCC. Map generation: Genevieve Bremner.

See accompanying Excel file for geotechnical comments at sites.

Yellow dashed lines near sites 6 and 23 indicate recommended track re-locations.





Attachment 4

(6 pages)

Site photographs (2 and 3 November 2021)

The grid coordinates are GDA94 Zone 55

The staff is graduated in red- and black-numbered sections each one metre long. The large numbers are decimetres.
 Site numbers refer to those in Attachment 3 and the separate file *Geotechnical Field Data.xls*

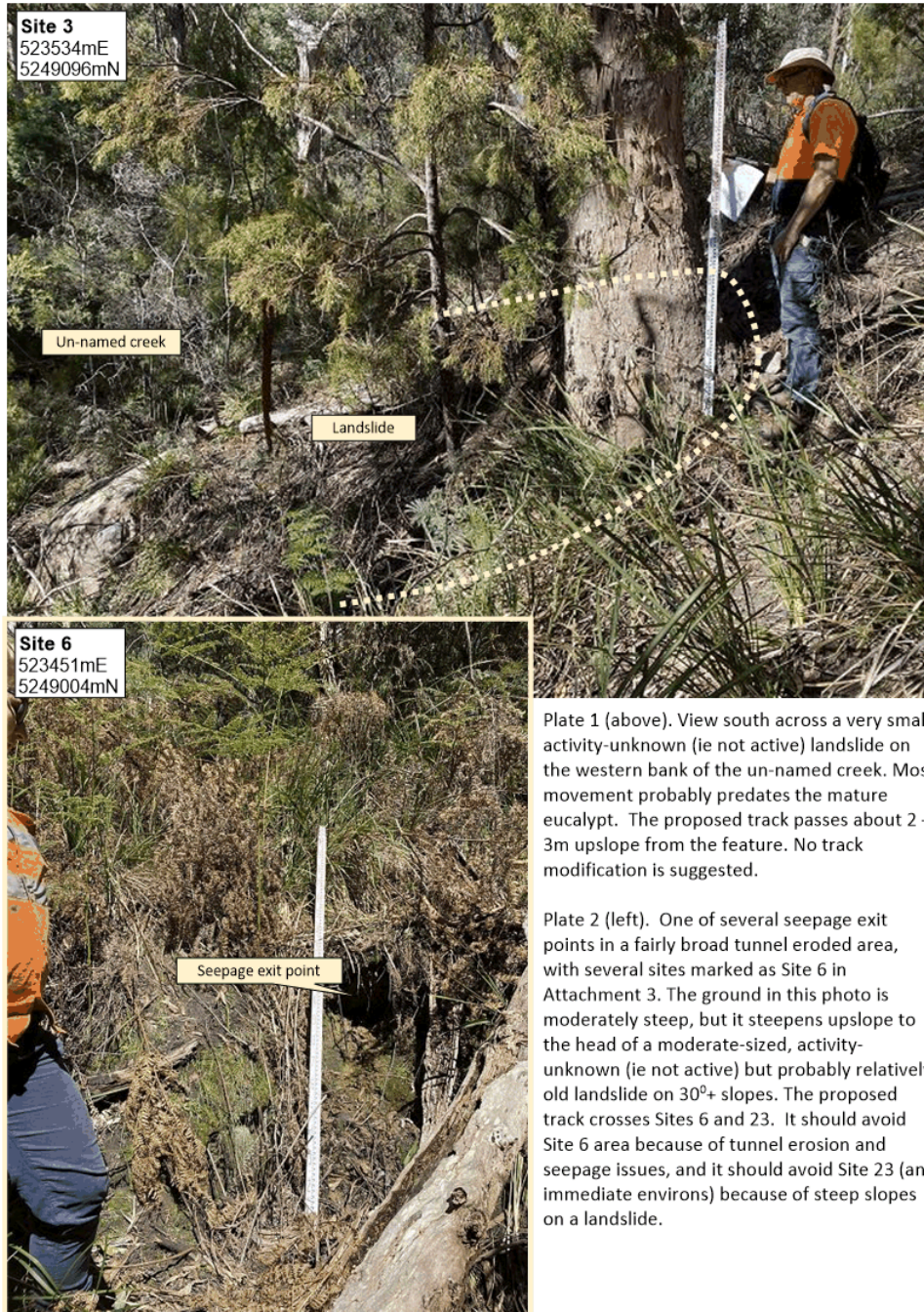


Plate 1 (above). View south across a very small, activity-unknown (ie not active) landslide on the western bank of the un-named creek. Most movement probably predates the mature eucalypt. The proposed track passes about 2 – 3m upslope from the feature. No track modification is suggested.

Plate 2 (left). One of several seepage exit points in a fairly broad tunnel eroded area, with several sites marked as Site 6 in Attachment 3. The ground in this photo is moderately steep, but it steepens upslope to the head of a moderate-sized, activity-unknown (ie not active) but probably relatively old landslide on 30°+ slopes. The proposed track crosses Sites 6 and 23. It should avoid Site 6 area because of tunnel erosion and seepage issues, and it should avoid Site 23 (and immediate environs) because of steep slopes on a landslide.





Plate 3 (above). View north across steep 30°+ slopes below the headscarp of the activity-unknown landslide depicted in Plate 4. The proposed track crosses this slope, and the slope angle presents challenges for track construction and maintenance. (There are other track sections just as steep or steeper, but Site 23 crosses a landslide and track relocation is relatively easily achieved.)

Plate 4 (below). View south across the 20m wide headscarp of the activity-unknown landslide at Site 25. The landslide extends downslope to the left, probably past the tunnel-eroded area at site 6 to the un-named creek. The proposed track crosses the landslide about 20m downslope to the left, shown in Plate 3.





Plate 5 (above). View southeast towards a low sandstone cliff a few metres upslope from the proposed track (behind camera). Fallen sandstone blocks up to about 0.5m in size are common on the slope.

Plate 6 (below). View west along the existing track (the new track follows this route here). Site 30 at upper left is a relatively prominent 5m wide x 7m high section of low sandstone cliff. Rock fall is "Almost Certain"; boulders would fall onto a c.20° slope 40m upslope from the track.





Plate 7. View east across the face of Site 30, a prominent 7m high short cliff section of cross-bedded, strongly-jointed, moderately-highly weathered Triassic sandstone bedrock dipping approx. 10° SSE. The site is about 40m upslope from the proposed track, which in this area follows the existing Pipeline Track. Some joint blocks are overhanging and rotated downslope, and there are several examples of relatively recent rockfalls (up to c.0.5m diameter) at its base and on the slope down to the track.





Plate 8 (above). View south and 15m upslope near Site 34, over 25° boulder-strewn slopes to low cliff sections of sandstone dipping into the hillside at c. 12°. Some of the toppled boulders are up to c. 3m across. The likelihood of further rockfalls is uncertain, but the size and number of boulders suggest “Likely”. In relation to risk to track users, It is recommended that the switchback (pink tape) be withdrawn about 20 – 25m back from this area. This re-location is relatively easily achieved without compromising required track gradients.

Plate 9 (below). A view east and slightly upslope from near Site 33 towards a relatively large (2.5m) sandstone boulder which has toppled from a low sandstone cliff (off camera at right) and has travelled about 10m down on a 25° slope. The proposed track crosses this site.





Plate 10. A view southeast and upslope towards Site 48 (top right), from near Site 49. The intervening rock-strewn slope is the outer face of a 35 – 40° spoil embankment from a sandstone quarry at top right. Boulder size ranges up to about 0.8 – 1m. The proposed track unavoidably crosses the lower part of the embankment at left of camera. It is suggested that some of the larger boulders be placed across the high side of the track to mitigate potential consequences of rock falls to track users.



**Attachment 5**

(6 pages)

Procedures for landslide risk assessment

This Attachment is a summary of the process of landslide risk management described in Australian Geomechanics Society (AGS) *Landslide Risk Management* (2007)¹⁰. The process is depicted in Figure 5.1. The main types of landslide movement are shown in Figure 5.2 and Table 5.1.

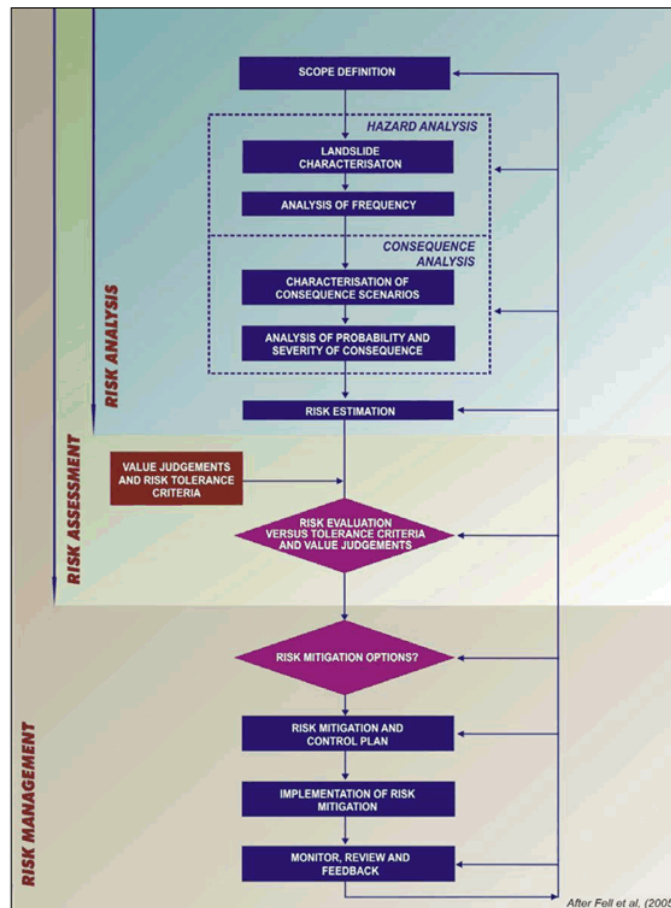


Figure 5.1. Framework for Landslide Risk Management

Source: Reproduced without amendment from AGS (2007a). Guideline for Landslide Susceptibility, Hazard and Risk Zoning. Australian Geomechanics, Vol 42 No 1 March 2007

¹⁰ The five AGS documents are:

AGS (2007a). Guideline for Landslide Susceptibility, Hazard and Risk Zoning. Australian Geomechanics, Vol 42 No 1 March 2007

AGS (2007b). Commentary on Guideline for Landslide Susceptibility, Hazard and Risk Zoning. Australian Geomechanics, Vol 42 No 1 March 2007

AGS (2007c). Practice Notes Guidelines for Landslide Risk Management. Australian Geomechanics Vol 42 No 1 March 2007

AGS (2007d). Commentary on Practice Notes Guidelines for Landslide Risk Management. Australian Geomechanics Vol 42 No 1 March 2007

AGS (2007e). The Australian Geoguides for Slope Management and Maintenance. Australian Geomechanics Vol 42 No 1 March 2007

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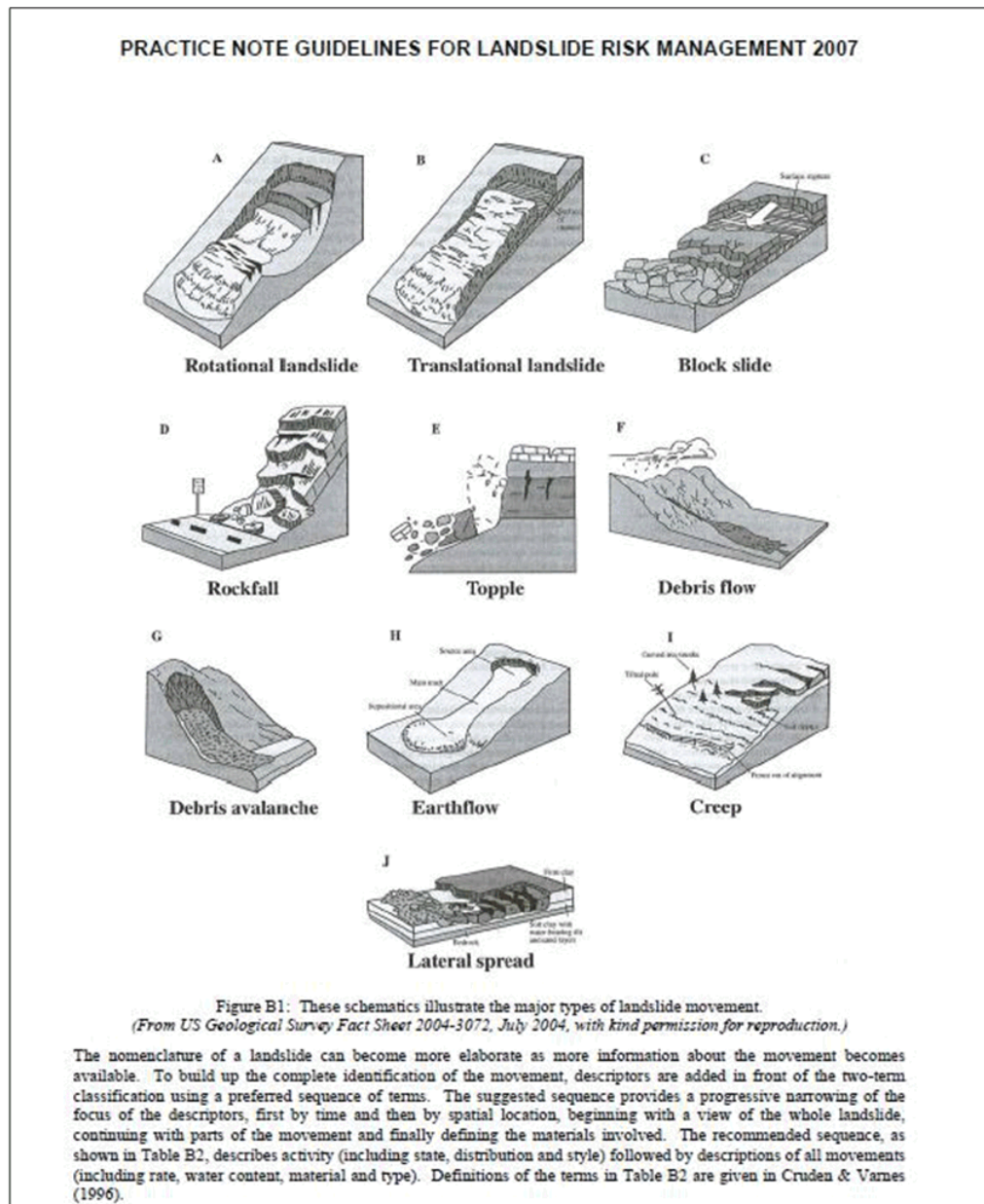


Figure 5.2

Main types of landslide movement

Source: From Appendix B of AGS (2007c). Practice Notes Guidelines for Landslide Risk Management. Australian Geomechanics Vol 42 No 1 March 2007





Table 5.1

Main types of landslide movement

Source: From Appendix B of AGS (2007c). Practice Notes Guidelines for Landslide Risk Management.
 Australian Geomechanics Vol 42 No 1 March 2007

| TYPE OF MOVEMENT | | TYPE OF MATERIAL | | |
|------------------|---------------|--|-----------------------------|--------------------|
| | | BEDROCK | ENGINEERING SOILS | |
| | | | Predominantly Coarse | Predominantly Fine |
| FALLS | | Rock fall | Debris fall | Earth fall |
| TOPPLES | | Rock topple | Debris topple | Earth topple |
| SLIDES | ROTATIONAL | Rock slide | Debris slide | Earth slide |
| | TRANSLATIONAL | | | |
| LATERAL SPREADS | | Rock spread | Debris spread | Earth spread |
| FLOWS | | Rock flow (Deep creep) | Debris flow (Soil creep) | Earth flow |
| COMPLEX | | Combination of two or more principle types of movement | | |

LANDSLIDE RISK MANAGEMENT (LRM)

1.1 Preliminary

1.1.1 Published evidence of slope instability

See Section 2.1 of the report.

1.1.2 Field evidence and mechanisms/triggers of slope instability

See Section 2.2.5 of the report.

Mechanisms for landslides are primarily gravity-induced movements on relatively low-strength and often lubricated soil surfaces on slopes.

Triggers for landslide movement are commonly related to the frequency and intensity of rain events, traffic-induced vibrations (not applicable in the study area) and less commonly by earthquake vibrations.

1.1.3 Site plans and maps

Attachment 1 shows topography and hillshading, aerial imagery, landslide hazard bands and published geology of the study area and environs.

1.1.4 Geology

Published geology

The geology of the district¹¹ is shown in Attachment 1. T

Observed geology

See Section 2.2 of the report.

1.2 Conceptual hydrogeological model

A conceptual hydrogeological model for the study area is shown in Figure 3, together with observed and potential landslide hazards labelled A –H.

¹¹ Calver, C. R. and Latinovic, M. (compilers). 2002. Digital Geological Atlas 1:25,000 Scale Series. *Taroona*. Mineral Resources Tasmania.





1.3 Hazard Analysis

1.3.1 Hazard characterisation and likelihood

See Tables 1 – 7 in the report.

1.3.2 Elements at risk

The track users (“elements”) at risk to life are judged to be:

- individual users (walkers/runners/cyclists): these are “mobile elements”
- track construction and maintenance crews (these are “stationary” elements)

1.4 Consequence analysis and qualitative risk to property estimation

See Section 3 of the report..

1.5 Quantitative risk to life estimation for users of the proposed new track

See Section 3 of the report.

1.6 Acceptability of risks

See Section 3 of the report..





Table 5.4. Calculation for estimating the risk to life of an individual most at risk from a single hazard [Section 7.1 of AGS2007(c)]

| | |
|---|---|
| For loss of life, the individual risk can be calculated from: | |
| | $R_{(LoL)} = P_{(H)} \times P_{(S:H)} \times P_{(T:S)} \times V_{(D:T)}$ (2) |
| Where | |
| $R_{(LoL)}$ | is the risk (annual probability of loss of life (death) of an individual). |
| $P_{(H)}$ | is the annual probability of the landslide. |
| $P_{(S:H)}$ | is the probability of spatial impact of the landslide impacting a building (location) taking into account the travel distance and travel direction given the event. |
| $P_{(T:S)}$ | is the temporal spatial probability (e.g. of the building or location being occupied by the individual) given the spatial impact and allowing for the possibility of evacuation given there is warning of the landslide occurrence. |
| $V_{(D:T)}$ | is the vulnerability of the individual (probability of loss of life of the individual given the impact). |

Table 5.5. Explanation of abbreviations used for risk to life estimations [from Golder Associates Pty. Ltd. (2020)]

| | |
|----------------------|---|
| d | The length of a track that could be impacted by a landslide. For rockfall, d = the boulder diameter. |
| e | The exposed population (an integer), referring to the number of separate individuals exposed to a hazard over the course of a year. |
| es | The number of people within a subgroup of the exposed population, e that could be impacted by a single occurrence of a hazard. |
| ea _v | The hypothetical average number of people exposed to a hazard assuming they are exposed for 100 % of the time. |
| F | The probability of impact to the exposed population resulting in the death of N or more people. |
| F _c | The combined probability of loss of life of N or more people from multiple hazards. |
| f | a reduction factor between 0 and 1 which describes the probability of a person being present when the landslide is triggered. |
| l | a length of track affected by landslide in metres. |
| n | the total number of traverses made annually by a mobile element at risk through an area at risk from landslide. |
| n _i | the number of traverses made annually by a specific individual, nominally the individual most at risk. |
| N | the number people that are expected to be impacted and killed by a landslide hazard. |
| R _(LoL) | The probability of loss of life of the individual most at risk from a single hazard. |
| AvR _(LoL) | The average individual risk or probability of loss of life of the across all individuals in the exposed population or subgroup of the exposed population, used in the calculation of societal risk for mobile elements at risk. |
| R _(LoLC) | The combined probability of loss of life of the individual most at risk from multiple hazards. |
| P _(H) | The annual probability that a landslide or rock fall occurs. |
| s | The average speed in km/hr that a mobile element at risk moves through an area subject to a landslide hazard. |
| s _i | The speed in km/hr that the individual most at risk moves through an area subject to a landslide hazard. |
| V _(D:T) | The vulnerability of the individual given they are impacted by a hazard. |
| w | The proportion of or track affected by the landslide and ranges between 0 (none of track affected) to 1 (full width of the track affected). |





LLOYD'S

Tasman Underwriting Pty Ltd is a Corporate Authorised Representative of Austagencies Pty Ltd ABN 76 006 090 464 AFSL 244584

Level 13, 141 Walker Street, North Sydney NSW 2060
PO Box 1813 North Sydney NSW 2059

Telephone: (02) 9930 9542

CERTIFICATE OF CURRENCY

Type: Professional Indemnity Insurance

Insured: William C. Cromer Pty Ltd

Profession: Consulting Geotechnical, Environmental and Geological Engineers

Limit of Indemnity: \$1,000,000

Period of Insurance: From: 4.00pm 31 August 2021
To: 4.00pm 31 August 2022

Retroactive Date: Unlimited (excluding any known Claims/Circumstances)

Insurers: 100% Certain Underwriters at Lloyd's, London
per Tasman Underwriting Pty Limited, Sydney.

Please refer to the policy document and any endorsements for the full terms and conditions of this insurance.

Signed:

Roy Daly
For and on behalf of Tasman Underwriting Pty Limited

Dated: In Sydney this Wednesday, 25 August 2021

This Certificate has been issued in our capacity as agents for Certain Underwriters at Lloyd's, London. It does not reflect in detail the policy terms or conditions and merely provides a very brief summary of the insurance that is, to the best of our knowledge, in existence at the date we have issued this Certificate. If you wish to obtain details of the policy terms, conditions, restrictions, exclusions or warranties, you must refer to the policy document.

In issuing this Certificate, we do not guarantee that the insurance outlined will continue to remain in force for the Period of Insurance as the policy may be cancelled or altered by either party to the contract at any time in accordance with the terms and conditions of the policy or in accordance with the terms of The Insurance Contracts Act 1984. We accept no responsibility or liability to advise any party who may be relying on this Certificate of any such alteration to, or cancellation, of the policy.





Attachment 6

(2 pages)

Qualitative terminology used in assessing risk to property/infrastructure

Source: Appendix C of AGS2007c.

PRACTICE NOTE GUIDELINES FOR LANDSLIDE RISK MANAGEMENT 2007
APPENDIX C: LANDSLIDE RISK ASSESSMENT
QUALITATIVE TERMINOLOGY FOR USE IN ASSESSING RISK TO PROPERTY

QUALITATIVE MEASURES OF LIKELIHOOD

| Approximate Annual Probability | | Implied Indicative Landslide Recurrence Interval | Description | Descriptor | Level |
|--------------------------------|--------------------|--|---|-----------------|-------|
| Indicative Value | Notional Boundary | | | | |
| 10 ⁻¹ | | 10 years | The event is expected to occur over the design life. | ALMOST CERTAIN | A |
| 10 ⁻² | 5x10 ⁻² | 20 years | The event will probably occur under adverse conditions over the design life. | LIKELY | B |
| 10 ⁻³ | 5x10 ⁻³ | 200 years | The event could occur under adverse conditions over the design life. | POSSIBLE | C |
| 10 ⁻⁴ | 5x10 ⁻⁴ | 2000 years | The event might occur under very adverse circumstances over the design life. | UNLIKELY | D |
| 10 ⁻⁵ | 5x10 ⁻⁵ | 20,000 years | The event is conceivable but only under exceptional circumstances over the design life. | RARE | E |
| 10 ⁻⁶ | 5x10 ⁻⁶ | 200,000 years | The event is inconceivable or fanciful over the design life. | BARELY CREDIBLE | F |

Note: (1) The table should be used from left to right; use Approximate Annual Probability or Description to assign Descriptor, not vice versa.

QUALITATIVE MEASURES OF CONSEQUENCES TO PROPERTY

| Approximate Cost of Damage | | Description | Descriptor | Level |
|----------------------------|-------------------|---|---------------|-------|
| Indicative Value | Notional Boundary | | | |
| 200% | | Structure(s) completely destroyed and/or large scale damage requiring major engineering works for stabilisation. Could cause at least one adjacent property major consequence damage. | CATASTROPHIC | 1 |
| 60% | 100% | Extensive damage to most of structure; and/or extending beyond site boundaries requiring significant stabilisation works. Could cause at least one adjacent property medium consequence damage. | MAJOR | 2 |
| 20% | 40% | Moderate damage to some of structure; and/or significant part of site requiring large stabilisation works. Could cause at least one adjacent property minor consequence damage. | MEDIUM | 3 |
| 5% | 10% | Limited damage to part of structure; and/or part of site requiring some reinstatement stabilisation works. | MINOR | 4 |
| 0.5% | 1% | Little damage. (Note for high probability event (Almost Certain), this category may be subdivided at a notional boundary of 0.1%. See Risk Matrix.) | INSIGNIFICANT | 5 |

Notes: (2) The Approximate Cost of Damage is expressed as a percentage of market value, being the cost of the improved value of the unaffected property which includes the land plus the unaffected structures.

(3) The Approximate Cost is to be an estimate of the direct cost of the damage, such as the cost of reinstatement of the damaged portion of the property (land plus structures), stabilisation works required to render the site to tolerable risk level for the landslide which has occurred and professional design fees, and consequential costs such as legal fees, temporary accommodation. It does not include additional stabilisation works to address other landslides which may affect the property.

(4) The table should be used from left to right; use Approximate Cost of Damage or Description to assign Descriptor, not vice versa

Australian Geomechanics Vol 42 No 1 March 2007





PRACTICE NOTE GUIDELINES FOR LANDSLIDE RISK MANAGEMENT 2007
APPENDIX C: – QUALITATIVE TERMINOLOGY FOR USE IN ASSESSING RISK TO PROPERTY (CONTINUED)

QUALITATIVE RISK ANALYSIS MATRIX – LEVEL OF RISK TO PROPERTY

| LIKELIHOOD | Indicative Value of Approximate Annual Probability | CONSEQUENCES TO PROPERTY (With Indicative Approximate Cost of Damage) | | | | |
|---------------------|--|---|-----------------|------------------|----------------|--------------------------|
| | | 1: CATASTROPHIC 200% | 2: MAJOR 60% | 3: MEDIUM 20% | 4: MINOR 5% | 5: INSIGNIFICANT 0.5% |
| A – ALMOST CERTAIN | 10 ⁻¹ | VH | VH | VH | H | M or L (5) |
| 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: (5) For Cell A5, may be subdivided such that a consequence of less than 0.1% is Low Risk.
 (6) When considering a risk assessment it must be clearly stated whether it is for existing conditions or with risk control measures which may not be implemented at the current time.

RISK LEVEL IMPLICATIONS

| Risk Level | | Example Implications (7) |
|------------|----------------|---|
| VH | VERY HIGH RISK | 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 value of the property. |
| H | HIGH RISK | 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 RISK | 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 RISK | Usually acceptable to regulators. Where treatment has been required to reduce the risk to this level, ongoing maintenance is required. |
| VL | VERY LOW RISK | Acceptable. Manage by normal slope maintenance procedures. |

Note: (7) The implications for a particular situation are to be determined by all parties to the risk assessment and may depend on the nature of the property at risk; these are only given as a general guide.



Gentle Annie Falls Track Improvements

Rockfall Risk Management Plan

The proposed re-alignment of the Gentle Annie Falls Track will pass through several areas of rocky terrain that have the potential to present a hazard to workers and the public.

This Rockfall Risk Management Plan (RRMP) identifies the risks associated with building the track through potentially hazardous terrain, and the control measures that are to be implemented prior to, during, and following construction.

Landslide Hazard Areas

The potentially hazardous areas have been identified through Landslide Hazard Area spatial data provided by LISTmap. According to this data, the proposed track corridor passes through areas of Low to Medium rockfall susceptibility source and runout.

A more comprehensive and higher resolution spatial data from the Buildings and Roads Vulnerability to Rockfall and Debris Flow in Hobart (Geoneon, 2021) report has identified residual rupture and reach susceptibility within the project area (see Map 1).

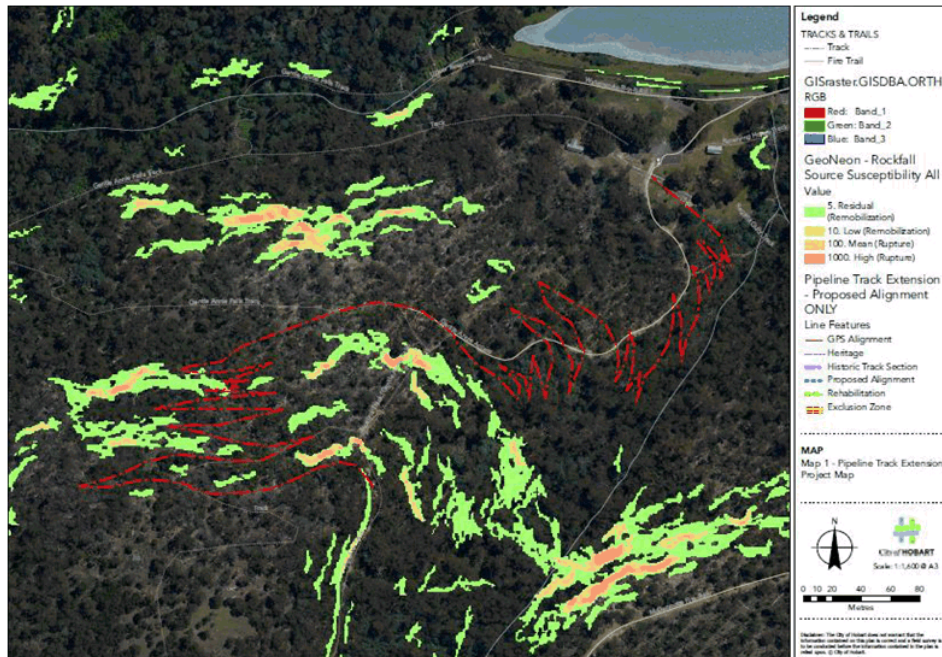
Risk Management

The analysis of the rockfall hazard finds that the identified residual rupture and reach susceptibility intersects the proposed track alignment in a few locations (see Map 1).

The main identified risks are:

- Injury to staff during construction through a rolling boulder either from the rockfall source area, the rockfall runout area, or above any construction area.
- Injury to public during construction through a rolling boulder either from the rockfall source area, the rockfall runout area, or above any construction area.
- Rockfall or rock roll causing injury to public utilising completed track.

A hazard identification meeting will be held prior to the commencement of the construction work, so to ensure that all risks have been identified and that the control measures are understood by all stakeholders.



Map 1. Proposed alignment of the Gentle Annie Falls re-route (red) showing, residual rupture susceptibility areas (green).

Risks and Control Measures

The following risks have been identified. These are accompanied by the assigned control measures and responsibilities.

| Risk | Control measures | Responsibility |
|--|---|-------------------------|
| Injury to staff during construction through a rolling boulder either from the rockfall source area, the rockfall runout area, or any construction area. | <ul style="list-style-type: none"> No staff are to be located in a rockfall source area or runout area below active construction When undertaking works involving or adjacent to large rocks, assessments will be undertaken as per the City of Hobart's <i>Boulder Hazard Assessment SOP</i>, with 'High > 2m' boulders to be assessed by City of Hobart Supervisor – Track Management or delegated council officer/ contractor prior to treatment Employ standard methods of track construction in accordance with AS2156.1 -2001 Class 2/Aus Cycling Trail Difficulty Rating System Easy. Remove obvious loose/ unstable boulders from immediately adjacent (i.e. 2-3 m) rock faces above new track. Hand building is to be utilised if ground stability is assessed to be unsafe for excavator or other powered plant | Construction contractor |


| | | |
|---|---|-------------------------|
| | <ul style="list-style-type: none"> ○ On-site crew leader or site manager to assess ● General risk management procedures to be followed at all times <ul style="list-style-type: none"> ○ As per contractor risk management procedures | |
| Injury to public during construction through a rolling boulder either from the rockfall source area, the rockfall runout area, or any construction area. | <ul style="list-style-type: none"> ● Once works have commenced, public access to the track will not be allowed until after the recommendations have been implemented <ul style="list-style-type: none"> ○ Use signage & barrier mesh to implement closure ● The existing Gentle Annie Track alignment (fire trail) is to be closed to public access if works are required in a rockfall area that may result in unanticipated dislodged rock entering the existing track alignment <ul style="list-style-type: none"> ○ Use signage & barrier mesh to implement closure ○ Continue to monitoring by on-site personnel | Construction contractor |
| Rockfall or rock roll causing injury to public utilising completed track | <ul style="list-style-type: none"> ● All recommended risk treatments outlined in the project Geotechnical report will be implemented prior to allowing public access to the track, including: <ul style="list-style-type: none"> ○ Avoiding the construction of excessively steep switchbacks ● Scheduled track inspections (6mo) to assess and review of any possible hazards. To be undertaken by a City of Hobart Senior Track Worker ● A track counter will be installed to monitor usage rates. If usage increases to > 20,000/ annum, the City of Hobart will investigate and implement additional risk mitigation measures with the assistance of a geotechnical expert. | City of Hobart |

Table 1

Supporting Documents

The following documents are provided to support this Rockfall Risk Management Plan


| Document | File Name |
|--|--|
| Geotechnical Risk Assessment Pipeline Track Improvements – Gentle Annie Falls Section March 2022 | Geotechnical Risk Assessment Pipeline Track Improvements – Gentle Annie Falls Section March 2022 |
| City of Hobart <i>Boulder Hazard Assessment SOP</i> | SOP-Boulder Hazard Assessment.pdf |





City of HOBART


STANDARD OPERATING PROCEDURE


Mandatory Personal Protective Equipment (select minimum mandatory PPE)

 ☒ Hi-Vis


 ☐ Dust Mask


 ☐ Face Shield


 ☐ Hearing Protection


 ☐ Hard hat

☐ Gloves

 ☐ Eye Protection

 ☒ Safety Boots










 ☐ Respirator

 ☐ Overalls


Communication Acknowledgement Form [F20/119322](#)

No VOC Required



Warnings and Cautions

-  Potential hazards and injuries to consider:
 -  Manual Tasks – strains and sprains
 -  Hazardous Terrain – slips, trips and falls
 -  Strains and sprains; crush injuries
 -  Flora – cuts, abrasions
 -  Fauna – bites, stings
 -  Adverse weather
 -  Falling trees/branches
 -  Stone movement – Crush injuries

Pre-Start Checks

-  Inspect area for potential hazards and implement controls.
- The pre-work hazard assessment document

(Stop & Think F15/42812) can be used to assist with this process

-  If any high risk tasks are identified make sure SWMS is used
-  Manage risk to public – place warning signs and or barriers around worksite

Advisory Notes



-  Do not lift or try & move more than you can handle
-  Prioritise use of mechanical aids and team lifts when handling loads

Fig 1:

| Boulder Risk Rating | | | |
|---------------------|-----------|-----------|------|
| Diameter | at | Task | |
| | | Stabilise | Move |
| | | | |
| | < 0.5m | Low | Med |
| | 0.5 -1.2m | Med | Med |



STANDARD OPERATING PROCEDURE

Page 5

| | | |
|---------|------|------|
| 1.2 -2m | High | High |
| > 2m | High | High |

Fig 2:

| Boulder Movement Decision Making | | | |
|----------------------------------|---------------|------|--|
| If Rating is | Risk Rating | | Who |
| | Low | Then | Crew Member |
| | Medium | | Experienced Track Worker and Crew Member |
| | High 1.2 - 2m | | Team Leader & Experienced Track Worker |
| | High > 2m | | Supervisor & Team Leader |

Perform Task or Operate Equipment

- ✓ Assess rock hazard/risk level – Consider:
 - ✓ size,
 - ✓ shape,
 - ✓ stability,
 - ✓ centre of gravity,
 - ✓ integrity of support and gradient, and
 - ✓ nearby hazards.
- ✓ Refer to boulder risk rating chart to determine risk level (Fig 1).
- ✓ Refer to boulder movement decision making chart (Fig 2).
- ✓ **For High risk >2m:**

Treatment to be determined by Supervisor – Track Management and Team leader – Bushland projects.

Document which SOP to be used on site survey sheet.
- ✓ **For High risk 1.2 – 2m:**

Treatment to be determined by Team leader – Bushland projects and experienced track worker.

Document which SOP to be used on site survey sheet.
- ✓ **Medium risk:**

Treatment to be determined by experienced

track worker & crew member.

Document SOP to use on site survey sheet.

**For Low risk:**

Treatment can be determined by crew members by following relevant SOP.

Post-Task or Operational Steps



Rehabilitate work site to blend with surrounds.



Once safe, remove any signage and barriers then open site to the public.

Re-alignment of Gentle Annie Falls Track – Rockfall Risk Management Plan

**Pipeline Track Improvements - Gentle Annie Falls
Ridgeway Park, Hobart
Historic Heritage Assessment Final Report**

Report to Hobart City Council
Gondwana Heritage Solutions
GHS.2022HH05
August 2022



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Pipeline Track Improvements – Gentle Annie Falls, Historic Heritage Assessment Final Report


Revision No: 0.2
 August 2022

Document information


| | |
|---------------------|---|
| Title | Pipeline Track Improvements- Gentle Annie Falls, Ridgeway Park, Hobart Historic Heritage Assessment Final Report |
| Client organisation | Hobart City Council |
| Client contact | Bree Hunter |
| Document number | GHS2022HH05 |
| Project manager | Greg Jackman |
| Project reference | |

Revision history

Revision 0.0

| | | | |
|----------------------|--------------------------------|--|------------|
| Revision description | Draft Report for Client review | | |
| Prepared by | Greg Jackman |  | 27/06/2022 |
| | (name) | (signature) | (date) |
| Distributed to | Bree Hunter | City of Hobart | 27/06/2022 |
| | (name) | (organisation) | (date) |

Revision 0.1

| | | | |
|----------------------|--------------------|--|------------|
| Revision description | Draft Final Report | | |
| Prepared by | Greg Jackman |  | 27/07/2022 |
| | (name) | (signature) | (date) |
| Distributed to | Bree Hunter | City of Hobart | 27/07/2022 |
| | (name) | (organisation) | (date) |

Revision 0.2

| | | | |
|----------------------|--------------|--|------------|
| Revision description | Final Report | | |
| Prepared by | Greg Jackman |  | 03/08/2022 |
| | (name) | (signature) | (date) |
| Distributed to | Bree Hunter | City of Hobart | 03/08/2022 |
| | (name) | (organisation) | (date) |

Pipeline Track Improvements – Gentle Annie Falls, Historic Heritage Assessment Final Report

Revision No: 0.2
August 2022

Executive summary

Executive summary

City of Hobart is proposing to improve access between the north end of the Pipeline Track at Gentle Annie Falls to and Upper Reservoir by constructing a new 2.3km long walking track with a reduced grade. For practical purposes the new track will be a continuation of the Pipeline Track providing a recreational link from Waterworks Reserve to kunanyi/Mount Wellington and the wider City of Hobart recreational track and trail network and suitable for a wide range of users of varying ability.

The improvement of this section of track has been identified as a priority through the Recreational Network Gaps project. It is identified as a high priority capital works project in the *Conservation and Management Plan for the Pipeline Track* (Murray & Nieberler 1994: 35) and in the *Hobart Mountain Water Supply System Conservation Management Plan* (Futurepast 2012: 107).

The proposed track alignment intersects features associated with the historic water supply system including elements of conveyance infrastructure and construction era quarries and tracks. The area has been subject to previous assessment however as part of a standard due diligence process City of Hobart has commissioned Aboriginal and historic heritage assessments of the proposed new track route to inform final design and construction. The Aboriginal heritage assessment is the subject of a standalone report. The current report deals only with the assessment of potential impacts on historic heritage values and provision of associated management recommendations.

Study area

The study area is situated within Ridgway Park on the eastern footslopes of kunanyi/Mt Wellington and comprises an 11.2ha area on the south side of Sandy Bay Rivulet encompassing the sandstone bluff bisected by the Pipeline Track and Gentle Annie Falls/pipeline to the Upper Reservoir Receiving House. The Receiving House and Upper and Lower Reservoirs are situated in a portion of the park designated the Waterworks Reserve which is maintained as a manicured parkland. Outside this area Ridgway Park is managed as a bushland reserve. The current study area comprises two zones, the primary focus being an 80m wide corridor (7.3ha) centred on the indicative 2.3km long track alignment (Primary Area). A secondary zone totalling 3.9ha for additional design flexibility encompasses the adjacent area on the north side of the sandstone spur extending as far as the existing Gentle Annie Falls Track and a small area in the gully south of the Gentle Annie Falls Access Fire Trail (Secondary Area).

Proposed works

The proposed works involve constructing a dual direction shared use track linking the Waterworks Site 9 area with the Pipeline Track at the top of Gentle Annie Falls. The 2.3km long track will be constructed to the AS2156.1-2001 Class 2/AusCycling Trail Difficulty Rating System Easy (Green) standard and will be surfaced with imported gravel with an average width of 1.5m.

Beginning at the Waterworks Site 9 car park, the track will ascend the north-east face of the sandstone spur to the Pipe Head Well with several switchbacks centred on the on the existing fire trail. From the Pipe Head Well the track will follow the existing Gentle Annie Falls track for around 140m before turning south to traverse the north face of the sandstone spur to connect with the Pipeline Track above the falls. The final alignment will be influenced by natural and cultural heritage

values and engineering requirements and is subject to change but is expected to be contained within the combined study area.

The proposed track intersects a portion of Heritage Place 3202 listed on the local Heritage Code and a portion of the THR 11227 listed area and will require planning and heritage approval.

Study aims and process

The scope for the cultural heritage assessments is outlined in the CoH Request for Quotation dated 2 November 2021 as reproduced:

- Undertake desk-top analysis and field survey of the study area. The survey is to identify and map the location of any known and previously unknown sites and artefacts within the area.
- Identify and confirm the level of significance of any sites, artefacts and features.
- To provide expert advice in regard to the significance of identified sites, artefacts and features, as well as to identify or recommend:
 - a) whether the proposed track should avoid the site or artefact;
 - b) and for sites or artefacts with Low significance - identify whether certain track building techniques could increase the heritage value (i.e. rock armouring, interpretation etc.), and specify any planning approvals required in order for this to occur.
- To provide recommendations and/ or feedback on:
 - a) proposed design of stone headwall viewing platform and the clearing of vegetation from the headwall down to falls;
 - b) Whether dispersed stone in quarry sites can be used for rock walling, armouring and landscaping. The use of which could be highlighted through interpretive signage. If so, please provide any recommendations, control measures or guidelines that should be followed when undertaking this work
 - c) Potential sites for heritage interpretation signs (in priority order)
- If required, where significant areas are otherwise unable to be avoided and track construction and use would adversely affect any significant area(s), confirm any and all required planning approvals.
- Provide a brief written report with appropriate maps, in hardcopy and electronic form, of the assessment methodology, findings, and recommendations including safeguards required to be implemented for track construction, identify and confirm the level of significance of any sites or artefacts of European or aboriginal cultural heritage.
- Provide spatial data shapefiles accurately delineating and identifying any and all cultural heritage areas of significance (identify each by name & level of classification), and any safeguards.

The study process involved a desktop review of available historical studies and management reports dealing with the Pipeline Track, statutory and non-statutory heritage databases, LIST data and records held by the Tasmanian Museum and Art Gallery.

Field survey focussed on re-locating/verifying and spatially locating prevails documented historic heritage features referred to in previous assessments and heritage listings for the purposes of identifying and assessing potential impacts associated with the proposed track.

Historic features within the study area have been subject to previous significance assessment at individual and group level. These cumulative assessments form the basis of current statutory heritage listings. Consequently, the main aim of the current study was to determine potential impacts on identified/agreed heritage values rather than to assess significance from first principles.

Desktop findings

Statutory intersections

There are no entries on statutory lists established under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) that pertain to the current study area. Ridgeway Park is listed (ID 10949) as part of the Wellington Range Area on the non-statutory Register of the National Estate (RNE), that contains a generic statement that non-indigenous (historic) heritage values were assessed as part of the 1997 Tasmanian Regional Forest Agreement (RFA) process. Ridgeway Park is an informal Reserve under the RFA's CAR (Comprehensive, Adequate and Representative) system, however to date CAR values do not appear to have been defined for the reserve.

Waterworks Park and elements of the Pipeline Track are listed on the Tasmanian Heritage Register as part of the Hobart Mountain Water Supply System (ID 11227). The accompanying CPR identifies the listed area as encompassing a 6m wide alignment centred on the Pipeline Track containing the masonry troughing leading to the falls, and an area from 60-90m wide on the face of Gentle Annie falls spur centred on the conveyance from the falls to the Receiving House including the Pipe Head Well, and some of the closer quarry sites and associated access track.

The study area intersects one place, Waterworks Park (ID 3202), listed in Table E13.1 (Heritage Places) in the Historic Heritage Code of the Hobart Interim Planning Scheme. The boundaries of the listed place are not provided in the Code but are assumed to be the same as in the City of Hobart Open Space Parks spatial dataset

A second place relating to the Mountain Water Supply System (Pipeline Track ID 3290) comprising culverts and linear corridor between Halls Saddle and Long Creek is listed in the Code but does not intersect the current study area.

Historic heritage features

Previous researchers have defined/classified the historic heritage values within the current study area in terms of eleven features or complexes. These include two historic roads the predate the Hobart Mountain Water Supply System (RH/H2, RP/H15), eight features/complexes associated with the system (Features 2-9) and a house site (Feature 1) the post-dates the system. One of the eight water supply complexes (Feature 8B-F, 8J-O) comprises fifteen previously recorded quarry sites, eleven of which are located within the study area.

Survey findings and significance

Ten of the eleven previously described historic features (RP/H2, RP/H15 & Features 1-8), including the eleven (Feature 8B-F, 8J-O) quarry sites were re-inspected to identify proximity and potential

sensitivity to the proposed new track works. Detailed archaeological re-recording of features was not carried out due to the extent of previous work.

An additional four small workings (Feature 8S - 8V) and twelve tracks (Tracks 1-12) that do not appear to have been previously assessed were identified and documented to the level of previous records, while six tracks associated with previously recorded quarry sites (8A, 8B, 8K and 8M) were also assessed.

Table: Features identified by survey and significance thresholds

| Feature | Significance |
|---|---|
| Feature 1 Parlour/ Parlow's house site | Medium-Low (Regional) Medium-High (Local) (McConnell <i>et al</i> 1998, Vol 1: Table 2A) Unlikely to meet thresholds for State or Local listing based on exclusion factors XA1, XA2, XA3, XC1 and XC3. |
| Feature 2 Pipe Head Well | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) Covered by and referred to within current THR listing. |
| Feature 3 Sandstone troughing between the Falls and Receiving House | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) Covered by and referred to within current THR listing. t. |
| Feature 4 Cast iron pipes between Gentle Annie Falls and Receiving House | 2 - Slight heritage value (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) Covered by and referred to within current THR listing. Potentially eligible under HCHA inclusion factors A4, C5 in their own right |
| Feature 5 Gentle Annie Falls (includes chutes carved in stone) | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) Covered by and referred to within current THR listing. |
| Feature 6 Lower catchment basin | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) Covered by and referred to within current THR listing. |
| Feature 7 Upper catchment basin | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) Covered by and referred to within current THR listing. |
| Feature 8B (Q2) Quarry | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under C5. |
| Feature 8C (Q3) Quarry | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under C5. |
| Feature 8D (Q4) Quarry | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under C5. |
| Feature 8E (Q5) Quarry | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under C5. |
| Feature 8F (Q6) Quarry | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Partly contained within current THR listed area with area outside eligible for THR listing under C5. |
| Feature 8J (Q10) Quarry | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) |

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|--|---|
| | The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Contained within current THR listed area. |
| Feature 8K (Q11) Quarry | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under C4, C5. |
| Feature 8L (Q12) Quarry | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) Unlikely to meet thresholds for State or Local listing based on exclusion factors XA1, XA2, XD1 and XD3. |
| Feature 8M (Q13) Quarry | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under C4, C5. |
| Feature 8N (Q14) Quarry | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Mostly outside current THR listed area and HIPS Heritage Place but potentially eligible for THR listing under C4, C5. |
| Feature 8O (Q15) Quarry | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Contained within current THR listed area. |
| Feature 8S (Q16) Quarry | Not previously assessed. Contains evidence of contemporary spoil management techniques including Welsh walling. McConnell <i>et al</i> (1998) consider that the Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5. |
| Feature 8T (Q17) Quarry | Not previously assessed. Contains evidence of contemporary spoil management techniques. McConnell <i>et al</i> (1998) consider that the Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5. |
| Feature 8U (Q18) Quarry | Not previously assessed. Likely expedient prospecting feature with low intrinsic value but some contributory significance. McConnell <i>et al</i> (1998) consider that the Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Contained within current THR listed area. |
| Feature 8V (Q19) Quarry | Not previously assessed. Expedient feature likely associated with Fire Trail maintenance. Contained within THR listed area but unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2, XD3 and XD4. |
| RPH2 Old Huon Road | High/State (McConnell <i>et al</i> 1998, Vol 1: Table 2A) Outside current THR listed area but eligible (as Old Huon Road) for THR listing under HCHA inclusion factors A2 and D3. |
| RPH15 Old Huon Road (possible) | Assessed In 1998 as High/State (McConnell <i>et al</i> 1998, Vol 1: Table 2A) on the basis of it being a possible early or late alignment of Old Huon Road. If only a local track it is unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2, XD3 and XD4 |
| Track 1 | Not previously assessed. Outside the THR and HIPS Heritage Place boundaries. Has potential contributory significance relating to the construction and maintenance of the mountainwater supply system, but without further research is unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2, XC1, XD3 and XD4. |
| Track 2 | Not previously assessed. Outside the THR and HIPS Heritage Place boundaries. Has potential contributory significance relating to the construction and maintenance of the mountainwater supply system, but without further research is unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2, XC1, XD3 and XD4. |
| Track 3 | Not previously assessed. Outside the THR and HIPS Heritage Place boundaries. Has potential contributory significance relating to the construction and maintenance of the mountainwater supply system, but without further research is unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2, XC1, XD3 and XD4. |
| Track 4 | Not previously assessed. High cultural/scientific significance (Murray & Nieberler 1994) |

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| | High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries and associated infrastructure contribute to the State-level significance of the mountain water supply system. Largely outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5. |
| Track 5 | Not previously assessed. Outside the THR and HIPS Heritage Place boundaries. Has potential contributory significance relating to the construction and maintenance of the mountainwater supply system, but without further research is unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2, XC1, XD3 and XD4. |
| Track 6 | Possibly associated with Feature 1 which has been assessed as having the following significance. Medium-Low (Regional) Medium-High (Local) (McConnell <i>et al</i> 1998, Vol 1: Table 2A) Unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2, XA3, XC1 and XC3 |
| Track 7 | Not previously assessed. Low intrinsic value but some contributory significance relating to the history of recreation in the Park. Unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2 and XD4 |
| Track 8 | Not previously assessed. Low intrinsic value but minor contributory significance relating to the history of recreation in the Park. Unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2 and XD4 |
| Track 9 | Not previously assessed. May have some contributory significance relating to the history of recreation in the Park. Unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2 and XD4 |
| Track 10 | Not previously assessed. Does not contribute to the heritage values of the mountain water supply system. Low intrinsic significance and unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2 and XD4 |
| Track 11 | High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries and associated infrastructure contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5. |
| Track 12 | High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Pipe Head Well and associated infrastructure contribute to the State-level significance of the mountain water supply system. Partly outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5. |
| 8A (Q1) Track | High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries and associated infrastructure contribute to the State-level significance of the mountain water supply system. Partly outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5. |
| 8B (Q2) Track | High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries and associated infrastructure contribute to the State-level significance of the mountain water supply system. Largely outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5. |
| 8K (Q11) Track | High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries and associated infrastructure contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5. |
| 8M (Q13) Track | High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries and associated infrastructure contribute to the State-level significance of the mountain water supply system. Partly contained within THR and HIPS Heritage Place boundaries. External section potentially eligible under HCHA inclusion factors C4, C5. |

Works intersections and potential physical impacts

The proposed new track alignment avoids the majority of identified historic heritage features and with relatively minor localised adjustments should have minimal impact on the physical heritage of the Hobart Mountain Water Supply System.

Potential intersections and physical impacts identified in Table 1 are based on the track line shapefile provided by the City of Hobart and delineation of features during the current assessment which are both subject to spatial uncertainties which cumulatively may add up to 10m horizontal or more.

Table 1: Works intersections, potential impacts and site-specific recommendations

| Feature | Intersection | Recommended mitigation |
|------------------|--|---|
| Feature 1 | Not intersected by proposed path. No additional impacts anticipated with proposed works. | Potential impacts if Falls Track closed/rehabilitated. Seek specific heritage advice on any proposed change to current use. |
| Feature 2 | Not intersected by proposed path. Potential impacts from construction of new viewing platform, depending on design and location. | Seek specific heritage advice on proposed design, materials and siting. Consider reconstructing historic fencing based on further research. |
| Feature 3 | Intersected at existing Fire Trail crossing. No additional impacts anticipated. | Avoid ground excavation. |
| Feature 4 | Intersected at existing Fire Trail crossing. No additional impacts anticipated. | Avoid ground excavation. |
| Feature 8B (Q2) | Proposed track crosses west end of 8B (Q2) spoil heap. Likely impacts associated with levelling portion of spoil heap. | Design and construct to avoid stacked mullock piles. |
| Feature 8C (Q3) | Not intersected by proposed lower path. Return path passes close to rear of working. | Move return path upslope to run along Track 8A (Q1) and Track 11. |
| Feature 8F (Q6) | Proposed path intersects west end of spoil heap. Likely impacts associated with path levelling. | Redesign path to connect with Track 8B (Q2) west of spoil heap. |
| Feature 8S (Q16) | Proposed track potentially intersects southern spoil heap. Possible impacts associated with levelling path alignment. | Redesign path to avoid spoil heaps. |
| Feature 8T (Q17) | Proposed track potentially intersects northern spoil heap. Possible impacts associated with levelling path alignment. | Redesign path to avoid spoil heaps. |
| RPH2 | Not intersected by proposed path. No additional impacts anticipated with proposed works. | Potential impacts if Falls Track closed/rehabilitated |
| Track 1 | Intersected by proposed track. Minor impacts associated with transverse cutting and levelling across track. | Minimise disturbance to existing track formation, preferably crossing at close to right angles. |
| Track 4 | Intersected by proposed track. Potential impacts from concealment and excavation if grade altered. | Align track to run along existing formation rather than widen or intersect at an oblique angle. |
| Track 5 | Intersected by proposed track. Minor impacts associated with transverse cutting and levelling across track. | Realign track if possible to run along northern portion of existing formation rather than cutting across it. |
| Track 8 | Intersected over c. 50m distance. No significant impacts associated with proposed upgrade. | No specific recommendations |
| Track 11 | Potentially intersected by proposed track. Potential impacts from concealment and excavation if grade altered. | Move top path upslope to run along Track 8A (Q1) and Track 11 rather than intersect them at oblique angles. |
| Track 12 | Intersected by switching track. Likely impacts associated with new transverse cuttings and concealments across track. | Incorporate existing track into design rather than cut across it numerous times. |
| 8A (Q1) Track | Intersected over c. 10m distance. Potential impacts from concealment and excavation if grade altered. | Move top path upslope to run along Track 8A (Q1) and Track 11 rather than intersect them at oblique angles. |
| 8B (Q2) Track | Proposed track runs along access track. Potential impacts from concealment and excavation if grade altered. | Re-use existing track alignment and grade. |
| 8K (Q11) Track | Proposed path intersects access track in area already upgraded for Fire Trail. No additional impacts anticipated if existing grade used. | Re-use existing track alignment and grade. |

Potential intersections with individual heritage sites summarised in Table 1 are indicative and require more detailed design and precise field survey to quantify accurately. Indicative impact rankings in the table are coloured red = High, blue = Medium, green = Low, based on the following thresholds:

- High: Substantial intersection of highly significant feature requiring excavation or reworking of historic fabric to accommodate changes in ground level;
- Medium: Intersection of lower significance feature, or involving partial concealment or limited/localised ground disturbance of higher significance feature that does not obscure original function;
- Low: Concealment or disturbance of low significance feature or intersection of higher significance feature that does not involve ground disturbance and is reversible.

Heritage management recommendations

General recommendations

The following general recommendations relate to mitigating potential impacts on tangible heritage values, that is the documented physical fabric of the water supply system. Sits-specific recommendations are listed in Table 2. Insufficient information is available to effectively assess potential effects on cultural landscape, social or aesthetic values.

Track alignment

The proposed track alignment crosses the historic water conveyance at one location in an area that has previously been filled and modified and will have negligible additional impact at that point. The alignment centreline avoids most of the documented workings and spoil heaps in the study area, with local intersections with 8F/Q6 and 8B/Q2 on the west side of the pipeline and 8S (Q16) and 8T (Q17) in the Regans Gully portion. Without mitigation, these intersections have the potential to impact heritage values by requiring the removal or reworking of waste deposits that contribute to understanding the functioning of the system. With the exception of 8B (Q2), these intersections are largely avoidable by local track realignments.

Recommendation 1

Redesign selected track turns to avoid intersecting quarry spoil heaps. Where full avoidance is not possible (such as at 8B (Q2)), minimise the disturbance footprint and refer to relevant construction controls.

The proposed track intersects several historic tracks either demonstrably or very likely associated with historic quarry operation, including Tracks 1, 4, 5, 11, 12, 8A (Q1), 8B (Q2) and 8K (Q11). Most of these historic tracks are on reasonably gentle grades and greater than 1.5m in width. Locally realigning the proposed track to run along/utilise the historic formations and grades is considered preferable as a means of conserving the meaning of these tracks to crossing them at oblique angles and may provide additional authenticity to user experience and future interpretation opportunities. Care should be exercised when re-using historic tracks to keep new work centred, to minimise disturbance to any original surfaces – such as metalling, and to avoid unnecessary grade improvements/reprofiling that require excavation.

Recommendation 2

Consider selectively realigning new track sections to make better use of/respect original track segments, notably Tracks 4 and 5 in the Regans Gully portion and 8A (Q1) and Track 11

at the upper falls. New works should be centred, protect underlying surface deposits and build up rather than reduce ground levels to achieve desired grades.

Track construction

Track construction details are not available for assessment, however the proposal to create a shared use Class 2/bike track with 1.5m minimum width implies no steps and wide turning arcs, which will increase the need to benching and filling/armouring. These details will need to be resolved on a case-by-case basis to minimise impacts on adjacent historic fabric. As a general rule, historic quarry waste should not be used for levelling fills or armouring works, both to conserve resident fabric and avoid confusion regarding the age/association of the new track.

Recommendation 3

Do not use resident quarry waste for track fills, armouring or general landscaping works. The only potential exception to this rule is where track crossings cannot avoid waste dumps entirely and some re-profiling is necessary, in which case waste rocks may be re-purposed at that location, subject to any relevant heritage approval.

Details review

The RFQ calls for advice on the proposed design of stone headwall viewing platform. A concept design was not available for review as part of the current assessment but should be undertaken in conjunction with review of the design and construction drawings for the final track alignment. This will enable detailed evaluation and management of any intersections with heritage features, such as crossing 8B (Q2).

Recommendation 4

Review the concept design for a proposed new viewing platform and design/construction drawings for the final track alignment to confirm heritage mitigation requirements. The results of this review, which will consider design responses to this assessment report, should be included as supporting documents for planning and heritage approval.

Heritage approval requirements

Approximately 240m length, or around 20% of the proposed 2.3km track is located within the THR listed area and requires formal HCHA approval. Approximately 150m intersects the area listed in the HIPS Historic Heritage Code. Notwithstanding, the 2012 CMP recommends that a wider buffer than the THR listed area be considered for planning purposes, notionally 50m from the pipeline but *'wider where there is physical or documentary evidence of ancillary features or where the extent of any features has not been fully assessed and there is a requirement to protect the potential heritage'* (Futurepast 2012: 83).

Heritage Tasmania's *Works Guidelines* (HT 2015) outlines the process to be followed when seeking approval for works covered by the HCHA, as well as general impact thresholds for exemptions and discretionary permits. Under the *Guidelines* the proposed track qualifies as a New Element, for which the following thresholds apply:

Eligible for exemption

- Introducing new elements Introducing new elements where the elements will not impact on heritage significance, including landscape elements, setting and views, and where ground disturbance does not impact on significant archaeological values.

Discretionary permit required

- The introduction of new elements that may adversely impact on the place's significance.

Based on these definitions the proposed track will likely require a discretionary permit applied for through the local government authority (City of Hobart). The permit application should cover the entirety of the works, not just the components within the THR listed area. This discretionary permit application must meet the Application Requirements set out under Code E13.5 of the HIPS.

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1. Introduction

1.1 Project background

The City of Hobart manages around 23,000 of municipal reserves encompassing a wide range of natural and cultural values. Given Hobart's geographic positioning at the foot of kunanyi/Mt Wellington, much of the reserved land is located on the mountain or its foothills. One of the largest of these foothill reserves, Ridgeway Park, is situated between Fern Tree and Sandy Bay southwest of the city (Figure 1.1). Ridgeway Park contains areas of high biodiversity conservation value and encompasses the remains of the city's early water supply system. This system, which spans the period 1860 through to the present, includes three large storage reservoirs originally supplied from a trunk conveyance comprising pipelines, aqueducts and service tracks collectively known as the Pipeline Track. The three storage reservoirs and Pipeline Track conveyance are listed on the local planning scheme heritage code (Heritage Place ID 3202) and Tasmanian Heritage Register (ID 11227 – CPR 9267) as part of the Hobart Mountain Water Supply System (Figure 1.1). The Pipeline Track has been a focus for bushland recreation since its inception and the three-kilometre section through Ridgeway Park from the Upper Reservoir to Fern Tree remains a popular short walk.

The water conveyance falls 200m between Halls Saddle near Fern Tree and the Upper Reservoir Receiving House, the lowest 80m being the steepest section comprising an engineered cascade, wellhead and pipeline down the north-east face of a sandstone bluff known as Gentle Annie Falls. The falls is accessed by a 0.8km walking track that rises from the Upper Reservoir up the west side of the bluff and by a shorter but steeper 300m fire trail leading from the Site 9 area of the Waterworks Reserve encompassing the Upper and Lower Reservoirs.

City of Hobart is proposing to improve access between the north end of the Pipeline Track at Gentle Annie Falls to and Upper Reservoir by constructing a new 2.3km long walking track with a reduced grade. For practical purposes the new track will be a continuation of the Pipeline Track providing a recreational link from Waterworks Reserve to kunanyi/Mount Wellington and the wider City of Hobart recreational track and trail network and suitable for a wide range of users of varying ability.

The improvement of this section of track has been identified as a priority through the Recreational Network Gaps project. It is identified as a high priority capital works project in the *Conservation and Management Plan for the Pipeline Track* (Murray & Nieberler 1994: 35) and in the *Hobart Mountain Water Supply System Conservation Management Plan* (Futurepast 2012: 107).

The proposed track alignment intersects features associated with the historic water supply system including elements of conveyance infrastructure and construction era quarries and tracks. The area has been subject to previous assessment however as part of a standard due diligence process City of Hobart has commissioned Aboriginal and historic heritage assessments of the proposed new track route to inform final design and construction. The Aboriginal heritage assessment is the subject of a standalone report. The current report deals only with the assessment of potential impacts on historic heritage values.

1.2 Study area location

The study area is situated within Ridgway Park on the eastern footslopes of kunanyi/Mt Wellington and comprises an 11.2ha area on the south side of Sandy Bay Rivulet encompassing the sandstone bluff bisected by the Pipeline Track and Gentle Annie Falls/pipeline to the Upper Reservoir Receiving House. The Receiving House and Upper and Lower Reservoirs are situated in a portion of the park designated the Waterworks Reserve which is maintained as a manicured parkland. Outside this area Ridgway Park is managed as a bushland reserve. The current study area comprises two zones, the primary focus being an 80m wide corridor (7.3ha) centred on the indicative 2.3km long track alignment (Primary Area). A secondary zone totalling 3.9ha for additional design flexibility encompasses the adjacent area on the north side of the sandstone spur extending as far as the existing Gentle Annie Falls Track and a small area in the gully south of the Gentle Annie Falls Access Fire Trail (Secondary Area) (Figure 1.2).

1.3 Proposed works

The proposed works involve constructing a dual direction shared use track linking the Waterworks Site 9 area with the Pipeline Track at the top of Gentle Annie Falls. The 2.3km long track will be constructed to the AS2156.1-2001 Class 2/AusCycling Trail Difficulty Rating System Easy (Green) standard and will be surfaced with imported gravel with an average width of 1.5m.

Beginning at the Waterworks Site 9 car park, the track will ascend the north-east face of the sandstone spur to the Pipe Head Well with several switchbacks centred on the on the existing fire trail. From the Pipe Head Well the track will follow the existing Gentle Annie Falls track for around 140m before turning south to traverse the north face of the sandstone spur to connect with the Pipeline Track above the falls. The final alignment will be influenced by natural and cultural heritage values and engineering requirements and is subject to change but is expected to be contained within the combined study area.

The proposed track intersects a portion of Heritage Place 3202 listed on the local Heritage Code and a portion of the THR 11227 listed area and will require planning and heritage approval (Figure 1.2).

1.4 Study aims

The scope for the cultural heritage assessments is outlined in the CoH Request for Quotation dated 2 November 2021 as reproduced:

- Undertake desk-top analysis and field survey of the study area. The survey is to identify and map the location of any known and previously unknown sites and artefacts within the area.
- Identify and confirm the level of significance of any sites, artefacts and features.
- To provide expert advice in regard to the significance of identified sites, artefacts and features, as well as to identify or recommend:
 - c) whether the proposed track should avoid the site or artefact;
 - d) and for sites or artefacts with Low significance - identify whether certain track building techniques could increase the heritage value (i.e. rock armouring, interpretation etc.), and specify any planning approvals required in order for this to occur.

- To provide recommendations and/ or feedback on:
 - a) proposed design of stone headwall viewing platform and the clearing of vegetation from the headwall down to falls;
 - b) Whether dispersed stone in quarry sites can be used for rock walling, armouring and landscaping. The use of which could be highlighted through interpretive signage. If so, please provide any recommendations, control measures or guidelines that should be followed when undertaking this work
 - c) Potential sites for heritage interpretation signs (in priority order)
- If required, where significant areas are otherwise unable to be avoided and track construction and use would adversely affect any significant area(s), confirm any and all required planning approvals.
- Provide a brief written report with appropriate maps, in hardcopy and electronic form, of the assessment methodology, findings, and recommendations including safeguards required to be implemented for track construction, identify and confirm the level of significance of any sites or artefacts of European or aboriginal cultural heritage.
- Provide spatial data shapefiles accurately delineating and identifying any and all cultural heritage areas of significance (identify each by name & level of classification), and any safeguards.

The RFQ requirements are for a combined Aboriginal and historic heritage values assessment. In consultation with the CoH the assessment was broken into separate assessments for Aboriginal heritage and historic heritage, the separate assessments being undertaken in accordance with Aboriginal Heritage Tasmania's *Standards & Procedures* (AHT/DPIPWE 2018) in the first instance and Heritage Tasmania's *Pre-Development Assessment Guidelines* (HT/DPIPWE 2010) in the second.

The current assessment deals only with identifying and assessing the potential impact of the proposed works on historic heritage values as defined under the *Historic Cultural Heritage Act 1995* and Heritage Tasmania's *Assessing Historic Heritage Significance* (HT 2021)

1.5 Personnel

This assessment was undertaken by Gondwana Heritage Consulting Archaeologist Greg Jackman

1.6 Study process

The process for undertaking heritage assessments for places with potential State-level heritage values is outlined in Heritage Tasmania's *Pre-Development Assessment Guidelines* (HT 2010) and comprises several tasks.

1.6.1 Desktop review

The *Guidelines* recommends review of existing reports, surveys and sources, including but not limited to relevant heritage schedules, published and unpublished material, including reports held by government agencies and local planning authorities. For the current assessment this has included review of the following sources:

- Tasmanian Heritage Register (THR)
- Code E13.0 Historic Heritage Code within the Hobart Interim Planning Scheme 2015
- Register of the National Estate (RNE)
- Pipeline Track Historical Study (Scripps 1988)
- Ridgeway Park Cultural Heritage Survey and Assessment (McConnell *et al* 1998)
- Pipeline Track Project: Historical and Archaeological Documentation of Sites and Features (Hartzell, L. 1993)
- Conservation and Management Plan for the Pipeline Track (Murray & Nieberler 1994)
- Hobart Mountain Water Supply System Conservation Management Plan (Futurepast 2012)
- Previous heritage inspection and assessment reports provided by CoH
- Publically accessible spatial data including ELVIS 1m LiDAR and LIST 1m Hillshade imagery
- Historic maps/plans held by the Tasmanian Museum and Art Gallery (TMAG), Hobart

1.6.2 Field survey

The study area has been subject to several previous historic heritage assessments that have defined the key themes and features of interest. The aim of the current field assessment was to spatially locate and represent the previously identified features for presentation within a Geographic Information System (GIS) as the current records are largely paper-based.

Observations made during the field assessment were recorded by written description and digital photography and positioned by DGPS (Trimble Catalyst to an accuracy of +/- 0.3-0.5m).

1.6.3 Significance Assessment

Historic features within the study area have been subject to previous significance assessment at individual and group level. It was not deemed necessary to review significance given these assessments form the basis of formal heritage listings which, in the case of places listed on the THR, require a statutory process to update. The main aim of the current study with regard to significance was to determine potential impacts of the proposed track upgrade on identified heritage values.

1.6.4 Management Recommendations

The provision of management recommendations responds to the RFQ requirements insofar as this is feasible given the policy framework and constraints reflected in the management planning documents and statutory heritage listings covering the place.

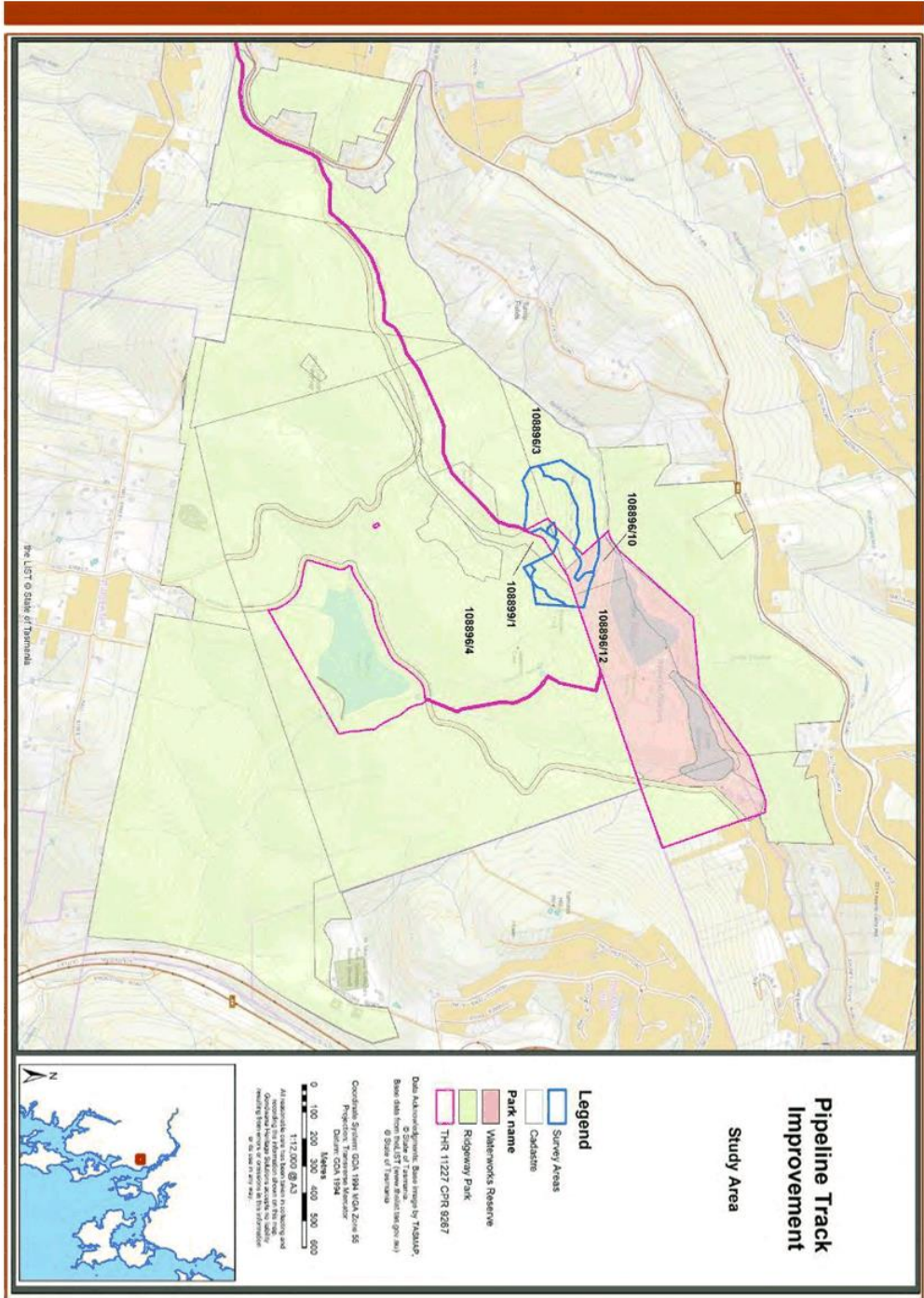


Figure 1.1: Study area location and heritage listings

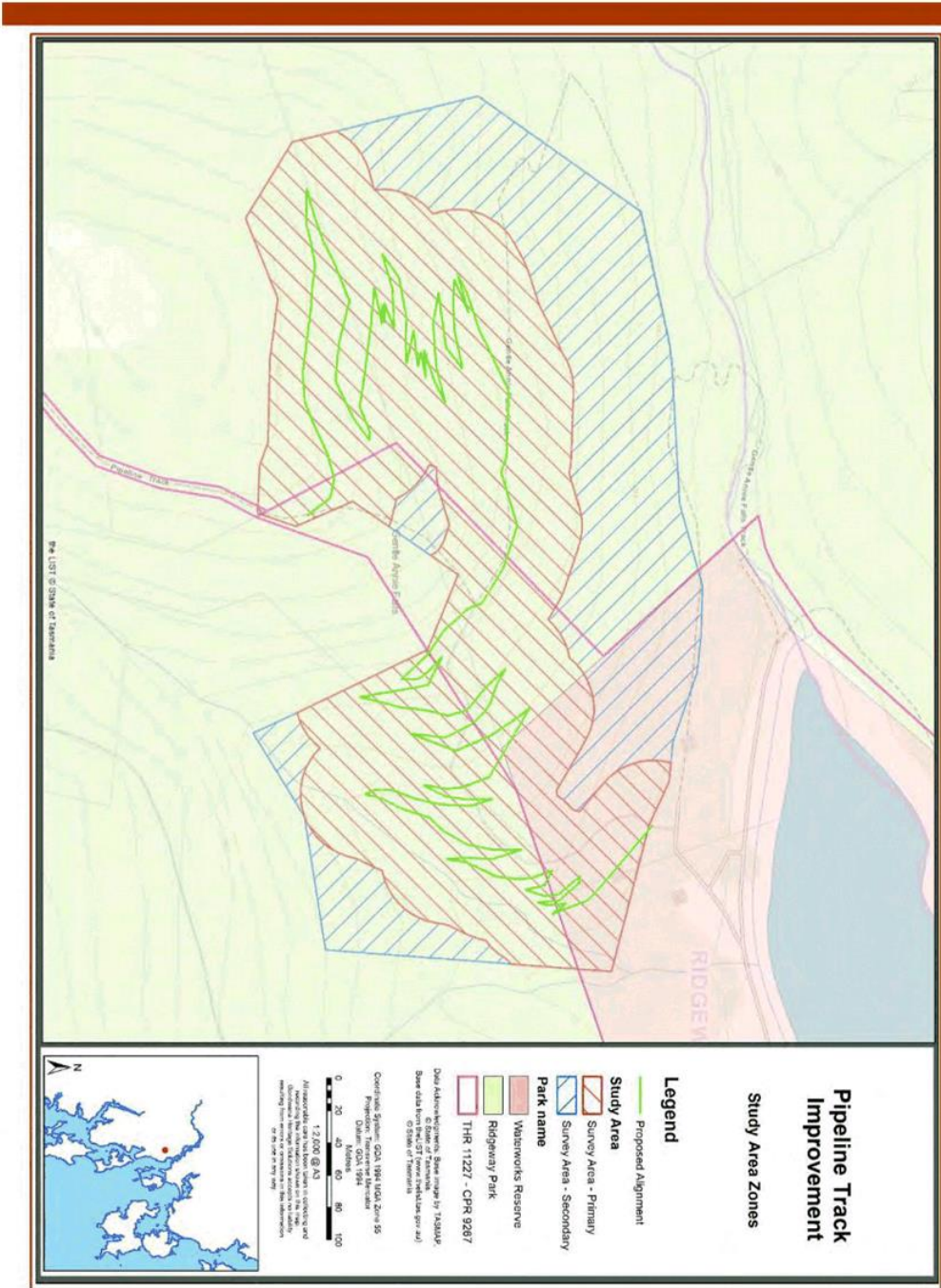


Figure 1.2: Study area zones and heritage listing intersections

2. Environmental setting

2.1 Regional geology and physiography

In broad terms, the geology of the eastern face of kunanyi/Mt Wellington comprises conformable low angle beds of marine mudstone and siltstone at lower elevations overlain by terrestrial sandstone which has been intruded and capped by Jurassic dolerite towards the summit.

Deposition of the marine sediments commenced during the Late Carboniferous period approximately 310 million years ago in a shallow sea on the southeast side of the former Gondwana supercontinent which was then close to the South Pole. Glaciers transporting enormous quantities of older Proterozoic rocks from the west deposited sediment into the basin, forming muds with siliceous dropstones from icebergs floating offshore. As the supercontinent drifted north and climate warmed through the Permian and Triassic periods the sea retreated, and the marine sediments were superimposed by terrestrial sands deposited by river systems over a broad plain (Corbett 2019).

The process of erosion in the west and deposition in the east was interrupted around 180 million years ago when the Gondwana supercontinent started to break up, resulting in the injection of igneous magma into the sedimentary sequence and forming dykes and sills of resistant dolerite over much of Tasmania. The continental stretching continued throughout the Cretaceous and Tertiary periods as Antarctica and New Zealand pulled away creating a series of north-west-southeast fault-lines in eastern Tasmania. The layered sedimentary and dolerite sequences were downthrown along the faults, creating a series of rift valleys (grabens).

In the Hobart Area, the western side of the Derwent Graben takes comprises numerous faults which have broken the marine and terrestrial sediments and dolerite rock into a series of eastwards-descending steps. The sandstone into which the dolerite magma was originally injected has eroded away on the summit of kunanyi/Mt Wellington, exposing the resistant dolerite, but elsewhere sediments and dolerite are juxtaposed by faulting and differentially exposed by erosion.

The physiography of the eastern slopes strongly reflects these geological processes. Differences in erodibility between the marine and non-marine sediments and igneous rock have created a terraced profile through the study area with cliffing in the more massive sandstone units and lower angle ground slopes in the softer sediments. The interface between the dolerite and terrestrial sediments is mantled by steep-angled Pleistocene periglacial talus and scree above 600m elevation (Leaman *et al* 1976).

The east face of the mountain is dissected by radial streams which drain south into Browns River, east via Sandy Bay and Hobart Rivulets into Sullivans Cove and northeast via New Town Rivulet to New Town Bay and Humphreys Rivulet to Elwick Bay.

2.2 Local geology, soil and vegetation

The study area is centred on a north-east trending spur within sediments of the Knocklofty Formation, a belt of sandstone and siltstone up to 230m thick that forms part of the Early Triassic Upper Parmeener Supergroup that extends in an arc around the lower footslopes of kunanyi/Mount Wellington. Locally the rock comprises sub-horizontal beds of cross-bedded quartz sandstone interbedded with siltstone and mudstone of the Ross Sandstone, an early component of the

formation, which extends from 155m elevation at the Upper Reservoir to 305m elevation below Ridgeway Reservoir. The sandstone is capped by dolerite at 295m elevation on the spur between Gentle Annie Falls and McDermott's Saddle which has protected the underlying sandstone from erosion and structured the local drainage. The spur is bordered to the north by Sandy Bay Rivulet and to the south by an unnamed tributary that drains into the rivulet at the Upper Reservoir.

Individual sandstone beds are mostly less than 0.6m thick and display upwards fining sequences. The stone contains several prominent sub-perpendicular joint sets which cause the stone to fracture into blocks. Erosion has created a series of low cliffs up to 4m high on the north face of the spur, but cliffing is less pronounced on the east and west faces. Collapse along beds and joints has resulted in the creation of irregular and unstable overhangs in the lower portions of cliff lines. The bed and joint structures have been exploited by quarrying to supply materials to build the historic water system

Ground slope is steep, averaging 20° along the fire trail which runs up the north-east side of the spur and 25° on the north face. Soils comprise friable podzolic kurasols that are highly mobile on the steep slope. The soils are hydrophilic and strongly acid, restricting the vegetation to eucalypt forest types. This is dominated by *Eucalyptus pulchella* forest and woodland on the lower slopes which grades into *E. tenuiramis* upslope with a bracken and shrub understory on the north face. This is replaced by *E. obliqua* dry forest and woodland in the more shaded eastern gully and by *E. obliqua* wet forest along the heavily shaded and perpetually damp Sandy Bay Rivulet to the west. The area has been historically logged and impacted by bushfires and the present vegetation is 20th C. regrowth.

2.3 Climate

The study area has a temperate maritime climate, with maximum daytime temperatures ranging from approximately 12° C. in July to 22° C. in January¹. Minimum overnight temperatures average 4.6° C. in July to 12° C. in February. The area is on the western edge of the kunanyi/Mt Wellington rain shadow receiving an average 835mm rainfall distributed relatively evenly throughout the year, with a moderate reduction in mid-summer and an increase in mid-spring (<1SD)².

2.4 Study area description

The study area is situated on a north-east trending dissected sandstone hill spur which can be considered a single geomorphic unit. There is some microclimatic variability due to differences in shading and humidity however the uniform steepness of terrain, ecotonal diffusion and lack of special resources militates against defining separate zones for archaeological analysis. The following description of the study area is therefore based around the proposed development.

The proposed track switches back across the fire trail that runs up the north-west side of the sandstone spur, traversing the north face to the west and turning south into the gully draining the east side (Regans Gully). The north face has been heavily prospected for building stone and contains numerous access tracks, pits and spoil dumps. Vegetation is light and scrubby. The eastern gully is steeper, more shaded and the vegetation less open, and contains several three historic tracks likely associated with historic quarrying that cross the creek and return along the west side of the gully.

¹ Based on Ellerslie Road, Hobart, 4km northeast of study area

http://www.bom.gov.au/jsp/ncc/cdio/weatherData/av?p_nccObsCode=36&p_display_type=dataFile&p_startYear=&p_c=&p_stn_num=094029

² Based on Waterworks Reserve <1km away

http://www.bom.gov.au/jsp/ncc/cdio/weatherData/av?p_nccObsCode=139&p_display_type=dataFile&p_startYear=&p_c=&p_stn_num=094031



Figure 2.1: View south along fire trail traversing north-east side of spur



Figure 2.2: View south along west side of gully on east side of spur

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Figure 2.3: View northeast along unnamed gully at east side of study area

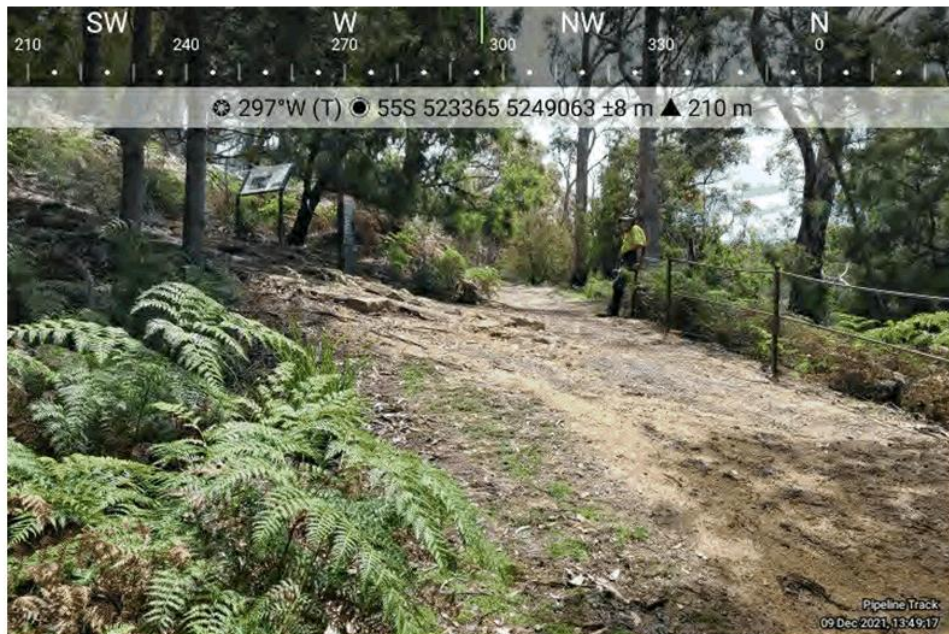


Figure 2.4: View west along existing Gentle Annie Falls track from Pipe Head Well track junction



Figure 2.5: View southeast upslope from existing track across upper switchback area



Figure 2.6: View northeast downslope across upper switchback area towards existing track

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Midway up the face of the main spur the proposed new path connects with the existing Gentle Annie Falls walking track that enters from the west to arrive at a set of steps leading to the upper pipeline intake.

The proposed track follows the existing track for c. 140m before zigzagging up the north face of the spur through lightly vegetated woodland, lacing through a band of low sandstone cliffing between the 235-250m elevation contours before encountering another band of sandstone outcrop around 265-270m elevation. This upper band has been extensively prospected and borrowed, and the last major track switchback follows sections of historic quarrying tracks to the point where it connects with the north end of the Pipeline Track at the head of Gentle Annie Falls.

The portion of study area north of the 80m track corridor extends into the shaded area on the south side of Sandy Bay Rivulet with a resulting thickening of vegetation. This downslope zone also includes several low sandstone cliff lines containing low and shallow overhangs. These cliff lines are heavily jointed and the overhangs small with north dipping sandstone floors.



Figure 2.7: View west along hill face towards Sandy Bay Rivulet, west portion of study area

3. Historical outline

The Hobart Mountain Water Supply system has been the subject of extensive historical research and documentation since the 1980s. The following outline is summarised from those studies. No additional primary research has been undertaken for this assessment.

3.1 Hobart rivulet water supply

The selection of Sullivan's Cove for the first permanent British settlement in southern Van Diemen's Land was based in part on the belief that the Hobart Rivulet from Mount Wellington would provide a reliable and virtually endless source of fresh water, something that was not readily available at the failed settlement at Risdon Cove. The rivulet was surveyed to its source at the Springs in 1804 by George Prideaux Harris and several grants made, the largest of 100 acres in the vicinity of Elbodeen Street being to Edward Lord in 1805 (Alexander 2015: 3). The land was found to be unworkable and for the next ten years most grants were confined to a 1 mile radius around Sullivan's Cove, the higher ground on the eastern flanks of kunanyi/Mt Wellington being reserved by the Crown for timber getting (Alexander 2015: 4).

A land boom in the early 1820s saw the situation change, and by the middle of the decade some 8,000 acres extending from Mt Stuart to Mt Nelson was in private hands. Much of this was held by two men, Robert Lathrop Murray and Peter Degraives. Murray had arrived in New South Wales as a convict by 1816 but had been pardoned for his crime of bigamy shortly after his arrival in Australia. Murray moved to Hobart in 1821 and was granted 500 acres of land in the Ridgeway area in 1825, eventually owning 4000 acres extending from the Hobart Rivulet across South Hobart, Dynnyrne to Mt Nelson (Alexander 2015: 10).

Peter Degraives, a civil engineer, arrived in the colony in 1824 and established a sawmill at the junction of Hobart Rivulet and Guy Fawkes Rivulet, sourcing timber from his 2000 acres that extended from sandy Bay Rivulet to McRobies Gully, and upslope almost to Fern Tree. In 1830 Degraives established the Cascades brewery, one of several operating along Hobart Rivulet, which along with tanneries diverted and polluted the Hobart water supply.

The continued assaults on the town water supply from Degraives and users downstream prompted the colonial authorities to divert water from Browns River near the Springs to a new dam on the Hobart Rivulet, 200m above Degraives sawmill from where the water was conveyed to Hobart via a brick conduit known as Town Tunnel.

Furious that rivulet flows to his businesses had been diverted, in 1837 Degraives built his own reservoir above the government dam and diverted water to a new hydraulically powered flour mill, lessening the town supply (Alexander 2015: 22). After much legal action and public consternation, Degraives was contracted by the Government to construct a new reservoir with a filter downstream of his mills for re-integrating water with the town supply however Degraives blocked the Town Tunnel and departed from other conditions resulting in a public petition and eventual termination of the contract in 1846 (Crawford & Ryan 1988: 18, Petrow and Alexander 2008: 33). More legal action ensued which continued until Degraives died in 1852. By this point Degraives' new reservoir had proved to be too small and in 1853 the Hobart Municipal Council constructed a new reservoir downstream of Degraives' and supplied by a stone aqueduct from a dam below the junction of Guy Fawkes Rivulet and Hobart Rivulet (Crawford & Ryan 1988: 22).

The convoluted and compromised Hobart Rivulet system remained the town's main water supply throughout the 1850s but was widely criticised for injuring the health of Hobart's citizens and constraining the growth of the town (Solomon 1976: 51). The Municipal Council commissioned a committee to investigate the future water supply in 1858 which recommended constructing a large reservoir or series of reservoirs on Sandy Bay Rivulet on Degrares grant capable of holding 4 months' supply for 30,000 inhabitants. Inflows would be augmented by redirecting the 1829 Browns River diversion back to Sandy Bay Rivulet. The recently constructed Cascades Reservoir would be retained for flushing drains and maintaining industrial flows in the Hobart Rivulet (Crawford & Ryan 1988: 23).

3.2 Development of the Mountain water supply system

In 1859 Joseph N. Gale, a Scottish born engineer based in Melbourne, was contracted by the Hobart Municipal Council to design and build the new water supply scheme which involved diverting water from Fork Creek and Browns River Creek higher on the mountain to a receiving house beside Sandy Bay Rivulet from where it would be piped to Hobart for reticulation. Surplus water would be diverted into a new storage reservoir situated on the Sandy Bay Rivulet below the receiving house.

Water was diverted from an intake well on Fork Creek and conveyed by wooden troughing to a second masonry intake on Browns River. From there, wooden troughing continued east, crossing Longhill Creek on stone piers and continuing around the north side of Chimney Pot Hill and through McDermott's Saddle. East of the saddle the troughing transitioned to an open masonry channel leading to the edge of a high sandstone bluff 110m above the level of the Receiving House (Scripps 1988: 3). The water passed over the ledge through a channel cut into the rock creating an artificial waterfall now known as Gentle Annie Falls. The water travelled from a receiving basin at the base of the falls along a lower open masonry channel to the Receiving House where it was stilled and filtered prior to entering a ten-inch cast iron water main leading to a new distribution reservoir in Hill Street West Hobart (Scripps 1988: 3).

While the storage reservoir was built on Degrares' Cascades estate, constructing the upstream conveyance required negotiation with other landholders for access to cross or to acquire the land necessary to develop the infrastructure. Access to the land between Chimney Pot Hill and gentle Annie Falls was obtained from John Regan, an Irish immigrant tanner and currier and property developer who had purchased 540 acres of Robert Lathrop Murray's extensive Dynnyrne Estate at auction in January 1851 for £270 after Murray had defaulted on a £600 mortgage to the Derwent Bank and returned to England (Mem 02/4509, 11/3063). It is unlikely John Regan lived on the land as he owned a number of properties in Hobart and is understood to have chiefly resided in Liverpool Street (Alexander 2015: 13).

The new water system was completed in October 1862 and by December a large part of the city was connected (Scripps 1988: 5). Due to shortcuts taken during construction the reservoir required constant repairs, failing spectacularly in 1871 when a portion of the main embankment collapsed due to defective footings. This reduced the water storage from its designed capacity of 40 million gallons to 3 million (Crawford & Ryan 1988: 45). The near catastrophe brought forward the construction of a second reservoir upstream to allow the original reservoir to be drained and rebuilt. The new Upper Reservoir was completed in 1888 and repairs on the Lower Reservoir completed in 1895.

Throughout this period the water conveyances also required repair and augmentation. The system was extended to utilise the waters of Long Creek, to the South-West of Fork Creek, and the Plains

Rivulet, farther West still. In June of 1871 the Director of Waterworks Alfred Randall surveyed land out to Wellington Falls and he suggested including Wellington Falls in the scheme and tapping either the North West Bay River or one of its tributaries (Scripps 1988: 7). The site of St. Crispin's Well was likely discovered at this time. In 1873 Thomas Dillon was awarded the contracts for the larger part of the scheme extensions although his attempt at damming the main stream of the Plains Rivulet, later to become St. Crispin's Well, was unsuccessful and his dam was replaced by one built by the Council under Randall's supervision (Scripps 1988: 9). Water from the new extended scheme was available to the town from January 1875.

Much of the extended scheme made use of earthenware pipes which were considered imperishable, inflammable and less injurious to water quality and prone to leakage than timber troughing. Poor quality and improper laying created significant problems however, with pipes leaking and bursting from the pressure. From 1881 both the earthenware pipes and timber troughing were replaced with cast iron pipes with a change in course being effected across Longhill Creek requiring a new stone aqueduct (Scripps 1988: 10,11).

John Regan died around 1902 and his 540 acre block was acquired from his estate by the Hobart City Council in 1906 (McConnell, Stanton, Scripps 1998: 10, Mem 11/3063). This became the site of a third reservoir, completed at Ridgeway in 1918, which was served by a new concrete pipeline delivering water from the North West Bay River (Scripps 1988: 65). The water then went through the original Receiving House and, by 1908, to a new No. 2 Receiving House to the West of the original. Apart from a section between Fern Tree and Halls Saddle the new concrete pipeline bypassed the Pipeline Track conveyance and in the late 1930s most of the water was diverted at Fern Tree into the Ridgeway pipeline (Hartzell 1993: 69). The Bower basin was destroyed by a flood in 1960 and reconstructed to only divert overflows into the troughing to the falls. The overflow was sealed in 1968 since which time the falls have been dry (Hartzell 1993: 61).

3.3 Gentle Annie Falls

Due to the difficult access and cost of bringing building materials to the project, most of the timber and stone used in construction of the water conveyance was sourced locally (Scripps 1988: 57). The distance from town meant that many men had to camp on the mountain, often for weeks at a time including through the winter (Scripps 1988: 4).

The wooden troughing which extended to within 372 metres of the Receiving House (approximately 136m west of the falls) was constructed by contractors Hodgson and Borthwick during 1861-61 and comprised boards of either blue gum or stringy bark with sides 2 inches thick and the top and bottom 2 ½ inches thick, laid in a narrow trench. Internal dimensions varied between 12 and 15 inches and it was expected to be able to convey 5 ½ million gallons (25 megalitres) of water per day (Scripps 1988: 58). The long joints were caulked with oakum and end joints caulked with Huon pine strips and pegged with trenails to 6" scantling frames spaced at 6 feet centres before the completed trough was sealed with hot pitch. The under sill space was grouted and flashed with hydraulic mortar (Scripps 1988: 58). Designer Joseph Gale predicted that the wooden troughing would last for ten years before it would need to be replaced, and that at a quarter of the cost of using iron pipes, ongoing replacement with timber was economical (Scripps 1988: 57).

From the end of the timber troughing to the falls and from the base of the falls to the Receiving House the water was conveyed in masonry troughing, constructed in 1861 by John Gillion who also

had the contract for constructing the intakes on Fork Creek and the Bower, the Receiving House and Valve House at the main storage reservoir. Little is known of Gillion's operation but it is presumed that he sourced stone from quarries close to the works (i.e. Scripps 1988: 22).

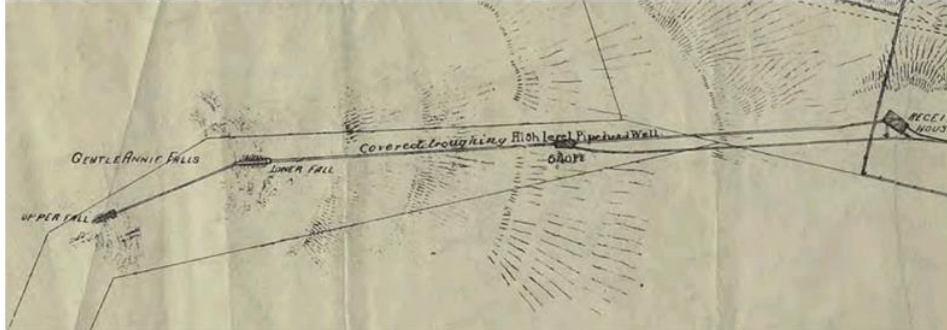


Figure 3.1: 1886 detail of plan showing falls and conveyance to Receiving House. TMAG R1405

The falls was an artificial cascade comprising a cut sandstone channel directing the flow over an upper sandstone ledge into a small intake basin excavated out of the rock at the foot of the ledge. Water exited the basin into the open masonry channel flowing downslope to a second ledge where it was funnelled via a cut channel down the rock face through a sandstone grille to a second intake basin which was enlarged with sandstone blocks to create a well. From here the water was directed into an open channel that continued downslope to the Receiving House (Figure 3.1, Figure 3.2)



Figure 3.2: Lower section of falls and second intake basin. Beattie, Hobart

The source of Gillion's stone is not recorded, however small quarries have been recorded on three levels east and west of the falls corresponding to the upper ledge, Pipe Head Well and lower masonry troughing to the Receiving House.

The deteriorating timber troughing was ultimately replaced with masonry in stages between 1878 and 1881. The first stage of works, between Halls Saddle and the falls, was carried out by John Clay during 1878-79. The stones were laid in a trench variously cut, or filled using stone spoil, to achieve a consistent grade, crossing ten masonry culverts along the way. The new masonry troughing was laid on the uphill side of the timber troughing which remained in service until the works were complete. The masonry troughing utilised cheek stones 9" wide x 13.5" tall on a 2' 10" x 6" bed stone set on a concrete foundation poured into the base of the trench (Hartzell 1993: 45). The design called for the gaps between the cheeks and trench sides to be filled with puddled clay and the covers made from timber recycled from the old troughing, a detail that was changed during construction to stone caps (Hartzell 1993: 44).

The section of timber troughing from the Bower to Halls Saddle was replaced in masonry by Joseph Hawkes in 1880-1881. The work involved diverting a section away from Huon Road across a new stone aqueduct crossing Longhill Creek and the adjacent gully. Hawkes sourced stone from a quarry at the falls which was conveyed along a road "*adjoining, crossing and running alongside the masonry aqueduct already built*". (Scripps 1998: 39).

Hawkes employed six quarrymen, three masons and a labourer. The quarrying method is not described but Scripps (1988: 30) considers that it involved blasting hand-drilled holes cut by the hammer and tap method and shaping stones using feather and wedge followed by hand dressing. Once cut, the stone was drawn by three-horse teams to the work sites.

Scripps (1988: 60) describes work reported to Council for on 28 June 1881:

"a gang of eight labourers was excavating a trench in preparation for the troughing: at another a mason was cutting cover stones whilst at a third location a team consisting of a blacksmith, a striker, and three masons was putting on the coverstones. Two plasterers and another man were at work at yet another site, applying the cement."

The stones were cut to size at the quarry with chases cut on site for fitting the covers. The trench was grouted with cement mortar and parged internally with ¾ inch of cement applied in two coats (Scripps 1988: 61).

The open troughing connecting the two intake basins to the Receiving House was covered following the death of a girl who fell into the open channel and drowned in 1880 (Scripps 1988: 59). The contract was awarded to John Clay who had undertaken the first stage of convenience upgrade works between the falls and Halls Saddle. . An excerpt from his contract reproduced in Hartzell 1993: 46 after Scripps 1993 states:

"The Contractor must at his own expense open all quarries that may be required for procuring suitable stone for the Contract and provide all tools, blasting powder, labour and other requisites for getting and conveying the stone to the site where it may be required."

All the stone supplied shall be of the best quality of Freestone or other approved hard building stone free from flaws, honeycombs, sandholes, blemishes or other defects and the whole of the stones shall be squared that they shall lie on their natural bed."

The Contractor will be permitted free of cost to quarry stone on the property belonging to the Corporation in the locality should suitable stone be found there for the purpose, but only in such places as the Director of waterworks shall permit.

All stones shall be dressed as hereafter specified before leaving the quarry, no after dressing or squaring will be allowed after the stone has been delivered at the troughing.

The flagstones shall be rough dressed to an even surface and out of winding.

The top side may be left quarry faced but no stone shall in any part be less than three (3) inches or greater than eight (8) inches in thickness.

The sides and the ends shall be rough picked but the latter must be dressed true and square and at right angles to the line of the aqueduct so as to make a close joint of not more than half an inch.

The quarry faced top shall be roughly dressed off to a pitch line at the ends and sides as to give a uniform thickness of three (3) inches at the joint."

A new pipe head well was subsequently constructed in 1883 midway along the troughing below the lower intake basin. The well comprised two chambers, uphill and downhill separated by a baffle wall containing two rectangular apertures. Water flowed from the uphill well through the apertures and a metal screen into the base of the downhill well into a 10 inch cast iron pipe leading past to the Receiving House to the town main. Excess water flowed over the baffle, supplementing the water into the pipe or discharging back onto the masonry troughing where it continued to the Receiving House (Figure 3.3). A smaller 4" pipe was added feeding water directly to a fountain installed in the Upper Reservoir completed in 1888.

In 1895 a 90m section of masonry troughing between the falls and Pipe-Head well collapsed and a 10" iron main was installed alongside (Hartzell 1993: 58).



Figure 3.3: Excerpt from undated (c. 1883) plan for Pipe Head Well TMAG 18800/148 HCC -563-00

4. Desktop summary

The desktop assessment is based on examination of statutory registers and publically available heritage lists and reports provided by City of Hobart. No primary research has been conducted for this assessment.

4.1 Statutory lists and databases

4.1.1 Commonwealth heritage registers and lists

There are no entries on statutory lists established under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) that pertain to the current study area. Ridgeway Park is listed (ID 10949) as part of the Wellington Range Area on the Register of the National Estate (RNE), a former statutory list established under the EPBCA's precursor legislation the *Australian Heritage Commission Act 1975* but non-statutory archive since 2012.

The Wellington Range Area listing, which also includes Knocklofty Reserve and most of Wellington Park, primarily references biodiversity and geoheritage values and does not specifically document or assess historic heritage values. The RNE listing contains a generic statement that non-indigenous (historic) heritage values were assessed as part of the 1997 Tasmanian Regional Forest Agreement (RFA) process.

The heritage provisions of the RFA are met through establishment of the Comprehensive, Adequate and Representative (CAR) reserve system within which Ridgeway Park is designated an Informal Reserve. The primary mechanisms available to the State for managing historic heritage values under the RFA are through the provisions the *Historic Cultural Heritage Act 1995* for THR listed places, by ensuring that management plans are prepared for Formal Reserves of the CAR system, and by ensuring that management plans for Formal and Informal Reserves clearly identify CAR values and the actions being taken to manage those values. CAR values are not referred to in any of the heritage assessments or management plans relating to Ridgeway Park that were reviewed for the current study.

4.1.2 Tasmanian Heritage Register

Waterworks Park and elements of the Pipeline Track are listed on the Tasmanian Heritage Register as part of the Hobart Mountain Water Supply System (ID 11227). The accompanying CPR identifies the listed area as encompassing a 6m wide alignment centred on the Pipeline Track containing the masonry troughing leading to the falls, and an area from 60-90m wide on the face of Gentle Annie falls spur centred on the conveyance from the falls to the Receiving House including the Pipe Head Well, and some of the closer quarry sites and associated access tracks (Figure 4.3). THR datasheet descriptions for listed features are largely reproduced from the Hobart Mountain water Supply Scheme Conservation Management Plan (Futurepast 2012). Features intersected by the current study area and their contribution to the assessed State level heritage values are reproduced in Table 4.1.

Table 4.1 THR datasheet descriptions and criteria statements for features intersected by Study Area

| Feature | Description | Relevant HCHA Criteria |
|--------------------------|--|---|
| Pipe-Head Well 1861 | The sandstone Pipe-Head Well was a key part of the first water supply system. It was originally fed by an open channel from Gentle Annie Falls; this was enclosed following a drowning in 1880 and later replaced with cast iron pipes. Sections of this piping are visible in the track leading down from the falls. The Pipe- Head Well was the location where the water was screened and mixed before entering pipes and fed by gravity downhill to the Receiving House. The structure is now located off the main pipeline route, which has been diverted along the nearby fire trail, which has a gentler grade. The Pipe-Head Well suffered some damage due to a tree fall in c2006, which cracked several sandstone panels covering one of the mixing chambers. This damage was repaired in 2009. The place also has several unsympathetic accretions, including a steel viewing platform installed in the 1980s and a domestic picket fence. | a) The Hobart Mountain Water Supply System is significant for its ability to demonstrate the evolution of the water supply for Hobart from its earliest phases until its final expansion. The water supply system as conceived, implemented and managed has had considerable impact on the natural habitat of Mount Wellington and demonstrates an evolution of the changing techniques and priorities in water management. |
| Gentle Annie Falls 1861 | Gentle Annie Falls represents a rugged junction in terrain, where water was directed from the sandstone troughing over a cliff and into a small receiving basin. From the basin, water was conducted downhill in pipes to the Pipe-Head Well. Gentle Annie Falls provides a scenic overlook of parts of the Waterworks Reserve below, and allows an appreciation of the ruggedness of the terrain in which the pipeline was originally constructed. Rock cut channels and stairs attest to the amount of sheer physical effort that was put into the construction of the water supply system | b) Several aspects of the Hobart Mountain Water Supply System are uncommon at a national level, and the system in its entirety is unique in Australia for its intactness. In particular, Gentle Annie Falls C which was created to direct water down a slot cut in a rock face C is a rare type of man-made waterfall. c) Further research into ancillary features such as the quarries used in the construction of the system will provide greater insight into the building of the system. |
| Stone quarries 1860s | Close to Gentle Annie Falls are several quarries from which stone was cut for the Hobart Mountain Water Supply System | e) The Hobart Mountain Water Supply System demonstrates an elegantly conceived , simple and inexpensive gravity-fed water supply system that could easily be extended, its design making good use of the local geology and hydrology. It also demonstrates an ongoing capacity for engineering to supply the growing city of Hobart in the face of difficult terrain. This is demonstrated in particular by the slots cut into the cliff face at Gentle Annie Falls |
| Sandstone troughing 1861 | The sandstone troughing that exists between Gentle Annie Falls and Fern Tree is the key element of the 1861 water supply system, serving as the pipeline which brought water to the reservoirs. The troughing also defines the route of the Pipeline Track and provides a linking element along the track . The stone troughing is largely intact, though no longer functional. The troughing was originally constructed of timber but this was soon replaced with troughing constructed of stone blocks. In many locations, the troughing is in good condition and does not appear to have suffered from an accretion of soil or other material internally. Minor root penetration has been noted and in some limited locations roots have the potential to slowly pull the troughing apart. Where the troughing is damaged, this is mainly on the top blocks, some of which have cracked and have been replaced with a variety of types of concrete capping materials. In some areas the troughing was covered up in the 1980s to make a better recreational track surface. This seems to have had its own negative consequences in some areas, due to the stone becoming saturated with retained water and subsequently weakening and cracking. | f) The Hobart Mountain Water Supply System is significant to the wider Hobart community both as a part of the infrastructure of the city and for its value as an important recreational resource close to the city. Fern Tree Gully, the Wishing Well, the Pipeline Track and the Waterworks Reserve have played significant parts in the recreational lives of both Hobartians and visitors to the area for well over one hundred years. |

4.2 Hobart Interim Planning Scheme Historic Heritage Code

The study area intersects one place, Waterworks Park (ID 3202), listed in Table E13.1 (Heritage Places) in the Historic Heritage Code of the Hobart Interim Planning Scheme. The boundaries of the listed place are not provided in the Code but are assumed to be the same as in the City of Hobart Open Space Parks spatial dataset³

A second place relating to the Mountain Water Supply System (Pipeline Track ID 3290) comprising culverts and linear corridor between Halls Saddle and Long Creek is listed in the Code but does not intersect the current study area.

4.3 Previous heritage assessments and inventories

The Hobart Mountain Water Supply System has been a popular recreational asset since the 1860s and been the subject of numerous articles and pictorial depictions. The earliest structured summary of physical features is arguably Roy Davies article on the Mt Wellington Waterworks for the Hobart walking Club's magazine "The Tasmanian Tramp" in 1984 (Davies 1984). A flurry of studies followed as the significance of the scheme became more universally realised, commencing with P. G. Crawford and K. R. Ryan's Bicentennial research project for the Engineering Heritage Committee of the Australian Institution of Engineers, published in 1988 as *The Early Water Supply of Hobart* (Crawford & Ryan 1988). The following year The Pipeline Track Project, a collaborative project between the Hobart City Council's Parks & Recreation Department and City Engineer's Department was launched which involved historical research, archaeological survey and landscape design with the aim of developing a concept for the Pipeline Track as a major tourism and recreational destination. The first element commissioned was Lindy Scripps's historical study of the Pipeline Track which was designed to provide material for use in developing interpretation material for the route (Scripps 1988). The same year, Tim Murray from LaTrobe University was contracted to undertake an archaeological survey of the system. This assessment does not appear to have resulted in a report and in 1993 Lindy Scripps was contracted again to undertake additional historical research and produce a resource document (Scripps 1993) to facilitate completion of the archaeological assessment. This was ultimately acquitted by archaeologist Leslie Hartzell from the La Trobe University based on a combination of Murray's field notes, Scripps' 1989 and 1993 Historical research and additional field survey (Hartzell 1993). This was followed up by a GPS survey of quarry sites undertaken by Robert Leamon, however the results of this survey were not available to Hartzell.

In the meantime, in 1991 landscape architect Katharina Nieberler was engaged to produce a landscape and design concept for the Pipeline Track. With the archaeological assessment being completed, Murray and Nieberler collaborated to produce the initial Conservation Management plan for the track in 1994.

With studies thus far focussing on the historic heritage of the water supply system, in 1998 Lindy Scripps, Steve Stanton and Anne McConnell were commissioned to undertake an Aboriginal and historic heritage survey and assessment for the broader Ridgeway Park to facilitate management planning for the reserve (McConnell *et al* 1998).

³ <https://data-1-hobartcc.opendata.arcgis.com/datasets/hobartcc::open-space-parks/explore?location=-42.897984%2C147.154328%2C11.90>

The following discussion focusses on those studies provided by City of Hobart for the consultant to review for the purposes of creating a desktop feature summary to guide the field assessment competent of the current study.

4.3.1 Historical and Archaeological Documentation of Sites and Features (Hartzell 1993)

Leslie Hartzell was engaged through LaTrobe University to complete the inventory and assessment commenced by Tim Murray in 1989. Hartzell documented twenty-two feature complexes along the system, basing her numbering on an earlier study by Roy Davies in 1984-1985.⁴ One of these complexes comprising at least four features are intersected by the current study area.

- Site No. 3: Gentle Annie Falls, comprising the pipe-head well (3/1), lower catchment basin (3/2) upper catchment basin (3/4) and channels cut into the natural rock face (3/5).⁵
- Site No. 4: Sandstone troughing between Gentle Annie Falls and Halls Saddle (No specific sub-number)

Hartzell's report refers to the presence of stone quarries associated with the complex and to the site of a late 19th century house tenanted to a Mrs Parlour/Parlow along Sandy Bay Rivulet above the Upper Reservoir but does not document or number them. The significance of individual features was not assessed, being subsequently incorporated by Murray and Nieberler in the 1994 Conservation Management Plan. Hartzell's descriptions for intersected features are reproduced in Table 4.2.

4.3.2 Ridgeway Park Cultural Heritage Survey and Assessment (McConnell *et al* 1998)

Archaeologist Anne McConnell, historian Lindy Scripps and Aboriginal Heritage Officer Stephen Stanton undertook an assessment of Aboriginal and historic heritage values in 1988 to expand the understanding of cultural heritage values in the park and identify issues and opportunities for management. While the study incorporated elements of the historic water supply system, the main aim was to complement the earlier assessments by filling in knowledge gaps. The study identified four Aboriginal heritage sites and twenty-six historic heritage places within Ridgeway Park, of which the water supply system was addressed as a single multi-feature complex. The main contribution to understandings of the water supply system was through assessing individual quarry sites which had not been previously undertaken. McConnell *et al*'s descriptions for intersected features are reproduced in Table 4.2 with descriptions and locations of quarry sites provided in Table 4.3 and Figure 4.1. Features that are adjacent to or near the study area are listed in Table 4.4. Features identified in both tables are indicated in Figure 4.3.

4.4 Reserve management plans

Two management plans have been prepared for the water supply system based on the corpus of knowledge available at the time.

4.4.1 Conservation and Management Plan for the Pipeline Track 1994 (Murray & Nieberler 1994)

The 1994 plan by Tim Murray and Katharina Nieberler was based on the archaeological inventory and analysis prepared by Leslie Hartzell in 1993 and reflects Hartzell's site breakdown and numbering,

⁴ Davies, R, The Mount Wellington Waterworks. Tasmanian Tramp No. 25. Not reviewed for the current assessment

⁵ It is unclear from Hartzell's report if 3/3 was assigned

although they further subdivided and added additional features to facilitate significance assessment and management recommendations. In addition to referencing Parlour's (Parlow's) House and Hartzell's 3/1, 3/2, 3/4, 3/5 features and Site No. 4 at Gentle Annie Falls, Murray & Nieberler referenced the sandstone troughing and cast iron pipes between the falls and Receiving House, the falls (as a distinct entity) and stone quarries although did not provide further descriptions or mapping. Murray and Nieberler's breakdown of intersected features is reproduced in Table 4.2 and indicated in Figure 4.3.

4.4.2 Hobart Mountain Water Supply System Conservation Management Plan (Futurepast 2012)

The 2008 (revised 2012) CMP was commissioned to revise and expand upon the 1994 Pipeline Track CMP to reflect changes in the goals and management structure for system since the original plan was produced. The revised CMP reviews and updates the management recommendations for an expanded area of significance and situates the conservation of significant elements within the remit of the various groups responsible for its implementation, which includes Hobart City Council, TasWater, Wellington Part Management Trust and the Tasmanian Heritage Council.

Fieldwork for the CMP involved a one-day inspection of significant features and sites identified in the 1994 CMP. No additional primary research was carried out. The 2012 CMP aggregates and simplifies the description of heritage features, with these descriptions forming the basis of the subsequent upgraded THR listing. Descriptions for intersected features are reproduced in Table 4.2.

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Table 4.2 Previous descriptions by author of features intersected by current Study Area

| Feature | Hartzell 1993 | McConnell <i>et al</i> 1998 | Futurepast | Listing | Significance |
|--|---|---|---|-------------------------------|--|
| Feature # 1 Mrs Parlour/Parlow's House, Upper Reservoir (Murray & Nieberler 1994, 19,) | Exotic tree and line of foundations visible (Scripps pers com quoted in Hartzell 1993: 54) Broken glass, pottery and dressed sandstone fragments on the track across the property down to Sandy Bay Rivulet (Hartzell 1993: 55). [Note that Hartzell (Fig 31) indicates the location to be 270m west of McConnell <i>et al</i> RP/H6] | There is no clear evidence of this site, only a possible disturbed collapsed chimney, an introduced pittosporum and some ceramic fragments. (McConnell <i>et al</i> 1998 Table 1, RP/H6) A slightly benched area with a mound of sandstone rubble with a large tree growing through it which may be a collapsed rubble and earth chimney, a small introduced tree (a mainland pittosporum) behind and another track behind. Below this area is the grassy area where ceramics and glass were noted in 1993, and where dressed sandstone blocks have been used in the path/gutter construction. No artefactual material was noted on the surface near the tree and rubble mound, but given the 1993 finds there may be subsurface cultural remains in this area also. (McConnell <i>et al</i> 1998 (Vol 2) RP/H6. [Note that MCC 16/43/5 (1880) AOT indicates the location to be c.120m northwest of RP/H6] | No reference | N/A | Not assessed (Murray & Nieberler 1994) Medium-low (Regional) Medium-High (Local) (McConnell <i>et al</i> 1998) |
| Feature # 2 Pipe Head Well (Murray & Nieberler 1994, 19) | Water flowed through the covered stone troughing into a broader trough that was 12 feet in length and angled on a slope of 1.5 to 1 down into the first basin. Water flowed through openings level with the bottom of the first basin and when volume was running high it would overflow the upper part of the curved wall into an adjacent and lower basin. All water entering the second basin passed through a wrought iron framed strainer. From the lower basin the water was carried out a 10" diameter cast iron pipe past the south, uphill side of the Receiving House where it joined and ran parallel to the original 10" cast iron main that exited the northeast side of the Receiving House. With high water volumes, the flow passed unfiltered through the masonry troughing at the base of the structure that connected to ...the original line of troughing that entered the southwest corner of the Receiving House. A 4" diameter pipe inlet was installed next to the 10" line in the Pipe-head well [in the 1890s]. This pipe also had a wrought iron circular grate over the inlet to filter large particles. This small pipe was laid to the Upper Reservoir where it... fed the fountain...well into the 20th century. (Hartzell 1993: 47-48) | The Pipe Head Well at the base of Gentle Annie Falls was formerly more ornate with more capping rocks, this work being carried out in 1883. The channel was lined with hydraulic cement. (McConnell <i>et al</i> 1998 (Vol 2) 2. | The Pipe-Head Well was a key part of the first water supply system. It was originally fed by an open channel from Gentle Annie Falls, which was enclosed following a drowning in 1880 and later replaced with cast iron pipes. Sections of this piping are visible in the track leading down from the Falls. The Pipe- Head Well was the location where the water was screened and mixed before entering pipes and fed by gravity downhill to the Receiving House. The structure is now located off the main pipeline route, which has been diverted along the nearby fire trail, which has a gentler grade. The Pipe-Head Well has suffered some damage due to a tree fall circa 2006, which cracked several sandstone panels covering one of the mixing chambers. [This damage was repaired in 2009]. The place also has several unsympathetic accretions, including a steel viewing platform installed in the 1980s and a domestic picket fence installed for safety reasons around the structure. (Futurepast 2012 Site B/1: p47) | THR 11227 HIPS 3202 (part) | 5 -High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) |

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| <p>Feature # 3 Sandstone troughing between the Falls and Receiving House (Murray & Nieberler 1994, 19)</p> | <p>Water exited the intake out the central base of the basin and was channelled into the dressed stone masonry outlet beneath the basin where it flowed through the next level of open troughing down slope [to the Receiving House]. The open troughing was covered sometime shortly after the drowning death of a young girl, Josephine Fleming, in August 1880 (Hartzell 1993: 10). With high water volumes, the flow passed unfiltered through the masonry troughing at the base of the structure [pipe-head well] that connected to ...the original line of troughing that entered the southwest corner of the Receiving House (Hartzell 1993: 47)</p> | <p>The open channel below the falls was covered in c. 1880 after the drowning of a schoolgirl, and due to its poor repair and was replaced in 1895 with 10" cast iron pipes (the troughing was left in situ and the pipes run along the side). (McConnell <i>et al</i> 1998 (Vol 2) 3.</p> | <p>The sandstone troughing is the key element of the 1861 water supply system, serving as the pipeline which brought water to the reservoirs. The troughing also defines the route of the Pipeline Track and provides a linking element along the track. The stone troughing is largely intact, though no longer functional. The troughing was originally constructed of timber but this was soon replaced with troughing constructed of stone blocks. In many locations, the troughing is in good condition...Minor root penetration has been noted and in some limited locations roots have the potential to slowly pull the troughing apart. Where the troughing is damaged, this is mainly on the top blocks, some of which have cracked and have been replaced with a variety of types of concrete capping materials. In some areas the troughing was covered up in the 1980s to make a better recreational track surface. This seems to have had its own negative consequences in some areas, due to the stone becoming saturated with retained water and subsequently weakening and cracking. (Futurepast 2012 Site B/3: p49)</p> | <p>THR 11227 HIPS 3202 (part)</p> | <p>5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998)</p> |
| <p>Feature # 4 Cast iron pipes between Gentle Annie Falls and Receiving House (Murray & Nieberler 1994, 19)</p> | <p>From the lower basin the water was carried out a 10" diameter cast iron pipe past the south, uphill side of the Receiving House where it joined and ran parallel to the original 10" cast iron main that exited the northeast side of the Receiving House. (Hartzell 1993: 47) A 4" diameter pipe inlet was installed next to the 10" line in the Pipe-head well [in the 1890s]. This pipe also had a wrought iron circular grate over the inlet to filter large particles. This small pipe was laid to the Upper Reservoir where it... fed the fountain...well into the 20th century. (Hartzell 1993: 48) A section of old masonry troughing collapsed below Gentle Annie Falls... the covered stone troughing was replaced in 1895 with 10" cast iron pipes from stock they had in storage, hence they are marked with the year of their casting, 1887. Based on archaeological evidence, it appears that the stone troughing was left in situ with the pipes run to the side of the troughing. (Hartzell 1993: 58)</p> | <p>The open channel below the falls was covered in c. 1880 after the drowning of a schoolgirl, and due to its poor repair and was replaced in 1895 with 10" cast iron pipes (the troughing was left in situ and the pipes run along the side). (McConnell <i>et al</i> 1998 (Vol 2) 3)</p> | <p>The Pipe-Head Well was a key part of the first water supply system. It was originally fed by an open channel from Gentle Annie Falls, which was enclosed following a drowning in 1880 and later replaced with cast iron pipes. Sections of this piping are visible in the track leading down from the Falls. (Futurepast 2012 Site B/1: p47)</p> | <p>THR 11227 HIPS 3202 (part)</p> | <p>2 - Slight heritage value (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998)</p> |

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| Feature # 5 Gentle Annie Falls (includes chutes carved in stone) (Murray & Nieberler 1994, 20) | <p>Water flowing across the steep grade of Gentle Annie Falls travelled through an open dressed stone masonry troughing described by Hall (1863) as a "channel of masonry 1221 feet long, lined with hydraulic cement".</p> <p>Water... was guided through sandstone troughing constructed between sections of carved bedrock and two masonry constructed catchment basins (Sites No. 3/4 and Site No. 3/2) set into natural bedrock at the uppermost and intermediate level of the falls, respectively...They are each located at the base of a step rock ledge that was carved into a vertical channel. Water was directed along the channel and collected at the base in an intake pit or basin picked out of bedrock and enlarged with dressed stone to create a retaining wall around the formed basin. Dressed sandstone grates would have slowed the flow of water coming down the vertical channel and caught any large debris. Water exited the intake out the central base of the basin and was channelled into the dressed stone masonry outlet beneath the basin where it flowed through the next level of open troughing down slope. (Hartzell 1993: 9-10)</p> | <p>Gentle Annie falls is extant and in good condition but with some of the capping stones removed (possibly after water flow stopped in the 1960s). (McConnell <i>et al</i> 1998 (Vol 2) 2).</p> <p>The channels were open and the channel and two receiving basins were cut into bedrock. (McConnell <i>et al</i> 1998 (Vol 2) 3)</p> | <p>Gentle Annie Falls occurs in relatively rugged terrain. The Falls were man-made and comprise a cut channel in the sandstone bedrock, where water was directed from the sandstone troughing over a cliff and into a small receiving basin. From the basin, water was conducted downhill in pipes to the Pipe-Head Well. Gentle Annie Falls provides a scenic overlook of parts of the Waterworks Reserve below, and allows an appreciation of the ruggedness of the terrain in which the pipeline was originally constructed. Rock cut channels and stairs attest to the amount of sheer physical effort that was put into the construction of the water supply system. (Futurepast 2012 Site B/2: p48)</p> | <p>THR 11227</p> | <p>5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998)</p> |
| Feature # 6 Lower catchment basin (Murray & Nieberler 1994, 20) | <p>Two catchment basins are part of the original construction. They are each located at the base of a step rock ledge that was carved into a vertical channel. Water was directed along the channel and collected at the base in an intake pit or basin picked out of bedrock and enlarged with dressed stone to create a retaining wall around the formed basin. (Hartzell 1993: 10)</p> | <p>The channels were open and the channel and two receiving basins were cut into bedrock. (McConnell <i>et al</i> 1998 (Vol 2) 3)</p> | <p>Gentle Annie Falls occurs in relatively rugged terrain. The Falls were man-made and comprise a cut channel in the sandstone bedrock, where water was directed from the sandstone troughing over a cliff and into a small receiving basin... (Futurepast 2012 Site B/2: p48)</p> | <p>THR 11227</p> | <p>5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998)</p> |
| Feature # 7 Upper catchment basin (Murray & Nieberler 1994, 20) | <p>Two catchment basins are part of the original construction. They are each located at the base of a step rock ledge that was carved into a vertical channel. Water was directed along the channel and collected at the base in an intake pit or basin picked out of bedrock and enlarged with dressed stone to create a retaining wall around the formed basin. (Hartzell 1993: 10)</p> | <p>The channels were open and the channel and two receiving basins were cut into bedrock. (McConnell <i>et al</i> 1998 (Vol 2) 3)</p> | <p>Gentle Annie Falls occurs in relatively rugged terrain. The Falls were man-made and comprise a cut channel in the sandstone bedrock, where water was directed from the sandstone troughing over a cliff and into a small receiving basin... (Futurepast 2012 Site B/2: p48)</p> | <p>THR 11227</p> | <p>5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998)</p> |
| Feature # 8 Stone quarries (Murray & Nieberler 1994, 20) | <p>Quarries are located at each level of the falls west of Site No. 3/2 and south of Site No. 3/5 (Murray 1989, field notes). It is quite possible that these sources were used as early as 1861 as part of the initial construction for the catchment basins at the two levels as well as for raw materials for the</p> | <p>These supplied stone for the pipeline and reservoir in the initial construction in 1860-61 and also for the newer sections of masonry troughing from gentle Annie Falls to halls saddle) in the 1879-88 upgrade. A track was built...to transport the sandstone from the quarries to the pipeline. There is extant track</p> | <p>Sandstone quarries, where stone was cut for use along the Pipeline, are located in the bush nearby. (Futurepast 2012 Site B/2: p48)</p> <p>The presence of small quarries and associated tracks along the pipeline attests to the use of</p> | <p>THR 11227 HIPS 3202 (part)</p> | <p>5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998)</p> |

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| | <p>construction the open masonry troughing. (Hartzell 1993: 11)</p> <p>There were several quarries recorded along the slope of Gentle Annie Falls. These were likely exploited throughout the entire construction history beginning in the 1860s. Damage by graffiti artists has occurred at the upper level of the falls as well as throughout the neighbouring quarry. (Hartzell 1993: 81)</p> | <p>connecting the quarries that is likely to be this track. The quarries are a series of small to medium-large quarries with individual access tracks covering a large area of the slopes of gentle Annie Spur west from the Falls. Quarries are located at each level of the falls and the Pipe Head Well. In all 15 discrete quarries were located. The quarry adjacent to the Top Falls is the largest, measuring approximately 70m x 40m with a c. 9m high face. The small quarries are in the order of c. 6m x 6m with 3-4m high faces. No hand tool marks were noted in any of these quarries and the only evidence of working...are a small number of drill holes in the faces of a number of quarries. The large quarry beside the Top Falls has graffiti in black paint or tar. (McConnell <i>et al</i> 1998 (Vol 2) 3)</p> | <p>local stone which was quarried and dressed on site. (Futurepast 2012 Site B/3: p49)</p> | | |
| <p>Feature # 9</p> <p>Sandstone troughing from the falls to Halls Saddle (Murray & Nieberler 1994, 20)</p> | <p>The line of wooden troughing...was directed into an open trough and then into channels cut into bedrock to direct the flow of water over the uppermost rock faces (Site No. 3/5) and into a basin (Site No. 3/4) below. (Hartzell 1993: 9) [Refers to masonry troughing constructed by John Gillon c. 1861. The troughing constructed by John Clay is outside the current study area].</p> | <p>The masonry troughing and culverts are extant and mostly in good condition. A number of coverstones have been replaced since c. 1960 with concrete slabs and then from the 1990s with dressed but less well finished sandstone cover stones. (McConnell <i>et al</i> 1998 (Vol 2) 2)</p> | <p>The sandstone troughing is the key element of the 1861 water supply system, serving as the pipeline which brought water to the reservoirs. The troughing also defines the route of the Pipeline Track and provides a linking element along its length...The stone troughing is largely intact, though no longer functional. In many locations, the troughing is in good condition and does not appear to have suffered from an accretion of soil or other material internally. Minor root penetration has been noted and in some limited locations roots have the potential to slowly pull the troughing apart. Where the troughing is damaged, this is mainly on the top blocks, some of which have cracked and have been replaced with a variety of types of concrete capping materials. In some areas the troughing was covered up in the 1990s as a conservation measure due to concerns over damage to the sandstone capping. (Futurepast 2012 Site B/3: p49)</p> | THR 11227 | <p>3 - Moderate cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998)</p> |

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Table 4.3 Individual stone quarry descriptions from McConnell *et al* 1998, Vol2: 9

| Feature | Size (L x D x H) | Description |
|----------|------------------|--|
| 8A (Q1) | 10m x 4m x 1m | Small shallow quarry, floor is a flat bench of sandstone, spoil accumulation on the downslope side, track cuts through floor of quarry, possibly a test site. |
| 8B (Q2) | 12m x 10m x 4-5m | Small quarry with relatively vertical face, there is a central rubble pile and rubble immediately downslope. |
| 8C (Q3) | 15m x 10m x 4-5m | Small quarry, has rubble pile running out from the face at the north end. A low (c. 1.5m high) quarried face lies above and between Q3 and Q 4 but does not connect them. |
| 8D (Q4) | 7m x 7m x 3m | A small quarry with straight rear wall with 2 ledges. |
| 8E (Q5) | 5m x 7m x 3m | Small quarry, irregular and narrow shape and cut deep into the hill, low sandstone ledge at the front, rubble spurs at each end. |
| 8F (Q6) | 70m x 40m x 9m | Large quarry with a relatively vertical but irregular face, the floor slopes up towards the front and there is extensive rubble immediately downslope. 3 partial drill holes in face, hand tool marks at east end within 1-2m of the receiving basin of the Top Falls; the quarry face merges into the receiving basin construction. There is a post quarrying set of stairs from the top of Top Falls to the base of the falls which is via the quarry; there is back (paint or tar) graffiti painted on the quarry face. |
| 8G (Q7) | 10m x 7m x 5m | Small quarry with a two sided face immediately east of the Top Falls, straight vertical walls, sandy floor, some carved graffiti (included "G.T.Elliot", "E.Wenn") (May be a natural sandstone exposure rather than a quarry) |
| 8H (Q8) | 40m x 20m x 6m | Medium sized quarry; relatively vertical, straight face. |
| 8I (Q9) | 10m x 8m x 3m | Small quarry, quarried face has 1 low bench, 3 drill cores on face, quarry has sandy floor and is c. 1-2m above the track around the spur and from the upper quarries down to the base of Gentle Annie Falls |
| 8J (Q10) | 20m x 20m x 10m | Medium quarry with relatively high, vertical and straight quarry faces, 2 drill core holes |
| 8K (Q11) | 40m x 20m x 8-9m | Medium-large quarry; very irregular quarry face with several benched levels. |
| 8L (Q12) | 7m x 5m x 4m | Small quarry c. 1m above the road and semi-circular in plan; 2 low benches - 1 at the rear of the quarry and 1 at the front, a 2 course line of sandstone blocks has been (more recently) across the quarry in the middle. |
| 8M (Q13) | 8m x 6m x 6m | Small quarry c. 1-2m above the track, vertical walled but of irregular shape, has some benched levels |
| 8N (Q14) | 15m x 8m x 5-6m | Small, long quarry, irregular in plan, minor cutting back of face especially at the west end where it is <0.5m deep from the natural face which continues unmodified to the west |
| 8O (Q15) | 15m x 20m x 4m | Small-medium quarry. This quarry is unusual in that it is quarried on all sides (not open at the downslope end) and is accessed by a narrow excavated corridor on the corner nearest the Pipe Head Well. The headwall cutting is over 8m, although only the lower c. 4-5m is into bedrock (sandstone). There is a large amount of rubble on downslope side on the edge of the quarry. |

Table 4.4 McConnell *et al* 1998 heritage features bordering or close to current study area

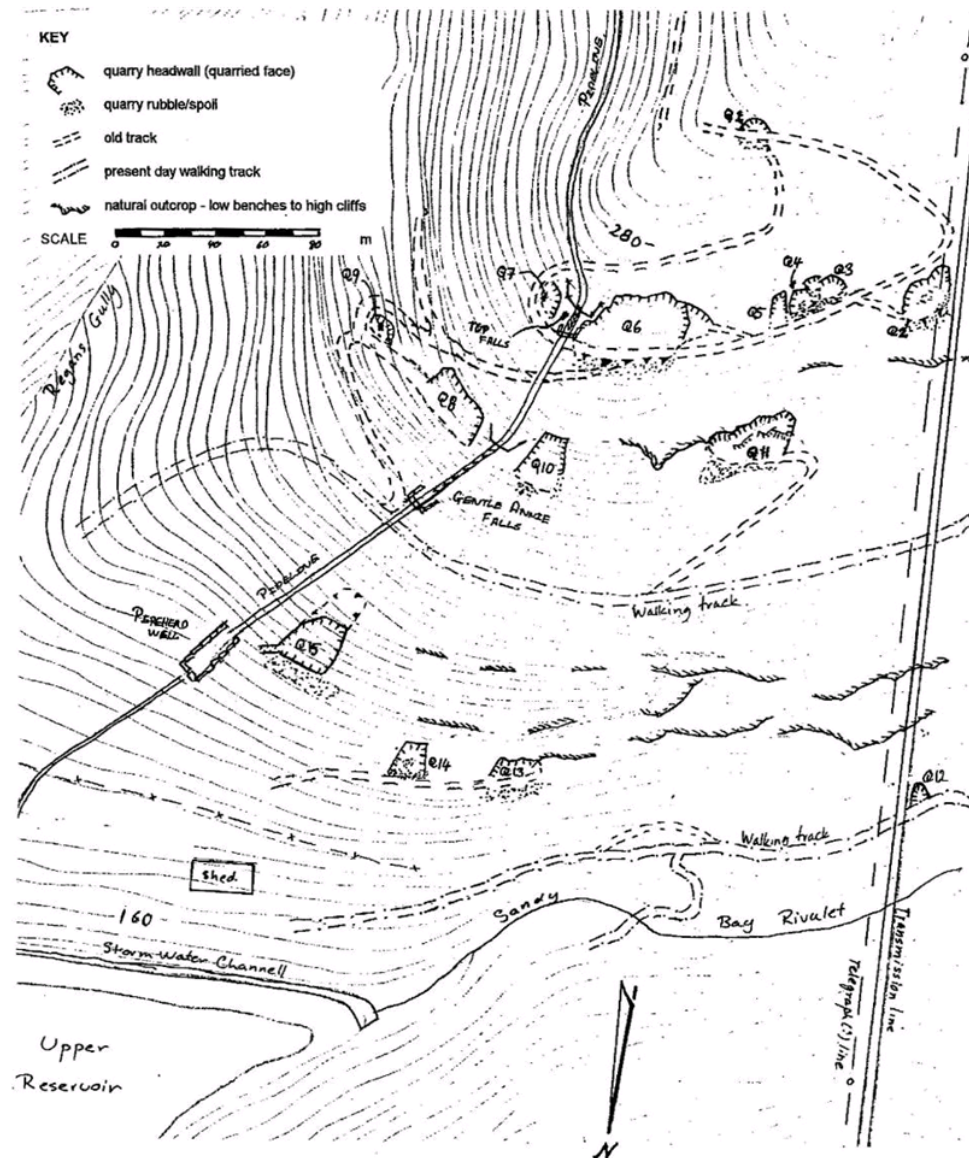
| Feature | Description | Significance |
|---------|--|--------------|
| RPH2 | Bridle track used by early settlers in the Huon, and possibly used by Charles Darwin during his visit in 1936 to clime kunanyi/Mt Wellington. Benched for its entire length, 4-6' wide with a flat surface but trenched/worn in on steeper sandy inclines. No stone walling, no cleaning back of sandstone outcrop, no surfacing. Some 19 th C artefact types observed. | State - High |

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|-------------------------|---|----------------------------------|
| RPH9 Hut site No. 2 | Late 1800s-early 1900s hut site. Flat area (bench in slope) with stone retaining wall on lower platform edge. 20m below the lower road and 10m from the rivulet flats and immediately east of a foot track from the Lower Road to the Rivulet | Regional – Low Local - Medium |
| RPH10 Hut site No. 3 | Late 1800s-early 1900s hut site. Flat area (excavation into slope) with stone retaining walling in head of excavation (possibly back of chimney) | Regional – Low Local - Medium |
| RPH11 Hut site No. 4 | Late 1800s-early 1900s hut site. Shallowly excavated flat area (no fill) with a line of stones on the lower side and a fragment of glazed stoneware | Local - Low |
| RPH12 Hut site No. 5 | Flat area excavated into the slope (no fill area) | Local - Low |
| RPH15 | Track running generally parallel to but lower downslope than RPH2. Clearly visible benched formation with generally a flat surface and c. 4-6 ft wide. No stone walling, no cleaning back of sandstone outcrop, no surfacing. The track starts c. 300m west of Upper Reservoir and continues to c. 100-200m east of Lime Kiln Track/Old Huon Road intersection. The track is very similar to the Old Huon Road. | State - High |

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5. Survey results

5.1 Previously recorded historic heritage features

Eight of the nine historic features referenced in Murray & Nieberler (Features 1-8) and eleven of the quarry sites recorded by McConnell *et al* (1998) that occur within the current study area were re-inspected during the current assessment. The aim of the re-inspection was to identify proximity and potential sensitivity of these features to the proposed new track works and not to undertake detailed archaeological recording which has been done on several previous occasions. Summary descriptions of the re-inspected features are given in Table 5.1 and locations plotted in Figure 5.1.

The functional associations of these features are detailed in previous assessments and re-iterated in Table 4.2.

5.2 Additional historic heritage features

A number of additional features were recorded during the assessment including four small workings (8S-8V) and twelve tracks (Tracks 1-12) that do not appear to have been previously assessed, and six tracks (RPH2, RPH15, 8A (Q1), 8B (Q2), 8K (Q11) and 8M (Q13) that are referred to in previous studies and were considered to warrant a level of re-assessment. Summary descriptions of the re-inspected features are given in Table 5.2 and locations plotted in Figure 5.1.

Two of the previously recorded tracks (RPH2 and RPH15) are documented by McConnell *et al* 1998. They consider RPH2 to be the original road connecting Hobart and the Huon district from the 1830s until 'replaced' by a track on the current Huon Road alignment in the 1870s (McConnell *et al* 1998: Vol2). A lower spur track (RPH15) is thought by McConnell *et al* as possibly being part of the Huon Road, however LiDAR evidence suggests a possible connection with tracks on the north side of the rivulet providing access to the Turnip Fields area, suggesting that the portion of the Old Huon Road below this point may have remained in use some time after the new Huon Road and Turnip Fields Road were built. The section east of the junction with the current Falls Track has been overprinted and maintained as part of Ridgeway Park's walking trail system.

Four tracks (8A (Q1), 8B (Q2), 8K (Q11) and 8M (Q13) are demonstrably access tracks for previously recorded quarry or test pits. Track 11 may be part of the track used by Joseph Hawkes for transporting materials for the conveyance upgrade works north of Halls Saddle during 1880-1881, while Track 12 is likely to be associated with construction of the Pipe Head Well in 1883.

Four tracks (Tracks 1, 2, 3 and 5) trend from quarries on the east side of Regans Gully which were not inspected as part of this assessment. Tracks 1, 5 and possibly Track 2 appear to converge opposite Track 12 and may be associated with the construction of the Pipe Head Well. Track 4 appears to be access for the previously unrecorded 8T quarry on the north side of Regans Gully.

Track 6 may be associated with the Parlour/Parlow occupancy while Track 9 may be associated with early waterworks/reserve management activities. Two tracks (Track 7 and Track 8 [Falls Track] are part of the C.20th park walking trail system. Track 10 is associated with construction and maintenance of the New Town to Electrona transmission line that commenced operating in 1917.

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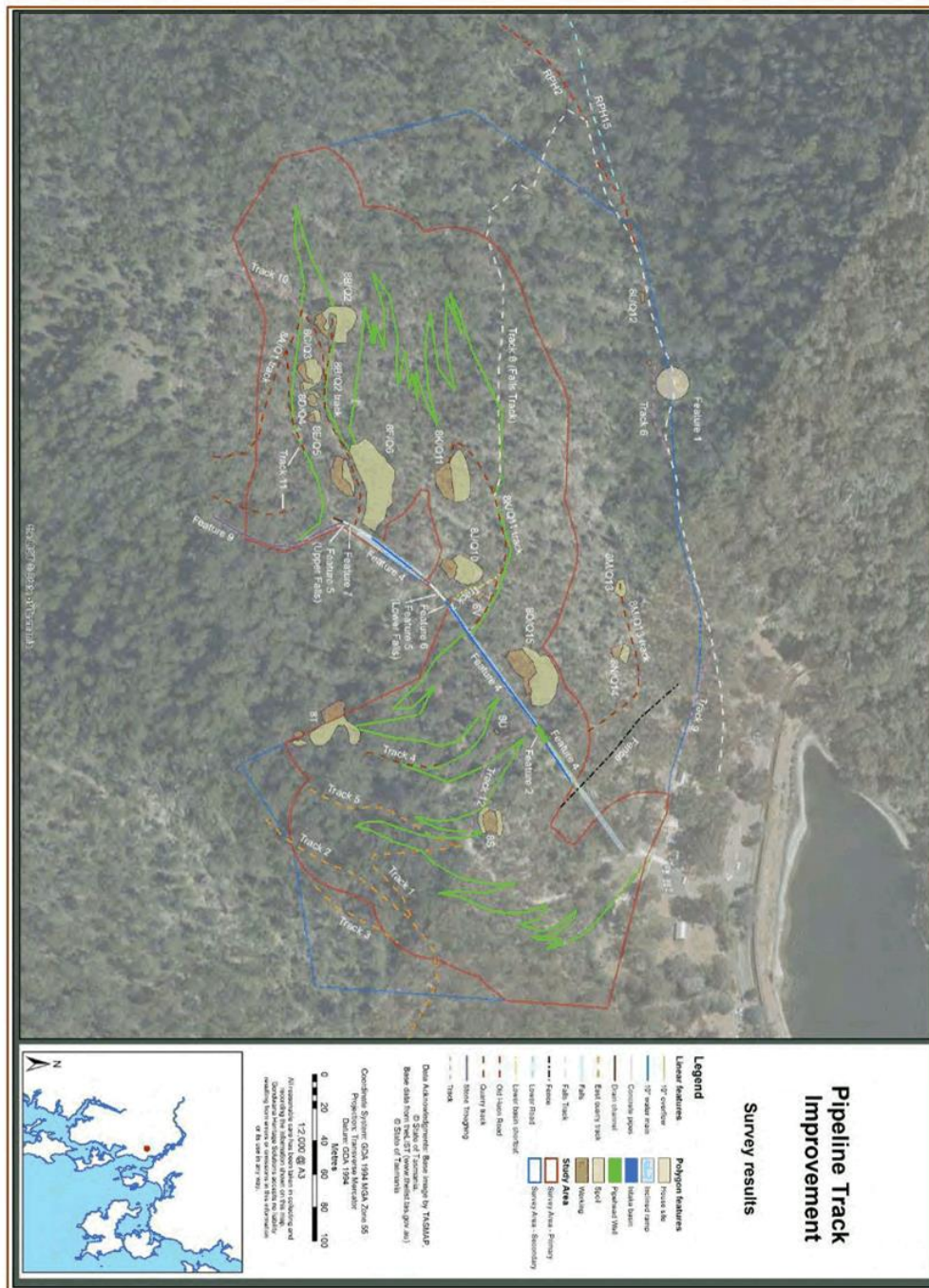


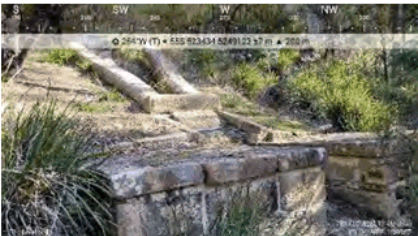


Figure 5.1: Survey results

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Table 5.1: Previously recorded features revised descriptions and reviewed significance thresholds

| Feature | Description | Significance | Images |
|--|--|--|---|
| Feature 1 Parlour/ Parlow's house site | No evidence of an occupation site was observed at the possible locations identified by Hartzell (1993) and McConnell <i>et al</i> (1998). Based on terrain factors, the most likely location is at the intersection of the Falls Track and the walking track crossing Sandy Bay Rivulet. Two introduced trees were present at this junction which has been historically cleared, but neither of sufficient age to be related to the Parlour//Parlow occupancy. The previously reported possible collapsed chimney and artefact scatter were not sighted. A log seat with stone flagged approach has been built at the tracks' intersection. | Medium-Low (Regional) Medium-High (Local) (McConnell <i>et al</i> 1998, Vol 1: Table 2A) Unlikely to meet thresholds for State or Local listing based on exclusion factors XA1, XA2, XA3, XC1 and XC3. |  Clearing at intersection of Old Huon Road and Sandy Bay Rivulet crossing track, possible site of former Parlour//Parlow house. |
| Feature 2 Pipe Head Well | The Pipe Head Well is an interception device installed on the 1860s troughing in 1883 to divert water into a 10" steel pipeline bypassing the receiving House. Built from squared dress sandstone blocks with stepped and curved training walls topped with rock faced capstones with pitched margins. Low flows are directed through or over a ported baffle into a grated pit containing the outlet pipe/s. High flows formerly continued into the stone lined trough to the Receiving House for settling. The original design has been modified by the addition of raised flat-topped masonry platforms at the downstream end. Each contains an aperture which probably connect to valves for the 10" main and 4" fountain pipes below. More recent timber picket fencing and a steel viewing platform have been erected at the upslope end of the well. The viewing platform is assessed as having an intrusive impact on heritage values (Murray & Nieberler 1994: 19) | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) Covered by and referred to within current THR listing. |  Pipe Head Well pipe intake  Masonry platforms added at the downstream end of the main overflow |


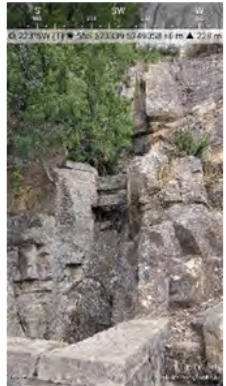

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| <p>Feature 3 Sandstone troughing between the Falls and Receiving House</p> | <p>Relict stone troughing expresses between the upper falls and Pipe Head Well, although many of the caps between the upper and lower basins have been reordered to form rough stone steps for pedestrian access. The troughing between the Pipe Head Well and Receiving House is largely indistinct and appears to have been broken up, but the alignment can be followed along a 3m wide x 0.5m high inclined earth ramp that formerly connected the lower basin and Receiving House and has been recently fenced off and rehabilitated.</p> | <p>5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) Covered by and referred to within current THR listing. t.</p> |  <p>Stone capped channel carved into outcrop, top of lower falls</p> <p>Stone troughing with later 10" main between upper and Lower falls</p> |
| <p>Feature 4 Cast iron pipes between Gentle Annie Falls and Receiving House</p> | <p>10" cast iron water mains have been installed variously within and beside the original stone troughing between the upper basin and Receiving House. At least one 9' section of iron main below the upper basin has been replaced with shorter-length concrete pipes, and much of the remaining iron piping to the lower falls appears to run within the stone troughing. From the lower falls to the Pipe Head Well the steel pipeline runs along the south side of the inclined formation beside the former trough, re-entering it near the well-head. Below the Pipe Head Well the 10" water main is periodically exposed in a ditch running along the south side of the inclined formation, while the 10" overflow pipe runs down the centre of the incline and appears to</p> | <p>2 - Slight heritage value (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) Covered by and referred to within current THR listing. Potentially eligible under HCHA inclusion factors A4, C5 in their own right</p> |  |




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| | overprint the troughing, broken fragments of which have been dumped along the side of the incline. | | <p>Overflow pipe (centre of image) and water main (exposed in ditch along right hand side).</p>  <p>Concrete pipes and displaced section of 10" main below upper basin</p> |
| Feature 5 Gentle Annie Falls (includes chutes carved in stone) | <p>The falls comprise narrow squared channels cut into the north faces of two natural sandstone ledges approximately 75m apart. The upper falls are approximately 5m high and the lower falls approximately 15m.</p> <p>A series of laid and cut stone steps with tube steel handrails ascend the western face of both falls, and steel handrails have been erected around the upper ledges to form viewing areas. The main flow over the upper ledge from the Pipeline Track stone troughing is augmented by natural drainage delivered via a narrow cut in the rock.</p> <p>There is abundant carved graffiti at the upper falls viewing area.</p> | <p>5 - High cultural/scientific significance (Murray & Nieberler 1994)</p> <p>High/State (McConnell <i>et al</i> 1998)</p> <p>Covered by and referred to within current THR listing.</p> |  <p>Lower falls rock cut looking up from catchment basin</p>  <p>Upper falls rock cut looking up from catchment basin</p> |




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| Feature 6 Lower catchment basin | <p>Comprises a slot cut in the base of the sandstone outcrop at the base of the water channel, 1.5m maximum width tapering to 0.55m at the channel and 3.2m from front to back. The north edge of the cut is framed with two courses of dressed sandstone blocks, 0.83m high and 2.42m external width, forming a well collar. The north face is of the collar is braced by a horizontal flat bar pinned into the sandstone outcrop. At the base of the well is a 1.5m x 1.3m intake structure comprising a baffled chamber fed by a 500mm x 25mm slot in the southern side with a 600mm x 500mm grated aperture in the top for overflow.</p> <p>There is a simple trashrack consisting of two horizontal sandstone bars mortared into slots on a ledge spanning the water channel approximately 2m above the basin.</p> | <p>5 - High cultural/scientific significance (Murray & Nieberler 1994)</p> <p>High/State (McConnell <i>et al</i> 1998)</p> <p>Covered by and referred to within current THR listing.</p> |  <p style="text-align: center;">Lower catchment basin and intake</p> |
| Feature 7 Upper catchment basin | <p>The upper basin comprises a section of the lower water channel that has been widened 1.5m from the back of the cut into an oval-shaped bowl 95cm wide x 90cm deep diverting water into a section of stone-lined trough 45cm wide x 60cm deep. A 20" C. welded steel grate has been fitted to the intake. A 10" concrete pipe has been laid in the trough 1.2m from the intake and continuing beneath a low drystone wall and continuing downhill towards the lower falls (Refer Feature 4).</p> | <p>5 - High cultural/scientific significance (Murray & Nieberler 1994)</p> <p>High/State (McConnell <i>et al</i> 1998)</p> <p>Covered by and referred to within current THR listing.</p> |  <p style="text-align: center;">Upper catchment basin and pipe intake</p> |
| Feature 8B (Q2) | <p>Moderate sized quarry 12m wide x 10m deep with 4m maximum face height. The uppermost units comprise laminated sandstone and with lowermost 1.5m being more massively bedded. The main face has a saw-toothed profile reflecting the two main joint sets (210-230 @ 78° dip to southeast and 130-140 @ 75-80° dip to east). No drill holes were observed and it appears that the face has primarily been worked by leveraging the joints. There is a narrow (2-4m wide) working floor backed by mounds of stacked rubble which are bounded on the north side by the access track which widens to form a turning area. A large spoil heap extends for 12m downslope below the track.</p> | <p>5 - High cultural/scientific significance (Murray & Nieberler 1994)</p> <p>High/State (McConnell <i>et al</i> 1998)</p> <p>The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under C5.</p> |  <p style="text-align: center;">View south to jointed main face</p> |




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| | | |  <p>Spoil heap downslope of pit</p> |
| Feature 8C (Q3) | <p>Elongate pit 12m long x 4m wide x 3m maximum height, the topmost 1m being regolith. The exposed stone features 30-40cm bed joints with subordinate vertical jointing resulting in irregular blocks that are suitable for caps and bases but not cheek stones. A large spoil spur extends downslope on the north side, that would account for most of the excavated volume, indicating low production</p> <p>A separate 1m high ledge of sandstone is situated above the pit extending towards Q3 and bearing evidence of hand drilling.</p> | <p>5 - High cultural/scientific significance (Murray & Nieberler 1994)</p> <p>High/State (McConnell <i>et al</i> 1998)</p> <p>The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under C5.</p> |  <p>View southwest from mouth of pit to rear</p>  <p>Drill hole in sandstone ledge between Q3 and Q4</p> |

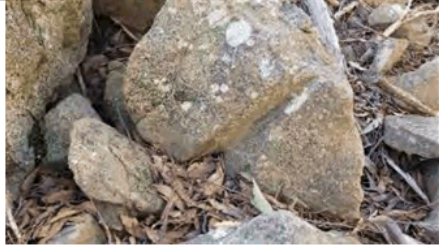


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| Feature 8D (Q4) | <p>Small pit excavated into hill face, 5m wide at mouth, 3.5m deep with 2.5m high back wall comprising 1.5m high ledge and 1m overburden. Spoil extends along both side of the pit and downslope to the track to Q2. A small amount of production is indicated.</p> | <p>5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under C5.</p> |  <p>View southwest from mouth of pit to ledge</p> |
| Feature 8E (Q5) | <p>Small test pit on a low sandstone outcrop on the top side of the track to Q2. The topmost 1m of overburden is heavily weathered/rotted with the lower 1.5m of harder stone being heavily jointed and breaking into small irregular blocks. Unsuitable for dimension stone. The small working measures 3.3m wide at the mouth x 5m deep with a maximum face height of 2.5m. Spoil extends around both sides and downslope of the pit. No evidence of production</p> | <p>5 – High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under C5.</p> |  <p>View south from mouth to rear of pit</p> |
| Feature 8F (Q6) | <p>Large quarry with near vertical faces up to 7m high on a saw-tooth configuration reflecting sub-vertical primary jointing. Fairly massive stone with little discernible bedding structure. Has been worked by blasting and splitting debris on quarry floor. The working floor is up to 6m wide littered with irregular blocky debris and bordered by a large spoil heap that extends c. 20m down the hill face. Several drill holes are visible in the faces and occasionally seen on floor debris. There is relict graffiti in tar-based black paint and brown paint at the east and west sides of the workings.</p> | <p>5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Partly contained within current THR listed area with area outside eligible for THR listing under C5.</p> |  <p>View west from mouth of quarry</p> |


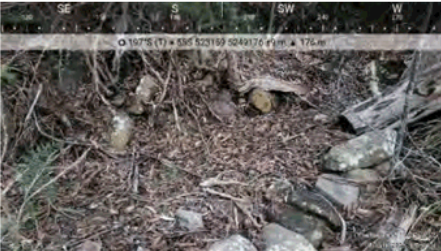

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| | | |  <p>Blocky spoil with evidence of drilling</p> |
| Feature 8J (Q10) | <p>Sandstone quarry situated immediately west of the lower catchment basin. The pit is 10m wide x 12m deep x 8m high with relatively vertical faces. Two drill holes were recorded in 1988. A large spoil heap extends 15m downslope and a 2m wide benched access track runs below the toe of the spoil heap to connect with Quarry 8H.</p> | <p>5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Contained within current THR listed area.</p> |  <p>Working face from spoil heap</p> |
| Feature 8K (Q11) | <p>Irregular worked sandstone outcrop, 24m long x 10m x c. 4m high. Principally worked on two levels with opportunistic removals on a third. Contains evidence of working by wedging bed joints within more massive sandstone units. A steel wedge was found on the spoil heap at the east corner of the working. A large spoil heap measuring 30m east-west x 10m north-south extends downslope.</p> | <p>5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under C4, C5.</p> |  <p>Irregular face with blocks split from three levels.</p> |




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| | | |  <p>Evidence of wedging bed joints</p> |
| Feature 8L (Q12) | Small pit on the topside of Old Huon Road, 6m x 4m deep x 1.2m max height with low perimeter benching. A row of sandstone rubble has been deposited along the northern edge of the pit parallel with the track. Possible borrow pit for road furniture rather than associated with water conveyance. | <p>5 - High cultural/scientific significance (Murray & Nieberler 1994)</p> <p>High/State (McConnell <i>et al</i> 1998)</p> <p>Unlikely to meet thresholds for State or Local listing based on exclusion factors XA1, XA2, XD1 and XD3.</p> |  <p>Roadside borrow pit with later rubble alignment</p> |
| Feature 8M (Q13) | Small working approximately 4m wide x 3m deep x 2.5m high on north face of natural sandstone outcrop, accessed via a 3m benched track. The irregular working face is defined by horizontal and sub-vertical jointing resulting in a stepped appearance. One drill hole is visible. Spoil extends for 6m downslope of the working. | <p>5 - High cultural/scientific significance (Murray & Nieberler 1994)</p> <p>High/State (McConnell <i>et al</i> 1998)</p> <p>The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under C4, C5.</p> |  <p>View south from track to worked face</p> |


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| | | |  <p>Top portion of drill hole in main face</p> |
| Feature 8N (Q14) | <p>Small working approximately 9m wide x max. 6m deep x 3m high on north face of natural sandstone outcrop, above and accessed via a 3m benched track. The irregular working face is defined by horizontal and sub-vertical jointing. Spoil extends for 5m downslope to the access track.</p> | <p>5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Mostly outside current THR listed area and HIPS Heritage Place but potentially eligible for THR listing under C4, C5.</p> |  <p>View southeast to main worked face</p> |
| Feature 8O (Q15) | <p>Elongate pit 20m long x <10m wide and <3m high sunk into the moderately sloping hill face with no surface outcrop. The southeast and southwest sidewalls slope in exposing heavily weathered stone in the lower portion. Hard-rock working is evident on an 8m face in the northwest corner. The pit is accessed by a narrow channel/drain at the southeast corner. An overburden dump runs around the north-west side of the pit while the main spoil heap extends for 18m on the northeast side.</p> | <p>5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Contained within current THR listed area.</p> |  <p>View south from northwest corner</p> |

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| Pick marks on northwest face | | | |

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Table 5.2: Additional historic heritage feature descriptions and significance thresholds

| Feature | Description | Significance | Images |
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| Feature 8S (Q16) | Small excavation 10m wide x 9m deep with 2m high rear face, situated immediately north of the intersection between the Pipe Head Well track and fire trail. The hard rock working is small and mainly confined to the north side, much of the removal appears to be overburden/waste rock. Spoil heaps curve around the north and south side of the pit, with evidence of dry stacking (Welsh walling) in the northern heap. There is no evidence of a formal track access track and the pit may have only been a test pit with little actual production. | Not previously assessed. Contains evidence of contemporary spoil management techniques including Welsh walling. McConnell <i>et al</i> (1998) consider that the Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5. |  <p style="text-align: center;">View west from mouth of pit</p>  <p style="text-align: center;">Dry-stacked rubble in north spoil heap</p> |
| Feature 8T (Q17) | Small sandstone quarry and test pit. The larger, northern, pit measures 17m long x 8m wide with faces up to 6m high, cut into the west side of the gully, approximately 100m south of the falls pipeline. Spoil spurs extend from the north and south ends either side of a lower central access area. The remains of a 3m wide benched access track can be traced for 50m from the northern spoil heap. A small excavation with separate spoil heap is situated c. 15m south of the main working. | Not previously assessed. Contains evidence of contemporary spoil management techniques. McConnell <i>et al</i> (1998) consider that the Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5. |  <p style="text-align: center;">Main working southern spoil heap</p> |




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| Feature 8U (Q18) | <p>Small rectangular pit measuring 3.7m long x 2.7m wide x 1.5m deep 4m above the track leading from the fire trail to the Pipe Head Well. Likely test pit.</p> | <p>Not previously assessed.</p> <p>Likely expedient prospecting feature with low intrinsic value but some contributory significance.</p> <p>McConnell <i>et al</i> (1998) consider that the Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Contained within current THR listed area.</p> |  <p>Small pit beside Pipe Head Well access track</p> |
| Feature 8V (Q19) | <p>Small borrow pit 5m x 5, with <1m high face beside the main fire trail. A rough stone-edged shortcut track runs from the Gentle Annie Falls Track between quarry 8J and the borrow pit leading to the lower intake basin. Likely associated with fire train construction/maintenance.</p> | <p>Not previously assessed.</p> <p>Expedient feature likely associated with Fire Trail maintenance. Contained within THR listed area but unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2, XD3 and XD4.</p> |  <p>Borrow pit beside fire trail below 8J</p> |
| RPH2 | <p>Benched track 3-4m wide with topside cutting up to 1m high running 45-60m upslope of Sandy Bay Rivulet. Traced for 500m from the west end of Upper Reservoir, the easternmost 300m has been overprinted and upgraded as part of the Falls Track. The original formation continues west of the point where the Falls Track turns southeast upslope and as a short (c. 20m) section between the Lower Track (RPH15) and new Falls Track section.</p> | <p>High/State (McConnell <i>et al</i> 1998, Vol 1: Table 2A)</p> <p>Outside current THR listed area but eligible (as Old Huon Road) for THR listing under HCHA inclusion factors A2 and D3.</p> |  <p>View southwest along track west of Falls Track junction.</p> |



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| RPH15 | 2.5m wide benched track taking off from RPH2 c. 365m west of Upper Reservoir. Function unknown, but McConnell <i>et al</i> (1998) suggest it may be part of the Old Huon Road. This alignment was not followed beyond the current study area but can be traced using LiDAR imagery for c. 200m southwest of the northern junction and c. 250m northeast of the southern junction near the Limekiln Track. There are suggestions that another branch may cross over Sandy Bay Rivulet to join a series of contour tracks on the north side of the rivulet running parallel to Turnip Fields Road. As such the northern segment of RP15 may have been a short cut between the original Huon Road and the Turnip Fields area. | Assessed in 1998 as High/State (McConnell <i>et al</i> 1998, Vol 1: Table 2A) on the basis of it being a possible early or late alignment of Old Huon Road. If only a local track it is unlikely to meet thresholds for State or Local listing based on HCHA exlusion factors XA1, XA2, XD3 and XD4 |  View southwest along track west of Falls Track junction. |
| Track 1 | Lower 3m wide benched track that takes off from Track 2 on the east side of Regans Gully to cross the creek and turn north upslope towards the east end of the Pipe Head Well Track (Track 12). Likely associated with the east gully quarries (not assessed) and possibly a lower switch/shortcut for communicating with the Pipe Head Well. | Not previously assessed. Outside the THR and HIPS Heritage Place boundaries. Has potential contributory significance relating to the construction and maintenance of the mountainwater supply system, but without further research is unlikely to meet thresholds for State or Local listing based on HCHA exlusion factors XA1, XA2, XC1, XD3 and XD4. |  View south along Track 1, west side Regans Gully. |
| Track 2 | 4m wide contour track running c. 15m east of Regans Gully. Likely associated with the east gully quarries (not assessed and possibly connected to Track 5 on the west bank although a creek crossing was not able to be detected. Possibly a longer and less steep route between the east gully quarries and Pipe Head Well. | Not previously assessed. Outside the THR and HIPS Heritage Place boundaries. Has potential contributory significance relating to the construction and maintenance of the mountainwater supply system, but without further research is unlikely to meet thresholds for State or Local listing based on HCHA exlusion factors XA1, XA2, XC1, XD3 and XD4. |  View south along Track 2, east side Regans Gully. |



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| Track 3 | Short section of benched track, 4m wide and c. 60m long, upslope of and parallel to Track 2. The east and west continuations were not traced. Likely associated with the east gully quarries (not assessed). | <p>Not previously assessed.</p> <p>Outside the THR and HIPS Heritage Place boundaries. Has potential contributory significance relating to the construction and maintenance of the mountainwater supply system, but without further research is unlikely to meet thresholds for State or Local listing based on HCHA exlusion factors XA1, XA2, XC1, XD3 and XD4.</p> |  <p>View south along Track 3 (image compass incorrect)</p> |
| Track 4 | Short section of indistinct slightly benched linear formation up to 3m wide heading north between Quarry QT and the Falls fire trail. Possible quarry track. | <p>Not previously assessed.</p> <p>High cultural/scientific significance (Murray & Nieberler 1994)</p> <p>High/State (McConnell <i>et al</i> 1998)</p> <p>The Gentle Annie Falls quarries and associated infrastructure contribute to the State-level significance of the mountain water supply system. Largely outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5.</p> | No image |
| Track 5 | 3m wide benched track formation heading north from Reagan's Gully to join Track 1 immediately south of the Falls Fire Trail and opposite the east end of the Pipe Head Well track. Possibly a continuation of Track 2. | <p>Not previously assessed.</p> <p>Outside the THR and HIPS Heritage Place boundaries. Has potential contributory significance relating to the construction and maintenance of the mountainwater supply system, but without further research is unlikely to meet thresholds for State or Local listing based on HCHA exlusion factors XA1, XA2, XC1, XD3 and XD4.</p> |  <p>View north along track towards Fire Trail</p> |


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| Track 6 | <p>A 40m long trenched track formation with a small pit, 4m x 3m x 1m high, at the west end, running 12m upslope of the main Falls Track immediately upslope of the purported location of Feature 1. The track joins the Falls Track at the east end but does not appear to connect at the west end. This is likely to be the track reported by McConnell <i>et al</i> (1998) as part of Feature 1.</p> | <p>Possibly associated with Feature 1 which has been assessed as having the following significance.</p> <p>Medium-Low (Regional) Medium-High (Local)</p> <p>(McConnell <i>et al</i> 1998, Vol 1: Table 2A)</p> <p>Unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2, XA3, XC1 and XC3</p> |  <p>View southwest along track towards pit</p> |
| Track 7 | <p>30m long narrow benched track edged with stone or formed as low steps connecting the Falls Track and lower catchment basin (Feature 6). 20th C feature.</p> | <p>Not previously assessed.</p> <p>Low intrinsic value but some contributory significance relating to the history of recreation in the Park. Unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2 and XD4</p> |  <p>View east along shortcut track to Feature 6</p> |
| Track 8 | <p>Falls Track. A downhill 2m wide walking track with stone steps and switchbacks on steeper sections continuing west from 8K/Q11 track to join RPH2/Old Huon Road c. 400m west of Upper Reservoir. The falls Track overprints RPH2 for 25m east of the junction before diverting upslope away from RPH2 for c. 50m before joining it again and overprinting it for the final 300m to Upper Reservoir.</p> | <p>Not previously assessed.</p> <p>Low intrinsic value but minor contributory significance relating to the history of recreation in the Park. Unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2 and XD4</p> |  <p>View along Falls Track west of 8K/Q11 junction</p> |




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| Track 9 | Broad 4m wide levelled formation taking off south from the Falls Track south of Upper Reservoir to head towards the BBQ shelter where it becomes indistinct. Function unknown, possible reserve management feature. | Not previously assessed. May have some contributory significance relating to the history of recreation in the Park. Unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2 and XD4 |  View west along Track 9 towards Falls Track/RPH2 |
| Track 10 | Short (c. 50m) section of track heading south upslope from the 8A/Q1 track to a transmission tower set on a drystone rubble pad. Possibly associated with Electrona transline construction. | Not previously assessed. Does not contribute to the heritage values of the mountain water supply system. Low intrinsic significance and unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2 and XD4 | No image |
| Track 11 | 3m benched formation heading east from the 8A/Q1 track to the south of 8F/Q6. Appears to turn south on east side of sandstone bluff to run parallel to the Pipeline Track. Possibly Hawkes Track. | High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries and associated infrastructure contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5. | No image |
| Track 12 | 3m -wide benched level formation running for 90m from the Fire Trail to the top of the Pipe Head Well. Appears to be an early track, possibly continuous with Track 5, that has been overprinted for access to the current viewing platform. | High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Pipe Head Well and associated infrastructure contribute to the State-level significance of the mountain water supply system. Partly outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5. |  View west along track from Fire Trail |

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| 8A (Q1) Track | 3m wide benched formation taking off from the 8B/Q2 track in a south-westerly direction before switching back to head upslope towards quarry 8A/Q 1(not assessed). | <p>High cultural/scientific significance (Murray & Nieberler 1994)</p> <p>High/State (McConnell <i>et al</i> 1998)</p> <p>The Gentle Annie Falls quarries and associated infrastructure contribute to the State-level significance of the mountain water supply system. Partly outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5.</p> |  <p>Junction between 8A/*1 track and 8B/Q2 track</p> |
| 8B (Q2) Track | 3m wide benched formation running west from the upper basin in front of the 8F/Q6 workings to terminate at a turning area at 8B/Q2. | <p>High cultural/scientific significance (Murray & Nieberler 1994)</p> <p>High/State (McConnell <i>et al</i> 1998)</p> <p>The Gentle Annie Falls quarries and associated infrastructure contribute to the State-level significance of the mountain water supply system. Largely outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5.</p> |  <p>View west along quarry access track</p> |
| 8K (Q11) Track | 3m wide benched formation running from the pipeline incline below the lower intake to quarry 8K/Q11, passing below the 8I/Q10 spoil heap. The easternmost 90m of the track has been overprinted/re-used as part of the Falls Fire Trail/Falls Track. | <p>High cultural/scientific significance (Murray & Nieberler 1994)</p> <p>High/State (McConnell <i>et al</i> 1998)</p> <p>The Gentle Annie Falls quarries and associated infrastructure contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5.</p> |  <p>View southwest along quarry access track</p> |

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| 8M (Q13) Track | Section of track west of the Pipe Head Well connecting to quarries 8N/Q145 and 8M/Q13. The connection through to the Pipe Head Well/pipeline incline was not able to be traced | High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries and associated infrastructure contribute to the State-level significance of the mountain water supply system. Partly contained within THR and HIPS Heritage Place boundaries. External section potentially eligible under HCHA inclusion factors C4, C5. | <p>View west along quarry access track.</p> |
|-------------------|--|---|---|

6. Assessing cultural significance

The historic heritage values of the Hobart Mountain Water Supply System are the subject of several previous and detailed assessments including Murray and Nieberler (1994), McConnell *et al* (1998) and North (Futurepast 2012). Even before the latter assessments, Murray & Nieberler (1994: 9) considered that the Pipeline Track was '*one of the more thoroughly researched major public works places in Australia*'. It is the not purpose of the current study to critique previous significance assessments, merely to bring forward the pertinent understandings and to interpolate from agreed frameworks relative values for previously unidentified features discussed in this report.

Previous researchers have used different frameworks for articulating the cumulative heritage values for the scheme and for ranking the contributions of individual features. Being done prior to the advent of the Tasmanian *Historic Cultural Heritage Act* (HCHA 1995), Murray & Nieberler (1994: 8-25) utilised the ICOMOS Australia *Burra Charter* frameworks of aesthetic, scientific, historic and social values (Australia ICOMOS 2013) for assessing the cumulative significance of the scheme and created a bespoke ordinal ranking system for individual components based on the following scale:

5 & 4 high cultural and/scientific significance. These places are of considerable importance and the Council should exert every effort to ensure that they are well-maintained and do not have their heritage value diminished by inappropriate maintenance or presentation to the public.

3 moderate level of significance. Refers to sites which gain their moderate level of significance by virtue of their context in the Pipeline Track. They may be uncommon on the track but cannot be classed as excellent examples of their type or unique in their construction or treatment.

2 & 1 slight heritage value. Refers to sites which have only low heritage value in that they are common on the Pipeline Track and gain what significance they have as part of the system.

- not relevant or not assessed

Int intrusive elements

Neg impairs heritage values

They consider that the Gentle Annie Falls elements of the water supply system have scientific significance as '*eloquent statements of developing and adapting technologies to a clearly defined end*'...and together with the extensive network of troughing, dams and intakes '*comprise a slice through Tasmania's engineering history and allow us to reflect on the development of colonial technology.*' (Murray & Nieberler (1994: 8). They are also argued to demonstrate social value by virtue of the oft depicted vistas between the falls and Receiving House (Murray & Nieberler (1994: 9). Murray & Nieberler's significance rankings for individual features are listed in Table 4.2 and Table 5.1.

McConnell *et al* (1998) refer to the four standard Burra Charter criteria listed above, and add additional non-Charter criteria of 'technological, interpretive or educational value, rarity and representatives', while also referring to HCHA criteria a -g. No statements against the expanded Burra Charter criteria are provided however, and references to HCHA criteria are essentially a

reiteration of a 1998 THR nomination by Mike Grant that considered the system met five of the seven HCHA criteria (a, b, d, e & f). McConnell *et al* use a geographic filter of 'international, national, state, regional and local' qualified by terms 'High, Medium and Low' for ranking the significance of individual features. Within this scheme 'regional' is defined as 'the Greater Hobart area' while local indicates a 'suburb or similar sized area'. Definitions of High, Medium and Low are not provided. McConnell *et al*'s significance rankings for individual features are listed in Table 4.2 and Table 5.1.

The 2012 Conservation Management Plan (CMP) for the Hobart Mountain Water Supply System (Futurepast 2012) assesses the heritage values of the scheme using only HCHA criteria (a-g) and does not utilise any relative ranking scale for individual features. Within this assessment, Gentle Annie Falls and associated infrastructure specifically meet HCHA criteria b, c and e, according to the following statements:

- b) Several aspects of the Hobart Mountain Water Supply System are uncommon at a national level, and the system in its entirety is unique in Australia for its intactness. In particular, Gentle Annie Falls - which was created to direct water down a slot cut in a rock face - is a rare type of man-made waterfall.
- c) Further research into ancillary features such as the quarries used in the construction of the system will provide greater insight into the building of the system.
- e) The Hobart Mountain Water Supply System demonstrates an ongoing capacity for engineering to supply the growing city of Hobart in the face of difficult terrain. This is demonstrated in particular by the slots cut into the cliff face at Gentle Annie Falls.

These statements, and those against HCHA criteria a, d, f & g as well as the synthetic non-statutory Statement of Significance were subsequently incorporated into the updated THR listing for the water supply system (refer Table 4.1) and provide a formal and agreed basis for understanding and managing the broader historic heritage values of the place. The absence of a relative ranking scale is problematic given the inevitability of new discoveries and need to prioritise management effort in conserving diverse features into the future.

Additional guidance on applying HCHA criteria as well as indicative thresholds for determining State and Local scale importance are provided in Heritage Tasmania's *Assessing Historic Heritage Significance* (HT 2021). These guidelines reflect the HERCON national heritage model criteria agreed states and territories through the Environment Protection and Heritage Council in 1998 which recognises four levels of heritage listing/protection in Australia: International, National, State/Territory and Local (AHC 2009). There is no recognition of regional significance under the HERCON model. Several jurisdictions, including Queensland, Victoria and Tasmania, further articulate their HERCON criteria with significance indicators to provide a more robust basis for comparative assessment and include exclusion factors for disqualifying doubtful or inferior nominations. These inclusion and exclusion factors also include thresholds for assessing places for listing on planning scheme heritage schedules. State and Local listing factors defined in *Assessing Historic Heritage Significance* that are relevant to the current assessment are included in Table 5.1 and Table 5.2. The source document should be referred to for the full list and definitions.

7. Planning context

Historic heritage values in Tasmania are subject to a raft of controls and expectations that operate at a range of statutory and non-statutory scales. These are discussed briefly below.

7.1 Statutory requirements

7.1.1 Environment and Biodiversity Conservation Act 1999 (EPBCA)

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* establishes the National Heritage List (NHL) which includes natural, Indigenous and historic places that are of outstanding heritage value to the nation. The EPBCA is administered by the Commonwealth Government's Department of the Environment (DOE). Under the Act there are penalties for anyone who takes an action that has or will have a significant impact on the Indigenous heritage values of a place that is recognised in the NHL. Any action that has, will have or is likely to have a significant impact on National Heritage values must be referred to the Federal Environment Minister for a decision about whether the action should be a controlled action or not (DEWHA 2010). A controlled action is one that requires formal approval under the Act.

The current study area does not contain any places listed on the NHL, consequently the provisions of the EPBCA do not apply to this assessment.

7.1.2 Historic Cultural Heritage Act 1995 (HCHA)

Places on the Tasmanian Heritage Register are protected by the provisions of the *Historic Cultural Heritage Act 1995* (HCHA). Under the HCHA it is illegal to undertake works within the boundary of a listed place without heritage approval in the form of a Planning Permit or Certificate of Exemption.

Works are defined under the HCH Act as including:

- (a) any development; and
- (b) any physical intervention, excavation or action which may result in a change to the nature or appearance of the fabric of a place; and
- (c) any change to the natural or existing condition or topography of land; and
- (e) any removal of vegetation or topsoil;

Works that are eligible for a Certificate of Exemption are outlined in Heritage Tasmania's *Works Guidelines for Historic Heritage Places* (Tasmanian Heritage Council 2015).

The current THR listing incorporates Waterworks Park and a 30-40m wide corridor centred on the historic water conveyance. It includes several of the closer quarries and tracks. Works in within the THR listed area will require statutory approval, the form of which will depend on the level of impact to heritage values as outlined in the *Works Guidelines*.

7.1.3 Hobart Interim Planning Scheme 2015 (HIPS)

At the local level, rudimentary provisions for protecting and conserving Aboriginal heritage are contained within local government planning schemes in accordance with Part 2 of Schedule 1 of the *Land Use Planning and Approvals Act 1993* (LUPA Act), which has as objective (g) *to conserve*

those buildings, areas or other places which are of scientific, aesthetic, architectural or historical interest, or otherwise of special cultural value. The current study area is subject to the *Hobart Interim Planning Scheme 2015 (HIPS)*.

The Historic Heritage Code (E13.0) of the HIPS contains provisions for recognising and protecting the historic cultural heritage significance of places, precincts, cultural landscapes, areas of archaeological potential and significant trees by regulating development that may impact on their values, features and characteristics.

Heritage places are delineated by title boundaries. Heritage Precincts are agglomerations of contiguous Heritage Places and delineated as a Planning Scheme Overlay. Cultural Landscape Precincts are also defined as Planning Scheme Overlays but are not based on property boundaries.

The Significant Trees Code (E24.0) of the HIPS contains provisions to recognise and protect trees considered to be significant for reasons including aesthetics, size, age, species, cultural value or contribution to the streetscape, townscape or public amenity. The Significant Trees Code relates to individual specimens/groups of trees and is not based on cadastral boundaries.

Several features discussed in this report fall within the boundaries of Waterworks Park (ID 3202) listed in Table E13.1 (Heritage Places) although none are currently impacted by the proposed path development. Notwithstanding, unless exempted, works within the boundary of the scheduled area will require planning approval.

7.2 Non-statutory considerations

7.2.1 Register of the National Estate (RNE)

The RNE was established under the predecessor legislation to the EPBCA, the *Australian Heritage Commission Act 1975 (AHCA)*, to comprise elements of Australia's natural or cultural environment that have aesthetic, historic, scientific, social or other special value for present and future generations. RNE listing provided protection from actions by the Commonwealth Government but not State governments or other groups/individuals and was closed to new entries in 2007 and became a non-statutory heritage information database in February 2012. As a publically accessible source of information about places which previously have been considered as important to individuals and communities for heritage values, it is a useful indicator of places that may attract third party nominations or appeals under other legislation.

The RNE entry for the Wellington Range Area, which encompasses Ridgeway Park, does not document or assess historic heritage values and provides no practical guidance for the current assessment. Listing on the RNE does not confer any formal protection or approval requirement.

7.2.2 Conservation and Management Plan for the Pipeline Track 1994 (Murray & Nieberler 1994)

The 1994 CMP assesses the values of and makes general recommendations for managing elements of the Gentle Annie Falls component of the water supply system. Specific drivers include:

- Protect significant elements of the site but make them accessible through controlled visitor access

- Enhance the significance of the pipeline Track through controlled planning and development
- Elements rated intrusive or negative should be removed or replaced with elements of compatible design and/or material.

Overarching principles for capital works and presentation/interpretation include:

- No works proposed shall appear to be more dominant than the pipeline Track and its features and sites themselves. Here important criteria are size, bulk and appearance.
- New works should be designed and carried out with minimal disturbance to the site and environment. New structures and facilities need to be special and creative in design and construction. They must respect the special qualities of the environment.
- New structures should be obviously new and distinctly contemporary and utilitarian in design and construction, faking of architectural styles will destroy the special qualities of the pipeline Track
- The quality of workmanship of new structures should be at least equal to the workmanship of the original historic structures
- Visitor access is to be encouraged under the motto “Look but don’t touch”.
- New facilities and structures should not in any way negatively impact on the significance of structures and elements of the Pipeline Track.
- Interpretation shall adequately describe the significance of the Pipeline Track. Themes focussing on history, engineering achievements and natural environment should be developed...
- Sign posting and interpretation structures should be combined wherever possible to limit the amount of posts and structures along the track
- A team of professionals should be engaged to develop a detailed strategy for the interpretation and sign posting of the Pipeline Track. This is to include design and construction details.

In addition to the general management principles and recommendations, The 1994 CMP makes several recommendations that are of particular relevance to the current assessment. These include

- Provide a safe relocated walking track between the Receiving House and the top of Gentle Annie Falls, no steeper than 1:7, that maximises the experience of natural and cultural assets.
 - Site and construct new track & steps; provide viewing areas; revegetate track [Fire Trail]
- Improve drainage between the receiving House and the top of Gentle Annie Falls in order to minimise surface run off, prevent soil erosion and protect the sandstone troughing and cast iron pipes.
 - Locate shallow spoon drains across the old track [Fire Trail] at regular intervals at 30o degrees to the slope; fill and revegetate erosion channels.

- Provide a 'Sense of Entry' at the start of the Track near the receiving House at waterworks Reserve
 - Paving, seating, interpretation and sign posting, planting, remove bitumen car park, screen toilet block
- Re-establish view corridor from the Receiving House up to Gentle Annie Falls
 - Careful removal and trimming back of existing vegetation; additional planting.
- Replace viewing platform with an appropriate structure
 - Manufacture and install

The plan also details requirements for track alignments, profiles and surfaces, recommending that alterations to the original alignments should only be considered:

- Where the walking track is too steep for safe walking and where the steepness causes erosion and drainage problems
- Where the alignment of the walking track encourages the climbing of historic structures causing wear and tear of the historic fabric.
- Relocated track sections should:
 - stay as close as possible to the original alignment of the pipeline track
 - have an interesting sequence of experiences, of spaces and types of vegetation
 - protect and enhance the natural and cultural experiences of the Pipeline Track. Minimum clearing of vegetation along the new track is anticipated, with no break in the upper canopy. Features and sites should be accessible under the motto "Look but do not touch".
 - provide safe walking conditions being no steeper than 1 in 7. If a 1 in 7 grade cannot be achieved, steps shall be grouped together in sets of three to five with appropriately sized landings in between.
 - be easily identified as a new track. The new track should be narrower than the original track and at no time appear to be more dominant than the original track. A minimum width of 1.2m for relocated track sections will allow two people to walk next to each other.
 - not obscure the original alignment. Where the alignment of the original track is hidden, the original alignment should be made clearly visible.
 - Be surfaced with a material other than gravel, in order to distinguish original from new. At this stage the preferred material for new tracks is hammermilled eucalyptus bark providing a mat forming a soft and comfortable walking surface.

7.2.3 Ridgeway Park Cultural Heritage Survey and Assessment (McConnell *et al* 1998)

The study provides a rigorous desktop assessment and survey report and provides general and targeted recommendations for managing historic heritage values within the Park. General recommendations include establishing a Mountain Water Supply Precinct to encompass Upper, lower and Ridgeway Reservoirs, water conveyances and associated sites - which is considerably

larger than the current THR listed area, and a Historic Cultural Heritage Zone extending from the Upper Reservoir to Halls Saddle and from Sandy Bay Rivulet to Regans Gully.

General principles for managing historic heritage values of the water supply system include:

- All the features and elements of the Mountain Water Supply System be considered part of a single site complex and managed as such;
- Management within the Mountain Water Supply Precinct give priority to the conservation of the Mountain Water Supply System cultural heritage

General principles for the cultural heritage zone, which is intersected by the western half of the proposed walking track, include:

- that the primary value for which the zoned area is to be managed is cultural values.
- that it is the highest priority area for works to conserve the cultural heritage (to the degree necessary to maintain cultural significance).
- that no new infrastructure or developments should be allowed within the zone.
- that the use of mechanised equipment (including vehicles) be avoided in this zone except where essential for management (and in these cases equipment should avoid sites and their margins).
- that, given its significance, the Old Huon Road should be listed on the City of Hobart planning Scheme Heritage Schedule and on the Tasmanian Heritage Register.
- that all new developments in Ridgeway Park be designed to be sympathetic to the existing cultural heritage values, and where possible retain the traditional ambience, particularly in the Waterworks reserve area.
- that the use of historic tracks and roads within Ridgeway Park be considered for use as walking tracks to extend the system of walking Tracks in Ridgeway Park and to promote this cultural heritage. Given the nature of these tracks, use should be restricted to pedestrian traffic and mechanised equipment, including for repair, should not be used on these tracks.

Targeted recommendations contained in McConnell *et al* (1998) for managing the heritage values of the features discussed in this report include:

- full documentation of system elements be conducted with the Hobart planning scheme and THR listings updated accordingly;
- establishment of a Mountain Water Supply management advisory committee representing landowning and heritage stakeholders;
- implementation of outstanding actions in the 1994 CMP;
- actions affecting the significance of the broader site complex to be referred to the THC for approval;
- regular monitoring and maintenance of Pipeline Track heritage elements;
- Consideration be given to use of the Pipeline Track as a major route linking the city to Kunanyi/Mt Wellington and development of interpretation;

- Consideration be given to opening and promoting the use of the Old Huon Road as an alternate walking track;
- Archaeological monitoring of future ground disturbing works in the vicinity of Parlour/Parlow's house.

7.2.4 Hobart Mountain Water Supply System Conservation Management Plan (Futurepast 2012)

The HMWSS CMP contains policies and outlines actions for conserving heritage associated with the historic water supply scheme and for managing change. As a general principle the CMP considers that new structures (fabric) should only be introduced where necessary to continue the function of the system, to address safety issues or *'facilitate the interpretation of the place or provide public access in a manner which does not compromise the heritage values of the system'* (Futurepast 2012: 88). The CMP provides basic design principles to ensure that new structures and infrastructure complement the rural, natural and industrial character of the water supply system and suggests a palette of suitable materials including rough-cut sandstone and bush rock, iron and undressed timber rather than modern materials and finishes.

The CMP considers that it is desirable to re-establish public access along the full length of pipeline between Waterworks Reserve and Gentle Annie Falls by creating an additional path following the original pipeline alignment that allows access to the Pipe Head Well. Where walking presents an ongoing risk to heritage fabric, particularly the sandstone troughing, paths should be diverted away from affected areas as an option of last resort (Futurepast 2012: 90-92). The CMP identifies issues and suggests possible key sites for future interpretation based on heritage significance and scenic opportunity and recommends the development of a formal Interpretation Plan based on thematic principles underpinned by audience research (Futurepast 2012: 93).

Specific conservation policies in the CMP that are relevant to the proposed relocated walking track include the following.

- **5.3 Conservation of significant fabric**
 - Historic fabric from all phases of the System is present and important, and will be recognised, conserved and protected.
 - The greatest emphasis will be on conservation of fabric which is fragile, particularly from the earlier phases of the System.
- **5.4 Promotion of the place and its values**
 - The System will be presented as a whole, integrated entity and efforts will be made to present the context of individual elements within that system and to direct visitors to other locations along the System.
 - The presentation of the System will strive for consistency in the style and quality of visitor infrastructure along its route.
- **5.6 Interpretation of history and values**
 - A common approach will be developed towards the interpretation of the System and the key messages to be presented. This interpretation is to include recognition of the multiple values and functions of the System.

- Further research into the history of the System will be encouraged and used to inform future interpretive decisions about the place.

Specific recommendations contained in the CMP with particular regard to the current proposed include:

Recommendation 4 - Introduced fabric

- 4.1 New fabric should not disrupt the essentially natural and industrial character of the System and the Track.
- 4.2 Design Guidelines should be prepared under the auspices of the MWSHWG which sets consistent design principles for new fabric for interpretation and visitation management within the System.
- 4.7 Existing infrastructure such as interpretation, chicanes and visitor infrastructure should be reviewed for consistency with the design principles and be progressively replaced where inconsistent with those principles.

Recommendation 11 – Reinstating missing historic features

- 11.4 Investigate the potential for reinstatement of water flow over Gentle Annie Falls on a permanent basis (if practical) or alternately as a temporary installation that is activated for a defined period annually.

Recommendation 12 – Site specific conservation recommendations

- Pipe Head Well
 - Reinstall track to Pipe Head Well. Investigate feasibility of reinstalling track along Pipeline Route, or establish new track at a lower grade. Interpret once access is re-established.
 - Remove steel viewing platform. One-off removal of intrusive fabric.
 - Remove picket fencing. One-off removal of intrusive fabric. If necessary, reinstall fencing in accordance with the Design Guidelines principles
 - Clear vegetation from sandstone. Remove vegetation as required. Investigate all trees within 10m for potential fall risk to feature.
- Gentle Annie Falls
 - Remove existing fencing and replace with sympathetic alternative. Reinstall fencing in accordance with the Design Guidelines principles
 - Trim the canopy selectively to retain views to the Waterworks Reserve.
 - Repair collapsed collecting basin stone work at the base of the Falls. Use appropriate techniques; to include reuse of the collapsed stone and lime mortar.
 - Investigate reinstatement of water flow over Gentle Annie falls for interpretive purposes.

Recommendation 13 – Improving access to the system

- 13.6 The feasibility of re-establishing a track along the route of the Pipeline, down from Gentle Annie Falls to the Waterworks Reserve, via the Pipe Head Well, should be investigated. If establishing a permanent track along that route is unfeasible, a new side

track should be established from the present fire trail which directs visitors to the Pipe Head Well.

Recommendation 14 – Improving interpretation and presentation

14.1 The System should be presented to the public in a consistent fashion, which acknowledges the links between the different components, emphasises the function of the System as a whole and has a consistent style and quality of interpretive, safety and visitor infrastructure along the route of the System.

14.2 Develop an overall Interpretation Plan for the System. This Plan should identify key historic themes and messages, key locations for interpretation and the audiences for different interpretive media. It should consider, in detail, both on site and off site interpretation of the System.

Design Guidelines for consolidating visitor infrastructure and signage styles for the water supply system were developed in 2013 (HCC/WPMT 2013). These provide standard designs for bridges and raised walkways/viewing decks, barriers and handrails, fences and gateways, stone steps, seating and tables, bicycle barriers and wayfinding and interpretive signage. They do not cover walking paths, changes to 'heritage' visitor infrastructure such as the existing steel handrails at the upper and lower falls, or provide advice or selection criteria for locating visitor infrastructure, beyond the inclusion of a general caveat that any stone used should '*reflect local geology factoring in availability, durability and heritage issues*'.

7.3 Industry codes and standards

In addition to the general laws and site-specific plans that shape the ways heritage is classified and assessed, it may also be relevant to consider industry standards for managing classes of heritage to arrive at a suitably calibrated management solution. In Tasmania, requirements for managing historic mine workings, quarries and water conveyances are contained within the *Mineral Exploration Code of Practice* (MRT 2012) and *Forest Practices Code* (FPA 2020). While not directly relevant to Ridgeway Park as the area is not subject to current exploration licences, mining leases, or forest activity, these codes and associated standards provide a benchmark for how such site types are managed in other settings.

7.3.1 Mining heritage

Under the *Mineral Exploration Code of Practice*, applications for mineral exploration activity in informal reserves (such as Ridgeway Park) must be referred to an interdepartmental committee, the Mineral Exploration Working Group (MEWG) for comment. The MEWG, which comprises representatives from Mineral Resources Tasmania (MRT), the Department of Primary Industries, Parks, Water and Environment (DPIPWE), Forest Practices Authority (FPA), Aboriginal Heritage Tasmania (AHT) and takes advice from other sections of government with jurisdictional interests, must investigate potential impacts on CAR values and make recommendations to protect those values, which may include recommendations for a formal heritage impact assessment. Proposals for mining in CAR reserves, which include re-working of historic waste deposits, are subject to formal environmental impact assessment and environmental management conditions as required by Tasmanian environmental laws.

Specific guidance on managing historic mining heritage is provided in MRT's *Mining Heritage Guidelines for re-opening, re-working or exploring a previously worked deposit*. As an overarching principle the *Guidelines* state that 'The aim of new work should be to avoid disturbance to mining heritage artefacts wherever possible. If disturbance is unavoidable then details of the artefacts being reworked (e.g. mullock heaps) or relocated (batteries, crushers) should be recorded prior to work commencing' (MRT 1996/02: 1). While waste dumps, including mullock heaps, forkings, tailings and quarry spoil, may contain valuable information regarding historic working practices and local geology, the *Guidelines* consider that due to the presence or valuable minerals or environmental pollution, preservation or conservation of historic mining wastes is not always possible but deposits of heritage significance should be documented prior to reworking or removal where reprocessing, redevelopment or rehabilitation is necessary (MRT 1996/02: 2). Forkings and stacked waste should be left in-situ wherever possible and not used routinely for track fills etc. (MRT 1996/02: 5)

For historic water infrastructure, the *Guidelines* recommend avoidance of unnecessary disturbance of local-scale features such as single-working water races and full avoidance of significant features such as intakes, aqueducts and siphons (MRT 1996/02: 4-5).

The *Guidelines* recommendations for managing quarries of historic interest is a little different to metalliferous mine workings, with at least part of the area of interest recommended to be preserved if the old workings are not able to be fenced off in their entirety (MRT 1996/02: 6). Quarry operations also come under the *Environment Protection Authority Code of Practice* (EPA 2017), which require the identification and protection of sites of possible historic cultural heritage significance in consultation with Heritage Tasmania.

7.3.2 Forest practices

Timber harvesting operations, and associated activities such as road construction and quarry operation, in Tasmania are subject to the *Forest Practices Code* (FPA 2020). Under the Code, provisions for managing cultural heritage values must be included in an approved Forest Practices Plan (FPP) for the activity. The operational approach for managing historic heritage values in forests is outlined in the FPA's *Procedures for Managing historic cultural heritage when preparing FPPs* (FPA 2017). The *Procedures* includes requirements for pre-identification and management of historic heritage values along with standard prescriptions for managing classes of heritage on the ground. As a general rule, all historic sites that pre-date 1950 are considered significant with any one of the following criteria triggering a requirement for management (FPA 2017: 16, 18).

- Is the site well preserved
- Does the site indicate how it functioned when in use?
- Is the site rare, distinctive or unique?
- Is the site associated with an historic event, person or cultural group?
- Is the site an example of unusual human endeavour?
- Does the site date to the early history of the colony?
- Is the site a good example of its type?
- Is the site part of a larger cultural landscape and /or aesthetically pleasing?
- Would Tasmania lose part of its heritage if the site was lost?

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Standard management prescriptions listed under the *Procedures*, are reproduced in Table 7.1 (FPA 1017: 20-21).

Table 7.1 FPA prescriptions for managing selected historic features during forestry activities

| Feature type | Significance | Management prescription | Constraints |
|----------------------|--------------|--|--|
| Mullock heaps | High | Manage all features within a buffer | Consider safety issues – discuss options with MRT |
| Open cut mines | High | Manage all features within a buffer | Consider safety issues – discuss options with MRT |
| Exploration trenches | Low | Manage all features within a buffer | Consider safety issues – discuss options with MRT |
| Tailings dumps | Low | Manage all features within a buffer | Requests for salvage/reworking should require heritage assessments |
| Access tracks | Medium | Manage all features within a buffer | Retain integrity if to be used for access |
| Water races etc. | High | 10 m MEZ. Minimise crossings; clear debris from crossings; use temporary piping/slash and remove after operation | Places on Tasmanian Heritage Register require works approval for any activity that may impact them |

8. Historic heritage management

Commentary and recommendations for managing the potential impacts of the proposed shared use track and other potential activities are given under the following headings derived from the RFQ.

8.1 Historic heritage features

The desk-top assessment identified eleven previously recorded/classified historic features/complexes in or immediately bordering the combined study area. These were verified by field survey, with an additional twenty features being identified and documented. A total of forty individual features assessed in relation to the proposed works are listed in Table 5.1 and Table 5.2 and plotted in Figure 5.1. The majority of these features are associated with the construction or upgrade of the mountain water supply system.

8.2 Cultural significance

Assessments of cultural significance contained in Table 5.1 and Table 5.2 are based on previous assessments and the current THR listing for the Hobart Mountain Water Supply System. Features demonstrably associated with this system are ranked as having State significance by virtue of either being included in the existing THR listed area or through having the capacity to meet at least one of the listing criteria contained in the HCHA. Two pre-water supply tracks are assessed as potentially having State level values as part of the Old Huon Road system. Tracks and workings that are not demonstrably linked to the water supply system, or that require further research to establish a link, are not considered to meet thresholds for listing on the THR or Heritage Code of the Hobart Interim Planning Scheme at this time.

8.3 Works intersections and potential impacts

8.3.1 Proposed works

The proposed works involve constructing a dual direction shared use track linking the Waterworks Site 9 area with the Pipeline Track at the top of Gentle Annie Falls. The 2.3km long track will be constructed to the AS2156.1-2001 Class 2/AusCycling Trail Difficulty Rating System Easy (Green) standard and will be surfaced with imported gravel with an average width of 1.5m. the work will involve vegetation clearance, ground excavation and importation of fills to create a benched track on the steep hillside.

8.3.2 Site specific impacts

Potential intersections and physical impacts discussed in this report are based on the track line shapefile provided by the City of Hobart and delineation of features during the current assessment which are both subject to spatial uncertainties which cumulatively may add up to 10m horizontal or more. Potential intersections with individual heritage sites summarised in Table 8.1 are indicative and require more detailed design and precise field survey to quantify accurately. Indicative impact rankings in the table are coloured red = High, blue = Medium, green = Low, based on the following thresholds:

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Table 8.1 Potential track intersections and mitigation recommendations

| Feature | Intersection | Recommended mitigation |
|------------------|--|---|
| Feature 1 | Not intersected by proposed path. No additional impacts anticipated with proposed works. | Potential impacts if Falls Track closed/rehabilitated. Seek specific heritage advice on any proposed change to current use. |
| Feature 2 | Not intersected by proposed path. Potential impacts from construction of new viewing platform, depending on design and location. | Seek specific heritage advice on proposed design, materials and siting. Consider reconstructing historic fencing based on further research. |
| Feature 3 | Intersected at existing Fire Trail crossing. No additional impacts anticipated. | Avoid ground excavation. |
| Feature 4 | Intersected at existing Fire Trail crossing. No additional impacts anticipated. | Avoid ground excavation. |
| Feature 8B (Q2) | Proposed track crosses west end of 8B (Q2) spoil heap. Likely impacts associated with levelling portion of spoil heap. | Design and construct to avoid stacked mullock piles. |
| Feature 8C (Q3) | Not intersected by proposed lower path. Return path passes close to rear of working. | Move return path upslope to run along Track 8A (Q1) and Track 11. |
| Feature 8F (Q6) | Proposed path intersects west end of spoil heap. Likely impacts associated with path levelling. | Redesign path to connect with Track 8B (Q2) west of spoil heap. |
| Feature 8S (Q16) | Proposed track potentially intersects southern spoil heap. Possible impacts associated with levelling path alignment. | Redesign path to avoid spoil heaps. |
| Feature 8T (Q17) | Proposed track potentially intersects northern spoil heap. Possible impacts associated with levelling path alignment. | Redesign path to avoid spoil heaps. |
| RPH2 | Not intersected by proposed path. No additional impacts anticipated with proposed works. | Potential impacts if Falls Track closed/rehabilitated |
| Track 1 | Intersected by proposed track. Minor impacts associated with transverse cutting and levelling across track. | Minimise disturbance to existing track formation, preferably crossing at close to right angles. |
| Track 4 | Intersected by proposed track. Potential impacts from concealment and excavation if grade altered. | Align track to run along existing formation rather than widen or intersect at an oblique angle. |
| Track 5 | Intersected by proposed track. Minor impacts associated with transverse cutting and levelling across track. | Realign track if possible to run along northern portion of existing formation rather than cutting across it. |
| Track 8 | Intersected over c. 50m distance. No significant impacts associated with proposed upgrade. | No specific recommendations |
| Track 11 | Potentially intersected by proposed track. Potential impacts from concealment and excavation if grade altered. | Move top path upslope to run along Track 8A (Q1) and Track 11 rather than intersect them at oblique angles. |
| Track 12 | Intersected by switching track. Likely impacts associated with new transverse cuttings and concealments across track. | Incorporate existing track into design rather than cut across it numerous times. |
| 8A (Q1) Track | Intersected over c. 10m distance. Potential impacts from concealment and excavation if grade altered. | Move top path upslope to run along Track 8A (Q1) and Track 11 rather than intersect them at oblique angles. |
| 8B (Q2) Track | Proposed track runs along access track. Potential impacts from concealment and excavation if grade altered. | Re-use existing track alignment and grade. |
| 8K (Q11) Track | Proposed path intersects access track in area already upgraded for Fire Trail. No additional impacts anticipated if existing grade used. | Re-use existing track alignment and grade. |

- High: Substantial intersection of highly significant feature requiring excavation or reworking of historic fabric to accommodate changes in ground level;
- Medium: Intersection of lower significance feature, or involving partial concealment or limited/localised ground disturbance of higher significance feature that does not obscure original function;
- Low: Concealment or disturbance of low significance feature or intersection of higher significance feature that does not involve ground disturbance and is reversible.

8.3.3 Potential impacts on broader heritage values

Separate to the potential impacts on the fabric of individual historic sites, are the potential effects of the proposed track on so-called intangible values, including social and spiritual value and aesthetics, on the place and its setting. This is difficult to establish as while the 1994 and 2012 CMPs (and current THR listing) refer to the social and aesthetic values of the water supply system and provide short statements against assessment criteria, the basis for these assessments is unclear as no supporting evidence is provided.

The Pipeline Track has a high social value for Hobart residents both as a place of quiet recreation in the present and as a place where changing recreational uses can be used to assist reflection about the social history of the city (Murray & Nieberler 1994: 8)

The strong internal vistas, such as the vista from the receiving House to Gentle Annie Falls...highlight the scale of the undertakings, help understand the engineering solutions and illustrate, as old photographs show, the pride people took in their achievements. (Murray & Nieberler 1994: 9)

The Mountain Water Supply System is significant to the community both as a part of the infrastructure of the city as well as for its value as an important recreational resource close to the city...the Pipeline Track and the Waterworks Reserve have played significant parts in the recreational lives of both Hobartians and visitors to the area for well over one hundred years. (Futurepast 2012: 81-82)

The system is of high aesthetic and recreational value, due to the bush areas through which the system flows and the robust but attractive examples of the early waterworks technology, exemplified by structures as Reservoirs 1 and 2, the receiving House, Gentle Annie Falls, The Pipe Head Well and the aqueducts that span Longhill and Sassafras Creeks. (Futurepast 2012: 82)

Heritage Tasmania's guideline *Assessing Cultural Significance* (HT 2021) requires that to satisfy the social values test [criterion (f)] a place must meet three additive tests:

- evidence of a past or present community association between the place and a group or community or a place of generic community attachment; and
- the group or community should have a common interest in the place that must be strong and special and transcend everyday amenity value; and
- the group or community and its interest in the place must be capable of being accepted by the wider Tasmanian community as an association.

Although it remains uncompiled, accounts from published sources such as local newspapers, indicate that that Waterworks Reserve and Pipeline Track has been a place of generic community attachment for casual recreation for over a century, potentially satisfying the first test, although many heritage practitioners and some Australian regulatory frameworks contend that historic social attachments should be addressed under Criterion (a):

The second test is not so readily demonstrated as it is not clear if casual recreation is a necessarily strong and special attachment that transcends simple utility value. Many if not all municipal parks would potentially qualify for heritage listing on social grounds if that were the case.

Similarly, there is a question mark as to whether ‘Hobartians’ can readily be considered a common interest group and whether it would be regarded by other Tasmanians as having a special association beyond simple amenity. There is also a very legitimate question over whether ‘visitors to the area’ qualify as a district social group or community or if out-of-area casual visitation and tourism qualifies as a strong and special attachment at all.

Blair and Truscott (1987) argue that for a place to have social value there must be a continuum of feeling by a particular self-identified community and not a transitory attachment, such as a one-off or occasional visit, and that the attachment should be based on continual and current experience rather than a nostalgic or sentimental attachment to the past or a resistance to change.

Chris Johnston takes a broader view, considering that social value is about collective attachment to places that embody meanings important to a community, and that it is up to each community to articulate the meanings and places of relevance to them (Johnston 1992: 10). Johnston argues that the process of understanding the social value of a place must therefore involve defining the community of interest, identifying the nature and degree of significance and preparing an agreed statement of the social value of the place. This process must closely involve or be led by the affected communities. (Johnston 1992: 19).

Further compounding definitional complexity, Byrne, Brayshaw and Ireland (2003) contest the notion that significance is intrinsic to the fabric of a place, arguing that social value is transactional and rooted in the subjective experience and continual reshaping of a place and its use. Social significance of places and landscapes, they argue, is a matter of social process rather than social fact, constantly changing and evolving for individuals, groups and communities at a range of scales, and includes shallow-time depth attachment such as social action in response to threat. Because of this dynamism and issue-responsiveness, constant engagement with interested groups is required, *‘an assessment of social significance carried out twenty years ago is an historical document, not a basis for determining the significance of a place in the present’* (Byrne et al 2003: 59).

Due to the difficulty of managing such a nebulous and changeable concept, heritage regulators across Australia have attempted to formalise definitions of social significance and community and to apply threshold association tests, such as those within Heritage Tasmania’s *Assessing Cultural Significance* guideline. Regardless of which philosophical position is adopted regarding how groups, places and associations are defined, no formal process of group/community engagement appears to have been followed in the formulation of the 1994 or 2012 CMP and THR statements for Criterion (f), bringing them seriously into question.

“To gain an understanding of social values it is necessary to carry out research with communities of interest using qualitative methods derived from sociology and

anthropology. These methods involve the use of various techniques, for instance focus groups, qualitative interviews and participant observation, to reveal the meanings and attachments that underpin aspects of social value. Researchers have also employed other methods, including analysing archival documents and historic photographs, as well as oral and life histories. Using such methodologies to investigate forms of social value and meaning that are inherently dynamic inevitably creates a snapshot of a particular landscape that requires regular review and revision". (Jones 2016: 27)

Without a clear understanding for whom and what elements of the water supply system is of social value, the best that can be done on present knowledge is to assess how the proposed works may change the ways people use, experience and maintain attachment to the elements of a place. However, despite more than 30 years' research globally focussing on identifying theoretical and methodological problems no agreed standards have evolved on how to determine use, experience and attachment for practical heritage management purposes. At a fundamental level little progress has been made since Johnston (1992: 21) summarised the process of determining social value as being to 'ask, listen and observe'.

Asking, listening and observing are beyond the remit of the current assessment but ought to have informed the 2014 CMP and THR statements, and should underpin any proposal that seeks to change the ways in which people engage with the water supply system – including the proposed track realignment.

The same knowledge limitations apply in assessing potential impacts on aesthetic values. Criterion (h) was included in the HCHA in 2014 and is not separately addressed in the 2012 CMP or THR listing. Aesthetic values are briefly referred to in the CMP/THR statement for Criterion (e) and in the Statement of Significance. These statements speak of the elegant design and functional quality of architectural elements (i.e. stone-built features) and the "robust but attractive" examples of early Waterworks technology amidst the bushland setting.

Heritage Tasmania's *Assessing Significance* guideline (Heritage Tasmania 2021) has not yet been updated to contain significance indicators and thresholds for assessments against Criterion (h), however a brief commentary on aesthetics is provided under Criterion (e) (Creative and Technical) that references a definition used in other state jurisdictions, notably Queensland. This definition states that place may have aesthetic significance:

"if that place exhibits sensual qualities that can be judged against various ideals including beauty, picturesqueness, evocativeness, expressiveness, landmark presence, symbolism or some other quality of nature or human endeavour." (Heritage Tasmania 2011: 27)

Typical inclusion parameters outlined within the current Tasmanian guideline include:

- the place being of landmark quality;
- the place having, or contributing to, its setting or important vistas; and
- buildings that sit well within their landscape due to the use of local materials, form, scale or massing.

Other State heritage jurisdictions, such as Victoria, emphasise the visual and formal concepts to an even greater degree:

"Aesthetic characteristics are the visual qualities of a place or object that invite judgement against the ideals of beauty, picturesqueness, evocativeness, expressiveness, grotesqueness, sublimeness and other descriptors of aesthetic judgement. The visual

qualities of a place or object lie in the form, scale, setting, unity, contrast, colour, texture and material of the fabric of a place or object.” (Heritage Victoria 2019: 14).

However, the Victorian guidelines do state that *“Being “pretty” or “attractive” or popular is insufficient for the purposes of satisfying this criterion.”*

This ‘expert’ view of aesthetics privilege visual over other senses, placing it at odds with the Burra Charter definition of aesthetic values which refers more broadly to:

“the sensory and perceptual experience of a place—that is, how we respond to visual and non-visual aspects such as sounds, smells and other factors having a strong impact on human thoughts, feelings and attitudes. Aesthetic qualities may include the concept of beauty and formal aesthetic ideals” (Australia ICOMOS 2013a)

The ‘expert’ view is increasingly coming under challenge within heritage circles, much in the way that understandings of social value are being progressively expanded and democratised, although there is a counter argument that experiential facets of aesthetic value, symbolic meaning and popular representation should be considered part of social value (Byrne et al 2003: 145).

Due of the lack of an evidentiary basis for the assessment of aesthetic significance contained in the 2014 CMP and THR listing, and the intrinsic overlap between aesthetic and social value, the same engagement and observational approach suggested for exploring social values should be used to gather data on the aesthetic values of the place and acceptable thresholds for change.

In the absence of such data relating to social and aesthetic values and concepts of acceptable change, it is not possible to assess the potential impacts (or benefits) of the proposed track realignment on these values, although is strongly recommended that this, and other works such as visual impact modelling, be done prior to the route and construction design being finalised.

8.4 Management recommendations

8.4.1 General recommendations

For reasons discussed above, the following recommendations relate to mitigating potential impacts on tangible heritage values, that is the documented physical fabric of the water supply system. Insufficient information is available to effectively assess potential effects on cultural landscape, social or aesthetic values.

Track alignment

The proposed track alignment crosses the historic water conveyance at one location in an area that has previously been filled and modified and will have negligible additional impact at that point. The alignment centreline avoids most of the documented workings and spoil heaps in the study area, with local intersections with 8F (Q6) and 8B (Q2) on the west side of the pipeline and 8S (Q16) and 8T (Q17) in the Regans Gully portion. Without mitigation, these intersections have the potential to impact heritage values by requiring the removal of reworking of waste deposits that contribute to understanding the functioning of the system. With the exception of 8B (Q2), these intersections are largely avoidable by local track realignments.

Recommendation 1

Redesign selected track turns to avoid intersecting quarry spoil heaps. Where full avoidance is not possible (such as at 8B (Q2)), minimise the disturbance footprint and refer to relevant construction controls.

The proposed track intersects several historic tracks either demonstrably or very likely associated with historic quarry operation, including Tracks 1, 4, 5, 11, 12, 8A (Q1), 8B (Q2) and 8K (Q11). Most of these historic tracks are on reasonably gentle grades and greater than 1.5m in width. Locally realigning the proposed track to run along/utilise the historic formations and grades is considered preferable as a means of conserving the meaning of these tracks to crossing them at oblique angles and may provide additional authenticity to user experience and future interpretation opportunities. Care should be exercised when re-using historic tracks to keep new work centred, to minimise disturbance to any original surfaces – such as metalling, and to avoid unnecessary grade improvements/reprofiling that require excavation.

Recommendation 2

Consider selectively realigning new track sections to make better use of/respect original track segments, notably Tracks 4 and 5 in the Regans Gully portion and 8A (Q1) and Track 11 at the upper falls. New works should be centred, protect underlying surface deposits and build up rather than reduce ground levels to achieve desired grades.

Track construction

Track construction details are not available for assessment, however the proposal to create a shared use Class 2/bike track with 1.5m minimum width implies no steps and wide turning arcs, which will increase the need to benching and filling/armouring. These details will need to be resolved on a case-by-case basis to minimise impacts on adjacent historic fabric. As a general rule, historic quarry waste should not be used for levelling fills or armouring works, both to conserve resident fabric and avoid confusion regarding the age/association of the new track.

Recommendation 3

Do not use resident quarry waste for track fills, armouring or general landscaping works. The only potential exception to this rule is where track crossings cannot avoid waste dumps entirely and some re-profiling is necessary, in which case waste rocks may be re-purposed at that location, subject to any relevant heritage approval.

Details review

The RFQ calls for advice on the proposed design of stone headwall viewing platform. A concept design was not available for review as part of the current assessment but should be undertaken in conjunction with review of the design and construction drawings for the final track alignment. This will enable detailed evaluation and management of any intersections with heritage features, such as crossing 8B (Q2).

Recommendation 4

Review the concept design for a proposed new viewing platform and design/construction drawings for the final track alignment to confirm heritage mitigation requirements. The

results of this review, which will consider design responses to this assessment report, should be included as supporting documents for planning and heritage approval.

8.4.2 Site specific recommendations

Recommended actions for mitigating potential impacts on identified historic heritage features are provided in Table 8.1.

8.5 Heritage approval requirements

Approximately 240m length, or around 20% of the proposed 2.3km track is located within the THR listed area and requires formal HCHA approval. Approximately 150m intersects the area listed in the HIPS Historic Heritage Code. Notwithstanding, the 2012 CMP recommends that a wider buffer than the THR listed area be considered for planning purposes, notionally 50m from the pipeline but *'wider where there is physical or documentary evidence of ancillary features or where the extent of any features has not been fully assessed and there is a requirement to protect the potential heritage'* (Futurepast 2012: 83).

Heritage Tasmania's *Works Guidelines* (HT 2015) outlines the process to be followed when seeking approval for works covered by the HCHA, as well as general impact thresholds for exemptions and discretionary permits. Under the *Guidelines* the proposed track qualifies as a New Element, for which the following thresholds apply:

Eligible for exemption

- Introducing new elements where the elements will not impact on heritage significance, including landscape elements, setting and views, and where ground disturbance does not impact on significant archaeological values.

Discretionary permit required

- The introduction of new elements that may adversely impact on the place's significance.

Based on these definitions the proposed track will likely require a discretionary permit applied for through the local government authority (City of Hobart). The permit application should cover the entirety of the works, not just the components within the THR listed area. This discretionary permit application must meet the Application Requirements set out under Code E13.5 of the HIPS.

8.6 Consideration of alternatives

While it was not specifically requested as part of the RFQ, review of previous management plans and studies suggests that potential alternatives to the current proposal may exist that provide opportunities to conserve and present the cultural significance of the area between Gentle Annie Falls and the Receiving House. Both the 1994 and 2012 CMPs recommend re-establishing a pedestrian track beside the pipeline (as seen in Figure 8.1) as the optimal means of allowing visitors to engage with extant water supply features, at least between the Receiving House and lower intake basin. Such a track mirrors historical modes of access and would present a simpler and potentially richer interpretive experience than the current proposal which breaks encounters with the water supply system into glimpses separated by other experiences.

Reinstating a pedestrian path on the historic trough/pipeline alignment would not solve the issue of easy pedestrian access or bike access, but it would provide an opportunity to un-pack or complement the current shared access proposal.

8.7 Other proposed works

The RFQ includes a request for advice on several items that require additional information or design details, including:

- the proposed design of a stone headwall (Pipe Head Well?) viewing platform
- the clearing of vegetation from the headwall down to falls (Receiving House?);
- the use of historic quarry spoil for rock walling, armouring and landscaping;
- potential sites and priorities for heritage interpretation signs.

Responses are outlined briefly below.

8.7.1 Viewing platform design

The HMWSS CMP and associated Design Guidelines provide guidance on the principles and materials to be used for visitor access infrastructure including viewing platforms (i.e. Design Guidelines P1 – 1). As these Guidelines have been developed with and endorsed by Park management stakeholders they should be used unless specific site circumstances or historical precedent dictate otherwise.

Both the 1994 and 2012 CMP state the need for new infrastructure to be contemporary and utilitarian in design and construction and to avoid ‘faking’ historic architectural styles (Murray and Nieberler 1994: 33). Both documents however reiterate the role of appropriate historically informed reconstruction which ‘*can greatly enhance the significance of the place*’ (Murray and Nieberler 1994: 20). Photographic sources indicate that at an early period a simple white painted timber paling fence was in place around the Pipe Head Well, which was accessible via a track along the west side of the pipeline incline (Figure 8.1, Figure 8.2). Reconstructing such a structure may obviate the need for a bespoke and potentially intrusive viewing platform altogether and should be considered as a historically based alternative.

It is not possible to provide additional commentary or advice on the proposed viewing platform design in the current assessment report. The provision of detailed design advice on works design or implementation is a separate process.

8.7.2 Clearing of vegetation from the headwall to the Viewing platform design

Vegetation management to reinstate historical views from the falls to the Receiving House is recommended in the 1994 and 2012 CMP. This is considered appropriate to re-establish visual connection between elements and a means of recovering some of the latent cultural significance of the system. This should be done regardless of the eventual access arrangements.

8.7.3 Re-use of quarry spoil for track and other landscaping works

Historic quarries are a record of the primary extraction, selection and reduction processes operating in a specific geological setting. Waste dumps document not only what was left behind, but also the quality and quantity of material that was removed for use elsewhere. The sandstone

quarries and waste dumps around Gentle Annie Falls and Regans Gully are an integral part of the technical and economic setting for the State heritage listed Hobart Mountain water Supply System, and both McConnell *et al* (1998) and the 2012 CMP argue for enlargement of the listed area to include more quarry sites than are presently included.

Based on the technical attributes of individual waste dumps - which contain evidence of a range of historic working methods including drilling, wedging, dressing and waste stacking; their contribution to understanding the economics of building and upgrading the water conveyance; and benchmarking against current extractive and forest industry practices, It is considered that re-working historic quarry dumps for track and other landscaping works is incompatible with conserving the cultural significance of the water supply system and should not be pursued as a general option. Local re-use of waste material to level and form track crossings, such as at 8B (Q2), may be acceptable where the repurposed material can still be 'read' as part of the heritage fabric at that site.



Figure 8.1: View from Pipe Head Well to Receiving House. c. 1900. National Archives UK



Figure 8.2: Walking track beside troughing/pipeline incline, c. 1920. TAHO NS479-1-159

8.7.4 Potential sites and priorities for heritage interpretation

The 1994 CMP recommended that interpretation facilities should be located at major entrances to the Pipeline Track including the receiving House and Fern Tree, supported by spot interpretation at major attractions including Gentle Annie Falls, the Halls Saddle valve house, the aqueducts, Fern Tree Bower and the Wishing Well. It recommends the development of a detailed interpretation and wayfinding strategy with themes covering the history, engineering achievements and natural environment along the track (Murray and Nieberler 1994: 45).

The 2012 CMP identifies a number of key interpretive nodes at places of high intrinsic significance or logical entry, exit or stopping points along the route of the water supply system. Gentle Annie Falls is included in this indicative list, however this and other potential locations are recommended for further research and articulation within a formal Interpretation Plan for the system that is based on principles of thematic interpretation and supported by audience research.

In the absence of such a framework and data, it is not possible for the current assessment to suggest specific places or topics for interpretation due to lack of context. Developing an Interpretation Plan for the water supply system is listed as a short-term priority in the 2012 CMP. Ten years has now passed and this CMP is due for review with many of the high priority recommendations not having been implemented.

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Response to Request for more information #3:

The Mountain Water Supply System Heritage Advisory Group met to discuss this project and others in the vicinity on Monday October 3rd.

The following people were present:

- Amy Russell (Wellington park Trust)
- Sarah Waight (Heritage Officer COH)
- Cole Smith (Manager COH)
- Bree Hunter (Park Planner COH)
- Mischa Pringle (Project Officer COH)
- Sean Black (Program Leader COH)
- Deirdre MacDonald (Heritage Tasmania)
- Michael Golding (Project Officer COH)

Apologies were received from:

- John Fawcett (TasWater)
- Brendan Leonard

The map, drawings and detailed plans for this project were discussed at the meeting.

No recommendations were made by the group and they were happy to see the project progressing.

There was also discussion about how the group could be convened in the future and the positive role it can play in the early development of projects.

Signed:



Bree Hunter – Park Planner

Date: October 24th, 2022

**Pipeline Track Improvements - Gentle Annie Falls
Ridgeway Park, Hobart
Aboriginal Heritage Assessment Final Report AS1730**

Report to Hobart City Council

Gondwana Heritage Solutions

GHS.2022AH04

July 2022



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Pipeline Track Improvements – Gentle Annie Falls, Aboriginal Heritage Assessment Final Report


Revision No: 0.3
 July 2022

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Pipeline Track Improvements – Gentle Annie Falls, Aboriginal Heritage Assessment Final Report

Revision No: 0.3
July 2022

Executive summary

Background

City of Hobart is proposing to improve access between the north end of the Pipeline Track at Gentle Annie Falls to and Upper Reservoir within Ridgeway Park by constructing a new walking track with a gentle grade. The 2.3km long track will be constructed to the AS2156.1-2001 Class 2/AusCycling Trail Difficulty Rating System Easy (Green). For practical purposes the new track will be a continuation of the Pipeline Track providing a recreational link from Waterworks Reserve to kunanyi/Mount Wellington and the wider City of Hobart recreational track and trail network and suitable for a wide range of users of varying ability.

The improvement of this section of track has been identified as a priority through the Recreational Network Gaps project. It is identified as a high priority capital works project in the *Conservation and Management Plan for the Pipeline Track* and in the *Hobart Mountain Water Supply System Conservation Management Plan*.

The proposed track alignment will intersect features associated with the historic water supply system. The potential for Aboriginal heritage to be present has been previously assessed as low (McConnell *et al* 1998), however as part of a standard due diligence process City of Hobart has commissioned Aboriginal and historic heritage assessments of the proposed new track route to inform final design and construction. The Aboriginal heritage assessment was undertaken jointly by Gondwana Heritage Solutions and Caleb Pedder.

Assessment method

The study area is located within Ridgeway Park on the eastern footslopes of kunanyi/Mt Wellington and comprises an 11.2ha area on the south side of Sandy Bay Rivulet encompassing the sandstone bluff bisected by the Pipeline Track and Gentle Annie Falls/pipeline to the Upper Reservoir Receiving House. The Receiving House and Upper and Lower Reservoirs are situated in a portion of the park designated the Waterworks Reserve which is maintained as a manicured parkland. Outside this area Ridgeway Park is managed as a bushland reserve. The study area comprises two zones, the primary focus being an 80m wide corridor (7.3ha) centred on the indicative 2.3km long track alignment (Primary Area). A secondary zone totalling 3.9ha for additional design flexibility encompasses the adjacent area on the north side of the sandstone spur extending as far as the existing Gentle Annie Falls Track and a small area in the gully south of the Gentle Annie Falls Access Fire Trail (Secondary Area).

The assessment method involved a desktop review of previous site records, heritage reports and management documents relating to the study area.

The field survey method involved the Consulting Archaeologist and Aboriginal Heritage Officer surveying an initial series of sub-parallel pedestrian transects at c10m spacings centred on the indicative track alignment which was flagged by CoH prior to survey. This was supplemented by sub-parallel surveys across the broader study area at 10-20m horizontal spacings targeting 5m contours and meandering transects to circumvent obstacles, such as cliff and creek lines.

Desktop assessment

The desktop assessment identified one possible rockshelter site (AH 7992) being situated at c. 195m elevation at the southeastern edge of the 40m track buffer zone and c. 13m inside the combined study area. Three other sites identified within Ridgeway Park including a second rockshelter, small artefact scatter and single artefact were located between 170m and 500m from the study area and are not implicated in any way.

Based on a review of predictive statements developed for Wellington Park and considering the results of previous local assessments including a 1998 cultural heritage survey of Ridgeway Park, the potential for stone artefacts or additional rockshelters within the study area was considered to be low.

Survey findings

Approximately 15km of transects were walked within the combined study area covering 5.25ha. Physical coverage was estimated to be approximately 48% for the Primary Survey area (80m wide track corridor) and 39% for the adjacent Secondary survey area.

Ground surface visibility across the study area was typically low to very low, being highest on the upper north-facing slopes where vegetation was thinnest and ground disturbances associated with recreational infrastructure and historic quarrying greatest. GSV decreased downslope and to the east and west along the bracketing creek gullies where disturbed windows were less prevalent. GSV averaged 12% for the Primary survey area and 7.5% for the Secondary survey areas

Previously identified Aboriginal heritage sites

While the coordinates provided on the 1998 site recording form place the site within the bounds, the previously recorded rockshelter site (AH 7992) was determined to not be situated within the current study area. The site was originally described as an overhang 3.5m wide and 1.5m deep in the middle face of a cliff with a north-west aspect in a small steep valley to the south of Gentle Annie Falls. The shelter was described as having a level floor with evidence of recent activity in the form of graffiti and camping debris. Being outside the study area the site was not re-inspected during the current assessment, however the most likely location is a belt of sandstone cliffs located 40m south of the southeastern Secondary study area zone between the 215 and 240m elevation contours

Newley discovered Aboriginal heritage sites

No stone artefact sites were identified during the survey. Given the steep ground slope, mobile surface soils and degree of historic disturbance, and considering the history of previous surveys and high level of visitation the area receives, the lack of finds is considered to be a fair reflection of the low potential for stone artefacts to be present.

No rock shelter sites were identified during the survey. Several belts of sandstone outcrop with areas of low cliffing are present on the north face of the Gentle Annie Falls spur were inspected and several small overhangs noted, however these are not considered to have sufficient potential for habitation to contain occupation deposits to be considered shelter sites. This sandstone terrain has previously been investigated by several researchers who studied the sandstone outcrops for evidence of historic usage. None of these researchers have identified potential rockshelter sites in this zone.

Potential Areas of Sensitivity

A Potential Area of Sensitivity (PAS) is a zone considered prospective for relics or cultural deposits based on landscape or geomorphological factors, despite no relics being observed on the surface.

Due to the steep ground slope, mobile surface soils and degree of historic disturbance, the potential for undiscovered cultural deposits to be present within the study area is considered low and no PAS were designated.

Non 'site' - based heritage values

While the lack of obvious evidence of utilisation suggests that they that they were not used for regular habitation, the sandstone outcrop, cliffs and overhangs within the study area are durable features likely to have formed part of the landscape experienced by Aboriginal people in the centuries prior to white contact. They may have served as markers and waypoints through country, connecting living places and having names and stories attached to them. Local traditional knowledge has unfortunately not survived the process of colonisation but must be assumed to have existed given the time depth of Aboriginal occupation of *lutruwita*/Tasmania.

Aboriginal heritage management**Proposed works**

The proposed works involve constructing a dual direction shared use track linking the Waterworks Site 9 area with the Pipeline Track at the top of Gentle Annie Falls. The 2.3km long track will be constructed to the AS2156.1-2001 Class 2/AusCycling Trail Difficulty Rating System Easy (Green) standard and will be surfaced with imported gravel with an average width of 1.5m. the work will involve vegetation clearance, ground excavation and importation of fills to create a benched track on the steep hillside.

Potential impacts on identified and potential Aboriginal sites and objects

No Aboriginal heritage sites were found during the current assessment, consequently no specific site impacts have been identified. The potential for impacts to undiscovered artefacts and other site types is considered low.

Potential impacts on non 'site'-based heritage values

The track passes through cliffed sandstone terrain on the north face of the hillspur that contains several small overhangs although there is no evidence of Aboriginal occupation. The large number of switchbacks may mean that the track becomes a highly visible element in the landscape, which may be considered by the Aboriginal community to harm the Aboriginal cultural landscape values of kunanyi/Mt Wellington.

Management recommendations

The following recommendations for managing potential impacts of the proposed track project on unidentified Aboriginal site values, and for managing heritage, including intangible values, more broadly within the study area are designed to be consistent with existing heritage legislation, previous management recommendations and published Aboriginal community expectations for kunanyi/Mt Wellington outlined in Sections 6 and 7.

Regulatory processes

All Aboriginal relics are protected under Tasmanian law and may not be 'destroyed, damaged, defaced, concealed or otherwise interfered with' without a suitable Permit issued in accordance with the *Aboriginal Heritage Act 1975*. Given the negative survey findings for additional Aboriginal relics as defined under the AHA, no circumstances were identified that would trigger the requirement for a Permit under the Act.

It is understood that the current Aboriginal heritage assessment has been driven by CoH internal compliance requirements rather than a directive from Aboriginal Heritage Tasmania based on an Aboriginal Heritage Desktop Request. Nonetheless, AHT should be made aware of the project as a matter of courtesy and provided with a copy of the report for record-keeping purposes.

Recommendation 1

A copy of this assessment report should be provided to Aboriginal Heritage Tasmania for review and record keeping.

Design and Construction

Aboriginal relics and sites in Ridgeway Park are non-renewable resources that contribute to the Aboriginal cultural landscape of kunanyi/Mt Wellington and Aboriginal community identity, health and wellbeing. Designing and constructing paths and other recreational infrastructure to be sympathetic to cultural landscape values must be key objectives of respectful and sustainable heritage management. Avoiding a proliferation of infrastructure helps to minimise physical disturbance of any cultural deposits that may be present and control visual clutter which can interfere with the aesthetics and emotional power of heritage places and landscapes.

Recommendation 2

The existing Hobart Mountain Water Supply System Design Guidelines are based on the Conservation Management Plan which focuses on the industrial heritage but inadequately recognises the Aboriginal heritage values of Ridgeway Park as an element of the kunanyi/Mt Wellington cultural landscape. It is unclear what, if any, Aboriginal community consultation occurred in developing the guidelines. Given that the proposed path departs from historical tracks and passes through country with potential Aboriginal cultural landscape significance, it is recommended that the guidelines are reviewed in consultation with the Aboriginal community.

Recommendation 3

Without prejudice to Recommendation 2, design recreational infrastructure generally within important cultural landscape settings to minimise the need for ground disturbance or impacts to important resources, including sandstone outcrops and cliff lines. Preferentially use reversible methods, such as clean fills, over excavation as a means of achieving desired grades and cross falls.

Managing unanticipated discoveries

The current assessment of the track upgrade study area and 1998 Ridgeway Park cultural heritage report conclude that there is low potential for Aboriginal stone artefacts to be impacted by the proposed track works. Notwithstanding, encountering artefacts cannot be ruled out altogether so it

is prudent to have measures in place during works to identify and manage any unanticipated discoveries.

Recommendation 4

If Aboriginal relics are encountered during pre-clearing or construction, then works at that location must cease immediately and AHT's Unanticipated Discovery Plan must be put into operation. This is available from the AHT website and is reproduced as Appendix A. All workers on the project must be aware of the UDP with a copy being kept on hand during ground disturbing activities.

Aboriginal community consultation

This study has been undertaken with limited Aboriginal community consultation. The 1998 Ridgeway Park cultural heritage report advocates establishing a long-term consultative mechanism with the Aboriginal community for managing values rather than reactive project-based consultation. This is yet to be done but is a far superior means of achieving respectful and sustainable heritage and reserve management outcomes than project-based assessments and delimited consultation. Given the recommendations contained in the 1998 Ridgeway Park cultural heritage report for Aboriginal collaboration and training of CoH field staff, the need for the current assessment might have reasonably been avoided in favour of a more direct understanding of the interests and wishes of the Aboriginal community.

Recommendation 5

City of Hobart should establish an appropriate strategic consultative mechanism with the Tasmanian Aboriginal community for managing heritage and cultural landscape values on Council-managed land, particularly on kunanyi/Mt Wellington. The mechanism should focus on proactive identification and management of values rather than being project driven.

Recommendation 6

As an interim measure, a copy of the draft Aboriginal Heritage Assessment report should be circulated to Aboriginal community organisations for comment regarding the identification of heritage values and management recommendations.

Future investigation and assessment

Effective heritage management involves allocating scarce investigative resources to achieve maximum benefits. To date very few Aboriginal sites have been found on kunanyi/Mt Wellington which has been attributed by researchers to the lack of systematic studies under good visibility conditions (i.e., McConnell & Sculthorpe 2017 & 2019). Re-evaluating areas that have been subject to previous assessment should generally be considered only where there is a reasonable prospect of finding sites in high potential areas that have been missed or where survey conditions have vastly improved.

The 1998 assessment by McConnell *et al* was undertaken under high visibility conditions and covered much of the current study area. They concluded that further survey in the park to identify Aboriginal heritage was unlikely to reveal much additional heritage and no further significant sites. They advised that if further survey was to be carried out it should be done under post-burn or vegetation clearing conditions (McConnell *et al* 1998: 31).

The current desktop assessment concluded that there was a low potential for sites to be present and the field survey was carried under lower GSV conditions than the 1998 assessment, creating no new knowledge in the process and bringing into question the need for a formal standalone assessment. Instead of further project-level assessments, McConnell *et al* 1998 advocated developing suitable in-house training and works control for park management activities supported by a process to ensure Aboriginal community input into decision-making.

Such a collaborative design and implementation approach is considered by the authors of the current assessment to be the most culturally appropriate and budget effective model for managing Aboriginal heritage values within Ridgeway Park.

Recommendation 7

Given the aligned findings of the current and 1998 surveys, the need for further Aboriginal heritage assessments within Ridgeway Park should be re-evaluated and based on a process that is driven by Aboriginal community interests, focuses on filling gaps rather than confirming existing knowledge and leverages planned and unplanned burns and vegetation reduction.

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1. Introduction

1.1 Project background

The City of Hobart manages around 23,000 of municipal reserves encompassing a wide range of natural and cultural values. Given Hobart's geographic positioning at the foot of kunanyi/Mt Wellington, much of the reserved land is located on the mountain or its foothills. One of the largest of these foothill reserves, Ridgeway Park, is situated between Fern Tree and Sandy Bay southwest of the city (Figure 1.1). Ridgeway Park contains areas of high biodiversity conservation value and encompasses the remains of the city's early water supply system. This system, which spans the period 1860 through to the present, includes three large storage reservoirs originally supplied from a trunk conveyance comprising pipelines, aqueducts and service tracks collectively known as the Pipeline Track. The Pipeline Track has been a focus for bushland recreation since its inception and the three-kilometre section through Ridgeway Park from the Upper Reservoir to Fern Tree remains a popular short walk.

The water conveyance falls 200m between Halls Saddle near Fern Tree and the Upper Reservoir Receiving House, the lowest 80m being the steepest section comprising an engineered cascade, wellhead and pipeline down the north-east face of a sandstone bluff known as Gentle Annie Falls. The falls is accessed by a 0.8km walking track that rises from the Upper Reservoir up the west side of the bluff and by a shorter but steeper 300m fire trail leading from the Site 9 area of the Waterworks Reserve encompassing the Upper and Lower Reservoirs.

City of Hobart is proposing to improve access between the north end of the Pipeline Track at Gentle Annie Falls to and Upper Reservoir by constructing a new 2.3km long walking track with a gentle grade. For practical purposes the new track will be a continuation of the Pipeline Track providing a recreational link from Waterworks Reserve to kunanyi/Mount Wellington and the wider City of Hobart recreational track and trail network and suitable for a wide range of users of varying ability.

The improvement of this section of track has been identified as a priority through the Recreational Network Gaps project. It is identified as a high priority capital works project in the *Conservation and Management Plan for the Pipeline Track* (Murray & Nieberler 1994: 35) and in the *Hobart Mountain Water Supply System Conservation Management Plan* (Futurepast 2012: 107).

The proposed track alignment will intersect features associated with the historic water supply system. The potential for Aboriginal heritage to be present has been previously assessed as low (McConnell *et al* 1998), however as part of a standard due diligence process City of Hobart has commissioned Aboriginal and historic heritage assessments of the proposed new track route to inform final design and construction. The assessment of historic heritage values is the subject of a standalone report. The Aboriginal heritage assessment was undertaken jointly by Gondwana Heritage Solutions and Caleb Pedder.

1.2 Study area location

The study area is located within Ridgeway Park on the eastern footslopes of kunanyi/Mt Wellington and comprises an 11.2ha area on the south side of Sandy Bay Rivulet encompassing the sandstone

bluff bisected by the Pipeline Track and Gentle Annie Falls/pipeline to the Upper Reservoir Receiving House. The Receiving House and Upper and Lower Reservoirs are situated in a portion of the park designated the Waterworks Reserve which is maintained as a manicured parkland. Outside this area Ridgeway Park is managed as a bushland reserve. The study area comprises two zones, the primary focus being an 80m wide corridor (7.3ha) centred on the indicative 2.3km long track alignment (Primary Area). A secondary zone totalling 3.9ha for additional design flexibility encompasses the adjacent area on the north side of the sandstone spur extending as far as the existing Gentle Annie Falls Track and a small area in the gully south of the Gentle Annie Falls Access Fire Trail (Secondary Area) (Figure 1.2).

1.3 Proposed works

The proposed works involve constructing a dual direction shared use track linking the Waterworks Site 9 area with the Pipeline Track at the top of Gentle Annie Falls. The 2.3km long track will be constructed to the AS2156.1-2001 Class 2/AusCycling Trail Difficulty Rating System Easy (Green) standard and will be surfaced with imported gravel with an average width of 1.5m.

Beginning at the Waterworks Site 9 car park, the track will ascend the north-east face of the sandstone spur to the pipehead well with several switchbacks centred on the on the existing fire trail. From the pipehead well the track will follow the existing Gentle Annie Falls track for around 140m before turning south to traverse the north face of the sandstone spur to connect with the Pipeline Track above the falls. The final alignment will be influenced by natural and cultural heritage values and engineering requirements and is subject to change but is expected to be contained within the combined study area.

1.4 Study aims

The scope for the cultural heritage assessments is outlined in the CoH Request for Quotation dated 2 November 2021 as reproduced:

- Undertake desk-top analysis and field survey of the study area. The survey is to identify and map the location of any known and previously unknown sites and artefacts within the area.
- Identify and confirm the level of significance of any sites, artefacts and features.
- To provide expert advice in regard to the significance of identified sites, artefacts and features, as well as to identify or recommend:
 - a) whether the proposed track should avoid the site or artefact;
 - b) and for sites or artefacts with Low significance - identify whether certain track building techniques could increase the heritage value (i.e. rock armouring, interpretation etc.), and specify any planning approvals required in order for this to occur.
- To provide recommendations and/ or feedback on:
 - a) proposed design of stone headwall viewing platform (will be provided to the successful consultant), and the clearing of vegetation from the headwall down to falls;
 - b) Whether dispersed stone in quarry sites can be used for rock walling, armouring and landscaping. The use of which could be highlighted through interpretive signage. If so,

please provide any recommendations, control measures or guidelines that should be followed when undertaking this work

c) Potential sites for heritage interpretation signs (in priority order)

- If required, where significant areas are otherwise unable to be avoided and track construction and use would adversely affect any significant area(s), confirm any and all required planning approvals.
- Provide a brief written report with appropriate maps, in hardcopy and electronic form, of the assessment methodology, findings, and recommendations including safeguards required to be implemented for track construction, identify and confirm the level of significance of any sites or artefacts of European or aboriginal cultural heritage.
- Provide spatial data shapefiles accurately delineating and identifying any and all cultural heritage areas of significance (identify each by name & level of classification), and any safeguards.

The RFQ requirements are for a combined Aboriginal and historic heritage values assessment. In consultation with the CoH the assessment was broken into separate assessments for Aboriginal heritage and historic heritage, the separate assessments being undertaken in accordance with Aboriginal Heritage Tasmania's *Standards & Procedures* (AHT/DPIPWE 2018) in the first instance and Heritage Tasmania's *Pre-Development Assessment Guidelines* (HT/DPIPWE 2010) in the second.

The current assessment deals only with identifying and assessing the potential impact of the proposed works on Aboriginal heritage values as defined under the *Aboriginal Heritage Act 1975*.

The study aims for the current assessment therefore are to:

- Conduct background research and review documents relevant to the study area.
- In conjunction with an Aboriginal Heritage Officer, locate, document and assess the Aboriginal heritage values of the study area through a systematic on-ground survey.
- Prepare a concise Aboriginal heritage assessment technical report incorporating:
 - A description of each Aboriginal heritage site identified within the Study Area, including its location, contents and condition;
 - a significance assessment for each identified Aboriginal heritage site in accordance with AHT's *Standards & Procedures* (2018) and the *Aboriginal Heritage Act 1975* (AHA);
 - an assessment of any potential impacts of the proposed track improvement project on the Aboriginal heritage values;
 - specific recommendations for mitigating impacts to Aboriginal heritage values, including any AHA Permit requirements;
 - results of consultation with the Tasmanian Aboriginal community and Aboriginal Heritage Tasmania.



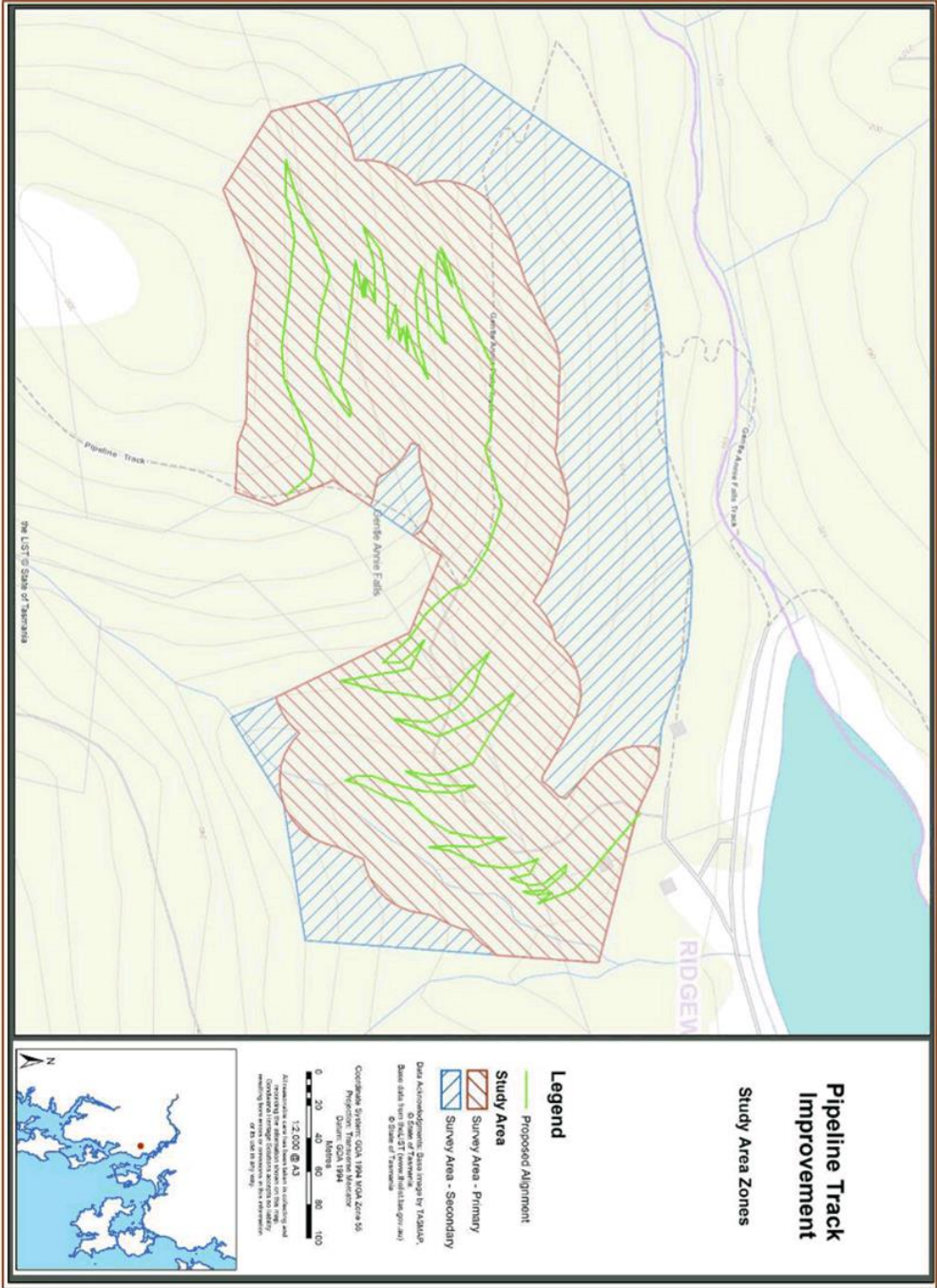


Figure 1.2: Study area zones

1.5 Personnel

This assessment was undertaken by Gondwana Heritage Consulting Archaeologist (CA) Greg Jackman and Consultant Aboriginal Heritage Officer (AHO) Caleb Pedder.

1.6 Study process

1.6.1 Desktop review

A search of the Aboriginal Heritage Register for a 2km radius of the proposed Gentle Annie Falls track was requested on 15 November 2021, with preliminary results provided by AHT on 26 November (AS1730) and access to site records and reports provided on 29 November.

The desktop review included the following sources:

- Aboriginal Heritage Register (AHR)
- Register of the National Estate (RNE)
- Ridgeway Park Cultural Heritage Survey and Assessment (McConnell *et al* 1998)
- Conservation and Management Plan for the Pipeline Track (Murray & Nieberler 1994)
- Hobart Mountain Water Supply System Conservation Management Plan (Futurepast 2012)
- Previous heritage assessment reports (list supplied by AHT)

1.6.2 Field survey

The field survey was carried out over 1.5 days spanning 9-10 December 2021. The survey method involved the Consulting Archaeologist and Aboriginal Heritage Officer surveying an initial series of sub-parallel pedestrian transects at c10m spacings centred on the indicative track alignment which was flagged by CoH prior to survey. This was supplemented by sub-parallel surveys across the broader study area at 10-20m horizontal spacings targeting 5m contours and meandering transects to circumvent obstacles, such as cliff and creek lines.

Transect tracklogs were recorded by handheld GPS referenced to MGA Zone 55 with autonomous sub-5m accuracy. Ground-surface visibility was logged along the archaeologist's transects in 10% increments.

For coverage estimation purposes, transects were taken as 4m wide, representing an effective visual scanning range of 2m either side of each surveyor.

Observations made during the field survey were recorded by written description and digital photography and positioned by DGPS (Trimble Catalyst to an accuracy of +/- 0.3-0.5m).

1.6.3 Aboriginal community consultation

The importance of engaging with traditional owners/custodians is an established principle of heritage management worldwide.¹ Specific requirements for indigenous community consultation on heritage

¹ i.e., refer the ICOMOS statement on Indigenous Cultural Heritage <https://australia.icomos.org/wp-content/uploads/Australia-ICOMOS-Statement-on-Indigenous-Cultural-Heritage.pdf>

matters are outlined in a range of State and Commonwealth guidelines, including Aboriginal Heritage Tasmania's *Standards and Procedures*, and the Department of Environment's [Ask First](#) and [Engage Early](#) publications.

AHT's *Standards and Procedures* states that "Appropriate Aboriginal consultation for the level of a proposed project is essential for successful outcomes, particularly if a proponent cannot avoid or mitigate potential impact to Aboriginal heritage" (AHT 2018: 23). On 28 April 2017 the Aboriginal Heritage Council (Tasmania) determined that consultation with an Aboriginal community organisation was not required when:

- *There are less than 10 isolated artefacts that are not associated with any other nearby heritage; or*
- *The impact of the project on Aboriginal heritage:*
 - *is not significant; or*
 - *will not destroy the heritage; or*
 - *affects only part of the outer approximately 20% of a buffer around a registered site.*

For the purposes of the current study consultation with the Tasmanian Aboriginal community has been undertaken by the AHO primarily through email. The consultation process in respect of the current project is summarised in Table 1.1.

Table 1.1: Community consultation log

| Date | Organisation | Contact | Method | Action | Response |
|-----------|--------------------|--------------------|--------|--|--|
| 1/06/2022 | Weetapoonna | Secretary | email | Provided draft report with request for comment | No response by 16/06/2022 |
| 1/06/2022 | Karadi | Rachel Dunn | email | Provided draft report with request for comment | Response 24/06/2022 Karadi Aboriginal Corporation do not endorse any proposal to upgrade the Pipeline Track on kunanyi. Karadi believe to do so would be detrimental to the Aboriginal Community's spiritual and cultural connection to the Mountain. |
| 1/06/2022 | Pungenna Community | Peter MacDonald | email | Provided draft report with request for comment | No response by 16/06/2022 |
| 1/06/2022 | SETAC | CEO | email | Provided draft report with request for comment | No response by 16/06/2022 |
| 1/06/2022 | TAC | Heather Sculthorpe | email | Provided draft report with request for comment | No response by 16/06/2022 |
| 1/06/2022 | weetapoonna | Rachel Dunn | email | Provided draft report with request for comment | No response by 16/06/2022 |

It is important to be aware that Aboriginal community organisations receive hundreds of requests to comment on development proposals each year but are not resourced to respond, particularly within short time-frames. Lack of a response does not indicate Aboriginal community acceptance of an assessment report finding or support for the activity or development to which it relates.

2. Environmental setting

2.1 Regional geology and physiography

In broad terms, the geology of the eastern face of kunanyi/Mt Wellington comprises conformable low angle beds of marine mudstone and siltstone at lower elevations overlain by terrestrial sandstone which has been intruded and capped by Jurassic dolerite towards the summit.

Deposition of the marine sediments commenced during the Late Carboniferous period approximately 310 million years ago in a shallow sea on the southeast side of the former Gondwana supercontinent which was then close to the South Pole. Glaciers transporting enormous quantities of older Proterozoic rocks from the west deposited sediment into the basin, forming muds with siliceous dropstones from icebergs floating offshore. As the supercontinent drifted north and climate warmed through the Permian and Triassic periods the sea retreated, and the marine sediments were superimposed by terrestrial sands deposited by river systems over a broad plain (Corbett 2019).

The process of erosion in the west and deposition in the east was interrupted around 180 million years ago when the Gondwana supercontinent started to break up, resulting in the injection of igneous magma into the sedimentary sequence and forming dykes and sills of resistant dolerite over much of Tasmania. The continental stretching continued throughout the Cretaceous and Tertiary periods as Antarctica and New Zealand pulled away creating a series of north-west-southeast fault-lines in eastern Tasmania. The layered sedimentary and dolerite sequences were downthrown along the faults, creating a series of rift valleys (grabens).

In the Hobart Area, the western side of the Derwent Graben takes comprises numerous faults which have broken the marine and terrestrial sediments and dolerite rock into a series of eastwards-descending steps. The sandstone into which the dolerite magma was originally injected has eroded away on the summit of kunanyi/Mt Wellington, exposing the resistant dolerite, but elsewhere sediments and dolerite are juxtaposed by faulting and differentially exposed by erosion.

The physiography of the eastern slopes strongly reflects these geological processes. Differences in erodibility between the marine and non-marine sediments and igneous rock have created a terraced profile through the study area with cliffing in the more massive sandstone units and lower angle ground slopes in the softer sediments. The interface between the dolerite and terrestrial sediments is mantled by steep-angled Pleistocene periglacial talus and scree above 600m elevation (Leaman *et al* 1976).

The east face of the mountain is dissected by radial streams which drain south into Browns River, east via Sandy Bay and Hobart Rivulets into Sullivans Cove and northeast via New Town Rivulet to New Town Bay and Humphreys Rivulet to Elwick Bay.

2.2 Local geology, soil and vegetation

The study area is centred on a north-east trending spur within sediments of the Knocklofty Formation, a belt of sandstone and siltstone up to 230m thick that forms part of the Early Triassic Upper Parmeener Supergroup that extends in an arc around the lower footslopes of kunanyi/Mount Wellington. Locally the rock comprises sub-horizontal beds of cross-bedded quartz sandstone interbedded with siltstone and mudstone of the Ross Sandstone, an early component of the

formation, which extends from 155m elevation at the Upper Reservoir to 305m elevation below Ridgeway Reservoir. The sandstone is capped by dolerite at 295m elevation on the spur between Gentle Annie Falls and McDermott's Saddle which has protected the underlying sandstone from erosion and structured the local drainage. The spur is bordered to the north by Sandy Bay Rivulet and to the south by an unnamed tributary that drains into the rivulet at the Upper Reservoir.

Individual sandstone beds are mostly less than 0.6m thick and display upwards fining sequences. The stone contains several prominent sub-perpendicular joint sets which cause the stone to fracture into blocks. Erosion has created a series of low cliffs up to 4m high on the north face of the spur, but cliffing is less pronounced on the east and west faces. Collapse along beds and joints has resulted in the creation of irregular and unstable overhangs in the lower portions of cliff lines. The bed and joint structures have been exploited by quarrying to supply materials to build the historic water system

Ground slope is steep, averaging 20° along the fire trail which runs up the north-east side of the spur and 25° on the north face. Soils comprise friable podzolic kurasols that are highly mobile on the steep slope. The soils are hydrophilic and strongly acid, restricting the vegetation to eucalypt forest types. This is dominated by *Eucalyptus pulchella* forest and woodland on the lower slopes which grades into *E. tenuiramis* upslope with a bracken and shrub understory on the north face. This is replaced by *E. obliqua* dry forest and woodland in the more shaded eastern gully and by *E. obliqua* wet forest along the heavily shaded and perpetually damp Sandy Bay Rivulet to the west. The area has been historically logged and impacted by bushfires and the present vegetation is 20th C. regrowth.

2.3 Climate

The study area has a temperate maritime climate, with maximum daytime temperatures ranging from approximately 12° C. in July to 22° C. in January². Minimum overnight temperatures average 4.6° C. in July to 12° C. in February. The area is on the western edge of the kunanyi/Mt Wellington rain shadow receiving an average 835mm rainfall distributed relatively evenly throughout the year, with a moderate reduction in mid-summer and an increase in mid-spring (<1SD)³.

2.4 Study area description

The study area is situated on a north-east trending dissected sandstone foot spur which can be considered a single geomorphic unit. There is some microclimatic variability due to differences in shading and humidity however the uniform steepness of terrain, ecotonal diffusion and lack of special resources militates against defining separate zones for archaeological analysis. The following description of the study area is therefore based around the proposed development.

The proposed track switches back across the fire trail that runs up the north-west side of the sandstone spur, traversing the north face to the west and turning south into the gully draining the east side. The north face has been heavily prospected for building stone and contains numerous access tracks, pits and spoil dumps. Vegetation is light and scrubby. The eastern gully is steeper, more shaded and the vegetation less open, and contains at least three historic tracks associated with

² Based on Ellerslie Road, Hobart, 4km northeast of study area

http://www.bom.gov.au/jsp/ncc/cdio/weatherData/av?p_nccObsCode=36&p_display_type=dataFile&p_startYear=&p_c=&p_stn_num=094029

³ Based on Waterworks Reserve <1km away

http://www.bom.gov.au/jsp/ncc/cdio/weatherData/av?p_nccObsCode=139&p_display_type=dataFile&p_startYear=&p_c=&p_stn_num=094031

historic quarrying for timber harvesting that cross the creek and return along the west side of the gully.

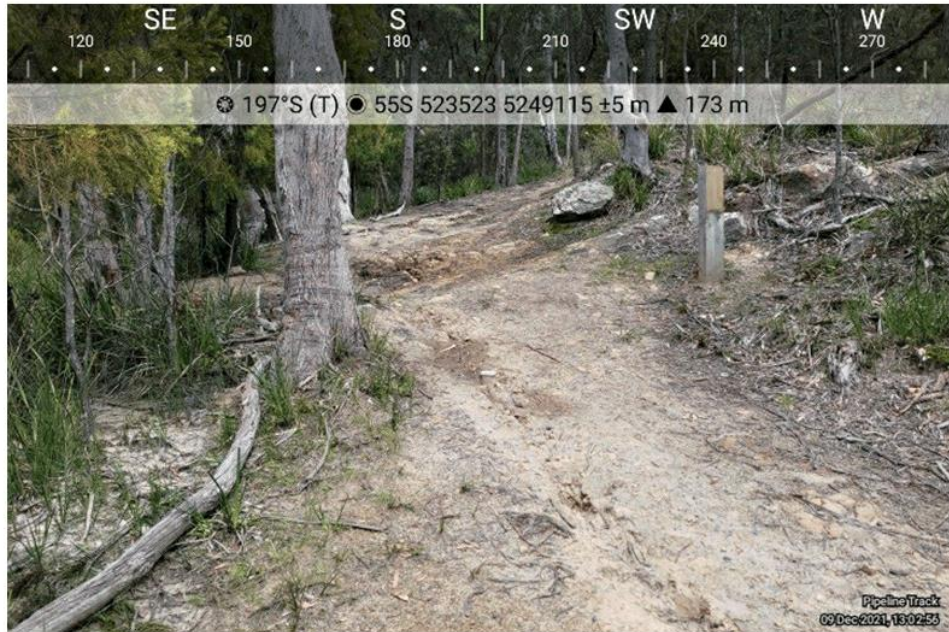


Figure 2.1: View south along fire trail traversing north-east side of spur



Figure 2.2: View south along west side of gully on east side of spur



Figure 2.3: View northeast along unnamed gully at east side of study area

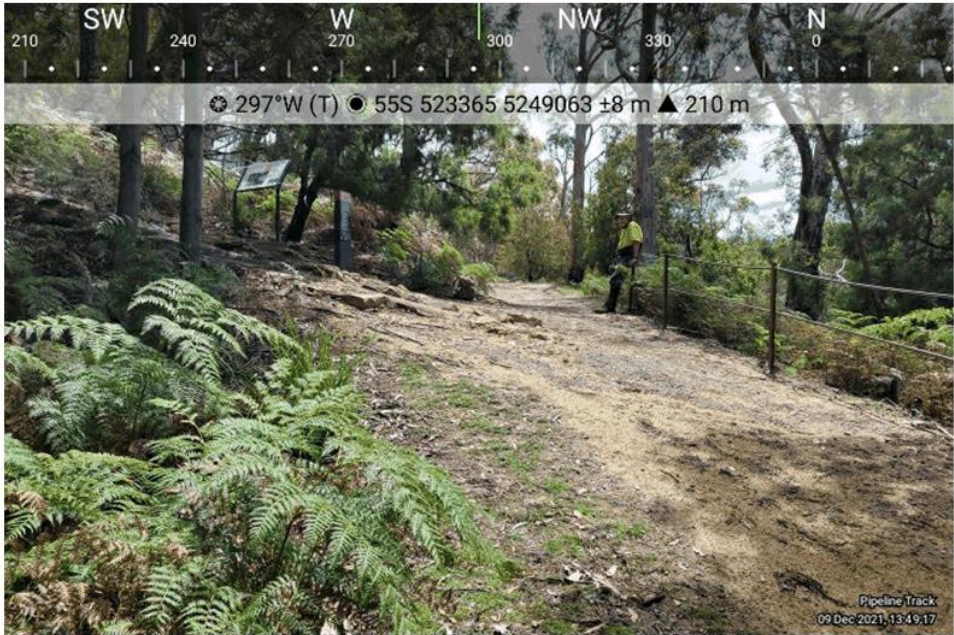


Figure 2.4: View west along existing Gentle Annie Falls track from pipehead well track junction

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Figure 2.5: View southeast upslope from existing track across upper switchback area



Figure 2.6: View northeast downslope across upper switchback area towards existing track

Midway upslope the proposed new path connects with the existing Gentle Annie Falls walking track that enters from the west to arrive at a set of steps leading to the upper pipeline intake.

The proposed track follows the existing track for c. 140m before zigzagging up the north face of the spur through lightly vegetated woodland, lacing through a band of low sandstone cliffing between the 235-250m elevation contours before encountering another band of sandstone outcrop around 265-270m elevation. This upper band has been extensively prospected and borrowed, and the last major track switchback follows sections of historic quarrying tracks to the point where it connects with the north end of the Pipeline Track at the head of Gentle Annie Falls.

The portion of study area north of the 80m track corridor extends into the shaded area on the south side of Sandy Bay Rivulet with a resulting thickening of vegetation. This downslope zone also includes several low sandstone cliff lines containing low and shallow overhangs. These cliff lines are heavily jointed and the overhangs small with north dipping sandstone floors.



Figure 2.7: View west along hill face towards Sandy Bay Rivulet, west portion of study area



Figure 2.8: Sandstone cliffing on lower north spur face displaying typical blocky dissection



Figure 2.9: Shallow overhang with stone floors formed in lower north face cliff section

3. Historical sketches

3.1 Aboriginal land use

At the time of European contact, it is thought that *timtumili minanya*/River Derwent marked a major political boundary delineating part of the territories of three separate Aboriginal nations. The Big River nation controlled the land north of New Norfolk on the west side of the river and as far south as the Jordan River on the east bank. The western shore of the river south of New Norfolk were occupied by the Southeast nation clans, while the eastern shore south of the Jordan River was controlled by the Oyster Bay nation (Ryan 2012: 17).

Being the traditional owners of the area first permanently settled by Europeans in 1803, the Southeast nation peoples bore the brunt of white incursion and suffered the effects of dislocation and disruption from an early stage. Consequently, the historical accounts of cultural life are fragmentary and lacking in detail. It is believed that the Southeast nation comprised as many as seven clans at the time of European arrival, each clan comprising several family groups totalling perhaps comprising 70-80 individuals. Only the names of four clans are historically recorded. The *mouheneenner*⁴ were based around Hobart, which was apparently known by them as *nibberloone* or *linghe*, adjoining an un-named clan at North-West Bay and the *nuenonne* clan of Bruny Island, who occupied the lower Huon and channel regions. Further south along the coast were the *lyluequonny* around Recherche Bay and another un-named clan based at South Cape. Inland, the area around and upstream of Huonville was home to the *mellukerde*. The combined Southeast clan territories extended from New Norfolk to Storm Bay in the east, and from South East Cape to the upper reaches of the Huon River in the west, incorporating over 500km of resource-rich coastline (Ryan 2012: 39-41).

Historical accounts suggest that the Southeast peoples enjoyed an economy and social life that was largely focussed on the seasonal exploitation of coastal resources and the opportunities for travel and communion afforded by the Derwent Estuary and its islands. Winters were typically spent on the coast gathering shellfish, with clans congregating on Bruny Island in early summer for the muttonbird season. In late summer, groups gathered at Recherche Bay to hunt seals, catch fish and seabirds, and hunt kangaroo and possum inland. (Ryan 2012: 41). The South-east clans were adept mariners, travelling by bark canoe across Storm Bay to acquire women and undertaking open sea voyages up to 25km to visit offshore islands during the sealing season.

Reports exist of clans from neighbouring nations, including the Big River people, visiting *mouheneenner* territory seasonally, travelling as far as the foothills of kunanyi/Mt Wellington. At such times, large numbers of people got together to share resources and for ceremonies, with gatherings of up to 300 people witnessed between Hobart and Kingston before 1807 (Brown 1986).

Historical accounts of specific Aboriginal activity on kunanyi/Mt Wellington are scant but suggest that the area was actively managed and utilised. Botanist Jean-Baptiste Leschenault de la Tour from Nicholas Baudin's 1802 expedition reported on 25 Jan:

"On all sides [of the Derwent River] there arose black clouds of smoke, on all sides the forests were on fire...They had withdrawn to a lofty mountain [presumably kunanyi/Mt Wellington], which itself looked like a huge pyramid of flame and smoke. From there their clamour could

⁴ Muwinina in palawa kani

be heard, the number gathered seeming to be large...the fire had destroyed all the grass, and most of the bushes and small trees had met with the same fate...the natives had fled, abandoning their miserable huts... (Leschenault in Plomley 1983, cited in Brown 1986, Appendix 9.1.1: 167)

Naturalist Francois Peron from the same expedition observed on 26 Jan:

"We saw another conflagration like that the day before...the foothills...being now no more than a vast desert ravaged by fire, with the back of the mountain [kunanyi/Mt Wellington] in flames." (Peron in Plomley 1983, cited in Brown 1986, Appendix 9.1.1: 167)

The establishment of a permanent white settlement in Sullivans Cove in 1804 and its rapid connections to what is now Glenorchy and Sandy Bay by farming estates across the lower footslopes of the mountain pressured the traditional owners, cutting off access between the mountains and Derwent River.

Despite the incursion, the *mouheneenner* initially showed politeness to small parties of whites they encountered in the bush, and in January 1805 offered kelp and crayfish to outlying settlers at Kingston, Taroona and New Town in exchange for bread and potatoes (Backhouse 1843: 21). The situation began to deteriorate shortly afterwards however, as the settlers sent out foraging parties to hunt kangaroo to ameliorate an impending famine in the colony. Resenting the belligerence and wastefulness of these incursions, the *mouheneenner* began to attack the hunting parties or settlers who strayed too far from the settlements and set fire to corn stacks (Knopwood 16 Feb 1805 in Nicholls 1977: 77, cited in Brown 1986, Appendix 9.1.1:172).

The *mouheneenner* continued to burn the kunanyi/Mt Wellington footslopes right up to the Sullivans Cove and New Town settlements for the next few years, although whether it was purely a continuation of cultural practice or an attempt to contain the invaders is not clear. At the same time, some Aboriginal people began to make brief visits into the town. These fragile accommodations were shattered as white settlement dramatically expanded after 1820; a breakout that was resisted by the Aboriginal clans and ultimately resulted in the exile of survivors to government reservations after 1830. While not an active landscape of resistance in the final conflict phase, kunanyi/Mt Wellington appears to have placed a strategic role in the Aboriginal monitoring of white activities.

Wooraddy, a chief of the neighbouring *nuenonne* clan from Bruny Island recalled in 1831, *"...when the first [white] people settled they cut down the trees, built houses, dug the ground and planted, that by and by more ships came, then at last plenty of ships; that the natives went to the mountains [presumably kunanyi/Mt Wellington], went and looked at what the white people did, and went and told other natives and they came and looked also"* (Robinson & Plomley 2008, 408).

3.2 European land use

The selection of Sullivan's Cove for the first permanent British settlement in southern Van Diemen's Land was based in part on the belief that the Hobart Rivulet from Mount Wellington would provide a reliable and virtually endless source of fresh water, something that was not readily available at the failed settlement at Risdon Cove. The rivulet was surveyed to its source at the Springs in 1804 by George Prideaux Harris and for the next forty years the waterway was engineered and tapped at various locations to provide water for drinking and industry, the two uses often in conflict. By the 1840s the quantity and quality of water sourced from rivulet water was being widely criticised for injuring the health of Hobart's citizens and constraining the growth of the town (Solomon 1976: 51).

In 1859 Joseph N. Gale, a Scottish born engineer based in Melbourne, was contracted by the Hobart Municipal Council to design and build a new water supply scheme which involved diverting water from Fork Creek and Browns River Creek higher on the mountain to a receiving house beside Sandy Bay Rivulet from where it would be piped to Hobart for reticulation. Surplus water would be diverted into a new storage reservoir situated on the Sandy Bay Rivulet below the receiving house.

Water was diverted from an intake well on Fork Creek and conveyed by wooden troughing to a second masonry intake on Browns River. From there, wooden troughing continued east to Halls Saddle, crossing Longhill Creek on stone piers, and around the north side of Chimney Pot Hill to McDermott's Saddle where it entered stone troughing leading to the edge of a high sandstone bluff 110m above the level of the Receiving House (Scripps 1988: 3). Here the water passed through masonry troughing cut into the rock and over a sandstone ledge creating an artificial waterfall now known as Gentle Annie Falls. The water travelled along a stone cut channel at the base of the falls to the pipe-head well where it entered steel pipes for the final decent to the Receiving House. Here the water was stilled and filtered prior to entering a ten-inch cast iron water main leading to a new distribution reservoir in Hill Street West Hobart (Scripps 1988: 3).

Due to the difficulty of accessing much of the area and bringing building materials to the sites, most of the timber and stone used in the construction of the water conveyance was sourced locally (Scripps 1988: 57). Stone from quarries near Gentle Annie Falls may also have been used to construct a stone valve tower built by John Gillon at the lower end of the original, lower reservoir in 1862 (Scripps 1988: 22).

During subsequent upgrades, a second (Upper) reservoir was constructed above the original (Lower) reservoir and the timber troughing was replaced with cast iron pipes. Masonry aqueducts and new stone arched bridges were constructed by Joseph Hawkes with stone collected from 'the Falls quarry' likely to be a reference to one of the quarries near Gentle Annie Falls, where he employed six quarrymen, three masons and a labourer. Once cut, the stone was drawn by three-horse teams to the construction sites. Labourers, masons, blacksmiths, strikers and plasterers were all employed to excavate and line the masonry elements of the conveyance (Scripps 1988: 11, 60).

Construction of a third and larger reservoir at Ridgeway in 1918 fed directly by a concrete pipeline from the North West Bay River reduced the reliance on the original conveyance. When a new pipeline from Lake Fenton near Mount Field was constructed in 1940 to bring water to the Sandy Bay reservoirs the original mountain supply via McDermott's Saddle and Gentle Annie Falls was rendered fully redundant was decommissioned although the service track (the Pipeline Track) is maintained as a popular recreational walk.

4. Desktop summary

4.1 Regional studies

While seminal investigations of the Aboriginal archaeology of Tasmania's north-west, west and east coasts were being conducted in the 1970s which pushed the proven date for earliest Aboriginal occupation of Tasmania from c5,000 to 8,000 and then 23,000 years BP (i.e., Lourandos 1970, Jones 1971, Bowdler 1977), no systematic studies within south-east Tasmania were undertaken prior to the 1980s. By this point individual discoveries in the upper Derwent catchment had demonstrated Aboriginal occupation of the central eastern Tasmania by c. 20,000 BP (Goede and Murray 1979) however dates for the coastal occupation of the southeast coast typically failed to extend beyond the mid-Holocene (Brown 1986, 109).

A basal date of 8,700 +/- 200 BP was obtained by Grote Reber from the base of a midden at Carlton Bluff (Reber 1965: 266), however the methodology has been questioned (Bowdler 1986: 3). Most of the undisputed earliest dates obtained prior to 1986 from South-east coastal and estuarine midden sites fall within the 5,000-6000 BP range, corresponding to the period in which post-glacial sea levels are generally considered to have stabilised around their present level (Lambeck & Nakada 1990). Sigleo and Colhoun (1975) dated occupation horizons within an aeolian sandsheet at Old Beach of 5,800 +/- 130BP and inferred that artefacts at the base of the sheet may be of Pleistocene age, however no dates were obtained. A date of 4,540 +/- 105 years was obtained from a site at Bridgewater (Colhoun 1978; 11), while at excavations by McGowan at Risdon Cove yielded a date of 4,900 +/- 90 BP (McGowan 1985: 84). South of the study area, a midden basal date of 6,050 BP was reputedly obtained at Kellys Point on Bruny Island, while a midden basal date of 4,140 +/- 90 BP has been published for Seven Mile Beach (Colhoun 1985: 43). Closer to the present study area Kerrison & Binns (1984: 60) reported a date of 5,210 +/- 110 years for a midden in the Royal Tasmanian Botanical Gardens, while most recently a date of 8,090 +/- 87 years has been reported for a midden at Salamanca Place in Hobart (Austral Tasmania 2020).

Excavations by Paton in 2010 at the Jordan River levee site has radically challenged understandings of the Aboriginal occupation of south-east Tasmania by claiming a basal date of 41,000 BP for an artefact bearing levee deposit within the lower Jordan River Valley, with continued occupation of the site to recent times (Paton 2010). While the timing of first occupation of the inland regions of southeast Tasmania remains contested, there is general agreement that the large numbers of currently visible sites, particularly middens, around the current south-east coastline and Derwent estuary reflects intense occupation of this zone as post-glacial littoral ecosystems matured.

Systematic studies of Derwent estuary sites commenced in the 1960s, with seven studies being carried out by 1979 (Stockton & Wallace 1979). In that year Charles Morris undertook an investigation of the faunal composition of middens at Droughty Point as part of a Bachelor of Education Degree (Morris 1979). Morris observed local differentiation in the form and content of middens between the west and east Droughty Point shorelines, with the western middens being smaller and shallower than the eastern examples, many of which were extensive and/or stratified.

Morris' Droughty Point midden investigation was followed in 1980 by a major study of the Derwent estuary by Ian Officer, also in support of a B. Ed (Officer 1980). Officer recorded 416 middens between New Norfolk and a line connecting Blinking Billy Point to Tryworks Point: 298 on the east side and 118 on the west side of the river. Eleven quarry suites were also documented.

These and other thematic studies were subsequently incorporated into a regional study of South-east Tasmania by PWS archaeologist Brown (1986) which was funded by the National Estate Grants Program as part of a regional inventory and resource management framework for Tasmania. Brown undertook surveys in a range of different environments, including coastal and estuarine areas, offshore islands and inland river and valley systems. Areas sampled included Betsy, Partridge and Bruny islands, Colebrook, Bothwell and Mt Field.

Based on his findings, Brown classified the south-east study area into five major landscape divisions: Offshore islands, Bruny Island, Coastal and estuarine regions, Inland hills and plains and Inland mountains and alpine plateau.

Brown's Inland Hills and Plains division extends roughly from the 40m to 600m AHD contours and is the largest zone within the southeast region. It includes the current study area but due to the large range of environments encompassed by the division the characteristics for Aboriginal sites are only broadly outlined (1986: 93-95):

- Open sites, including artefact scatters and isolated artefacts, are the most common site type;
- The greatest number occur on valley and creek floors and surrounding footslopes;
- The largest sites (>50 artefacts) are situated on well drained, typically sandy, soils, usually near a water source but in slightly elevated positions relative to river and creek floodplains, and often with a northerly aspect offering protection from winter weather patterns;
- Medium (10-50 artefacts) and small (< 10 artefact) sites appear to have no distinct pattern and occur over widespread areas of the valley plains and lower hillslopes;
- Alluvial deposits formed in river and creek floodplains and river terraces may contain buried artefactual material;
- Artefact types include unmodified flakes, flake fragments, cores and debitage, while retouched flakes include a variety of scrapers. Unmodified cobble grinding and hammerstones are also observed. Backed or blade forms are absent.
- Quarry sites target specific geological resources including hornfels, silicified breccia (silcrete), quartzite and chalcedony, and range in size from a few boulders to extensive outcrop formations. Reduction is mainly carried out at/near the source.
- Rock-shelters will be confined to areas of sandstone outcrop, with most frequent use being evident in large north and northeast facing shelters closest to valley floors.

4.2 Local studies

Several influential researchers including Cosgrove (1984) and Brown (1986) have advocated using a catchment approach for examining the spatial patterning of inland Aboriginal sites in Tasmania. This stems partly from historical accounts which indicate the importance of geographic boundaries, such as major rivers and ranges, in shaping territorial boundaries but also from the results of archaeological investigations themselves. While catchment analysis most usefully applied at the scale of larger river systems, it may also be useful at the sub-catchment drainage scale, as creeks and ridgelines within clan territories were often favoured avenues for travel and access to resources.

The following discussion groups the assessments in terms of the drainage system with which they are primarily connected.

4.2.1 Sullivans Cove/Sandy Bay Catchment

This catchment encompasses the ridges and gullies of streams that drain the eastern footslopes of kunanyi/Mt Wellington east to the River Derwent, including Guy Fawkes Rivulet, Hobart Rivulet and Sandy Bay Rivulet. Relevant local heritage studies are discussed below.

Several studies have been carried out in the Ridgeway and Fern Tree areas, the most substantial and closest of which is a 4.5km² survey of Ridgeway Park conducted as a burnt-area survey in 1998 by Archaeologist Anne McConnell and Aboriginal Heritage Officer Steve Stanton (McConnell *et al* 1998). Ground surface visibility for the assessment was estimated at 75% and particular attention was paid to areas considered most conducive for locating Aboriginal heritage including hilltops, ridgelines, level areas, spurs, watercourses and valley floors (McConnell *et al* 1998: 3). Four Aboriginal heritage sites were identified within the park comprising an isolated artefact, small scatter of two flakes and two rock shelters with potential to contain cultural deposits (McConnell *et al* 1998: 15). The results were significantly less than expected based on findings in upland areas elsewhere in south-east Tasmania, prompting the authors to conclude that while concealed material may be present on the flatter valley floors adjacent to the Sandy Bay Rivulet, particularly in areas disturbed by creation of reservoirs, that the potential for more sites to occur on ridges in the study area is low (McConnell *et al* 1998: 15).

The following year, Archaeologist Robin Sim surveyed a 300m section of subsurface Telstra cable between Huon Road and Turnip Fields Road in South Hobart, approximately 1km west of the current study area. The survey passed along the edge of a cleared paddock on a south-east facing hillspur overlooking the Sandy Bay Rivulet, which would formerly have been cloaked in wet eucalypt forest. No sites were observed during the survey, which Sim attributed to the area not being a focus for past Aboriginal activity (Sim 1999: 3).

Closer to Fern Tree, in July 1999 Steve Stanton surveyed a section of Pillinger Drive Track between Huon Rd and Bracken Lane preparatory to a proposed Pillinger Drive bypass. The assessment covered an area 15-50m wide and 400m in length. No Aboriginal sites were observed, with the author concluding that the potential for Aboriginal sites was low owing to factors including the southerly aspect and steepness of terrain (Stanton 1999a: 2). Stanton considered that Aboriginal sites were more likely to be concentrated below the foothills in level areas which afforded easier access (Stanton 1999a: 3). Stanton also concluded that although all endemic vegetation is significant to Aboriginal Tasmanians, the native vegetation within the survey area was compromised by development impacts and invasion of introduced species and better represented elsewhere (Stanton 1999a: 4).

Few studies are recorded for the higher slopes of the mountain, largely due to the reduced amount of residential development and associated services although several recreational tracks have been established or upgraded on the mountain over the past 30 years. In 2004 Steve Stanton carried out an assessment of Aboriginal heritage values at Sphinx rock, a prominent but localised spur of Triassic sandstone at around 700m AHD on the middle eastern face of the mountain, approximately 3km west of the current study area, as a precursor to a safety upgrade of the lookout access track. Stanton did not identify any Aboriginal relics which he attributed to the generally lower intensity use of the steeper mountain terrain compared to the Derwent estuary and lower footslopes. Stanton did

however allude to the potential for distinctive landforms, such as Sphinx Rock, to contribute to the Aboriginal cultural landscape values of the mountain in a general sense (Stanton 2004: 5).

In 2016 and 2018 Anne McConnell in conjunction with a team led by Aboriginal Heritage Officer Andry Sculthorpe from the Tasmanian Aboriginal Centre carried out several burnt area surveys across the east face of Wellington Park. The 2016 surveys covered 52ha focussing on four zones, two at Limekiln Gully at the northern end of the park, one at Lenah Valley on the north-eastern slopes and another at South Hobart near Fern Tree. The South Hobart burnt area survey extended beyond the park to Strickland Avenue. No artefacts were identified in the South Hobart/Bracken Lane burnt area, which the authors concluded demonstrated that at least on the eastern slopes and foothills, *“sites are not generally likely on steeper slopes and spur ridges, but that there is some, albeit low, potential for small sites on the flatter parts of major ridges and spurs”* (McConnell & Sculthorpe 2017: 21).

More recently, Archaeologist Greg Jackman and Caleb Pedder assessed four proposed fuel reduction zones in the Ferntree area of Wellington Park ahead of a 2020 risk abatement program undertaken by City of Hobart. No artefacts were identified which was attributed to the generally steep ground slope encountered and paucity of specific economic resources, such as lithic materials or culturally useful plants. (Jackman & Pedder 2020: 26).

Few systematic surveys for Aboriginal heritage have been carried out along the upper reaches of Hobart Rivulet. The closest recorded finds to the current study area are a small scatter of displaced artefacts identified by Archaeologist Michael Jones during test pitting in Syme Street within the WHA buffer zone for the Cascades Female Factory (Jones 2013). Jones concluded that the artefacts were introduced in a recent fill deposit from an unknown source, rendering them effectively useless for understanding site patterning. (Jones 2013: 89).

More recently, Archaeologist Nic Grguric undertook targeted assessments of several areas on the eastern foothills and summit of kunanyi/Mt Wellington for a proposed cable car development. The assessment focussed on two main zones: dissected Permian sediments on the ridgeline between Guy Fawkes Rivulet and McRobies Gully and elevated/steep dolerite terrain between Pinnacle Road and the summit. The McRobies Gully survey areas for the cable car base station and access road featured moderate ground slope and a predominate north-facing aspect, with vegetation comprising low *Eucalypt obliqua* dry forest and *E. tenuiramis* forest grading into low *E. pulchella* upslope. The locations for two towers and access corridor upslope were on steep and rocky dolerite scree over mudstone, thickly wooded with *Eucalyptus obliqua* wet forest with dense shrubby undergrowth (Grguric 2021 30-32).

No Aboriginal heritage was identified during the surveys which Grguric concluded was due the areas being unfavourable for occupation owing to steepness, rocky ground surface and distance from reliable water sources (Grguric 2021: 37). Rather than assess all kunanyi/Mt Wellington environments, Grguric recommended future investigations should utilise a targeted landform-element approach focussing on flatter areas and saddles in the foothills, outcrops of knappable stone and rockshelters/overhangs (Grguric 2021: 37).

4.2.2 New Town Catchment

Few heritage studies are reported for this area. In 1998 Steve Stanton undertook an assessment of potential routes for overhead and underground cables associated with a re-development of the HEC West Hobart power network. The study area extended from Glenorchy to McRobies Gully via Lenah

Valley, traversing a series of low foothills and valleys extending from the Derwent River to the lower slopes of kunanyi/Mt Wellington. The routes were found to have been variously modified by historical land use, and no Aboriginal heritage sites were identified (Stanton 1998: 2). Stanton concluded that Aboriginal use of the area appeared to be focussed primarily in the lower-lying sections of the Derwent valley apart from a sparse distribution of sites, including rock-shelters on the lower foothills of the mountain and a small number of sites adjacent to watercourses (Stanton 1998: 6).

The following year, Stanton undertook an assessment of Knocklofty Reserve ahead of a weed eradication project undertaken by the Friends of Knocklofty Bushcare Group (Stanton 1999b). No sites were identified during the survey, although Stanton considered some areas as being conducive for sites but degraded through historical land use. Three possible rock-shelter sites previously recorded by amateur archaeologist John Thompson at the southern edge of the reserve were considered by Stanton to be highly significant and sensitive to physical disturbance, with avoidance being recommended (Stanton 1999b: 1).

In 2008 Steve Stanton assessed a property at 198 Pottery Road Lenah Valley for a proposed water supply augmentation reservoir. No Aboriginal artefacts were found during the survey which Stanton attributed to the steep terrain and rocky soil, absence of shelter or stone suitable for artefact manufacture and the distance from fresh water (Stanton 2008: 3).

The 2016 WPMT northern area burnt area surveys located a single artefact in the Lenah Valley Hills zone; a silcrete scraper situated on the northern side of the main spur ridge crest running approximately east – west between Brushy Creek and McRobies Gully. The subsequent 2018 WPMT burnt area surveys covered 64ha focussing on the mid to lower foothills on the northern side of the Wellington Range, including Limekiln Gully, Goat Hills and Collins Cap within the Berriedale-Elwick catchment north of New Town. Three Aboriginal sites were identified within the Goat Hills area, comprising two isolated artefacts (quartzite flake and a metamorphic quartzite flaked piece with use wear) and a small artefact scatter comprising 13 pieces (cores, flakes & flaked pieces) of low grade hornfels (McConnell & Sculthorpe 2019: 40). The sites were all located on relatively flat and moderately stony of two adjacent spurs running off a major bench at c.400-450m asl down to the Derwent valley floor, and originally cloaked with dry eucalypt forest with a heathy/shrubby understorey. Permian metamorphosed sediments occur within the survey area however no quarry sites or reduction areas were found (McConnell & Sculthorpe 2019: 35).

Having the broadest purview of local studies to that time, findings from the 2016 and 2018 WPMT burnt area surveys were important in formulating a series of predictive statements for Wellington Park by McConnell & Sculthorpe (2019) that are considered relevant to the current study and reproduced in Section 4.4.1.

4.3 Statutory lists and databases

4.3.1 Commonwealth heritage registers

There are no entries on statutory lists established under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) that pertain to the current study area. Ridgeway Park is listed (ID 10949) as part of the Wellington Range Area on the Register of the National Estate, a former statutory list established under the EPBCA's precursor legislation the *Australian Heritage Commission Act 1975* but non-statutory archive since 2012.

The Wellington Range Area listing, which also includes Knocklofty Reserve and most of Wellington Park, primarily references biodiversity and geoheritage values and does not document or assess Aboriginal heritage values, as the following statement makes clear: *"It is possible that Indigenous cultural values of national estate significance exist in this place. As yet the Australian Heritage Commission has not identified, documented or assessed these values."*

4.3.2 Aboriginal Heritage Register

A search of the Aboriginal Heritage Register (AHR) in November 2021 identified four registered Aboriginal sites within 2km of the current study area. Summary details are given in Table 2.1.

The four sites comprise two unoccupied rockshelter sites, one small artefact scatter and one isolated artefact. The two possible rockshelter sites comprise low overhangs in steep sandstone terrain on the east side of the unnamed tributary running along the east side of the Gentle Annie Falls spur. One site (AH 7992) plots at c. 195m elevation at the southeastern edge of the 40m track buffer zone and c. 13m inside the combined study area. The other potential rockshelter plots at c. 255m approximately 170 south-east of the southeast corner of the combined study area.

The artefact scatter (AH 7993) comprises two quartzite artefacts recorded in a tributary gully at c. 150m elevation 205m southwest of the westernmost proposed switchback and c 175m west of the western study area boundary. The single artefact (AH 7990) was found in a secondary context on fills for a sewage line running along the south side of Huon Road 500m of the current study area.

The small sample size and nature of the recorded sites makes it impossible to identify meaningful patterning. One of the open sites is situated in a secondary context and the two rockshelter sites are geologically constrained, although all in-situ sites are located on the north-faces of major east-west sedimentary foot slope ridges within 30m of a drainage line.

Table 2.1 AHR sites within 2km of the current study area

| AHR | Site types | Description/Landscape | Contents |
|------|------------------------|--|---|
| 7990 | Isolated artefact | Crest of small sandstone spur at edge of valley above Sandy Bay Rivulet Artefact located in secondary context, 8m south of Huon Road, soils disturbed by sewage line. Triassic freshwater quartz sandstone and micaceous siltstone supporting mix of <i>Eucalyptus pulchella</i> and <i>Eucalyptus tenuiramis</i> forest and woodland. | Retouched silcrete flake |
| 7991 | Unoccupied Rockshelter | Located on north facing hillside overlooking sandy bay Rivulet. Triassic sandstone with prominent cliffing. Denoted as "Sixpence Cave" on LIST topographic map. | No visible contents. Shelter is 6m wide and 4m deep. 100-150mm of sandy deposit |
| 7992 | Unoccupied Rockshelter | Small steep valley south of gentle Annie Falls. Middle face of slope with northwest aspect. Triassic sandstone with prominent cliffing. | No visible contents. Shelter is 3.5m wide and 1.5m deep. |
| 7993 | Artefact Scatter | Level area on the lower slopes of a spur between McDermotts Saddle and Sandy Bay Rivulet. Situated beside old track, possibly displaced. Triassic freshwater quartz sandstone, micaceous siltstone and mudstone supporting mix of <i>Eucalyptus pulchella</i> and <i>Eucalyptus tenuiramis</i> forest and woodland. | Two quartzite flakes |

4.4 Predictive statements for track study area

4.4.1 Predictive statements for Wellington Park

Based on their burnt area surveys and a review of relevant literature, McConnell & Sculthorpe developed a set of predictive statements for the presence of Aboriginal sites in Wellington Park and which generally pertain to the east face of kunanyi/Mt Wellington outside the park boundaries.

Other areas are considered to have low – very low sensitivity for Aboriginal sites (McConnell & Sculthorpe 2019: 45-46). Factors for elevated potential for presence of Aboriginal sites include:

1. Flat to gently sloping valley bottom areas adjacent to permanent watercourses – high potential for surface and subsurface open sites, in particular larger sites. Sites in these alluvial contexts however may be buried.
2. Areas within c.200m of a fresh water source and which are flat to gently sloping (i.e., <c.10° slope) – high potential for surface and subsurface open sites.
3. Flat to gently sloping ground (of <c.10° slope) which is well drained – medium potential for open sites (may not apply at higher altitudes (e.g., above, c.800-900m asl). The potential is considered higher where the ground is not stony or only slightly stony.
4. Steeper stony slopes (in particular on dolerite) and slopes of >c.16° – low potential for open sites.
5. Spurs between the lowlands surrounding Wellington Park and kunanyi/Mt Wellington and the Wellington Range – medium-high potential for small surface open sites.
6. Broad flat ridges and saddles – high potential for surface and subsurface open sites.
7. Other ridges and spurs – medium potential for surface and subsurface open sites, particularly where not stony or only slightly stony.
8. Benches in the landscape below c.800-900m asl (all distinct benches including those on spurs and broad slopes) – moderate-high potential for small-medium surface open sites, particularly where not stony or only slightly stony. Major benches (i.e., larger benches formed on resistant rock surfaces) below c.800-900m asl – high potential for sites.
9. Edges of forest and heath, grassland or marsh at the boundary of the two environments – high potential for small-medium surface open sites where the land is not steeply sloping.
10. Areas of resistant Permian and Triassic rocks (primarily the lower Triassic “Rlq” and “Rls” units) – high potential for containing rockshelters which may have been occupied or which may contain art works.
11. Areas of Permo-Triassic rocks (in particular siltstones-mudstones; and demonstrated within the Permian Faulkner Group), and adjacent – high potential to have tool quality cherty hornfels, hence quarries and associated working sites.
12. Areas of Tertiary sediments and the edges of Tertiary basalts, and adjacent – high potential to have tool quality silcrete, hence quarries and associated working sites.
13. Areas of Permian geology with quartzite rocks or quartzite components (e.g. in conglomerates and as dropstones in some Permian sediments) (in particular in quartz sandstone and conglomeratic units, and in the Permian Fern Tree Group) – high potential to have tool quality quartzite, hence quarries and associated working sites (where stone occurs as dropstones, past use is likely to have been relatively opportunistic and not regular, hence the potential for quarries and associated open sites is considered to be lower).
14. Stony dolerite terrain – low potential for surface and subsurface open, except where high sensitivity factors (e.g., a fine-grained sedimentary rock margin) apply, in which case the potential is high.
15. High altitude areas (over c.800-900m) – potential not determined. (This environment is likely to have relatively low, but some, potential for sites. Insufficient survey has been undertaken

to assess the potential but the 2018 burnt area survey in the Collins Cap – Collins Bonnet area indicates that there may be some reduction in site density above c.850-900m).

It is important to note that due to the small numbers of sites recorded on the east face of kunanyi/Mt Wellington many if not most of these predictive statements are unconfirmed. The predictive statements also do not take into consideration north facing aspect which appears to be a common feature of sites recorded to date.

The WPMT predictors are further challenged by a more recent biogeographical analysis by Jones *et al* (2019) of Tasmanian stone artefact site distribution against a range of geographic variables relating to climate, topography and resource proximity, including geology, vegetation community, elevation and cost distance from coast and waterways. The analysis, which was based on uncleaned AHR data and publically accessible digital environmental data with no additional ground truthing, concluded that Tasmanian landscapes with most evidence for Aboriginal use included inland river valleys, floodplains, wetland margins, open forest habitats, open plains and the coastal fringe. These areas support a range of dry forest communities and ecotones, including tall closed shrubland or open shrubby forest on the coast, or open shrubby/grassy forest inland (Jones *et al* 2019: 2577-2578). Indicators of low utilisation include inland areas with high elevation, steep or rough terrain and wet areas. These areas often support rain forest, wet sclerophyll forest or sedgeland. Density of sites typically also decreases with distance from the coast or inland water (Jones *et al* 1999: 2578).

4.4.2 Relevant WP risk factors for the current study area

Several of the conditions for elevated potential for Aboriginal sites identified by McConnell & Sculthorpe (2019) are not substantively met in the current study area or are mitigated by other considerations, including the general biogeographic associations claimed by Jones *et al* (2019) and, general paucity of artefacts found in assessments spanning nearly twenty-five 20 years. Taking into account the environmental attributes and biogeographic indicators for the Gentle Annie Falls study area, the Wellington Park risk factors and ratings considered most applicable to the current assessment are summarised below.

4. Steeper stony slopes and slopes of >c.16°: **low** potential for open sites.
5. Spurs between the lowlands surrounding Wellington Park and kunanyi/Mt Wellington and the Wellington Range: **medium** potential for small surface open sites.
10. Areas of resistant Permian and Triassic rocks: **medium** potential for containing rockshelters.

These factors need to be considered together and adjusted for local conditions and the presence of more optimal alternatives. The Gentle Annie Falls Spur separates tributary streams on the south side of Sandy Bay Rivulet and theoretically provides access from the Upper Reservoir area via Chimney Pot Hill, Halls Saddle and Fern Tree to South Wellington, however other more continuous ridgelines exist locally such as the major ridge followed by Huon Road used by Europeans since the early days of white settlement, and which may have followed an existing Aboriginal road. The potential for open sites within the study area is considered reduced due to the steep ground-slope (20 -25°), mobile soils and absence of resources (including water) and suitable micro-terrain other than where caused by cliffing. The low cliff lines (<4m) and high degree of structure (thin bedding and pronounced perpendicular jointing) is also less conducive to rockshelter formation than more massive sandstone units.

Another important factor to consider is that Ridgeway Park, including the Gentle Annie Falls spur, has been previously assessed (McConnell *et al* 1998) with the authors concluding that apart from the two recorded shelter sites (AH 7991 & AH 7992) *“there is not considered to be potential for other rockshelters which are likely to have been occupied.”* and that *“the high density of survey coverage of Ridges in Ridgeway Park suggests that the potential for more sites to occur on ridges ...is low.”* (McConnell *et al* 1998: 15)

As a result, the potential for locating open sites (single artefacts or small artefact scatters) and sandstone rockshelters within the current study area is considered to be low.

4.4.3 Non-‘relic’ heritage values

No formal assessment of non-statutory (i.e., non “archaeological site” values) has been undertaken for kunanyi/Mt Wellington or Wellington Park, however McConnell and Sculthorpe provide the following list of landscape attributes that are likely to be of cultural significance to the contemporary Aboriginal community (McConnell & Sculthorpe 2019: 46-47).

- Summit of kunanyi/Mt Wellington – a known point of visitation and vantage point. For site predictive purposes - suggests higher potential for open sites in the summit area.
- Higher areas of kunanyi/Mt Wellington – of likely past spiritual value given its visual dominance in the region and overlook of the Derwent River/Estuary.
- Wellington Range plateau, especially high points – likely historical viewpoints.
- Wellington Range high areas – possible travel route from the lower Derwent / Derwent Estuary to the Huon and western Tasmania.
- Goat Hills – possible travel route from the lower Derwent to Collinsvale / upper Derwent area.
- Permian metamorphosed sediments – areas with tool quality stone are of possible Aboriginal heritage value as traditional resource locations.
- Triassic quartz rich sandstones – areas with sandstone rockshelter development are of possible Aboriginal heritage value as traditional resource locations.
- Alpine areas – alpine areas with specialised alpine food (e.g., lily tubers) and other traditionally used plants are of likely Aboriginal heritage value as special traditional resource locations.
- Vegetation ecotones– ecotonal areas are likely to have a greater variety, hence overall abundance, of traditionally used plants, hence are of possible Aboriginal heritage value as important traditional resource locations.

The occurrence of quartz sandstone, and implied connection with previously recorded rockshelter sites in the same geological formation, is the only general cultural landscape condition met with in the current study area.



5. Survey results

5.1 Survey metrics

5.1.1 Physical survey coverage

The field survey was based on an 80m wide corridor encompassing 7.3ha centred on the proposed new trail alignment (Primary Zone) with additional areas covering 3.9ha to the north and east (Secondary Area) for a total study area of 11.2 ha. The survey method involved walking an initial series of transects along the flagged proposed trail followed by sub-parallel east-west transects around 5m contours, supplemented by meandering transects to circumvent obstacles such as cliff and creek lines.

Approximately 15km of transects were walked within the combined study area covering 5.25ha. Physical coverage achieved for survey areas is summarised in Table 5.1 and illustrated in Figure 5.2. Physical coverage was estimated to be approximately 48% for the Primary Survey area (80m wide track corridor) and 39% for the adjacent Secondary survey area.

Table 5.1: Physical survey coverage

| Survey unit | Total area m ² | Area surveyed m ² | Physical coverage % | Effective coverage % |
|----------------|---------------------------|------------------------------|---------------------|----------------------|
| Primary Area | 72934 | 34932 | 47.9 | 5.8 |
| Secondary Area | 38817 | 15208 | 39.2 | 2.9 |
| Combined Areas | 111751 | 50140 | 44.9 | 4.8 |

5.1.2 Ground-surface visibility

The ability to detect Aboriginal relics by survey is heavily dependent on ground-surface visibility (GSV). Visibility under 25% is generally considered low and can result in many smaller artefact sites being missed. GSV approaching 50% should enable most large artefact sites and a significant proportion of smaller sites and isolated artefacts to be found, while GSV above 75% is optimal for locating small artefact sites and most surficial isolates. Mapping the observed variability in GSV across a landscape at the time of survey illustrates the level of confidence that can be given to survey results and is useful for comparing against survey results in other areas or in the same area over time.

For the current assessment, GSV variability was recorded in 10% increments along the Consulting Archaeologist's transects. Recordings were purposefully conservative, representing the minimum level of ground-surface exposure for a given transect segment; for example, an estimate of 25% over a 50m transect segment equates to an unobstructed view (i.e., bare ground with no obscuring cover or vegetation) of at least a 1m-wide band within a 4m wide transect over 50m continuous distance. Ground surface visibility data for the project survey areas is summarised in Table 5.2 and illustrated in Figure 5.1.

GSV across the study area was typically low to very low, being highest on the upper north-facing slopes where vegetation was thinnest and ground disturbances associated with recreational infrastructure and historic quarrying greatest. GSV decreased downslope and to the east and west

along the bracketing creek gullies where disturbed windows were less prevalent. GSV averaged 12% for the Primary survey area and 7.5% for the Secondary survey areas.

Table 5.2 Ground-surface visibility

| Survey unit | Ground-surface visibility (%) | | | | | | | | | | |
|----------------|-------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|
| | 0 | 5-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 | 80-90 | 90+ |
| Primary Area | 16.7 | 52.2 | 20.1 | 0.9 | 1.4 | 3.1 | 5.6 | 0.0 | 0.0 | 0.0 | 0.0 |
| Secondary Area | 22.8 | 59.2 | 14.6 | 3.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Combined Areas | 18.6 | 54.4 | 18.4 | 1.7 | 0.9 | 2.1 | 3.8 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | | | | | | | | | Avg % |
| | | | | | | | | | | | 12.1 |
| | | | | | | | | | | | 7.5 |
| | | | | | | | | | | | 10.7 |

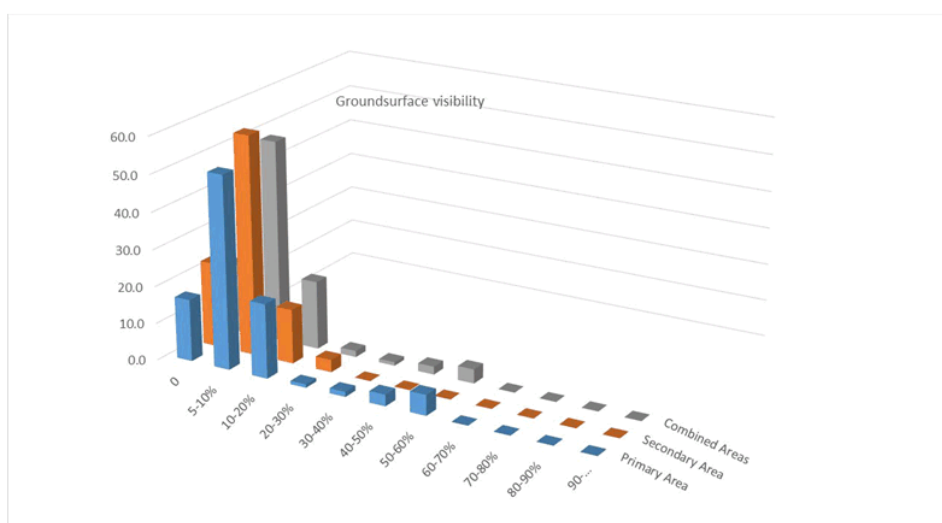


Figure 5.1: Ground-surface visibility profiles per survey area

5.1.3 Survey effectiveness

A gross measure of the effectiveness of a field survey can be obtained by calculating effective survey coverage (physical coverage x ground-surface visibility). This indicates the general proportion of the study area that was able to be visually inspected as a 'bare-earth' equivalent.

While the physical coverage of 48% for the Primary Area and 39% for the Secondary Area are considered adequate spatial samples, due to very low GSV the effective survey coverage was calculated to be approximately 5.8% and 2.9% respectively. Such low effective coverage would not be considered sufficient to identify most stone artefact sites, however it is in keeping with figures for Tasmanian forested areas broadly and in the current study area is significantly mitigated by the steep ground angles and extent of historic ground disturbance in areas most likely to contain open sites.

5.2 'Site-based' Aboriginal heritage values

5.2.1 Previously identified heritage sites

While the coordinates provided on the 1998 site recording form place the site within the bounds, the previously recorded rockshelter site (AH 7992) was determined to not be situated within the current study area. The site was originally described as an overhang 3.5m wide and 1.5m deep in the middle face of a cliff with a north-west aspect in a small steep valley to the south of Gentle Annie Falls. The shelter was described as having a level floor with evidence of recent activity in the form of graffiti and camping debris. Being outside the study area the site was not re-inspected during the current assessment, however the most likely location is a belt of sandstone cliffs located 40m south of the southeastern Secondary study area zone between the 215 and 240m elevation contours.

5.2.2 Newly discovered heritage sites

No stone artefact sites were identified during the survey. Given the steep ground slope, mobile surface soils and degree of historic disturbance, and considering the history of previous surveys and high level of visitation the area receives, the lack of finds is considered to be a fair reflection of the low potential for stone artefacts to be present.

No rock shelter sites were identified during the survey. Several belts of sandstone outcrop with areas of low cliffing are present on the north face of the Gentle Annie Falls spur were inspected and several small overhangs noted, however these are not considered to have sufficient potential for habitation to contain occupation deposits to be considered shelter sites. This sandstone terrain has previously been investigated by several researchers including Hartzell (1993), Murray & Nieberler (1994) and most recently by McConnell *et al* (1998) who studied the sandstone outcrops for evidence of historic usage. None of these researchers have identified potential rockshelter sites in this zone.

Aboriginal Heritage Tasmania provides the following definition for Aboriginal rockshelters:

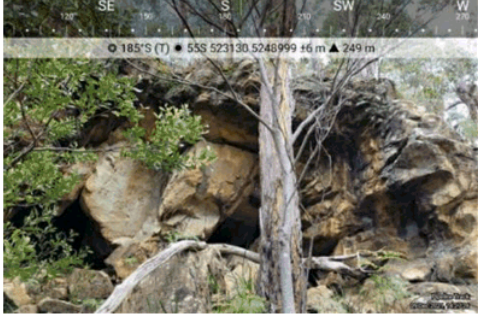


An Aboriginal rockshelter is a cave, overhang or rock arch that contains evidence of use and occupation by Aboriginal people. Cultural material can be visible on the ground such as artefacts and archaeological features such as rock markings or subsurface archaeological deposits can be present.

AHT provides criteria for determining if a shelter may contain evidence of Aboriginal occupation:

- the probable depth of the floor deposit (based on a visual examination) and potential for archaeological deposits;
- whether the rockshelter would have been considered suitable for shelter for long or short periods;
- the degree of protection from the elements;
- useable floor space and natural light;
- proximity to drinkable water and food resources.


Examples of overhangs within the study area that were assessed for potential Aboriginal occupation against AHT criteria are discussed in Table 5.3.

Table 5.3: Sandstone overhangs assessed for rockshelter potential

| Overhang | Coordinates (GDA94) | Description | Images |
|------------|-----------------------|---|--|
| Overhang 1 | E 523128 N 5249003 | <p>Partially collapsed overhang in area of heavily jointed sandstone cliff line at 255m elevation, 220m from Sandy Bay Rivulet. Mouth 8m wide x 3m maximum height with roof dipping inwards. Contains two chambers c.4.5m deep from dripline x c2m wide separated by pillar. West chamber has 1m high back wall and ceiling collapse. East chamber has partial ceiling collapse and 2m high back wall on a major joint. Side walls in east chamber appear to have been excavated along the joint with debris accumulating at the chamber mouth. Appears deliberate chasing of shear zone but no chisel marks observed. Possible prospecting feature.</p> <p>No artefacts or evidence of use.</p> <p>Steep fall below entry ledge with minimal potential for cultural deposits.</p> <p>Very small floor area and not possible to stand up in chambers.</p> <p>Rock is very unstable and prone to collapse.</p> |  <p>Overhang 1, view of dual chambers</p>  <p>Overhang 1, heavily jointed ceiling with collapse</p> |
| Overhang 2 | E 523230 N 5249154 | <p>Small, mid cliff overhang in heavily jointed low cliffline with staining and honeycombing. 190m elevation and 90m south of Sandy Bay Rivulet. Main overhang is 5m wide x 3m high at front of dripline x 1.5m deep. Steeply dipping roof due to collapse with 1m high back wall. Stone floor with dipping to north with no sediment deposits. Steep drop and fall of ground downhill with negligible potential for cultural deposits.</p> <p>No artefacts or evidence of use.</p> <p>Steep fall below entry with minimal potential for cultural deposits</p> <p>Very small floor area and only possible to stand up at entry.</p> |  <p>Overhang 2, heavily jointed and stained</p> |

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| | | | |
|------------|-----------------------|---|--|
| Overhang 3 | E 523138 N 5249168 | <p>Small overhang, 6m north of existing Gentle Annie Falls track. 183m elevation and 40m south of sandy Bay Rivulet. Mouth 3m wide x 1m high x 1m deep with steeply north dipping sandstone floor and no sediment deposits.</p> <p>No artefacts or evidence of use.</p> <p>Small size precludes occupation.</p> |  |
|------------|-----------------------|---|--|

5.3 Potential Areas of Sensitivity

A Potential Area of Sensitivity (PAS) is a zone considered prospective for relics or cultural deposits based on landscape or geomorphological factors, despite no relics being observed on the surface.

For reasons discussed in previous sections the potential for undiscovered cultural deposits to be present within the study area is considered low and no PAS have been designated because of this assessment.

5.4 Site patterning

Predictive statements for the most likely site types – open stone artefact sites and sandstone rockshelters, are discussed in Section 4.4. These considered that the potential for locating stone artefacts was low due to the steepness of terrain, mobility of soils and lack of suitable resources. The low inherent potential for artefact sites to be detected in the study area is diminished further by the extent of disturbance associated with historic stone prospecting and extraction.

Apart from supporting the predictive statements, the survey findings contribute little new information to the understanding of Aboriginal site patterning on the lower eastern footslopes of kunanyi/Mt Wellington.

5.5 Non 'Site-based' heritage values

While the lack of obvious evidence of utilisation suggests that they that they were not used for regular habitation, the sandstone outcrop, cliffs and overhangs within the study area are durable features likely to have formed part of the landscape experienced by Aboriginal people in the centuries prior to white contact. They may have served as markers and waypoints through country, connecting living places and having names and stories attached to them. Local traditional knowledge has unfortunately not survived the process of colonisation but must be assumed to have existed given the time depth of Aboriginal occupation of *lutruwita*/Tasmania.

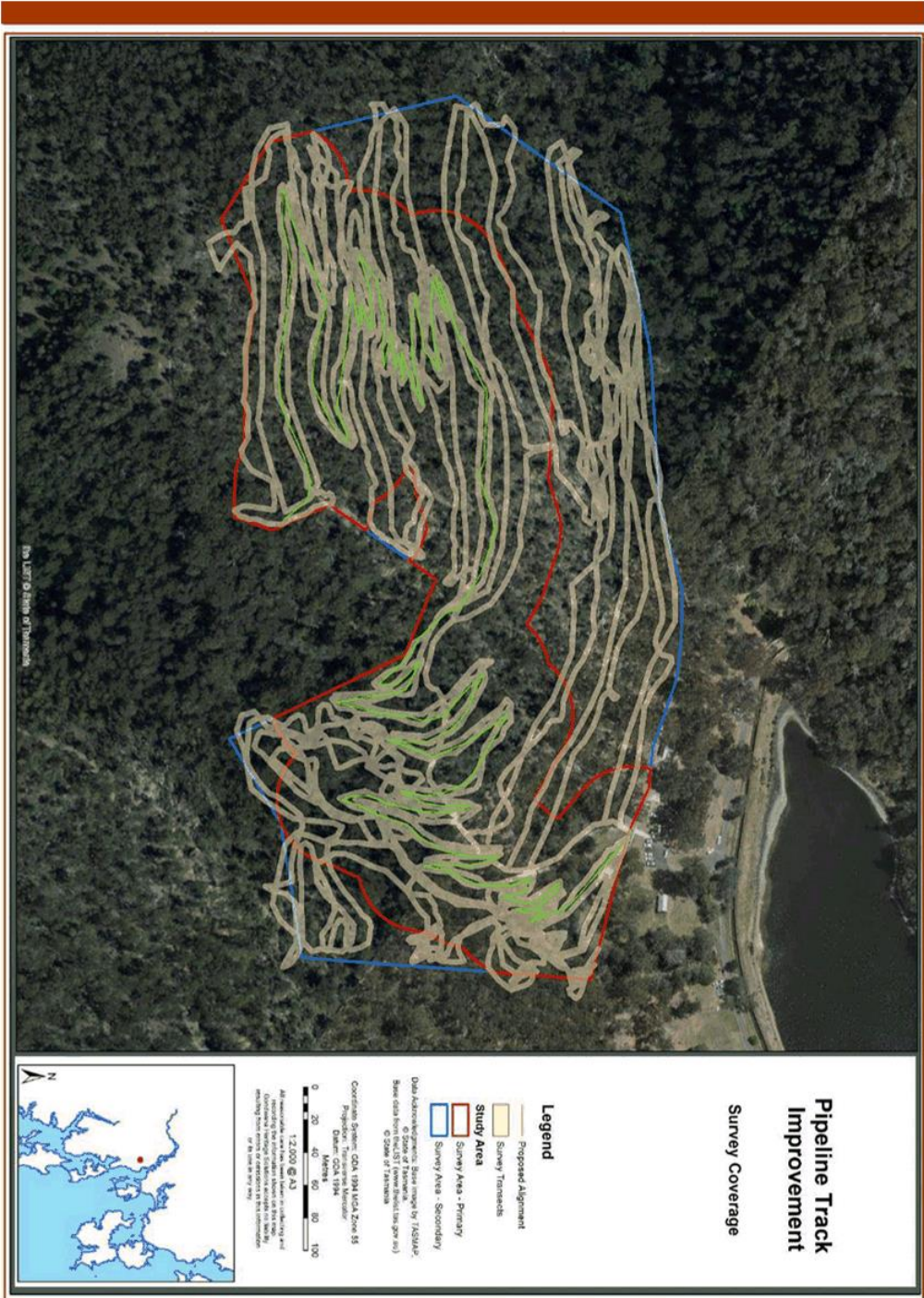


Figure 5.2: Survey coverage

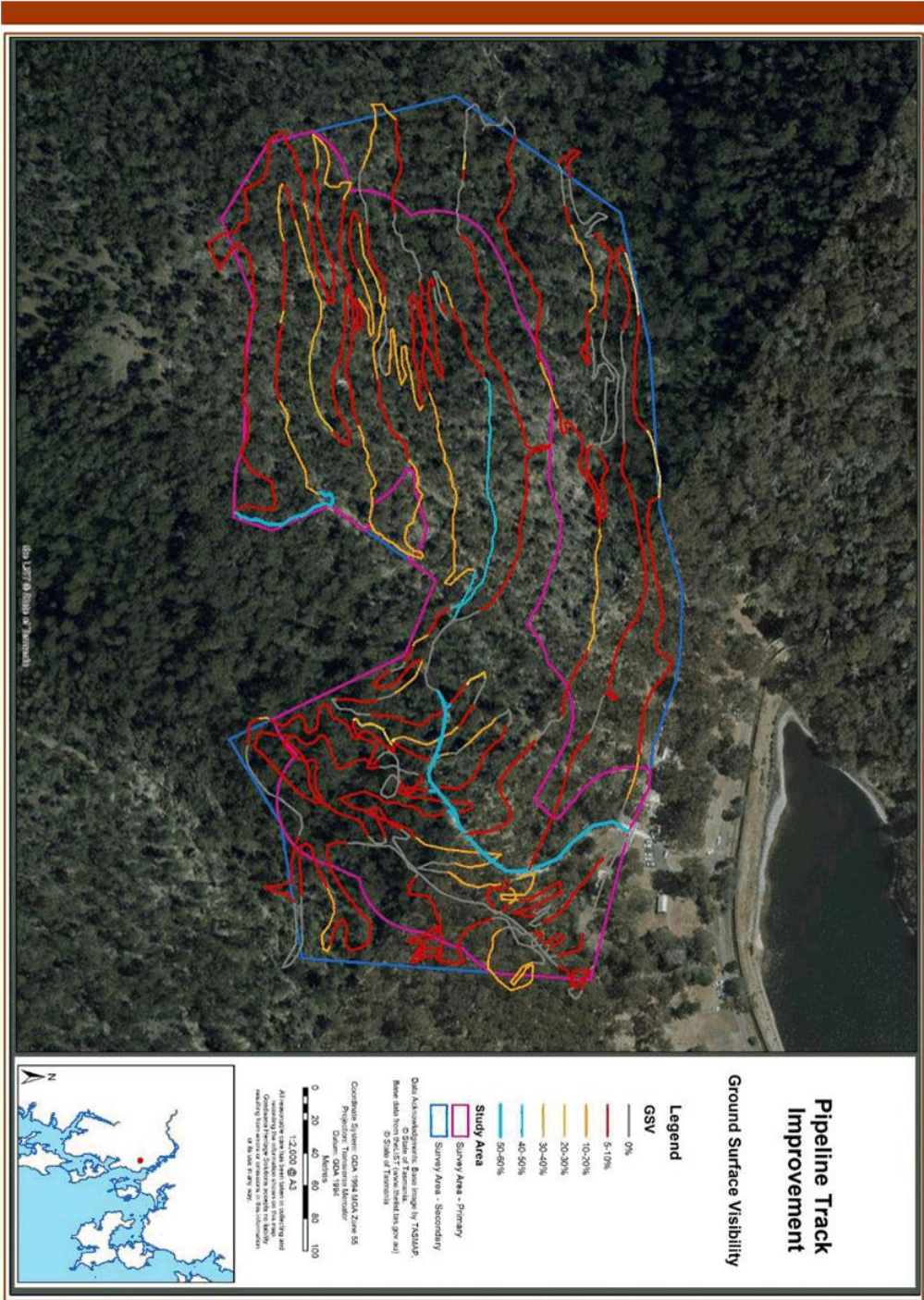


Figure 5.3: Ground Surface Visibility

6. Assessing cultural significance

The assessment of cultural significance of Aboriginal heritage values within the current study has been undertaken in accordance with the principles outlined in The Australia ICOMOS (*Burra*) Charter for Places of Cultural Significance (Australia ICOMOS 2013). This is the standard recognised by most heritage practitioners and regulatory bodies in Australia. The Burra Charter establishes five basic classes of value to be assessed in determining the cultural significance of a place:

- Historic
- Aesthetic
- Scientific
- Social
- Spiritual

The assessment also recognises the following definition of significance contained in the *Aboriginal Heritage Act 1975*:

2 (8) *significance*, of a relic, means significance in accordance with—

- a) the archaeological or scientific history of Aboriginal people; or
- b) the anthropological history of Aboriginal people; or
- c) the contemporary history of Aboriginal people; or
- d) Aboriginal tradition.

The AHA criteria are largely synonymous with the Burra Charter categories of significance, with AHA criterion a) relating to Burra charter concept of Scientific significance and AHA criterion b) referring to historically observed/documented accounts of Aboriginal activity or Burra Charter Historic value. AHA criterion c) arguably relates to recent (i.e., post-displacement) and current Aboriginal social associations and uses, which is covered under Burra Charter Social value. AHA criterion d) is defined under the Act as meaning:

- a) the body of traditions, knowledge, observances, customs and beliefs of Aboriginal people generally or of a particular community or group of Aboriginal people; and
- b) any such tradition, knowledge, observance, custom or belief relating to particular persons, areas, objects or relationships;

This broadly maps to Burra Charter Spiritual value, however given that most traditional cultural knowledge and associations with places has been lost since invasion and new spiritualities and connections with country are being formed, it also arguably encompasses more subjective experiences and perspectives including Aesthetics. Tasmanian Aboriginal traditions are constantly evolving and being re-made and have participatory and revelatory elements, social and spiritual values are largely indistinguishable, or at least inseparable, consequently this assessment considers them together under a combined the Burra Charter Social and Spiritual grouping that is perhaps most simply defined as *Aboriginal cultural values*. This leaves the formal academic Burra Charter Aesthetic value somewhat stranded without an agreed Aboriginal analogue. The issue of aesthetics is generally covered under the statement of Aboriginal cultural significance provided in Section 6.4.1.

6.1 Burra Charter Historic significance / AHA 2 (8) b) Anthropological history

The Burra Charter considers that *"a place may have historic value because it has influenced, or has been influenced by, an historic event, phase, movement or activity, person or group of people. It may be the site of an important event."* (Australia ICOMOS 2013b; 3).

An outline sketch of historically observed Aboriginal activity broadly relevant to the Hobart area is provided in Section 3.1. This has not identified specific documented accounts of Aboriginal activity within the current study area, although given the historically and archaeologically documented presence of Aboriginal people in and around Sullivans Cove during the first two decades of European settlement the possibility cannot be ruled out that small and transitory Aboriginal fringe camps may have existed in the lower foothills of kunanyi/Mt Wellington.

Statement of historic significance

The lack of historical accounts of Aboriginal life and absence of positive finds means that the historic value criterion cannot be effectively assessed.

6.2 Burra Charter Aesthetic significance

Aesthetic values embody the capacity of a place to affect the senses through such attributes as form, scale, colour, texture, smells and sound. The appeal to senses sets aesthetics apart from information-based appreciations of heritage (such as historical and scientific), or emotional understandings based on use or tradition (such as social and spiritual), although in practice there may be considerable overlap. Tasmanian Aboriginal community generally considers aesthetic values to be an indivisible element of the Aboriginal cultural (i.e., social and spiritual) value of a place (refer Section 7.4). It is normal practice to assess aesthetic significance where meaningful to do so and only then against carefully defined criteria. No standard criteria have yet been developed for formally assessing Aboriginal aesthetic values in Tasmania and no structured evaluation of Aboriginal aesthetics of kunanyi/Mt Wellington have been undertaken to date. However, responses to the recent proposal to develop a cable car on the mountain point to the existence or evolution of aesthetic values based partly around physical attributes such as sandstone rockshelters, plants and animals, and partly based in larger scale qualities such as its relatively undeveloped and landmark character.

"It's just a part of who we are, it's just such a huge landmark and our people are so connected to that. It means a lot to our community." Rebecca Digney 2021⁵

Statement of aesthetic significance

The current study area forms part of kunanyi/Mt Wellington which is valued by Aboriginal people due to its intrinsic physical assets and relatively undeveloped landmark character. The current study area has been subject to significant historic disturbance but retains features and potential resources, including areas of sandstone cliffing, that contribute to the connection Aboriginal Tasmanians feel to the mountain.

⁵ Company in TAS appeals against conducting Aboriginal heritage assessment on kunanyi. Bernadette Clark NITV News/SBS 1 April 2021. <https://www.sbs.com.au/nitv/article/2021/04/01/company-tas-appeals-against-conducting-aboriginal-heritage-assessment-kunanyi>

6.3 Burra Charter Scientific significance / AHA 2 (8) a) Scientific history

Scientific significance refers to the potential of the place to yield information, generally through a process of archaeological investigation in response to topical research questions. The Wellington Park Management Plan (WPMT 2015: 23) identifies cultural values as a research priority and identifies places most likely to contain Aboriginal archaeological deposits as sandstone rock shelters, Aboriginal tracks and gently sloping ground and mid-slope benches but does not articulate specific research themes or questions. More recent burnt area assessments within Wellington Park (McConnell & Sculthorpe 2017 & 2019) similarly discuss research priorities in terms of geomorphic attributes rather than testable scientific topics or theories.

The capacity for individual sites to answer research questions depends on a range of intrinsic attributes. Sullivan & Bowdler (1984) contend that these attributes include site integrity, structure and content:

- **Site integrity** is the degree to which a site, site complex or landscape is preserved intact and may be consequently impacted by both cultural and environmental processes. Places which are more intact have greater potential to contain significant archaeological information about such things as human activity and environmental change;
- **Site structure** relates to factors such as stratification, depth and the horizontal extent of cultural material. Stratified sites, where the material remains in the original layers in which it was deposited, may offer opportunities for identifying cultural and environmental changes through time;
- **Site content** refers to the range of material occurring in a site. Sites containing a wide variety of materials or artefact types may have greater research potential than sites containing a more limited range.

For the purposes of this study, three levels of relative scientific significance are used: High and Moderate and Low.

- Sites assessed as having **High** significance generally have a high level of integrity, a diversity of shell materials or lithic fabrics and forms, potential for in-situ or stratified deposits, or are considered rare or excellent representative examples of their type;
- Sites assessed as having **Medium** significance may have a lower degree of integrity due to disturbance, but have sufficient discernible content and structure to be able to yield important information about past activities at a local or regional scale;
- Sites assessed as having **Low** significance are usually poorly preserved, lack structure or have questionable context with little resultant ability to contribute unique information or are of a type that is well or better represented in the local area.

Statements of scientific significance

The absence of positive finds means that the scientific value criterion cannot be effectively assessed.

6.4 Burra Charter Social and spiritual significance / AHA 2 (8) c) Contemporary history and d) Aboriginal tradition

All land in Tasmania is significant to Tasmanian Aboriginal people arising from its capacity to connect the living community with the past elders and traditions, support continuing cultural practices and provide opportunities for recovering spiritual health and economic self-determination.

The *Aboriginal Heritage Act 1975* defines social and spiritual significance in terms of contemporary and traditional Aboriginal history. While Aboriginal places and objects may hold social or spiritual values for non-Aboriginal people, the clear intent of the AHA is to only protect those values that are of significance to the Aboriginal people of Tasmania.

Given its commanding visual prominence, it is highly likely that kunanyi/Mt Wellington would have been an important place in pre-contact Aboriginal spiritual and social life. Most of the traditional stories relating to the mountain have been lost and the contemporary Aboriginal community is reconnecting with the place in various ways to forge new spiritual and social meanings that incorporate aspects of received cultural knowledge, indigenous environmentalism and renascent identity.

To date no structured investigation of Aboriginal aesthetics of kunanyi/Mt Wellington has been undertaken, however responses to the recent proposal to develop a cable car on the mountain express sentiments based on contemporary Aboriginal spirituality that are broadly relevant to the current study area.

"Growing up in the Aboriginal community, one of the most prominent stories given to me was that when we die our spirits go beyond the mountain... It's a pathway to our ancestors and to the spirit world, a doorway if you like to the next stage of who we are" Sharnie Reid 2020⁶

"I feel as though something's happened up there with my old people [ancestors], I don't know what those things were and we may never know"... "It's the unknown of not knowing if you're walking somewhere where you shouldn't be walking". Theresa Sainty 2020⁷

The following statement of Aboriginal cultural significance for the area covered by this assessment is provided by consultant Aboriginal Heritage Officer Caleb Pedder and informed by the process of community consultation outlined in Section 1.6.3.

6.4.1 Statement of Aboriginal cultural significance

Aboriginal cultural significance can only be determined by Aboriginal people. Cultural significance is formed from a complex mix of the emotional and physical attributes identified for a place. One attribute is the heritage places found across the country. Aboriginal heritage places are many and varied, from isolated artefacts, artefact scatters, rockshelters, middens and rock art, to places with intangible and/or nonphysical associations.

All Aboriginal places are non-renewable and have high cultural significance for today's Aboriginal community. Aboriginal sites reinforce Aboriginal connections with country and are an integral part of Aboriginal culture and the relationship with land.

⁶ What does Hobart's kunanyi/Mt Wellington mean to Tasmania's First Nations people? Phoebe Hosier, ABC News, 26 April 2020 <https://www.abc.net.au/news/2020-04-26/what-hobarts-mt-wellington-mean-to-tasmanias-indigenous-people/12141266>

⁷ ibid

It should be noted that all land has high cultural significance, both for individual Aboriginal people and for the Aboriginal community collectively. The presence of Aboriginal sites or other values contributes to the cultural significance of the land.

As a general principle, any development upon, or other disturbance of land, is contrary to Aboriginal beliefs regarding the land, its values, and its inherent cultural significance. This applies to all land irrespective of its tenure, the degree of landscape modification or the levels of existing disturbance.

It is expected that preservation and protection of Aboriginal heritage should be the overriding factors when making decisions about that heritage. To do otherwise undervalues Aboriginal culture and heritage and attempts to minimise its importance to the Tasmanian community.

There were no Aboriginal heritage places identified during the on-ground assessment of the proposed walking track study area.

The proposed rerouting of the walking track should not affect any Aboriginal heritage places. The probability of finding any Aboriginal artefacts on the proposed rerouted sections of the track is very low.

7. Planning context

Aboriginal heritage values in Tasmania are subject to a raft of controls and expectations that operate at a range of statutory and non-statutory scales. These are discussed briefly below.

7.1 Statutory requirements

7.1.1 Environment and Biodiversity Conservation Act 1999 (EPBCA)

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* establishes the National Heritage List (NHL) which includes natural, Indigenous and historic places that are of outstanding heritage value to the nation. The EPBCA is administered by the Commonwealth Government's Department of the Environment (DOE). Under the Act there are penalties for anyone who takes an action that has or will have a significant impact on the Indigenous heritage values of a place that is recognised in the NHL. Any action that has, will have or is likely to have a significant impact on National Heritage values must be referred to the Federal Environment Minister for a decision about whether the action should be a controlled action or not (DEWHA 2010). A controlled action is one that requires formal approval under the Act.

Where a proposed action is likely to significantly impact on a protected matter that has Indigenous heritage values such as a listed heritage place, the National Heritage management principles require that the views of affected Indigenous peoples should be sought and treated as the primary source of information in relation to the value of that heritage (DOE 2016: 4)

The current study area does not contain any places listed on the NHL, consequently the provisions of the EPBCA do not apply to this assessment.

7.1.2 Aboriginal Heritage Act 1975 (AHA)

The *Aboriginal Heritage Act 1975 (AHA)* is the principal legislation governing the treatment of Aboriginal cultural heritage in Tasmania. It sets out what legally constitutes unacceptable impacts and a process to approve impacts (via a permit under S.14 of the Act) if there is deemed to be no feasible option. The AHA is administered by Aboriginal Heritage Tasmania (AHT). The AHA uses the term 'relic' to describe the following forms of protected Aboriginal heritage:

- a) any artefact, painting, carving, engraving, arrangement of stones, midden, or other object, made or created by any of the original inhabitants of Australia or the descendants of any such inhabitants, which is of significance to the Aboriginal people of Tasmania; or
- b) any object, site, or place that bears signs of the activities of any such original inhabitants or their descendants, which is of significance to the Aboriginal people of Tasmania; or
- c) the remains of the body of such an original inhabitant or of a descendant of such an inhabitant that are not interred in:
 - (i) any land that is or has been held, set aside, reserved, or used for the purposes of a burial ground or cemetery pursuant to any Act, deed, or other instrument; or
 - (ii) a marked grave in any other land.

The relevant provisions of the *AHA* in relation to Aboriginal heritage protection within the study area are:

- All relics are protected under the Act and it is illegal to ‘destroy, damage, deface, conceal or otherwise interfere with a relic’ without a permit;
- It is illegal to remove a relic from the place where it is found or abandoned;
- It is illegal to ‘sell or offer for sale a relic’, or ‘to cause or permit a relic to be taken out of Tasmania without a permit’.
- It is illegal to ‘cause an excavation to be made or any other work to be carried out on Crown land for the purpose of searching for a relic’ without a permit;
- Persons who own or who have knowledge of a relic shall inform the Director of the Parks and Wildlife Service (PWS)⁸ of this and provide information about the location of the relic(s).

The *AHA* also gives the Minister responsible for the Act the ability to declare certain sites and objects as ‘protected’ sites or objects which are required to be managed by the Parks and Wildlife Service. Further to its general heritage protections, the Act also establishes a due diligence defence and associated Guidelines. It is the intent of the Guidelines that sector-specific codes or other documents be created to provide specific guidance to proponents of significant projects. These sector-specific resources don’t currently exist for the current study area however, and consequently City of Hobart is required to abide by the process outlined in Aboriginal Heritage Tasmania’s *Aboriginal Heritage Standards and Procedures*. In summary these establish the following obligations:

- To undertake assessments to an appropriate standard to ensure that Aboriginal sites and other relics are not knowingly disturbed or destroyed by the development;
- To report Aboriginal relics identified during assessments and encountered during works to the Director PWS (in this case Aboriginal Heritage Tasmania).
- Where impacting relics cannot be avoided and when excavating in search of relics on Crown land (including land managed by the P&WS), to obtain a permit to destroy, damage, deface, conceal or interfere with any Aboriginal relics prior to the action.

7.1.3 Tasmanian Planning Scheme Hobart 2021 (TPSH)

At the local level, rudimentary provisions for protecting and conserving Aboriginal heritage are contained within local government planning schemes in accordance with Part 2 of Schedule 1 of the *Land Use Planning and Approvals Act 1993 (LUPA Act)*, which has as objective (g) *to conserve those buildings, areas or other places which are of scientific, aesthetic, architectural or historical interest, or otherwise of special cultural value*. The current study area is subject to the *Hobart Interim Planning Scheme 2015 (HIPS)*.

The HIPS does not contain specific management areas or objectives for Aboriginal Heritage. Under Part A 3.0.10 – R Liveability: Regional Objectives, one of the Desired Outcomes is that:

- (c) Aboriginal heritage values within the region are recognised, retained and protected for their character, culture, sense of place, contribution to our understanding history and contribution to the region’s competitive advantage.

⁸ Responsibility currently vested in Aboriginal Heritage Tasmania.

There are no specific codes, development standards or requirements for Aboriginal heritage under the HIPS, with the means of achieving A 3.0.10 – R (c) being to:

- (c) Ensure development proponents are aware of their responsibilities under the *Aboriginal Relics [Heritage] Act 1975*.

The area covered by the HIPS is categorised into zones reflecting dominant or preferred land use or capability, special values, or that have specific development objectives and/or performance standards. Ridgeway Park falls within the 29.0 Environmental Management zone.

Management of tangible Aboriginal heritage (i.e., statutory relics) is not specifically mentioned within the Purpose Statements of the Environmental Management zone, however the statement under 29.1.1. refers to 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*.

7.2 Non-statutory requirements

7.2.1 Register of the National Estate (RNE)

The RNE was established under the predecessor legislation to the EPBCA, the *Australian Heritage Commission Act 1975* (AHCA), to comprise elements of Australia's natural or cultural environment that have aesthetic, historic, scientific, social or other special value for present and future generations. RNE listing provided protection from actions by the Commonwealth Government but not State governments or other groups/individuals and was closed to new entries in 2007 and became a non-statutory heritage information database in February 2012. As a publicly accessible source of information about places which previously have been considered as important to individuals and communities for heritage values, it is a useful indicator of places that may attract third party nominations or appeals under other legislation.

The RNE entry for the Wellington Range Area, which encompasses Ridgeway Park, does not document or assess Aboriginal heritage values and provides no practical guidance for the current assessment. Listing on the RNE does not confer any formal protection or approval requirement.

7.2.2 Ridgeway Park Cultural Heritage Survey and Assessment (1998)

The study provides a rigorous desktop assessment and survey report and provides recommendations for managing Aboriginal heritage values within the park. The authors consider that given the coverage of areas with the highest potential to contain sites and high post-burn visibility, *"further survey...is not considered to be likely to reveal much additional cultural heritage, and no significant sites. It is therefore considered that further survey is not necessary. If further survey is however carried out, then it is recommended that the survey be post-fire or post-some type of vegetation clearance as visibility is extremely limited under natural conditions."* (McConnell et al 1998: 31).

The study made three recommendations for managing Aboriginal heritage.

1. The Hobart City Council, in conjunction with the TALC⁹, should establish an appropriate, long term consultative mechanism for managing the Aboriginal values of Ridgeway Park.

⁹ Tasmanian Aboriginal Land Council, later Tasmanian Aboriginal Land and Sea Council no longer exists. Engagement with the Aboriginal community on heritage matters is now more broadly based.

2. That disturbance of the [four] identified Aboriginal sites in Ridgeway Park will be avoided.
3. That, to protect known and potential Aboriginal cultural heritage, appropriate Hobart City Council field staff be provided with the basic training necessary to be able to recognise Aboriginal heritage within Ridgeway Park and take appropriate steps to ensure the protection of the identified heritage, particularly potential Aboriginal cultural heritage which is likely to be located where ground disturbing activities or developments are proposed. The training must be developed in consultation with, and with the involvement of the TALC.

Assessing the present status of the four previously identified sites (Recommendation 2) is beyond the scope of the current assessment. Recommendations 1 and 3 do not appear to have been actioned.

7.2.3 Hobart Mountain Water Supply System Conservation Management Plan 2012

The HMWSS CMP contains policies and outlines actions for conserving heritage associated with the historic water supply scheme but does not include any reference to the management, or even potential existence of Aboriginal heritage values. Given Policy 5.2 refers to the need to recognise and manage for multiple values and refers to the system “*passing through many places of natural beauty and environmental value*”, the omission of any reference to Aboriginal heritage is problematic.

Failure to consider the potential for Aboriginal heritage or other values to be present risks missing important opportunities to achieve respectful and sustainable development. For example, the CMP recommends the development of design guidelines that feature materials that complement the industrial heritage but makes no reference to mitigating potential impacts on Aboriginal values.

This lack of acknowledgement and guidance renders the CMP irrelevant, if not hostile, to the current assessment and conservation of Aboriginal heritage values.

7.2.4 Aboriginal community expectations

Aboriginal heritage legislation, planning scheme provisions and reserve management plans poorly reflect the interests of the Aboriginal community regarding land and heritage values management. These interests are broadly signposted in commentary made by Aboriginal community members in response to the recent kunanyi/Mt Wellington cable car proposal but have not been systematically documented or evaluated for Ridgeway Park, despite a mechanism for achieving this being recommended in the 1998 Cultural Heritage Assessment. The evident high level of attachment and feeling Aboriginal Tasmanians have for the mountain reinforces the need to meaningfully engage with Aboriginal community on developments that have the potential to impact tangible places, objects and resources and intangible values as a minimum standard. The Tasmanian Aboriginal community has consistently stated that proactive engagement based around identifying values and opportunities is strongly preferred over reactive/development-based consultation where the outcomes are limited to impact mitigation.

8. Aboriginal Heritage management

8.1 Proposed works

The proposed works involve constructing a dual direction shared use track linking the Waterworks Site 9 area with the Pipeline Track at the top of Gentle Annie Falls. The 2.3km long track will be constructed to the AS2156.1-2001 Class 2/AusCycling Trail Difficulty Rating System Easy (Green) standard and will be surfaced with imported gravel with an average width of 1.5m. the work will involve vegetation clearance, ground excavation and importation of fills to create a benched track on the steep hillside.

8.1.1 Potential impacts on identified and potential Aboriginal heritage sites and objects

No Aboriginal heritage sites were found during the current assessment, consequently no specific site impacts have been identified. The potential for impacts to undiscovered artefacts and other site types is considered low.

8.1.2 Potential impacts on non 'site'-based heritage values

The track passes through cliffed sandstone terrain on the north face of the hillspur that contains several small overhangs although there is no evidence of Aboriginal occupation. The large number of switchbacks may mean that the track becomes a highly visible element in the landscape, which may be considered by the Aboriginal community to harm the Aboriginal cultural landscape values of kunanyi/Mt Wellington.

8.2 Management recommendations

The following recommendations for managing potential impacts of the proposed track project on unidentified Aboriginal site values, and for managing heritage, including intangible values, more broadly within the study area are designed to be consistent with existing heritage legislation, previous management recommendations and published Aboriginal community expectations for kunanyi/Mt Wellington outlined in Sections 6 and 7.

8.2.1 Regulatory process

All Aboriginal relics are protected under Tasmanian law and may not be 'destroyed, damaged, defaced, concealed or otherwise interfered with' without a suitable Permit issued in accordance with the *Aboriginal Heritage Act 1975*. Given the negative survey findings for additional Aboriginal relics as defined under the AHA, no circumstances were identified that would trigger the requirement for a Permit under the Act.

It is understood that the current Aboriginal heritage assessment has been driven by CoH internal compliance requirements rather than a directive from Aboriginal Heritage Tasmania based on an Aboriginal Heritage Desktop Request. Nonetheless, AHT should be made aware of the project as a matter of courtesy and provided with a copy of the report for record-keeping purposes.

Recommendation 1

A copy of this assessment report should be provided to Aboriginal Heritage Tasmania for review and record keeping.

8.2.2 Design and construction

Aboriginal relics and sites in Ridgeway Park are non-renewable resources that contribute to the Aboriginal cultural landscape of kunanyi/Mt Wellington and Aboriginal community identity, health and wellbeing. Designing and constructing paths and other recreational infrastructure to be sympathetic to cultural landscape values must be key objectives of respectful and sustainable heritage management. Avoiding a proliferation of infrastructure helps to minimise physical disturbance of any cultural deposits that may be present and control visual clutter which can interfere with the aesthetics and emotional power of heritage places and landscapes.

Recommendation 2

The existing Hobart Mountain Water Supply System Design Guidelines are based on the Conservation Management Plan which focuses on the industrial heritage but inadequately recognises the Aboriginal heritage values of Ridgeway Park as an element of the kunanyi/Mt Wellington cultural landscape. It is unclear what, if any, Aboriginal community consultation occurred in developing the guidelines. Given that the proposed path departs from historical tracks and passes through country with potential Aboriginal cultural landscape significance, it is recommended that the guidelines are reviewed in consultation with the Aboriginal community.

Recommendation 3

Without prejudice to Recommendation 2, design recreational infrastructure generally within important cultural landscape settings to minimise the need for ground disturbance or impacts to important resources, including sandstone outcrops and cliff lines. Preferentially use reversible methods, such as clean fills, over excavation as a means of achieving desired grades and cross falls.

8.2.3 Managing unanticipated discoveries

The current assessment of the track upgrade study area and 1998 Ridgeway Park cultural heritage report conclude that there is low potential for Aboriginal stone artefacts to be impacted by the proposed track works. Notwithstanding, encountering artefacts cannot be ruled out altogether so it is prudent to have measures in place during works to identify and manage any unanticipated discoveries.

Recommendation 4

If Aboriginal relics are encountered during pre-clearing or construction, then works at that location must cease immediately and AHT's Unanticipated Discovery Plan must be put into operation. This is available from the AHT website¹⁰ and is reproduced as Appendix A. All

¹⁰ <https://www.aboriginalheritage.tas.gov.au/Documents/UDP.pdf>

workers on the project must be aware of the UDP with a copy being kept on hand during ground disturbing activities.

8.2.4 Aboriginal community consultation

This study has been undertaken with limited Aboriginal community consultation. The 1998 Ridgeway Park cultural heritage report advocates establishing a long-term consultative mechanism with the Aboriginal community for managing values rather than reactive project-based consultation. This is yet to be done but is a far superior means of achieving respectful and sustainable heritage and reserve management outcomes than project-based assessments and delimited consultation. Given the recommendations contained in the 1998 Ridgeway Park cultural heritage report for Aboriginal collaboration and training of CoH field staff, the need for the current assessment might have reasonably been avoided in favour of a more direct understanding of the interests and wishes of the Aboriginal community.

Recommendation 5

City of Hobart should establish an appropriate strategic consultative mechanism with the Tasmanian Aboriginal community for managing heritage and cultural landscape values on Council-managed land, particularly on kunanyi/Mt Wellington. The mechanism should focus on proactive identification and management of values rather than being project driven.

Recommendation 6

As an interim measure, a copy of the draft Aboriginal Heritage Assessment report should be circulated to Aboriginal community organisations for comment regarding the identification of heritage values and management recommendations.

8.2.5 Future investigation and assessment

Effective heritage management involves allocating scarce investigative resources to achieve maximum benefits. To date very few Aboriginal sites have been found on kunanyi/Mt Wellington which has been attributed by researchers to the lack of systematic studies under good visibility conditions (i.e., McConnell & Sculthorpe 2017 & 2019). Re-evaluating areas that have been subject to previous assessment should generally be considered only where there is a reasonable prospect of finding sites in high potential areas that have been missed or where survey conditions have vastly improved.

The 1998 assessment by McConnell *et al* was undertaken under high visibility conditions and covered much of the current study area. They concluded that further survey in the park to identify Aboriginal heritage was unlikely to reveal much additional heritage and no further significant sites. They advised that if further survey was to be carried out it should be done under post-burn or vegetation clearing conditions (McConnell *et al* 1998: 31).

The current desktop assessment concluded that there was a low potential for sites to be present and the field survey was carried under lower GSV conditions than the 1998 assessment, creating no new knowledge in the process and bringing into question the need for a formal standalone assessment. Instead of further project-level assessments, McConnell *et al* 1998 advocated developing suitable in-house training and works control for park management activities supported by a process to ensure Aboriginal community input into decision-making.

Such a collaborative design and implementation approach is considered by the authors of the current assessment to be the most culturally appropriate and budget effective model for managing Aboriginal heritage values within Ridgeway Park.

Recommendation 7

Given the aligned findings of the current and 1998 surveys, the need for further Aboriginal heritage assessments within Ridgeway Park should be re-evaluated and based on a process that is driven by Aboriginal community interests, focuses on filling gaps rather than confirming existing knowledge and leverages planned and unplanned burns and vegetation reduction.

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Pipeline Track Improvements – Gentle Annie Falls, Aboriginal Heritage Assessment Final Report

Revision No: 0.3
July 2022

Appendices

A Unanticipated Discovery Plan (AHT 6 April 2018)**Unanticipated Discovery Plan**

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

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

Discovery of Aboriginal Relics other than Skeletal Material**Step 1:**

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

Step 2:

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

Step 3:

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

Discovery of Skeletal Material**Step 1:**

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

Step 2:

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

Step 3:

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

Step 4:

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

Step 5:

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

Aboriginal Heritage Tasmania
Department of Primary Industries, Parks, Water and Environment



Guide to Aboriginal site types**Stone Artefact Scatters**

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

Shell Middens

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

Rockshelters

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

Quarries

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

Rock Marking

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

Burials

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

Further information on Aboriginal Heritage is available from:

Aboriginal Heritage Tasmania
Natural and Cultural Heritage Division
Department of Primary Industries, Parks, Water and Environment
GPO Box 44 Hobart TAS 7001

Telephone: **1300 487 045**

Email: **aboriginal@heritage.tas.gov.au**

Web: **www.aboriginalheritage.tas.gov.au**

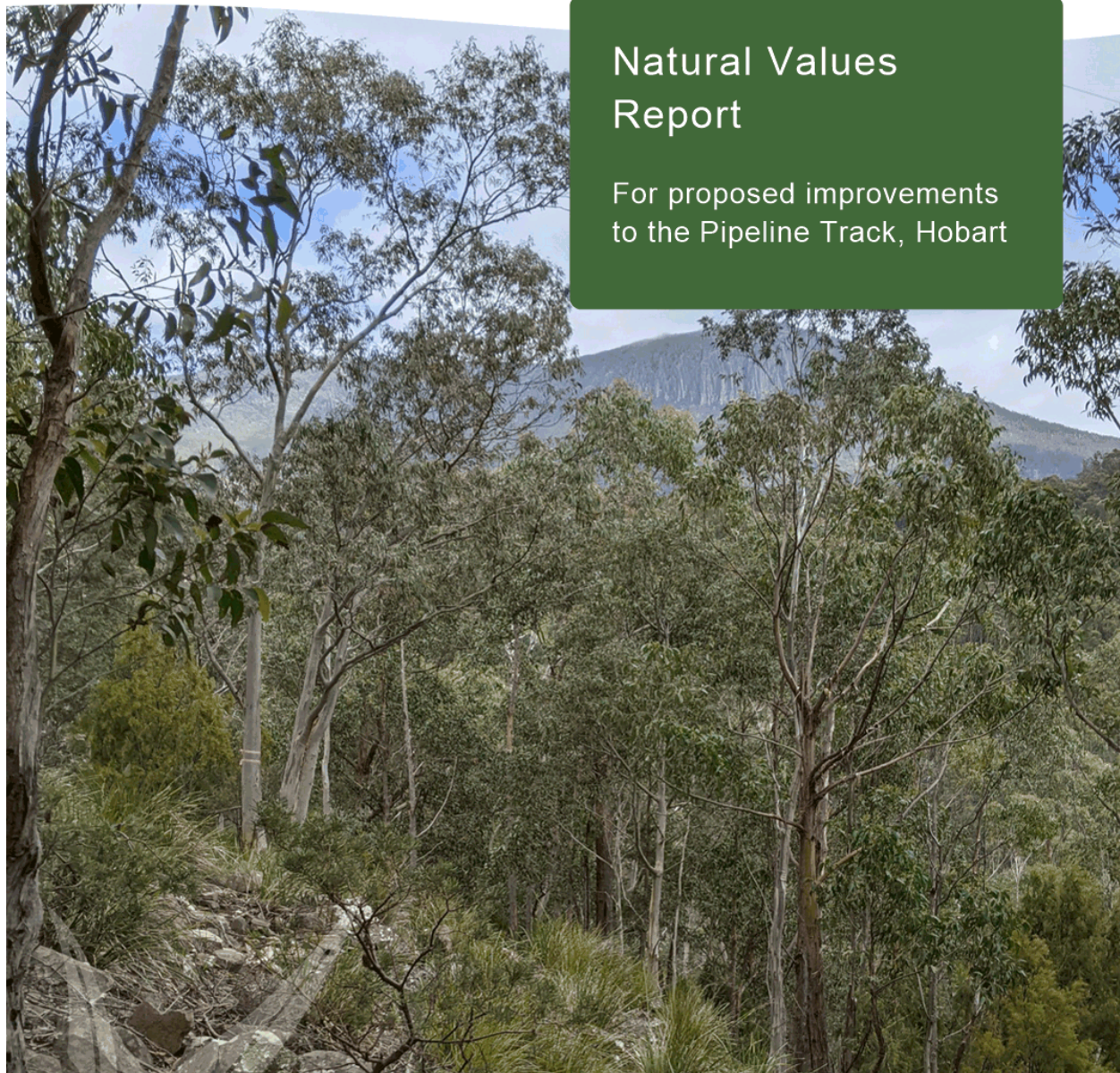
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Natural Values Report

For proposed improvements
to the Pipeline Track, Hobart



Client: City of Hobart
Prepared by: ENVIRO-DYNAMICS
8 MARCH 2022

*Natural Values Assessment for Pipeline Track, Hobart – March 2022***Contents**

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1. Introduction

This natural values report has been prepared for the City of Hobart (CoH) to assess potential impacts on natural values from proposed upgrades to the Pipeline Track. CoH proposes to upgrade a section of the Pipeline Track between Waterworks Reserve and Gentle Annie Falls from a narrow steep track rated 'difficult' into a dual direction, multiuse track rated 'easy'. This upgrade would connect existing 'easy' trails to provide a continuous multiuse 'easy' track from the Waterworks Reserve to Wellington Falls.

This report details the results of a desktop and on-ground assessment of natural values in the survey area. The assessment identifies the natural values of the site including the type and extent of vegetation communities, presence of significant trees, threatened species, threatened fauna habitat and weed infestations. Recommendations for track alignment are provided to minimise impacts to natural values from the proposed works.

2 Background

2.1 Site Description

The survey area for the proposed track upgrade is 11 ha within the Waterworks and Ridgeway Reserves, between Huon and Chimney Pot Hill Road. The primary survey area includes a 40 m buffer on either side of the proposed track commencing from the Upper Reservoir in the Waterworks Reserve ascending west and south via a series of switchbacks to the Pipeline Track above Gentle Annie Falls (Figure 1).

The survey area is moderately sloping with aspect ranging from easterly to northerly. The geology is Triassic sandstone. Altitude varies from 170-270 m a.s.l.

The survey area is zoned Environmental Management under the *Hobart Interim Planning Scheme 2015*. The Pipeline Track is a listed heritage site, and its management is overseen by the multi-agency Pipeline Track Management Committee. Waterworks Reserve is also a heritage listed site.

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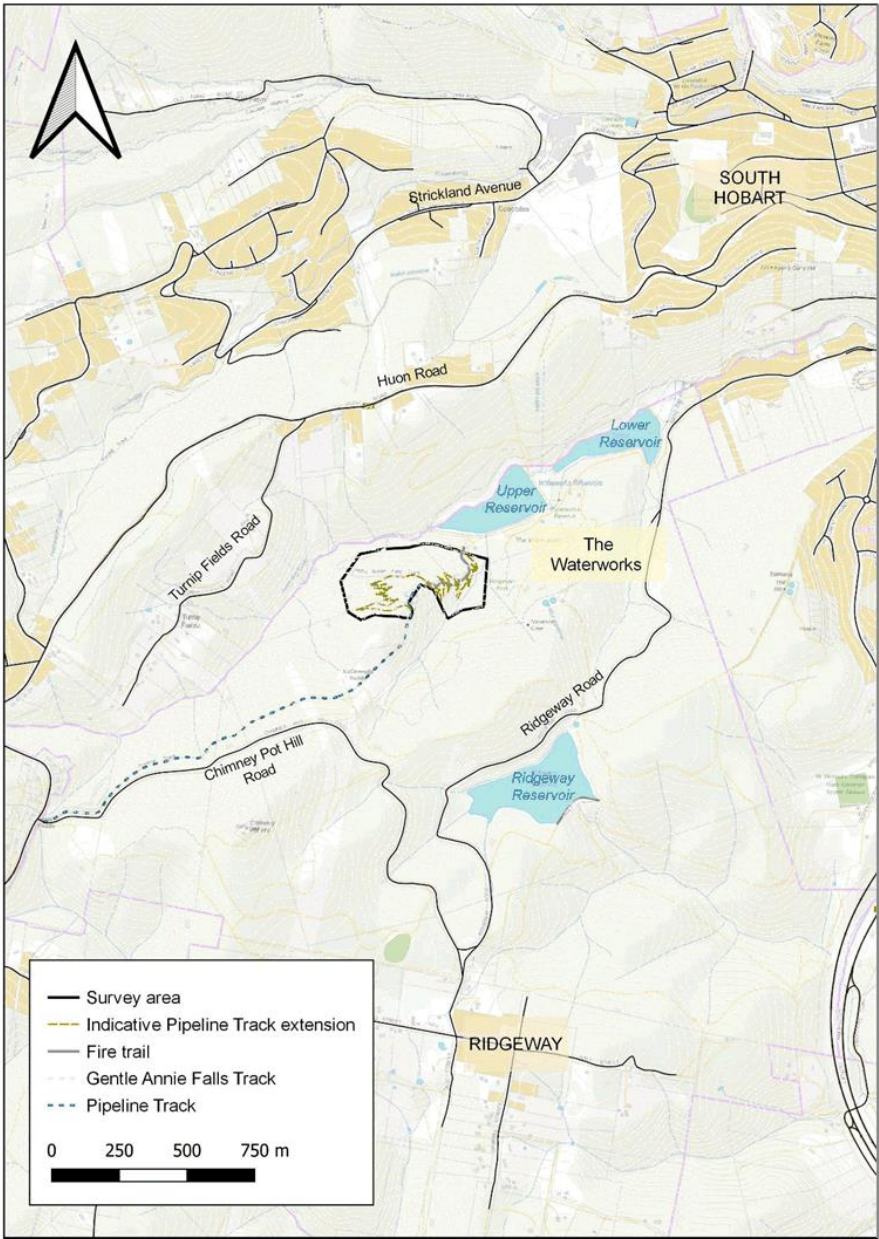


Figure 1 – Site Location Plan (Image source: LISTmap 2021)

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2.2 Proposed works

CoH proposes to upgrade a section of the Pipeline Track between Waterworks Reserve and Gentle Annie Falls from a narrow steep track rated 'difficult' into a dual direction, multiuse Class 2 track rated 'easy'.

The proposed track development includes construction or upgrade of 2300 m of track. The track will be surfaced with imported gravel and have an average width of 1.5 m. Some of the track will be located on the existing trail. The proposed track will ascend from the Waterworks Site 9 car park near the Upper Reservoir following a series of switchbacks crossing the fire trail before joining with the existing Gentle Annie Falls Track mid-way at the Pipe-head Well heritage feature. From here the track will switch back in a southerly direction, linking with the Pipeline Track above Gentle Annie Falls (Figure 2).

The final track alignment will be influenced by heritage requirements, local terrain and natural values.

3 Methods

The natural values assessment was undertaken in two stages: desktop analysis and field survey.

3.1 Desktop analysis

The desktop analysis involved extracting data from a variety of sources, including:

- Natural Values Atlas (DPIPWE 2021)
- Protected Matters Search Tool (DEE 2021)
- LIST map

3.2 Field survey

The field survey was undertaken by a single observer on the 26th October 2021. The overall vegetation communities on the site were assessed and classified according to TASVEG 4.0. All vascular plant species encountered were recorded, with an emphasis on detecting rare and threatened species. Searches for potential threatened fauna habitat e.g. tree hollows and den sites, and other evidence e.g. scats, diggings and tracks were also undertaken. Whilst no detailed fauna surveys were conducted an additional site visit was undertaken on the 6th December 2021 to assess potential track impact on devil habitat (shelter den).

A targeted survey for the endangered orchid *Corunastylis nudiscapa* (bare midge-orchid) was undertaken on 25th February 2022. The survey focussed on the sites where this species was previously recorded along the existing Gentle Annie Falls Track and the alignment of the proposed new track above the Gentle Annie Falls Track. The survey also attempted to detect *Corunastylis nuda* (tiny midge-orchid), which has been previously observed at one location within 100 m of the proposed track works.

Locations of threatened flora, fauna habitat and significant weeds were mapped with a handheld GPS and population data was captured e.g. numbers of individuals, area occupied etc. Geographic datum used was GDA94 Zone 55.

Taxonomic nomenclature for flora follows the latest Census of Vascular Plants of Tasmania (Baker & de Salas 2021). Classification of vegetation communities is in accordance with Kitchener and Harris (2013) and TASVEG 4.0.

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3.3 Limitation of the survey

Whilst every effort was made to compile a complete list of vascular plants for the property, a single survey is unlikely to detect all species present due to seasonal/temporal variations. Some plants could not be identified to a species level and some species may have been overlooked due to a lack of fertile material. It is also possible that additional species are present but were dormant at the time of survey e.g. annuals, ephemerals.

4 Natural Values Assessment

This section outlines the findings of the desktop analysis and field survey, including a description of the vegetation communities, threatened flora, fauna habitat values and weeds.

4.1 Vegetation Communities

Three native vegetation communities and one modified community were recorded during the field survey, as per the TASVEG 4.0 classification system:

- *Eucalyptus tenuiramis* forest and woodland on sediments (DTO)
- *Eucalyptus obliqua* dry forest (DOB)
- *Eucalyptus amygdalina* forest and woodland on sandstone (DAS)
- Extra-urban miscellaneous (FUM)

Vegetation communities are mapped in Figure 3 and described briefly below. The boundaries provided for the different vegetation communities are based on changes in the dominant eucalypt species and are indicative only. The transition between communities is not a distinct or linear boundary.

Eucalyptus tenuiramis forest and woodland on sediments (DTO)

Forest dominated by silver peppermint (*E. tenuiramis*) occurs on the higher north-facing slopes. Black peppermint (*E. amygdalina*) and stringybark (*E. obliqua*) trees are often present at the margins of this community where it intergrades with the DOB forest.

The understorey includes scattered shrubs, such as native cherry (*Exocarpos cupressiformis*) and prickly beauty (*Pultenaea juniperina*), with a groundcover of sedges (particularly *Lomandra longifolia*) and bracken (*Pteridium esculentum*) that varies from sparse to dense.

This community has a history of repeated fires evident in the mixed age stand structure and the fire scars on older trees. Many of the oldest age class silver peppermint trees display old growth features, including well-developed branch and trunk hollows, despite being smaller in height and trunk diameter than is typical of old growth eucalypts.

Eucalyptus obliqua dry forest (DOB)

The area mapped as DOB includes variable combinations of eucalypts generally dominated by stringybark. Black peppermint is commonly co-dominant and in these cases the community has

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affinities with the *E. amygdalina* on sandstone (DAS) community. On the drier upper slopes there is a transition from stringybark to silver peppermint dominance. The understorey includes a diverse mix of shrubs (including heathy species typical of sandy soils), sedges, and herbs.

The creek in the east of the survey area is dominated by blue gum (*E. globulus*) but is too small to map separately as *E. globulus* wet forest (WGL). This riparian zone and the adjacent sheltered slopes, where stringybark is dominant, have an understorey of wet sclerophyll shrubs such as dogwood (*Pomaderris apetala*) and blanket leaf (*Bedfordia salicina*) with a groundcover of sedges and ferns.

Eucalyptus amygdalina forest and woodland on sandstone (DAS)

This community occurs at the south-eastern edge of the survey area, where black peppermint is dominant. The understorey of heathy shrubs, sedges and herbs is similar to the DOB community.

Extra-urban miscellaneous (FUM)

Areas of parkland, including lawns, are mapped as FUM.

4.1.1 Conservation status of the vegetation communities

Two vegetation communities listed as threatened under threatened under Schedule 3A of the *Nature Conservation Act 2002* are present in the survey area:

- *Eucalyptus tenuiramis* forest and woodland on sediments (DTO), and
- *Eucalyptus amygdalina* forest and woodland on sandstone (DAS).

These vegetation communities are also listed as High Priority Biodiversity Values under the Biodiversity Code (Section E10.0) of the Hobart Interim Planning Scheme 2015.

No vegetation communities listed as threatened under the *Environment Protection and Biodiversity Conservation Act 1999* are present in the survey area.

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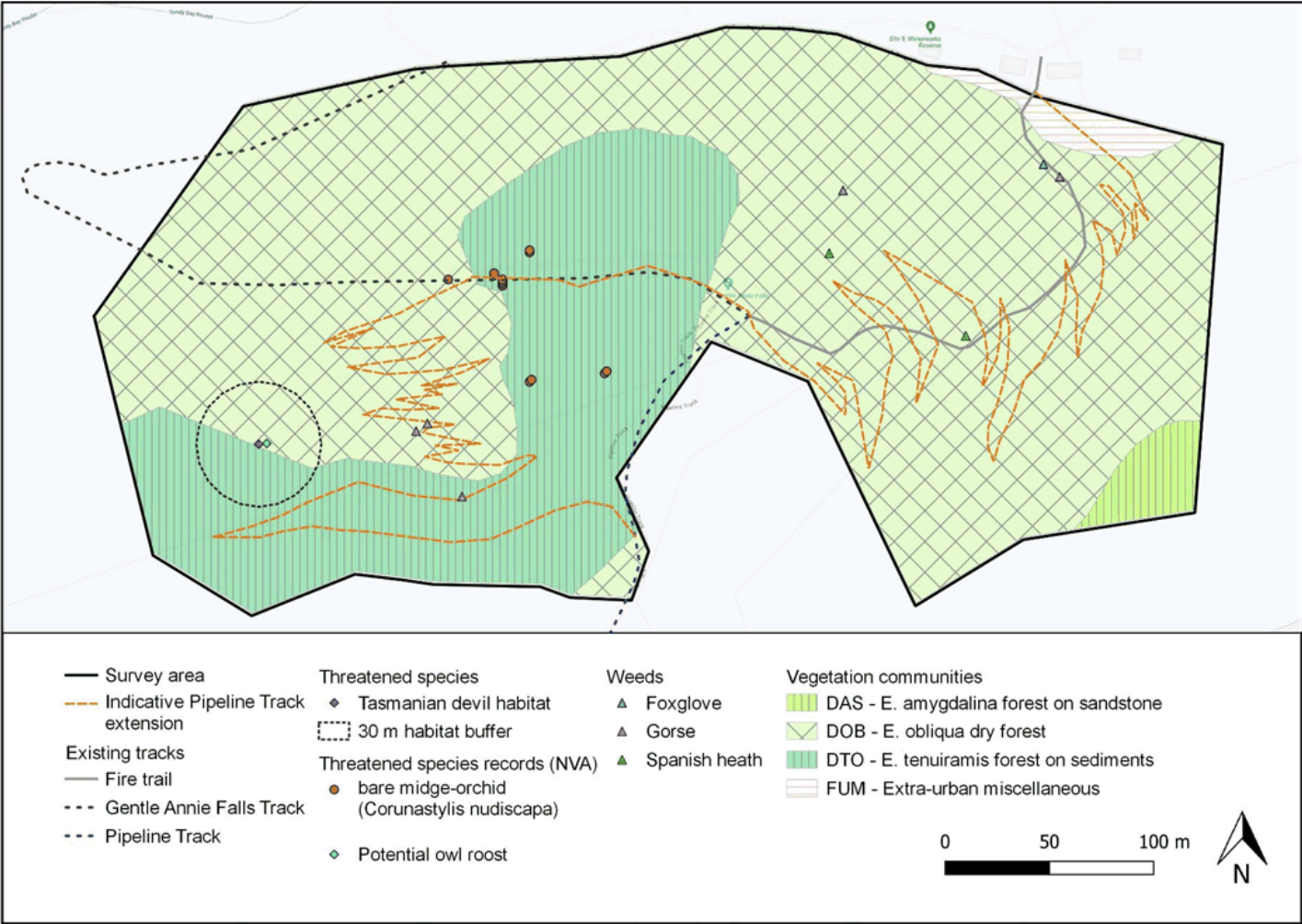


Figure 2 – Vegetation communities, habitat features, threatened species and weed locations.

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Photo 1 - E. obliqua dry forest.



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Photo 3 – Tasmanian Devil habitat identified at the site.

4.2 Flora

4.2.1 Threatened flora

No threatened flora species listed under the *Threatened Species Protection Act 1995* or the *Environment Protection and Biodiversity Conservation Act 1999* were recorded during the survey.

In 2015 multiple bare midge-orchids (*Corunastylis nudiscapa*) were observed within the survey area. Flowers are required for the identification of this ground orchid, therefore surveys during the flowering season in summer was required to determine the presence of this species. These surveys were carried out in February 2022 and no plants were observed. The species is however very cryptic and may not flower every year or may flower at different times in some years. While there have been no observations of *C. nudiscapa* from this location since the original records in 2015, it is possible the species is still present as underground tubers.

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A search of the Natural Values Atlas (DPIPWE database) revealed that seven threatened flora species have been recorded within 500 m of the site and an additional nine species have been recorded within 2 km since 1950. These species are listed in along with a comment about the likelihood of them occurring at the site.

Table 1 – Threatened flora species recorded within 500 m and 2 km of the site.

| Species | Status TSPA | Status EPBCA | Comment |
|--|----------------|-----------------|---|
| Species within 500 m | | | |
| <i>Caladenia caudata</i> Tailed spider-orchid | v | VU | Known from a variety of habitats, typically on dry sunny sites on sandy soils. Also known to occur on dolerite loam soils. Generally flowers in September and only after fire. Suitable habitat present. |
| <i>Caladenia filamentosa</i> daddy longlegs | r | | Occurs on sandy soils in heathy or sedgely eucalypt forest. Suitable habitat present. |
| <i>Corunastylis nuda</i> tiny midge-orchid | r | | Known from a range of habitats including wet and dry sclerophyll forest. In the Hobart region this species occurs on dry north-facing slopes. Recent record near survey area. Flowering Jan–Mar. Suitable habitat present. Not recorded during summer survey. |
| <i>Corunastylis nudiscapa</i> bare midge-orchid | e | | Occurs in dry forest with an open heathy understorey, typically on north-facing slopes. Observed on site in 2015. Flowering Dec–Apr (usually late Feb – early April). Suitable habitat present. Not recorded during summer survey. |
| <i>Juncus vaginatus</i> clustered rush | r | | Usually found in wet riparian areas. No suitable habitat present. |
| <i>Senecio squarrosus</i> leafy fireweed | r | | Occurs in dry forest. Flowering Oct – Dec. Suitable habitat present on northern aspects. |

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| Species | Status TSPA | Status EPBCA | Comment |
|---|----------------|-----------------|--|
| <i>Thelymitra inflata</i> inflated sun-orchid | e | | Habitat is damp areas with clay loam soils in dry forest. Known from only two locations in Tasmania, including on a ridge 400 m south of the survey area. Similar habitat occurs in the survey area. Flowering Nov– Dec. |
| Additional species within 2 km | | | |
| <i>Allocasuarina duncanii</i> conical sheoak | r | | Occurs in forest, woodland and scrub on shallow dolerite soils. Habitat not suitable due to different geology. |
| <i>Asperula scoparia</i> subsp. <i>scoparia</i> prickly woodruff | r | | Occurs in varied habitats including wet forest with rocky ground. Suitable habitat not present. Ideal survey timing is January-March. |
| <i>Austrostipa bigeniculata</i> doublejointed speargrass | r | | Occurs in dry open woodlands and grassland. Potential habitat present. |
| <i>Caladenia sylvicola</i> forest fingers | e | CR | Known from two sites in dry forest adjacent to Huon Road on mudstone. Due to restricted distribution unlikely to occur in survey area. |
| <i>Euphrasia scabra</i> yellow eyebright | e | | Restricted to damp grassy or marshy areas associated with marshes or damp drainage lines in dry forest. <i>Euphrasia</i> species are often associated with edges of tracks and other sites subject to disturbance. No suitable habitat present. Flowering mainly Dec– Feb. |
| <i>Pterostylis atriola</i> snug greenhood | r | | Associated with stony soil in dry to damp sclerophyll forest, typically with an open understorey. Favours disturbed sites. Potential habitat present in open <i>E. tenuiramis</i> and <i>E. obliqua</i> forest. |
| <i>Scleranthus fasciculatus</i> spreading knawel | v | | Found in <i>Poa</i> grassland/grassy woodland. No suitable habitat present. |
| <i>Vittadinia muelleri</i> narrowleaf new-holland-daisy | | | Occurs in native grassland and grassy woodland. No suitable habitat present. |

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| Species | Status TSPA | Status EPBCA | Comment |
|--|----------------|-----------------|---|
| <i>Xerochrysum bicolor</i> eastcoast paperdaisy | | | Occurs in dry lowland sites, usually near coastal areas. No suitable habitat. |

4.2.2 Introduced plants

Seven introduced plants were recorded at the site including two declared weeds listed under the *Weed Management Act 1999*, Spanish heath (*Erica lusitanica*) and gorse (*Ulex europaeus*). Gorse plants are small with regrowth present suggesting they have been previously controlled. One cluster of the environmental weed, foxglove (*Digitalis purpurea*), was observed in native vegetation on the edge of the parkland (Figure 2).

4.2.3 High conservation trees

Ten large eucalypt trees, eight blue gums with DBH >70 cm and two stringybarks with DBH > 100 cm were observed in the survey area (Figure 3, Table 2). These trees meet requirements for protection during track construction under the City of Hobart Tree Protection Methodology (see Conclusion and Recommendations for mitigation measures).

Mature blue gums are high priority biodiversity value under E10.0 Biodiversity Code of the Hobart Interim Planning Scheme 2015 as they provide potential foraging and nesting habitat for swift parrot, listed as endangered under and *Threatened Species Protection Act 1995* and critically endangered under the *Environment Protection and Biodiversity Conservation Act 1999*. Tree Protection Zones (TPZ) and Structural Root Zones (SRZ) of the mapped trees are provided in Table 2 are mapped in Figure 3.

Scattered old growth stringybarks and silver peppermint trees also occur in the DTO community, often with DBH <70 cm. These trees are also of high priority biodiversity value under E10.0 Biodiversity Code of the Hobart Interim Planning Scheme 2015 as they may provide hollow habitat for swift parrot and masked owl. These trees are not individually mapped as they are directly adjacent to the flagged track route however any alteration in the route is to avoid all trees with hollows. Tree protection measures where the track is within proximity to a significant tree are provided in the recommendations section the report. These measures are based on an approved methodology (approved by CoH for other track works) for work near significant trees that has been developed by a qualified arborist.

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Table 2 High conservation trees with tree protection and structural root zones.

| Species | Label | DBH (cm) | TPZ radius (m) | SRZ Radius (m) |
|--|-------|----------|----------------|-------------------|
| <i>Eucalyptus globulus</i> blue gum | EG1 | 75 | 9 | 3.2 |
| <i>Eucalyptus globulus</i> blue gum | EG2 | 70 | 8.4 | 3.1 |
| <i>Eucalyptus globulus</i> blue gum | EG3 | 80 | 9.6 | 3.3 |
| <i>Eucalyptus globulus</i> blue gum | EG4 | 75 | 9 | 3.2 |
| <i>Eucalyptus globulus</i> blue gum | EG5 | 75 | 9 | 3.2 |
| <i>Eucalyptus globulus</i> blue gum | EG6 | 70 | 8.4 | 3.1 |
| <i>Eucalyptus globulus</i> blue gum | EG7 | 80 | 9.6 | 3.3 |
| <i>Eucalyptus globulus</i> blue gum | EG8 | 80 | 9.6 | 3.3 |
| <i>Eucalyptus obliqua</i> stringybark | EO1 | 100 | 12 | 3.6 |
| <i>Eucalyptus obliqua</i> stringybark | EO2 | 180 | 15 | 4.6 |

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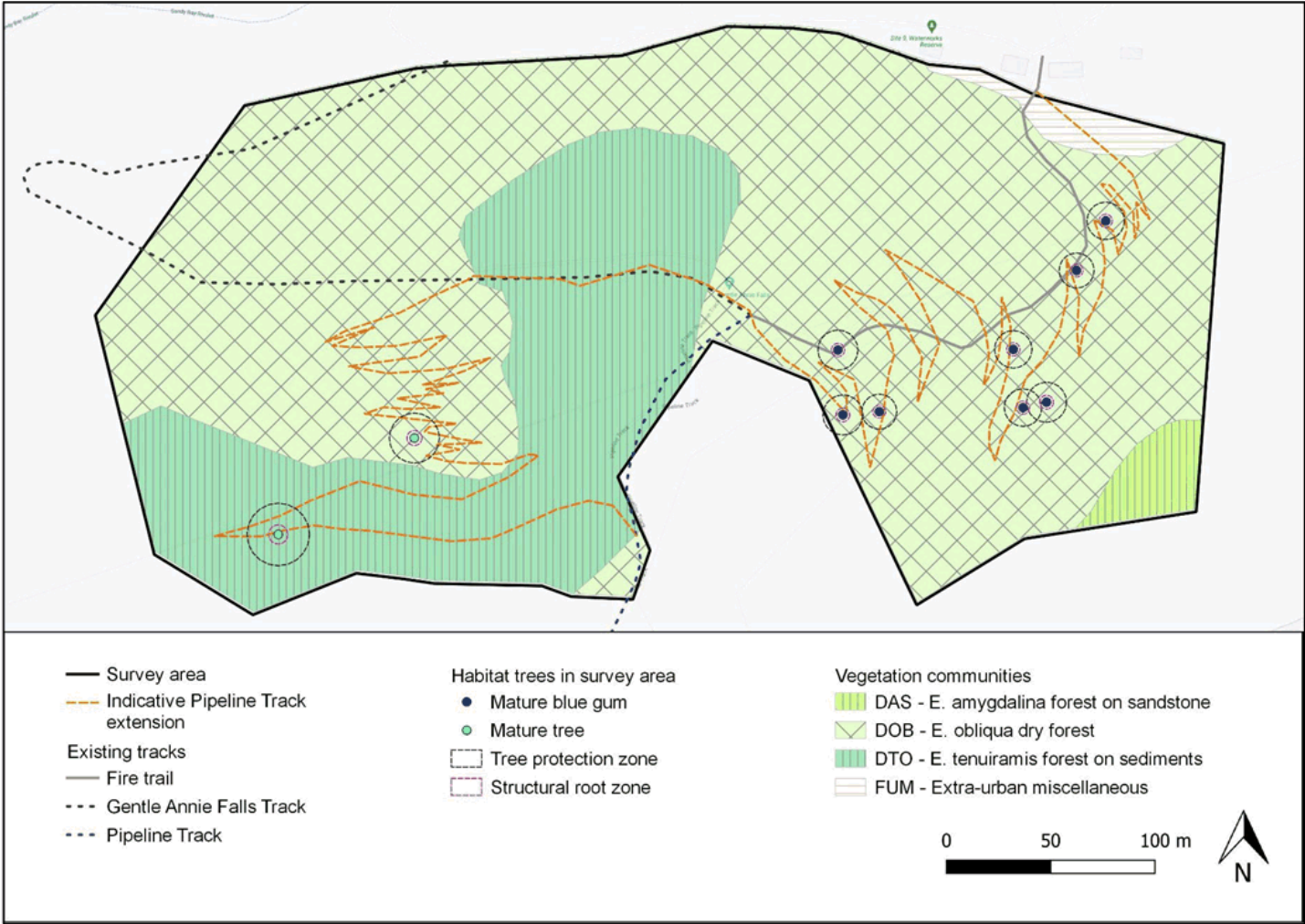


Figure 3 – High conservation trees, tree protection zones and structural root zones.

4.3 Fauna

4.3.1 Threatened fauna

Evidence of one threatened fauna species, Tasmanian devil (*Sarcophilus harrisii*), listed under the *Threatened Species Protection Act 1995* and the *Environment Protection and Biodiversity Conservation Act 1999* was recorded during the survey.

Tasmanian devil habitat with abundant Tasmanian devil scats was observed in the southwestern corner of the survey area (Figure 2 and Photo 3). This is a high priority biodiversity value under E10.0 Biodiversity Code Hobart Interim Planning Scheme 2015. Adjacent to the den, within the same sandstone overhang, a boobook owl (*Ninox boobook*) roost was also observed. The owl is not a threatened species. Searches were conducted for chaostola skipper larvae in *Gahnia* sedges during the survey with no evidence of larvae found.

The search of the Natural Values Atlas revealed a total of 15 threatened fauna species have been recorded within 2 km of the survey area since 1950. Ten of these species have been recorded within a 500 m radius of the site. These species are listed in Table 2 including a comment on the likelihood of them occurring at the site. Multiple raptor sightings within 500 m of the survey area have been recorded. One masked owl nest has been recorded within 2 km, although in 1985.

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Table 3 – Threatened fauna species recorded within 500 m and 2 km radius of site.

| Species | Status TSPA | Status EPBCA | Comments |
|--|----------------|-----------------|--|
| Species within 500 m | | | |
| <i>Accipiter novaehollandiae</i> grey goshawk | e | | Likely to forage across the area. Nests in wet forest, typically near watercourses. No potential nesting habitat. |
| <i>Aquila audax</i> subsp. <i>fleayi</i> wedge-tailed eagle | e | EN | Nests in tall forest on sheltered slopes away from disturbances such as roads. Marginal nesting habitat present. No known nests within 2 km. |
| <i>Haliaeetus leucogaster</i> white-bellied sea-eagle | v | | Nests in large trees in near-coastal areas. No suitable nesting or foraging habitat. |
| <i>Hirundapus caudacutus</i> white-throated needletail | | VU | Does not breed in Australia. Species is mostly aerial in the non-breeding season, but roosts in trees. |
| <i>Pardalotus quadragintus</i> forty-spotted pardalote | e | EN | Dependent on white gum (<i>E. viminalis</i>). No suitable habitat present. |
| <i>Perameles gunnii</i> eastern barred bandicoot | | VU | Numerous records within 2 km. Prefers a mosaic of vegetation types including open grassy habitats. The combination of dense native understorey vegetation and open parkland provides high quality bandicoot habitat. Species has secure populations in Tasmania. |
| <i>Podiceps cristatus</i> great crested grebe | v | | Occurs in large, deep open bodies of fresh water. Potential habitat in the nearby Waterworks reservoirs but not in survey area. |
| <i>Sarcophilus harrisii</i> Tasmanian devil | E | EN | Will forage across the study area. Habitat and sign (scats) present. |
| <i>Tyto novaehollandiae</i> masked owl | e | VU | Requires large tree hollows for nesting. Area likely to be used for foraging. Suitable nesting trees may be present, although most tree hollows in the survey area are likely to be too small. |

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| Species | Status TSPA | Status EPBCA | Comments |
|---|----------------|-----------------|--|
| Additional species within 2 km | | | |
| <i>Antipodia chaostola</i> subsp. <i>leucophaea</i> chaostola skipper | e | EN | Butterfly reliant on <i>Gahnia</i> sedge species in dry forest for larval habitat. <i>Gahnia radula</i> is locally common in the survey area, particularly in the DTO forest, providing suitable habitat. Species has not been observed in the survey area. |
| <i>Dasyurus maculatus</i> spotted-tail quoll | r | VU | Likely to forage across the survey area. Potential den sites including hollow logs, caves and rock crevices present on site. |
| <i>Dasyurus viverrinus</i> eastern quoll | | EN | Likely to forage across the survey area. Potential den sites including hollow logs, caves and rock crevices present on site. |
| <i>Discocharopa vicens</i> ammonite pinwheel snail | e | CR | Tiny terrestrial snail which lives under dolerite rocks. Recorded from only seven sites around Hobart. No suitable habitat present due to the lack of dolerite rocks in the survey area. |
| <i>Lathamus discolor</i> swift parrot | e | CR | Species has strong association with blue gum and black gum. These trees provide potential foraging habitat. Blue gums occur in the gully, providing potential foraging habitat. Old growth trees with hollows potentially suitable for nesting occur in the survey area. |

5 Development Impacts

Natural values

The construction of a new 2300 m long section of track between Waterworks Reserve and Gentle Annie Falls will require some minor earthworks, clearing of understorey vegetation and some immature trees along a 1.5 m wide strip for the length of the track.

Some of the proposed track extension is located in a threatened vegetation community, *Eucalyptus tenuiramis* forest and woodland on sediments (DTO), which will be subject to minor modification by removal of some understorey vegetation. The community will not be reduced in extent and will retain its ecological characteristics (e.g. structure, species composition, habitat features, recruitment processes). Impacts to the understorey will be limited due to the typically sparse nature of the understorey.

The final track alignment should be designed to avoid impacts to habitat trees (e.g. mature or old-growth trees) as far as possible, noting that heritage sites may be a constraint limiting options for realignment. The current track alignment intersects the TPZ of six blue gum trees DBH>70 cm and one stringybark DBH>100 cm (Figure 3). To avoid impact to these trees from track construction mitigation measures outlined in the City of Hobart Tree Protection Methodology should be followed (summarised below in recommendations section).

The proposed track intersects a broad area where a population of threatened bare midge-orchid (*Corunastylis nudiscapa*) have been recorded. There are also record of *Corunastylis nuda* nearby to the site. Targeted surveys for these species were undertaken during the peak flowering season in February 2022. No midge orchids were observed. The species are very cryptic and may not flower every year or may flower at different times in some years. While there have been no observations of *C. nudiscapa* from this location since the original records in 2015, it is possible the species is still present as underground tubers.

The habitat where *C. nudiscapa* has been observed at this location is *E. tenuiramis* forest with an open heathy understorey and relatively little groundcover. This habitat will not be impacted during the proposed works because the existing walking track will be utilised in this section. The proposed new track is located in forest with a similar aspect and soil type but with a generally denser understorey of shrubs or bracken and less bare ground. This difference in understorey suggests that *C. nudiscapa* is less likely to occur where the new track alignment is planned. However, there

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is limited certainty due to the cryptic nature of *C. nudiscapa*, the possibility that it is more difficult to detect in denser vegetation and known occurrences of the species in habitat with varying understorey density in other locations.

Potential impacts on *C. nudiscapa* can be mitigated by utilising the existing alignment of the Gentle Annie Falls Track where the species has previously been recorded. Any widening or realignment of the track presents a risk to the bare midge-orchid because the species has been observed growing close to the edges of the track and may persist as underground tubers in these locations.

Vegetation trimming beside the existing fire trail and newly constructed trail sections will have a minor impact provided that trees are retained, and soil disturbance is avoided. Native flora species will persist in these areas where vegetation is modified.

Track alignment in the western section of the survey area needs to be rerouted to maintain buffer from known Tasmanian devil shelter habitat. Final track alignment should ensure a minimum 30 m buffer around the habitat site, to be measured on the ground when determining the western limit of the switchbacks in proximity of the site.

Impacts on habitat for other threatened fauna species are expected to be negligible.

Minor excavations will be required with consequent impacts on soils and drainage. These will be confined to the footprint of the works, which at an average width of under 1.5 m and a track length of around 2300 m, is expected to be less than 3500 m².

Environmental weeds

Environmental weeds have scattered occurrences in the survey area including two declared weeds, Spanish heath and gorse. Control of these weeds prior to commencement of works and ongoing follow up is recommended.

Vegetation clearing, earthworks, machinery use and importation of materials such as gravel pose a risk of introducing or spreading weeds in the area. Track construction works may spread weeds within the site (including seeds in soil). Most of the plant species present have a low risk of *Phytophthora cinnamomi* (Pc) infection and standard weed hygiene measures are adequate.

6 Conclusion and Recommendations

Natural values and environmental weeds were assessed in the area of the proposed track upgrade of the Pipeline Track between Waterworks Reserve and Gentle Annie Falls.

Two threatened vegetation communities, *Eucalyptus tenuiramis* forest and woodland on sediments (DTO) and *Eucalyptus amygdalina* forest and woodland on sandstone (DAS), listed under the *Nature Conservation Act 2002* occur in the survey area. The proposed track extension does not impact the *Eucalyptus amygdalina* forest and woodland on sandstone (DAS).

No threatened flora species were observed during the initial on-ground survey although records of the threatened species, bare midge-orchid, intersect the proposed track alignment (within an area bisected by the existing track). A summer survey for this species was carried out and no plants were recorded.

Tasmanian devil habitat and potential owl roost were observed in the southwestern corner of the survey area. These habitat areas will be avoided by the track.

Suitable habitat for threatened fauna species was observed in the survey area. Mature and old-growth trees with developing or existing hollows providing potential habitat for swift parrots, masked owls and other hollow-nesting fauna occur in the survey area.

High conservation value trees occur adjacent to the proposed track alignment. Impacts to these trees can be avoided by following mitigation measures outlined in the City of Hobart Tree Protection Methodology or rerouting sections of the trail to avoid TPZ of mature trees.

Recommendations

- Align track to provide a minimum 30 m buffer for the Tasmanian devil habitat and potential owl roost.
- Minimise impact to the threatened DTO community by following sections of existing tracks and clear areas where possible, keeping the clearing of understorey vegetation to a minimal width and avoiding the steepest gradients to reduce the extent of earthworks.
- Improve the condition of the DTO community by rehabilitating existing informal tracks and controlling gorse (as per Weed Management Plan, Appendix 2).
- Minimise potential impacts on midge orchids by utilising the existing alignment of the Gentle Annie Falls Track where the species has previously been recorded. Avoid

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expansion of the track edges in this area to prevent impacts to any tubers that were unseen during the summer surveys.

- Control environmental weeds in survey area prior to commencing works, with ongoing follow up monitoring and control following the Weed Management Plan (Appendix 2).
- Implement vehicle and machinery weed hygiene measures to reduce risk of spreading weeds and weed seeds to the site.
- Ensure gravel and any other materials introduced to the site are free from weed seeds.
- Restrict machinery to existing fire trail surface or the alignment of new trail sections, where possible, to avoid unnecessary impacts to native vegetation and soils.

Tree protection measures:

- Avoid damaging significant trees, where possible. Where impacts are unavoidable the following protocols will minimize impacts. This applies to mature blue gums (*E. globulus*) DBH>60 cm, mature stringybarks (*E. obliqua*) DBH>100 cm, old growth eucalypt trees in the DTO community and dead stags with potential hollows.
- For the significant trees as defined above, no roots are to be cut >100 mm within the SRZ and >75 mm within the TPZ.
- The track is to be built up and over roots of the above sizes, to a minimum of 100 mm and maximum of 300 mm depth, with soil, gravel and/or rock as applicable.
- Any build-up of track formation > 300 mm requires a permeable foundation such as rock or gravel to allow aeration of the soil below.
- Where track alteration to avoid roots is not possible, a 10% incursion limit as per AS1490-2009 into the TPZ applies.
- Clearly mark out a protection zone around all significant trees prior to works, to aid in following the above protocols.

References

Australian Standard - Protection of trees on development sites

AS 4970-2009 Protection of trees on development sites (tcaa.com.au)

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*Natural Values Assessment for Pipeline Track, Hobart – March 2022***Appendix 1 – Vascular Plant Species List**

| | | | |
|--|-----------------------|--------------|-----------------|
| Recorder: | Nick Fitzgerald | Date: | 26 October 2021 |
| <i>Dicotyledons</i> | | | |
| APIACEAE | | | |
| <i>Daucus glochidiatus</i> | Australian carrot | | |
| ARALIACEAE | | | |
| <i>Hydrocotyle hirta</i> | hairy pennywort | | |
| ASTERACEAE | | | |
| <i>Bedfordia salicina</i> | tasmanian blanketleaf | end | |
| <i>Cassinia aculeata subsp. aculeata</i> | common dollybush | | |
| <i>Coronidium scorpioides</i> | curling everlasting | | |
| <i>Lagenophora sp.</i> | | | |
| <i>Olearia argophylla</i> | musk daisybush | | |
| <i>Olearia ramulosa</i> | twiggy daisybush | | |
| <i>Olearia viscosa</i> | viscid daisybush | | |
| <i>Ozothamnus reflexus</i> | | | |
| <i>Senecio hispidissimus</i> | coarse fireweed | | |
| <i>Senecio prenanthoides</i> | common fireweed | | |
| <i>Senecio sp.</i> | | | |
| BRASSICACEAE | | | |
| <i>Cardamine hirsuta</i> | hairy bittercress | i | |
| CAMPANULACEAE | | | |
| <i>Wahlenbergia sp.</i> | | | |
| CARYOPHYLLACEAE | | | |
| <i>Cerastium glomeratum</i> | sticky mouse-ear | i | |
| CRASSULACEAE | | | |
| <i>Crassula tetramera</i> | wiry stonecrop | | |
| DROSERACEAE | | | |
| <i>Drosera auriculata</i> | tall sundew | | |
| ELAEOCARPACEAE | | | |
| <i>Tetratheca labillardierei</i> | glandular pinkbells | | |
| ERICACEAE | | | |
| <i>Epacris impressa</i> | common heath | | |
| <i>Erica lusitanica</i> | spanish heath | i | d |

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| | | | |
|--|------------------------|---|-----|
| <i>Leucopogon ericoides</i> | pink beardheath | | |
| <i>Leucopogon virgatus</i> | beardheath | | |
| <i>Lissanthe strigosa subsp. subulata</i> | peachberry heath | | |
| <i>Styphelia humifusa</i> | native cranberry | | |
| EUPHORBIACEAE | | | |
| <i>Amperea xiphoclada var. xiphoclada</i> | broom spurge | | |
| FABACEAE | | | |
| <i>Acacia dealbata subsp. dealbata</i> | silver wattle | | |
| <i>Acacia leprosa var. graveolens</i> | varnish wattle | | |
| <i>Acacia melanoxylon</i> | blackwood | | |
| <i>Acacia verticillata subsp. verticillata</i> | prickly moses | | |
| <i>Aotus ericoides</i> | golden pea | | |
| <i>Daviesia ulicifolia subsp. ulicifolia</i> | yellow spiky bitterpea | | |
| <i>Dillwynia sericea</i> | showy parrotpea | | |
| <i>Indigofera australis subsp. australis</i> | native indigo | | |
| <i>Oxylobium ellipticum</i> | golden shaggypea | | |
| <i>Pultenaea daphnoides</i> | heartleaf bushpea | | |
| <i>Pultenaea juniperina</i> | prickly beauty | | |
| <i>Ulex europaeus</i> | gorse | i | d |
| GENTIANACEAE | | | |
| <i>Centaurium erythraea</i> | common centaurry | i | |
| GERANIACEAE | | | |
| <i>Geranium potentilloides var. potentilloides</i> | mountain cranesbill | | |
| GOODENIACEAE | | | |
| <i>Goodenia ovata</i> | hop native-primrose | | |
| HALORAGACEAE | | | |
| <i>Gonocarpus tetragynus</i> | common raspwort | | |
| <i>Gonocarpus teucroides</i> | forest raspwort | | |
| LAMIACEAE | | | |
| <i>Prostanthera lasianthos var. lasianthos</i> | christmas mintbush | | |
| MALVACEAE | | | |
| <i>Asterotrichion discolor</i> | Tasmanian currajong | | end |
| MYRTACEAE | | | |
| <i>Eucalyptus amygdalina</i> | black peppermint | | end |
| <i>Eucalyptus globulus subsp. globulus</i> | tasmanian blue gum | | |

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| | | |
|--|-------------------------|-----|
| <i>Eucalyptus obliqua</i> | stringybark | |
| <i>Eucalyptus tenuiramis</i> | silver peppermint | end |
| <i>Eucalyptus viminalis</i> | white gum | |
| <i>Leptospermum scoparium</i> | common teatree | |
| OXALIDACEAE | | |
| <i>Oxalis perennans</i> | grassland woodsorrel | |
| PITTOSPORACEAE | | |
| <i>Billardiera longiflora</i> | purple appleberry | end |
| <i>Bursaria spinosa subsp. spinosa</i> | prickly box | |
| PLANTAGINACEAE | | |
| <i>Digitalis purpurea</i> | foxglove | i |
| POLYGALACEAE | | |
| <i>Comesperma volubile</i> | blue lovecreeper | |
| PROTEACEAE | | |
| <i>Banksia marginata</i> | silver banksia | |
| <i>Lomatia tinctoria</i> | guitarplant | end |
| RANUNCULACEAE | | |
| <i>Clematis aristata</i> | mountain clematis | |
| RHAMNACEAE | | |
| <i>Pomaderris apetala subsp. apetala</i> | common dogwood | |
| ROSACEAE | | |
| <i>Acaena novae-zelandiae</i> | common buzzy | |
| RUBIACEAE | | |
| <i>Coprosma quadrifida</i> | native currant | |
| <i>Galium aparine</i> | cleavers | i |
| <i>Galium sp.</i> | bedstraw | |
| SANTALACEAE | | |
| <i>Exocarpos cupressiformis</i> | common native-cherry | |
| <i>Leptomeria drupacea</i> | erect currantbush | |
| STYLIDIACEAE | | |
| <i>Stylidium graminifolium</i> | narrowleaf triggerplant | |
| THYMELAEACEAE | | |
| <i>Pimelea linifolia</i> | slender riceflower | |
| VIOLACEAE | | |
| <i>Viola hederacea subsp. hederacea</i> | ivy leaf violet | |

*Natural Values Assessment for Pipeline Track, Hobart – March 2022***Magnoliids**

LAURACEAE

| | |
|---------------------------|--------------------|
| <i>Cassytha melantha</i> | large dodderlaurel |
| <i>Cassytha pubescens</i> | downy dodderlaurel |

Monocotyledons

ASPARAGACEAE

| | |
|----------------------------|------|
| <i>Lomandra longifolia</i> | sagg |
|----------------------------|------|

CYPERACEAE

| | |
|-------------------------------|--------------------|
| <i>Gahnia radula</i> | thatch sawsedge |
| <i>Lepidosperma elatius</i> | tall swordedge |
| <i>Lepidosperma ensiforme</i> | arching swordedge |
| <i>Lepidosperma laterale</i> | variable swordedge |

HEMEROCALLIDACEAE

| | |
|---------------------------|-----------------|
| <i>Dianella tasmanica</i> | forest flaxlily |
|---------------------------|-----------------|

JUNCACEAE

| | |
|--------------------------|----------------|
| <i>Juncus pallidus</i> | pale rush |
| <i>Luzula densiflora</i> | dense woodrush |

ORCHIDACEAE

| | | |
|------------------------------|-------------------|-----|
| <i>Acianthus sp.</i> | | |
| <i>Caladenia fuscata</i> | dusky fingers | |
| <i>Chiloglottis grammata</i> | small bird-orchid | end |
| <i>Pterostylis sp.</i> | | |
| <i>Thelymitra sp.</i> | sun-orchid | |

POACEAE

| | |
|--|---------------|
| <i>Deyeuxia sp.</i> | |
| <i>Microlaena stipoides var. stipoides</i> | weeping grass |
| <i>Rytidosperma sp.</i> | wallaby grass |

Pteridophytes

ASPLENIACEAE

| | |
|---------------------------------|---------------|
| <i>Asplenium flabellifolium</i> | necklace fern |
|---------------------------------|---------------|

DENNSTAEDTIACEAE

| | |
|---|---------|
| <i>Pteridium esculentum subsp. esculentum</i> | bracken |
|---|---------|

DRYOPTERIDACEAE

| | |
|-------------------------------|-------------------|
| <i>Polystichum proliferum</i> | mother shieldfern |
|-------------------------------|-------------------|

Natural Values Assessment for Pipeline Track, Hobart – March 2022

end = Tasmanian endemic i = introduced

d = declared weed ~ (Weed Management Act 1999)

CR = Critically Endangered, EN = Endangered, VU = Vulnerable, LC = Least Concern, NT = Near Threatened, DD = Data Deficient, ~ = Uncertain, EX = Extinct, *~* = (Environment Protection and Biodiversity Conservation)

Vulnerable *Act 1999)*

e = endangered v = vulnerable r = rare ~ (*Tasmanian Threatened Species Protection Act 1995*)

Appendix 2 – Weed Management Plan

A1. Introduction

This weed management plan has been developed in conjunction with a natural values assessment for the proposed Gentle Annie Falls shared use (walking and bicycling) track. The Weed Management Plan identifies the current and potential risks of environmental weeds in the survey area and provides an action plan for weed hygiene and weed control.

A2. Weeds Recorded on Site

The site was surveyed in October 2021, with any declared or environmental weeds identified and mapped within the survey area for the track assessment project.

Seven introduced plant species were recorded during the survey, including four minor herbaceous weeds with limited impact on natural values. Three environmental weeds were observed, including two species classified as declared weeds under the *Weed Management Act 1999*. The location of weeds is shown in Figure 1.

Gorse (*Ulex europaeus*) and Spanish heath (*Erica lusitanica*) are the most serious weeds present and are widespread in the survey area, where they pose a serious risk of further spread with consequent impacts on natural values. Both woody weed species are highly flammable and, when infestations are dense, can increase the risk and severity of fire.

Following previous weed control works, gorse and Spanish heath are limited to mostly small juvenile or regrowth plants occurring in low densities (Figures 2 & 3). Given the small size of most plants and their scattered distribution it is likely that many individual plants were not detected and mapped during the survey, particularly the very small gorse plants on the upper slopes.

Foxglove (*Digitalis purpurea*) is confined to a patch at the northern edge of the survey area, in native forest where the understorey has been disturbed (Figure 4). This herbaceous weed favours disturbed or bare soil such as along track edges. Most of the survey area is too dry for foxglove (e.g. the DTO forest) and the damper sites, such as the gully at the eastern edge of the survey area, are likely to be resilient to foxglove invasion in the absence of disturbance.

Soil disturbance associated with track construction may promote the establishment and spread of foxglove, Spanish heath, gorse and other weeds.

Natural Values Assessment for Pipeline Track, Hobart – March 2022

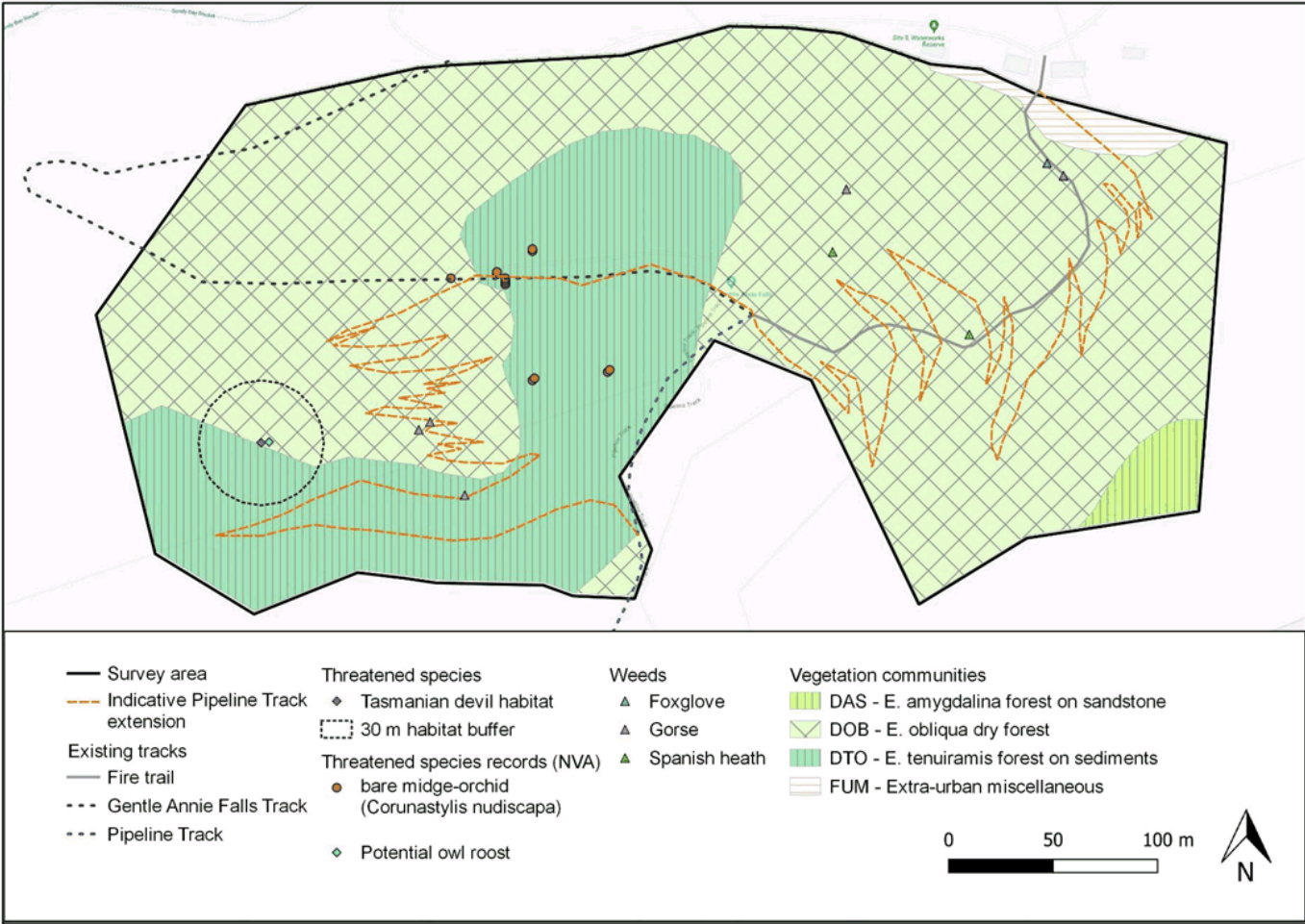


Figure 4 - Location of weeds, tracks and vegetation communities in the survey area.

A3. Weed Control Aim and Methodology

The overall weed management aim for the site is to control all environmental weeds and prevent the spread of weed seed across the site and off the site. This is to be achieved by undertaking primary control of all weeds, conducting secondary control of regrowth weeds, and implementing materials and machinery hygiene protocols for track construction works to minimise the spread of weed seed. Refer to Table 1 for a timeline of weed control actions.

Primary Control – All weeds are to be controlled by foliar spraying with herbicide for immature plants and cut and paint for larger woody plants as described in Table 1 of this plan. This primary control must be undertaken prior to the commencement of further works.

Secondary Weed Treatment – Secondary weed control (i.e. follow-up control) is critical to the success of the weed management and must include annual follow-up monitoring and maintenance over a period of at least 3 years after initial control. Refer to Table 2 for specific follow-up treatments by weed.

Hygiene and Access – Weed hygiene protocols (see Section A5) should be implemented during the construction phase to minimise the spread of weeds around the site or off the site to other locations. A key component of weed containment is to restrict access to ensure machinery does not become a weed vector during construction. Personal hygiene should also be undertaken daily, e.g. check clothes and boots for seeds and clean them prior to leaving site.

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Figure 5 - Spanish heath plant growing amongst native understorey near existing gravel track.



Figure 6 - Gorse growing on edge of small dam in DOB forest.

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Figure 7 – Foxglove infestation in open area at edge of native forest.

A4. Disposal of Debris

Any weeds that are physically removed as part of the project, such as woody weeds that are cut and pasted or weeds that are pulled such as foxglove, should be disposed of at an approved waste disposal facility. Weeds that contain seed should be double bagged when dug out prior to disposal.

A permit from DPIPWE may be required prior to the transport of any declared weed material. A permit generally sets out measures to minimise the opportunity for weed seed or debris to spread during transport and correct disposal procedures. This may include ensuring all weed material is well covered and tied down during transport to ensure no material is spread along roadsides and ensuring debris is not mixed with general rubbish or added to green waste piles.

A5. Hygiene Protocols

A key component of weed containment is to restrict access by ensuring machinery does not facilitate weed spread during construction. The use of machinery on the site must be managed carefully to prevent weed seed from spreading around the site or to other locations off site.

All machinery entering the site should adhere to the 'Weed and Disease Planning and Hygiene Guidelines (DPIPWE 2015)'.

- *Equipment and machinery are to be clean prior to unloading on the site and cleaned on site before removal. Cleaning should include the removal of soil, mud etc. and the blowing of any dry plant material from the vehicle.*

In addition to vehicle hygiene, the movement of soil around the site and the import and export of soil should adhere to the following broad guidelines:

- All gravel, fill and topsoil brought to the site should be sourced from certified weed free suppliers and quarries in accordance with Australian Standard AS4419 Soil for Landscaping and Garden Use to ensure weed seed is not introduced.

*Natural Values Assessment for Pipeline Track, Hobart – March 2022***A6. Weed Control Table****Table 4 – Summary of weed control measures**

| Weed Species | Action | Treatment/Methodology | Outcome | Timing | Priority |
|-------------------------------------|--|---|--|--|----------|
| Gorse, Spanish heath | Primary treatment of plants | Control incorporating hand-pulling of seedlings or foliar spray of plants with established roots (when actively growing). | Gorse and Spanish heath prevented from flowering and seeding | Autumn or Spring 2022 | High |
| | Follow-up treatment of new growth and plants that have not been killed | Hand-pulling of seedlings. Foliar spraying of plants with established roots (when actively growing). | Gorse and Spanish heath eradicated from site. | Annually for 3 years following primary control | High |
| Foxglove | Primary treatment of plants on site | Foliar spray or grub juvenile rosettes and mature plants. | Foxglove plants killed, preventing seed production. | Spring 2021 | High |
| | Follow-up treatment of new plants or plants that have not been killed. | Foliage spray or grub regrowth or seedlings. | Foxglove eradicated from site. | Annually for 3 years following primary control | Moderate |
| Monitoring & Maintenance | Conduct annual survey of treated areas and treat weeds as required | Foliar spray seedlings, regrowth or plants not killed during primary treatment. Hand pull isolated or small plants. | Major weed infestations monitored and treated as required to reduce extent and density of weed species | Annually in Spring for minimum 3 years | High |

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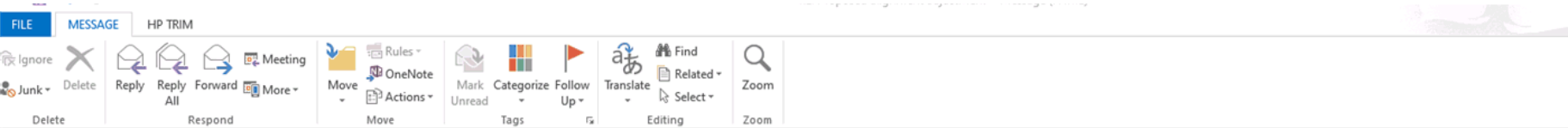
| Weed Species | Action | Treatment/Methodology | Outcome | Timing | Priority |
|--------------|---|---|---|--|----------|
| | Annual surveillance of newly constructed track for new weeds. | Record any new weeds established. Foliage spray, chip out or hand pull any new weeds located. | Any missed or isolated plants are recorded and treated preventing new infestations establishing | Annually in Spring for minimum 2 years following track construction. | Moderate |

Natural Values Assessment for Pipeline Track, Hobart – March 2022

References

Department of Primary Industries, Parks, Water and Environment (2015). *Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania*.

Weed Management Act 1999, Tasmanian State Government, No 105 of 1999. Government Printer, Hobart, Tasmania



Mon 15/08/2022 3:14 PM
Andy Welling <andy.welling@enviro-dynamics.com.au>
RE: Proposed alignment adjustment

To: Bree Hunter
You forwarded this message on 15/08/2022 3:31 PM.

Hi Bree,
Thanks for your email regarding some realignment of a section of the Gentle Annie Falls track.

- I have looked at the area of the proposed reroute and provide the following thoughts.
- The proposed reroute will result in less overall disturbance to natural values as the length of track to be constructed will be shorter than the original route (approx. 70m rather than 150-180m)
 - The reroute will remove the start of the new track away from an area where a threatened orchid (*Corunstylis nudiscarpa*) have been recorded previously and hence reduce possible impacts to this species.
 - The route will require a short section of track (approx. 40m) to traverse DTO vegetation which is a threatened vegetation community. Provided large trees and root zones are avoided (as per tree protection measures outlined in the natural values report) the impacts will be no greater than impacts to the adjacent vegetation that is classified as DOB as the understorey contains very similar species.

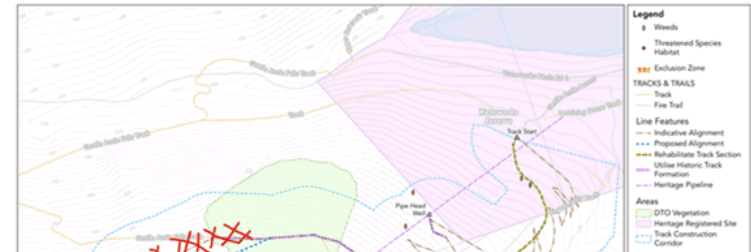
The proposed reroute will reduce overall impacts on the vegetation and reduce soil disturbance and is supported as a prefer route.
The impacts on the DTO will be minimal (<150m2). We didn't address the planning scheme in the first report – which perhaps we should have? This track change wont change the impacts substantially from the initial propose route.

Regards
Andy

Andy Welling
Principal Consultant/Director
Enviro-dynamics
16 Collins Street, HOBART
0400 151 205
andy.welling@enviro-dynamics.com.au

From: Bree Hunter <hunterb@hobartcity.com.au>
Sent: Tuesday, 12 July 2022 11:06 AM
To: Andy Welling <andy.welling@enviro-dynamics.com.au>
Subject: Proposed alignment adjustment

Hey Andy,
We've finally received and reviewed the necessary feasibility assessments for the proposed realignment of the Gentle Annie Falls/ Pipeline track.
We're considering a slight change to the initial proposed alignment, which would reduce the overall track length by 100m. It will also remove the need for three switchbacks. However, this change would require the new track to cross through the area of surveyed as DTO by approximately 38m. The map below shows the proposed adjustment with the dotted blue line replacing the previously proposed alignment (under red x's).
We'd like to know you're thoughts as to whether this adjustment reduces the impact overall, or whether it would be best to stick to the initially proposal. We're also curious to know whether there would be additional approvals required if it were to cut across the DTO.
I'm happy to chat over the phone or meet on site if you feel it's necessary!
Thanks,
Bree
P.S. Pease invoice us for any time put towards answering this question.





Construction Environment & Heritage Management Plan

Pipeline Track Improvements – Gentle Annie Falls Area
Ridgeway Park

September 2022

Printed copies of this document are uncontrolled

Pipeline Track Improvements – Gentle Annie Falls Area - Construction Environmental and Heritage Management Plan

Document Control

Document Number: F21/113592

Title: Pipeline Track Improvements – Gentle Annie Falls Area - Construction Environmental & Heritage Management Plan

Author: Bree Hunter

| Issue | Date | Revision Description | Authorised by |
|-------|------|----------------------|---------------|
| Rev 0 | | | |
| Rev 1 | | | |
| Rev 2 | | | |
| Rev 3 | | | |

Endorsement of CEHMP

/ /2022

Program Leader – Bushland Infrastructure

/ /2022

Construction Supervisor

Pipeline Track Improvements – Gentle Annie Falls Area - Construction Environmental and Heritage Management Plan

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Pipeline Track Improvements – Gentle Annie Falls Area - Construction Environmental and Heritage Management Plan

1. Background

Scope

This Construction Environment & Heritage Management Plan (CEHMP) details the construction methodology and environmental protection practices and processes that will apply for the construction of the Pipeline Track Improvements project.

The CEHMP identifies all potential environmental impacts associated with the works including, water pollution, land contamination, erosion, land instability, changes to hydrology, habitat degradation and impacts upon flora and fauna. The project will generate no impacts from noise, odours, or air pollution. It has been informed by natural values, geotechnical and cultural heritage assessments of the site and identified required safeguards to avoid and minimise potential adverse environmental and heritage impacts. The CEHMP will be updated as required as the project progresses.

The plan incorporates the following specific sections:

- Weed Management Plan
- Construction Hygiene Protocol
- Soil and Water Management Plan
- Natural Values Assessment
- Heritage Assessment
- Geotechnical Assessment

The CEHMP supplements the project specifications and drawings. Relevant complementary documents include, but are not limited to:

- Design & Construction Specification - Pipeline Track Improvements
- Unanticipated Discovery Plan Procedure for the management of unanticipated discoveries of Aboriginal relics in Tasmania
 - <https://www.aboriginalheritage.tas.gov.au/Documents/UDP.pdf>
- Map 1 – Pipeline Track Improvements (see Appendix A)

Objectives

- Confirm environmental & heritage management structure and responsibility
- Identify environmental & heritage values and risk from works
- Define environmental & heritage management activities and controls
- Confirm environmental * heritage management monitoring and review

2. Project Description

This proposal undertakes to extend the northern end of the Pipeline Track from the top of Gentle Annie Falls to Site 9 in the Waterworks Reserve in order to improve the access for all users, remove risks to user safety, and to provide a key link in the wider bushland recreational track network. The proposed track alignment and construction methods are set out in the specifications.

Project Team

The organisational structure and responsibilities for implementation and management of this project is as detailed below.

Pipeline Track Improvements – Gentle Annie Falls Area - Construction Environmental and Heritage Management Plan

Program Leader Bushland Infrastructure (Sean Black – 0438 381 171)

Overall responsibility for project delivery and accountable for ensuring compliance with City of Hobart (CoH) project approvals and all legislative requirements. Specifically, this includes:

- Approving and regular evaluation of project environmental controls and this CEHMP
- Ensuring, for both council staff and any subcontractors, documented environmental procedures are followed and records are kept
- Ensuring reporting on environmental and heritage issues takes place as required
- Community and regulatory agency liaison

Project Manager (CoH: TBC ; Contractor: TBC)

The Project Manager has delegated authority from, and responsibility to, the Program Leader Bushland Infrastructure for management of project delivery:

- Coordinating CEHMP activities of all personnel involved in the contract
- Organising an induction for staff prior to works commencing
- Monitoring performance, including compliance with CEHMP and project approvals
- Arrange and ensure environmental protection training of staff takes place as required by this Plan
- Act on corrective/preventive action notifications concerning environmental protection ensuring they are raised when appropriate and are closed out before the process or equipment is used again
- Ensuring Council's response to environmental emergencies
- Ensuring reporting on environmental and heritage issues takes place as required
- Monthly progress reporting detailing status of works and addressing any issues including environmental, heritage and Work Health and Safety matters. These reports will be provided to the Program Leader Bushland Infrastructure and appropriate dissemination and action initiated as required.

Project Supervisor (CoH: Lindsay Ashlin – 0417 305 166; Contractor TBC)

The Project Supervisor is responsible coordinating and overseeing project delivery, including:

- Ensuring route alignment avoids identified environmental and heritage values and hazards, and that risks are controlled in construction activities and work areas. The project Supervisor will report any unanticipated cultural heritage discoveries to the Project Manager who will report to the Council's Senior Cultural Heritage Officer.
- Ensuring the requirements of CEHMP and approvals are met
- Coordinating or conducting environmental/quality/safety site inspections
- Identifying training needs and arranging for employees and subcontractors to attend training
- Ensuring toolbox meetings and team briefings are held about managing environmental issues, incidents and emergencies
- Arranging the supply of appropriate environmental incident and emergency equipment
- Notifying stakeholders of works which will impact track usage, including commercial operators

Contractor Site Foreman / Team Leader (TBC)

The Project Site Foreman / Team Leader manages the construction crew and is responsible for day-to-day delivery of the project including:

- Implementing environmental controls in work areas
- Ensuring the requirements of approvals are met on site
- Ensuring site personnel are:

Pipeline Track Improvements – Gentle Annie Falls Area - Construction Environmental and Heritage Management Plan

- appropriately inducted and trained in the use of equipment and
 - comply with environmental and heritage protection procedures
- Advising Project Supervisor/Manager of any environmental or heritage protection training needed
- Conduct daily toolbox meetings/briefings about managing environmental, safety and quality requirements
- Site environmental and heritage protection inspections
- Investigating incidents
- Environmental assessment of plant and materials
- Advising the Project Supervisor/Manager of any environmental or heritage issues the crew encounters on site
- Storage arrangements for materials and equipment

Environment and Heritage Induction

All personnel engaged in the works, including contractors, shall attend a project induction given by the Project Manager and Project Supervisor prior to commencing work on site. This will include a review of requirements and control measures laid out in this CEHMP and the Unanticipated Discovery Plan Procedure for the management of unanticipated discoveries of Aboriginal relics in Tasmania.

The Project Site Foreman / Team leader will conduct daily toolbox meetings and team briefings about managing heritage and environmental issues, incidents and emergencies.

3. Flora and Fauna

A natural values assessment of the proposed track realignment corridor and surrounding area was undertaken by Enviro-dynamics Pty Ltd¹.

Natural values and environmental weeds were assessed in the area of the proposed track upgrade of the Pipeline Track between Waterworks Reserve and Gentle Annie Falls.

Two threatened vegetation communities, *Eucalyptus tenuiramis* forest and woodland on sediments (DTO) and *Eucalyptus amygdalina* forest and woodland on sandstone (DAS), listed under the *Nature Conservation Act 2002* occur in the survey area. The proposed track extension does not impact the *Eucalyptus amygdalina* forest and woodland on sandstone (DAS).

No threatened flora species were observed during the initial on-ground survey although records of the threatened species, bare midge-orchid, intersect the proposed track alignment (within an area bisected by the existing track). A summer survey for this species was carried out and no plants were recorded.

Tasmanian devil habitat and potential owl roost were observed in the southwestern corner of the survey area. These habitat areas will be avoided by the track

Suitable habitat for threatened fauna species was observed in the survey area. Mature and old-growth trees with developing or existing hollows providing potential habitat for swift parrots, masked owls and other hollow-nesting fauna occur in the survey area.

High conservation value trees occur adjacent to the proposed track alignment. Impacts to these trees can be avoided by following mitigation measures outlined in the City of Hobart Tree Protection Methodology or rerouting sections of the trail to avoid TPZ of mature trees.

Recommendations to be followed are:

- Align track to provide a minimum 30 m buffer for the Tasmanian devil habitat and potential owl roost.
- Minimise impact to the threatened DTO community by following sections of existing tracks and clear areas where possible, keeping the clearing of understorey vegetation to a minimal width and avoiding the steepest gradients to reduce the extent of earthworks.
- Improve the condition of the DTO community by rehabilitating existing informal tracks and controlling gorse (as per Weed Management Plan, Appendix 2).
- Minimise potential impacts on midge orchids by utilising the existing alignment of the Gentle Annie Falls Track where the species has previously been recorded. Avoid expansion of the track edges in this area to prevent impacts to any tubers that were unseen during the summer surveys.
- Control environmental weeds in survey area prior to commencing works, with ongoing follow up monitoring and control following the Weed Management Plan (Appendix 2).
- Implement vehicle and machinery weed hygiene measures to reduce risk of spreading weeds and weed seeds to the site.
- Ensure gravel and any other materials introduced to the site are free from weed seeds.
- Restrict machinery to existing fire trail surface or the alignment of new trail sections, where possible, to avoid unnecessary impacts to native vegetation and soils.

Tree protection measures:

- Avoid damaging significant trees, where possible. Where impacts are unavoidable the following protocols will minimize impacts. This applies to mature blue gums (*E. globulus*) DBH>60 cm, mature stringybarks (*E. obliqua*) DBH>100 cm, old growth eucalypt trees in the DTO community and dead stags with potential hollows.
- For the significant trees as defined above, no roots are to be cut >100 mm within the SRZ and >75 mm within the TPZ.
- The track is to be built up and over roots of the above sizes, to a minimum of 100 mm and maximum of 300 mm depth, with soil, gravel and/or rock as applicable.
- Any build-up of track formation > 300 mm requires a permeable foundation such as rock or gravel to allow aeration of the soil below.
- Where track alteration to avoid roots is not possible, a 10% incursion limit as per AS1490-2009 into the TPZ applies.
- Clearly mark out a protection zone around all significant trees prior to works, to aid in following the above protocols.

4. Heritage

Aboriginal Heritage

A desktop review of previous site records, heritage reports and management documents relating to the study area. This was followed by a field survey, undertaken by a Consulting Archaeologist and an Aboriginal Heritage Officer.

No Aboriginal heritage sites were found during the current assessment, consequently no specific site impacts have been identified. The potential for impacts to undiscovered artefacts and other site types is considered low.

Due to the steep ground slope, mobile surface soils and degree of historic disturbance, the potential for undiscovered cultural deposits to be present within the study area is considered low and no potential areas of sensitivity were designated.

If at any time during works personnel suspect Aboriginal heritage, works will cease immediately and staff are to follow the AHT Unanticipated Discovery Plan.

All Aboriginal heritage in Tasmania is protected under the *Aboriginal Heritage Act 1975* (the Act). There are requirements under the Act to report Aboriginal heritage, and not to impact Aboriginal heritage without a permit granted by the Minister. The Unanticipated Discovery Plan will be kept on site during ground disturbing works, to aid works personnel in meeting their requirements under the Act in the event that Aboriginal heritage is identified. Works personnel will be briefed about the process outlined in the Unanticipated Discovery Plan and made aware of their obligations under the Act during site inductions and tool box meetings.

Historic Heritage

Previous researchers have defined/classified the historic heritage values within the current study area in terms of eleven features or complexes. These include two historic roads that predate the Hobart Mountain Water Supply System (RH/H2, RP/H15), eight features/complexes associated with the system (Features 2-9) and a house site (Feature 1) the post-dates the system. One of the eight water supply complexes (Feature 8B-F, 8J-O) comprises fifteen previously recorded quarry sites, eleven of which are located within the study area.

Ten of the eleven previously described historic features (RP/H2, RP/H15 & Features 1-8), including the eleven (Feature 8B-F, 8J-O) quarry sites were re-inspected to identify proximity and potential sensitivity to the proposed new track works. Detailed archaeological re-recording of features was not carried out due to the extent of previous work.

An additional four small workings (Feature 8S - 8V) and twelve tracks (Tracks 1-12) that do not appear to have been previously assessed were identified and documented to the level of previous records, while six tracks associated with previously recorded quarry sites (8A, 8B, 8K and 8M) were also assessed.

The proposed new track alignment avoids the majority of identified historic heritage features and with relatively minor localised adjustments should have minimal impact on the physical heritage of the Hobart Mountain Water Supply System.

Potential intersections and physical impacts identified in Table 1 are based on the track line shapefile provided by the City of Hobart and delineation of features during the current assessment which are both subject to spatial uncertainties which cumulatively may add up to 10m horizontal or more.

All features are listed in the following table and shown on Map 2 (Appendix A).

Pipeline Track Improvements – Gentle Annie Falls Area - Construction Environmental and Heritage Management Plan

Table: Features Identified by survey and significance thresholds

| Feature | Significance |
|--|--|
| Feature 1 Parlour/ Parlow's house site | Medium-Low (Regional) Medium-High (Local) (McConnell <i>et al</i> 1998, Vol 1: Table 2A) Unlikely to meet thresholds for State or Local listing based on exclusion factors XA1, XA2, XA3, XC1 and XC3. |
| Feature 2 Pipe Head Well | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) Covered by and referred to within current THR listing. |
| Feature 3 Sandstone troughing between the Falls and Receiving House | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) Covered by and referred to within current THR listing. t. |
| Feature 4 Cast iron pipes between Gentle Annie Falls and Receiving House | 2 - Slight heritage value (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) Covered by and referred to within current THR listing. Potentially eligible under HCHA inclusion factors A4, C5 in their own right |
| Feature 5 Gentle Annie Falls (includes chutes carved in stone) | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) Covered by and referred to within current THR listing. |
| Feature 6 Lower catchment basin | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) Covered by and referred to within current THR listing. |
| Feature 7 Upper catchment basin | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) Covered by and referred to within current THR listing. |
| Feature 8B (Q2) Quarry | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under C5. |
| Feature 8C (Q3) Quarry | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under C5. |
| Feature 8D (Q4) Quarry | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under C5. |
| Feature 8E (Q5) Quarry | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under C5. |
| Feature 8F (Q6) Quarry | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Partly contained within current THR listed area with area outside eligible for THR listing under C5. |
| Feature 8J (Q10) Quarry | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) |

Pipeline Track Improvements – Gentle Annie Falls Area - Construction Environmental and Heritage Management Plan

| | |
|--------------------------------------|---|
| Feature 8K (Q11) Quarry | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under C4, C5. |
| Feature 8L (Q12) Quarry | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) Unlikely to meet thresholds for State or Local listing based on exclusion factors XA1, XA2, XD1 and XD3. |
| Feature 8M (Q13) Quarry | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under C4, C5. |
| Feature 8N (Q14) Quarry | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Mostly outside current THR listed area and HIPS Heritage Place but potentially eligible for THR listing under C4, C5. |
| Feature 8O (Q15) Quarry | 5 - High cultural/scientific significance (Murray & Nieberler 1994) High/State (McConnell <i>et al</i> 1998) The Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Contained within current THR listed area. |
| Feature 8S (Q16) Quarry | Not previously assessed. Contains evidence of contemporary spoil management techniques including Welsh walling. McConnell <i>et al</i> (1998) consider that the Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5. |
| Feature 8T (Q17) Quarry | Not previously assessed. Contains evidence of contemporary spoil management techniques. McConnell <i>et al</i> (1998) consider that the Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5. |
| Feature 8U (Q18) Quarry | Not previously assessed. Likely expedient prospecting feature with low intrinsic value but some contributory significance. McConnell <i>et al</i> (1998) consider that the Gentle Annie Falls quarries contribute to the State-level significance of the mountain water supply system. Contained within current THR listed area. |
| Feature 8V (Q19) Quarry | Not previously assessed. Expedient feature likely associated with Fire Trail maintenance. Contained within THR listed area but unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2, XD3 and XD4. |
| RPH2 Old Huon Road | High/State (McConnell <i>et al</i> 1998, Vol 1: Table 2A) Outside current THR listed area but eligible (as Old Huon Road) for THR listing under HCHA inclusion factors A2 and D3. |
| RPH15 Old Huon Road (possible) | Assessed In 1998 as High/State (McConnell <i>et al</i> 1998, Vol 1: Table 2A) on the basis of it being a possible early or late alignment of Old Huon Road. If only a local track it is unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2, XD3 and XD4 |
| Track 1 | Not previously assessed. Outside the THR and HIPS Heritage Place boundaries. Has potential contributory significance relating to the construction and maintenance of the mountainwater supply system, but without further research is unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2, XC1, XD3 and XD4. |
| Track 2 | Not previously assessed. Outside the THR and HIPS Heritage Place boundaries. Has potential contributory significance relating to the construction and maintenance of the mountainwater supply system, but without further research is unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2, XC1, XD3 and XD4. |
| Track 3 | Not previously assessed. Outside the THR and HIPS Heritage Place boundaries. Has potential contributory significance relating to the construction and maintenance of the mountainwater supply system, but without further research is unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2, XC1, XD3 and XD4. |
| Track 4 | Not previously assessed. High cultural/scientific significance (Murray & Nieberler 1994) |

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| | |
|----------------|--|
| | <p>High/State (McConnell <i>et al</i> 1998)</p> <p>The Gentle Annie Falls quarries and associated infrastructure contribute to the State-level significance of the mountain water supply system. Largely outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5.</p> |
| Track 5 | <p>Not previously assessed.</p> <p>Outside the THR and HIPS Heritage Place boundaries. Has potential contributory significance relating to the construction and maintenance of the mountainwater supply system, but without further research is unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2, XC1, XD3 and XD4.</p> |
| Track 6 | <p>Possibly associated with Feature 1 which has been assessed as having the following significance.</p> <p>Medium-Low (Regional)</p> <p>Medium-High (Local)</p> <p>(McConnell <i>et al</i> 1998, Vol 1: Table 2A)</p> <p>Unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2, XA3, XC1 and XC3</p> |
| Track 7 | <p>Not previously assessed.</p> <p>Low intrinsic value but some contributory significance relating to the history of recreation in the Park.</p> <p>Unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2 and XD4</p> |
| Track 8 | <p>Not previously assessed.</p> <p>Low intrinsic value but minor contributory significance relating to the history of recreation in the Park.</p> <p>Unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2 and XD4</p> |
| Track 9 | <p>Not previously assessed.</p> <p>May have some contributory significance relating to the history of recreation in the Park. Unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2 and XD4</p> |
| Track 10 | <p>Not previously assessed.</p> <p>Does not contribute to the heritage values of the mountain water supply system. Low intrinsic significance and unlikely to meet thresholds for State or Local listing based on HCHA exclusion factors XA1, XA2 and XD4</p> |
| Track 11 | <p>High cultural/scientific significance (Murray & Nieberler 1994)</p> <p>High/State (McConnell <i>et al</i> 1998)</p> <p>The Gentle Annie Falls quarries and associated infrastructure contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5.</p> |
| Track 12 | <p>High cultural/scientific significance (Murray & Nieberler 1994)</p> <p>High/State (McConnell <i>et al</i> 1998)</p> <p>The Pipe Head Well and associated infrastructure contribute to the State-level significance of the mountain water supply system. Partly outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5.</p> |
| 8A (Q1) Track | <p>High cultural/scientific significance (Murray & Nieberler 1994)</p> <p>High/State (McConnell <i>et al</i> 1998)</p> <p>The Gentle Annie Falls quarries and associated infrastructure contribute to the State-level significance of the mountain water supply system. Partly outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5.</p> |
| 8B (Q2) Track | <p>High cultural/scientific significance (Murray & Nieberler 1994)</p> <p>High/State (McConnell <i>et al</i> 1998)</p> <p>The Gentle Annie Falls quarries and associated infrastructure contribute to the State-level significance of the mountain water supply system. Largely outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5.</p> |
| 8K (Q11) Track | <p>High cultural/scientific significance (Murray & Nieberler 1994)</p> <p>High/State (McConnell <i>et al</i> 1998)</p> <p>The Gentle Annie Falls quarries and associated infrastructure contribute to the State-level significance of the mountain water supply system. Outside current THR listed area but potentially eligible for THR listing under HCHA inclusion factors C4, C5.</p> |
| 8M (Q13) Track | <p>High cultural/scientific significance (Murray & Nieberler 1994)</p> <p>High/State (McConnell <i>et al</i> 1998)</p> <p>The Gentle Annie Falls quarries and associated infrastructure contribute to the State-level significance of the mountain water supply system. Partly contained within THR and HIPS Heritage Place boundaries. External section potentially eligible under HCHA inclusion factors C4, C5.</p> |

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Heritage Management Recommendations

The following general recommendations relate to mitigating potential impacts on tangible heritage values, that is the documented physical fabric of the water supply system. Site-specific recommendations are listed in Table 2. The management response is included directly after each recommendation.

Managing impacts associated with Track alignment

- a. The proposed track alignment crosses the historic water conveyance at one location in an area that has previously been filled and modified and will have negligible additional impact at that point. The alignment centreline avoids most of the documented workings and spoil heaps in the study area, with local intersections with 8F/Q6 and 8B/Q2 on the west side of the pipeline and 8S (Q16) and 8T (Q17) in the Regans Gully portion. Without mitigation, these intersections have the potential to impact heritage values by requiring the removal or reworking of waste deposits that contribute to understanding the functioning of the system. With the exception of 8B (Q2), these intersections are largely avoidable by local track realignments.

RECOMMENDATION 1

Redesign selected track turns to avoid intersecting quarry spoil heaps. Where full avoidance is not possible (such as at 8B (Q2)), minimise the disturbance footprint and refer to relevant construction controls.

MANAGEMENT ACTION 1

Adhere to *Track Construction on Archaeological Sensitive Areas*.

- b. The proposed track intersects several historic tracks either demonstrably or very likely associated with historic quarry operation, including Tracks 1, 4, 5, 11, 12, 8A (Q1), 8B (Q2) and 8K (Q11). Most of these historic tracks are on reasonably gentle grades and greater than 1.5m in width. Locally realigning the proposed track to run along/utilise the historic formations and grades is considered preferable as a means of conserving the meaning of these tracks to crossing them at oblique angles and may provide additional authenticity to user experience and future interpretation opportunities. Care should be exercised when re-using historic tracks to keep new work centred, to minimise disturbance to any original surfaces – such as metalling, and to avoid unnecessary grade improvements/profiling that require excavation.

RECOMMENDATION 2

Consider selectively realigning new track sections to make better use of/respect original track segments, notably Tracks 4 and 5 in the Regans Gully portion and 8A (Q1) and Track 11 at the upper falls. New works should be centred, protect underlying surface deposits and build up rather than reduce ground levels to achieve desired grades.

MANAGEMENT ACTION 2

The track has been aligned to run along the existing formation.

Managing impact associated with track construction

Track construction details are not available for assessment, however the proposal to create a shared use Class 2/bike track with 1.5m minimum width implies no steps and wide turning arcs, which will increase the need to benching and filling/armouring. These details will need to be resolved on a case-by-case basis to minimise impacts on adjacent historic fabric. As a general rule, historic quarry waste should not be used for

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levelling fills or armouring works, both to conserve resident fabric and avoid confusion regarding the age/association of the new track.

RECOMMENDATION 3

Do not use resident quarry waste for track fills, armouring or general landscaping works. The only potential exception to this rule is where track crossings cannot avoid waste dumps entirely and some re-profiling is necessary, in which case waste rocks may be re-purposed at that location, subject to any relevant heritage approval.

MANAGEMENT ACTION 3

Quarry waste will not be used for track fills, armouring or general landscape works (except as per the exception noted above).

Design of Viewing Platform

The RFQ calls for advice on the proposed design of stone headwall viewing platform. A concept design was not available for review as part of the current assessment but should be undertaken in conjunction with review of the design and construction drawings for the final track alignment. This will enable detailed evaluation and management of any intersections with heritage features, such as crossing 8B (Q2).

RECOMMENDATION 4

Review the concept design for a proposed new viewing platform and design/construction drawings for the final track alignment to confirm heritage mitigation requirements. The results of this review, which will consider design responses to this assessment report, should be included as supporting documents for planning and heritage approval.

MANAGEMENT ACTION 4

Drawings were submitted to the Heritage consultant for comment. The results have been included as supporting documents for planning and heritage approval.

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Table 2: Works, intersections, potential impacts and site-specific recommendations that have been incorporated into the final alignment and design of the track.

| Feature | Intersection | Recommended mitigation |
|------------------|--|---|
| Feature 1 | Not intersected by proposed path. No additional impacts anticipated with proposed works. | Potential impacts if Falls Track closed/rehabilitated. Seek specific heritage advice on any proposed change to current use. |
| Feature 2 | Not intersected by proposed path. Potential impacts from construction of new viewing platform, depending on design and location. | Seek specific heritage advice on proposed design, materials and siting. Consider reconstructing historic fencing based on further research. |
| Feature 3 | Intersected at existing Fire Trail crossing. No additional impacts anticipated. | Avoid ground excavation. |
| Feature 4 | Intersected at existing Fire Trail crossing. No additional impacts anticipated. | Avoid ground excavation. |
| Feature 8B (Q2) | Proposed track crosses west end of 8B (Q2) spoil heap. Likely impacts associated with levelling portion of spoil heap. | Design and construct to avoid stacked mullock piles. |
| Feature 8C (Q3) | Not intersected by proposed lower path. Return path passes close to rear of working. | Move return path upslope to run along Track 8A (Q1) and Track 11. |
| Feature 8F (Q6) | Proposed path intersects west end of spoil heap. Likely impacts associated with path levelling. | Redesign path to connect with Track 8B (Q2) west of spoil heap. |
| Feature 8S (Q16) | Proposed track potentially intersects southern spoil heap. Possible impacts associated with levelling path alignment. | Redesign path to avoid spoil heaps. |
| Feature 8T (Q17) | Proposed track potentially intersects northern spoil heap. Possible impacts associated with levelling path alignment. | Redesign path to avoid spoil heaps. |
| RPH2 | Not intersected by proposed path. No additional impacts anticipated with proposed works. | Potential impacts if Falls Track closed/rehabilitated |
| Track 1 | Intersected by proposed track. Minor impacts associated with transverse cutting and levelling across track. | Minimise disturbance to existing track formation, preferably crossing at close to right angles. |
| Track 4 | Intersected by proposed track. Potential impacts from concealment and excavation if grade altered. | Align track to run along existing formation rather than widen or intersect at an oblique angle. |
| Track 5 | Intersected by proposed track. Minor impacts associated with transverse cutting and levelling across track. | Realign track if possible to run along northern portion of existing formation rather than cutting across it. |
| Track 8 | Intersected over c. 50m distance. No significant impacts associated with proposed upgrade. | No specific recommendations |
| Track 11 | Potentially intersected by proposed track. Potential impacts from concealment and excavation if grade altered. | Move top path upslope to run along Track 8A (Q1) and Track 11 rather than intersect them at oblique angles. |
| Track 12 | Intersected by switching track. Likely impacts associated with new transverse cuttings and concealments across track. | Incorporate existing track into design rather than cut across it numerous times. |
| 8A (Q1) Track | Intersected over c. 10m distance. Potential impacts from concealment and excavation if grade altered. | Move top path upslope to run along Track 8A (Q1) and Track 11 rather than intersect them at oblique angles. |
| 8B (Q2) Track | Proposed track runs along access track. Potential impacts from concealment and excavation if grade altered. | Re-use existing track alignment and grade. |
| 8K (Q11) Track | Proposed path intersects access track in area already upgraded for Fire Trail. No additional impacts anticipated if existing grade used. | Re-use existing track alignment and grade. |

Pipeline Track Improvements – Gentle Annie Falls Area - Construction Environmental and Heritage Management Plan

5. Soil and Water Management

The proposed 2,300m long, zig-zagging track improvements near Gentle Annie Falls are exposed to various geotechnical hazards – observed and potential – but all hazards present acceptably low or very low risks to property (track infrastructure).

These acceptably low levels of risk to the track require no unusual construction techniques (appropriate construction methods are assumed) or unusual ongoing maintenance. Nevertheless, re-routing and design of the initial proposed alignment has been undertaken in response to the geotechnical assessment.

During track construction or maintenance, risk to life assessments presented in this report suggest that crews will be at acceptably low risks from the identified hazards. Individual members of the public using the track will similarly be at an acceptably low level of risk to life.

The current annual number of track users is estimated to be about 10,000. The new and easier-walk track is expected to carry higher numbers. Societal risks to life increase with increasing annual numbers of users.

Geotechnical risks to infrastructure and track users for this project are probably not dissimilar to risks associated with existing City of Hobart tracks in similar terrain.

Track construction will potentially increase rockfall hazard. Mitigating this risk is adequately addressed in HCC's *Rockfall Risk Management Plan*.

6. Site Management

Site access will be restricted to existing formed fire trails and walking tracks, and activities confined to within 40m corridor either side of the flagged centreline. Vehicle access to the worksite will be via Gentle Annie Access fire trail through the Waterworks Site 9 car park. The site may be accessed from McDermotts Saddle, but this should be limited to small plant that will not impact the existing Pipeline Track or its associated heritage fabric.

No fuels, oils or chemicals are to be stored on-site, only in the approved storage compound. Fuelling of plant to be undertaken with a spill kit in place.

When not in use, all plant are to be secured to minimise potential for vandalism.

7. Weed Management and Construction Hygiene Protocol

The site was surveyed in October 2021, with any declared or environmental weeds identified and mapped within the survey area for the track assessment project.

Seven introduced plant species were recorded during the survey, including four minor herbaceous weeds with limited impact on natural values. Three environmental weeds were observed, including two species classified as declared weeds under the Weed Management Act 1999. The location of weeds is shown in Figure 1.

Gorse (*Ulex europaeus*) and Spanish heath (*Erica lusitanica*) are the most serious weeds present and are widespread in the survey area, where they pose a serious risk of further spread with consequent impacts on natural values. Both woody weed species are highly flammable and, when infestations are dense, can increase the risk and severity of fire.

Following previous weed control works, gorse and Spanish heath are limited to mostly small juvenile or regrowth plants occurring in low densities (Figures 2 & 3). Given the small size of most plants and their scattered distribution it is likely that many individual plants were not detected and mapped during the survey, particularly the very small gorse plants on the upper slopes.

Foxglove (*Digitalis purpurea*) is confined to a patch at the northern edge of the survey area, in native forest where the understorey has been disturbed (Figure 4). This herbaceous weed favours disturbed or bare soil such as along track edges. Most of the survey area is too dry for foxglove (e.g. the DTO forest) and the damper sites, such as the gully at the eastern edge of the survey area, are likely to be resilient to foxglove invasion in the absence of disturbance.

Soil disturbance associated with track construction may promote the establishment and spread of foxglove, Spanish heath, gorse and other weeds.

Weed Control Aim and Methodology

The overall weed management aim for the site is to control all environmental weeds and prevent the spread of weed seed across the site and off the site. This is to be achieved by undertaking primary control of all weeds, conducting secondary control of regrowth weeds, and implementing materials and machinery hygiene protocols for track construction works to minimise the spread of weed seed. Refer to Table 1 for a timeline of weed control actions.

Primary Control

All weeds are to be controlled by foliar spraying with herbicide for immature plants and cut and paint for larger woody plants as described in Table 1 of this plan. This primary control must be undertaken prior to the commencement of further works.

Secondary Weed Treatment

Secondary weed control (i.e. follow-up control) is critical to the success of the weed management and must include annual follow-up monitoring and maintenance over a period of at least 3 years after initial control. Refer to Table 2 for specific follow-up treatments by weed.

Hygiene and Access

Weed hygiene protocols (see Section A5) should be implemented during the construction phase to minimise the spread of weeds around the site or off the site to other locations. A key component of weed containment is to restrict access to ensure machinery does not become a weed vector during construction. Personal hygiene should also be undertaken daily, e.g. check clothes and boots for seeds and clean them prior to leaving site.

Disposal of Debris

Any weeds that are physically removed as part of the project, such as woody weeds that are cut and pasted or weeds that are pulled such as foxglove, should be disposed of at an approved waste disposal facility. Weeds that contain seed should be double bagged when dug out prior to disposal.

A permit from DPIPWE may be required prior to the transport of any declared weed material. A permit generally sets out measures to minimise the opportunity for weed seed or debris to spread during transport and correct disposal procedures. This may include ensuring all weed material is well covered and tied down during transport to ensure no material is spread along roadsides and ensuring debris is not mixed with general rubbish or added to green waste piles.

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Hygiene Protocols

A key component of weed containment is to restrict access by ensuring machinery does not facilitate weed spread during construction. The use of machinery on the site must be managed carefully to prevent weed seed from spreading around the site or to other locations off site.

All machinery entering the site should adhere to the 'Weed and Disease Planning and Hygiene Guidelines (DPIPWE 2015)'.

- Equipment and machinery are to be clean prior to unloading on the site and cleaned on site before removal. Cleaning should include the removal of soil, mud etc. and the blowing of any dry plant material from the vehicle.

In addition to vehicle hygiene, the movement of soil around the site and the import and export of soil should adhere to the following broad guidelines:

- All gravel, fill and topsoil brought to the site should be sourced from certified weed free suppliers and quarries in accordance with Australian Standard AS4419 Soil for Landscaping and Garden Use to ensure weed seed is not introduced.

8. Adjacent Public Asset Dilapidation

A photographic record of the current condition of existing tracks and fire trails is to be undertaken by the contractor as a **Dilapidation Record**.

9. Monitor and Review

Environmental and heritage management activities and controls will be regularly monitored and corrective action taken to rectify any deficiencies or make improvements as required.

| Issue | When | Who | How |
|--|---|--|---|
| Construction personnel project induction | Prior to commencement of site works and before any new personnel commence | Project Manager and Project Supervisor | Deliver induction and require all construction personnel to sign induction and associated forms |
| Site establishment including public notification and access controls | Prior to commencement of site works and thence fortnightly | Project Manager | Notification on CoH website, email notification of key stakeholders, installation of site signage and barriers on all access routes |
| Physical marking of environmental and heritage assets to be protected from disturbance (| Prior to commencement and re-assessed for each new section of track prior to vegetation removal | Project Supervisor / Team Leader | Marked on-site with flagging tape as exclusion/protection area |
| Soil and water management controls | Prior to commencement and then at least weekly or after rainfall | Project Manager / Team Leader | Compliance with CEHMP |

Pipeline Track Improvements – Gentle Annie Falls Area - Construction Environmental and Heritage Management Plan

| | | | |
|--------------------------|--|---|-----------------------|
| Weed management controls | Prior to commencement of track works, during and proceeding construction | Project Manager / Team Leader / Track Inspector | Compliance with CEHMP |
| CEHMP | Prior to commencement of site works and thence monthly and on practical completion | Program Leader | Compliance with CEHMP |

10. Community Relations

Working Hours

The planned span of working hours onsite:

Monday to Friday 7.00 am to 6.00 pm

Site activities conducted outside these hours will require approval by the Program Leader Bushland Infrastructure.

Access

Fire trails used for construction access to remain trafficable to authorised vehicles and park visitors at all times.

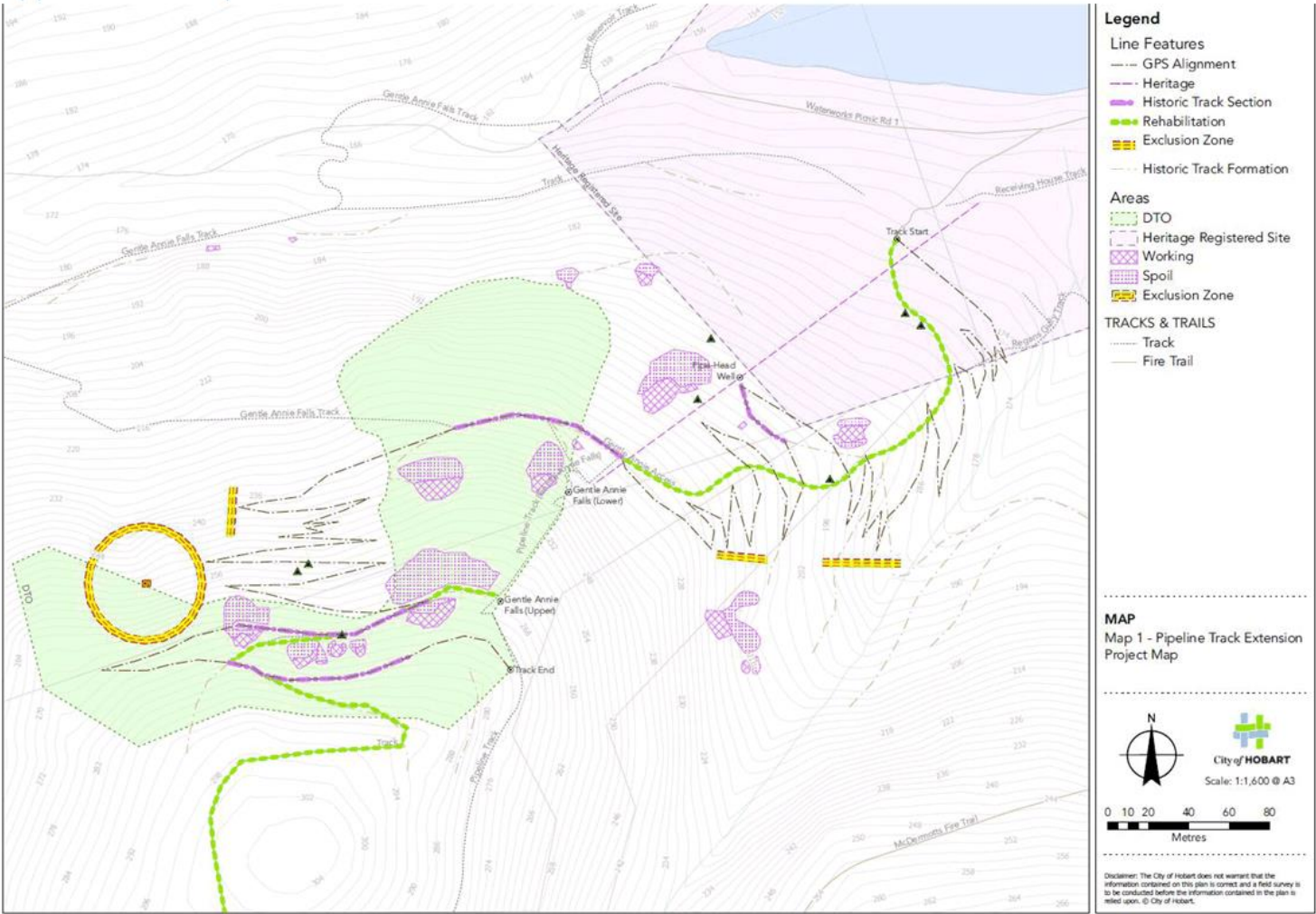
Temporary visitor safety signage and barriers to be erected and maintained for the duration of site works.

Prior to works commencing, provide notification of works and use constraints to the public.

Pipeline track Improvements - Construction Environmental and Heritage Management Plan
2021

July

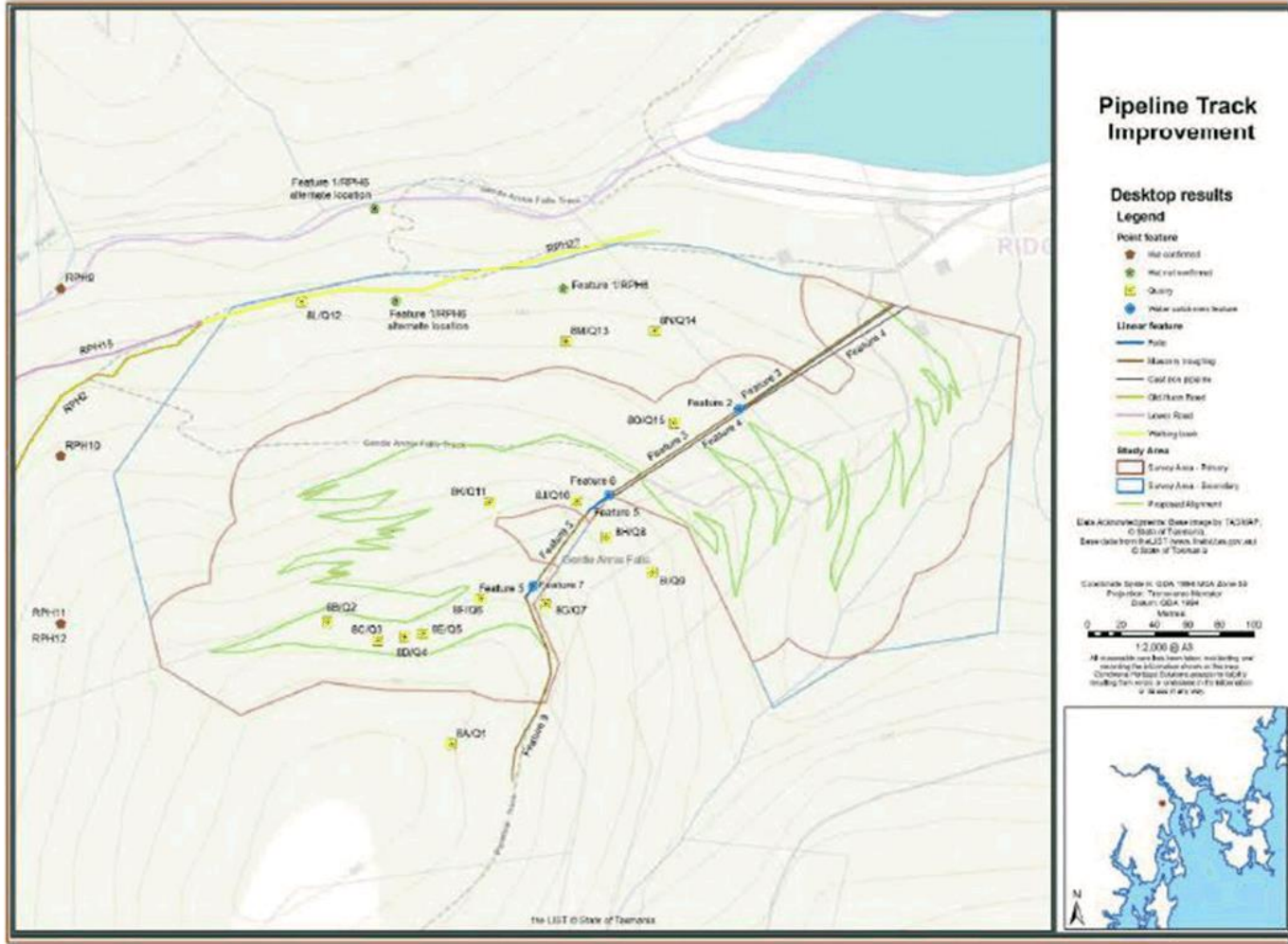
Appendix A – Map 1



Pipeline track Improvements - Construction Environmental and Heritage Management Plan
2021

July

Appendix A – Map 2



Grade reversal at top of ramp
Gradient of ramp not to exceed 1 in 7

Cut and fill construction
to climb Pipeline Track
cutting. New work not to
encroach onto Pipeline Track

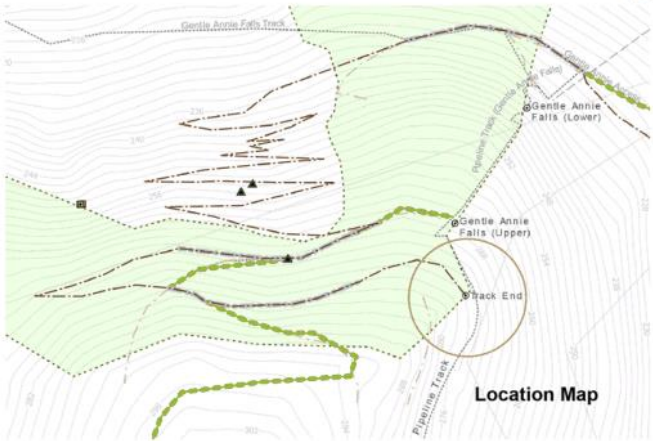
Install anchor stones near steep edges

Dry stone batter walls
to retain lower edge and
cutting. Use weathered local stone.

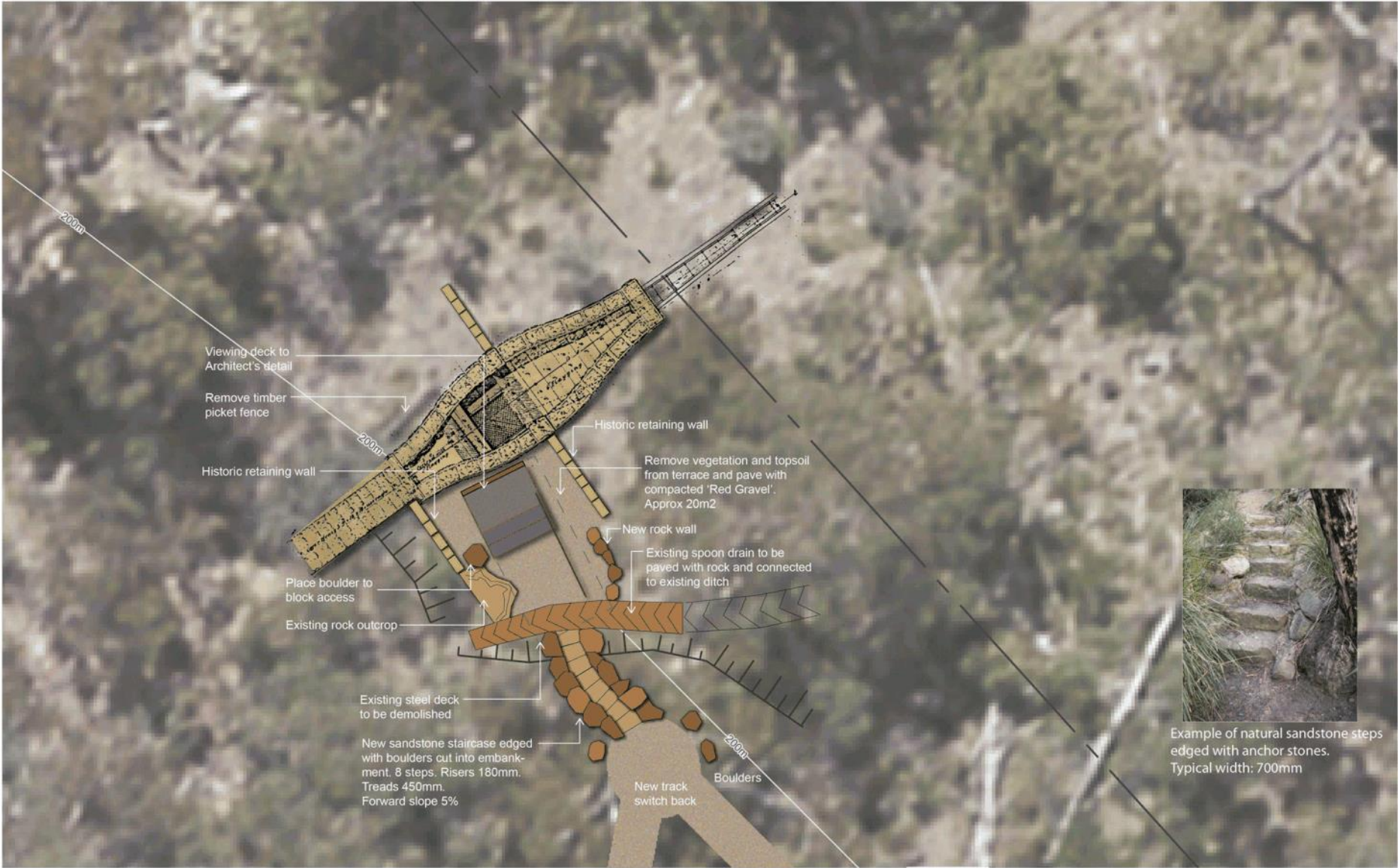
Directional totem



Montage



| | | |
|---------|---------------------------|----------------------|
| ISSUE | DATE | PROJECT |
| PROJECT | Pipeline Track Extension | |
| CLIENT | Bushland and Reserves | DATE 29 Aug 2022 DWG |
| DWG | Montage showing track end | SCALE A3 |
| | | DRAWN D Beaver |
| | | CHKD |
| | | REVISION |



TRACK CONSTRUCTION NOTES**Track Surfacing**

The track surface capping layer shall be 50mm min. depth specified gravel. Surface and sub-base shall be mechanically compacted in max. 50 mm layers.

Prior to use the mix should have sufficient moisture to properly bind during compaction. When squeezed in the hand it should hold its shape. If necessary add water to maintain gravel within its optimum moisture content during compaction and also to bring the clays to the surface.

Sub-base

Use sub-base only where required.
Use mudstone 40mm sub base mix (or similar such as red gravel kernels) compacted in 50mm layers.

Stonework

Stone work to be weathered stone hand selected from the surrounding area, outside of the quarry and spoil heap features. Stone from the surface of spoil heaps may only be used within the bounds of the spoil heap feature. This should be sourced from the surface, not excavated from within the spoil heap.

Drainage

Contractor shall ensure that the finished surface level will provide adequate drainage of the surface.

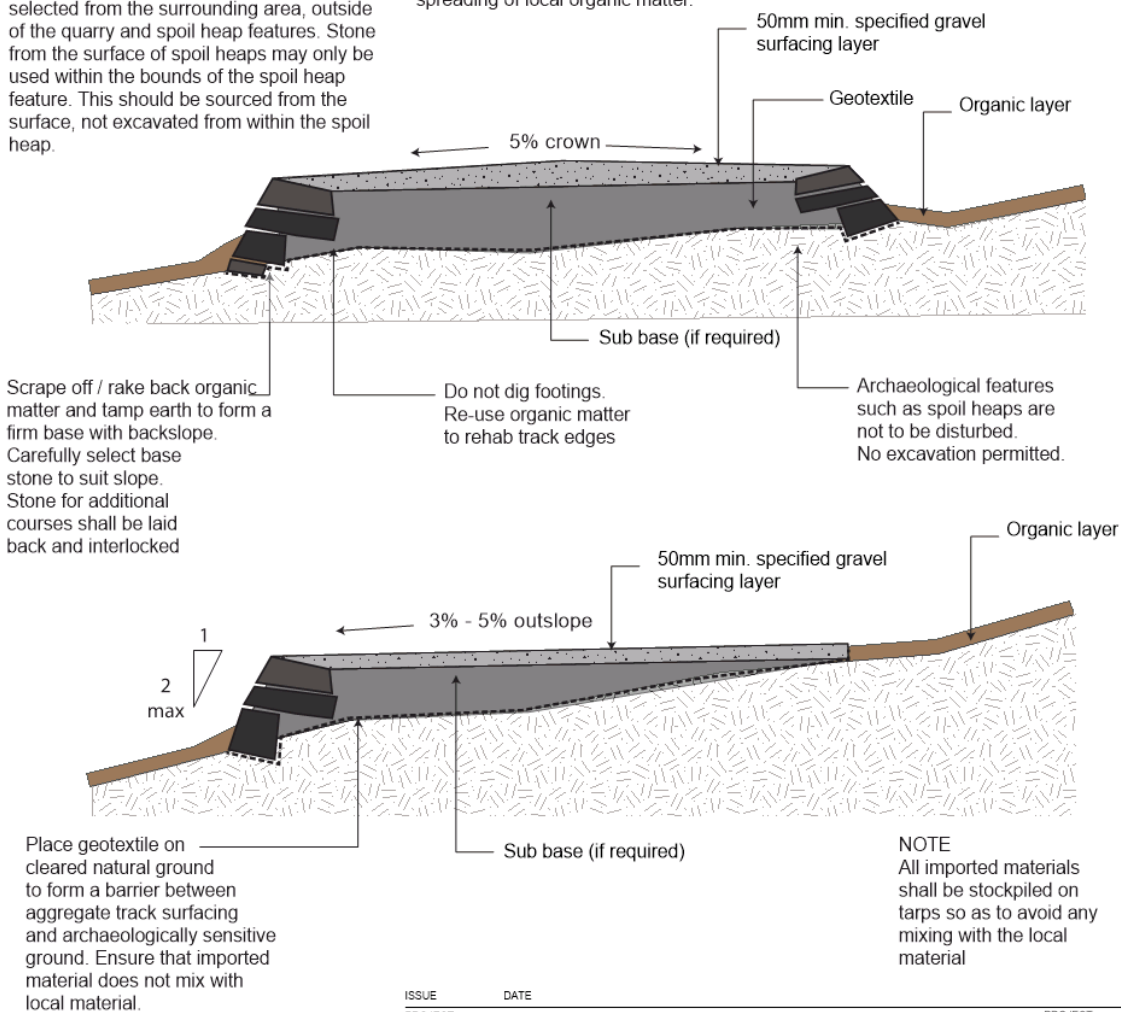
Construct drainage features as required. Generally these should be no more than 20 metres apart or as site conditions dictate. These shall be paved or gravelled grade dips.

Compliance with Standards

Track works are to comply with Hobart City Council details and specifications in conjunction with the requirements of AS 2156.1 (Walking Tracks Part 1: Classification and Signage) and AS 2156.2 (Walking Tracks Part 2: Infrastructure Design) for a Class 2 Track.

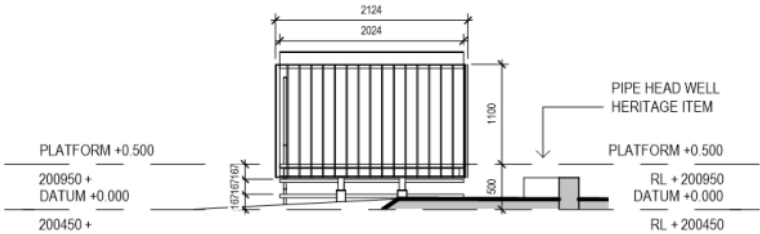
Rehabilitation

Disturbed trackside areas are to be rehabilitated by transplanting, seeding and spreading of local organic matter.



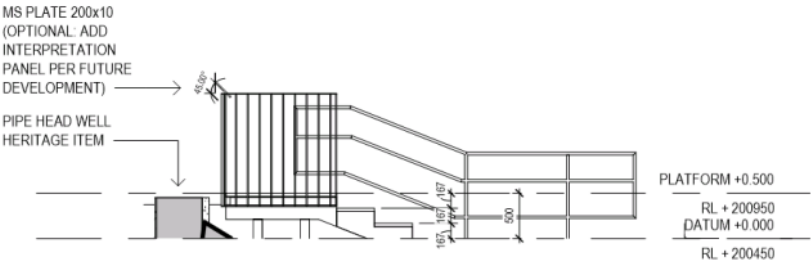
| | | |
|---------|-----------------|--------------------------|
| ISSUE | DATE | PROJECT |
| PROJECT | | Pipeline Track Extension |
| CLIENT | DATE 9 Aug 2022 | DWG |
| | SCALE | |
| DWG | DRAWN D Beaver | REVISION |
| | CHKD | |
| | | |

Track Construction on Archaeological Sensitive Areas



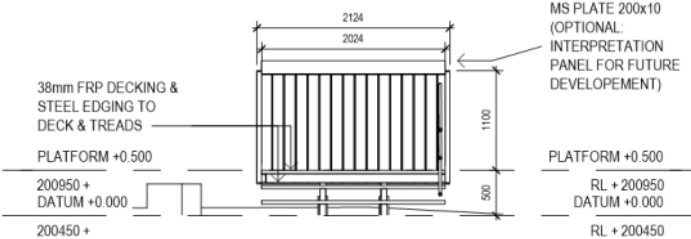
1 North Western Elevation

1 : 50



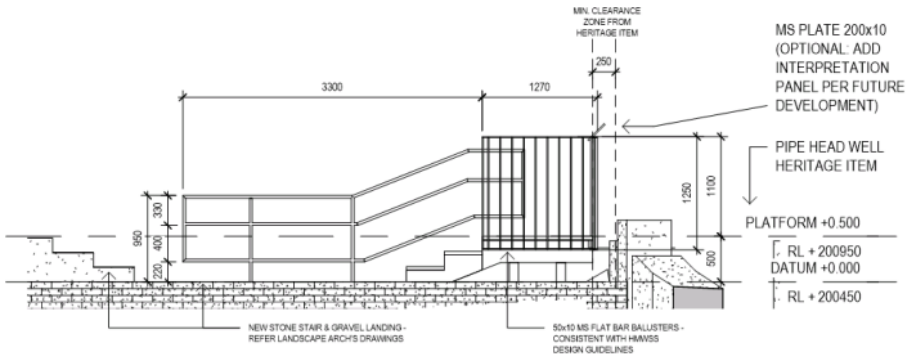
2 South Western Elevation

1 : 50



3 South Eastern Elevation

1 : 50



4 North Eastern Elevation

1 : 50

FOR APPROVAL



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1 : 50

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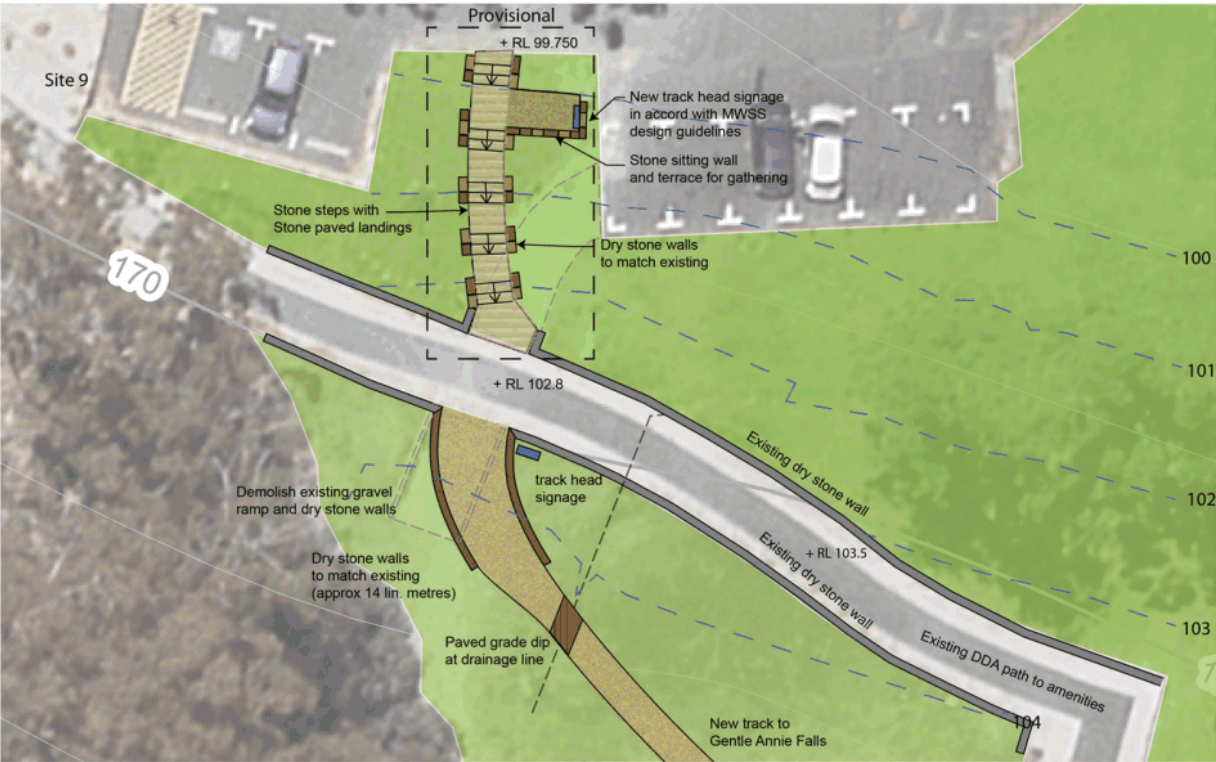
Revision: A

Elevations

Date: 08/08/2022

RFS-001349: Pipe Head
Well Viewing Platform

SK-01



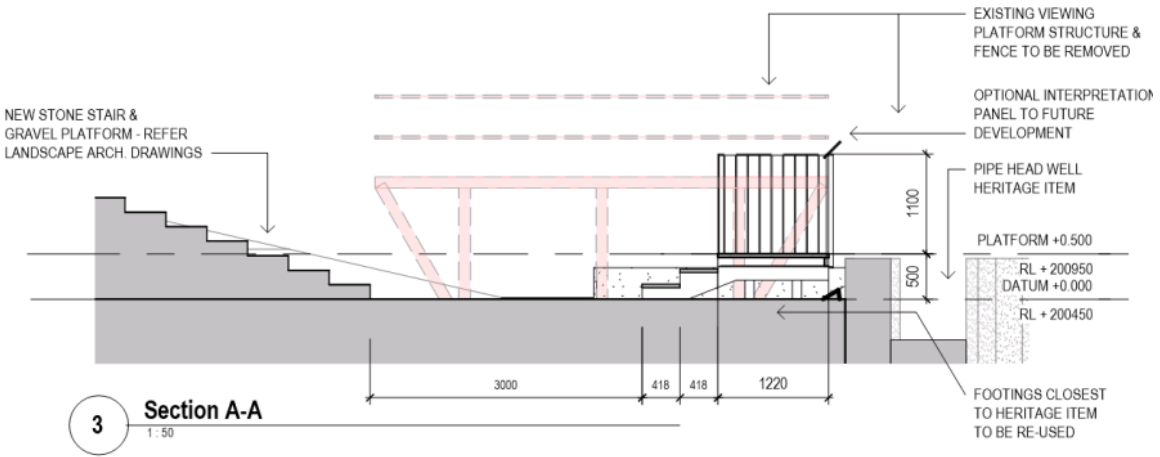
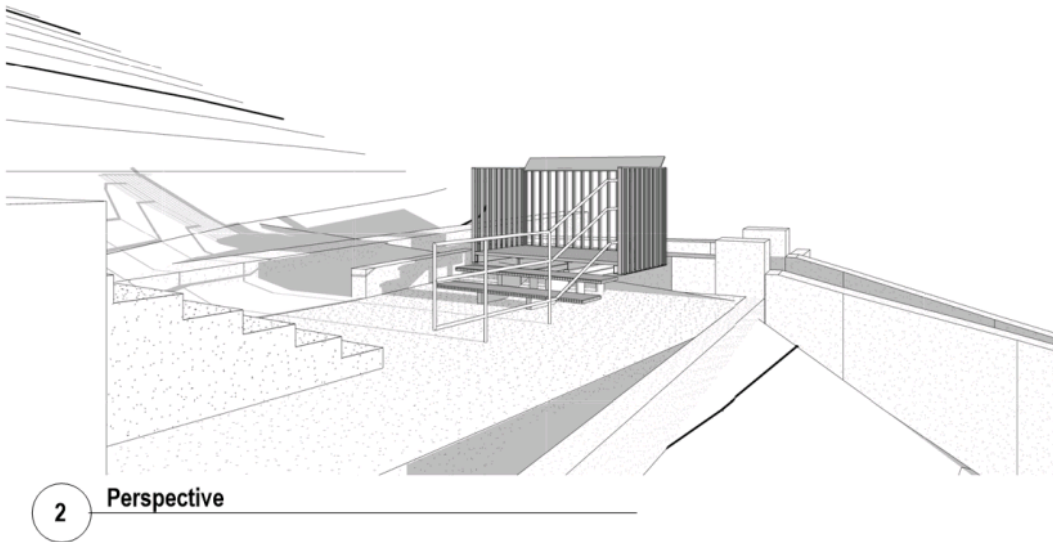
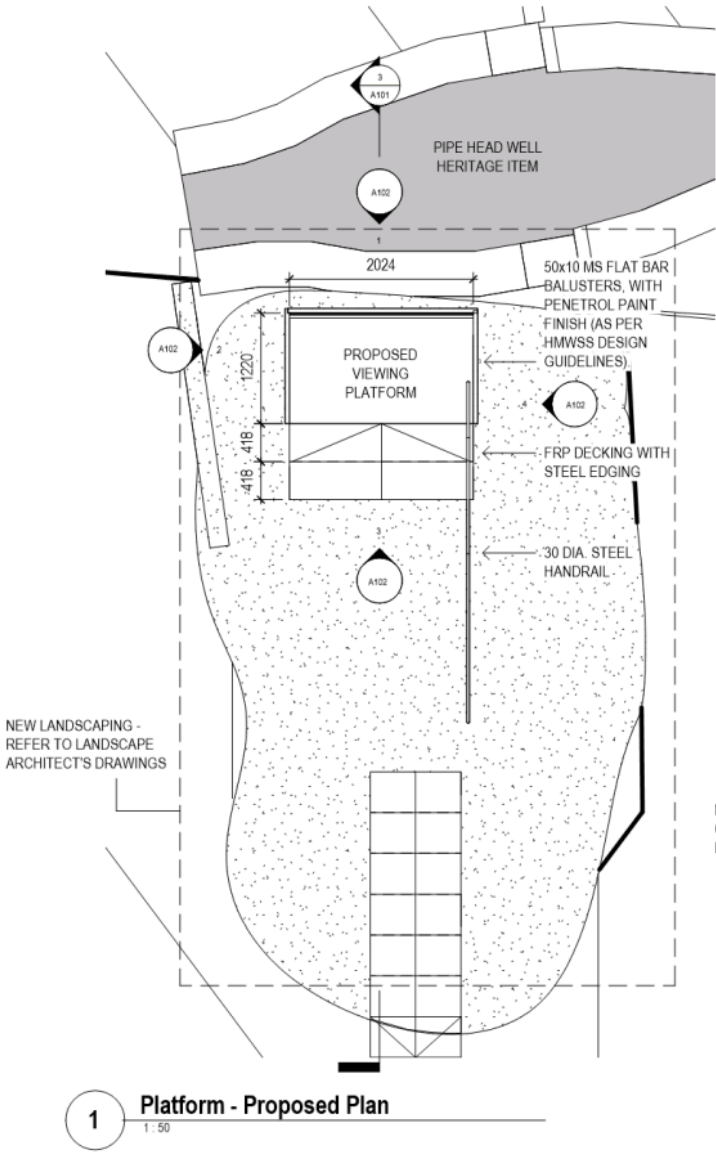
Montage showing steps from car park with terrace for gathering, sitting wall and interpretive signage (Provisional)



Montage showing start of the Pipeline Track extension



| | | | |
|---------|-------|--------------------------|-------------|
| ISSUE | DATE | PROJECT | PROJECT |
| PROJECT | | Pipeline Track Extension | RF5 21-0017 |
| CLIENT | DATE | 23 Aug 2022 | DWG |
| | SCALE | A4 1:200 | |
| DWG | DRAWN | D Beaver | |
| | CHKD | | REVISION |



FOR APPROVAL



HOBART COUNCIL CENTRE
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1:50

A101

Revision: A

Plan

Date: 08/08/2022

RFS-001349: Pipe Head
Well Viewing Platform

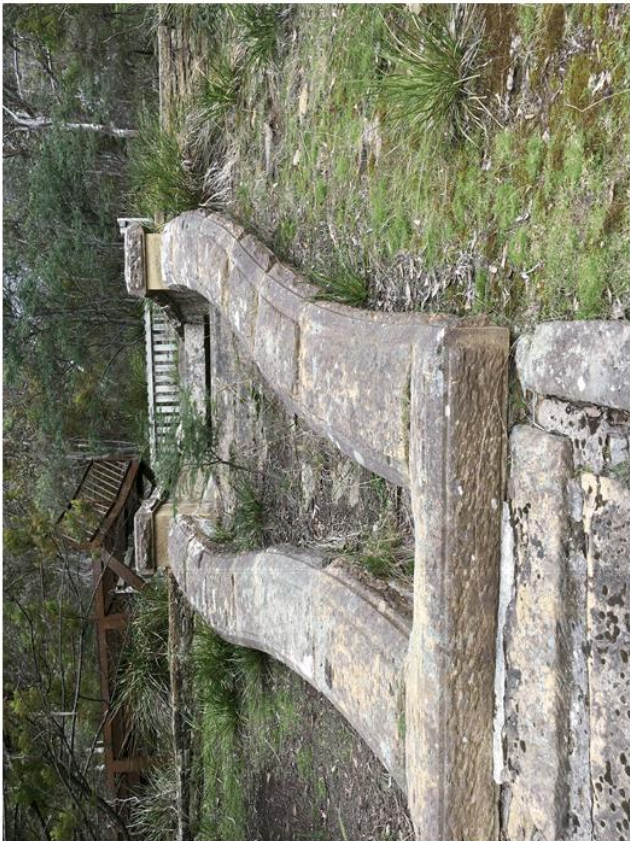
SK-01

Application Referral Cultural Heritage - Response

| | |
|----------------------------|---|
| From: | Sarah Waight |
| Recommendation: | Proposal is acceptable subject to conditions. |
| Date Completed: | |
| Address: | 220 WATERWORKS ROAD, DYNMYRNE |
| Proposal: | New Shared Track and Associated Works including Vegetation Rehabilitation |
| Application No: | PLN-22-665 |
| Assessment Officer: | Adam Smee, |

Referral Officer comments:

This application is for works to realign an existing section from above Gentle Annie Falls on the Pipeline Track to the Waterworks Reserve and undertake associated works to highlight a historic heritage feature - the Pipe Head Well which is currently not publicly accessible, including modification of the existing non-compliant viewing platform that has been abandoned. The new track will be a shared use track with a gradient of about 5% or Class 2 - Easy shared use track. It will be 2.3 km long. It will remain a continuation of the existing Pipeline Track and have a number of switchbacks.





Pipe Well Head - the new track will intersect with this currently isolated feature with alterations to the abandoned viewing platform. Source: Council image.

The Waterworks Reserve is a site heritage listed in Table E13.1 of the Historic Heritage Code of the Scheme.

The remaining site covered by the works are also located on a place that is heritage listed on the Tasmanian Heritage Register. The listing in Table E13.1 of the Historic Heritage Code, for no clear reason omits the section of the Pipeline Track from Halls Saddle to the Waterworks heritage listed site, including Gentle Annie Falls. The rationale for this is unclear and it is recommended that this section be included in any review of heritage listings.

The proposal is supported by a Heritage Assessment by Gondwana Heritage Solutions August 2022.

The heritage assessment included a desk top analysis if field survey within the study area, mapping all known and previously unknown sites and artefacts, followed by confirmation of all levels of heritage significance and recommendations and feedback on designs to the viewing platform and the clearing of vegetations, potential sites for interpretation and potential guidelines for rock walling and landscaping.

Existing historic heritage features already identified were inspected as well as several small workings and various tracks not previously identified or recorded by the heritage consultants.

The proposed works within the heritage listed area must be assessed against E13.7.1 P1 Demolition and E13.7.2 P1, P2 and P3 Building and works other than Demolition of the

Historic Heritage Code of the Scheme.

The works within the heritage listed area are:

- rehabilitation of the existing steep access track,
- new track realignment that extends both inside and outside the listed area below the Pipe Head Well
- new track, steps, walling and landings from the carpark near site 9,
- interpretative signage.

Works must respond to the Design Guidelines Hobart Mountain Water Supply System, dated 30 August 2013. This document is the recommendation of Hobart Mountain Water Supply System Conservation Management Plan prepared by Futurepast in 2012.

Advice or additional commentary of the proposed design of the viewing structure was not considered in the assessment by Gondwana Heritage Solutions. It is therefore unclear if or how the above design guidelines were taken into consideration. It is therefore recommended that a condition of permit be included that requires additional evidence that the design of all structures and signage relates to the design detail provided in the Design Guidelines to provide continuity of design and present the MWSS as a single heritage entity.

The proposed works do not involve the demolition of fabric or elements that are of heritage significance being elements of recent landscaping and other visitor facilities in and around the carpark next to site 9. The proposal satisfies E13.7.1 P1 Demolition.

The new work, with a condition of permit will ensure the resultant new work is consistent with the already designed and installed elements elsewhere on the Hobart Mountain Water Supply System.

On this basis, the works will satisfy E13.7.2 P1, P2 and P3 Building and Works other than Demolition of the Historic Heritage Code of the Scheme.

Sarah Waight
Senior Cultural Heritage Officer
29 November 2022

Application Referral Environmental Development Planner - Response

| | |
|----------------------------|---|
| From: | |
| Recommendation: | Proposal is acceptable subject to conditions. |
| Date Completed: | |
| Address: | 220 WATERWORKS ROAD, DYNMYRNE |
| Proposal: | New Shared Track and Associated Works including Vegetation Rehabilitation |
| Application No: | PLN-22-665 |
| Assessment Officer: | Adam Smee, |

Referral Officer comments:

Codes Applicable:

| Codes | Applicable | Exempt | Permitted | Discretionary |
|------------------------------------|------------|-----------|-----------|---------------|
| E1.0 Bushfire-Prone Areas | No | | | |
| E3.0 Landslide | Yes | No | No | Yes |
| E8.0 Electricity Protection | Yes | No | No | Yes |
| E9.0 Attenuation | No | | | |
| E10.0 Biodiversity | Yes | No | No | Yes |
| E11.0 Waterway & Coastal | No | | | |
| E15.0 Inundation Prone Areas | No | | | |
| E16.0 Coastal Erosion | No | | | |
| E18.0 Wind & Solar Energy | No | | | |
| E20.0 Acid Sulfate Soils | No | | | |

Assessment:

Landslide Code

The proposal requires assessment against clause E3.7.1 P1 of the Landslide Code, which reads:

Buildings and works must satisfy all of the following:

- (a) no part of the buildings and works is in a High Landslide Hazard Area;*
- (b) the landslide risk associated with the buildings and works is either:*

(i) acceptable risk; or

(ii) capable of feasible and effective treatment through hazard management measures, so as to be tolerable risk.

The proposal does not include track works in a high landslide hazard area. A landslide risk management report by William C Cromer Pty Ltd dated March 2022 provides an assessment of landslide risk associated with the proposal. None of the hazards present an unacceptable risks to life to individual track users, construction workers, or maintenance crews. However, without suitable hazard management measures, the report notes that the potential risk to society is unacceptable at one section of the track (site 25 in the report). To manage risk at site 25 to a tolerable level, the report recommends that the track be shortened by approximately 20 m in this location. It is noted that the report was completed prior to track alignment concept being finalised, and several of the realignment recommendations in the report have already been implemented by the proposal. The shortening near site 25 has not. Therefore, accordance with recommendations of the report, risk mitigation measures must be implemented to meet the performance criterion. Following implementation of the mitigation measures, the landslide risk associated with the proposal, and ongoing use of the track, is considered acceptable and/or tolerable.

Subject to condition, the proposal meets the performance criterion.

Electricity Code

The proposal requires assessment against clause E8.7.1 P1 of the Electricity Transmission Infrastructure Protection Code, which reads:

Development must be located an appropriate distance from electricity transmission infrastructure, having regard to all of the following:

- (a) the need to ensure operational efficiencies of electricity transmission infrastructure;*
- (b) the provision of access and security to existing or future electricity transmission infrastructure;*
- (c) safety hazards associated with proximity to existing or future electricity transmission infrastructure;*
- (d) the requirements of the electricity transmission entity.*

The use and development of the track will result in very low impact on existing and future electricity infrastructure. Given the duration of stay, whereby track users will momentarily traverse in proximity to the electricity corridor, there is not considered to be any safety hazards posed by existing or potential electricity infrastructure on track users. The application has been referred to the electricity transmission entity for review and comment, who raised no objections to the proposal.

The proposal meets the performance criterion.

Biodiversity Code

The proposal requires assessment against clause E10.7.1 of the Biodiversity Code, which reads:

Clearance and conversion or disturbance must satisfy the following: ...

(c) if high priority biodiversity values:

(i) development is designed and located to minimise impacts, having regard to constraints such as topography or land hazard and the particular requirements of the development;

(ii) impacts resulting from bushfire hazard management measures are minimised as far as reasonably practicable through siting and fire-resistant design of habitable buildings;

(iii) remaining high priority biodiversity values on the site are retained and improved through implementation of current best practice mitigation strategies and ongoing management measures designed to protect the integrity of these values;

(iv) special circumstances exist;

The proposal includes clearance and conversion of native vegetation in a vegetation community of high priority biodiversity value (E. tenuiramis forest on sediments - DTO). Although most of the track is outside the DTO community, to minimise disturbance, track switchbacks are avoided through this community unless traversing a section of heritage track. This significantly shortens the track distance through DTO. Given the narrow 1.5 m wide track width, most of the clearance and conversion is also expected to be limited to understorey vegetation and immature trees. The track alignment also avoid a Tasmanian devil den and provides 30 m works exclusion zone.

A natural values assessment prepared by Enviro-dynamic Pty Ltd dated March 2022 has been submitted with the proposal documents. The assessment makes several recommendations regarding track alignment, weed management, construction methodology, and tree protection measures. These recommendations must be implemented.

Subject to condition, the proposal meets the performance criterion.

Recommended Conditions:

ENV1 - implement a soil and water management plan
ENV8 - implement landslide risk management recommendations
ENVs1 - implement rockfall risk management recommendations
OPS 4 & 5 - implement natural values assessment recommendations

Recommended Advice:

weed control

**6.1.2 171 BATHURST STREET, HOBART - PARTIAL DEMOLITION,
ALTERATIONS, AND EXTENSION
PLN-22-794 - FILE REF: F23/28697**

Address: 171 Bathurst Street, Hobart

Proposal: Partial Demolition, Alterations, and Extension

Expiry Date: 10 April 2023

Extension of Time: Not applicable

Author: Adam Smee

RECOMMENDATION

That pursuant to the *Hobart Interim Planning Scheme 2015*, the Planning Committee, in accordance with the delegations contained in its terms of reference, refuses the application for partial demolition, alterations, and extension at 171 Bathurst Street, Hobart, for the following reasons:

1. The proposal does not meet the acceptable solution or the performance criterion with respect to clause 11.4.2 A3 and P3 of the *Hobart Interim Planning Scheme 2015* because it would cause an unreasonable loss of amenity to an adjoining property having regard to a reduction in sunlight to a habitable room of a dwelling on an adjoining property.
2. The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.1 A1 or P1 (a), (b), (c), and (d) of the *Hobart Interim Planning Scheme 2015* because the proposed demolition will result in the loss of significant fabric that contributes to the historic cultural heritage significance of the place, and it has not been demonstrated:
 - a. that there are environmental, social, economic or safety reasons of greater value to the community than the historic cultural heritage values of the place; or,
 - b. that there are no prudent and feasible alternatives; important elements are not retained, and significant fabric is not documented.

3. The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.2 A1 or P1 (a) of the *Hobart Interim Planning Scheme 2015* because its incompatible design in terms of height, scale, bulk, form and siting will result in loss of the cultural heritage significance of the heritage listed place.
4. The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.2 A2 or P2 (a), (c) or (d) of the *Hobart Interim Planning Scheme 2015* because it will not be subservient and complementary to the listed place due to its bulk, scale, materials, built form, setback and siting with respect to listed elements and used of materials and colours.
5. The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.2 A3 or P3 of the *Hobart Interim Planning Scheme 2015* because it does not respond to the dominant heritage characteristics of the listed place.
6. The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.2 A4 or P4 of the *Hobart Interim Planning Scheme 2015* because the extension to the existing building detracts from the historic cultural heritage significance of the heritage listed place.

| | |
|---------------|--|
| Attachment A: | PLN-22-794 - 171 BATHURST STREET HOBART TAS 7000 - Planning Committee or Delegated Report ↴ |
| Attachment B: | PLN-22-794 - 171 BATHURST STREET HOBART TAS 7000 - Attachment B - Planning Committee Agenda Documents ↴ |
| Attachment C: | PLN-22-794 - 171 BATHURST STREET HOBART TAS 7000 - Attachment C - Planning Referral Officer Cultural Heritage Report ↴ |
| Attachment D: | Attachment - Planning Committee - 29 March 2023 - PLN-22-794 - 171 BATHURST STREET HOBART TAS 7000 - Attachment D - Applicant's Post Public Notification Submission ↴ |

**APPLICATION UNDER HOBART INTERIM PLANNING SCHEME 2015**

| | |
|-----------------------|---|
| Type of Report: | Committee |
| Committee: | 29 March 2023 |
| Expiry Date: | 10 April 2023 |
| Application No: | PLN-22-794 |
| Address: | 171 BATHURST STREET , HOBART |
| Applicant: | DESIGN EAST PTY LTD 153 DAVEY STREET |
| Proposal: | Partial Demolition, Alterations, and Extension |
| Representations: | Two representations. |
| Performance criteria: | Inner Residential Zone: Setbacks and building envelope for all dwellings, privacy; Historic Heritage Code: Demolition and Buildings and Works other than Demolition. |

1. Executive Summary

1.1 Planning approval is sought for partial demolition, alterations, and extension at 171 Bathurst Street, Hobart.

1.2 More specifically the proposal includes:

- demolition of a window and part of the roof of a previous addition at the rear of the dwelling on the site,
- internal alterations to allow for access to the proposed extension,
- construction of an extension at the rear of the dwelling.

The proposed extension would be above part of a previously approved (but not yet constructed) extension and would include an additional bedroom, ensuite, and WC. The proposed extension would have a floor area of 30m².

1.3 The proposal relies on performance criteria to satisfy the following standards and codes:

1.3.1 11.0 Inner Residential Zone: 11.4 Development Standards for Dwellings

- 1.3.2 E13.0 Historic Heritage Code: E13.7 Development Standards for Heritage Places and E13.8 Development Standards for Heritage Precincts
- 1.4 Two representations objecting to the proposal were received within the statutory advertising period between 24 February and 10 March 2023.
- 1.5 The proposal is recommended for refusal.
- 1.6 The final decision is delegated to the Planning Committee, because the application is recommended for refusal.

2. Site Detail

- 2.1 The site is a residential property at the western edge of the Hobart CBD. The property is relatively narrow and has an area of 554m². The property has frontage to Bathurst Street on its south-eastern boundary. A heritage listed, two storey dwelling occupies the part of the property closest to the frontage. The property slopes upward away from the frontage. The land to the rear of the dwelling is a relatively large area of private open space. A previously approved development, including an extension to the dwelling and extensive landscaping within this area of POS, was under construction on the site at the time of writing.
- 2.2 The site is within an established residential area. There are dwellings on the adjoining properties to the north-east and south-west. These dwellings occupy a similar position on the respective lot relative to Bathurst Street, as the dwelling on the subject property. The property to the north-east of the site, at 169 Bathurst Street, is similar to the site in that there is also a large area of POS to the rear of the dwelling on this property. The residential properties to the north-west of the site, that have frontage to Melville Street, also have large areas of POS to rear, i.e. between the site and the dwellings on these properties. However, the area to the rear of the dwelling at 173 Bathurst Street, to the south-west of the site, includes a building that is used for visitor accommodation, a driveway, and carparking areas.
- 2.3 Further residential development occurs to the south of the site, on the opposite side of Bathurst Street, while the land use to the east of the site, closer to the CBD, is generally commercial.
- 2.4 A site visit was conducted on 17 March 2023.



Figure 1: aerial view of site (outlined in blue) and surrounding area.

3. Proposal

3.1 Planning approval is sought for partial demolition, alterations, and extension at 171 Bathurst Street, Hobart.

3.2 More specifically the proposal is for:

- demolition of a window and part of the roof of a previous addition at the rear of the dwelling on the site,
- internal alterations to allow for access to the proposed extension,
- construction of an extension at the rear of the dwelling.

The proposed extension would be above part of a previously approved (but not yet constructed) extension and would include an additional bedroom, ensuite, and WC. The proposed extension would have a floor area of 30m².

4. Background

- 4.1 Council issued a Planning Permit for partial demolition, alterations, extension, swimming pool, and front fence on the site in July 2022 (see PLN-22-14). The current application relies upon this previous approval to the extent that the proposed extension would be above an extension that was approved by this previous permit.
- 4.2 Council's Cultural Heritage officers met with the applicant and the project heritage consultant on 7 March 2023 to discuss concerns regarding the heritage impact of the proposal. Minutes from this meeting prepared by the applicant are included in the attached documents.

5. Concerns raised by representors

- 5.1 Two representations objecting to the proposal were received within the statutory advertising period.
- 5.2 The following table outlines the concerns raised in the representations received. Those concerns which relate to a discretion invoked by the proposal are addressed in Section 6 of this report.

| |
|---|
| <p>"It is submitted that the siting and scale of the proposed dwelling addition will cause an unreasonable loss of amenity to adjoining properties at 173 Bathurst Street, as the proposed development will:</p> <p>(a) reduce all day sunlight to the living room window of the dwelling located south of the proposed development on the adjoining property at Unit 1, 173 Bathurst Street;</p> <p>(b) overshadow the private open space of the adjoining property at Unit 1, 173 Bathurst Street; and</p> <p>(c) adversely impact visually when viewed from the adjoining property at 173 Bathurst Street due to the apparent scale, bulk and proportions of the proposed first floor addition located adjoining the common boundary".</p> |
| <p>"The first floor windows of proposed Bedroom 5 do not provide a reasonable opportunity for privacy, as they are not screened, or otherwise located or designed to minimise direct views of windows and private open space of other dwellings on 169 and 173 Bathurst Street, contrary to the mandatory provisions of Performance Criterion P2".</p> |

| |
|--|
| <p>"The application fails to demonstrate the the proposed development will not result in loss of historic cultural heritage significance to the place through the inappropriate scale, bulk and form of the first floor addition, and fenestration, siting, materials, colours and finishes that are not subservient or complementary to the place.</p> <p>In particular, the extension's use of a skillion roof and large anodised aluminium framed windows are in stark contrast to the traditional gable forms and fenestration of the existing heritage place".</p> |
| <p>"The application fails to demonstrate the proposed development will be sympathetic to the historic cultural heritage significance of the precinct, due to the proposed form and fenestration, siting, materials, colours and finishes of the development being in stark contrast to the character of surrounding buildings and area".</p> |
| <p>"The extent, nature and duration of building work required for the proposed development and lack of direct frontage will have a significant adverse impact on the amenity of adjacent properties at Unit 1 and 2, 173 Bathurst Street due to construction noise, dust and access issues".</p> |
| <p>"We would however, be prepared to support a proposal that:</p> <p>(a) relocates the proposed first floor Bedroom 5 away from the southern boundary to above the ground floor kitchen;</p> <p>(B) amends for design to include a gable roof over the first floor addition to match the scale, bulk and form of the existing heritage place, together with fenestration, materials, colours and finishes that are subservient and complementary to the existing heritage place and surrounding buildings".</p> |
| <p>"Should the Planning Authority determine to grant a permit for the proposed development</p> <p>contrary to our objections, we submit that the development should be conditioned to</p> <p>require the windows of the first floor Bedroom 5 walkway have:</p> <p>(a) a sill height of not less than 1.7m above the floor level;</p> <p>(b) fixed obscure glazing extending to a height of at least 1.7m above the floor level; or</p> <p>(c) a permanently fixed external screen for the full length of the window or glazed door, to a height of not less than 1.7m above floor level, with a uniform transparency of not more than 25%".</p> |

"Loss of Amenity

There are only two windows on the south-east elevation of our property. It is submitted that the siting and scale of the proposed dwelling addition will cause an unreasonable loss of amenity to our property at 1/173 Bathurst Street, as the proposed development will:

- (a) reduce all day sunlight to the living room window and upstairs window of the dwelling located south of the proposed development on the adjoining property at Unit 1, 173 Bathurst Street;
- (b) overshadow the private open space of the adjoining property at Unit 1, 173 Bathurst Street; and
- (c) negatively impact on our garden area, including our vegetable garden, as a result of shading;
- (d) negatively impact on the views from our property to the Domain; and
- (e) adversely impact visually when viewed from the adjoining property at 173 Bathurst Street due to the apparent scale, bulk, and proportions of the proposed first floor addition located adjoining the common boundary".

"We submit that the proposed development is neither sympathetic nor appropriate and will cause a loss of historical cultural significance to the place. The design is incompatible; the height, scale, bulk, form, fenestration, siting, materials, colours, and finishes are inappropriate and not subservient to the historic values of the place. Nor do the materials, built form and fenestration respond to the dominant heritage characteristics of the place".

"Should the Planning Authority grant a permit for the proposed development despite our objections, we submit that any permit for the proposed development should contain a legally enforceable condition requiring a construction and access management plan to be prepared by the applicant in consultation with adjoining owners and approved by the council prior to any work being carried out as part of the permit".

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 Inner Residential Zone of the *Hobart Interim Planning Scheme 2015*.
- 6.3 The existing use of the site is a single dwelling within the residential use class. The existing use is a permitted use in the zone. The proposed development would be associated with the existing use.
- 6.4 The proposal has been assessed against:
- 6.4.1 11.0 Inner Residential Zone
 - 6.4.2 E7.0 Stormwater Management Code
 - 6.4.3 E13.0 Historic Heritage Code
- 6.5 The proposal relies on the following performance criteria to comply with the applicable standards:
- 6.5.1 11.0 Inner Residential Zone:
 - 11.4.2 Setbacks and building envelope for all dwellings P3, and,*
 - 11.4.6 Privacy for all dwellings P2.*
 - 6.5.2 E13.0 Historic Heritage Code:
 - E13.7.1 Demolition,*
 - E13.7.2 Buildings and Works other than Demolition,*
 - E13.8.1 Demolition, and,*
 - E13.8.2 Buildings and Works other than Demolition.*
- 6.6 Each performance criterion is assessed below.
- 6.7 *11.4.2 Setbacks and building envelope for all dwellings P3*
- 6.7.1 The acceptable solution A3(a) at clause 11.4.2 requires a dwelling, including an extension to a dwelling, to be contained within a prescribed building envelope. The acceptable solution A3(b) for the clause requires a dwelling to be setback 1.5m from a side boundary.
 - 6.7.2 The proposal includes a dwelling extension that would not be contained

within the prescribed building envelope and would not be setback 1.5m from the site's side boundary. The proposed extension would not be contained within the building envelope determined relative to the site's south-western side boundary. The extension would not be setback 1.5m from this boundary.

6.7.3 The proposal does not comply with the above acceptable solution and therefore relies upon assessment against the below performance criterion.

6.7.4 The performance criterion P3 at clause 11.4.2 provides as follows:

The siting and scale of a dwelling must:

(a) not cause an unreasonable loss of amenity to adjoining properties, having regard to:

- (i) reduction in sunlight to a habitable room (other than a bedroom) of a dwelling on an adjoining property;*
- (ii) overshadowing the private open space of a dwelling on an adjoining property;*
- (iii) overshadowing of an adjoining vacant property; and*
- (iv) visual impacts caused by the apparent scale, bulk or proportions of the dwelling when viewed from an adjoining property; and*

(b) provide separation between dwellings on adjoining properties that is consistent with that existing on established properties in the area.

6.7.5 The shadow diagrams provided by the applicant (in Attachment D) suggest that the proposed extension would cause additional overshadowing only on the adjoining property to the south-west, at 173 Bathurst Street. Given the proposed extension's position at the rear of the dwelling on the site and the topography of the surrounding area, it is unlikely to cause overshadowing on any other property. Noting the two storey height of the proposed extension, its proximity to the boundary, and the relatively small setback of unit 1, 173 Bathurst St from the boundary, the shadow diagrams show that the extension would cause significant additional overshadowing on the property at unit 1, 173 Bathurst Street at 9am and at midday on the winter solstice and at the equinox. This overshadowing is likely to extend to the majority of the north-east elevation of the dwelling at unit 1, 173 Bathurst Street, including the living room window on the lower level of this dwelling (see figure 2 below). Therefore, the proposal is likely to result in this window being overshadowed for

the majority of the day throughout the majority of the year. The proposal is unlikely to allow for any direct sunlight to enter this window and would therefore result in a significant reduction in the sunlight available to the associated habitable room.

- 6.7.6 Given the orientation of the dwelling on the adjoining property at unit 1, 173 Bathurst Street, no other windows to its habitable rooms (other than bedrooms) are likely to receive any significant direct sunlight. Therefore, the direct sunlight that is currently received by the living room window on the ground floor is likely to significantly contribute to the amenity of the dwelling. The proposal would result in the loss of this amenity which is considered unreasonable in the circumstances. The proposal therefore does not comply with sub-clause (a)(i) for the above performance criterion.
- 6.7.7 The shadow diagrams suggest that any overshadowing of ground surfaces on the property at unit 1, 173 Bathurst Street, would be generally limited to the driveway between the site and the dwelling on this adjoining property. Therefore, the proposal would not cause significant additional overshadowing of the private open space of a dwelling on an adjoining property. The proposal therefore complies with the above sub-clause (a)(ii). The site is not adjacent to a vacant property so sub-clause (a)(iii) is not relevant.
- 6.7.8 Similarly to above, the proposal would potentially have a significant visual impact only upon the dwelling on the adjoining property at unit 1, 173 Bathurst Street. Given its position to the rear of the dwelling on the site, the proposed extension would not be visible from the south or east. The proposed extension would be well separated from the dwellings to the north-west and seen against the existing, two-storey component of the dwelling on the site, which would reduce its visual impact when viewed from this direction. Given that the extension would be on the south-western side of the dwelling, there would be separation between it and the adjoining property to the north-east, at 169 Bathurst Street. Therefore, the proposal is not considered likely to have a significant visual impact upon this property.
- 6.7.9 The proposed extension would be visible from the living room window on the ground floor of the dwelling on the adjoining property to the south-west, at unit 173 Bathurst Street. However, much of the view-field from this window is likely to be taken up by existing structures on the subject property, including the two storey component of the dwelling on the site and the retaining wall on the boundary between. Therefore, the proposal

is not considered to cause a significant increase in visual impact upon this adjoining property. The proposal therefore complies with the above sub-clause (a)(iv).

6.7.10 Given that the lots in the surrounding area are generally relatively narrow, there is limited separation between most of the dwellings on adjoining lots in the area. As the dwelling on the site currently has a nil setback from the subject property's south-western side boundary, the proposal would not reduce the separation between dwellings on adjoining lots. The proposal therefore complies with the above sub-clause (b).

6.7.11 The proposal does not comply with the above performance criterion as it does not comply with sub-clause (a)(i).



Figure 2: site photo - view to the south-east showing the rear of the dwelling on the subject property (left) and the dwelling on the adjoining property at unit 1, 173 Bathurst Street (right).



Figure 3: site photo - view to the south showing the rear of the dwelling on the subject property (left) and the dwelling on the adjoining property at unit 1, 173 Bathurst Street (right). The latter dwelling's living room window is at the centre of the photo.

6.8 11.4.6 Privacy for all dwellings P2

- 6.8.1 The acceptable solution A2 at clause 11.4.6 requires a window to a habitable room that has a floor level more than 1m above existing ground level to have a setback of not less than 3m from a side boundary.
- 6.8.2 The proposal includes a window to a habitable room that would have a floor level more than 1m above existing ground level that would have a setback of less than 3m from a side boundary. The glazed section that would link the proposed extension to the rear of the dwelling on the site would be setback approximately 1.5m from the site's south-western side boundary.
- 6.8.3 The proposal does not comply with the above acceptable solution and therefore relies upon assessment against the below performance criterion.
- 6.8.4 The performance criterion P2 at clause 11.4.6 provides as follows:

A window or glazed door, to a habitable room of dwelling, that has a floor level more than 1m above existing ground level, must be screened, or otherwise located or designed, to minimise direct views to:

*(a) a window or glazed door, to a habitable room of another dwelling; and
(b) the private open space of another dwelling.*

- 6.8.5 The proposed glazed section would be directly opposite the living room window within the north-eastern elevation of the dwelling on the adjoining property at unit 1,173 Bathurst Street. Therefore, while this section is unlikely to be occupied for extended periods, there is considered to be potential for it to allow for direct views into the living room and other habitable rooms on the adjacent property. Therefore, if the proposal is approved, a condition of approval should be that either:
a) the glazing below ceiling height within the south-west elevation of the extension must be replaced with solid cladding, or,
b) the sill height of any glazing within the south-west elevation of the extension must be increased, or screening must be provided, to minimise direct views to windows of habitable rooms of another dwelling. The sill height or screening must be sufficient to prevent line of sight between a person within the extension and the windows of habitable rooms of another dwelling.
- 6.8.6 Provided that the proposal is modified in accordance with the recommended condition it is considered to comply with sub-clause (a) of the above performance criterion.
- 6.8.7 The proposed glazed section would be adjacent to the driveway between the site and the dwelling on the adjoining property to the south-west. Direct views of areas of private open space on this property would not be possible from this part of the proposed development.
- 6.8.8 The proposal complies with the above performance criterion.
- 6.9 *E13.7.1 Demolition*
- 6.9.1 There is no acceptable solution for clause *E13.7.1* which applies where demolition is proposed on a heritage place.
- 6.9.2 The proposal includes demolition and the site is listed in Table E13.1 as a heritage place.
- 6.9.3 As there is no acceptable solution for the above clause the proposal therefore relies upon assessment against the below performance criterion.
- 6.9.4 The performance criterion at clause *E13.7.1* provides as follows:

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.*

- 6.9.5 Council's Cultural Heritage Officer has assessed the proposed demolition against the above performance criterion and provided the following comments. The CHO's report on the proposal is included as an attachment.

"With regard to the proposed demolition, it is noted that the building has remained almost entirely intact with little in the way of alterations or modifications with the exception of a 2007 application for a rear Vergola at ground level in the courtyard space shown above in Photo 2. The approved demolition works (PLN-22-14) has already commenced and resulted in the removal of a rear ground floor window and door are considered unfortunate but not so detrimental to the historic cultural heritage significance of the place to warrant refusal at that time. The current application seeks the further demolition of original fabric through the removal of the first floor rear facing timber sash window, internal skirting and around 60 bricks of the surrounding wall in order to create an access through to the proposed extension, the threshold of which is proposed to utilise the original sandstone sill.

As set out above, E13.7.1 P1 'Demolition' states that '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'. In this instance, it is considered that the principal feature of note proposed for demolition is the original timber sliding sash window and its associated architraves and skirting. Whilst the stain-glass window would be effectively removed visually, in that it would no longer play a role within the visual characteristics of the rear elevation, it is considered that this does not constitute demolition.

With regard to the above, it is considered that the first floor timber sash is of good quality and is both original and unaltered. The interior moulded architraves that surround the window are elaborate and unaltered, which in part reflects the intended high 'status' of the property. The removal of the matching ground floor window and the rear door means that this window is the sole surviving original plain glass window to the rear elevation. It can therefore be argued that this places a greater emphasis on its protection. In this instance therefore, it is considered that individually and cumulatively, the removal of the sash window and its associated features represents the loss of significant fabric".

"It is noted that in the supporting documentation, the Applicant has chosen not to address how the proposal would satisfy point (a).

Following on from discussions with the Applicant prior to advertising, Heritage Officers are satisfied that as required under (b), there is a 'prudent and feasible alternative' for a second storey rear extension than that currently proposed (discussed later in this report).

As required by (c) and (d), the Applicant has stated in their supporting documentation that 'elements such as the doors, windows etc will be documented, and where practical - be retained'. It is noted however that no plans or additional supporting documents in relation to the re-use of the window have been provided.

It is therefore considered that the Applicant has failed to demonstrate the exceptional circumstances which would allow the resulting loss of historic cultural heritage values as required under (a), (b), (c) and (d) as set out above.

It is therefore considered that the proposal would fail to comply with the provision E13.7.1 P1 of the Scheme relating to the demolition in whole or part of Heritage Places".

6.9.6 The proposal does not comply with the above performance criterion.

6.10 *E13.7.2 Buildings and Works other than Demolition*

6.10.1 There are no applicable acceptable solutions for clause E13.7.2 which applies where buildings and works other than demolition are proposed on a heritage place.

6.10.2 The proposal includes buildings and works other than demolition and the

site is listed in Table E13.1 as a heritage place..

6.10.3 As there are no applicable acceptable solutions for the above clause the proposal therefore relies upon assessment against the below performance criteria.

6.10.4 The relevant performance criteria at clause E13.7.2 provide as follows:

P1

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.*

P2

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.*

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.

P4

Extensions to existing buildings must not detract from the historic cultural heritage significance of the place.

6.10.5 Council's Cultural Heritage Officer has assessed the proposal against the above performance criteria and provided the following comments:

"With regard to provisions of the Planning Scheme, *E13.7.2 Buildings and Works other than Demolition* to Heritage Places requires that development be 'sympathetic', 'subservient' and 'responsive' to the historic cultural heritage of the place.

It is considered reasonable to interpret the above as being that modern additions to a heritage place should seek to be in 'accordance' and 'agreement' with the characteristics of the original building, whilst also being clearly modern. It is considered that the intention of the Scheme is to ensure that new work avoids the use of 'pastiche' where possible, to ensure a clear distinction between old and new can be clearly understood. However, it is also considered that the terms 'sympathetic', 'subservient' and 'responsive' require that new works still spring and draws upon the original architecture of the place, potentially subtly reinterpreting the architectural language to distinguish it from the original building. This is to ensure that proposals that have an 'arbitrary' design, that is, one that has no clear link to the original architecture of the heritage place are avoided. To be subservient, it must also play a secondary role, maintaining the prominence of the original. When making assessment in such instances, it should be noted that the Scheme does not contain any acceptable solutions and as such the stated performance criteria must be satisfied.

It is noted that the box-like form of the proposed development does not occur within the style and form of the architecture of the original building and would not appear to draw from the building or its characteristics in any discernable way for its design.

The large structural glazed panels that make up a substantial part of the rear and return elevation bear no relation to the timber sliding sash windows of the original building in either form, rhythm or adherence to 'golden ratio' proportions.

The proposed use of metal tray cladding as the primary elevational treatment is not used anywhere else to the original building, nor is it in any way associated with residential development of this type and period. Similarly, the use of dark stained timber battens and the application of elevational treatments into distinct panels of differing materials is not found anywhere else to the elevation of building which is entirely constructed of brick with small elements of sandstone.

The structure would stand directly in front of the principal part of the buildings rear elevation at first floor level, largely obscuring the brickwork, fenestration pattern and views of the high quality and distinctive stain

glass window from the garden. Its distinctive architectural 'point of difference' would make it a highly prominent and largely domineering element to the rear elevation and its location above the former courtyard would run contrary to the traditional 'solid/void' rhythm associated with buildings constructed with rear wings.

Given the above, it is therefore considered that the proposal would fail to be sympathetic, subservient or responsive to the dominant characteristics of this heritage listed place. Due to its incompatible design, form, fenestration, siting materials and finishes, the proposal would detract from and lead to a loss of the historic cultural significance of the place. The proposal would also fail to be complementary to (that is, to 'complete') the place due to its built form, siting (by virtue of it obscuring the pattern and form of the rear elevation and prominent listed element in the form of the stain-glass window), proposed materials and the proposed fenestration.

It is therefore considered that the proposed extension would fail to comply with E13.7.2 P1(a); P2(a),(c), and (d); P3, and P4".

6.10.6 The proposal does not comply with the above performance criteria.

6.11 *E13.8.1 Demolition and E13.8.2 Buildings and Works other than Demolition*

6.11.1 There are no applicable acceptable solutions for either clause E13.8.1 or clause E13.8.2 which apply where demolition and buildings and works other than demolition are proposed on a site that is within a heritage precinct.

6.11.2 The proposal includes demolition and buildings and works other than demolition and the site is within the Inner Hillside Housing/Bathurst Street Heritage Precinct (WH5).

6.11.3 As there are no applicable acceptable solutions for the above clause the proposal therefore relies upon assessment against the below performance criteria.

6.11.4 The performance criterion at clause E13.8.1 provides as follows:

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, paths,*

*outbuildings and other items, that contribute to the historic cultural heritage significance of the precinct;
unless all 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 or feasible alternatives;*
- (iii) opportunity is created for a replacement building that will be more complementary to the heritage values of the precinct.*

The relevant performance criteria at clause E13.8.2 provide as follows:

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 E13.2.

P3

Extensions to existing buildings must not detract from the historic cultural heritage significance of the precinct.

- 6.11.5 Council's Cultural Heritage Officer has assessed the proposal against the above performance criteria and provided the following comments:

"As with all applications relating to Heritage Precincts, it is primarily only those works visible from the public realm that are adjudged to be able to have an impact upon the characteristics of a Precinct. In this instance it is noted that all of the proposed works would be to the rear of the property and entirely hidden from public view by the mass of the building and the immediate neighbouring properties.

As such, it is considered that the proposed works would have no impact upon the visual characteristics of the Precinct and that in this instance, provisions E13.7.1 and E13.7.2 are satisfied".

- 6.11.6 The proposal complies with the above performance criteria.

7. Discussion

- 7.1 Planning approval is sought for partial demolition, alterations, and extension at 171 Bathurst Street, Hobart.
- 7.2 The application was advertised and received two representations. The representations raise concerns regarding the overshadowing, visual, privacy, and heritage impacts of the proposal. The representations also raise concerns regarding the potential impact of construction of the proposed development upon adjoining properties. As discussed earlier, the proposal is considered to cause an unreasonable loss of amenity on the adjoining property to the south-west as a result of a reduction in sunlight to a habitable room. The proposal is not considered to have an unreasonable visual impact upon adjoining properties as the proposed extension would not have a significantly greater visual impact than the existing development on the site. Should the proposal be approved, privacy impacts could be addressed via measures to reduce or screen the relevant glazed elements. As discussed in the assessment provided by Council's Cultural Heritage Officer, the heritage impact of the proposal is not considered acceptable. Potential impacts during construction of the proposed development are not regulated by the planning scheme.
- 7.3 The proposal has been assessed against the relevant provisions of the planning scheme and is considered to not comply.
- 7.4 The proposal has been assessed by other Council officers, including the Council's Cultural Heritage Officer. The officers have raised objection to the proposal.
- 7.5 The proposal is recommended for refusal.

8. Conclusion

- 8.1 The proposed partial demolition, alterations, and extension at 171 Bathurst Street, Hobart, does not satisfy the relevant provisions of the *Hobart Interim Planning Scheme 2015* and is recommended for refusal.

9. Recommendations

That: Pursuant to the *Hobart Interim Planning Scheme 2015*, the Planning Committee, in accordance with the delegations contained in its terms of reference, refuses the application for partial demolition, alterations, and extension at 171 Bathurst Street, Hobart, for the following reasons:

- 1 The proposal does not meet the acceptable solution or the performance criterion with respect to clause 11.4.2 A3 and P3 of the *Hobart Interim Planning Scheme 2015* because it would cause an unreasonable loss of amenity to an adjoining property having regard to a reduction in sunlight to a habitable room of a dwelling on an adjoining property.
- 2 The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.1 A1 or P1 (a), (b), (c), and (d) of the *Hobart Interim Planning Scheme 2015* because the proposed demolition will result in the loss of significant fabric that contributes to the historic cultural heritage significance of the place and it has not been demonstrated:
 - a) that there are environmental, social, economic or safety reasons of greater value to the community than the historic cultural heritage values of the place; or,
 - b) that there are no prudent and feasible alternatives; important elements are not retained, and significant fabric is not documented.
- 3 The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.2 A1 or P1 (a) of the *Hobart Interim Planning Scheme 2015* because its incompatible design in terms of height, scale, bulk, form and siting will result in loss of the cultural heritage significance of the heritage listed place.
- 4 The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.2 A2 or P2 (a), (c) or (d) of the *Hobart Interim Planning Scheme 2015* because it will not be subservient and complementary to the listed place due to its bulk, scale, materials, built form, setback and siting with respect to listed elements and used of materials and colours.
- 5 The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.2 A3 or P3 of the *Hobart Interim Planning Scheme 2015* because it does not respond to the dominant heritage characteristics of the listed place.

- 6 The proposal does not meet the acceptable solution or the performance criterion with respect to clause *E13.7.2 A4* or *P4* of the *Hobart Interim Planning Scheme 2015* because the extension to the existing building detracts from the historic cultural heritage significance of the heritage listed place.



(Adam Smee)

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: 21 March 2023

Attachment(s):

Attachment B - Planning Committee Agenda Documents


Attachment C - Planning Referral Officer - Cultural Heritage Officer Report

Attachment D - Applicant's Post Public Notification Submission

 PLN-22-794 - 171 BATHURST STREET

Application Information

▼ Application Details

PLN-22-794 Partial Demolition, Alterations, and Extension 
Submitted on: 28/11/2022
Accepted as Valid on: 28/11/2022
Target Time Frame: 42 Days.
Elapsed Time: 86 Days (*Stopped: 49 Days*) = 37 Days Expiry date: 27/02/2023
Officer: Adam Smee

Have you obtained pre application advice?

☒ Yes

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. *

☒ 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)? *

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

Estimated cost of development *

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)

Other Details

Does the application include signage? *

No

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

0

Tasmania Heritage Register

Is this property on the Tasmanian Heritage Register?

Yes

Edit



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-22-794
THC WORKS REF: 8052
REGISTERED PLACE NO: 6588
APPLICANT: Design East Pty Ltd
DATE: 17 March 2023

NOTICE OF HERITAGE DECISION

(Historic Cultural Heritage Act 1995)

The Place: 171 Bathurst St, Hobart
Proposed Works: Partial demolition, alterations and extension.

Under section 39(6)(a) 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-22-794, advertised on 24/02/2023.

Should you require clarification of any matters contained in this notice, please contact Russell Dobie on 0458 326 828.

A handwritten signature in purple ink, appearing to read 'Ian Boersma'.

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

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

SEARCH OF TORRENS TITLE

| | |
|------------------|------------------------------|
| VOLUME 150160 | FOLIO 1 |
| EDITION 3 | DATE OF ISSUE 26-Aug-2021 |

SEARCH DATE : 28-Oct-2021

SEARCH TIME : 01.14 PM

DESCRIPTION OF LAND

City of HOBART
Lot 1 on Plan 150160
Derivation : Part of 0A-2R-2Ps Gtd to David Young
Prior CT 198648/1

SCHEDULE 1

E248480 TRANSFER to SAMUEL JULIAN FORBES-YOUNG and JOSEPHINE
GRACE FORBES-YOUNG Registered 26-Aug-2021 at 12.01
PM

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
BURDENING EASEMENT: the right for the eaves and downpipes
belonging to the cottage erected on the land
delineated in Certificate of Title Volume 233 Folio
141 to overhang and encroach on the land comprised
herein the said eaves and downpipe being shown on
Plan No. 150160
SP150135 BENEFITTING EASEMENT: a right for overhanging eaves
and gutter over the Overhanging Eaves & Gutter
Easement 0.40 wide on P150160

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations



FOLIO PLAN

RECORDED OF TITLES

Issued Pursuant to the Land Titles Act 1980



| | | |
|---|--|---|
| OWNER G D & D L COLLS FOLIO REFERENCE CT 198648-1 GRANTEE PART OF 0a 2r 2p GTD TO DAVID YOUNG | PLAN OF TITLE LOCATION CITY OF HOBART FIRST SURVEY PLAN No. 20/26 HOB. COMPILED BY NOEL LEARY & ASSOCIATES SCALE 1:250 LENGTHS IN METRES | REGISTERED NUMBER <h2 style="margin: 0;">P150160</h2> APPROVED 27 APR 2007 <i>Alice Kawa</i> Recorder of Titles |
| MAPSHEET MUNICIPAL CODE No.114 (5225-52) | LAST UPI No. GCW55B | LAST PLAN No.P198648 |
| ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN | | |

BALANCE PLAN

The diagram illustrates a land survey plan for a triangular plot. Key features include:

- Boundaries:** Bathurst Street forms the southern and eastern boundaries. A diagonal line runs from the northwest towards the center.
- Sections and Dimensions:**
 - Section 1: Central area, 554m², excluding a hatched portion. Dimensions along its northern boundary are 8.65, 27.30, and 24.26.
 - Section (P.198648): Located between Section 1 and the diagonal boundary. Dimensions include 0.48, 23.92, and 12.17.
 - Section (SP150135): Located between Section 1 and the diagonal boundary. Dimensions include 11.2, 9.54, 5.69, 5.23, and 0.25.
 - Section (20/26HOB): Located between Section 1 and the diagonal boundary. Dimensions include 0.08, 1.91, 5.23, 0.01, 12.71, and 0.25.
- Other Labels:** ENLARGEMENT, EAVES, DOWN PIPE, COTTAGE, PRIVATE ENTRANCE, WALL OF, and a reference to P.199595 and P.198182.
- North Arrow:** Indicated in the upper left corner.

design.EAST

Building design and interior architecture

STUDIO 153
153A DAVEY STREET
HOBART TASMANIA 7000
Phone: +61 3 6223 6740
Email: admin@designeast.com.au
ABN 55 106 867 805

20 November 2022

HOBART CITY COUNCIL
GPO Box 503
Hobart
Tasmania 7001Att: **Mr Ben Ikin – Senior Statutory Planner.**Re: **Amendment to design of structure at rear of 171 Bathurst Street.**

Dear Sir,

My clients – Jo and Sam Forbes-Young wish to increase the size of the recently approved rear extension. Building and plumbing permits had been issued and the project has been commenced.

The proposal is for the addition of a first floor structure consisting of a bedroom and ensuite ("**Master Bedroom**"). The Master Bedroom will be less in footprint to the ground floor level extension (the "**Sunroom**") approved pursuant to Planning Approval No. PLN-22-14.

The proposed extension is modern in style and is in keeping with (i.e. a continuation of) the approved Sunroom on the ground floor level. Materials have been chosen to expand on the idea that the Master Bedroom extension (like the Sunroom) is modern and not mimicry of the past style of the existing residence.

The existing residence is modest in size and the addition of a Master Bedroom is not an overuse of the site.

Heritage Matters

The existing residence is listed in the Heritage Tasmania register, and it is listed as a Heritage place in the WH5 Heritage precinct of the City of Hobart Interim Planning Scheme.

I discussed the proposal with the previous planner – Michael McClenahan who provided comment from Council's heritage officer as follows:-

« As a whole the proposal is thought to have too much demolition and the proposed alterations obscure and modify original fabric. If further feedback is sought then a formal PAE can be submitted or a meeting scheduled with a heritage officer at the Council Centre. »

I have also approached Heritage Tasmania to discuss their views on the proposal and they responded with the following comments:-

« This proposal seems to tick the boxes of the THC's Works Guidelines: not visible from the street, subservient in size and demonstrably modern. »

There will be a couple of details to resolve (such as the treatment of the landing window from the en suite side, and it might be nice to leave some of the exterior brickwork exposed internally) but, overall, I see no issues. »

At this point we have two conflicting opinions on the proposed addition.

We feel that our proposal can satisfy the requirements of the planning scheme and address the comments from Council's heritage officer and Heritage Tasmania.

The following are comments on the requirements of the planning scheme.

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. | | |
|--|--|--|
| Acceptable Solutions | Performance Criteria | Response |
| A1 No acceptable solution | P1 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; there are, environmental, social, economic or safety reasons of greater value to the community than the historic cultural heritage values of the place; (a) there are no prudent and feasible alternatives; important structural or façade elements that can feasibly be retained and reused in a new structure, are to be retained; (c) significant fabric is documented before demolition. | <i>The only demolition in this amendment proposal is the removal of the brickwork below the existing window to form the new door way. 600mm deep x the width of the existing opening.</i> <i>The existing sandstone sill will be reused as the threshold to the new opening. The existing sandstone lintol will remain in place.</i> <i>The window to the stair landing will remain in place and will become a historical and prominent feature of the ensuite. This beautiful feature will incorporate some of the original brick surrounds.</i> <i>We regard the removal of approximately [60-80 bricks] is as a minor intervention in the building fabric, and believe that the performance criteria (a) to (d) are satisfied.</i> <i>To put this in perspective, Planning Approval [###] has approved the internalisation of the exterior walls for the downstairs extension adjacent to the kitchen (the "Sunroom") and the removal of bricks to create a wide door in place of the window between the new Sunroom and the existing Dining Room for internal access purposes.</i> |

E13.7.2 Buildings and Works other than Demolition

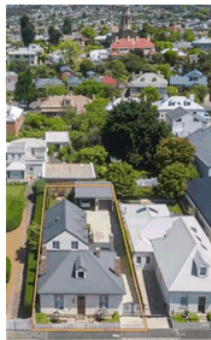
| Objective: To ensure that development at a heritage place is: (a) undertaken in a sympathetic manner which does not cause loss of historic cultural heritage significance; and (b) designed to be subservient to the historic cultural heritage values of the place and responsive to its dominant characteristics | | |
|--|--|---|
| Acceptable solutions | Performance Criteria | Response |
| A1 No Acceptable Solutions | P1 Development must not result in any of the following: loss of historic cultural heritage significance to the place through incompatible (a) design, including in height, scale, bulk, form, fenestration, siting, materials, colours and finishes; | <i>We feel in this case there is a strong argument to follow the recommendations in the "Burra Charter" and Heritage Tasmania's "Works Guidelines for historic heritage places"</i> <i>Article 22 – New work of the Burra Charter contains the following:-</i> |

| | | |
|--|---|---|
| | | <p>22.1 New work such as additions to the place may be acceptable where it does not distort or obscure the cultural significance of the place, or detract from its interpretation and appreciation.</p> <p>22.2 New work should be readily identifiable as such.</p> <p>As suggested by Heritage Tasmania the addition is subservient to the heritage building and not visible from the street.</p> <p>The addition is set back 500mm from the side façade of the existing building and the height does not interfere with the existing roof eaves line.</p> <p>The addition to the rear of the residence in no way diminishes the historic cultural heritage significance of the place through loss of significant streetscape elements. The streetscape is completely untouched by the amended P.A.</p> |
| | other items that contribute to the significance of the place. (b) | The street scape was addressed and approved in the first Development Application. |
| A2 No Acceptable Solution. | P2 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. | <p>I refer back to our arguments in P1 (a) The scale and bulk are subservient to the existing residence. The materials and fenestration are proportionally acceptable and representative of a new modern building.</p> <p>Setback to the street frontage is not applicable in this case.</p> <p>There are no listed elements to the rear of the residence however we do recognise that the stair landing window is of significance however as it can only be enjoyed by the occupants of the residence we have no issue with it being hidden by the addition.</p> <p>Once again I refer back to our arguments P1 (a) specifically article 22.2 of the Burra Charter. Exact colours are yet to be determined. As the building is already a strong brick colour we intend using natural anodised window frames, natural linings, and darker grey finishes to contrast with the brickwork. This I believe will have an opposite effect of highlighting the existing red brick residence.</p> |

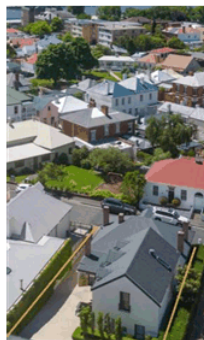
| | | |
|---|---|---|
| A3 No Acceptable Solution. | P3 Materials, built form and fenestration must respond to the dominant heritage characteristics of the place, but any new fabric should be readily identifiable as such. | <i>Performance Criteria P3 is satisfied by previous points above.</i> |
| A4 No Acceptable Solution. | P4 Extensions to existing buildings must not detract from the historic cultural heritage significance of the place. | <i>The significant part of this residence is surely the street façade and as argued above the rear addition has no impact on the cultural heritage significance of the place.</i> |
| A5 New front fences and gates must accord with original design, based on photographic, archaeological or other historical evidence. | 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. | <i>P5 has been addressed in the previously approved Development application.</i> |
| A6 Areas of landscaping between a dwelling and the street must be retained. | 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. | <i>P6 has been addressed in the previously approved Development application.</i> |

I have provided newer drawings to indicate how various elements to the rear wall are to be retained and reused as discussed in the various points above. We intend to leave the rear internal wall of the residence as natural brickwork (unpainted) as suggested by Heritage Tasmania.

Our view of the proposal is that it brings no harm to the existing heritage values and that the residence still remains a significant cultural and heritage building in the streetscape of Bathurst Street. There are many approved developments such as this to the rear of properties in Hobart (for example, Upper Level bedroom extension at 12 Francis Street, Battery Point, which is visible from the street) and I see no difference in the way this proposal should be viewed, particularly given the Master Bedroom extension is not visible as part of the streetscape.



12 Francis Street



This is a formal application contrary to Councils initial response recommending a formal PAE. We see value in discussions and meeting with Council an Heritage Tasmania (and other Heritage advice if considered appropriate) as part of any RFIs that may arise. However we need to move forward to obtain urgent Development Approval as construction with the approved building and plumbing permits is currently under way.

If you have any questions please call me on ☎ (03) 6223 6740

Yours Faithfully

A handwritten signature in black ink, appearing to be 'Monty East', with a stylized, flowing script.

Monty East
Director Design East Pty Ltd

design.EAST

Building design and interior architecture

STUDIO 153
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Email: admin@designeast.com.au
ABN 55 106 867 805

5 January 2023

HOBART CITY COUNCIL
GPO Box 503
Hobart
Tasmania 7001Att: **Mr Ben Ikin – Senior Statutory Planner.**Re: **Amendment to design of structure at rear of 171 Bathurst Street.**

Dear Sir,

Further to Council's letter and RFI of the 7th December 2022 (PLN-22-794 - 171 BATHURST STREET HOBART TAS 7000 - Additional Information Request) and my meeting with Council's Heritage officers I offer the following:-

Firstly I thank you for your considered response to the design and your efforts to offer a solution. I have discussed this and the solution I offered at our meeting to my clients and we have come to a position where we believe that there is more merit in maintaining the proposed addition over the recently approved works.

Heritage officers' solution - Place the proposed extension over the existing kitchen construction.

As access to the proposed bedroom and facilities would be required from the stair landing a new set of steps would be required to get to the higher level (over the existing kitchen ceiling level). These differences in level present construction issues and are not conducive to good flow through the space. The amount of floor area available in this area doesn't satisfy my clients' brief for a spacious and self-contained parents' retreat.

My solution – bedroom space over the recently approved works.

As per my sketch offered at our meeting and further developed in the attached drawing – the proposed work has been separated from the existing rear wall with a connection through the existing window on that wall.

The separation from the existing building is enough for the proposed extension to be viewed as a separate entity and we now propose that the roof between the existing wall and the proposed extension be glazed so that when in the downstairs room the whole of the existing rear wall of the front building can be viewed – including the stained glass window at the stair landing.

After much consideration we feel that the new "modern" design is maintained in the one area (over the previously approved modern extension – albeit replacement) and not spread over the whole of the back area. My client and I actually like the existing higher and lower level pitched roofs to the rear of the building and would wish to preserve them.

At this point I have had no discussion with Heritage Tasmania – however given their previous response to the present application I believe they would be supportive of the new design.

In response to your further RFI dated 24th January 2023 I have amended my previous correspondence to reflect the proposed amendment.

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. | | |
|--|---|--|
| Acceptable Solutions | Performance Criteria | Response |
| A1 No acceptable solution | P1 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; there are, environmental, social, economic or safety reasons of greater value to the community than the historic cultural heritage values of the place; (a) there are no prudent and feasible alternatives; important structural or façade elements that can feasibly be retained and reused in a new structure, are to be retained; (c) significant fabric is documented before demolition. (d) | <i>Although already approved I am responding to all demolition as part of this submission. Apart from the already approved demolition the only demolition in this amendment proposal is the removal of the brickwork below the existing first floor window to form the new door way to the rear first floor extension. The extent of brickwork to be removed is around 60 bricks.</i> <i>The existing sandstone sill will be reused as the threshold to the new opening. The existing sandstone lintol will remain in place.</i> <i>My clients bought this residence to live in as they appreciate the style and materials of the building however they want to make the residence suitable for modern day living. The changes we are making to the rear façade are minimal and will provide the necessary living spaces for my clients modern lifestyle.</i> <i>To put this in perspective the previous Planning Approval has allowed the internalisation of the exterior walls for the downstairs extension adjacent to the kitchen (the "Sunroom") and the removal of bricks to create a wide door in place of the window between the new Sunroom and the existing Dining Room for internal access purposes.</i> <i>As is all ways the case all existing removed elements such as the doors, windows etc will be documented, and where practical - be retained.</i> |

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 |

| Acceptable solutions | Performance Criteria | Response |
|--|--|---|
| A1 No Acceptable Solutions | P1 Development must not result in any of the following: loss of historic cultural heritage significance to the place through incompatible (a) design, including in height, scale, bulk, form, fenestration, siting, materials, colours and finishes; | <p><i>We feel in this case there is a strong argument to follow the recommendations in the "Burra Charter" and Heritage Tasmania's "Works Guidelines for historic heritage places"</i></p> <p><i>Article 22 – New work of the Burra Charter contains the following:-</i> 22.1 New work such as additions to the place may be acceptable where it does not distort or obscure the cultural significance of the place, or detract from its interpretation and appreciation.</p> <p><i>22.2 New work should be readily identifiable as such.</i></p> <p><i>As suggested by Heritage Tasmania the addition is subservient to the heritage building and not visible from the street.</i></p> <p><i>The addition is set back 500mm from the side boundary and 1500mm from the existing building and the height does not interfere with the existing roof eaves line.</i></p> <p><i>The addition to the rear of the residence in no way diminishes the historic cultural heritage significance of the place through loss of significant streetscape elements. The streetscape is completely untouched by the amended Planning application.</i></p> |
| | other items that contribute to (b) the significance of the place. | <p><i>The street scape was addressed and approved in the first Development Application.</i></p> |
| A2 No Acceptable Solution. | P2 Development must be designed to be subservient and complementary to the place through characteristics including: | |
| | (a) scale and bulk, materials, built form and fenestration; | <p><i>I refer back to our arguments in P1 (a)</i> <i>The scale and bulk are subservient to the existing residence. The materials and fenestration are proportionally acceptable and representative of a new modern building.</i></p> |
| | (b) setback from frontage; | <p><i>Setback to the street frontage is not applicable in this case.</i></p> |
| | (c) siting with respect to buildings, structures and listed elements; | <p><i>There are no listed elements to the rear of the residence however we do recognise that the stair landing window is of significance however as it can only be enjoyed by the occupants of the residence we have no issue with it being partially hidden by the addition.</i></p> |

| | | |
|---|---|---|
| | (d) using less dominant materials and colours. | <i>Once again I refer back to our arguments P1 (a) specifically article 22.2 of the Burra Charter. Exact colours are yet to be determined. As the building is already a strong brick colour we intend using natural anodised window frames, natural linings, and darker grey finishes to contrast with the brickwork. This I believe will have an opposite effect of highlighting the existing red brick residence.</i> |
| A3 No Acceptable Solution. | 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. | <i>Performance Criteria P3 is satisfied by previous points above.</i> |
| A4 No Acceptable Solution. | P4 Extensions to existing buildings must not detract from the historic cultural heritage significance of the place. | <i>The significant part of this residence is surely the street façade and as argued above the rear addition has no impact on the cultural heritage significance of the place.</i> |
| A5 New front fences and gates must accord with original design, based on photographic, archaeological or other historical evidence. | 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. | <i>P5 has been addressed in the previously approved Development application.</i> |
| A6 Areas of landscaping between a dwelling and the street must be retained. | 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. | <i>P6 has been addressed in the previously approved Development application.</i> |

If you have any questions please call me on ☎ (03) 6223 6740

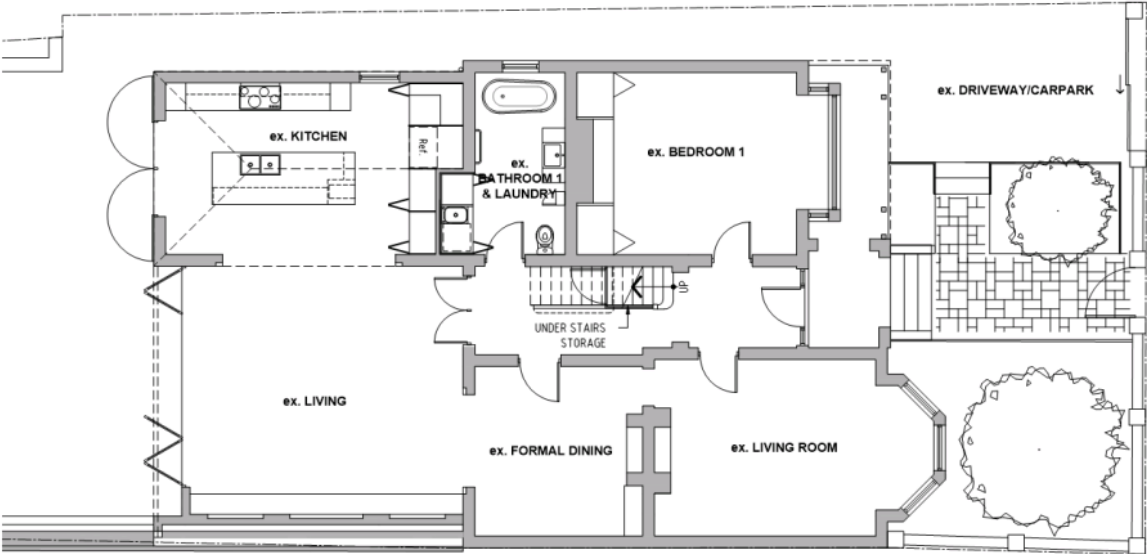
Yours Faithfully



Monty East
 Director Design East Pty Ltd

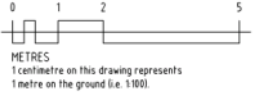
| LEGEND | |
|--------|-------------------------------------|
| MARK | DESCRIPTION |
| | EXISTING WALLS TO BE RETAINED. |
| | 90mm STUDWORK WALL (internal wall). |

| PROPOSED FLOOR AREA | |
|-------------------------------------|---------------|
| EXISTING GROUND FLOOR (USABLE) AREA | ± 159.00 sqm. |



 **EXISTING GROUND FLOOR PLAN**
1:100

NOTE:
AS PER PLANNING PERMIT PLN-22-14
AND AMENDED PLANNING PERMIT PAM-22-119.



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Web www.designeast.com.au
Accreditation No. CC1917 0

| SCALE | DRG NO. |
|---------------|-------------|
| 1:100 @ A3 | 5463 A04 |
| DRAWN | DATE |
| EJ | 25/11/22 |

| Project | PROPOSED ALTERATIONS AND ADDITIONS 171 BATHURST STREET, HOBART 7000 SAMUEL & JOSEPHINE FORBES-YOUNG |
|--|---|
| Drawing | PROPOSED GROUND FLOOR PLAN |
| design EAST registered trading name for design EAST Pty. Ltd | |

| ISSUE | DESCRIPTION | DATE | DRAWN |
|-------|--------------|----------|-------|
| A | PLANNING SET | 25/11/22 | EJ |

SHEET No. 4 OF 13

LEGEND

| MARK | DESCRIPTION |
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| | EXISTING WALLS TO BE RETAINED. |
| | 90mm STUDWORK WALL (internal wall). |

EXISTING FLOOR AREA

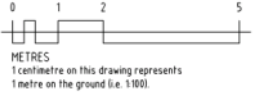
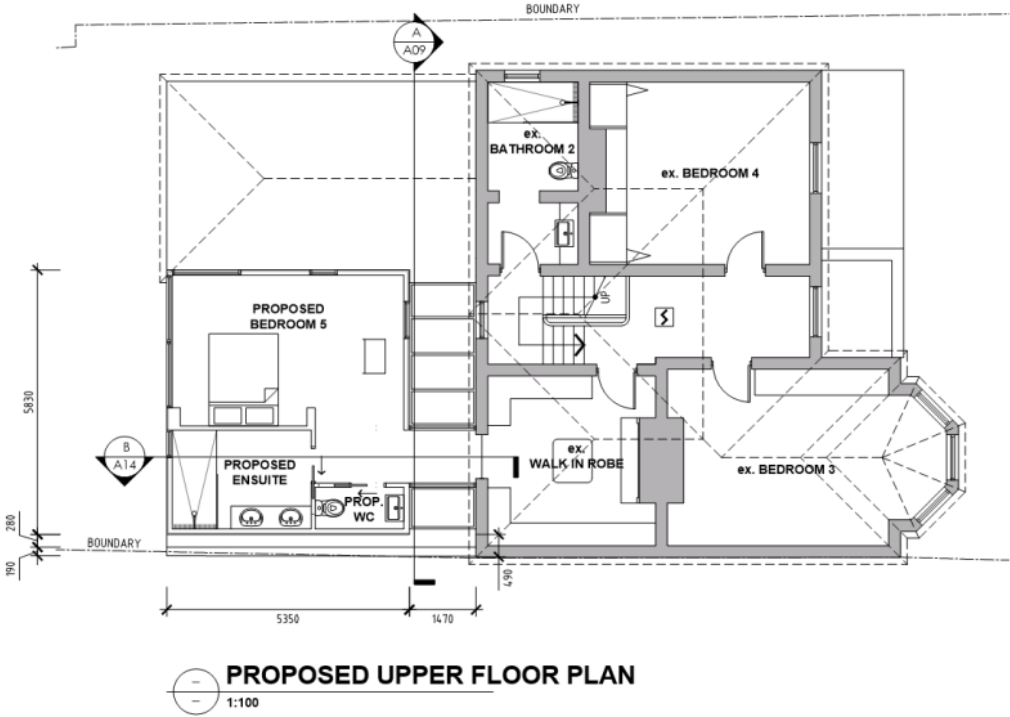
| | |
|------------------------------------|-----------------|
| EXISTING UPPER FLOOR (USABLE) AREA | = ± 192.50 sqm. |
|------------------------------------|-----------------|

PROPOSED FLOOR AREA

| | |
|------------------------------------|----------------|
| PROPOSED UPPER FLOOR (USABLE) AREA | = ± 30.00 sqm. |
|------------------------------------|----------------|

KEY

| MARK | DESCRIPTION |
|------|--|
| | PHOTOELECTRIC SMOKE ALARM (HARD WIRED) TO COMPLY WITH BCA 3.7.2 & AS 3786 (must be interconnected where there is more than one alarm). |



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Accreditation No. CC1917 0

SCALE: 1:100
@ A3
DRG. NO. 5463
DATE: 25/11/22
DRAWN: EJ

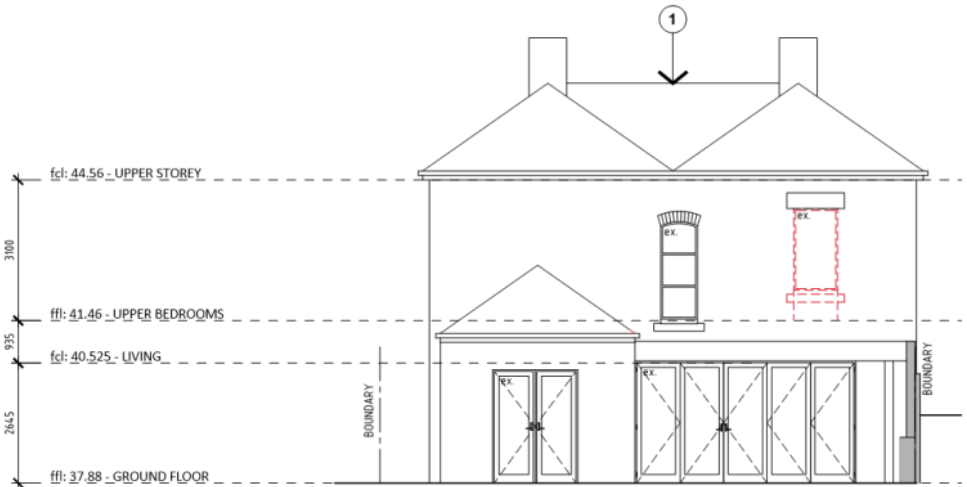
Project: PROPOSED ALTERATIONS AND ADDITIONS
171 BATHURST STREET, HOBART 7000
SAMUEL & JOSEPHINE FORBES-YOUNG
Drawing: PROPOSED UPPER FLOOR PLAN
design: EAST registered trading name for design: EAST Pty. Ltd.

| ISSUE | DESCRIPTION | DATE | DRAWN |
|-------|--------------|----------|-------|
| A | PLANNING SET | 25/11/22 | EJ |

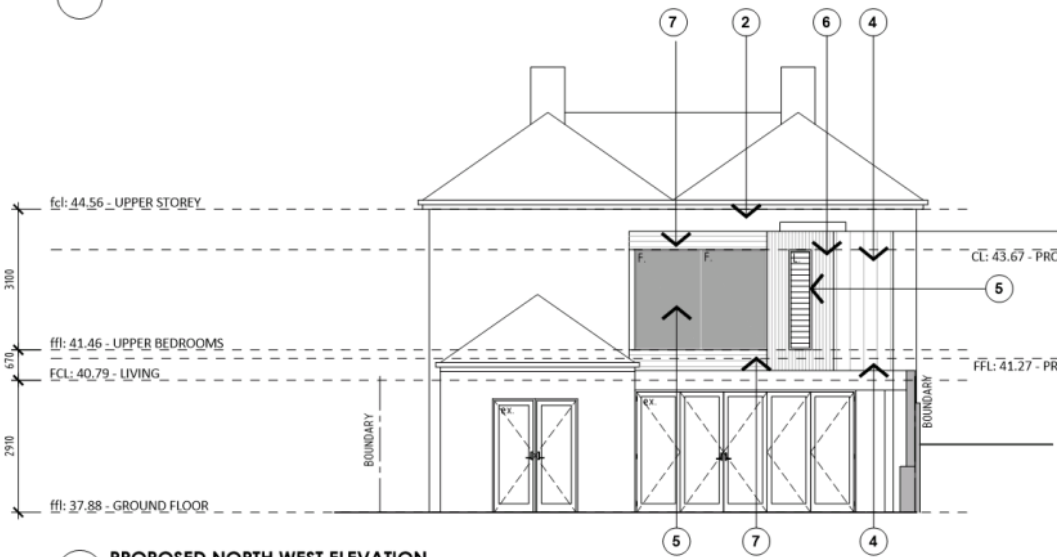
SHEET No. 5 OF 13

| EXTERNAL FINISHES | |
|-------------------|---|
| 1 | EXISTING DWELLING |
| 2 | PROPOSED EXTENSION |
| 3 | HARDIE-FLEX SHEETING TO 50mm RECESSED PANEL - PAINT FINISH LIGHT IN COLOUR. |
| 4 | METAL TRAY CLADDING |
| 5 | PROPOSED ALUMINUM FRAMED WINDOWS. FINISH: NATURAL ANODIZED. |
| 6 | VERTICAL BLACK BEAN 50 x 50mm BATTENS 50mm SPACINGS ON HARDIE-FLEX SHEET. |
| 7 | HORIZONTAL BLACK BEAN SHIP LAP BOARDING. DARK STAINED FINISH. |

| LEGEND | |
|--------|---------------------------|
| ex. | - EXISTING WINDOW / DOOR. |
| F. | - FIXED WINDOW. |
| L. | - LOUVRES |



EXISTING NORTH WEST ELEVATION



PROPOSED NORTH WEST ELEVATION

SHEET No. 6 OF 13

| ISSUE | DESCRIPTION | DATE | DRAWN |
|-------|--------------|----------|-------|
| A | PLANNING SET | 25/11/22 | EJ |

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| Project: | PROPOSED ALTERATIONS AND ADDITIONS 171 BATHURST STREET, HOBBART 7000 SAMUEL & JOSEPHINE FORRES-YOUNG |
| Drawn: | ELEVATIONS 01 OF 05 design EAST registered trading name for design EAST Pty. Ltd |

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| SCALE: | DRG NO: |
| 1:100 @ A3 | 5463 |
| DRAWN: | DATE: |
| EJ | 25/11/22 |

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| 153 Davey Street Hobart Tasmania 7000 Phone (03) 6223 6740 Email design@designeast.com.au Web www.designeast.com.au Accreditation No. CC19170 |
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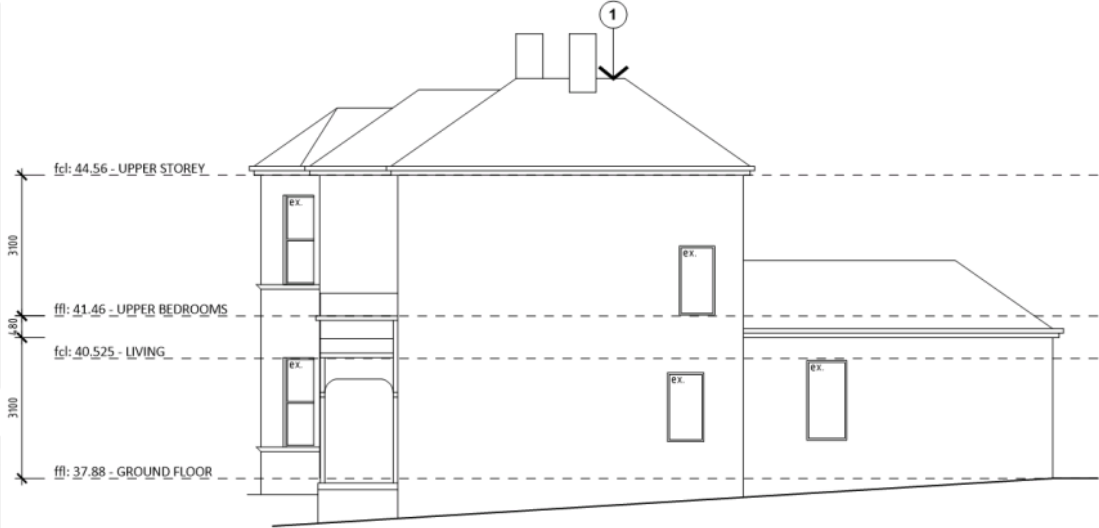
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EXTERNAL FINISHES

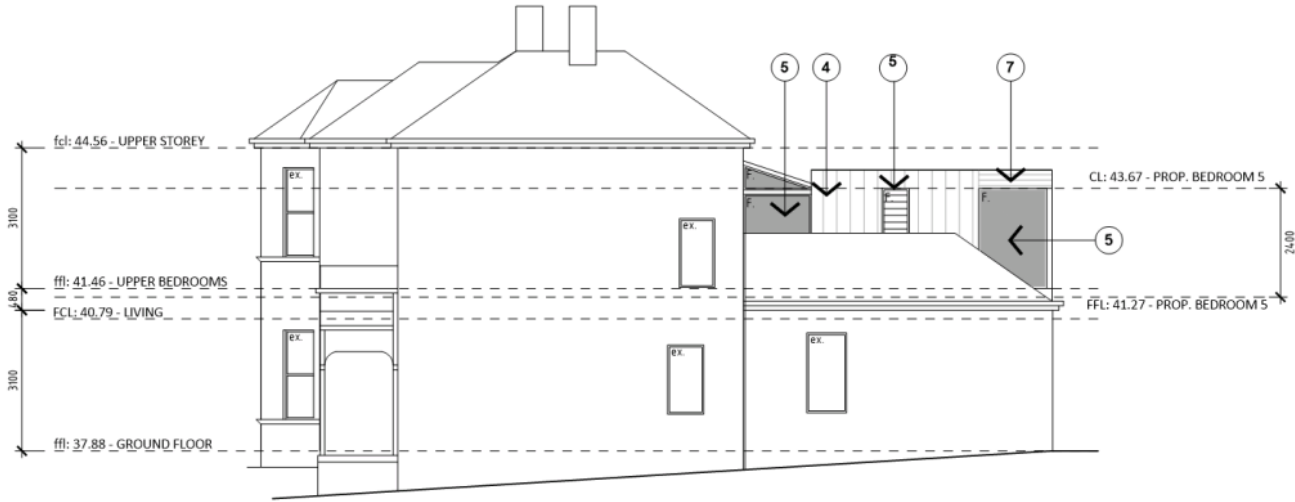
- 1 EXISTING DWELLING
- 2 PROPOSED EXTENSION
- 3 HARDIE-FLEX SHEETING TO 50mm RECESSED PANEL - PAINT FINISH LIGHT IN COLOUR.
- 4 METAL TRAY CLADDING
- 5 PROPOSED ALUMINUM FRAMED WINDOWS. FINISH: NATURAL ANODIZED.
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- 7 HORIZONTAL BLACK BEAN SHIP LAP BOARDING. DARK STAINED FINISH.

LEGEND

ex. - EXISTING WINDOW / DOOR.
F. - FIXED WINDOW.
L. - LOUVRES



EXISTING NORTH EAST ELEVATION



PROPOSED NORTH EAST ELEVATION

SHEET No. 7 OF 13

| ISSUE | DESCRIPTION | DATE | DRAWN |
|-------|--------------|----------|-------|
| A | PLANNING SET | 25/11/22 | EJ |

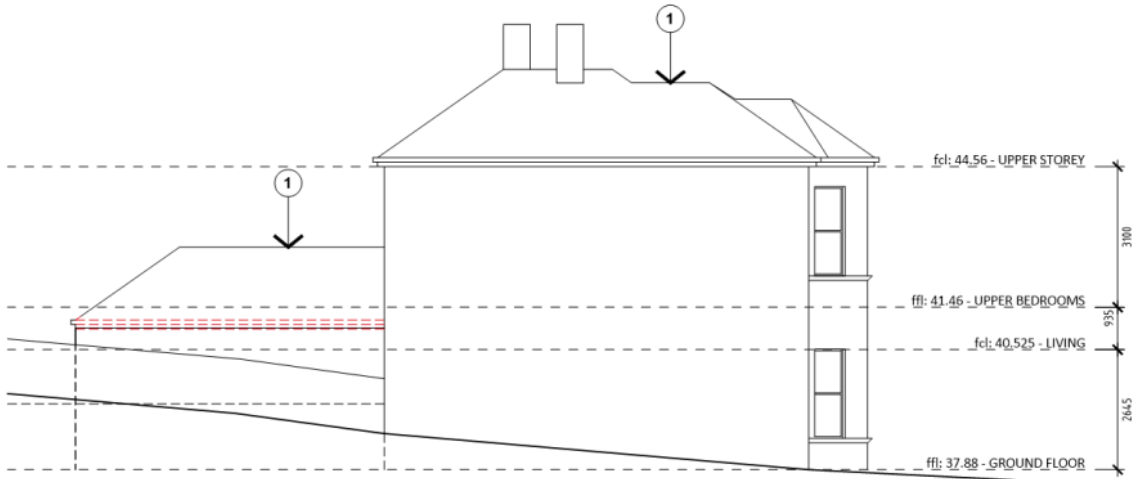
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| Project: | PROPOSED ALTERATIONS AND ADDITIONS 171 BATHURST STREET, HOBART 7000 SAMUEL & JOSEPHINE FORBES-YOUNG |
| Drawn: | ELEVATIONS 01 OF 05 design EAST registered trading name for design EAST Pty. Ltd |

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| DRG NO: | 5463 |
| SCALE: | 1:100 @ A3 |
| DATE: | 25/11/22 |
| DRAWN: | EJ |

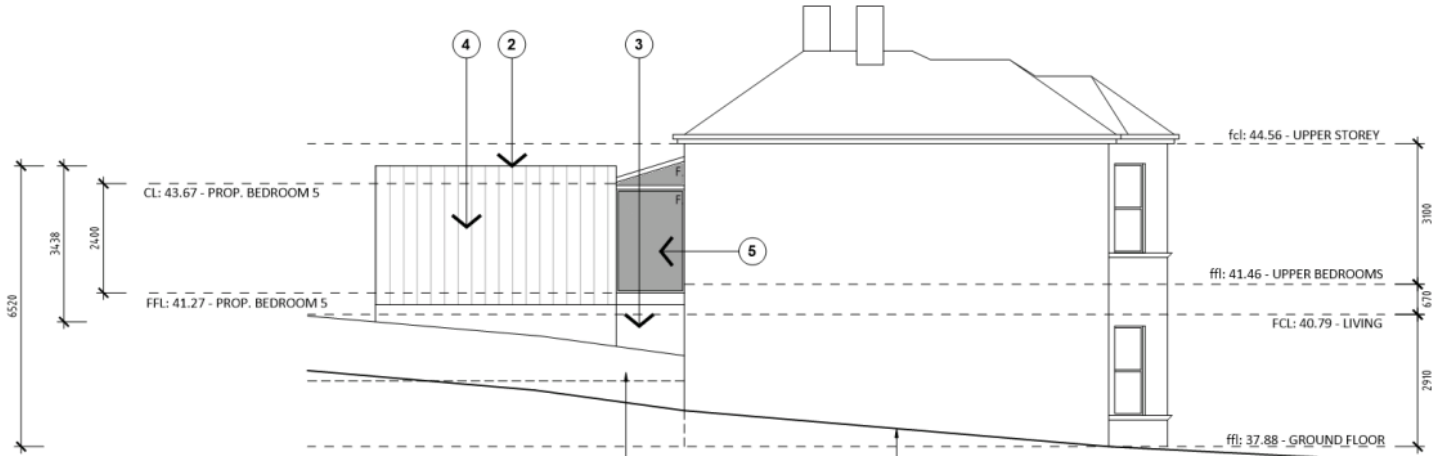
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| 153 Davey Street Hobart Tasmania 7000 Phone (03) 6223 6740 Email design@designeast.com.au Web www.designeast.com.au Accreditation No. CC19110 |
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| EXTERNAL FINISHES | |
|-------------------|---|
| 1 | EXISTING DWELLING |
| 2 | PROPOSED EXTENSION |
| 3 | HARDIE-FLEX SHEETING TO 50mm RECESSED PANEL - PAINT FINISH LIGHT IN COLOUR. |
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| LEGEND | |
|--------|---------------------------|
| ex. | - EXISTING WINDOW / DOOR. |
| F. | - FIXED WINDOW. |
| L. | - LOUVRES |



EXISTING SOUTH WEST ELEVATION



PROPOSED SOUTH WEST ELEVATION

SHEET No. 8 OF 13

| ISSUE | DESCRIPTION | DATE | DRAWN |
|-------|--------------|----------|-------|
| A | PLANNING SET | 25/11/22 | EJ |

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| Project: | PROPOSED ALTERATIONS AND ADDITIONS 171 BATHURST STREET, HOBBART 7000 SAMUEL & JOSEPHINE FORRES-YOUNG |
| Drawn: | ELEVATIONS 02 OF 05 design EAST registered trading name for design EAST Pty. Ltd |

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| DRG. NO: | 5463 |
| SCALE: | 1:100 @ A3 |
| DATE: | 25/11/22 |
| DRAWN: | EJ |

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Application Referral Cultural Heritage - Response

| | |
|----------------------------|--|
| From: | Nick Booth |
| Recommendation: | Proposal is unacceptable. |
| Date Completed: | |
| Address: | 171 BATHURST STREET, HOBART |
| Proposal: | Partial Demolition, Alterations, and Extension |
| Application No: | PLN-22-794 |
| Assessment Officer: | Adam Smee, |

Referral Officer comments:

This application relates to a late Victorian/early Federation (c.1890-1900) two storey brick built residential property set within its own plot with good sized rear garden given its inner city location and set slightly up from the street boundary. The site is individually Heritage Listed in Table E13.1 and also located in the Inner Hillside Housing/Bathurst Street Heritage Precinct (WH5) as defined within the *Hobart Interim Planning Scheme 2015*. The consideration of the buildings status as an individually heritage listed place and secondly as a contributing element within a wider Heritage Precinct are two different and distinctive issues which it should be noted are dealt with separately from each other. The Historic Heritage Code E13.0 applies.

Description

The subject property is a highly intact example of a red face brick townhouse, with asymmetrical front elevation containing two storey front bay window, distinctive arched and detailed porch, front verandah with highly decorated filigree ironwork and balustrade at first floor level along with sandstone detailing including quoins. To the rear, the building has a single storey half width wing with hipped roof. This partially encloses a rear 'courtyard' between the rear of the house and the garden typical of the traditional pattern associated with rear wings. This wing has been the subject of notable elements of demolition of external walls to facilitate the opening up of the space to larger windows and access to the courtyard. A lean-to open timber verandah that was previously attached to the wing has also been removed along with a large light weight infill addition with laserlite style roofing. At ground floor, the remaining rear elevation has also seen the removal of the original rear door and an original ground floor rear facing window, plus the removal of elements of the surrounding brick work to facilitate the opening up of the ground floor plan to the courtyard. Above this the rear elevation remains entirely unchanged and includes a timber sliding sash window serving a bedroom and a notable, highly decorated stain glass window that serves the principal staircase and landing.



Photo 1 Front Elevation. Source: Council image



Photo 2 - Rear elevation prior to recent alterations and extension. Source: Council image (dated 2007)

Relevant Planning History

This property has the following history that precedes the current application.

- A pre-application enquiry (PAE) was lodged in November 2011 (PAE-21-386) for a single storey ground floor extension with an angled roof and minor alterations within the first floor plus a swimming pool in the rear yard.
- A planning application (PLN-22-14) was lodged in January 2022 for a single storey ground floor extension with a modified roof (pyramid form), plus the conversion of the existing upstairs bedroom to an ensuite and a new front fence, landscaping and rear swimming pool. A permit was issued in April 2022.
- An amendment was lodged in July 2022 (PAM-22-22-119) reducing the pyramid roof to a lower form over the single storey rear extension and modifications to the rear pool area. A letter accompanying that application by the applicant reiterated the proposal would have little interference with the heritage fabric of the building. No additional demolition was proposed. A permit was issued in July 2022.
- In July 2022, Council received NBW-22-210 (notifiable building works plans) for the works approved so far.

- Start work notification and authorisation for building work issued in July 2022.
- In July 2022, Council received plans (CEP-22-109) for endorsement of the heritage conditions. Plans were endorsed July 2022.
- Start work notification and authorisation for plumbing work issues (PLM-22-91)
- In November 2022, Council received plans for a new application (PLN-22-794) - this application.



Photo 3 - Current rear elevation following approved demolition. Source: Council image (dated February 2023)

Proposal

Planning permission is sought for the erection of a second storey rear addition. The proposal would sit over and replace the roof of the yet to be constructed single storey rear addition approved under PLN-22-14. The structure would extend across more than half the width of the first floor elevation and be box like in appearance. The extension would be set slightly away from the main rear elevation of the house with access provided by a partially glazed linking corridor. This link would require the removal of the first floor sash bedroom window, its sill and part of its brick surrounds. The structure would sit in front but not encapsulate the staircase stain-glass window which would nonetheless be entirely hidden from view from the rear garden or be it retained within a gap between the original house and the proposed extension. Additional demolition of part of the roof of the existing rear wing would also be required to accommodate the new addition.

The structure is intended to be used as an additional bedroom with ensuite bathroom and would be wholly contemporary in appearance, utilising minimal modernist styling and detailing. It would appear flat roofed and would utilise large floor to ceiling glazing panels to the front and

inward facing return facing elevations and be clad predominantly in metal tray cladding with smaller panels of dark stained timber battens.

The proposal has been the subject of pre and post application discussion between the Council Officers and the Applicant, including discussions in March 2023 with consultant Graeme Corney, who has been employed by the Applicant to provide heritage advice. Mr Corney has provided a supporting document as part of the application and an analysis of these discussions and Mr Corney's statement are included within this report.

Relevant Planning Scheme Provisions

Heritage Place - 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.

No Acceptable Solutions

Performance Criteria –

P1 - 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.*

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.*

No Acceptable Solution.

Relevant Performance Criteria

P1 - 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.*

P2 - 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.*

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.

P4 - Extensions to existing buildings must not detract from the historic cultural heritage significance of the place.

Heritage Precinct

The property stands within the Inner Hillside Housing/ Bathurst Street Heritage Precinct (WH5) and is therefore subject to the heritage provisions dealing with works within a Heritage Precinct E13.8.1 P1 'Demolition' and E13.8.2 P1 and P3 'Building and Works other than Demolition'.

This precinct is characterised as being significant for reasons including:

- 1. The quality and quantity of Colonial and Victorian/Federation period housing stock represent the economic boom period of the early to late nineteenth/early twentieth centuries.*
- 2. A large number of individual buildings are intact examples of early to late nineteenth/early twentieth century architecture of high quality, many with landmark qualities.*
- 3. The section of continuous two and three-storey early to late Victorian facades constructed from a variety of materials and located along an eastern section of Bathurst Street create a distinctive visual impression and outstanding streetscape qualities.*
- 4. The section of continuous single-storey Colonial/Victorian Georgian residences constructed from brick and sandstone and located along a western section of Bathurst Street, create a distinctive visual impression and strong streetscape.*
- 5. The small number of intact nineteenth/early twentieth century industrial structures located along Harrington Street are physical and working reminders of early Hobart industry.*
- 6. The social significance of sections of streetscape and individual items to the local and broader community.*

As with all applications relating to Heritage Precincts, it is primarily only those works visible from the public realm that are judged to be able to have an impact upon the characteristics of a Precinct. In this instance it is noted that all of the proposed works would be to the rear of the property and entirely hidden from public view by the mass of the building and the immediate neighbouring properties.

As such, it is considered that the proposed works would have no impact upon the visual characteristics of the Precinct and that in this instance, Provisions E13.8.1 P1 and E13.8.2 P1 and P3 for demolition and new work are satisfied.

Analysis – Proposed Demolition

With regard to the proposed demolition, it is noted that the building has remained almost entirely intact with little in the way of alterations or modifications with the exception of a 2007 application for a rear Vergola at ground level in the courtyard space shown above in Photo 2. The approved demolition works (PLN-22-14) has already commenced and resulted in the removal of a rear ground floor window and door are considered unfortunate but not so

detrimental to the historic cultural heritage significance of the place to warrant refusal at that time. The current application seeks the further demolition of original fabric through the removal of the first floor rear facing timber sash window, internal skirting and around 60 bricks of the surrounding wall in order to create an access through to the proposed extension, the threshold of which is proposed to utilise the original sandstone sill.

As set out above, E13.7.1 P1 'Demolition' states that *'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'*. In this instance, it is considered that the principal feature of note proposed for demolition is the original timber sliding sash window and its associated architraves and skirting. Whilst the stain-glass window would be effectively removed visually, in that it would no longer play a role within the visual characteristics of the rear elevation, it is considered that this does not constitute demolition.

With regard to the above, it is considered that the first floor timber sash is of good quality and is both original and unaltered. The interior moulded architraves that surround the window are elaborate and unaltered, which in part reflects the intended high 'status' of the property. The removal of the matching ground floor window and the rear door means that this window is the sole surviving original plain glass window to the rear elevation. It can therefore be argued that this places a greater emphasis on its protection. In this instance therefore, it is considered that individually and cumulatively, the removal of the sash window and its associated features represents the loss of significant fabric.

Given the above, in order to meet the provisions of the Scheme, it must be demonstrated that **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.*

It is noted that in the supporting documentation, the Applicant has chosen not to address how the proposal would satisfy point (a).

Following on from discussions with the Applicant prior to advertising, Heritage Officers are satisfied that as required under (b), there is a 'prudent and feasible alternative' for a second storey rear extension than that currently proposed (discussed later in this report).

As required by (c) and (d), the Applicant has stated in their supporting documentation that *'elements such as the doors, windows etc will be documented, and where practical - be retained'*. It is noted however that no plans or additional supporting documents in relation to the re-use of the window have been provided.

It is therefore considered that the Applicant has failed to demonstrate the exceptional circumstances which would allow the resulting loss of historic cultural heritage values as required under (a), (b), (c) and (d) as set out above.

It is therefore considered that the proposal would fail to comply with the provision E13.7.1 P1 of the Scheme relating to the demolition in whole or part of Heritage Places.



Photo 4 - Bedroom window proposed to be demolished. Source: Council image (dated February 2023)

Analysis – Proposed Extension

With regard to provisions of the Planning Scheme, E13.7.2 'Buildings and Works other than Demolition' to Heritage Places requires that development be 'sympathetic', 'subservient' and 'responsive' to the historic cultural heritage of the place.

It is considered reasonable to interpret the above as being that modern additions to a heritage place should seek to be in 'accordance' and 'agreement' with the characteristics of the original building, whilst also being clearly modern. It is considered that the intention of the Scheme is to ensure that new work avoids the use of 'pastiche' where possible, to ensure a clear distinction between old and new can be clearly understood. However, it is also considered that the terms 'sympathetic', 'subservient' and 'responsive' require that new works still spring and draws upon the original architecture of the place, potentially subtly reinterpreting the architectural language to distinguish it from the original building. This is to ensure that proposals that have an 'arbitrary' design, that is, one that has no clear link to the original architecture of the heritage place are avoided. To be subservient, it must also play a secondary role, maintaining the prominence of the original. When making assessment in such instances, it should be noted

that the Scheme does not contain any acceptable solutions and as such the stated performance criteria must be satisfied.

It is noted that the box-like form of the proposed development does not occur within the style and form of the architecture of the original building and would not appear to draw from the building or its characteristics in any discernable way for its design.

The large structural glazed panels that make up a substantial part of the rear and return elevation bear no relation to the timber sliding sash windows of the original building in either form, rhythm or adherence to 'golden ratio' proportions.

The proposed use of metal tray cladding as the primary elevational treatment is not used anywhere else to the original building, nor is it in any way associated with residential development of this type and period. Similarly, the use of dark stained timber battens and the application of elevational treatments into distinct panels of differing materials is not found anywhere else to the elevation of building which is entirely constructed of brick with small elements of sandstone.

The structure would stand directly in front of the principal part of the buildings rear elevation at first floor level, largely obscuring the brickwork, fenestration pattern and views of the high quality and distinctive stain glass window from the garden. Its distinctive architectural 'point of difference' would make it a highly prominent and largely domineering element to the rear elevation and its location above the former courtyard would run contrary to the traditional 'solid/void' rhythm associated with buildings constructed with rear wings.

Given the above, it is therefore considered that the proposal would fail to be sympathetic, subservient or responsive to the dominant characteristics of this heritage listed place. Due to its incompatible design, form, fenestration, siting materials and finishes, the proposal would detract from and lead to a loss of the historic cultural significance of the place. The proposal would also fail to be complementary to (that is, to 'complete') the place due to its built form, siting (by virtue of it obscuring the pattern and form of the rear elevation and prominent listed element in the form of the stain-glass window), proposed materials and the proposed fenestration.

It is therefore considered that the proposed extension would fail to comply with E13.7.2 P1 (a); P2 (a),(c) and (d); P3 and P4.



Photo 5 - Stain glass window serving stairs and landing. Source: Council image (February 2023)



Photo 6 - Stain glass window detail. Source: Council image (February 2023)
Pertinent Pre-application Discussions

Prior to the submission of the current planning application, a Planning Advice Enquiry was submitted to the Council. This showed a similar set of proposals to the current application in terms of form, location, fenestration and materials, but which acted as a direct extension, omitting the glazed link and encapsulating the stain glass window as an internal feature of a proposed en-suite bathroom. At a meeting at the Council offices with Heritage Officers, the Applicant was advised that such a proposal was unlikely to comply with the heritage provisions of the Scheme.

As part of those discussions, the Applicant was advised that an alternative proposal which sought to build upon the existing wing, making it a two storey element, would be given more preferable consideration. It was advised that this would avoid the removal and encapsulation of the two rear facing windows, would retain the traditional solid/void 'wing' pattern and would retain the prominence of the original rear elevation. It was advised that additional demolition or extension of the wing to accommodate an upper floor extension would likely not be considered as constituting the loss of significant fabric due to the wing having been already substantially altered under the current and on-going approved works. The Applicant chose not to pursue this

advice and submitted the current application that retained the fundamentals of the initial design, but which stepped part of the extension away from the rear elevation in order to retain the stain-glass window as an exterior feature.

Response to Submitted Supporting Documentation

Mr East's letter dated 5th January 2023.

With regard to compliance with E13.7.1 P1 Demolition, Mr. East states that only the demolition proposed under the current application is pertinent which he considers to be minimal. In response, it is considered that the consideration of applications must include the cumulative impact of past works of demolition in order to determine the degree and relative importance of surviving elements. This also deters a 'slice by slice' scenario in which multiple applications for small elements of demolition result in cumulative substantial loss of fabric.

As set out above, it is considered that the loss of the rear bedroom window will constitute the loss of significant fabric. Mr. East does not provide any comment as to why the proposal would comply with the tests set out in the Scheme other than the intended documentation of fabric before demolition and its retention where possible, although no plans showing such a retention have been submitted.

With regard to compliance with E13.7.2 'Buildings and Works other than Demolition', Mr. East references recommendations in the "Burra Charter" and the Heritage Tasmania's "Works Guidelines for historic heritage places". It should be noted that the *Hobart Interim Planning Scheme 2015* does not reference nor afford any weight to these external documents. Determinations can therefore only be made on the basis of the provisions of the planning scheme.

Mr. East contends that the parts of the building which should be considered as significant are primarily those visible solely from the street. Whilst he acknowledges that the stain glass window is significant, he is of the opinion that as the proposed development would occur to the rear, the development and the associated obscuring of the stain-glass window would only impact the owners and not the cultural heritage significance of the place.

It should be noted that in considering proposals relating to Heritage Places, the Scheme makes no reference to the acceptability of proposed alterations based on visibility or whom would be impacted by the proposal. This point has been addressed by The Resources Management and Planning Appeal Tribunal on several occasions, most pertinently in the determination relating to the refusal of an extension to 53 Runnymede Street, Battery Point. The decision noted;

"It misconceives the Scheme requirement for an assessment of this issue. The Scheme does not require an assessment of the matter based on views, visibility or viewpoints. Rather it requires a comparison of built forms, as the Tribunal noted in Healey. The purpose of this provision is to prevent development which is not subservient and complementary; not one which is intended to prevent only those built forms which can be seen, but to otherwise allow a development to escape assessment against this criterion. That would defeat its purpose and the objective of this part."
(Paragraph 38)

"Therefore, the proposition that "it is not incompatible if it is not seen" must be rejected if the objectives articulated within the Scheme and at the heart of the Heritage Code are to be maintained." (Paragraph 39)

S Solvyns v Hobart City Council & Ors [2017] TASRMPAT 8 – 119/16P

Given the above, the degree of visibility of the proposed alterations to a Heritage Listed Place from the public realm, which is articulated in the applicant's supporting documentation is not relevant.

With regard to materials and fenestration, Mr East states that '*The materials and fenestration are proportionally acceptable and representative of a new modern building.*' The property in question is not in the modernist style and as stated above, whilst the Scheme requires that new fabric be identifiable as such, materials, built form and fenestration must first respond to the dominant heritage characteristics of the place. The use of modern built forms, materials and fenestration is therefore not in of itself sufficient in meeting the provisions of the scheme, and that to avoid 'arbitrary' design, new fabric must spring from and relate to the character of the place. As previously stated, it is considered that the proposed development does not satisfy this requirement of the Scheme.

Mr. East notes in his covering letter that the alternative proposal of adding an additional storey to the rear wing as suggested by Council Officers would require additional steps from the stair landing to the new bedroom, stating that this difference in levels '*are not conducive to good flow through the space.*' In response, it is noted that from the stair landing, it is already necessary to climb four additional steps to reach the top landing in order to access the existing bedrooms and the bedroom of the current proposal. It is therefore considered that adding additional steps from the staircase landing would merely replicate a situation that already exists.

Statement of Mr. Graeme Corney, heritage consultant dated 7th March 2023.

Mr. Corney is of the opinion that the retention of the stain glass window is sufficient in meeting the provisions of the Scheme. In response, it is considered that the window and its brick surrounds are a significant feature within the rear elevation of the building, and that in common with the first floor bedroom window identified for demolition, speak directly to both the building's residential use and the grandness of its detailing and fabric. Although its retention is welcomed, the subsequent obscuring of the window by placing a solid extension in front of it would remove the ability to read the window as part of the rear elevation, removing the contribution it makes to the special characteristics of the place.

Mr. Corney is of the opinion that the Council should not adopt The Resources Management and Planning Appeal Tribunal's interpretation of the term 'complimentary to' to be 'to complete' an existing building and describes this interpretation as 'ridiculous' and 'unworkable'.

The interpretation of the word 'complementary' has been addressed by The Resources Management and Planning Appeal Tribunal most pertinently in the determination relating to the refusal of solar panels to 19-21 Castray Esplanade. The decision noted;

38. The Tribunal uses the notion of "completeness" as a concept synonymous with "complement", to convey the idea that the works will make whole or complete the place....

The idea of doing that work to bring balance back to the overall structure sits with the concept of complementing and contributing to the cultural significance, character and appearance of the place because it restores a part of it.

James Richard Gandy v Hobart City Council and Tasmanian Heritage Council [2016] TASRMPAT 36 - 74/16P

It is considered that the role of the Resources Management and Planning Appeal Tribunal is in part to judge if Planning Authorities are correctly interpreting and enacting the Provisions of their own Planning Scheme. Here the Tribunal clearly state that the correct interpretation of

'complementary' is to 'complete'. Whilst Mr Corney may disagree with this interpretation, it is considered that it is the Tribunal's opinion that holds weight in this instance.

The alternative proposal suggested by Officers as part of the pre-application discussions to consider building a second storey above the existing wing, would have had the advantage of re-establishing the original 'solid/void' pattern of the wing massing, and '*bring balance back*' to the rear elevation. In contrast, it is considered that the current proposal confuses and erodes the original pattern of massing to the point where it is no longer discernable. It is therefore considered that under the interpretation set out by the Tribunal, the proposal would fail to be complementary to the heritage listed place.

Mr. Corney is of the opinion that the alternative proposal put forward by the Heritage Officers would result in the greater loss of original fabric and thus would have a greater heritage impact than the current proposal. In response, it is considered that impact from loss of original fabric is not solely based on degree, but on level of significance attached to the fabric in question. In this instance, it is considered that the wing has already been the subject of notable alteration and demolition and that its principal contribution to the character of the building is its siting and massing as a recognizable 'wing'. Unlike the original rear windows, the roof and surviving brick work of the wing as individual elements are not considered to be particularly noteworthy. As such, it is considered that the demolition in part or whole of the rear wing to accommodate a two storey rear wing that re-used as much of the original brickwork and potentially re-established the roof form of the existing wing would have far less impact upon the heritage characteristics of the place than the demolition of the bedroom window and the obscuring impact upon the stain glass window serving the staircase and landing.

Response to Representations

Three (3) representations have been received regarding the proposed development, all of whom object to the proposal. Of these representations, two (2) object on the grounds of non-compliance with the heritage provisions of the Planning Scheme.

Comments can be summarised and responded to as follows;

- a) In relation to E13.7.2 Buildings and Works other than Demolition: *'We submit that the proposed development is neither sympathetic nor appropriate and will cause a loss of historical cultural significance to the place. The design is incompatible; the height, scale, bulk, form, fenestration, siting, materials, colours, and finishes are inappropriate and not subservient to the historic values of the place. Nor do the materials, built form and fenestration respond to the dominant heritage characteristics of the place.'*

Response - It is considered that the above comments largely reflect the heritage concerns expressed in this report.

- b) *'The application fails to demonstrate the proposed development will not result in loss of historic cultural heritage significance to the place'*

Response - It is considered that the above comments largely reflect the heritage concerns expressed in this report.

- c) *'The extension's use of a skillion roof and large anodised aluminium framed windows are in stark contrast to the traditional gable forms and fenestration of the existing heritage place.'*

Response - It is considered that the above comments relating to fenestration largely reflect the heritage concerns expressed in this report.

d) *Support is voiced for an alternative proposal that relocates the proposed first floor Bedroom to above the ground floor kitchen and amends the design to include a gable roof over the first floor addition and which matches the scale, bulk and form of the existing heritage place, together with fenestration, materials, colours and finishes that are subservient and complementary to the existing heritage place and surrounding buildings.*

Response - It is considered that the above comments largely reflect the advice provided to the Applicant by Heritage Officers in pre-application discussions.

e) *In relation to E13.8.2 'Buildings and Works other than Demolition: 'The application fails to demonstrate the proposed development will be sympathetic to the historic cultural heritage significance of the precinct, due to the proposed form and fenestration, siting, materials, colours and finishes of the development being in stark contrast to the character of surrounding buildings and area.'*

'The Planning Authority is therefore required to refuse to grant a permit.

Response – As set out in the body of this report, it is noted that all of the proposed works would be to the rear of the property and entirely hidden from public view by the mass of the building and the immediate neighbouring properties.

As such, it is considered that the proposed works would have no impact upon the visual characteristics of the Precinct and that in this instance, Provisions E13.7.1 and E13.7.2 are satisfied.

Conclusion

It is considered that the proposal, fails to comply with the provisions of E13.7.1 'Demolition' P1 and E13.7.2 'Buildings and Works other than Demolition' P1 (a), (b), (c) and (d); P2 (a), (c) and (d); P3; and P4 of the *Hobart Interim Planning Scheme 2015*.

The recommendation therefore is that the application be refused.

Reasons for Refusal

1. The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.1 A1 or P1 (a), (b), (c) and (d) of the *Hobart Interim Planning Scheme 2015* because the proposed demolition will result in the loss of significant fabric that contributes to the historic cultural heritage significance of the place and it has not been demonstrated: that there are environmental, social, economic or safety reasons of greater value to the community than the historic cultural heritage values of the place; or that there are no prudent and feasible alternatives; important elements are not retained and significant fabric is not documented.

2. The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.2 A1 or P1 (a) of the *Hobart Interim Planning Scheme 2015* because its incompatible design in terms of height, scale, bulk, form and siting will result in loss of the cultural heritage significance of the heritage listed place.

3. The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.2 A2 or P2 (a), (c) or (d) of the *Hobart Interim Planning Scheme 2015* because it will not be subservient and complementary to the listed place due to its bulk, scale, materials, built form, setback and siting with respect to listed elements and used of

materials and colours.

4. The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.2 A3 or P3 of the *Hobart Interim Planning Scheme 2015* because it does not respond to the dominant heritage characteristics of the listed place.

5. The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.2 A4 or P4 of the *Hobart Interim Planning Scheme 2015* because the extension to the existing building detracts from the historic cultural heritage significance of the heritage listed place.

Nick Booth
Heritage Officer
20 March 2023

Reviewed
Sarah Waight
Senior Cultural Heritage Officer
20 March 2023

design.EAST

Building design and interior architecture

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14 March 2023

HOBART CITY COUNCIL
GPO Box 503
Hobart
Tasmania 7001Att: **Mr Ben Ikin – Senior Statutory Planner.**Re: **Amendment to design of structure at rear of 171 Bathurst Street.**

Dear Sir,

Please find attached the following documentation:-

- Amended drawings of plans and elevations to the first floor level at the rear of 171 Bathurst street.
- Minutes to a meeting held on the 7th March 2023 with Graeme Corney - Heritage Consultant, councils Heritage Officers, and myself.
- Heritage Analysis.

Of special interest is the following:-

- The wall to the driveway of 173 Bathurst Street has been moved to 900mm from that boundary, and
- The external wall finishes have been modified to present a simpler configuration of finishes.

Would please advise of any other requirements you may have in including this documentation in the present application

If you have any questions please call me on ☎ (03) 6223 6740

Yours Faithfully

**Monty East**
Director Design East Pty Ltd

**HERITAGE ANALYSIS OF AMENDED
PROPOSAL AT 171 BATHURST STREET** 7 March 2023

I have undertaken an analysis of the heritage impacts of the amendment proposed for 171 Bathurst Street, Hobart. This analysis accompanies that proposal and should be considered by Council.

The context of this submission is that a meeting took place on 7 March 2023 between Monty East and Graeme Corney representing the client and Nick Booth and Sarah Waite representing Council.

Council Officers opined that the current amendment proposal will not be supported because:

- (a) The rear stair stained glass window will be obscured from the outside
- (b) The original pattern of rear massing will be obscured
- (c) The combination of demolition from the previously approved DA when added to the further demolition proposed for the amendment amounts to too much demolition
- (d) The proposed upper floor extension is not 'complimentary to' the existing house

As an alternative Council Officers have proposed a second floor addition above the kitchen.

Mt response to Council Officers was as follows:

- (a) The most important treatment of the stained glass window is that it be retained and that it be seen from the inside with light feeding in behind it. This has been achieved. Stained glass windows are commonly covered by Perspex which usually conceals them from external viewing.
- (b) The original pattern of single storey rear construction (like 173 Bathurst) will continue to be demonstrated clearly with this proposal. The alternative proposed by Council to change that original single storey rear to two storeys will change and confuse the original pattern of rear massing.
- (c) The previously approved demolition should not be considered in deciding this application. This application stands anew. There is nothing in the planning scheme to allow Council to consider the previously approved demolition as part of this application.
- (d) A poor previous decision of the planning tribunal interpreted the term 'complimentary to' to be 'to complete' the existing building. Although a ridiculous and unworkable interpretation Council Officers now refer to that decision to refuse anything overly modern in appearance. My comment to council was that we may revisit the appearance of the first floor to make it more complimentary.
- (e) My response to Council's alternative proposal is that it will change and confuse the original pattern of rear massing. That alternative will also require the original fabric of the existing roof frame over the kitchen to be altered. The combination of removal of original fabric together with the change to the historical pattern of rear massing make the council alternative have a greater heritage impact than the current proposal.

I advised council that if I wrote a heritage brief for the proposed rear extension it should require the following:

- (a) The design should be below the existing first floor eaves;
- (b) The brick corner of the existing single storey rear wing should remain visible;

(c) There should if possible be a glass or similar spacer between the existing rear wall and the proposed extension; and

(d) The new design should not be fake old, it should be clearly contemporary.

In my view the current proposal satisfies all of those requirements.

My summary comments to council are as follows:

- The proposal in dealing with the rear stair stained glass window is appropriate.
- The Council proposal would have a greater heritage impact because it requires more heritage fabric to be altered and will change/confuse the original rear massing -which will otherwise be easily readable by the applicant's proposal.
- I have recommended to my client that the external materials of the elevations of the first floor proposal be changed towards a more complimentary solution. In all other respects the proposal is in my view appropriate from a heritage perspective.



Graeme Corney
architect and heritage consultant

I am an architect specializing in heritage work since 1993. I am a Winston Churchill Fellow studying heritage issues at the University of York, England in 1999 and in Germany, France and Italy.

I was the Senior Heritage Advisor to the Tasmanian Heritage Council for its first 10 years of operation and was responsible for the entry of over 5,000 places on the Tasmanian Heritage Register and all of the process for the Tasmanian Heritage Council dealing with Works Applications. I was responsible for recommendations for over 1,000 Works Applications to the Tasmanian Heritage Council.

I am a member of the international conservation organization UNESCO.

**MEETING WITH COUNCIL HERITAGE OFFICERS
FOR PROPOSAL AT 171 BATHURST STREET** 7 March 2023

Present: Monty East, Graeme corney for applicant
Nick Booth and Sarah Waite for Council

GC began the discussion suggesting the following process:

- 1 WILL THE PROPOSAL CAUSE AN UNACCEPTABLE HERITAGE IMPACT?
if yes,
- 2 WHAT IS THE UNACCEPTABLE HERITAGE IMPACT?
- 3 DOES AN ALTERNATIVE EXIST THAT CAUSES NO (OR AN ACCEPTABLY LOW)
HERITAGE IMPACT
 - either a variation to the proposal or a different proposal

Council response to 1:
Yes

Council response to 2:

- (a) The stained glass window will be obscured from the outside
- (b) The original pattern of rear massing will be obscured
- (c) The combination of demolition from the approved DA when added to the further demolition proposed for the amendment amounts to too much demolition
- (d) The proposed upper floor extension is not 'complimentary to' the existing house

Council response to 3:
Council proposes a second floor addition above the kitchen as an alternative

GC response given to Council heritage officers:

- 2(a) The most important treatment of the stained glass window is that it be retained and that it be seen from the inside with light feeding in behind it. This has been achieved. Stained glass windows are commonly covered by Perspex which usually conceals them from external viewing.
- 2(b) The original pattern of single storey rear construction (like 173 Bathurst) will continue to be demonstrated clearly with this proposal. The alternative proposed by Council will change and confuse the original pattern of rear massing.
- 2(c) The previously approved demolition should not be considered in deciding this application. This application stands anew. There is nothing in the planning scheme to allow Council to consider the previously approved demolition as part of this application.
- 2(d) A poor previous decision of the planning tribunal interpreted the term 'complimentary to' to be 'to complete' the existing building. Although a ridiculous and unworkable interpretation Council officers now refer to that decision to refuse anything overly modern in appearance. My comment to council was that we may revisit the appearance of the first floor to make it more complimentary.
- 3 The proposed Council alternative will change and confuse the original pattern of rear massing. That alternative will also require the original fabric of the existing roof frame over the new kitchen to be

altered. The combination of removal of original fabric together with the change to the historical pattern of rear massing make the council alternative have a greater heritage impact than the current proposal.

GC advised council that if I wrote a heritage brief for the proposed rear extension it should require the following:

- (a) The design should be below the existing first floor eaves;
- (b) The brick corner of the existing single storey rear wing should remain visible;
- (c) There should if possible be a glass or similar spacer between the existing rear wall and the proposed extension; and
- (d) The new design should not be fake old, it should be clearly contemporary.

In my view the current proposal satisfies all of those requirements.

My summary comment to council was as follows:

- The proposal in dealing with the stained glass window is appropriate.
- The Council proposal would have a greater heritage impact because it requires more heritage fabric to be altered and will change/confuse the original rear massing -which will otherwise be easily readable by the applicant's proposal.
- I intend recommending to my client that the external materials of the elevations of the first floor proposal be changed towards a more complimentary solution. In all other respects the proposal is in my view appropriate from a heritage perspective.

If an amendment is sent to Council modifying the elevations of the first floor extension, I recommend that it be accompanied by my attached heritage analysis.

SHEET No. 1 OF 14

| PROPOSED ALTERATIONS & ADDITIONS at 171 BATHURST STREET HOBART, 7000 for SAMUEL & JOSEPHINE FORBES-YOUNG | | DE JOB # 5463 |
|---|----------------------------------|--------------------------|
| ISSUE: PLANNING SET - 15 MARCH 2023 | | |
| DWG. No. | DRAWING | ISSUE |
| 5463 - A01 | DRAWING INDEX | A |
| 5463 - A02 | SITE PLAN | A |
| 5463 - A03 | EXISTING & DEMOLITION FLOOR PLAN | A |
| 5463 - A04 | PROPOSED GROUND FLOOR PLAN | A |
| 5463 - A05 | PROPOSED UPPER FLOOR PLAN | A |
| 5463 - A06 | ELEVATIONS 01 OF 03 | A |
| 5463 - A07 | ELEVATIONS 02 OF 03 | A |
| 5463 - A08 | ELEVATIONS 03 OF 03 | A |
| 5463 - A09 | SECTION A-A | A |
| 5463 - A10 | SECTION B-B | A |
| 5463 - A11 | SECTION C-C | A |
| 5463 - A12 | SHADOW DIAGRAM - WINTER | A |
| 5463 - A13 | SHADOW DIAGRAM - SUMMER | A |
| 5463 - A14 | SHADOW DIAGRAM - EQUINOX | A |

| GENERAL INFORMATION | |
|-------------------------------|---------------------------------------|
| Accredited Building Designer: | Monty East |
| Accreditation Number: | CC 1910 |
| Land title reference number: | C.T. 150160/1 |
| Site area: | 553 m ² +/- |
| Total floor area: | 290m ² +/- |
| Site assessment by: | - |
| Wind classification: | - Site Classification to AS 4055-2012 |
| Soil classification: | - Site Classification to AS 2870-2011 |
| Climate zone: | 7 |

IMPORTANT

1. USE WRITTEN DIMENSIONS ONLY.
2. DO NOT SCALE DRAWINGS.
3. THE CONTRACTOR IS TO CHECK ALL LEVELS, DATUMS, AND DIMENSIONS IN RELATION TO THE DRAWINGS AND THE SITE BEFORE PROCEEDING WITH THE WORK OR SHOP DRAWINGS.
4. ENSURE THAT THIS DRAWING AND ANY ACCOMPANYING DETAILS AND/OR SPECIFICATIONS HAVE BEEN STAMPED AS 'APPROVED' BY THE RELEVANT LOCAL AUTHORITY.
5. THE PROPRIETOR IS TO ENSURE THAT ANY 'CONDITIONS OF APPROVAL' ISSUED BY THE BUILDING SURVEYOR, RELEVANT COUNCIL AND OTHER STATUTORY AUTHORITIES ARE PASSED ONTO THE CONTRACTOR BEFORE CONSTRUCTION BEGINS.
6. MATERIALS AND WORKMANSHIP SHALL CONFORM WITH RELEVANT STANDARDS, BUILDING CODE OF AUSTRALIA AND PRODUCT MANUFACTURERS WRITTEN INSTRUCTIONS.
7. ANY ALTERATION TO THE CONSTRUCTION AND/OR MATERIALS INDICATED IN THESE DRAWINGS IS TO BE APPROVED BY DESIGN EAST, THE ENGINEER, THE BUILDING SURVEYOR, AND THE PROPRIETOR BEFORE PROCEEDING WITH THE WORK.
8. IF THERE ARE ANY QUERIES IN RELATION TO DIMENSIONS, LEVELS OR CONSTRUCTION DETAILS, CONTACT:

design . EAST

phone
6223 6740

email
admin@designeast.com.au

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Phone (03)6223 6740
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Accreditation No. CC1910

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SITE NOTES

Property Address:

171 BATHURST STREET

Property ID:

565412

Title Reference:

150160/1

Site Area:

+/- 553m²

Municipality:

HOBART

Owner:

SAMUEL & JOSEPHINE
FORBES-YOUNG

SITE KEY

A

OUTLINE OF EXISTING RESIDENCE.

B

UPPER FLOOR EXTENSION EXTENT SHOWN HATCHED.

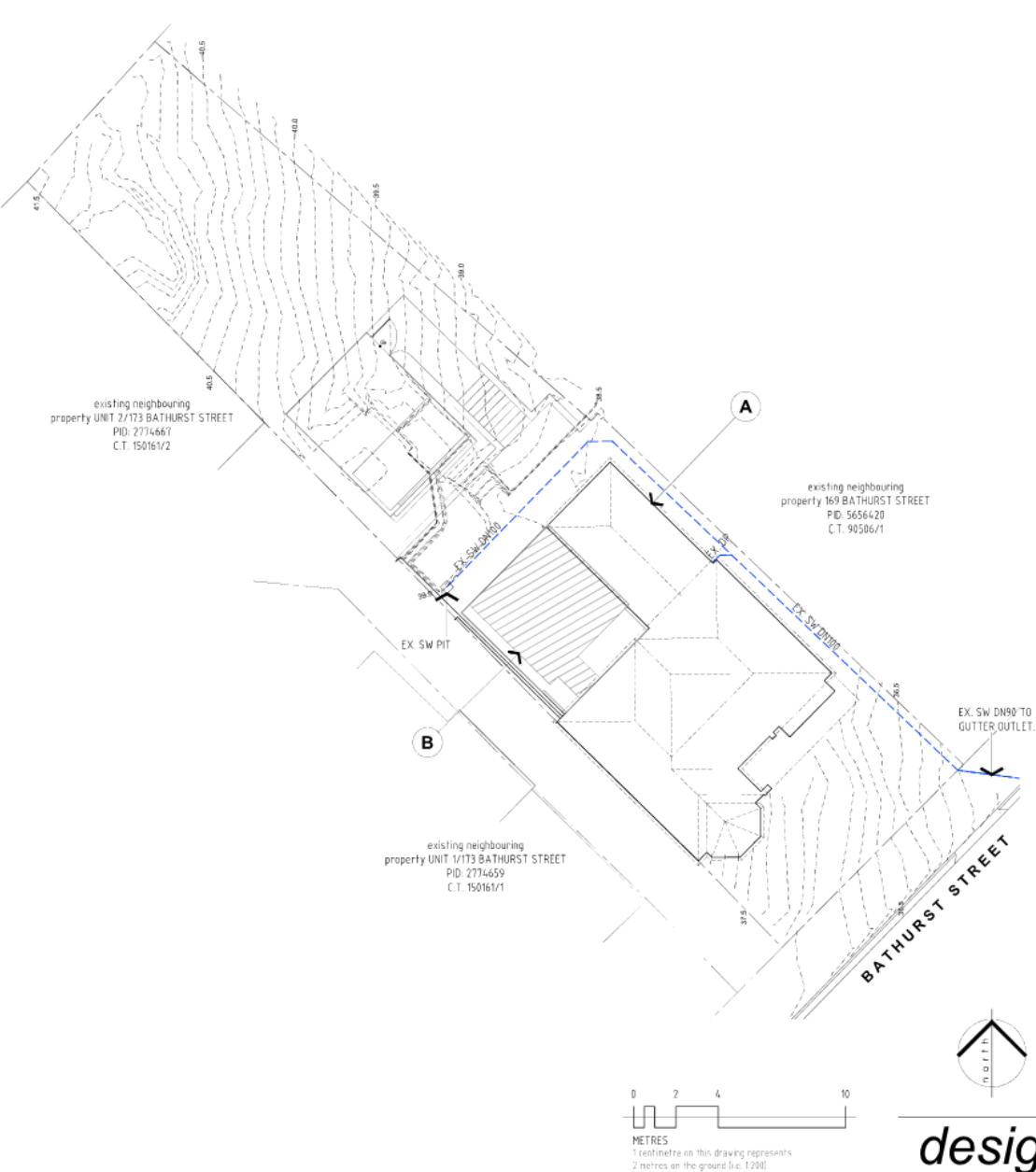
EXISTING FLOOR AREAS

EX. BUILDING FOOTPRINT AREA

= 290 sqm +/-

EX. LOT SIZE

= 553 sqm +/-



SHEET No. 2 OF 14

| ISSUE | DESCRIPTION | DATE | DRAWN |
|-------|--------------|----------|-------|
| A | PLANNING SET | 15.03.23 | EJ |

| | |
|----------|---|
| Project: | PROPOSED ALTERATIONS AND ADDITIONS 171 BATHURST STREET, HOBART 7000 SAMUEL & JOSEPHINE FORBES-YOUNG |
| Drawing: | SITE PLAN |

| | |
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| DRG NO: | 5463 |
| SCALE: | 1:200 @ A3 |
| DATE: | 15.03.23 |
| DRAWN: | EJ |

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| LEGEND | |
|--------|----------------------------------|
| MARK | DESCRIPTION |
| | EXISTING WALLS TO BE RETAINED. |
| | EXISTING WALLS TO BE DEMOLISHED. |

EXISTING DWELLING AREA

EXISTING DWELLING AREA GROUND & UPPER FLOOR 290 ± sqm

DEMOLITION NOTES

GENERALLY DEMOLITION WORKS MUST BE CARRIED OUT IN ACCORDANCE WITH AS 2601-2001 DEMOLITION OF STRUCTURES & REGULATIONS 29, 30 & 31 OF THE BUILDING REGULATIONS (Tas.) 2019.

BUILDINGS PRIOR TO 1990 MAY CONTAIN ASBESTOS. BUILDINGS PRIOR TO 1986 ARE LIKELY TO CONTAIN ASBESTOS EITHER IN CLADDING MATERIAL OR IN FIRE RETARDANT INSULATION MATERIAL. THE BUILDER SHOULD CHECK &, IF NECESSARY, TAKE APPROPRIATE ACTION BEFORE DEMOLISHING, CUTTING, SANDING, DRILLING OR OTHERWISE DISTURBING THE EXISTING STRUCTURE.

PROCEDURES & METHODS OF DEMOLITION MUST BE ADEQUATE TO PREVENT INJURY TO PERSONS & AVOID DAMAGE TO NEIGHBORING PROPERTY.

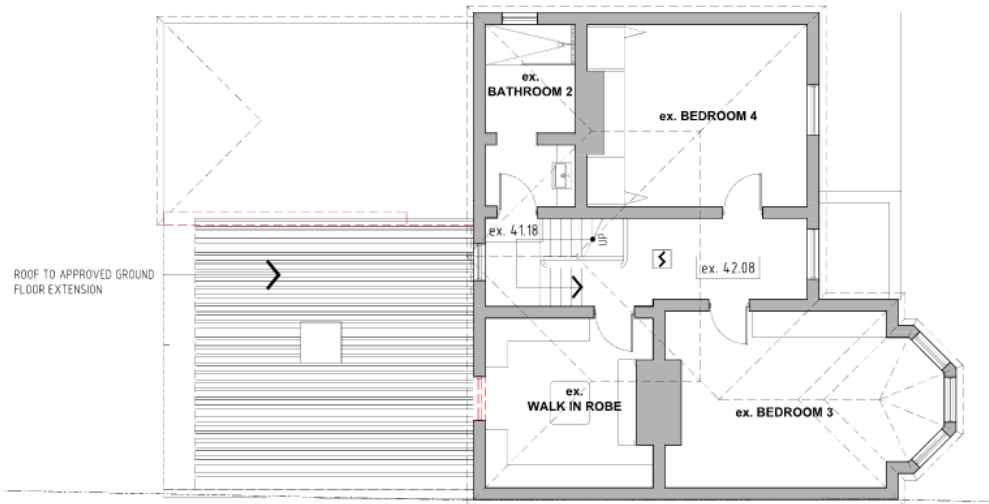
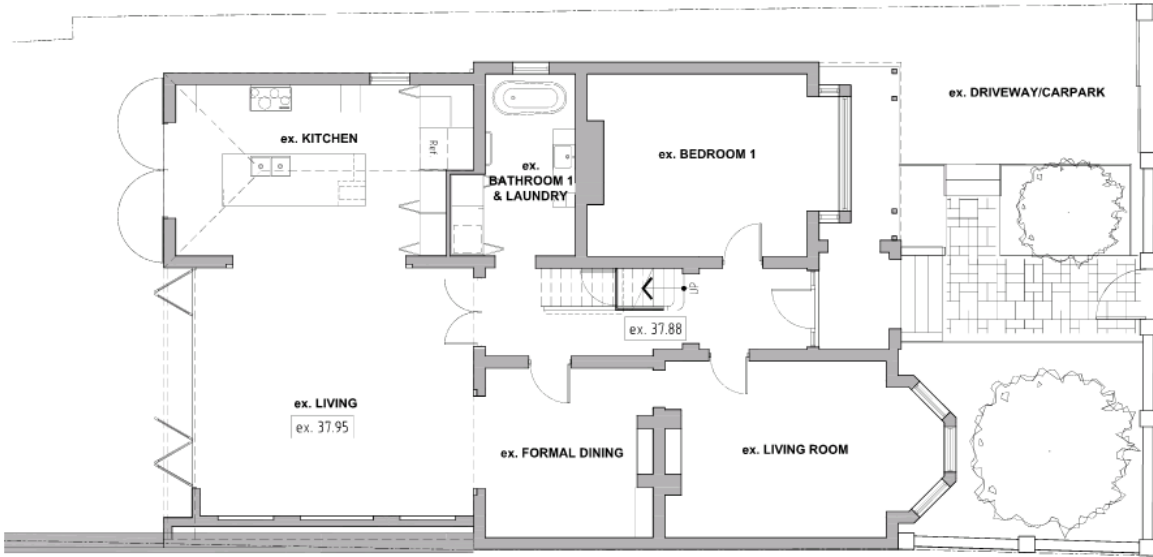
BEFORE REMOVING EXISTING WALLS SHOWN TO BE DEMOLISHED, BUILDER SHALL CONFIRM ON-SITE WHETHER THEY ARE LOAD-BEARING OR NOT. IF IT IS FOUND THAT THEY ARE LOAD-BEARING, A STRUCTURAL ENGINEER MUST BE ENGAGED TO DETERMINE ANY BEAMS REQUIRED TO SUPPORT THESE EXISTING LOADS.

ALL REDUNDANT STORMWATER, SEWER & WATER CONNECTIONS ASSOCIATED WITH THE DEMOLITION SHALL BE CUT & SEALED TO THE SATISFACTION OF COUNCIL'S SENIOR PLUMBING INSPECTOR.

THE REMOVAL OF EXISTING PLUMBING FIXTURES SHALL INCLUDE ALL ASSOCIATED WASTE & VENT PIPES, FLOOR DRAINS, WATER SERVICE PIPEWORK BRACKETS, SUPPORTS etc & SEAL OFF EXISTING SERVICES. SEAL OFF & MAKE GOOD ALL FLOOR, WALL & ROOF PENETRATIONS.

GENERALLY, MAKE GOOD TO EXISTING FLOORS, WALLS & CEILINGS WHERE ALL DEMOLITION WORK OCCURS TO MATCH EXISTING AS & WHERE REQUIRED.

| KEY | |
|------|--|
| MARK | DESCRIPTION |
| | PHOTOELECTRIC SMOKE ALARM (HARD WIRED) TO COMPLY WITH BCA 3.7.2 & AS 3786 (must be interconnected where there is more than one alarm). |



SHEET No. 3 OF 14

| ISSUE | DESCRIPTION | DATE | DRAWN |
|-------|--------------|----------|-------|
| A | PLANNING SET | 15.03.23 | EJ |
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|----------|---|
| Project: | PROPOSED ALTERATIONS AND ADDITIONS 171 BATHURST STREET, HOBART 7000 SAMUEL & JOSEPHINE FORBES-YOUNG |
| Drawing: | EXISTING & DEMOLITION FLOOR PLAN |
| Design: | design EAST registered trading name for design EAST Pty. Ltd. |

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|--------|----------|
| SCALE: | 5463 |
| 1:100 | A03 |
| @ A3 | DATE: |
| DRAWN: | 15.03.23 |
| EJ | |

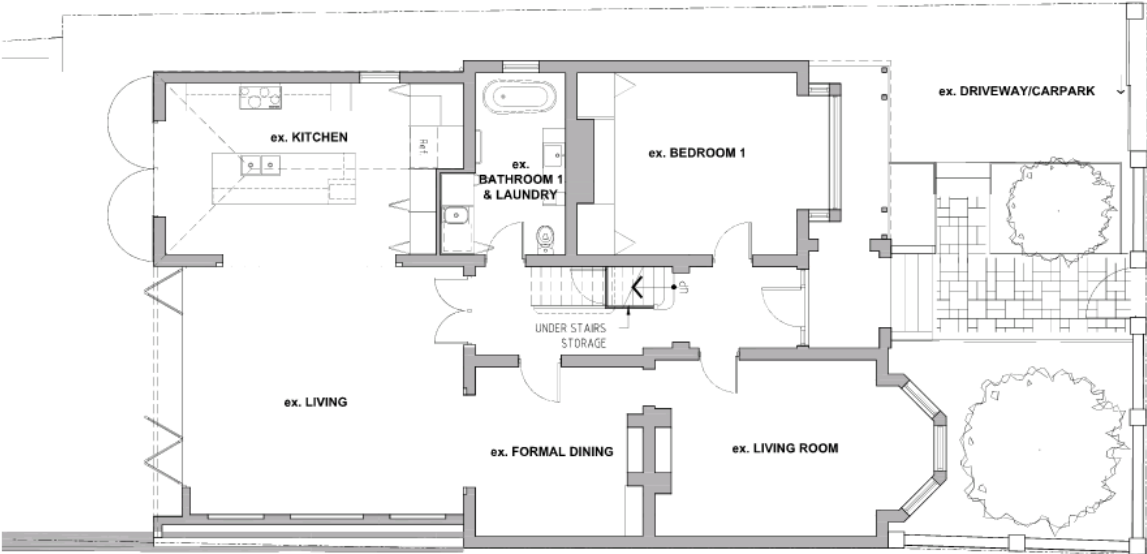
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LEGEND

| MARK | DESCRIPTION |
|------|-------------------------------------|
| | EXISTING WALLS TO BE RETAINED. |
| | 90mm STUDWORK WALL (internal wall). |

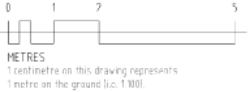
PROPOSED FLOOR AREA

EXISTING GROUND FLOOR (USABLE) AREA ± 159.00 sqm.



 **EXISTING GROUND FLOOR PLAN**
1:100

NOTE:
AS PER PLANNING PERMIT PLN-22-14
AND AMENDED PLANNING PERMIT PAM-22-119.



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SCALE: DRG NO: 5463
1:100 @ A3
DATE: 15.03.23
DRAWN: EJ

Project: PROPOSED ALTERATIONS AND ADDITIONS
171 BATHURST STREET, HOBART 7000
SAMUEL & JOSEPHINE FORBES-YOUNG
Drawing: PROPOSED GROUND FLOOR PLAN
design/EAST registered trading name for design/EAST Pty. Ltd.

| ISSUE | DESCRIPTION | DATE | DRAWN |
|-------|--------------|----------|-------|
| A | PLANNING SET | 15.03.23 | EJ |

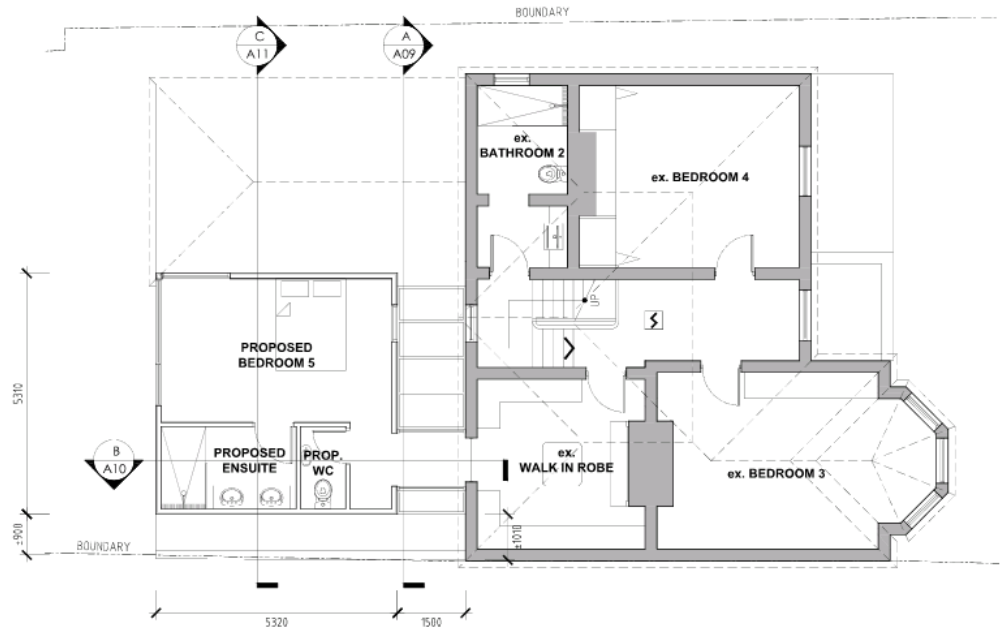
SHEET No. 4 OF 14

| LEGEND | |
|--------|-------------------------------------|
| MARK | DESCRIPTION |
| | EXISTING WALLS TO BE RETAINED. |
| | 90mm STUDWORK WALL (internal wall). |

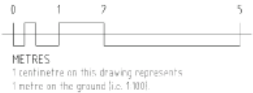
| EXISTING FLOOR AREA | |
|------------------------------------|-------------|
| EXISTING UPPER FLOOR (USABLE) AREA | = ± 75 sqm. |

| PROPOSED FLOOR AREA | |
|------------------------------------|----------------|
| PROPOSED UPPER FLOOR (USABLE) AREA | = ± 30.00 sqm. |

| KEY | |
|------|--|
| MARK | DESCRIPTION |
| | PHOTOELECTRIC SMOKE ALARM (HARD WIRED) TO COMPLY WITH BCA 3.7.2 & AS 3786 (must be interconnected where there is more than one alarm). |



PROPOSED UPPER FLOOR PLAN
1:100



SHEET No. 5 OF 14

| ISSUE | DESCRIPTION | DATE | DRAWN |
|-------|--------------|----------|-------|
| A | PLANNING SET | 15.03.23 | EJ |

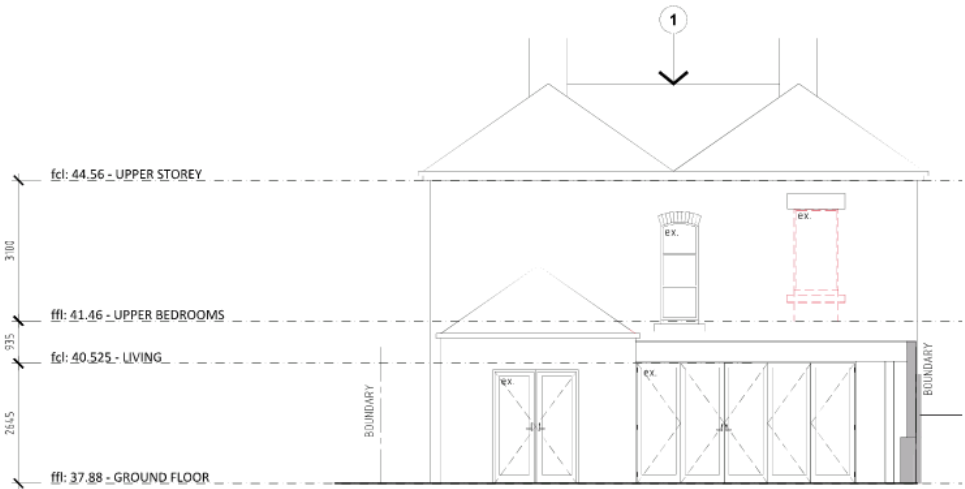
| | |
|---|---|
| Project: | PROPOSED ALTERATIONS AND ADDITIONS 171 BATHURST STREET, HOBART 7000 SAMUEL & JOSEPHINE FORBES-YOUNG |
| Drawing: | PROPOSED UPPER FLOOR PLAN |
| design/EAST registered trading name for design/EAST Pty. Ltd. | |

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| DRG NO: | 5463 |
| SCALE: | 1:100 @ A3 |
| DATE: | 15.03.23 |
| DRAWN: | EJ |

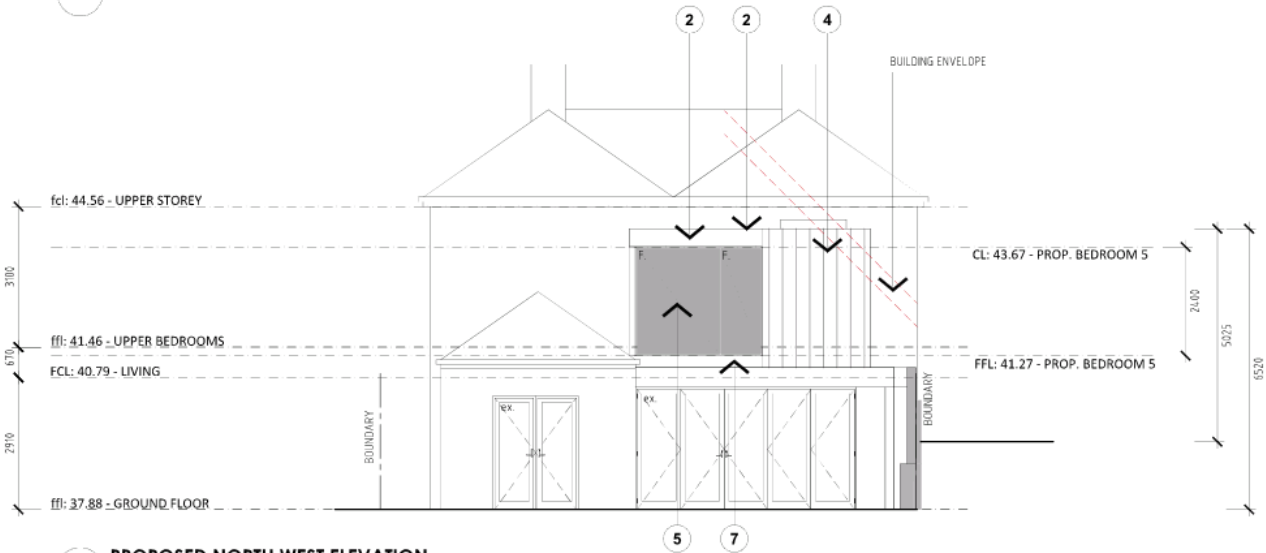
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| EXTERNAL FINISHES | |
|-------------------|---|
| 1 | EXISTING DWELLING |
| 2 | PROPOSED EXTENSION |
| 3 | HARDIE-FLEX SHEETING TO 50mm RECESSED PANEL - PAINT FINISH LIGHT IN COLOUR. |
| 4 | METAL TRAY CLADDING |
| 5 | PROPOSED ALUMINUM FRAMED WINDOWS. FINISH: NATURAL ANODIZED |
| 6 | VERTICAL BLACK BEAM 50 x 50mm BATTENS 50mm SPACINGS ON HARDIE-FLEX SHEET. |
| 7 | HORIZONTAL BLACK BEAM SHIP LAP BOARDING. DARK STAINED FINISH. |

| LEGEND | |
|--------|---------------------------|
| ex. | - EXISTING WINDOW / DOOR. |
| F. | - FIXED WINDOW. |
| L. | - LOUVRES |



EXISTING NORTH WEST ELEVATION



PROPOSED NORTH WEST ELEVATION

SHEET No. 6 OF 14

| ISSUE | DESCRIPTION | DATE | DRAWN |
|-------|--------------|----------|-------|
| A | PLANNING SET | 15.03.23 | EJ |
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|---|---|
| Project: | PROPOSED ALTERATIONS AND ADDITIONS 171 BATHURST STREET, HOBART 7000 SAMUEL & JOSEPHINE FORBES-YOUNG |
| Drawing: | ELEVATIONS 01 OF 05 |
| design:EAST registered trading name for design:EAST Pty. Ltd. | |

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|---------|------------|
| DRG NO: | 5463 |
| SCALE: | 1:100 @ A3 |
| DATE: | 15.03.23 |
| DRAWN: | EJ |

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EXTERNAL FINISHES

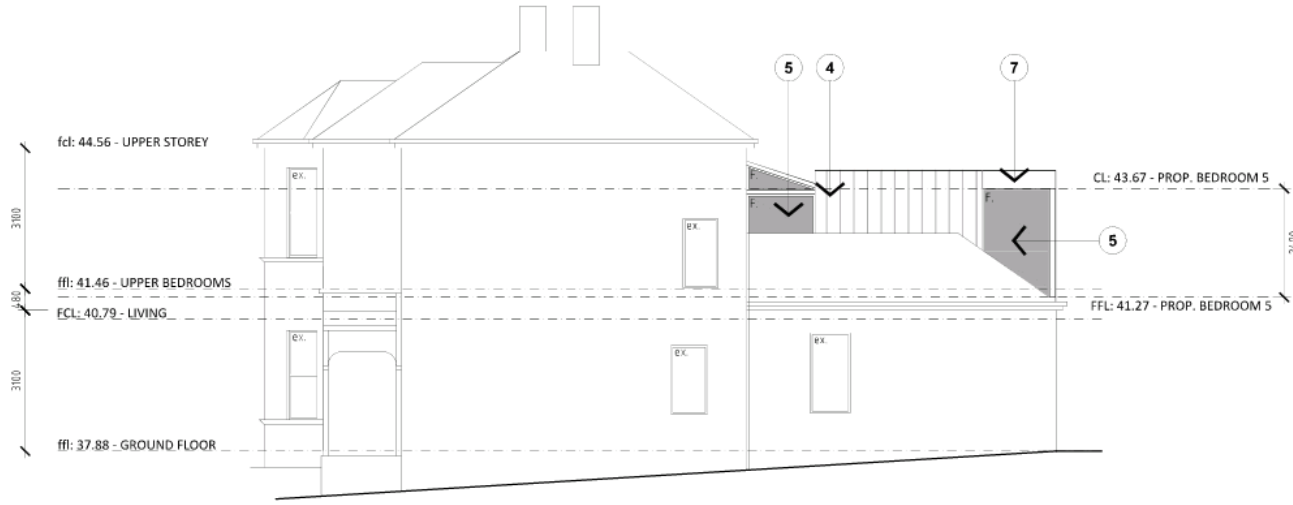
- 1 EXISTING DWELLING
- 2 PROPOSED EXTENSION
- 3 HARDIE-FLEX SHEETING TO 50mm RECESSED PANEL - PAINT FINISH LIGHT IN COLOUR.
- 4 METAL TRAY CLADDING
- 5 PROPOSED ALUMINUM FRAMED WINDOWS. FINISH NATURAL ANODIZED
- 6 VERTICAL BLACK BEAN 50 x 50mm BATTENS 50mm SPACINGS ON HARDIE-FLEX SHEET.
- 7 HORIZONTAL BLACK BEAN SHIP LAP BOARDING. DARK STAINED FINISH.

LEGEND

ex. - EXISTING WINDOW / DOOR.
F. - FIXED WINDOW.
L. - LOUVRES



EXISTING NORTH EAST ELEVATION



PROPOSED NORTH EAST ELEVATION

SHEET No. 7 OF 14

| ISSUE | DESCRIPTION | DATE | DRAWN |
|-------|--------------|----------|-------|
| A | PLANNING SET | 15.03.23 | EJ |

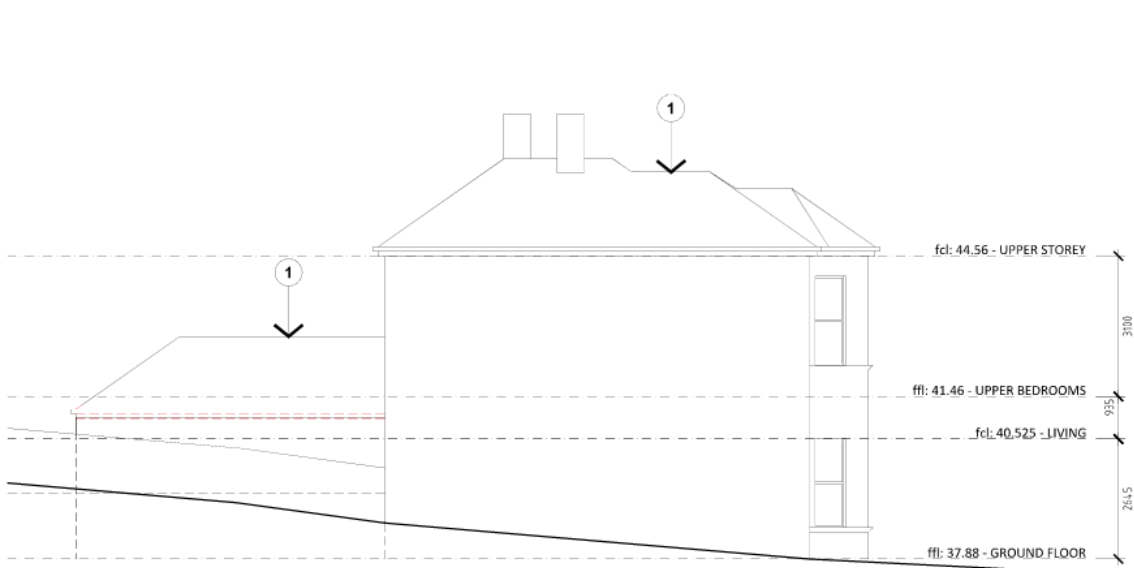
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|----------|---|
| Project: | PROPOSED ALTERATIONS AND ADDITIONS 171 BATHURST STREET, HOBART 7000 SAMUEL & JOSEPHINE FORBES-YOUNG |
| Drawing: | ELEVATIONS 01 OF 05 |
| Design: | design:EAST registered trading name for design:EAST Pty. Ltd. |

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| DRG NO: | 5463 |
| SCALE: | 1:100 @ A3 |
| DATE: | 15.03.23 |
| DRAWN: | EJ |

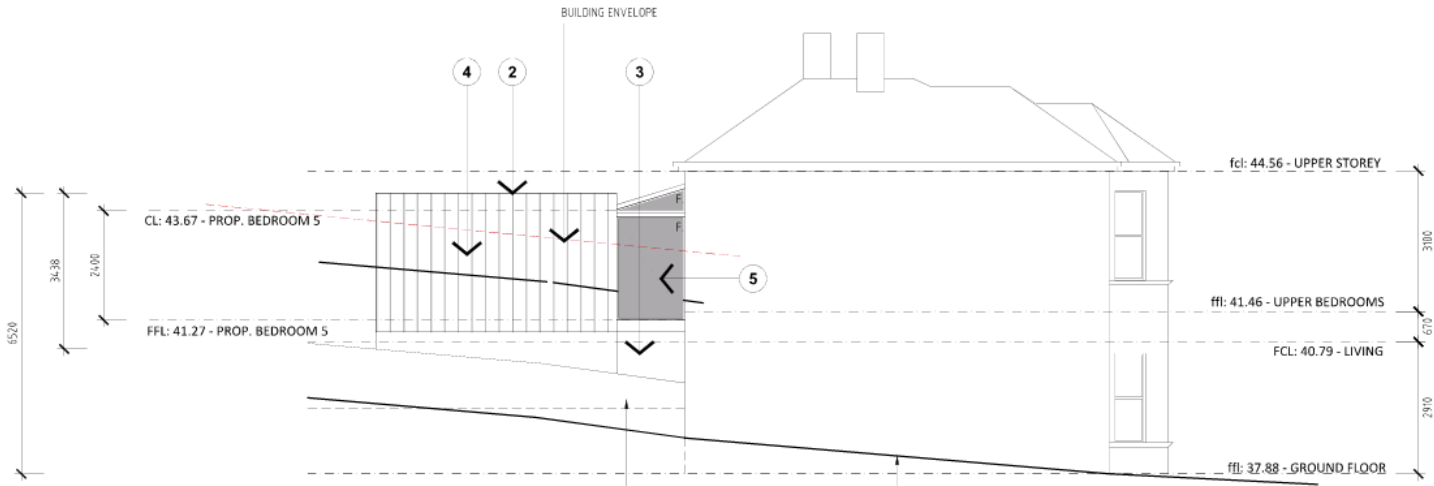
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| EXTERNAL FINISHES | |
|-------------------|---|
| 1 | EXISTING DWELLING |
| 2 | PROPOSED EXTENSION |
| 3 | HARDIE-FLEX SHEETING TO 50mm RECESSED PANEL - PAINT FINISH LIGHT IN COLOUR. |
| 4 | METAL TRAY CLADDING |
| 5 | PROPOSED ALUMINUM FRAMED WINDOWS. FINISH: NATURAL ANODIZED |
| 6 | VERTICAL BLACK BEAM 50 x 50mm BATTENS 50mm SPACINGS ON HARDIE-FLEX SHEET. |
| 7 | HORIZONTAL BLACK BEAM SHIP LAP BOARDING. DARK STAINED FINISH. |

| LEGEND | |
|--------|---------------------------|
| ex. | - EXISTING WINDOW / DOOR. |
| F. | - FIXED WINDOW. |
| L. | - LOUVRES |



EXISTING SOUTH WEST ELEVATION



PROPOSED SOUTH WEST ELEVATION

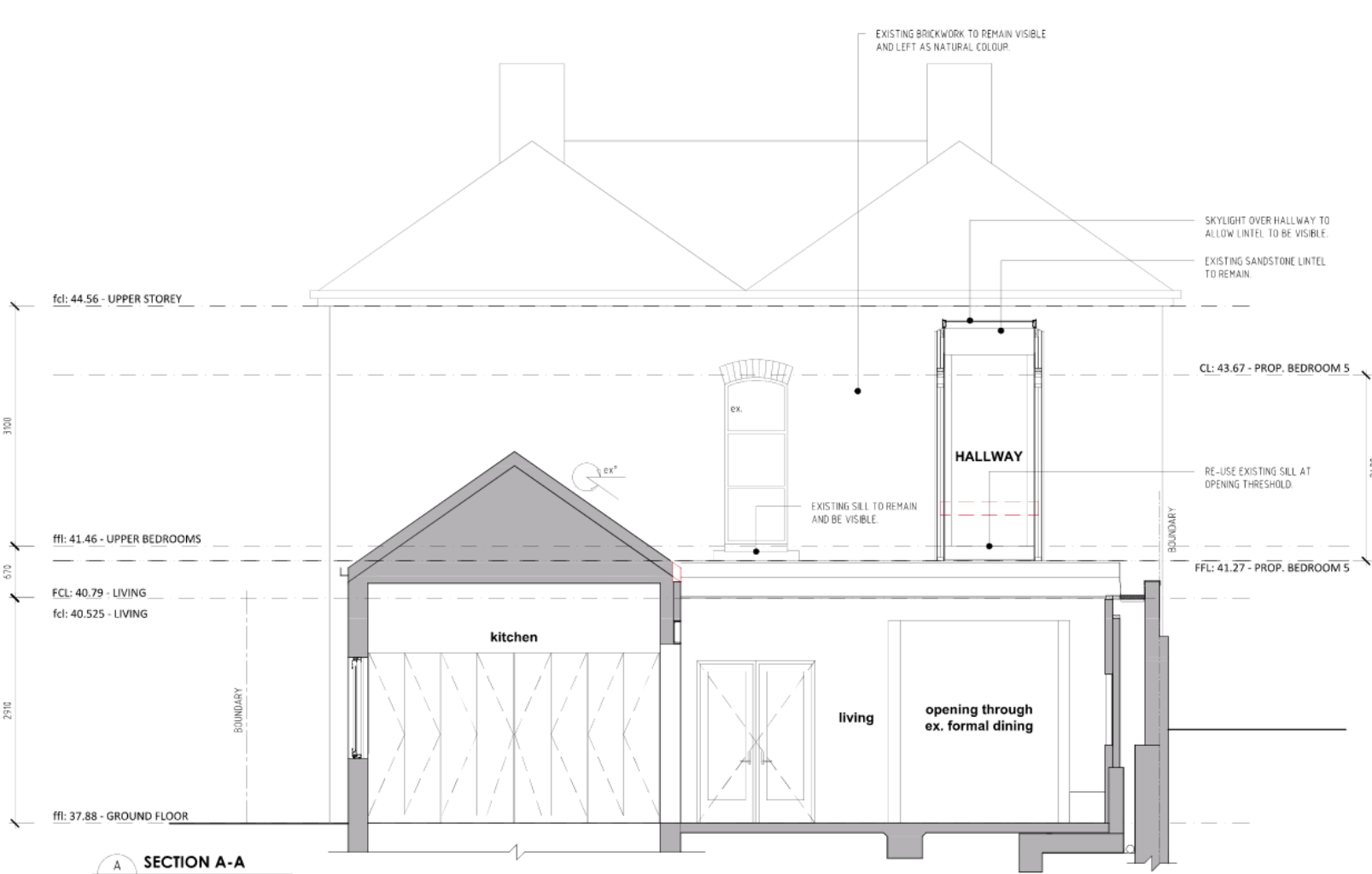
SHEET No. 8 OF 14

| ISSUE | DESCRIPTION | DATE | DRAWN |
|-------|--------------|----------|-------|
| A | PLANNING SET | 15.03.23 | EJ |
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|----------|---|
| Project: | PROPOSED ALTERATIONS AND ADDITIONS 171 BATHURST STREET, HOBART 7000 SAMUEL & JOSEPHINE FORBES-YOUNG |
| Drawing: | ELEVATIONS 02 OF 05 |
| Design: | design:EAST registered trading name for design:EAST Pty. Ltd. |

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| DRG NO: | 5463 |
| SCALE: | 1:100 @ A3 |
| DATE: | 15.03.23 |
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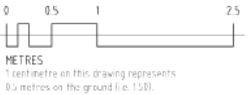
SHEET No. 9 OF 14

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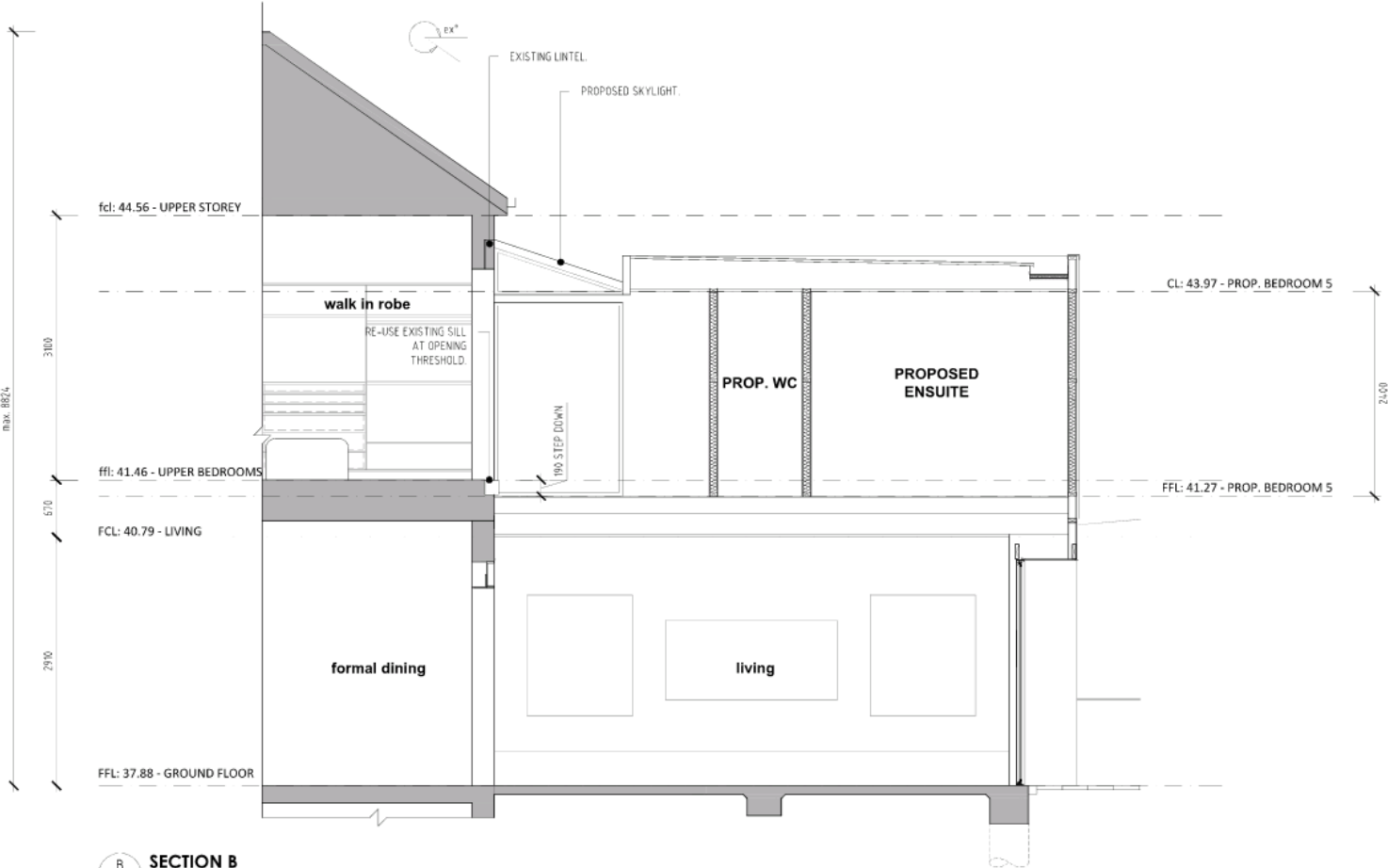
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|----------|---|
| Project: | PROPOSED ALTERATIONS AND ADDITIONS 171 BATHURST STREET, HOBART 7000 SAMUEL & JOSEPHINE FORBES-YOUNG |
| Drawing: | SECTION A-A |

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| DRG NO: | 5463 |
| SCALE: | 1:50 @ A3 |
| DATE: | 15.03.23 |
| DRAWN: | EJ |

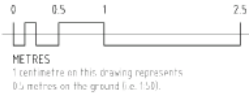
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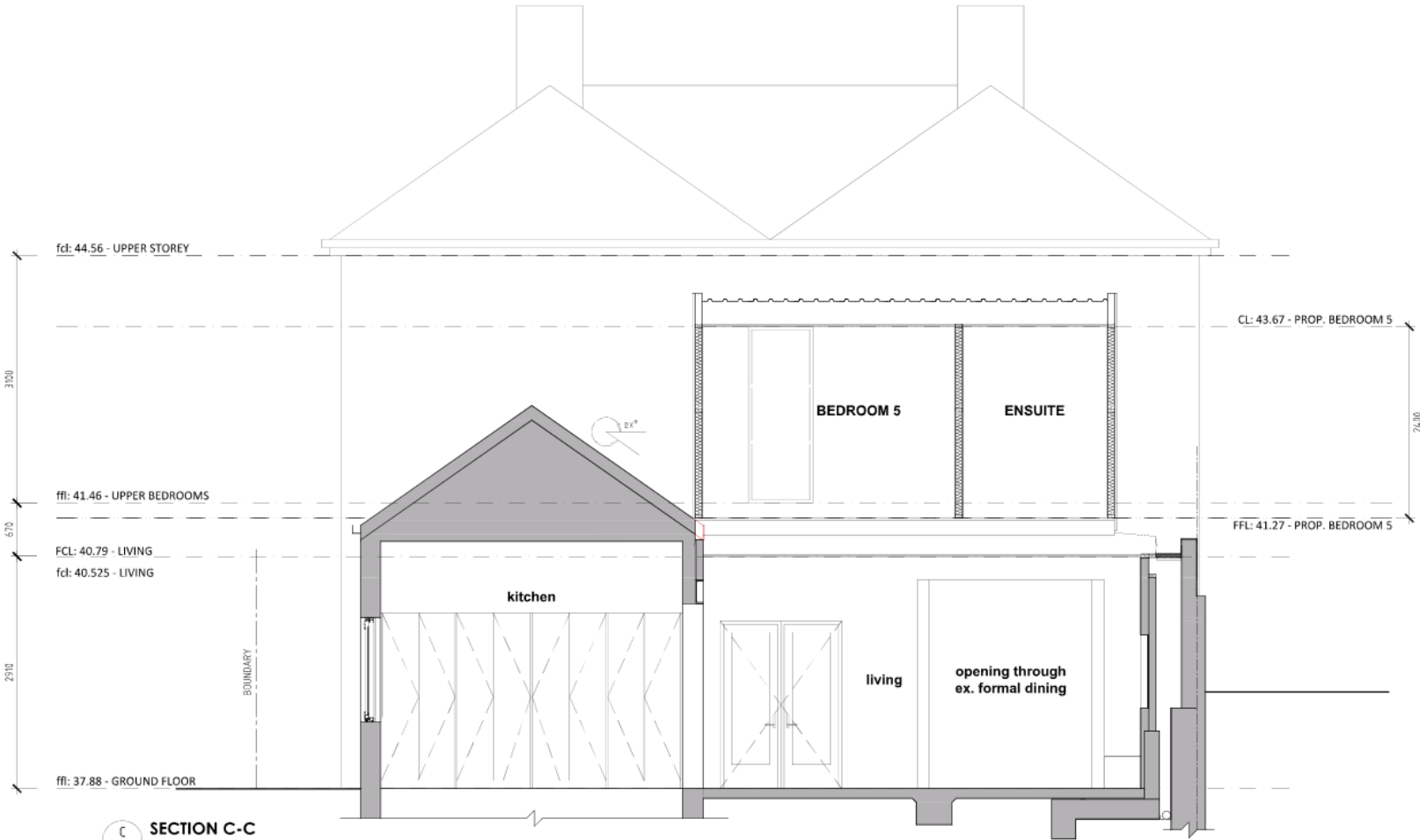
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B
A04
SECTION B
PROPOSED UPPER FLOOR EXTENSION
AND EX. KITCHEN AND LIVING 1:50



| ISSUE | DESCRIPTION | DATE | DRAWN |
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| A | PLANNING SET | 15.03.23 | EJ |



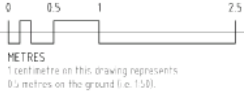
SHEET No. 11 OF 14

| ISSUE | DESCRIPTION | DATE | DRAWN |
|-------|--------------|----------|-------|
| A | PLANNING SET | 15.03.23 | EJ |

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|---|---|
| Project: | PROPOSED ALTERATIONS AND ADDITIONS 171 BATHURST STREET, HOBART 7000 SAMUEL & JOSEPHINE FORBES-YOUNG |
| Drawing: | SECTION A-A |
| design/EAST registered trading name for design/EAST Pty. Ltd. | |

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| DRG NO: | 5463 |
| SCALE: | 1:50 @ A3 |
| DATE: | 15.03.23 |
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SHEET No. 12 OF 14

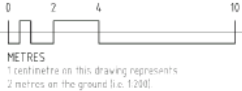
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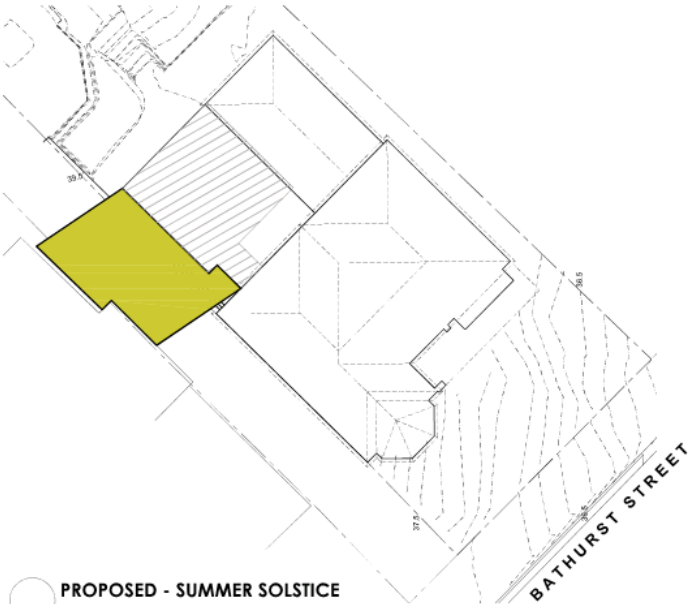
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|----------|---|
| Project: | PROPOSED ALTERATIONS AND ADDITIONS 171 BATHURST STREET, HOBART 7000 SAMUEL & JOSEPHINE FORBES-YOUNG |
| Drawing: | PROPOSED SHADOW DIAGRAM - WINTER |

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| DRG NO: | 5463 |
| SCALE: | 1:200 @ A3 |
| DATE: | 15.03.23 |
| DRAWN: | EJ |

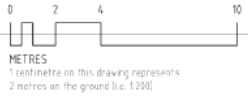
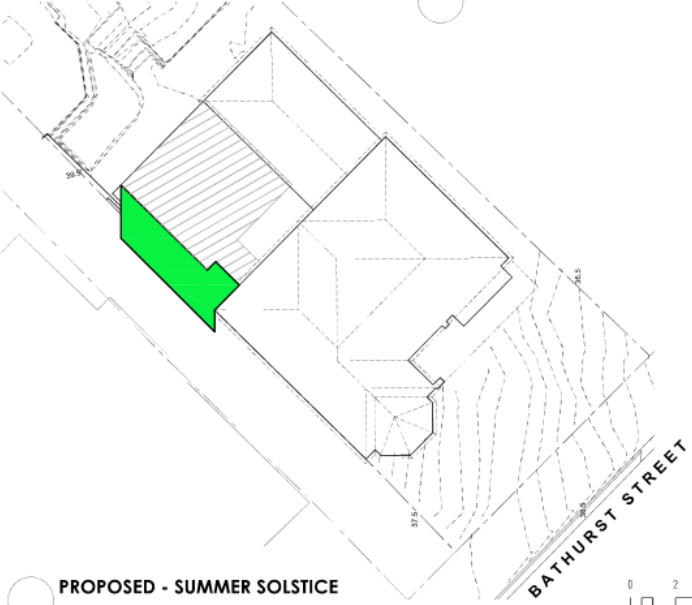
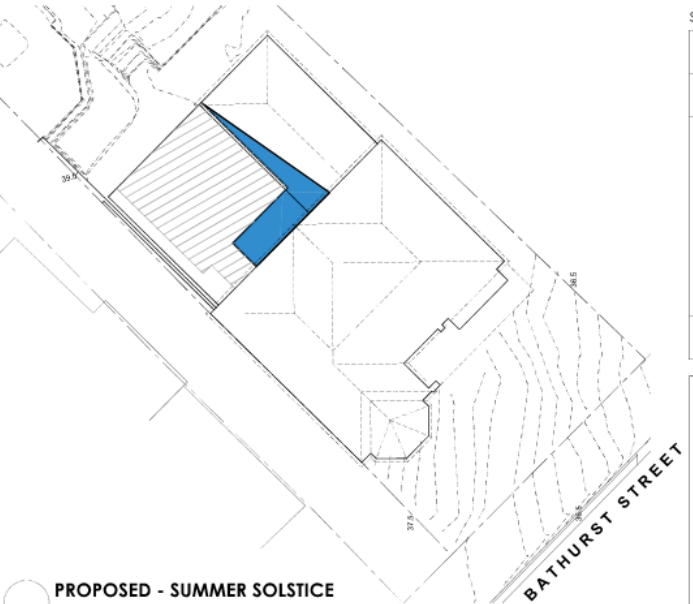
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- 9.00 AM
- 12.00 NOON
- 3.00 PM



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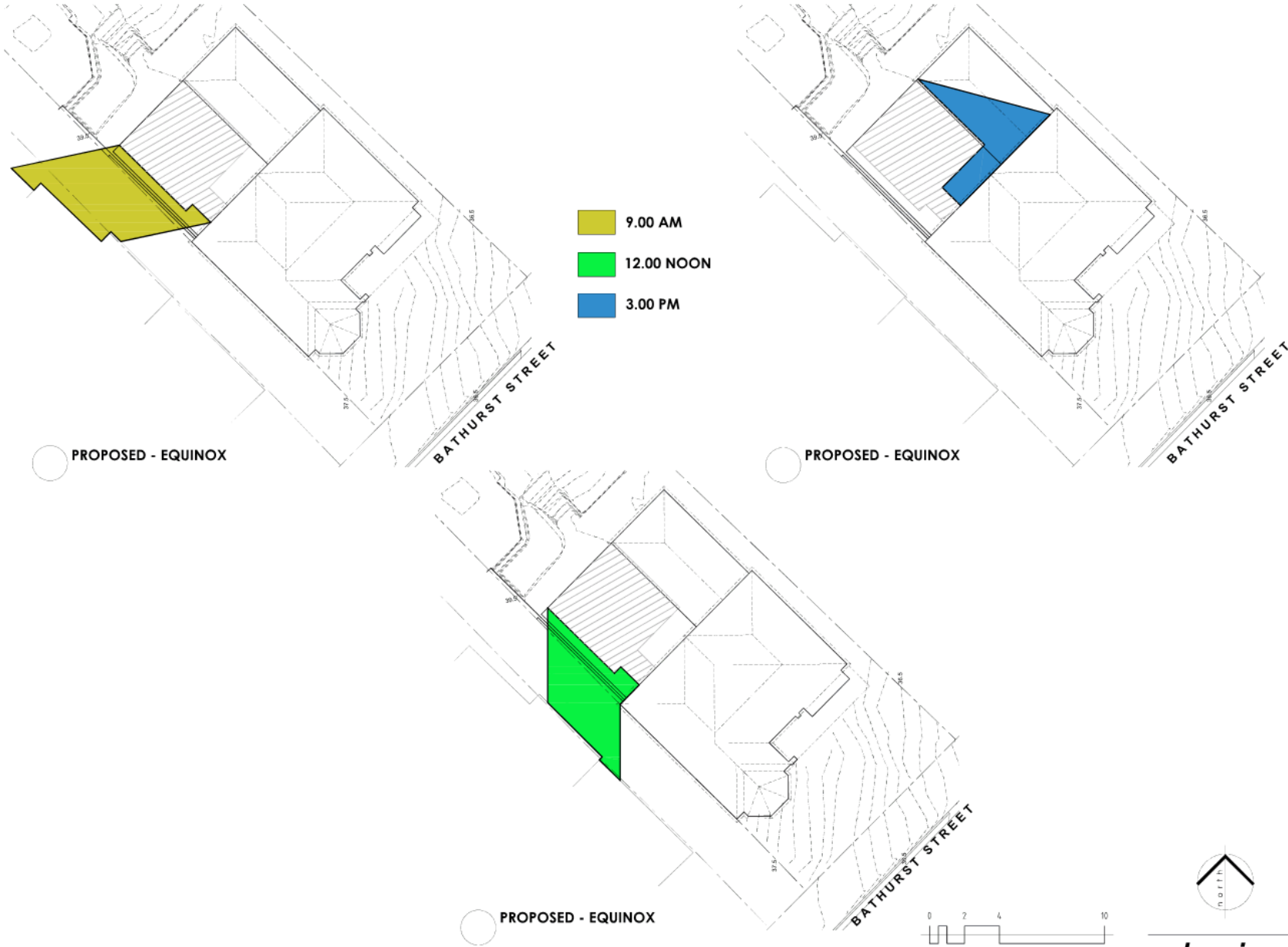
SHEET No. 13 OF 14

| ISSUE | DESCRIPTION | DATE | DRAWN |
|-------|--------------|----------|-------|
| A | PLANNING SET | 15.03.23 | EJ |

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|----------|---|
| Project: | PROPOSED ALTERATIONS AND ADDITIONS 171 BATHURST STREET, HOBART 7000 SAMUEL & JOSEPHINE FORBES-YOUNG |
| Drawing: | PROPOSED SHADOW DIAGRAM - SUMMER |

| | |
|---------------|----------|
| SCALE: | DRG NO: |
| 1:200 @ A3 | 5463 |
| DRAWN: | DATE: |
| EJ | 15.03.23 |

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SHEET No. 14 OF 14

| ISSUE | DESCRIPTION | DATE | DRAWN |
|-------|--------------|----------|-------|
| A | PLANNING SET | 15.03.23 | EJ |

| | |
|----------|---|
| Project: | PROPOSED ALTERATIONS AND ADDITIONS 171 BATHURST STREET, HOBART 7000 SAMUEL & JOSEPHINE FORBES-YOUNG |
| Drawing: | PROPOSED SHADOW DIAGRAM - EQUINOX |

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|---------------|----------|
| SCALE: | DRG NO: |
| 1:200 @ A3 | 5463 |
| DRAWN: | DATE: |
| EJ | 15.03.23 |

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7. REPORTS

7.1 Planning - Advertised Applications Report File Ref: F23/24896

Report of the Director City Life of 22 March 2023 and attachment.

Delegation: Committee



City of **HOBART**

MEMORANDUM: PLANNING COMMITTEE

Planning - Advertised Applications Report

Attached is the advertised applications list for the period 28 February 2023 to 10 March 2023.

RECOMMENDATION

That the advertised planning applications report for the period 28 February 2023 to 10 March 2023 be received and noted.

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.

Neil Noye
DIRECTOR CITY LIFE

Date: 22 March 2023
File Reference: F23/24896

Attachment A: Planning - Advertised Applications Report ↴

| No | Application | Street | Suburb | Development | Works Value | Expiry Date | Referral | Proposed Delegation | Advertising Period Start | Advertising Period End |
|----|-------------|---------------------------|---------------|--|-------------|-------------|-------------|---------------------|--------------------------|------------------------|
| 1 | PLN-23-57 | 23 DE WITT STREET | BATTERY POINT | Partial Demolition, Alterations, and Ancillary Dwelling | \$190,000 | 23/03/2023 | nolanm | Director | 03/03/2023 | 18/03/2023 |
| 2 | PLN-22-753 | 116 - 138 CAMPBELL STREET | HOBART | Partial Demolition and Alterations for Substation, and Associated Works | \$82,000 | 23/12/2022 | ikinb | Director | 03/03/2023 | 18/03/2023 |
| 3 | PLN-22-795 | 2 FRANKLIN WHARF | HOBART | Additional Aircraft | \$0 | 09/01/2023 | ikinb | Director | 08/03/2023 | 23/03/2023 |
| 4 | PLN-22-823 | 5 BERE STREET | HOBART | Partial Demolition, Alterations, and Extension | \$400,000 | 18/01/2023 | mcclenahanm | Director | 06/03/2023 | 21/03/2023 |
| 5 | PLN-22-862 | 250 MACQUARIE STREET | HOBART | Partial Demolition, Alterations, Extension, Front Fencing, and Alterations to Carparking | \$50,000 | 31/01/2023 | mcclenahanm | Director | 28/02/2023 | 15/03/2023 |
| 6 | PLN-23-16 | 71 MACQUARIE STREET | HOBART | Partial Change of Use to Eating Establishment | \$10,000 | 24/02/2023 | langd | Director | 07/03/2023 | 22/03/2023 |
| 7 | PLN-23-87 | 143 MACQUARIE STREET | HOBART | Partial Demolition and Alterations | \$19,500 | 12/04/2023 | sherriffc | Director | 09/03/2023 | 24/03/2023 |

| No | Application | Street | Suburb | Development | Works Value | Expiry Date | Referral | Proposed Delegation | Advertising Period Start | Advertising Period End |
|----|-------------|-------------------|--------------|---|-------------|-------------|----------|---------------------|--------------------------|------------------------|
| 8 | PLN-22-582 | 19 BLUESTONE RISE | LENAH VALLEY | Dwelling | \$742,030 | 14/10/2022 | ayersh | Director | 03/03/2023 | 18/03/2023 |
| 9 | PLN-22-791 | 2 ANCANTHE AVENUE | LENAH VALLEY | Dwelling | \$370,000 | 06/01/2023 | baconr | Director | 07/03/2023 | 22/03/2023 |
| 10 | PLN-22-861 | 9 CUTHBERT AVENUE | LENAH VALLEY | Partial Demolition, Alterations to Driveway and Parking, Carport, Outbuilding (Storage), and Ancillary Dwelling | \$150,000 | 31/01/2023 | maxwellv | Director | 28/02/2023 | 15/03/2023 |
| 11 | PLN-23-80 | 79 ATHLEEN AVENUE | LENAH VALLEY | Change of Use to Visitor Accommodation | \$200 | 06/04/2023 | nolanm | Director | 06/03/2023 | 21/03/2023 |
| 12 | PLN-23-93 | 34 KALANG AVENUE | LENAH VALLEY | Partial Demolition, Alterations, and Extension | \$400,000 | 14/04/2023 | langd | Director | 10/03/2023 | 25/03/2023 |
| 13 | PLN-22-782 | 7 ESK AVENUE | MOUNT STUART | Partial Demolition, Alterations, Extension, and Two Multiple Dwellings (One Existing, One New) | \$150,000 | 03/01/2023 | ayersh | Director | 02/03/2023 | 17/03/2023 |

| No | Application | Street | Suburb | Development | Works Value | Expiry Date | Referral | Proposed Delegation | Advertising Period Start | Advertising Period End |
|----|-------------|---------------------|---------------|---|-------------|-------------|-------------|---------------------|--------------------------|------------------------|
| 14 | PLN-22-362 | 55 RISDON ROAD | NEW TOWN | Partial Demolition, Alterations, Extension, and Change of Use to Three Multiple Dwellings (Two Existing, One New) | \$400,000 | 15/07/2022 | sherriffc | Director | 28/02/2023 | 15/03/2023 |
| 15 | PLN-22-871 | 63 - 83 CREEK ROAD | NEW TOWN | Partial Demolition, Six Multiple Dwellings, Alterations to Parking and Access, and Associated Works | \$1,500,000 | 03/02/2023 | smeea | Director | 08/03/2023 | 23/03/2023 |
| 16 | PLN-23-60 | 101 BURNETT STREET | NORTH HOBART | Partial Demolition, Alterations, and Fencing | \$80,000 | 28/03/2023 | mcclenahanm | Director | 07/03/2023 | 22/03/2023 |
| 17 | PLN-23-83 | 7 LOWER DOMAIN ROAD | QUEENS DOMAIN | Partial Demolition and Alterations | \$20,000 | 07/04/2023 | ayersh | Director | 09/03/2023 | 24/03/2023 |
| 18 | PLN-22-570 | 5 LIPSCOMBE AVENUE | SANDY BAY | Partial Demolition and Alterations | \$20,000 | 10/10/2022 | smeea | Director | 07/03/2023 | 22/03/2023 |

| No | Application | Street | Suburb | Development | Works Value | Expiry Date | Referral | Proposed Delegation | Advertising Period Start | Advertising Period End |
|----|-------------|----------------------|--------------|--|-------------|-------------|-------------|---------------------|--------------------------|------------------------|
| 19 | PLN-23-8 | 62 RED CHAPEL AVENUE | SANDY BAY | Partial Demolition, Alterations, and Swimming Pool | \$200,000 | 20/02/2023 | maxwellv | Director | 09/03/2023 | 24/03/2023 |
| 20 | PLN-23-34 | 22 ASCOT AVENUE | SANDY BAY | Alterations | \$17,855 | 13/03/2023 | baconr | Director | 02/03/2023 | 17/03/2023 |
| 21 | PLN-23-79 | 255 SANDY BAY ROAD | SANDY BAY | Partial Demolition and Alterations | \$70,000 | 06/04/2023 | ayersh | Director | 08/03/2023 | 23/03/2023 |
| 22 | PLN-23-86 | 38 LORD STREET | SANDY BAY | Alterations (Solar Panels) | \$8,000 | 12/04/2023 | maxwellv | Director | 08/03/2023 | 23/03/2023 |
| 23 | PLN-21-830 | 20 MCROBIES ROAD | SOUTH HOBART | Demolition, New Dwelling and Carport | \$450,000 | 18/01/2022 | mcclenahanm | Director | 28/02/2023 | 15/03/2023 |
| 24 | PLN-23-66 | 19 MCKELLAR STREET | SOUTH HOBART | Partial Demolition, Alterations, and Extension to Outbuilding (Garage) | \$15,000 | 30/03/2023 | maxwellv | Director | 08/03/2023 | 23/03/2023 |
| 25 | PLN-23-64 | 11 WOODRIDGE PLACE | TOLMANS HILL | Partial Demolition, Alterations, and Extension | \$130,000 | 30/03/2023 | mcclenahanm | Director | 06/03/2023 | 21/03/2023 |
| 26 | PLN-23-47 | 41 NEWDEGATE STREET | WEST HOBART | Change of use to Visitor Accommodation | \$0 | 20/03/2023 | langd | Director | 06/03/2023 | 21/03/2023 |

7.2 Delegated Decision Report (Planning)
File Ref: F23/28142

Report of the Director City Life of 22 March 2023 and attachment.

Delegation: Committee



City of **HOBART**

MEMORANDUM: PLANNING COMMITTEE

Delegated Decision Report (Planning)

Attached is the delegated planning decisions report for the period 7 March 2023 to 20 March 2023.

RECOMMENDATION

That the delegated decisions report (planning) for the period 7 March 2023 to 20 March 2023 be received and noted.

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.

Neil Noye
DIRECTOR CITY LIFE

Date: 22 March 2023
File Reference: F23/28142

Attachment A: Delegated Permit Report ↓

21 March 2023

Delegated Decisions Report (Planning)

24 applications found.

| | | | | Approved | All |
|--|---|--------------|----------|-----------|-----|
| Planning Description | Address | Works Value | Decision | Authority | |
| PLN-20-892 Partial Demolition, Retaining Wall, and Front Fence | 65-69 LETITIA STREET NORTH HOBART TAS 7000 | \$ 15,000 | Approved | Delegated | |
| PLN-22-434 Alterations | 42 PLAISTER COURT SANDY BAY TAS 7005 | \$ 60,000 | Approved | Delegated | |
| PLN-22-678 Partial Demolition, Alterations, Extension, and Garage | 25 YORK STREET SANDY BAY TAS 7005 | \$ 400,000 | Approved | Delegated | |
| PLN-22-728 Partial Demolition, Alterations, and Extension | 298 LIVERPOOL STREET HOBART TAS 7000 | \$ 478,000 | Approved | Delegated | |
| PLN-22-737 Two Multiple Dwellings and Associated Works | 13 ANCANTHE AVENUE LENA VALLEY TAS 7008 | \$ 900,000 | Approved | Delegated | |
| PLN-22-763 Alterations, Signage, and Partial Change of Use to Business and Professional Services | 30-36 NEW TOWN ROAD NEW TOWN TAS 7008 | \$ 2,000,000 | Approved | Delegated | |
| PLN-22-773 Partial Demolition, Alterations, Extension, Garage, and Carport | 12 CLAUDE STREET NEW TOWN TAS 7008 | \$ 200,000 | Approved | Delegated | |
| PLN-22-779 Partial Hedge Removal and Front Fencing | 1/52 POTTERY ROAD LENA VALLEY TAS 7008 | \$ 3,500 | Approved | Delegated | |
| PLN-22-827 Partial Demolition, Alterations, Extension, Ancillary Dwelling, Garage, and Front Fencing | 77 WENTWORTH STREET SOUTH HOBART TAS 7004 | \$ 600,000 | Approved | Delegated | |
| PLN-23-101 Change of Use to Visitor Accommodation | 24 STRAHAN STREET NORTH HOBART TAS 7000 | \$ 0 | Approved | Delegated | |
| PLN-23-102 Change of Use to Visitor Accommodation | 53 LORD STREET SANDY BAY TAS 7005 | \$ 0 | Approved | Delegated | |
| PLN-23-106 Partial Demolition and Alterations | 54 NEW TOWN ROAD NEW TOWN TAS 7008 | \$ 350,000 | Approved | Delegated | |
| PLN-23-119 Change of Use to Visitor Accommodation | 11 NIXON STREET SANDY BAY TAS 7005 | \$ 0 | Approved | Delegated | |
| PLN-23-13 Partial Demolition, Alterations, and Extensions | 30 MARGARET STREET SANDY BAY TAS 7005 | \$ 1,500,000 | Approved | Delegated | |
| PLN-23-22 Alterations, Landscaping, Front Fencing, and Garage and Studio/Gym | 5A ZOMAY AVENUE DYN NYRNE TAS 7005 | \$ 250,000 | Approved | Delegated | |
| PLN-23-28 Change of Use to Visitor Accommodation | 5/40 FITZROY PLACE DYN NYRNE TAS 7005 | \$ 0 | Approved | Delegated | |
| PLN-23-32 Signage and Extension to Operating Hours | 17A CASTRAY ESPLANADE BATTERY POINT TAS 7004 | \$ 0 | Approved | Delegated | |
| PLN-23-44 Change of Use to Visitor Accommodation | 1/6 THELMA DRIVE WEST HOBART TAS 7000 | \$ 0 | Approved | Delegated | |
| PLN-23-45 Partial Demolition and Alterations | 155 NEW TOWN ROAD NEW TOWN TAS 7008 | \$ 75,000 | Approved | Delegated | |
| PLN-23-49 Partial Demolition, Alterations, and Extension | 8 STOKE STREET NEW TOWN TAS 7008 | \$ 50,000 | Approved | Delegated | |
| PLN-23-5 Partial Demolition, Alterations, Extension, Signage, and Partial Change of Use to Two Multiple Dwellings (One Existing, One New) | 222-228 ELIZABETH STREET HOBART TAS 7000 | \$ 800,000 | Approved | Delegated | |

CITY OF HOBART

| Planning Description | Address | Works Value | Decision | Authority |
|--|---|-------------|----------|-----------|
| PLN-23-70 Partial Demolition, Alteration, and Extension to Outbuilding | 10 MELLIFONT STREET WEST HOBART TAS 7000 | \$ 50,000 | Approved | Delegated |
| PLN-23-91 Change of use to Visitor Accommodation | 33 FELTHAM STREET NORTH HOBART TAS 7000 | \$ 0 | Approved | Delegated |
| PLN-23-92 Change of Use to Visitor Accommodation | 487 CHURCHILL AVENUE SANDY BAY TAS 7005 | \$ 0 | Approved | Delegated |

8. QUESTIONS WITHOUT NOTICE

Regulation 29 of the *Local Government (Meeting Procedures) Regulations 2015*.

File Ref: 13-1-10

- (1) *A councillor at a meeting may ask a question without notice –
 - (a) of the chairperson; or
 - (b) through the chairperson, of –
 - (i) another councillor; or
 - (ii) the chief executive officer.*
- (2) *In putting a question without notice at a meeting, a councillor must not –
 - (a) offer an argument or opinion; or
 - (b) draw any inferences or make any imputations –except so far as may be necessary to explain the question.*
- (3) *The chairperson of a meeting must not permit any debate of a question without notice or its answer.*
- (4) *The chairperson, councillor or chief executive officer who is asked a question without notice at a meeting may decline to answer the question.*
- (5) *The chairperson of a meeting may refuse to accept a question without notice if it does not relate to the activities of the council.*
- (6) *Questions without notice, and any answers to those questions, are not required to be recorded in the minutes of the meeting.*
- (7) *The chairperson of a meeting may require a councillor to put a question without notice in writing.*

9. CLOSED PORTION OF THE MEETING

That the Committee resolve by majority that the meeting be closed to the public pursuant to regulation 15(1) of the *Local Government (Meeting Procedures) Regulations 2015* because the items included on the closed agenda contain the following matters:

- A matter involving legal action.

The following items were discussed: -

- | | |
|--------------|---|
| Item No. 1 | Minutes of the last meeting of the Closed Portion of the Committee Meeting |
| Item No. 2 | Consideration of supplementary items to the agenda |
| Item No. 3 | Indications of pecuniary and conflicts of interest |
| Item No. 4 | Planning Authority Items – Consideration of Items with Deputations |
| Item No. 5 | Reports |
| Item No. 5.1 | Planning Authority Decisions Subject to Appeal before the Tasmanian Civil and Administrative Tribunal - Monthly Update LG(MP)R 15(4)(a) |