

Blue Lake Boardwalk

Heritage Submission

Report Number: P-FY20220743-BLHS01

October 2021

Prepared for:



Contents

1. Introduction	4
1.1 Background.....	4
1.2 The Development	4
1.3 Benefits.....	4
2. Plan Development	6
2.1 Plan Amendments	6
2.1.1 Additional Plan Development	6
2.2 Devil’s Coach House and Nettle Cave Access	7
2.3 Blue Lake Western end elevated boardwalk crossing	9
2.4 Vegetation Plan	11
3. Public Consultation	12
3.1 JCRT Stakeholder Reference Group	12
3.2 Direct Consultation	12
3.2.1 Process and Communications.....	12
3.2.2 SRG Submissions and Changes	13
3.2.3 Letters of Support.....	13
3.3 Consultation Conclusion	14
4. Conclusion	15
5. References	16
Appendix A Blue Lake General Arrangement Plans	A-1
Appendix B Blue Lake - Design Statement and Interpretation Plan	B-1
Appendix C Blue Lake Boardwalk Heritage Impact Statement	C-1
Appendix D Blue Lake Boardwalk Materials Schedule Rev D (as amended)	D-1
Appendix E Blue Lake Boardwalk Visualisations	E-1
Appendix F Blue Lake Vegetation Plan	F-1
Appendix G Jenolan Project Overview Document	G-1
Appendix H Stakeholder Reference Group Consultation Summary	H-1
Appendix I Stakeholder Reference Group Communications	I-1
Appendix J Plans Provided to Stakeholders Reference Group for Comment	J-1

Tables

Appendix Table F-1: Vegetation Mix Type.....	F-2
Appendix Table F-2: Vegetation Description	F-4

Figures

Figure 1-1: Grand Arch view from Event Deck	5
Figure 2-1: Western end elevated boardwalk crossing.....	6
Figure 2-2: Jenolan Caves Blue Lake Precinct Arrangement.....	7

Figure 2-3: Nettle Cave Staircase Damage8
Figure 2-4: Carlotta Arch Slope Topography (for reference)8
Figure 2-5: Carlotta’s Arch Detachment Risk Profile Map (PSM, 2020)9
Figure 2-6: Alternate Devil’s Coach House Access Path.....10
Figure 2-7: Carlotta’s Arch Viewing Platform view of the Blue Lake.....11
Figure 2-8: Nettle Staircase view of the Blue Lake.....11

1. Introduction

1.1 Background

The Jenolan Caves Reserve Trust (JCRT) manages the Visitor Use and Services Zone (VUSZ) of the Jenolan Karst Conservation Reserve (the Reserve). The NSW National Parks & Wildlife Service (NPWS) manages the Conservation Management Zone of the Reserve. The Blue Lake Walking Track is within the Grand Arch precinct of the VUSZ and connects to the Jenolan River Walk managed by the NPWS.

Approximately 90% of all JCRT's 240,000 visitors are recorded as visiting the Blue Lake precinct, which is as high as 1200 visitors per day in the busiest times. Of the 90% of visitors who attend the Blue Lake, only 20% continue beyond the Blue Lake dam wall.

The upper limit yearly visitation is projected to be between 375,000 and 465,000 visitors per annum from visitation modelling. From this JCRT were successful in receiving grant funding from Restart NSW for Visitor Facilities Upgrade. The revitalisation of the Blue Lake precinct's visitor infrastructure and walking trails such that the visitor experience is provided new life and would have sufficient visitor carrying capacity.

JCRT have engaged NewScape Designs Pty Ltd to prepare a landscape design which through stakeholder consultation, and previous revisions, are now in state suitable for submission to Heritage NSW. This exciting project will revitalise a much-loved visitor precinct, providing substantial benefits to visitors while honouring the cultural and natural heritage and important viewscales.

1.2 The Development

The Blue Lake Boardwalk includes the refurbishment of existing trails, construction of new elevated boardwalk and ramps, construction of new viewing platforms and new meeting areas. The works are further detailed within the following:

- Appendix A – Blue Lake General Arrangement Plans
- Appendix B – Blue Lake - Design Statement and Interpretation Plan
- Appendix C – Blue Lake Boardwalk Heritage Impact Statement
- Appendix D – Blue Lake Boardwalk Materials Schedule Rev D (as amended)
- Appendix E – Blue Lake Boardwalk Visualisations
- Appendix F – Blue Lake Vegetation Plan

Context to the submission is expanded upon herein based on the site constraints and other associated Jenolan experiences which rely upon the Blue Lake Boardwalk project.

1.3 Benefits

The Blue Lake Boardwalk is an exciting opportunity for JCRT which will be an inclusive experience for people with disabilities, provide a repaired cultural landscape with an enhanced Blue Lake and setting. The development to the Blue Lake Boardwalk allows JCRT the rare opportunity to:

- Replace worn-out infrastructure and plan for improved accessibility with new visitor experiences offered to those with mobility disabilities
- Provide high quality, accessible access to the lake which will allow further use of the precinct;
- Provide a space to allow larger gatherings with a strong focus on education and interpretation while also allowing for public uses such as events and weddings;
- Provide a much-needed safety improvement with the inclusion of balustrades to remove the risk of falling from a height;
- Providing safe access to the Devils Coach House via a boardwalk across the eastern edge of the lake to avoid significant rockfall zones;
- Provide improved landscaping and vegetation which supports and encourages the growth of the local Platypus and food sources;

- Protect built heritage (including heritage views) and natural heritage including known Platypus burrows that existing visitors on gravel pathways are currently compacting;
- Engage with the local knowledge holders and highlight the Dreamtime stories and significance of the area; and
- Provide high quality interpretation of the precinct to educate visitors on the values of Jenolan and the Blue Lake.

Refurbishment of the Blue Lake Precinct allows JCRT to showcase the area’s natural, built and cultural heritage. This is to be achieved by implementing an interpretation plan as part of the project, developed in consultation with the Gundungurra people JCRT currently engages with.

JCRT’s focus of the development is increasing the education and interpretation to highlight the opportunities available to the precinct. The plans have been developed as an extension of the 2007 BioDesign Concept Plan which identified views and vistas.



Figure 1-1: Grand Arch view from Event Deck

The above Figure 1-1 shows a visualisation of the Event Deck as a teaching space and depicts the development extent of the Blue Lake Western end elevated boardwalk crossing.

As part of the project’s interpretation implementation finalised content is in development which will include direct consultation with the Jenolan Caves

2. Plan Development

In response to the refusal of the Section 60 application of March 2021, reference S60/2021/056, JRCT have amended the plans based on the Heritage Approval Committee's commentary. A revised schedule has been shared with the Heritage Approval's Committee and discussed through a workshop with a small group of the Committee held on August 13th, 2021.

2.1 Plan Amendments

In design development from the previous submission JCRT have

- removed the bridge downstream of the Blue Lake dam wall
- removed elevated boardwalk along the North Eastern alignment of the walking track
- reduced the encroachment of the Blue Lake event deck

The proposal focusses on the adaptive reuse of the North Eastern alignment with materials suitable to the local geology, allowing for improved accessibility along the North Eastern alignment; an experience not previously afforded to people with disabilities.

The plan still incorporates an elevated boardwalk crossing to the Western end of the boardwalk, show below in Figure 2-1, such that access can be provided to the Devil's Coach House and Nettle Cave; detailed in Section 2.2.



Figure 2-1: Western end elevated boardwalk crossing

2.1.1 Additional Plan Development

During the workshop with the Approval's Committee member in August, the plans have now been developed to include the portion of the Jenolan Caves River Walk from the Blue Lake dam wall to the Jenolan Swimming Hole. This inclusion is such that the entire looped walking trail is shown. Thus, the plan is more easily read in conjunction with the 2007 BioDesign Concept. Additional interpretation elements within this section of the walking path are captured in the project.

To provide better context to the development the plans also show the starting location of the walking trail experience which begins at the congregation point within the Grand Arch. This is where the trailhead map and wayfinding information is conveyed to visitors.

The picnic seating has been substituted for typical bench seating plans due to public stakeholder consultation.

2.2 Devil's Coach House and Nettle Cave Access

Previously, the Devil's Coach House and Nettle Cave were accessed from a walking track beginning within the Jenolan Caves Grand Arch East Portal, which progressed North of the Jenolan Caves Road. In addition, there is an alternate walking trail which is part of the River Walk and Blue Lake Walk North Eastern alignment. A general arrangement mark-up is provided below in Figure 2-2.



Figure 2-2: Jenolan Caves Blue Lake Precinct Arrangement

The previous access track to the Devil's Coach House and staircase to the Nettle Cave were closed to public access in mid-2010 due to rockfall hazards. This was due partly resulting from vegetation loss of the 2019 bushfires, and a significant rockfall event was experienced below the Carlotta's Arch which had a considerable impact on the Nettle Cave staircase. This is depicted below in Figure 2-3. This occurrence highlights the likelihood and severity of rockfall events when they do occur.

The Devil's Coach House and Nettle Cave are both visitor experiences that are either self-guided tours, nil cost experiences or guided tour experiences. Unfortunately, these visitor experiences have been inaccessible since their closure due to the rockfall risk. JCRT looks to re-open the experiences as part of the Blue Lake Boardwalk project.

In 2020, JCRT undertook a slope stability and risk assessment of the Reserve. One the outcome was a quantified risk identification of the Grand Arch East Portal and Carlotta's Arch slopes.



Figure 2-3: Nettle Cave Staircase Damage



Figure 2-4: Carlotta Arch Slope Topography (for reference)

The slope below Carlotta's Arch was identified as having a Very High risk of rock detachment and a rockfall source zone, depicted below in Figure 2-5. The previous access track was identified as having an Unacceptable Risk to Life when assessed using the *National Parks and Wildlife Service Guidelines for Quantitative Risk to Life Calculations for Landslides* (Golder, January 2020). This has become the approved method under the adopted *NSW National Parks and Wildlife Service Landslide and Rockfall Procedures NSW* (NSW Govt, February 2020) policy.

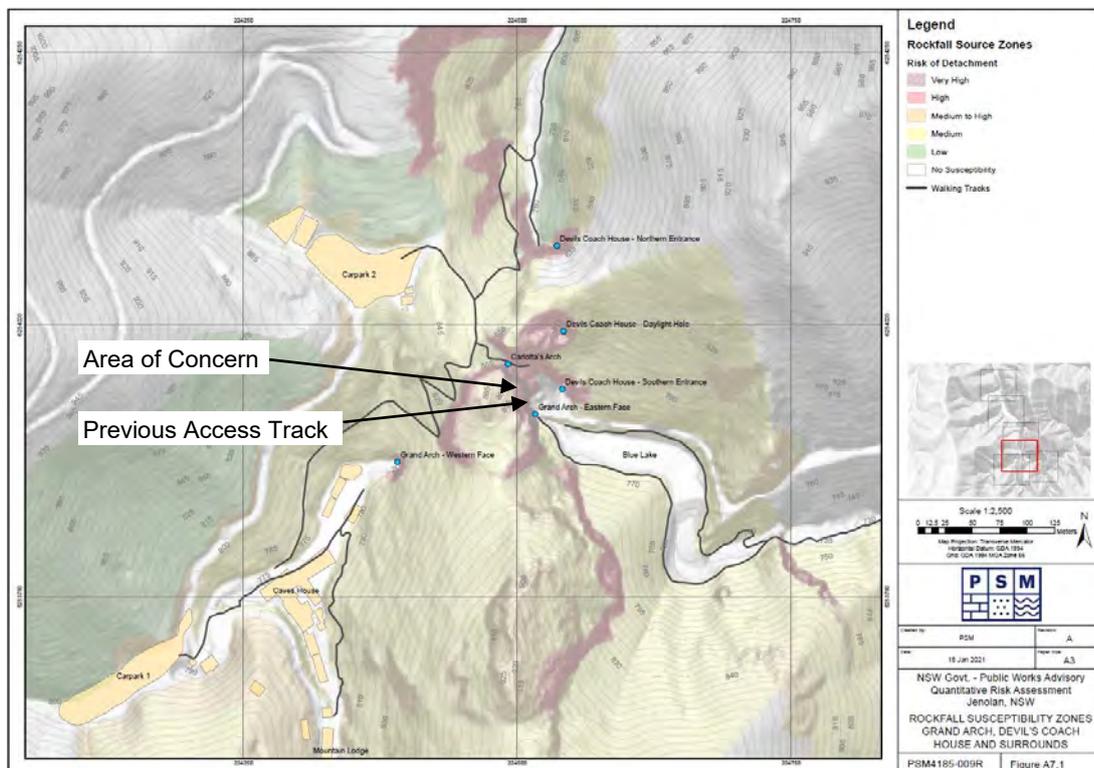


Figure 2-5: Carlotta's Arch Detachment Risk Profile Map (PSM, 2020)

With the previous access track identified as having an Unacceptable Risk to Life, Pells Sullivan Meynink (PSM) included recommendations within the slope stability assessment report for the construction of a rockfall structure constructed at the base of the Grand Arch to provide protection to track users (PSM, 2020).

JCRT has reviewed this and considers that a structure created within the Carlotta's Arch slope would significantly impact the Grand Arch Eastern Portal significant views. Noting that the Blue Lake Western Access track will require rockfall protection measures, the access to the Devil's Coach House and Nettle Cave has been reviewed. An alternate action to access the areas is to utilise the Blue Lake Western end elevated boardwalk crossing.

Site's topography and rockfall risk is best understood through physical inspection, but where this is not possible JCRT have provided drone footage of the Blue Lake though Carlotta's Arch. Fly through footage is available via the link <https://vimeo.com/523656611>

2.3 Blue Lake Western end elevated boardwalk crossing

Utilising the Blue Lake Western end elevated boardwalk crossing avoids unnecessary construction and remove the previous concrete access path that crosses directly below the rockfall zone of the slope below Carlotta's Arch.

The inclusion of this crossing also allows for JCRT to provide a new visitor experience in that:

- the Blue Lake's North Eastern alignment will have improved accessibility for people with disabilities
- additional interpretation opportunities are realised for
 - the Leffel Wheel Weir,
 - the Grand Arch East Portal,
 - the underground river resurgence (referred to within the cave system as the River Styx), and
 - the areas cultural elements

- increased accessibility to all visitors with a significantly reduced distance to access the alignment from the previous access path (based on the closure of the Devil's Coach House access path)

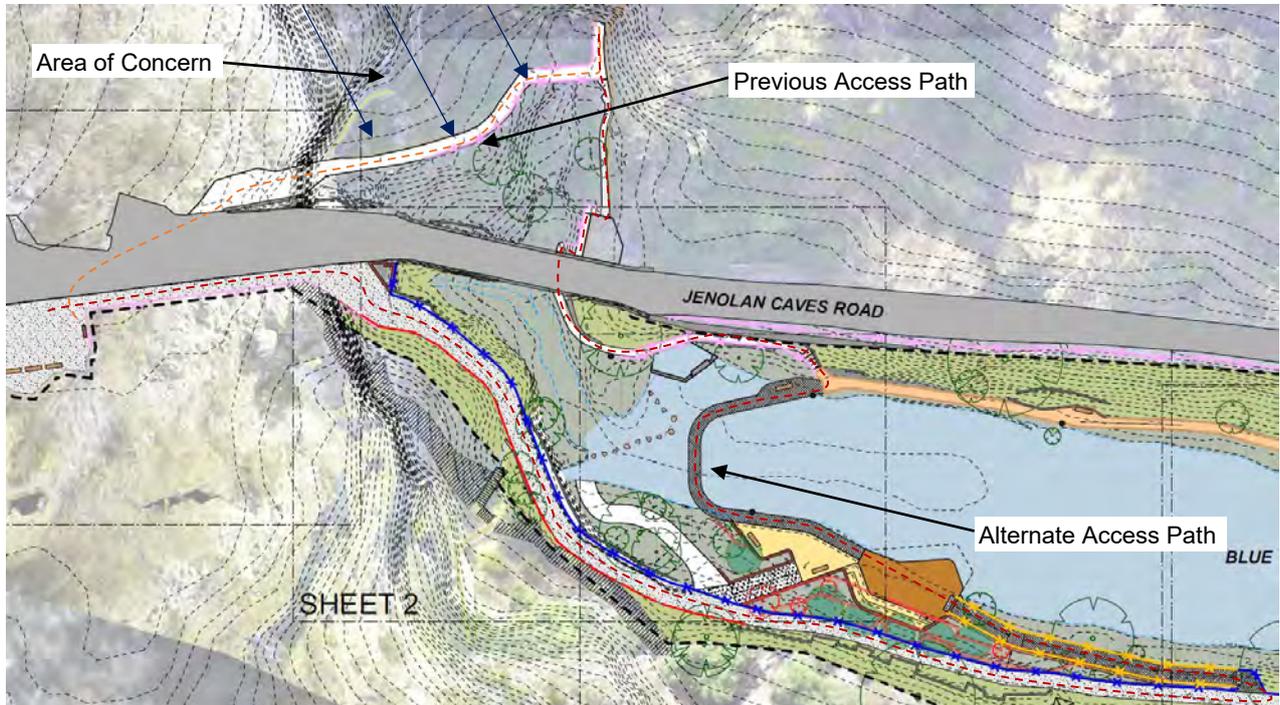


Figure 2-6: Alternate Devil's Coach House Access Path

The above Figure 2-6 shows the previous access path used to access the Devil's Coach House as the Orange dotted line. The new proposed access path is depicted as the Dark Red dotted line. Due to the site topography, there is little opportunity elsewhere within the Blue Lake head which allow for access to be provided across the lake which has a little development as the proposed crossing, depicted in Figure 2-1. Without the inclusion of the proposed crossing the only way to access the Devil's Coach House and Nettle Cave will be to follow the full length of the Blue Lake walk and Riverwalk, shown on the cover page of Appendix A. This will add approximately 600m to the walking trail and, more significantly, numerous steps which significantly impact the likelihood of visitors utilising the experience.

While it is acknowledged that the Western end elevated boardwalk crossing will be visible from within the Blue Lake, it will have minimal impact on the views from Carlotta's Arch. The Western end elevated boardwalk crossing has been marked out by surveyors and is shown below in Figure 2-7 and Figure 2-8. From Figure 2-7 it is evident that there will be minimal visual impact on the Blue Lake view and Figure 2-8 clearly demonstrates that the Western end elevated boardwalk crossing will be partially visible from well down the staircase.



Figure 2-7: Carlotta's Arch Viewing Platform view of the Blue Lake



Figure 2-8: Nettle Staircase view of the Blue Lake

2.4 Vegetation Plan

As part of the works a vegetation plan has been developed by NewScape Designs Pty Ltd which was informed from consultation with:

- Greg Bourke, Curator of the Blue Mountains Botanic Garden Mount Tomah (in an assisting capacity with advice on plant historical relevance, suitability and availability)

- Roger Lembit, Principal Ecologist of Gingra Ecological Surveys (in an assisting capacity with advice on plant historical relevance and suitability)
- Dr. Tom Grant, UNSW Affiliate and published Platypus researcher (in an assisting capacity with information on Platypus longevity, improvement of habitat and food sources, and impact mitigation)
- Eren Turak, Principal Scientist Biodiversity Research and Assessment of Office of Environment and Heritage (in an assisting capacity with information on Platypus longevity, improvement of habitat and food sources, and impact mitigation)

The species list has been selected from the master list of plants recorded from the Jenolan Karst Conservation Area as per Atlas of NSW Wildlife (OEH, 2021) records. Our list was based on native species and suitability to the site considering:

- species known to be part of the original ecological community
- the need for bank stabilisation
- providing fibrous root growth at the water's edge to promote macro invertebrate growth
- selecting planting to the water's edge to provide overhanging shade and protection to Platypus

The vegetation plan has been simplified for this submission to designate plant species mix and plantings rates and is provided within Appendix F.

3. Public Consultation

3.1 JCRT Stakeholder Reference Group

JCRT established a Stakeholders Reference Group (SRG) in July 2021, with an initial meeting held on Wednesday July 21st. The SRG is facilitated by an external public consultation consultant, Communico Consulting, and is comprised of representatives from

- Oberon Business & Tourism Association,
- Oberon Council,
- CDC Blue Mountains Transit,
- Jenolan Environment Protection Committee,
- Jenolan Caves Historical and Preservation Society,
- Neighbouring Landowner (Mr. Brian Harmon),
- NPWS, Blue Mountains Branch,
- Pejar Local Aboriginal Land Council,
- Gundungurra Aboriginal Heritage Association, and
- NSW SpeleoCouncil

The SRG is a voluntary membership group which has formal meetings on a quarterly basis for consultation on the wider program of works occurring within the Jenolan Reserve; detailed within the Jenolan Project Overview Document. The project Overview Document provided in Appendix G, shared with Heritage NSW on Tuesday 29th September, along with further request for the Heritage Approvals Committee's site attendance for early consultation on the wider program of works.

It is noted that JCRT has directly included three parties who submitted responses during the previous Heritage Section 60 public exhibition period. These parties provided their submissions to JCRT for reference, those members being Jenolan Environment Protection Committee, Jenolan Environment Protection Committee and the NSW SpeleoCouncil.

3.2 Direct Consultation

3.2.1 Process and Communications

From the plan development of the to the Blue Lake Board plan set and following the workshop with members of the Heritage Approvals Committee, JCRT provided the plans in Appendix J to the SRG for their review with an invitation to comment over a 3-week period, which was later extended to a

26-day period. The process is detailed within Communico Consulting's summary provided within Appendix H. In brief, the plans were shared with the SRG and an information session held within the consultation period which allowed explanation of the plans and to field questions directly.

3.2.2 SRG Submissions and Changes

At the close of the consultation period submissions were received from

- Jenolan Environment Protection Committee, and
- Jenolan Caves Historical and Preservation Society

JCRT has reviewed the submissions and provided responses as appropriate. The submissions and JCRT's response are provided on pages 1 through 26 of Appendix I. It is noted that Jenolan Environment Protection Committee provided an additional response of an alternate Devil's Coach House access path. Commentary is provided within the JCRT response, it is to be noted that this does not remove the rockfall risk from above.

Items that were directly incorporated into the plan are summarised as below:

1. The plan has been extended to show the walking trail below the dam wall, which includes
 - a. Replacement of the balustrades to be consistent with the Blue Lake Boardwalk selection so that the looping walking trail is represented as a whole visitor experience.
 - b. Renewal of existing interpretation points to be consistent with the Blue Lake Boardwalk's interpretation signage.
 - c. The plan can be utilised in track head signage for wayfinding purposes.
2. The plan has been extended to show the track head location within the Grand Arch, which includes:
 - a. Revised location of track head signage away from rockfall area.
 - b. Bollards along road edge to stop vehicles parking within the Grand Arch pedestrian areas.
 - c. Upgraded seating near track head.
 - d. Refurbished ground treatment near track head.
 - e. Widening and balustrade along the pedestrian path toward the Blue Lake.
3. Picnic benches near the event space revised to park bench seating only.
4. No painting works are proposed to the Hydro outlet pipe.

After the close of the consultation period, JCRT provided response to supplementary questions tendered from Jenolan Environment Protection Committee and Gundungurra Aboriginal Heritage Association, responses are included on pages 23 and 24 of Appendix I.

Additional to the plan developments JCRT have been able to further convey the future consultation on the interpretation content of both the local natural (geological) and built heritage but also the appropriate consultation on cultural heritage. JCRT will be consulting with the Jenolan Caves Historical and Preservation Society and internal staff (guides and environmental officers) for the final natural (geological) and built heritage content. JCRT will be consulting with the Gundungurra Aboriginal Heritage Association for the development and approved use of local knowledge holder's and cultural interpretation content.

3.2.3 Letters of Support

Following the closure of the consultation period JCRT had received letters of support from the following members of the SRG

- Oberon Council,
- Jenolan Caves Historical and Preservation Society,
- Neighbouring Landowner (Mr. Brian Harmon),
- Gundungurra Aboriginal Heritage Association, and
- NSW SpeleoCouncil

A single letter of non-support was received from

- Jenolan Environment Protection Committee

The aforementioned letters are provided within Appendix I.

3.3 Consultation Conclusion

JCRT have demonstrated a thorough, useful and beneficial public consultation period that meets the consultation undertaken in the previous Section 60 through the Public Exhibition period. The inclusion of all correspondence in this application should provide full transparency that JCRT have exceeded the public exhibition requirements of such and application. Further, it is our understanding that only 3 submissions were received for the previous application, that all three bodies sit on the SRG, were included in the consultation period and finally that two of the three bodies have now submitted letters of support for the revised plans.

The process undertaken by JCRT should clearly demonstrate that a public exhibition period for this application is not required and it is requested that this be foregone, relying on the process demonstrated herein.

4. Conclusion

JCRT has developed the Blue lake Boardwalk plan in the time since the Section 60 application of March 2021, reference S60/2021/056, with consideration of Heritage NSW's comments. The plan has been developed with a strong focus on the suitability of the precinct's development and the opportunity for the interpretation and education of the natural, built and cultural heritage values.

Detailed information and explanation have been provided for the site's topography, risk and need for consideration of the access to the Devil's Coach House and Nettle Cave. It is considered essential that the Blue Lake Western end elevated boardwalk crossing be included in the project delivery such that safe access can be provided and allow for the re-opening of the Devil's Coach House and Nettle Cave to the public. Further, the inclusion of the crossing allows for improved accessibility and new experiences for visitors, including those with mobility disabilities.

With the inclusion of the crossing, and the wider development, JCRT look to promote equality for all visitors with the Blue Lake precinct offering one of the only possible experiences for people with disabilities within the Reserve.

JCRT strongly believe that the submitted documentation represents a proposal which suits the public expectations and needs for the Blue lake precinct. More importantly, the proposal enhances the area and opportunities for visitors to experience and appreciate the Blue Lake precinct's natural beauty, heritage and cultural values. It is recommended that the proposal approved, and that the public consultation undertaken by JCRT, through the SRG, be accepted as demonstrating sufficient public exhibition.

5. References

Golder Associates Pty Ltd (January, 2020) "Guidelines for Quantitative Risk to Life Calculations for Landslides, 19120759-002-R-Rev3". Report prepared for NSW National Parks and Wildlife Services.

NSW Government, Department of Planning, Industry and Environment (2020) NSW National Parks and Wildlife Services – Landslides and Rockfalls Procedure.

Office of Environment & Heritage (2021). NSW BioNet Atlas. Occurrence dataset <https://doi.org/10.15468/14jd9g> accessed via GBIF.org on 2021-10-20.

PSM Consult Pty Ltd. (February, 2021). "Jenolan Caves – Slope Stability Assessment". Report prepared for Jenolan Caves Reserve Trust.