



NSW NATIONAL PARKS & WILDLIFE SERVICE

# **Review of Environmental Factors: Gardens of Stone Multi- day Walk, Section One**



Cover photograph: Character of the area Section One will traverse, from  
lookout on track.

Report produced at the request of:

National Parks and Wildlife Service

by

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## Acronyms & Abbreviations

Abbreviation	Definition
°C	Degrees Celsius
ACH	Aboriginal Cultural Heritage
ADD	Aboriginal Due Diligence
AHIMS	Aboriginal Heritage Information Management System
AIS	Asset of Intergenerational Significance
AOBV	Area of Outstanding Biodiversity Value

Abbreviation	Definition
BAM	Biodiversity Assessment Method
BAR	Biodiversity Assessment Report
BC Act	<i>Biodiversity Conservation Act 2016 (NSW)</i>
BC Regulation	Biodiversity Conservation Regulation 2017 (NSW)
BDAR	Biodiversity Development Assessment Report
BOS	Biodiversity Offset Scheme
BOM	Bureau of Meteorology
CEEC	Critically Endangered Ecological Community
CEMP	Construction Environmental Management Plan
DAWE	Commonwealth Department of Agriculture, Water and the Environment (now known as DCCEEW)
DE	Commonwealth Department of the Environment (now known as DCCEEW)
DEC	NSW Department of Environment and Conservation (now known as DPE)
DECC	NSW Department of Environment and Climate Change (now known as DPE)
DECCW	NSW Department of Environment, Climate Change and Water (now known as DPE)
DEE	Department of the Environment and Energy (now known as DCCEEW)
DCCEEW	Department of Climate Change, Energy, the Environment and Water (Commonwealth)
DPE	Department of Planning and Environment (NSW)
DPI	Department of Primary Industries (NSW)
EEC	Endangered ecological community
EIS	Environmental Impact Statement
EPA	Environmental Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979 (NSW)</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)</i>
ESCP	Erosion and Sediment Control Plan
FM Act	<i>Fisheries Management Act 1994 (NSW)</i>
FRP	Fibreglass Reinforced Plastic
GDE	Groundwater dependent ecosystems
GPS	Global Positioning System
ha	Hectares
HHIMS	Historic Heritage Information Management System
IBRA	Interim Biogeographically Regionalisation of Australia
KFH	Key Fish Habitat
KTP	Key Threatening Process
Lesryk	Lesryk Environmental Pty Ltd

Abbreviation	Definition
LEP	Local Environmental Plan
LGA	Local Government Area
mm/cm/m/m <sup>2</sup> /km	Millimetres, centimetres, metres, square metres, kilometres
MNES	Matters of national environmental significance
NHL	National Heritage List
NPW Act	NSW National Parks and Wildlife Act 1974
NSW	New South Wales
OEH	NSW Office of Environment and Heritage
PoM	Gardens of Stone State Conservation Area Plan of Management
PCT	Plant community type
PMST	Protected Matters Search Tool
REF	Review of Environmental Factors
SCC	Sutherland Shire Council
SEPP	State Environmental Planning Policy
SHR	State Heritage Register
SIS	Species Impact Statement
SoHI	Statements of Heritage Impact
SVMT	NSW State Vegetation Type Map (release C1.1.M1)
TBDC	Threatened Biodiversity Data Collection
TECs	Threatened ecological communities (VECs, EECs and CEECs)
TfNSW	Transport for NSW
VIS	Vegetation Information System
WCC	Wollongong City Council
WoNS	Weeds of National Significance

# Glossary

Term	Explanation
Areas of outstanding biodiversity	<p>An area of outstanding biodiversity value is:</p> <ul style="list-style-type: none"> <li>• an area important at a State, national or global scale, and</li> <li>• an area that makes a significant contribution to the persistence of at least one of the following: <ul style="list-style-type: none"> <li>i. multiple species or at least one threatened species or ecological community</li> <li>ii. irreplaceable biological distinctiveness</li> <li>iii. ecological processes or ecological integrity</li> <li>iv. outstanding ecological value for education or scientific research.</li> </ul> </li> <li>• The declaration of an area may relate, but is not limited, to protecting threatened species or ecological communities, connectivity, climate refuges and migratory species (BC Act 2016).</li> </ul>
Important population	<p>Is a population that is necessary for a species' long-term survival and recovery; this may include populations identified as such in recovery plans, and/or that are:</p> <ul style="list-style-type: none"> <li>• key source populations either for breeding or dispersal</li> <li>• populations that are necessary for maintaining genetic diversity, and/or</li> <li>• populations that are near the limit of the species range (DE 2013).</li> </ul>
Local population (in regards to a threatened species)	<p>Comprises those individuals known or likely to occur in the study area, as well as any individuals occurring in adjoining areas (contiguous or otherwise) that are known or likely to utilise habitats in the study area (DECC 2007).</p>
Invasive species	<p>Is an introduced species, including an introduced (translocated) native species, which out-competes native species for space and resources, or which is a predator of native species. Introducing an invasive species into an area may result in that species becoming established. An invasive species may harm listed threatened species or ecological communities by direct competition, modification of habitat or predation.</p>
Proposal	<p>Is considered to include 'all activities likely to be undertaken within the subject site to achieve the objective of the proposed development' (DECC 2007).</p>
Subject site	<p>Means the area directly affected by the proposal. The subject site includes the footprint of the proposal and any ancillary works, facilities, accesses or hazard reduction zones that support the construction or operation of the development or activity (OEH 2018).</p>
Study area	<p>Means the subject site and any additional areas which are likely to be affected by the proposal, either directly or indirectly (OEH 2018).</p>
Study region	<p>Is considered to 'include the lands that surround the subject site for a distance of 10 km (DECC 2007).</p>
Direct impact	<p>Are those that directly affect the habitat of species and ecological communities and of individuals using the study area. They include, but are not limited to, death through predation, trampling, poisoning of the animal/plant itself and the removal of suitable habitat (OEH 2018).</p>
Indirect impacts	<p>Occur when project-related activities affect species or ecological communities in a manner other than direct loss within the subject site. Indirect impacts may sterilise or reduce the habitability of adjacent or connected habitats. Indirect impacts can include loss of individuals through starvation, exposure, predation by domestic and/or feral animals, loss of breeding opportunities, loss of shade/shelter, reduction in viability of adjacent habitat due to edge effects, deleterious hydrological changes, increased soil salinity, erosion, inhibition of nitrogen fixation, weed invasion, noise, light spill, fertiliser drift, or increased human activity within or directly adjacent to sensitive habitat areas (OEH 2018).</p>



# 1. Introduction

## 1.1 Proposal name and brief description

This Review of Environmental Factors (REF) considers the environmental impact of the Gardens of Stone State Conservation Area Multi-day Walk, Section One.

This REF has been prepared by Lesryk Environmental Pty Ltd ('Lesryk') at the request of NSW National Parks and Wildlife Service. The REF is required to assess any environmental impacts associated with the proposed construction of a publicly accessible ~12 km long multi-day walking track with an associated camping area in the Gardens of Stone SCA, NSW (Figure 1).

The new 28,322 ha Gardens of Stone SCA was formally gazetted in May 2022 as part of a \$49.5 million NSW Government investment to establish Lithgow as a world-class ecotourism destination, while conserving the exceptional natural and cultural heritage values of the region (NPWS 2023). The SCA links Wollemi, Blue Mountains and the Gardens of Stone National Parks (NPWS 2023).

The Gardens of Stone Multi-Day Walk will be a major drawcard for visitors to the Gardens of Stone SCA, offering an iconic walking experience which captures the varied terrain (such as clifftop views, rainforest lined gullies and complex stone pagoda formations) of this protected area (NPWS 2023).

All works are proposed to occur in the Gardens of Stone State Conservation Area (SCA), which is located near Lithgow, NSW (Figure 1). The SCA is in the Lithgow local government area, State electorate of Bathurst and NPWS Kanangra Area, Blue Mountains Branch.

It is acknowledged that the proposed work predominantly follows the existing alignment of an unauthorised motorcycle track that was used when the area was a State Forest. That stated, sections of the proposal have been realigned from the existing motorcycle track alignment following the outcomes of extensive ground-truthing work that was done during the course of both the ecological and Aboriginal cultural heritage assessments.

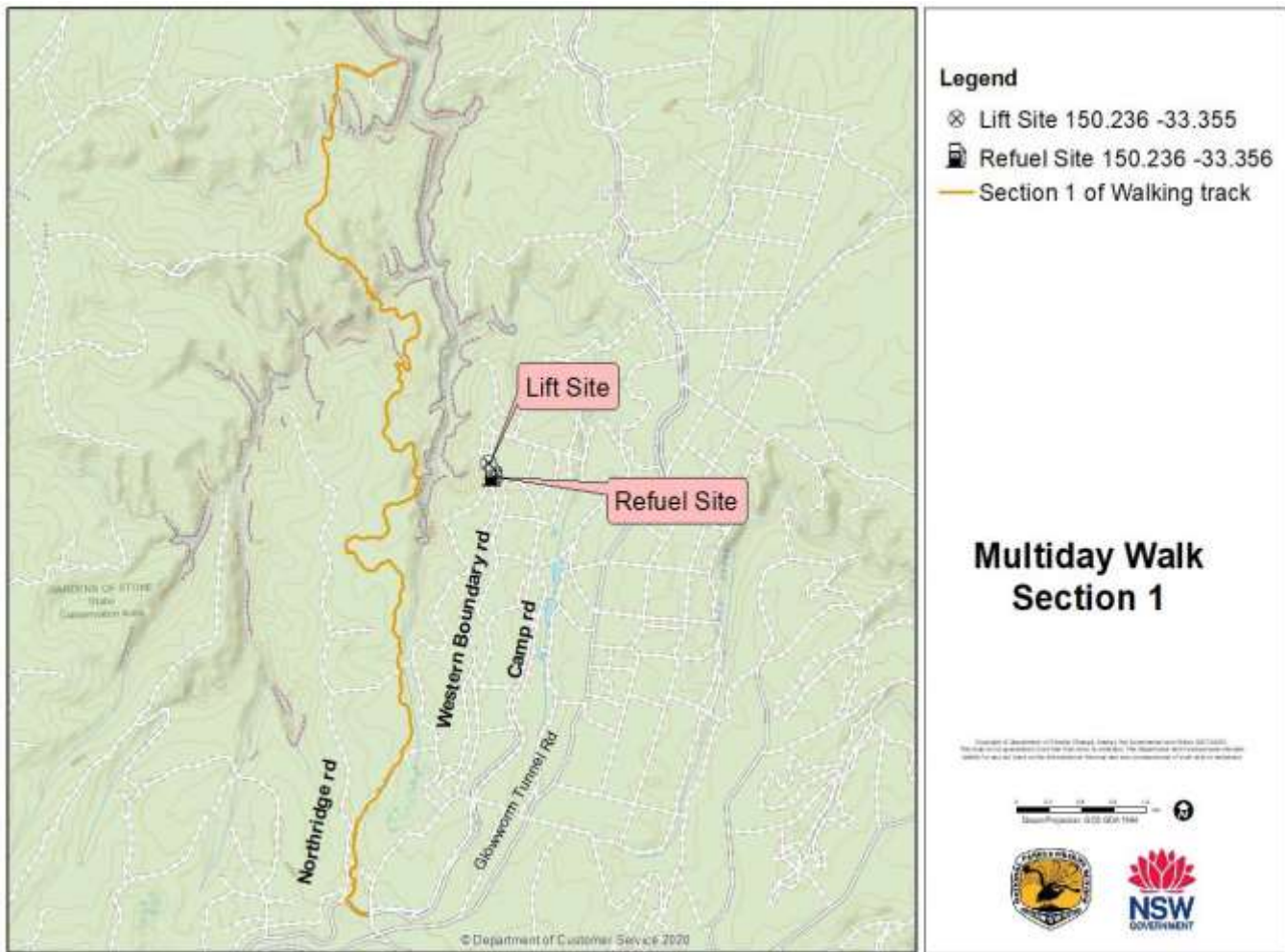
The realignment of sections of the existing track has occurred to promote the conservation of threatened species, ecological communities and ACH items that were recorded within the study area and greater SCA.

The proposed track would be about 12 km in length and includes establishment of two dedicated helicopter landing pad (Figure 1). To permit the establishment of both the walking track and helicopter landing pads, a total disturbance footprint of about 34,908 m<sup>2</sup> (3.49 ha) would be required.

During the construction phase of the project, it is expected that an additional disturbance footprint of no greater than 2 m either side of the track would be required, this needed to permit the movement of machinery and personnel. During the construction phase, 22,742 m<sup>2</sup> of vegetation would be potentially cleared. Post-establishment of the walking track, these adjacent areas would be permitted to naturally regenerate. Based on the observations made during the field inspection, unassisted natural regeneration of those plants present is considered to be high.

Where applicable, any materials won during the work, including that associated with the benching sections of the track, will be reused on site.





**Figure 1. Location of the proposal**

The BAR prepared by Lesryk (Supporting Documentation #1) and Aboriginal Cultural Heritage Due Diligence report prepared by Kelleher Nightingale Consulting (Supporting Documentation #2) have been referred to in this REF. A Statement of Heritage Impacts is not required as the track alignment does not interact with heritage fabric.

A photographic record of the area assessed within this REF has been provided in the BAR.

Unless a specific aspect of the proposal is referred to, the work would hereafter be referred to as 'the work proposed'.

## 1.2 Estimated development cost of proposal

The estimated development cost of the proposal is \$2,166,128.40 (not including staff time or land value).

## 1.3 Estimated duration of proposal

The proposal is likely to take 37 weeks to complete.

## 2. Proponent's details

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## 3. Permissibility and assessment pathway

### 3.1 Permissibility under NSW legislation

The following sections outline how the activity is permissible under applicable NSW legislation.

#### 3.1.1 National Parks and Wildlife Act 1974 (NPW Act) and NPW Regulation

The proposed work is consistent with:

##### The Objects of the Act (s.2A)

The objects in section 2A(1) of the NPW Act are:

- (a) the conservation of nature, including, but not limited to, the conservation of—
  - (i) habitat, ecosystems and ecosystem processes, and
  - (ii) landforms of significance, including geological features and processes, and
  - (iii) landscapes and natural features of significance including wilderness and wild rivers,
- (b) conservation of objects, places or features (including biological diversity) of cultural value within the landscape, including:
  - (i) places, objects and features of significance to Aboriginal people
  - (ii) places of social value to the people of New South Wales
  - (iii) places of historic, architectural or scientific significance.
- (c) fostering public appreciation, understanding and enjoyment of nature and cultural heritage and their conservation
- (d) providing for the management of land reserved under this Act.

The track has been extensively ground-truthed and realigned to promote the conservation of threatened species and ecological communities within the SCA, and to foster appreciation of the striking natural features present along the alignment. The creation of this multi-day walk will increase visitor appreciation of the ecological, historical and cultural values of the park, and greater locality.

The proposed construction footprint, broadly limited to the existing alignment determined by NPWS and revised in sections following input from both Lesryk and Kelleher Nightingale Consulting based on the outcomes of the field surveys, was determined with an objective to minimise impact on the cultural and ecological values of the site wherever possible. The use of existing trails, and the realignment of various sections, would minimise clearance requirements and/or adverse habitat impact. The track alignment has been modified to avoid or minimise impacts on species or communities of conservation concern, namely *Persoonia hindii* and Newnes Plateau Shrub Swamp/Temperate Highlands Peat Swamps on Sandstone.

An Aboriginal Cultural Heritage Due Diligence report has been prepared for the proposal by Kelleher Nightingale Consulting (Appendix B), and is detailed in Section 6.4 of this REF (pp. 32-37). A visual inspection and assessment of the study area was conducted on 23 and 27-30 June by Kelleher Nightingale Consulting. Six sites of ACH were recorded in the study area as a result of the inspections. The track alignment and proposed works do not impact any sites. Refer to Section 8.3.1 of the REF for further detail, and Section 9.5 for the impact assessment and mitigation measures.

## **Reserve management principles**

In accordance with 30(G)(2) a State Conservation Area is to be managed in accordance with a number of principles; those relevant to the proposal including:

- (a) the conservation of biodiversity, the maintenance of ecosystem function, the protection of natural phenomena and the maintenance of natural landscapes,
- (b) the conservation of places, objects and features of cultural value,
- (c) provision for the undertaking of uses permitted under other provisions of this Act in such areas having regard to the conservation of the natural and cultural values of the state conservation area,
- (d) provision for sustainable visitor or tourist use and enjoyment that is compatible with the conservation of the state conservation area's natural and cultural values and with uses permitted under other provisions of this Act in such areas.

The proposal would not have an adverse impact on any ecological communities, places, objects, features and landscapes of cultural value. In operation, the proposal would provide for sustainable (and safe) visitor/tourist use and enjoyment, compatible with the conservation, cultural and natural values of the locality.

The proposal is considered to be consistent with, and does not contravene any of the management principles of S.30G of the Act.

## **Plan of management**

The proposed work is consistent with the following policies of the Gardens of Stone State Conservation Area Plan of Management (NPWS 2022):

- Section 4.4 Establishing a major new visitor destination in the Blue Mountains (p.11)
  - Establishing the park as a major new visitor destination will require high-quality access roads, signs and carefully designed facilities that meet the needs of future visitors, including camping areas, toilets, information shelters, lookouts and walking and cycling tracks. Once constructed, this infrastructure will provide opportunities for a broad range of safe, attractive and environmentally sustainable experiences to help drive the growth of tourism in the region
  - This plan provides for the development of a multi-day walk and associated camping areas that will be publicly accessible.

This action will also support other policies and outcomes outlined in the PoM, including conservation programs and caring for Country.

## **Protection of Aboriginal objects and places**

Under section 86 of the NPW Act, it is an offence to harm Aboriginal objects and places. As discussed elsewhere in this REF, an inspection of the wider site to provide due diligence for all the works has not identified any unrecorded Aboriginal objects.

## **Assets of intergenerational significance.**

N/A. No assets of intergenerational significance (AIS), as declared under Part 12A of the NPW Act, occur in proximity to the works

### NPWS management powers and responsibilities

The proposal will maintain a conservation area, conserve the natural, cultural and recreational values of the locality, prevent damage to Aboriginal objects, and provide opportunities for visitor or tourist use and enjoyment; the proposal complying with the following NPWS management powers and responsibilities:

- section 8(6A)(c): in the case of every conservation area, but subject to the terms of the conservation agreement concerned
  - (ii) arrange for the carrying out of such works as the Area Manager considers necessary for or in connection with the management and maintenance of the area
- section 12: The Service is to carry out such works and activities as the Minister may direct, either generally or in a particular case, in relation to the following:
  - (a) the conservation and protection of land reserved under this Act or acquired for reservation under this Act and of land for which the National Parks and Wildlife Reserve Trust is the Crown land manager
  - (d) the identification, conservation and protection of, and prevention of damage to, Aboriginal objects and Aboriginal places
  - (f) the provision of facilities and opportunities for sustainable visitor or tourist use and enjoyment on land reserved under this Act
  - (g) the identification and protection of buildings, places and objects of non-Aboriginal cultural values on land reserved under this Act.

#### 3.1.2 Wilderness Act 1987

N/A. The activity is not within a declared wilderness area.

#### 3.1.3 Biodiversity Conservation Act 2016 (BC Act)

The purpose of this Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development.

By the completion of the field investigation the following biota listed under this Act were recorded:

- Newnes Plateau Shrub Swamp – endangered ecological community
- *Persoonia hindii* - endangered species
- Flame Robin – vulnerable species
- Scarlet Robin – vulnerable species
- Varied Sittella – vulnerable species
- Gang-gang Cockatoo – vulnerable species.

As they have been previously recorded within the locality, and as suitable habitat is present, it is considered necessary to adopt the precautionary approach to the potential presence of the:

- Small Pale Grass-lily – endangered species
- Deane's Boronia – vulnerable species
- Blue Mountains Water Skink – endangered species
- Giant Dragonfly – endangered species.

Impact assessments for the EEC and recorded/predicted species were conducted with reference to s.7.3 of the BC Act, these concluding that the proposal is unlikely to significantly affect the threatened species, the ecological community, or their habitats (see the BAR, Supporting Documentation #1). As such, the preparation of a SIS/BDAR that further considers the impact of the proposal on these entities is not required, and the BOS is not triggered.

### 3.1.4 Rural Fires Act 1997 (RF Act)

This Act is not applicable to the proposal; nonetheless, the proposal remains compliant with its objectives of protecting life and property and protection of the environment.

Reference to the RFS Bush Fire Prone Land Map SEED dataset (State Government of NSW and NSW Rural Fire Service 2023) indicates that the proposal area is mapped as Vegetation Category 1.

Vegetation Category 1 is considered to be the highest risk for bush fire. The proposed work would not have an adverse impact on bushfire or bushfire management. No asset protection zones, including Vegetation Category 1 zones, would be affected in the long-term by the proposed work. The proposed work would not impede firefighter access or public evacuation operations.

## 3.2 Environmental Planning and Assessment Act 1979

### 3.2.1 Assessment pathway

It is confirmed that a REF is the applicable assessment pathway as each of the following apply.

- The activity may be undertaken without development consent under the provisions of section 2.73(1)(a) of the Transport and Infrastructure SEPP as it is:
  - on land reserved under the NPW Act or acquired under Part 11 of the NPW Act, **and**
  - for a purpose authorised under the NPW Act.

Under section 5.5(1) of the EP&A Act, NPWS (as the determining authority) is required to 'examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity' in order to assess applications for approval of the proposed activity of which they are the determining authority.

This REF complies with the requirement for public authorities to assess the impact of an activity under Part 5 of the EP&A Act.

- There are no environmental planning instruments which prevail over the Transport and Infrastructure SEPP requiring the proposal to be subject to development consent.
  - The proposed activity is permissible under relevant planning instruments of the Lithgow Local Environmental Plan 2014 (Lithgow LEP). The site is zoned C1 – National Parks and Nature Reserves. Development on land reserved under the NPW Act may be undertaken without Council consent, and the EP&A Act requires NPWS to assess applications for approval of the proposed activity of which they are the determining authority.
  - The activity is not subject to development consent under the Resilience and Hazards SEPP as it is not on land mapped as littoral rainforest or coastal wetland, nor is the activity coastal protection works.
- The activity is not state significant infrastructure under Schedule 3(7) of the Planning Systems SEPP.



The activity can be considered to be declared exempt development under Section 2.74(1)(a) of the Transport and Infrastructure SEPP, as work will be carried out on behalf of NPWS [as a public authority] following requirements of Section 2.20. However, given the sensitivity of the site, and the fact that the activity involves some clearing and ground disturbance – including establishment of two heli-pads – the higher level of environmental impact assessment under an REF is considered appropriate.

### 3.2.2 Strategic plans

The activity is fully consistent with the following strategic plans made under Division 3.1 of the Act:

- The Lithgow 2040 Local Strategic Planning Statement – as it supports policies that promote balanced growth, preserve community character, and encourage environmental stewardship.

By fostering sustainable tourism, the Pagoda Walk directly addresses LSPS priorities related to enhancing liveability and connecting communities.

- The Central West and Orana Regional Plan 2041 – in supporting the Regional Plan’s vision of a healthy, connected, and resilient region that leverages its natural and cultural assets for sustainable growth.

## 3.3 Other relevant NSW legislation

### 3.3.1 Coal Mine Subsidence Compensation Act 2017

N/A. Proposed work is not in a mine subsidence district.

### 3.3.2 Fisheries Management Act 1994

The objects of Part 7 of this Division are to conserve the biodiversity of fish and aquatic vegetation and to protect fish habitat by providing for the management of dredging work and reclamation work, consistent with the objectives of ecologically sustainable development.

Reference to the DPI’s Fisheries NSW Spatial Data Portal [layer: Hawkesbury Nepean] (DPI 2023b) indicates Carne Creek is mapped as key fish habitat (KFH). See Figure 3. The proposed track alignment crosses this drainage line in two locations, and traverses the boundary of the mapping towards the southern end of the track. To minimise impacts on Carne Creek where the walking track intersect with this drainage line, large sandstone stepping stones with adequate spacing will be used. This approach will not impact the dynamics of the waterway and species movement for short water crossings, nor will it create additional environmental impacts during major bushfire events.

With reference to the BAR (Supporting Documentation #1), no fish passage would be blocked, therefore no permits (e.g., s.205 or 219) in accordance with the FM Act are necessary. No threatened species or populations listed under the FM Act were recorded or considered likely to occur in proximity to the proposed walking track; therefore, no assessments referencing the criteria listed under Part 7A, Division 12, s.221ZV of this Act (these commonly referred to as the seven-part test) were conducted.

Part 7 Division 3, ‘Dredging and reclamation’ is applicable to the proposal, this defined as:

Dredging work —

- a. any work that involves excavating water land
- b. any work that involves moving material on water land or removing material from water land.



Reclamation work —

- a. using any material (such as sand, soil, silt, gravel, concrete, oyster shells, tyres, timber or rocks) to fill in or reclaim water land, or
- b. depositing any such material on water land for the purpose of constructing anything over water land (such as a bridge), or
- c. draining water from water land for the purpose of its reclamation.

Water land is land submerged by water —

- a. whether permanently or intermittently
- b. whether forming an artificial or natural body of water.

Section 199 of the Act requires that the proponent must, before it carries out or authorises the carrying out of dredging work:

- give the Minister written notice of the proposed work, and
- consider any matters concerning the proposed work that are raised by the Minister within 28 days after the giving of the notice (or such other period as is agreed between the Minister and the public authority).

As works will be undertaken near KFH that meets the definitions of Dredging and reclamation, NPWS must give the Minister administering the FM Act written notice of the proposed work and consider any matters concerning the work raised in accordance with s.199, Part 7 Division 3 'Dredging and reclamation' of the FM Act. See Section 4.1.2 of this REF.

### **3.3.3 Heritage Act 1977**

The activity is on land that contains:

- an item listed on the State Heritage Register (SHR)
- an item listed on the NPWS Heritage and Conservation Register under s.170 of the Heritage Act (contained in the Historic Heritage Information Management System [HHIMS])
- a place, building landscape feature or moveable heritage item older than 25 years

A desktop search of relevant heritage databases identified the following listed heritage items within the study area:

- Wolgan Valley Railway (Newnes Railway) – listed on the State Heritage Inventory as part of the Blue Mountains Walking tracks, Schedule 5 of the Lithgow LEP and under s.170 of the Heritage Act, listed on the HHIMS.

It is acknowledged that heritage items are located within the area investigated however, the value of these will not be impacted by the proposed works (refer to section 8.3.2 of the REF for further details).

### **3.3.4 Marine Estate Management Act 2014**

N/A.

### **3.3.5 NSW Reconstruction Authority Act 2022**

The NSW Reconstruction Authority has developed Australia's first *State Disaster Mitigation Plan 2024-2026* (SDMP) (NSW RA 2024). This supports the NSW Government's commitment to making our communities safer, more resilient and better prepared to face the challenges of disasters caused by natural hazards such as floods, bushfires, storms and cyclones, and coastal erosion and inundation. The proposed activity is not inconsistent with the SDMP.

## 3.4 Commonwealth legislation

### 3.4.1 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act applies as the activity is on land that contains the following, or the activity may affect:

- world heritage or national heritage values of a property on the World Heritage List or place on the National Heritage List
- nationally listed threatened species and ecological communities or listed migratory species.

This Act regulates the assessment and approval of activities that will have, or are likely to have, a significant impact on MNES, activities by Commonwealth government agencies and activities by any person on Commonwealth land. MNES currently include World Heritage properties, Ramsar wetlands, a nationally threatened species and ecological communities, migratory species (as listed by the Commonwealth Government), nuclear actions, Commonwealth marine areas and other matters prescribed by the Regulations. Where applicable, the assessment criteria relevant to this Act must be drawn upon to determine whether there would be a significant effect on these species and hence whether referral to the Federal Environment Minister is required.

See section 8.6 for further discussion of the MNES present.

Assessments conducted in accordance with the significant impact guidelines prepared under this Act (DE 2013) were undertaken on each of these MNES (see the BAR, Supporting Documentation #1). Based on the outcomes of these assessments it was concluded that, provided the recommended mitigative measures were undertaken, the proposal would not have a significant impact on Temperate Highlands Peat Swamps on Sandstone, Deane's Boronia, the Blue Mountains Water Skink or Gang-gang Cockatoo. As such, the proposal is not a controlled action that requires referral to the Federal Minister for the Environment for further consideration or approval.

As such, referral of the matter to the Federal Minister for the Environment for further consideration or approval is not required.

## 3.5 Consistency with NPWS policy

Policy name	How proposal is consistent
Walking Tracks Policy	<p>This policy is intended to help NPWS meet government and industry standards in the design and classification of walking tracks (DPE 2021a). The tracks must be appropriately located and designed to minimise environmental impacts, and be appropriate to the setting. The planning, development and management of walking tracks should also consider:</p> <ul style="list-style-type: none"> <li>• public safety issues</li> <li>• opportunities to provide access for people with disabilities</li> <li>• resources needed to keep the track maintained.</li> </ul> <p>The proposal aims to establish a walking track that is in line with relevant guidelines and standards.</p>
Visitor Safety Policy	<p>This policy outlines NPWS' legal duty of care towards people in parks and provides guidance about how to address safety issues and reduce risk to park visitors while maintaining park values (DPE 2023b).</p> <p>The proposal would be constructed in accordance with this policy.</p>

Policy name	How proposal is consistent
Visitor Accommodation Policy	<p>Visitor accommodation is permissible in parks where it is consistent with the objects and management principles of the NPW Act and the <i>Wilderness Act 1987</i>, and the relevant park's plan of management (DPE 2021b).</p> <p>To protect the park environment and the experience of other park users, the following actions may be undertaken to manage camping activities:</p> <ul style="list-style-type: none"> <li>the number of camping sites or availability of remote ('bush') camping may be limited</li> <li>camping sites may be rotated or rested to allow areas to rehabilitate</li> <li>bookings may be required to occupy sites</li> <li>permits may be required for remote camping.</li> </ul> <p>Camping areas associated with the proposed Section One track would remain consistent with this policy.</p>
Landslides and Rockfalls Policy	<p>This policy outlines NPWS' duty of care to park visitors and staff to minimise the risk of landslides and rockfalls where:</p> <ul style="list-style-type: none"> <li>the risk is foreseeable to NPWS</li> <li>it is not insignificant</li> <li>a reasonable person (if aware of the risk) would have taken precautions to limit or remove the risk.</li> </ul> <p>NPWS follows accepted risk management and safety practices; conforms with international and Australian standards; and follows corporate Risk Management Procedures and the Work, Health and Safety (WHS) System in its management of risk from landslides and rockfalls (DPE 2020).</p> <p>The management of landslides and rockfalls within the proposal area would be managed in accordance with the principles set out in this policy, and associated <u>Landslides and Rockfalls Procedures</u>.</p>
Vehicle Access Policy	<p>This policy aims to manage vehicle access to parks to keep staff and visitors safe and limit impacts on the park environment (DPE 2021c).</p> <p>Any vehicle access and associated infrastructure, e.g. the carpark at the southern end the proposal would be constructed in accordance with the aims of this policy.</p>

## 3.6 Summary of licences and approvals

### 3.6.1 Approval under the National Parks and Wildlife Act

Internal NPWS approval or authorisation, including expenditure.

### 3.6.2 Other approvals

None. Notification (and not approval) is required from the Minister administering the FM Act in respect of s.199, Part 7 Division 3 'Dredging and reclamation' of the FM Act. Refer to Section 3.2.2 of the REF for further detail.

### 3.6.3 Publication triggers

**Table 1. Triggers for publication of the Review of Environmental Factors**

Permit or approval	Applicable?
<i>Fisheries Management Act 1994</i> , sections 144, 201, 205 or 219	No
<i>Heritage Act 1977</i> , section 57 (commonly known as a section 60)	No
<i>National Parks and Wildlife Act 1974</i> , section 90 (AHIP)	No
Protection of the <i>Environment Operations Act 1997</i> , sections 47–49 or 122 (designates the EPA as the regulatory authority)	No

No permits or approvals are required, therefore this REF does not meet the publication trigger under section 171(4)(b) of the EP&A Regulation.

## 4. Consultation – general

### 4.1 Statutory consultation

#### 4.1.1 Transport and Infrastructure SEPP

Consultation with other public authorities is required as per the following table.

**Table 2. Consultation triggers under the Transport and Infrastructure SEPP**

Authority (TISEPP section)	Trigger	Applicable to proposal?
Consultation with local council (s 2.10)	Development with impacts on council infrastructure or services (such as stormwater, sewer, water, roads and footpaths)	No
Consultation with local council (s 2.11)	Development with impacts on heritage items listed under the local environmental plan (LEP)	Yes
Consultation with local council (s 2.12)	Development that will change flood patterns on flood-labile land	No
Consultation with State Emergency Service (s 2.13)	Development on flood-labile land	No
Consultation with local council (s 2.14)	Development that is inconsistent with a certified coastal management program affecting land within the mapped coastal vulnerability area.	No
Consultation with NPWS (s 2.15(2)(a))	Development adjacent to land reserved or acquired under the NPW Act	No
Consultation with NPWS (s 2.15(2)(b))	Development on land in Zone C1 that is yet to be reserved under the NPW Act	No
Consultation with Transport for NSW (s 2.15(2)(c))	Development comprising a fixed or floating structure in or over navigable waters	No
Consultation with the Director of the Siding Spring Observatory (s 2.15(2)(d))	Development that may increase the amount of artificial light in the night sky and that is on land within the mapped dark sky region	No
Consultation with the Cth Department of Defence (s 2.15(2)(e))	Development located within the buffer around the defence communications facility near Morundah as mapped under the Lockhart, Narrandera or Urana LEPs	No
Consultation with the Subsidence Advisory NSW (s 2.15(2)(f))	Development on land in a mine subsidence district.	No
Consultation with the Willandra Lakes Region World Heritage Advisory Committee and Heritage NSW (s 2.15(2)(g))	Development on, or reasonably likely to have an impact on, a part of the Willandra Lakes Region World Heritage Property	No

Authority (TISEPP section)	Trigger	Applicable to proposal?
Consultation with the Western Parkland City Authority (s 2.15(2)(h))	Development within a Western City operational area (Western Parkland City Authority Act 2018, Schedule 2) with a capital investment value of \$30 million or more	No
Consultation with Transport for NSW (s 2.221)	Traffic-generating development listed in Schedule 3	No

Relevant to the works within the curtilage of the Wolgan Valley Railway listed under Schedule 5 of the Lithgow LEP, Clause 5.10 'Heritage Conservation' of the LEP states *development consent is not required under this clause if:*

- a) the applicant has notified the consent authority of the proposed development and the consent authority has advised the applicant in writing before any work is carried out that it is satisfied that the proposed development—
  - i. is of a minor nature or is for the maintenance of the heritage item, Aboriginal object, Aboriginal place of heritage significance or archaeological site or a building, work, relic, tree or place within the heritage conservation area, and
  - ii. would not adversely affect the heritage significance of the heritage item, Aboriginal object, Aboriginal place, archaeological site or heritage conservation area

As the proponent and a public authority, NPWS is the consent authority. In accordance with Cl 5.10(3), NPWS must consider the effect of the proposed development on the heritage significance of the area concerned. The proposal does not impose any impacts on heritage items listed under the LEP.

## 4.1.2 Other statutory consultation

As discussed in Section 3.3.2 of this REF, the proposal involves notification in accordance with section 199 of the FM Act.

NPWS has consulted with DPI Fisheries as part of this REF, with no objections to the proposed placement of sandstock block stepping stones and landscape stone in KFH provided environmental safeguards are put in place and stockpile locations are contained and located away from waterways.

## 4.2 Targeted consultation

### 4.2.1 Adjacent landowners

N/A

### 4.2.2 Wider community consultation and/or notification of works

NPWS prepared a consultation report for the Gardens of Stone State Conservation Area Plan of Management (2022). The report summarises consultation undertaken before and during the development of the final State Conservation Area Plan of Management as follows:

- Consultation to support the establishment of Gardens of Stone State Conservation Area commenced in 2021 after the park's establishment was announced by Matt Kean, the then Treasurer and Minister for Energy and Environment.
- Consultation on the Plan of Management included meetings with Wiradjuri representatives, meetings with key stakeholders and public exhibition of a draft plan of management and draft master plan. A series of community briefings on the establishment of the reserve and planning process were provided in Lithgow.
- Key stakeholders consulted included recreational users, conservation groups, local businesses, mining companies, defence organisations, reserve neighbours, local government and relevant government agencies.
- The Gardens of Stone State Conservation Area draft Plan of Management was placed on public exhibition from 6 May to 5 July 2022. A total of 736 submissions covering a broad range of viewpoints and interests were received.
- The Blue Mountains Regional Advisory Committee and National Parks and Wildlife Council provided advice to the Minister for Energy and Environment in July 2022 after considering the draft plan and submissions received during public exhibition.
- The Gardens of Stone Plan of Management was adopted by the Minister for Environment and Heritage under the National Parks and Wildlife Act 1974 on 7 November 2022.

Targeted consultation was also coordinated with First Nations people as part of the Heritage NSW *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* and Clause 80C of the *National Parks and Wildlife Regulation 2019*. This included the invitation to participate and contribute to the management of Aboriginal heritage within the Gardens of Stone State Conservation Area, in addition to participation in site surveys and the opportunity to contribute to Aboriginal Cultural Heritage Due Diligence assessments. Key representatives from Mingaan Wiradjuri Aboriginal Corporation and Bathurst Local Aboriginal Land Council attended several site surveys and engaged in ongoing dialogue as part of the Aboriginal Cultural Heritage Due Diligence assessment, which is outlined in more detail in section 5.1 below

#### **4.2.3 Interest groups and/or notification**

N/A

## **5. Consultation – Aboriginal communities**

### **5.1 Native title notification requirements**

Based on the information on the National Native Title Tribunal website and the site's Native Title Vision mapping, the study area is not subject to an Indigenous Land Use Agreement (ILUA).

It is unclear whether native title has been extinguished, and so it is assumed that native title is applicable to the study area.

A Native Title Claim - NC2018/002 - Warrabinga-Wiradjuri #7 filed in 2018 exists over the study area and surrounds. This claim has been accepted for registration. No determination of native title has been made for this application.

The proposed activity is:

- occurring on land that was reserved/dedicated as park or state forest on or before 23 December 1996
- an act in accordance with the purpose of reservation/dedication



- a 'public work' (e.g. a building or other structure that is fixed to the landscape, a road or bridge, a well or a bore, or involves major earthworks, carried out by a public authority).

To validate the proposed activity (as a 'public work') according to subdivision 24JB of the Act, NPWS issued a notification to the native title claimants and provided a 28-day period for comment.

## 5.2 Other Aboriginal consultation

With reference to the Aboriginal Cultural Heritage Due Diligence (Supporting Documentation #2), consultation has been undertaken in accordance with best practice guidelines and any relevant engagement strategies or consultation requirements identified during the assessment process. For the preparation of the Aboriginal Cultural Heritage Due Diligence report, consultation with Aboriginal people was undertaken with reference to the Heritage NSW *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Heritage NSW 2010a) and the requirements of Clause 80C of the NPW Regulation. The consultation process has included:

- notification of Aboriginal persons, including register of native title determinations search and government agency notification letters
- invitation to participate and contribute to the management of Aboriginal heritage within the Gardens of Stone State Conservation Area
- advertising for registered stakeholders in local print media
- notification of closing date for registration (27/05/2022)
- record of registration of interest (Heritage NSW and BLALC notified 17/06/2022)
- provision of project information and proposed cultural heritage assessment methodology (28 day review period ending on 10/10/2022)
- invitation to advise on Aboriginal cultural value of the study area
- provision of draft Aboriginal heritage assessment for review (a 28 day review was provided)
- ongoing consultation with the local Aboriginal community.

Stakeholders were also provided with the proposed assessment methodology and an overview of the proposed assessment process, and invited to review and provide feedback in a letter dated 9 September 2022. An invitation was extended for Aboriginal cultural knowledge holders and stakeholders to provide comments on the proposed heritage assessment methodology, including any protocols regarding the gathering of information and any matters such as issues/areas of cultural significance that might affect, inform or refine the assessment methodology.

Formal responses to the proposed assessment methodology were received from four stakeholder groups: Murra Bidgee Mullangari Aboriginal Corporation (MBMAC), Merrigarn, Timothy Stubbs and Yurwang Gundana Cultural Heritage Services (YGCHS). MBMAC indicated that they had read the project information and methodology for the project. They stated that they endorsed the recommendations made by Kelleher Nightingale Consulting (email dated 30/09/2022).

Merrigarn stated that they had read the project information and methodology for the project. They added that they agreed with the recommendations made (email dated 12/09/2022).

Timothy Stubbs stated that they had reviewed the proposed assessment methodology and agreed with the points made at this stage and added they were available for any fieldwork (email dated 12/09/2022).

YGCHS agreed with the proposed assessment methodology for the project and expressed an interest to be involved in any fieldwork (email dated 6/09/2021).

For further detail refer to Section 2 of the ADD (Appendix B).

## 6. Proposed activity (or activities)

### 6.1 Location of activity

NPWS is proposing the construction of an approximate 12 km length publicly accessible multi-day walking track alignment with two associated helicopter landing pads in the Gardens of Stone State Conservation Area, NSW (Figure 1 and Table 3). This proposal represents the first section of the Gardens of Stone Multi-Day Walk, to be followed by sections 2-3.

**Table 3. Location of activity**

<b>Description of location</b>	Gardens of Stone State Conservation Area, NSW (Figure 1).
<b>Park name</b>	Gardens of Stone State Conservation Area.
<b>Other tenures</b>	N/A.
<b>Lot/DP</b>	N/A.
<b>Site reference</b>	Easting: 241948 to 241784 Northing: 6309528 to 6302032 MGA zone: 56

### 6.2 Description of the proposed activity

The walking track width will be approximately 900 mm wide, with additional buffer zones to be included for construction of approximately 1m wide either side of the track alignment. Timber steps and a combination of local stone and imported sandstone will be used in the construction (NPWS 2023). According to the Australian Walking Track Grading System, it is anticipated the standard of track will be a combination of Grade 3 and Grade 4, with steep ascents and descents minimised to manage construction costs and meet the needs of some user groups.

The proposed walking track alignment predominantly follows an existing motorcycle track. Some sections of new track will be carefully designed and constructed to avoid a recorded *Persoonia hindii* population, occurrences of the PCTs Newnes Plateau Shrub Swamp/Temperate Highlands Peat Swamps on Sandstone and the species recorded/predicted. The alignment will be sympathetic to the alignment of the topography, and will avoid mature trees, particularly those that are hollow-bearing.

Two heli-pads will be required for the proposed activity; a 30m x 30m refuelling site, and a 15m x 100m lifting pad. No vegetation removal will be required.

In line with the NPWS's tree risk management procedures (NPWS 2019), for safety reasons, some mature or hollow-bearing trees may require removal, or indirectly disturbed. Any maintenance or management of high value trees will be completed with advice from a suitably qualified arborist and/or ecologist.

To permit the establishment of both the walking track and helicopter landing pads, a disturbance footprint of about 34,908 m<sup>2</sup> (3.49 ha) would be required.

#### 6.2.1 The proposed activity

##### Site set-up/pre-construction

- Rock scaling to mitigate rock fall risks

## Construction

Construction of tracks and ancillary facilities will be according to the NPWS Parks Facilities Manual and best practice standards. Construction methods include:

- Manual track construction
- Carved bedrock steps and ramps
- Benching with the use of excavators, hand tools and power tools
- Timber steps
- Sandstone steps and drains
- Vegetation clearing
- Sandstone stepping stones
- Timber and galvanised steel bridges
- Galvanised steel staircases
- Boardwalks
- Timber and galvanised steel handrails and barriers
- Rock scaling
- Helicopter lifts required for materials loads.

Geotechnical rock scaling and reinforcement may be required in sections, as per NPWS policy. All construction will be completed in accordance with the following Australian Standards:

- AS 2156.1-2001 Walking Tracks Classification and Signage
- AS 2156.2 Walking Tracks: Infrastructure Design
- AS 1657 Fixed Platforms, Walkways, Stairways and Ladders
- AS 1170 Structural Design Actions.

Works will also conform to NPWS track design specifications outlined in the NPWS Parks Facilities Manual.

Post-establishment of the walking track, adjacent areas would be permitted to naturally regenerate. Based on the observations made during the field inspection, unassisted natural regeneration of those plants present is considered to be high (see the BAR).

For a detailed summary of work to be conducted at specific reference points on the proposed alignment, refer to the scope of works (Supporting Documentation #4).

### 6.2.2 The activity footprint (size of the area of impact)

Based on a worst-case estimate, the proposed establishment and operation of the walking track is expected to result in a total direct and indirect impact of 3.49 ha, inclusive of disturbance/removal of about 2.27 ha of native vegetation that is composed of:

- The approximate 12.011 km length x optimal 0.9 m track width, 640 m of which at the northern end uses the existing Birds Rock fire trail to Carne View Lookout
- Disturbance/removal of 2.27 ha of trail side vegetation (along 11.371 km length x 2 m edge width (1m each side))
  - Including 300 m<sup>2</sup> of the recorded TECs
- Compound/stockpile sites (these predominantly located in existing clearings or NPWS facilities).
- Two helicopter landing pads 35 m<sup>2</sup> in size (these requiring no vegetation clearing).

Existing sections of the 'motorcycle' track that are wider than 0.9 m would be rehabilitated, which to some degree would off-set the loss of vegetation represented by the track's construction.

### 6.2.3 Proposed construction methods, materials and equipment

#### Site set up

1. Installation of erosion and sediment controls identified within the Erosion and Sediment Control Plan (ESCP); these to be monitored and maintained for the duration of the work period.
2. Installation and maintenance of environmental mitigation measures identified in the REF.
3. Installation of temporary barricades/fencing and signage as required for the duration of the work period.
4. A temporary compound/stockpile site would be located within existing cleared/disturbed areas to minimise site disturbance.
5. Delivery of materials.

#### Walking track construction

1. Removal of edge vegetation to a trail width of 0.9 m.
  - Retention of all mature trees, including those that are hollow-bearing. If maintenance or management of high value trees is required to manage public safety risks, works must be completed in accordance with NPWS's *Tree risk management procedures* (NPWS 2019) and advice from a suitably qualified arborist and ecologist.
2. Construction of track, this to be benched into the existing track and topography with excavated material being placed, compacted and revegetated on down slope sides.
3. Drainage work as required.
4. Construction of drainage line crossings and stone work as required.
5. Installation of timber/stone steps as required.
6. Slope stabilisation.

#### Post construction work

1. Site to be cleared and returned to pre-work condition (i.e., removal of waste/spoil).
2. Compaction and revegetation of exposed areas to be undertaken to prevent the off-site movement of sediment
3. Promote natural restoration and rehabilitation of disturbed areas not part of the proposed work (i.e., brush matting).
4. Removed vegetation and spoil disposed of appropriately at a licensed landfill facility (if not repurposed).

Due to the site's altitude and topography, the use of artificial lighting may be required at dawn and dusk, and during periods of low light and poor visibility (e.g. dense fog, overcast days) during the winter months.

The proposed work would be carried out by contractors engaged by NPWS, or by NPWS staff. The following machinery and equipment would be required for the proposed work:

- |                 |   |
|-----------------|---|
| • hand tools    | • powered wheelbarrow with trailer        |
| • generator     | • mini excavator / possie track loader    |
| • brush cutters | • various delivery vehicles for materials |

- chainsaw
- power saw, drills, jack hammers and kango hammer
- slasher/tritter
- helicopter

#### **6.2.4 Receival, storage and on-site management for materials used in construction**

Materials and equipment would be brought to stockpile sites located along Western Boundary Road via the existing road network and deposited along lengths of the track by helicopter, to 5 m accuracy.

Where established, stockpiled materials would be kept out of any overland flow paths and would be bundled.

Suitable signage and barricading would be erected to delineate the limits of the work area, manage access and the movement of members of the public.

#### **6.2.5 Earthworks and site clearing**

Earthwork and site excavation will be required to establish the walking track. Disturbed surfaces would be compacted prior to the end of each work day or before significant rainfall to minimise potential for erosion and sedimentation during construction as per ESCP.

Water diversion structures, such as mitre and table drains, and rollover bars would be incorporated into the track design as needed.

Where possible, uncontaminated spoil would be retained and reused on-site.

Temporary stockpiles, where required, would be treated in accordance with Landcom (2004) 'Soils and Construction: Managing Urban Stormwater' (the 'Blue Book') and following the ESCP.

To permit the establishment of both the walking track and helicopter landing pads, a disturbance footprint of about 34,908 m<sup>2</sup> (3.49 ha) would be required. Approximately 22,742 m<sup>2</sup> of vegetation would be potentially cleared.

If maintenance or management of high value trees is required to address public safety risks, works must be completed in accordance with NPWS's *Tree risk management procedures* (NPWS 2019) and advice from a suitably qualified arborist and ecologist. Removed native vegetation would be utilised as brush matting to encourage natural remediation of disturbed areas not part of the proposal.

#### **6.2.6 Environmental safeguards and mitigation measures**

The following environmental safeguards and mitigation measures would be adopted during the project. Additional safeguards and mitigation measures are identified in Section 9 of this REF.

- NPWS to provide notification to the local community of the commencement date of the project, hours of operation and likely completion date.
- An ESCP would be developed to limit soil erosion and sediment transfer off-site.
  - Where applicable, sedimentation fencing/structures (e.g., sandbag) would be erected prior to the commencement, and kept in place for the duration, of the proposed work.
- Limit vegetation clearing to the minimum required to successfully complete the proposal.
- Identify the limits of clearing; these would be provided to the construction contractor, identified both on site maps/plans and on site through detailed site instruction, the erection of temporary fencing, bunting or similar. Areas beyond the proposal footprint that are to be

retained will be clearly marked on site as well as on any plans provided to contractors. These areas would be marked as 'no-go zones'.

- Mature or hollow-bearing trees will be retained unless maintenance or management is required for safety reasons. Any works would be conducted in accordance with NPWS's *Tree risk management procedures* (NPWS 2019) and based on advice from a suitably qualified arborist and ecologist.
- Removed native and non-seed-bearing exotic vegetation would be mulched and re-used on-site, while weed contaminated green waste and any surplus spoil and other materials would be disposed of appropriately at a licensed landfill facility.
- Uncontaminated spoil would be retained and re-used on-site if applicable.
- Machinery movements and earthwork would be restricted during rainfall, wet weather and high wind conditions.
- All machinery would be washed and enter the site via stabilised access areas to prevent the introduction and spread of weed seeds and/or pathogens.
- Store/park machinery in designated areas devoid of shrub and canopy species.
- Vehicles that are transporting materials would comply with Transport for NSW standards (i.e., loads covered and complying with designated speed limits).
- All waste materials including personal rubbish would be removed and deposited in an approved waste receptacle.

Visual inspection of site post-completion of the work to ensure the area is clean and available for the safe use by members of the public.

### **6.2.7 Sustainability measures – including choice of materials and water/energy efficiency**

The design life of materials ranges from 20 (e.g., timber) to 40 years (e.g., sandstone) and will provide a long-lasting walking surface that is in character with the surrounding environment.

However, it is important to note that fire activity will impact life span of any materials.

The proposed work would be carried out during daylight hours where possible, minimising the need for artificial lighting.

Vehicle, aircraft and machinery movements, including those transporting equipment to and from the work site, will be coordinated to minimise fuel consumption. All vehicles, aircraft, machinery and equipment used would be serviced and maintained to ensure efficient operation and energy use.

### **6.2.8 Construction timetable and staging and hours of operation**

Construction is proposed to commence in March 2024, and take approximately seven months. The proposed work will be conducted during standard working hours according to the Draft Construction Noise Guideline (EPA 2020) and may be permitted 6:00 am – 7:00 pm Monday to Saturday.

No work would be carried out on Sundays or during public holidays unless authorised by NPWS.



## 7. Reasons and consideration of alternatives

### 7.1 Objectives and reasons for the proposal

The key objective is to construct a ~12km walking track within the Gardens of Stone SCA. The proposed work predominantly follows the existing alignment of an unauthorised motorcycle track that was used when the area was a State Forest. That stated, sections of the proposal have been realigned following the outcomes of extensive ground-truthing work that was done during the course of both the ecological and Aboriginal cultural heritage assessments.

The proposed track includes dedicated helicopter landing pads (Figure 1). To permit the establishment of both the walking track and helicopter landing pads (for use during the construction phase only), a disturbance footprint of about 34,908 m<sup>2</sup> (3.49 ha) would be required.

The establishment of the walking track will upgrade and contribute to infrastructure within the SCA, and improve public safety and appreciation of the locality, whilst conserving the natural, cultural heritage and recreational values of the local environment.

### 7.2 Consideration of alternatives

Alternatives include closing the track and creating a new track alignment, or the 'do nothing' option.

#### **Closing the track/ and creating a new track:**

- This would require the construction of a new track along a different undisturbed alignment, resulting in significantly greater clearing and environmental impact.
- Closure of the track would cause walkers within the SCA to either use or create informal tracks, posing potential ecological damage to endangered populations.
- This option is considered inappropriate given the objectives of the NPW Act, the NPWS Visitor Safety policy and relevant policies and management consideration and opportunities of the PoM (refer to Section 3.1.1 of the REF).

#### **Do nothing option:**

- The track is not usable for the proposed purpose in its current state.
- Safety risks are posed by the current state of the track, and the dilapidated state of the track detracts from the overall character of Gardens of Stone SCA.
- This option is considered inappropriate given the objectives of the NPW Act, the NPWS Visitor Safety policy and relevant policies and management consideration and opportunities of the PoM, (refer to Section 3.1.1 of the REF).

### 7.3 Justification for preferred option

The preferred option, being the establishment of a ~12 km length of track would:

- Offer improved and desirable levels of infrastructure and service, better accommodating increased visitor expectations in this locality.
- Create a new visitor experience within the park, connecting it to adjacent parks and walks.
- Improve visitor safety.
- Maintain a conservation area.
- Conserve the locality's natural, cultural heritage and recreation values.
- Meet the objectives of the NPW Act.



- Comply with policies and management consideration and opportunities of the:
- Gardens of Stone State Conservation Area PoM (State of NSW and DPIE 2022)
- Meet the objectives of NPWS' '*Visitor Safety*', '*Walking Tracks*', '*Visitor Accommodation*', '*Landslides and Rockfalls*' and '*Vehicle Access*' policies (DPE 2023b, 2021a, 2021b, 2020, 2021c).

The preferred option seeks to provide the best outcome within financial, environmental and heritage constraints.

## 8. Description of the existing environment

### 8.1 Overview of the project area

Gardens of Stone SCA was reserved on 6 May 2022 after the NSW Government made a landmark commitment to strengthen protection of this iconic landscape within the Western Blue Mountains. The park is located about 5 km north of Lithgow and 140 km west of Sydney at the junction of the Great Dividing and Blue Mountains Ranges in the NSW Central Tablelands region. It adjoins Blue Mountains National Park to the east and Wollemi National Park and Gardens of Stone National Park to the north. These parks, along with 5 other parks, form the World Heritage-listed Greater Blue Mountains Area (NPWS 2022).

The park is part of a significant Wiradjuri cultural landscape. It contains many Aboriginal heritage sites and adjoins the Maiyingu Marragu Aboriginal Place – a significant rock art site and cultural educational precinct with strong connections to Mingaan Wiradjuri Aboriginal Corporation (NPWS 2022).

The park is comprised of the former Newnes, Ben Bullen and Wolgan State Forests which include pine plantations and areas formerly used for native forest harvesting. It also contains the headwaters of the Wolgan, Coxs and Wollangambe Rivers, and so part of the park lies in the Sydney drinking water catchment.

The park has been used over many years for sightseeing, walking, 4WD touring, trail bike riding and camping. A number of coalmines are located underneath the park, supply coal to the Mount Piper Power Station (NPWS 2022).

### 8.2 Natural values

#### 8.2.1 Geology, geomorphology and topography

As described in the Gardens of Stone PoM (NPWS 2022), the weathering of Triassic-era sandstones on the western margin of the Sydney Basin has resulted in a striking landscape of rocky landforms, including massive beehives, domes and plates known as pagodas. The Newnes Plateau area of the park contains some of the most spectacular sections of this nationally significant landscape, as well as 'platy' pagodas (which have ridged profiles formed by more resistant bands of ironstone interspersed by sandstone) which are considered rare on a global scale. The landscape also contains spectacular sandstone pinnacles, rugged cliff lines, slot canyons, gorges and overhangs set among dense bushland. This dramatic and complex terrain is of considerable scenic, cultural, geological and aesthetic value.

The alignment of the proposed walking track has been carefully considered to showcase the dramatic landscape of the area. Whilst predominantly following the existing motorcycle track, several areas have been rerouted as a result of ground-truthing work to avoid sections of challenging geology. Steep inclines and declines will be managed by construction of steps from locally sourced stone, ensuring the track design is sympathetic to the existing landscape.

#### 8.2.2 Soil types and properties (including contamination)

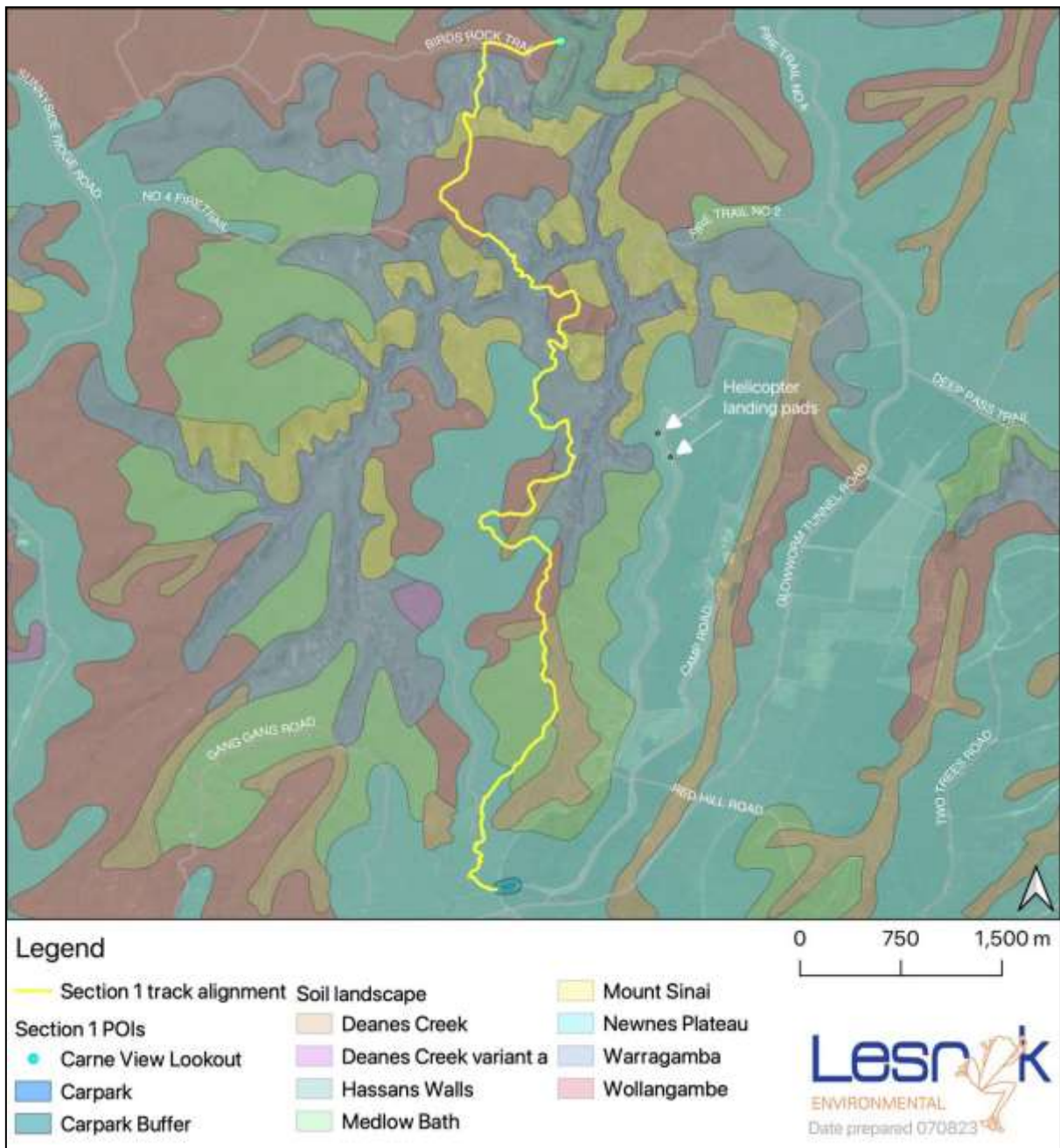
The Wallerawang 1:100,000 Soil Landscape map sheet (King 1992), and with reference to the SEED Dataset mapping (State Government of NSW and DPE 2023), identifies that the investigated area is located within the following soil landscapes (Figure 2):

- Deanes Creek

- Hassans Walls
- Medlow Bath
- Mount Sinai
- Newnes Plateau
- Warragamba
- Wallangamba.

Refer to Table 3 of the BAR (Supporting Documentation #1) for a detailed description of soil types and properties.

With reference to SEED Acid Sulfate Soil mapping (State Government of NSW and DPIE 1995), the proposed work is located on Class 5 land. Typically, Acid Sulfate Soils are not found in Class 5 land.



**Figure 2. Soil landscapes of study area.**

Regarding the EPA Contaminated Land Record [search area: Lithgow Shire Council], the proposal area is not identified as supporting contaminated land (EPA 2023).

### 8.2.3 Watercourses, waterbodies and wetlands

One mapped waterway (Carne Creek) traverses the study area. At the time of the investigation, Carne Creek was flowing moderately. The creek was generally 1-1.5 m wide with a rocky bed and was densely lined by vegetation (Refer to Appendix 2 of the BAR for photographs). The proposed track alignment crosses Carne Creek at two locations, and traverses the boundary of the mapping towards the southern end of the track.

Reference to the DPI's Fisheries NSW Spatial Data Portal [layer: Hawkesbury Nepean] (DPI 2023b) indicates that Carne Creek is mapped as KFH (Figure 3).

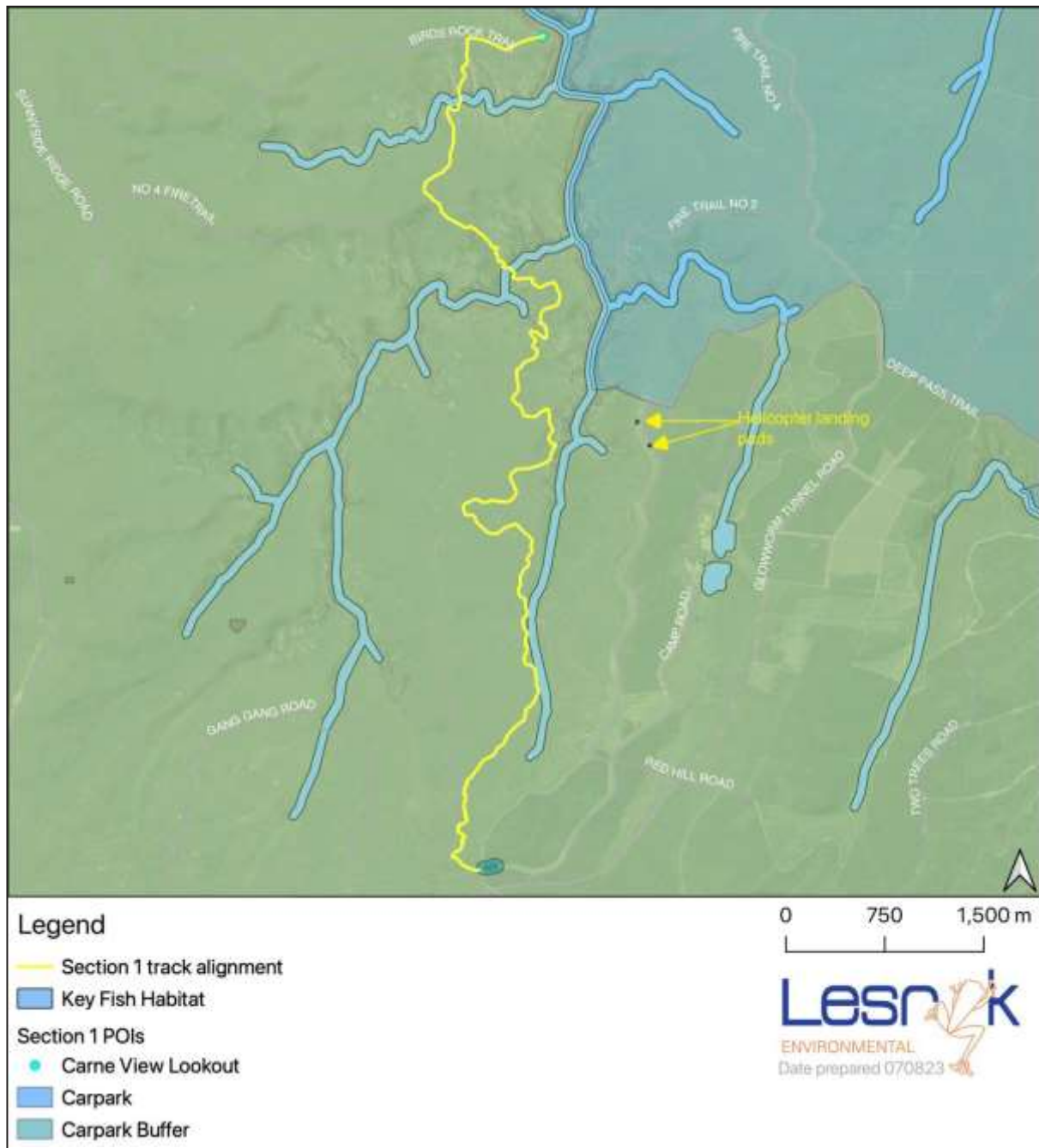


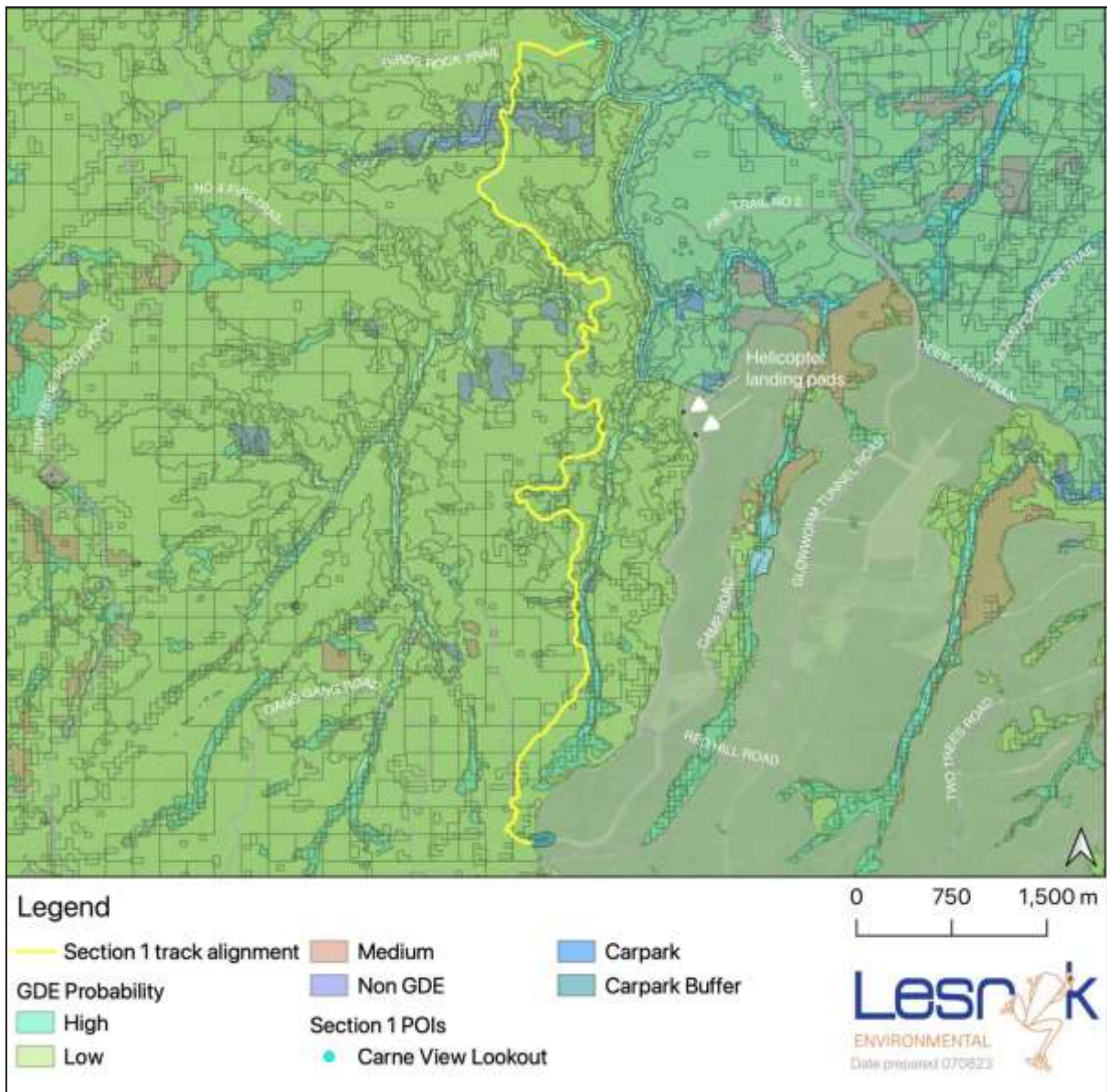
Figure 3. Key Fish Habitat.



No threatened species or populations listed under the FM Act were recorded or considered likely to occur in proximity to the proposed walking track; therefore, no assessments referencing the criteria listed under Part 7A, Division 12, s.221ZV of this Act (these commonly referred to as the seven-part test) were conducted.

No nationally important Ramsar wetlands are identified within, or near to, the study area (DCCEE 2023a).

Reference to the BoM Groundwater Dependent Ecosystems Atlas (GDE) Atlas (BoM 2023b) identified mapped areas of High, Medium and Low potential Terrestrial GDE within the study area (Figure 4).



**Figure 4. Groundwater Dependent Ecosystems**

The high potential GDEs that the proposed track would traverse are analogous to the mapped areas of Newnes Plateau Shrub Swamp (See Section 8.2.5).

GDE's are communities of plants, animals and other organisms whose extent and life processes are dependent on groundwater. In reference to the DPI's (Office of Water) Risk Assessment

guidelines for GDE (Serov *et al.* 2012), the proposal would not have any direct or indirect impact on a water source or aquifer structure, nor would it involve groundwater extraction.

With the adoption of mitigation measures, the proposed work would not contribute to the off-site movement of sediment.

Standard Erosion Sediment Control measures would be carried out and supervised by engaged contractors to ensure negligible impact on nearby waterways. Sedimentation fencing/structures (e.g., sandbags) would be erected/installed where ground disturbance is predicted, prior to the commencement, and kept in place for the duration, of the proposed work. During the works, these would be inspected and maintained (e.g., sediment build up cleared) as required.

According to monthly rainfall figures from Lithgow<sup>1</sup>, the mean annual rainfall experienced by the study region is 792.7 mm, with the greatest falls of 85.7 mm recorded in January (BoM 2022a).

The proposal is not located within that part of the park which forms part of the Sydney Drinking Water Catchment. In addition, while the proposal lies within waters that eventually drain into the Colo River (which is part of the Hawkesbury-Nepean Catchment), the proposal lies outside the mapped regulated catchment under Chapter 6 of the *State Environmental Planning Policy (Biodiversity and Conservation) 2021*.

## 8.2.4 Coasts and estuaries

There are no coastal or estuarine values, marine parks or aquatic reserves within the vicinity of the proposal. No management considerations are required regarding Chapter 2 of the *State Environmental Planning Policy (Resilience and Hazards) 2021*.

## 8.3 Biodiversity

### 8.3.1 Overview of terrestrial and aquatic biodiversity

The PCTs in the study area were reviewed with reference to the SVMT (State Government of NSW and DPE 2023) (Figure 5). The alignment of the proposed walking track traverses the following PCTs:

- PCT3687 Newnes Plateau Peppermint-Ash Tall Forest
- PCT3688 Newnes Plateau Silvertop Ash Woodland
- PCT3691 Upper Blue Mountains Fringing Swamp Woodland
- PCT3694 Upper Blue Mountains Ridgetop Woodland
- PCT3695 Western Blue Mountains Peppermint Sheltered Forest
- PCT3696 Western Blue Mountains Rocky Scribbly Gum Woodland
- PCT3862 Newnes Plateau Rockplate Heath
- PCT3865 Western Blue Mountains Pagoda Scrub
- PCT3945 Newnes Plateau Shrub Swamp.

Of these, Newnes Plateau Shrub Swamp is listed as an EEC on the BC Act and is part of the EPBC Act listed EEC Temperate Highlands Peat Swamps on Sandstone. Refer to s.4.4.3.2 of the BAR.

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<sup>1</sup> The nearest operating weather station



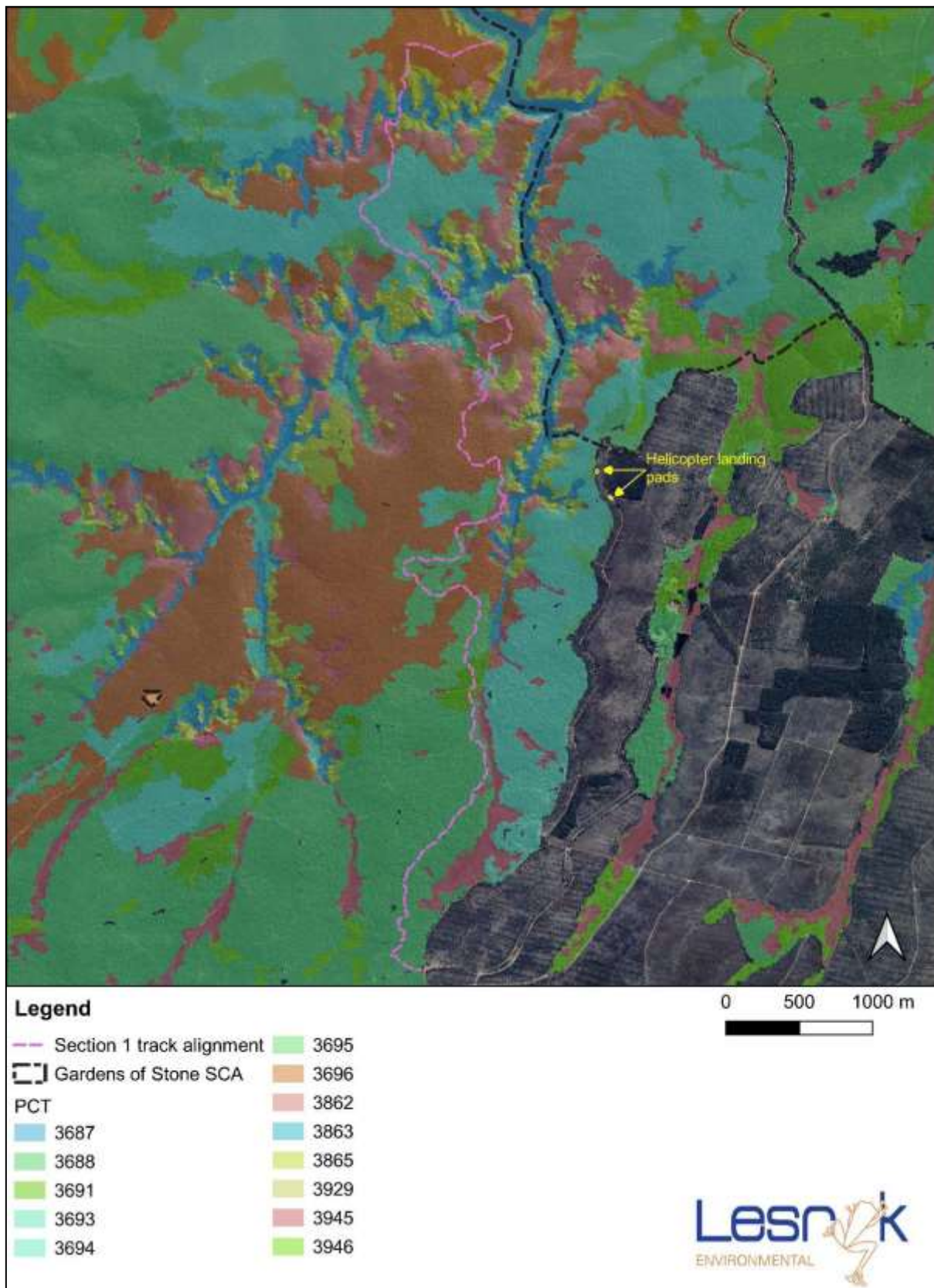


Figure 5. State Vegetation Type mapping in vicinity of proposed track alignment.



### **8.3.2 Areas of outstanding biodiversity value or critical habitat**

Through reference to the Australian Government's Register of Critical Habitat (DCCEEW 2023c), and the AOBV register (DPE 2023b) (in conjunction with Part 3 of the Biodiversity Conservation Regulation 2017), per listings provided under the EPBC and BC Acts, no gazetted areas of critical habitat or AOBV for any terrestrial species or communities occur within or near the proposal area.

No declarations under Section 220T of the *FM Act 1994* are present within the proposal area.

### **8.3.3 Environmental assets of intergenerational significance (AIS)**

No AIS declarations under Section 153G of the NPW Act are within or in proximity to the study area.

No Conservation Action Plans approved under Clause 78E of the NPW Regulation exist for the study area.

### **8.3.4 Threatened ecological communities**

PCT3945 Newnes Plateau Shrub Swamp, which the proposed track route traverse at four locations (Figure 6), is part of the:

- BC Act listed EEC Newnes Plateau Shrub Swamp in the Sydney Basin Bioregion
- EPBC Act EEC Temperate Highland Peat Swamps on Sandstone.

The track alignment has been designed to minimise impacts on the TECs.

To consider the impact the proposal may have on the TECs, assessments drawing on the EPBC Act's Significant Impact Guidelines (DE 2013) and the criteria provided under Section 7.3 of the BC Act have been conducted (Appendix 3 of the BAR). These concluded that referral of the proposal as a controlled action to the Federal Minister of the Environment is not required, nor is the preparation of a SIS/BDAR needed.

As a consequence of their EEC status, areas mapped as Newnes Plateau Shrub Swamp on the SVTM are included on the Biodiversity Values Map (NSW Government 2023b). As Part 5 developments are not subject to consideration of Section 7.3 of the Biodiversity Conservation Regulation, no assessment is required in relation to Section 7.1(1)(b) of this regulation.

No other PCTs present within the study area are associated with any TECs listed, or being considered for listing, under the EPBC or BC Acts.

### **8.3.5 Threatened species and populations**

A review of the DCCEEW's PMST and DPE's BioNet Atlas databases (DCCEEW 2023a, DPE 2023a) identified 43 threatened flora species and 72 threatened fauna species listed under the Schedules of the EPBC, FM and/or BC Acts that have been previously recorded, or are considered to have habitat, within a 10 km radius of the study area (see Appendix 1 of the BAR). Figures 7 and 8 indicate those species previously recorded within a 10 km radius around the proposal area per the BioNet Atlas (note: some species' locations overlap due to having the same GPS coordinate on BioNet Atlas where one 'record' may account for several animals/plants).



Figure 6. PCT 3945 Newnes Plateau Shrub Swamp in relation to the proposed track alignment.

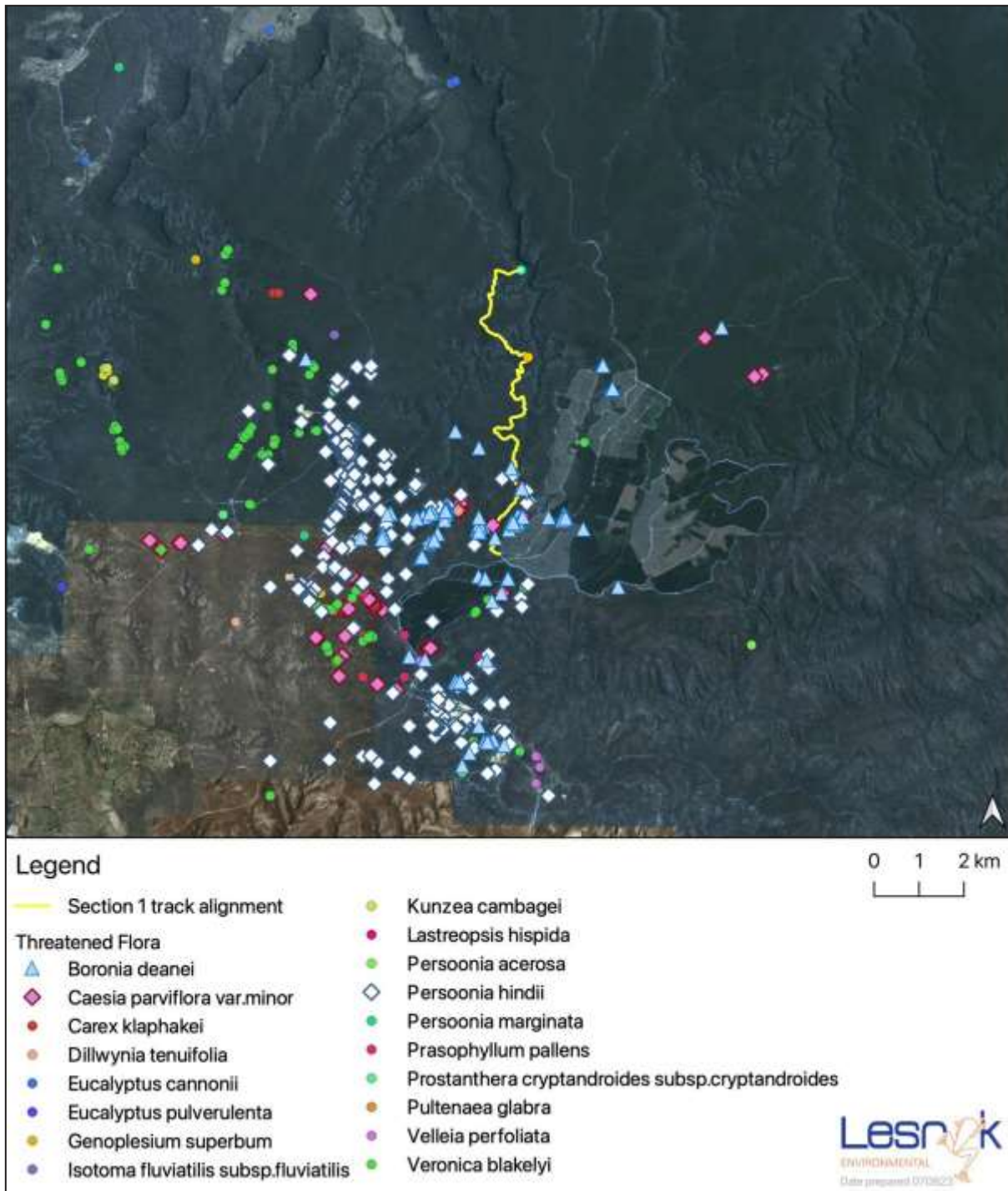


Figure 7. Threatened flora



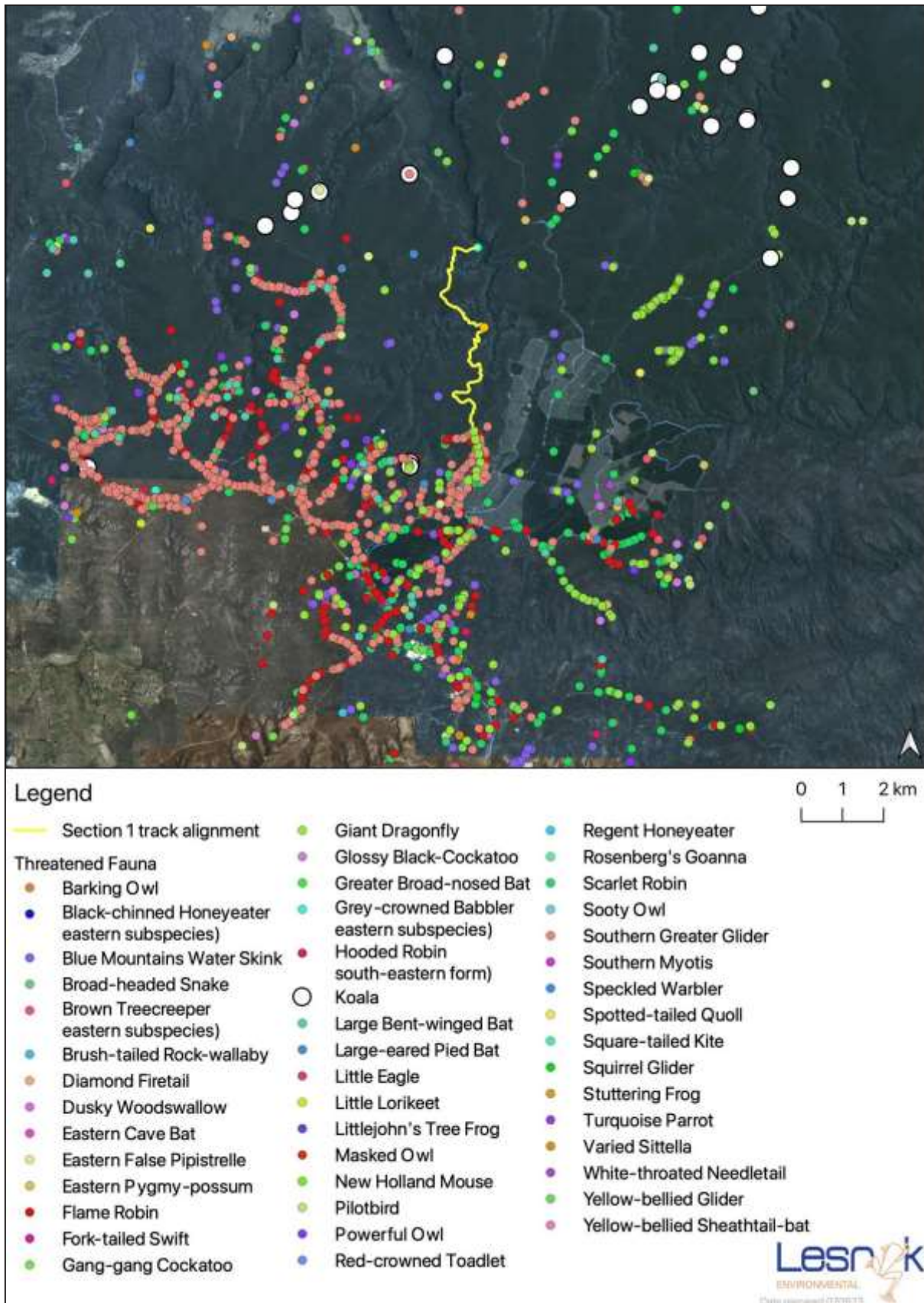


Figure 8. Threatened fauna species

Based on a consideration of the habitat needs of those threatened species listed in Appendix 1 of the BAR (as provided in standard texts/online profiles – refer to the references section for those used), combined with a desk-top review of the PCTs present (these also indicating the likely fauna habitats that may occur), there is the potential for some of the species in Appendix 1 of the BAR to be present in the vicinity of the proposal area. As such, during the course of the field investigations, consideration was given to identifying the presence of these species, or occurrences of their necessary vegetation associations/habitats, within the study area.

Targeted surveys for hollow-dependent species were not conducted during the investigation; therefore, the presence of such species is assumed based on the adoption of the precautionary approach. Several threatened hollow-dependent Yangochiroptera (insectivorous bats [hereafter referred to as microbats]) have been previously recorded within 10 km of the proposed walking trail (DPE 2023a); however, as significant tree removal is not proposed, this group of animals is not considered to be directly or indirectly impacted by the proposed track works.

Whilst previously recorded within and/or predicted as having habitat within 10 km of the study area, the majority of species previously recorded in the vicinity of the proposed walking track would not occur within, or be reliant upon, the habitats observed within the proposed impact footprint. Some individuals may traverse, fly over, forage or occur within the site on occasion (e.g., the Spotted-tailed Quoll *Dasyurus maculatus*, Grey-headed Flying-fox *Pteropus poliocephalus*, Large Bentwing-bat *Miniopterus schreibersii oceanensis*, Powerful Owl *Ninox strenua*, Square-tailed Kite *Lophoictinia isura*, Little Eagle *Hieraaetus morphnoides* and so forth); however, within the proposed walking track impact footprint, no significant resources for these animals [such as hollow-bearing trees, suitable cave-substitutes and so forth] are present, nor would any occurrences of these be adversely impacted by the proposal.

Whilst locally viable populations are known to occur within the Gardens of Stone SCA, the scale of work proposed is not considered to have an adverse impact on any of the threatened species record or expected, or on their lifecycle requirements. The proposed work would not cause the local extinction of these species, nor would it present any significant barriers to their movement patterns. Beyond the existing conditions presented within the site, the work will not fragment or isolate any of their habitat areas. These animals are expected to be tolerant of the current disturbance cause by the creation of an unauthorised motorcycle track and, post-work, are expected to be present within, and disperse across, both the proposed walking track and surrounding area.

Refer to Section 4.4.1 of the BAR for field survey methods, 4.4.2 for limitations and assumptions, and 4.4.3 for results.

## 8.4 Cultural values

### 8.4.1 Aboriginal cultural heritage

The park is part of a significant Wiradjuri cultural landscape. The park contains numerous Aboriginal heritage sites of profound cultural significance, including rock art, grinding grooves, wells, occupation deposits in rock shelters and artefact scatters. The swamps on the Newnes Plateau provided continuous food resources for Aboriginal people. Some of the shelters bordering the swamps have a very high concentration of artefact material. The park adjoins the Maiyingu Marragu Aboriginal Place – a well-known rock art site and cultural education precinct. The park provides the Wiradjuri community with opportunities to further their aspirations for community, culture and Country (NPWS 2022).

An Aboriginal Cultural Heritage Due Diligence report (ADD) has been prepared for the proposal (Kelleher Nightingale Consulting 2023) (see Supporting Documentation #2), and is detailed in Section 6.4 of this report. A visual inspection and assessment of the study area was conducted on 23 and 27-30 June by Kelleher Nightingale Consulting.

With reference to the ADD, two previously registered Aboriginal archaeological sites, CC 3 Newnes SF (AHIMS 45-1-0177) and CC 4 Newnes SF (AHIMS 45-1-0178) were revisited and assessed during the visual inspection. These sites were confirmed to be located within the Gardens of Stone Multi-Day Walk – Section 1 study area. Four newly recorded rock shelter sites were identified as a result of the visual inspection, including two rock shelters with artefact deposit and two rock shelters with art. These sites were also located within proximity to the Gardens of Stone Multi-Day Walk – Section 1 study area. Refer to the ADD for detailed site descriptions and photographic records.

An extract of the impact assessment and recommendations outlined in the ADD is presented in Table 4. The location of these sites is indicated in Figure 9. **Impact to all sites will be avoided during track construction.**

Consultation with stakeholders was conducted as part of the ADD. Following on from Stage 1 of the consultation process (stakeholder identification and registration), project-specific consultation was undertaken. Information regarding the proposed development was provided to registered Aboriginal stakeholder groups in a letter dated 11 May 2022. Information included an outline of the proposal, location of the Gardens of Stone SCA study area and an invitation to consult during the assessment. Formal responses to the proposed assessment methodology were received from four stakeholder groups, including Murra Bidgee Mullangari Aboriginal Corporation (MBMAC), Merrigarn, Timothy Stubbs and Yurwang Gundana Cultural Heritage Services (YGCHS). See section 5.2 above.

Further consultation with Aboriginal stakeholder groups will occur in tandem with construction to inform visitor interpretations and site signage to support cultural education and awareness, in consultation and collaboration with the Indigenous community.

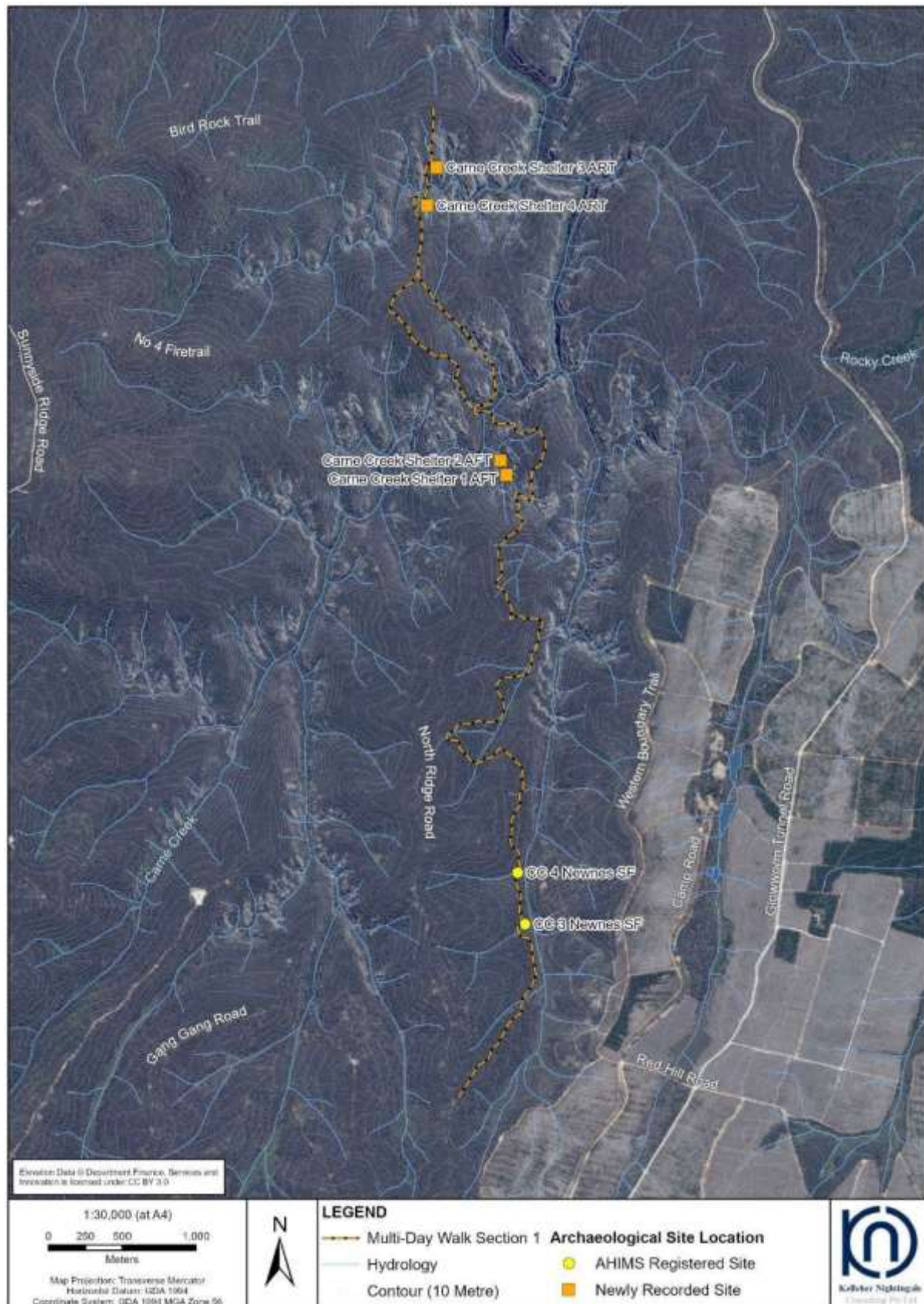
**Table 4. Impact assessment to Aboriginal archaeological items within proposal area.**

Site name and AHIMS number	Impacts on Aboriginal heritage	Management and Recommendations	Opportunities for Aboriginal heritage interpretation and management
CC 3 Newnes SF (AHIMS 45-1-0177)	No impact	Site avoided through use of construction techniques.	Signage and site-specific interpretation - created in consultation with Aboriginal stakeholders.
CC 4 Newnes SF (AHIMS 45-1-0178)	No impact	Site avoided through use of construction techniques.	Signage and site-specific interpretation - created in consultation with Aboriginal stakeholders.
Carne Creek Shelter 1 AFT (AHIMS tbc)	No Impact	N/A	General interpretation - Site information can inform the overall character of the multi- day walk as an Aboriginal pathway. Signage and site-specific interpretation - created in consultation with Aboriginal stakeholders.
Carne Creek Shelter 2 AFT (AHIMS tbc)	No Impact	N/A	General interpretation - Site information can inform the overall character of the multi- day walk as Aboriginal pathway.
Carne Creek Shelter 3 ART (AHIMS tbc)	No Impact	Fire hazard reduction to protect Aboriginal rock art.	Signage and site-specific interpretation - created in consultation with Aboriginal stakeholders.
Carne Creek Shelter	No Impact	Fire hazard reduction to protect Aboriginal	Signage and site-specific interpretation - created in consultation with Aboriginal



Site name and AHIMS number	Impacts on Aboriginal heritage	Management and Recommendations	Opportunities for Aboriginal heritage interpretation and management
4 ART (AHIMS tbc)		rock art.	stakeholders.

Source: Kelleher Nightingale Consulting 2023.



Source: Kelleher Nightingale Consulting 2023.

No nearby declarations under s153G of the NPW Act of Cultural AIS for Aboriginal cultural value, under s 84 of the NPW Act of Aboriginal places, or any Aboriginal places of heritage significance listed under the Lithgow LEP are present.

## 8.4.2 Historic heritage values

The NSW *Heritage Act 1977* defines a relic as ‘any deposit, artefact, object or material evidence that:

- (e) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and
- (f) is of State or local heritage significance’.

As described in the Gardens of Stone PoM, there are several historic sites and artefacts within and adjacent to the park, including evidence of early European exploration, historic railways such as the Clarence–Newnes Railway [Wolgan Valley Railway] which supported 19th century kerosene and oil shale (torbanite) mines at Newnes in the adjacent Wollemi National Park, and 20th century coal mining (NPWS 2022).

The proposed Section One track predominantly follows a heavily used existing motorcycle track alignment, with no known European heritage values present (NPWS 2023).

Lesryk conducted a desktop search of the NHL (DAWE 2023d), SHR (NSW Government 2023d), Lithgow LEP (NSW Government 2023a) and NPWS HHIMS on 24 May 2023 (Table 5).

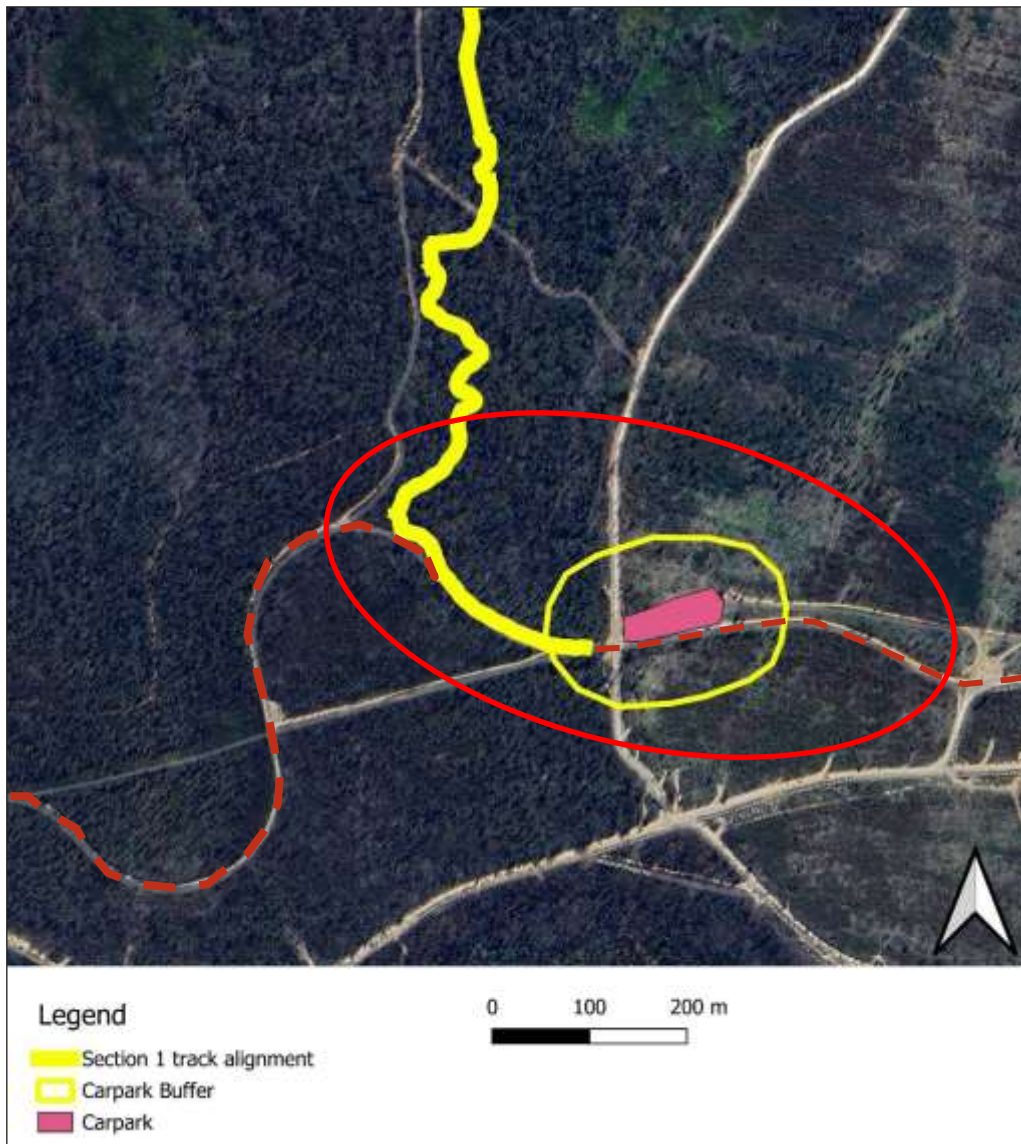
**Table 5. Historic heritage desktop search results.**

Database	Date of search	Type of search	Comment
Australian Heritage Database	24 May 2023	Study area	N/A.
State Heritage Inventory (SHI)	24 May 2023	Lithgow LGA / study area	Wolgan Railway Complex Newnes Railway, listed under Blue Mountains Walking tracks (SHR # 00980, item # 33 3900332).
Schedule 5 (Environmental Heritage) of the Lithgow LEP 2014	24 May 2023	Lithgow LGA / study area	One listed item for the study area: Railway Line Newnes – Zig Zag etc. (#1245)
HHIMS - S.170 Heritage and Conservation Register	24 May 2023	Study area	Wolgan Valley Railway



Statements of Heritage Impact prepared by Mountains Heritage for other proposals within the Gardens of Stone SCA (Mountains Heritage 2023a, 2023b, 2023c) and the BAR prepared for the Wolgan Valley Wilderness Rail Trail (First Field Environmental 2017) were also referred to.

The Wolgan Valley Railway – listed on the SHI (item # 33 3900332), Schedule 5 of the Lithgow LEP (item # 1245) and on the HHIMS (item ID 308) – runs approximately 2km to the east of the proposed Section One walking track, with the southernmost 50 m of the proposed walking track and carpark area following the railway track through an approximate 2 m high rock cutting (Figure 10).



**Figure 10. Historic heritage items in relation to study area (denoted by red ellipse).**

The SHI listing for the Blue Mountains Walking tracks includes an exemption under s.57(2) of the *Heritage Act 1977* to allow work. A permit under section 60 of the Act is therefore not required for the proposal.

As discussed in section 3.3.3, relevant to the works within the curtilage of the Wolgan Valley Railway, Clause 5.10 'Heritage Conservation' of the Lithgow LEP indicates that development consent is not required under this clause as it is not anticipated that the proposal would have an adverse impact on this item due to the width of the cutting and the extensive land use history of the railway track when the area was State Forest. The railway track is currently used as a

walking track as part of the Wolgan Valley Wilderness Rail Trail (Appendix F) and by vehicles. As such, the proposed walking track alignment is within a previously extensively disturbed/modified area, and the proposal will not change the current use of the heritage item. No railway tracks or historic items were noted during the field investigation. The Wolgan Valley Wilderness Rail Trail BAR indicated the trail would not have an impact on the heritage values of the item (First Field Environmental 2017).

It is anticipated that the proposal, once complete, would increase tourism to the region and foster appreciation of the area's historical heritage values, including the Wolgan Valley Railway.

Due to the land use history of the area and the extensive prior use of much of the proposed route, is expected that the likelihood of historic relics or artefacts being present within the activity in the absence of records is low to moderate.

No nearby declarations under s 153G of the NPW Act of Cultural Assets of Intergenerational Significance (AIS) for historic cultural value are present.

## **8.5 Social values**

### **8.5.1 Recreation values**

The Gardens of Stone landscape is an awe-inspiring natural setting. Once access has been upgraded and visitor sites have been developed, the park will provide opportunities for people to learn about Wiradjuri culture, connect with nature and enjoy outdoor recreation activities. The area has historically been used for a variety of recreational activities, including 4WD touring, trail bike riding, horse riding, mountain biking, birdwatching, bushwalking and rock climbing. The National Trail, a walking, cycling and horse-riding route from north Queensland to southern Victoria, traverses the park. The park will continue to provide for a range of sustainable recreation while also supporting new tourism and recreational experiences. Its establishment as a major new visitor destination will drive the growth and diversification of local and regional economies (NPWS 2022).

Prior to the areas acquisition by NPWS, the former State Forest areas of the proposal site were extensively used for recreational activities including motorbike riding, 4-wheel driving and walking.

### **8.5.2 Scenic and visually significant areas**

The weathering of Triassic-era sandstones on the western margin of the Sydney Basin has resulted in a striking landscape of rocky landforms, including massive beehives, domes and plates known as pagodas. The Newnes Plateau area of the park contains some of the most spectacular sections of this nationally significant landscape, as well as 'platy' pagodas (which have ridged profiles formed by more resistant bands of ironstone interspersed by sandstone) which are considered rare on a global scale. The landscape also contains spectacular sandstone pinnacles, rugged cliff lines, slot canyons, gorges and overhangs set among dense bushland.

This dramatic and complex terrain is of considerable scenic, cultural, geological and aesthetic value (State of NSW and DPIE 2022).

The proposed track would be located predominantly along an existing motorcycle track formed during the area's use as a State Forest, with much of the track being present within heavily vegetated (wooded) land. The construction method of the track (i.e., benching this into the natural topography) will not detract from the scenic value of the locality, with views of this ultimately reduced as areas revegetated. Views of bushwalkers traversing along the track would be possible from vantage points, but the overall visual impact of this would not be inconsistent, or detrimental to, the locality. The works have considered the surrounding environment, and the

bulk, scale and size of the proposed development. Vantage points from which the proposal would be seen are located along the track itself, and would not visually impact external sites.

There will be a temporary short term visual impact associated with the construction phase of the proposal (i.e. presence of personnel and machinery) which may affect visitors frequenting the area during construction; however, ultimately, the proposed track work will have a positive impact by ensuring conservation of the natural, cultural and recreational values of the study area, and mitigating safety and environmental hazards associated with the of existing track. The work will be consistent with the nature of existing modified sections of walking track through the park, and will not detract from the scenery of this portion of the Gardens of Stone SCA.

### **8.5.3 Education and scientific values**

The park is part of a significant Wiradjuri cultural landscape. It contains many Aboriginal heritage sites and adjoins the Maiyingu Marragu Aboriginal Place – a significant rock art site and cultural educational precinct with strong connections to Mingaan Wiradjuri Aboriginal Corporation (State of NSW and DPIE 2022). The complex rocky landforms of the upland plateau provide a diversity of habitats for plants and animals, resulting in rich biodiversity. Furthermore, the park supports several historic heritage values, all of which are of education and scientific value (State of NSW and DPIE 2022).

The educational and scientific values of the area would not be adversely affected by the proposed work, with the proposed track work assisting in attracting visitors to appreciate and experience these values. Furthermore, greater access to areas of the park will enable scientists and researchers to contribute to and inform the management of the park's biodiversity values (State of NSW and DPIE 2022).

### **8.5.4 Interests of external stakeholders**

Refer to Section 4.3 of the REF for further detail.

## **8.6 Matters of National Environmental Significance**

The Protected Matters Search Tool (PMST – DCCEE 2023a, Appendix C) identified 88 MNES listed under the EPBC Act within the study area, being:

- the Greater Blue Mountains Area – World Heritage Property and National Heritage Place
- 4 listed TECs:
  - Upland Basalt Eucalypt Forests of the Sydney Basin Bioregion – listed as Endangered
  - White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland – Critically Endangered
  - Natural Temperate Grassland of the South Eastern Highlands – Critically Endangered
  - Temperate Highland Peat Swamps on Sandstone – Endangered.
- 70 listed Threatened Species
- 12 listed Migratory Species.

After field investigations, the following MNES had been recorded, or considered likely to occur:

- Temperate Highlands Peat Swamps on Sandstone Endangered Ecological Community
- Deane's Boronia – Vulnerable species
- Blue Mountains Water Skink – Endangered species
- Gang-gang Cockatoo – Endangered species.



## 9. Impact assessment

### 9.1 Physical and chemical impacts during all stages of the activity

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
1. impact on soil quality or land stability?	Yes	Low, positive	<p>Earthwork/excavation will be required to establish and/or formalise/re-profile existing motorcycle track alignment, including the establishment of footings to support any boardwalks over the existing ephemeral drainage lines.</p> <p>Earthwork activities associated with construction would result in the disturbance and exposure of the track's soils. Exposure of this material could potentially cause erosion of the soils during periods of high winds, or where surface runoff is concentrated.</p>	<ul style="list-style-type: none"> <li>An ESCP will be prepared for the proposal.</li> <li>Sedimentation fencing/structures (e.g. sandbags) will be established as required prior to the commencement of works to ensure negligible impact on nearby waterways, and kept in place for the duration, of the proposed work in accordance with Landcom (2004) 'Soils and Construction: Managing Urban Stormwater' (the 'Blue Book').</li> <li>Disturbed surfaces would be compacted prior to the end of the work day or before rainfall to minimise potential for erosion and sedimentation during construction.</li> <li>If required, stockpiles would be treated in accordance with Landcom (2004) 'Soils and Construction: Managing Urban Stormwater' (the 'Blue Book').</li> <li>Uncontaminated spoil would be retained and reused onsite.</li> </ul>
2. affect a waterbody, watercourse, wetland or natural drainage system – either physically or chemically (e.g. due to runoff or pollution)?	Yes	Low, negative	<p>Carne Creek is present within the study area. The proposed track alignment traverses multiple ephemeral drainage lines, and crosses the main creek in two locations, however the native riparian vegetation present will not be significantly disturbed by the proposal.</p> <p>As the investigated walking track essentially follows the alignment of a degraded and disturbed motorcycle track, and given the</p>	No further safeguards/mitigation measures than those already provided above.

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
			<p>existing condition of the waterways/drainage lines present, the removal of some vegetation is not expected to cause the further instability of any waterway's banks or reduce the quality of the water</p> <p>Mitigation measures would be provided to prevent potential site runoff into any adjacent areas.</p>	
3. change flood or tidal regimes, or be affected by flooding?	No	N/A.	N/A.	N/A.
4. affect or be affected by coastal processes and coastal hazards, including those under climate change projections (e.g. sea level rise)?	No	N/A.	N/A.	N/A.
5. involve the use, storage or transport of hazardous substances, or use or generate chemicals which may build up residues in the environment?	Yes	Low, negative short-term.	It is anticipated that, considering the machinery/equipment employed during the proposed work, there will be requirements to store and re-fuel equipment on site. These will be stored in an adequately bundled and locked receptacle on site.	<ul style="list-style-type: none"> <li>A terrestrial spill kit must be maintained on site at all times. The type and nature of the kit must be commensurate to the type and quantity of hazardous material used on site.</li> <li>Should associated machinery require re-fuelling, this would occur within a bunded area at a minimum 50 m from any waterbody or drainage line.</li> <li>Any associated fuel would be placed beyond the limits of nearby waterbodies within a bunded location.</li> </ul>
6. involve the generation or disposal of gaseous, liquid or solid wastes or emissions?	Yes	Low, negative short-term.	Minor exhaust emissions would result from the use of machinery during the work. These emissions would be minimal and only for the duration of the project (i.e. short-term).	<ul style="list-style-type: none"> <li>Vehicles would be serviced and operate within standard Transport for NSW guidelines.</li> <li>Vehicles conveying materials to waste disposal sites will be covered.</li> </ul>

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
			Waste would be disposed to authorised waste facilities.	<ul style="list-style-type: none"> <li>Where possible, construction and demolition wastes would be recycled or reused.</li> <li>Work to be conducted during those periods when high winds are not predicted.</li> <li>Any clean surplus excavated soil and pruned vegetation may be retained for use on site.</li> <li>Other waste would be disposed to authorised waste facilities.</li> <li>Any personal rubbish would be removed and deposited in an approved waste receptacle and re-cycling methods enacted where appropriate.</li> </ul>
7. involve the emission of dust, odours, noise, vibration or radiation?	Yes	Low, negative short-term.	<p>The proposed work may have minor potential dust impacts associated with work activities and the presence of machinery/vehicles.</p> <p>There is expected to be a minor temporary acoustic and vibration impact during construction work associated with machinery and the presence of personnel, for members of the public within the surrounding area.</p>	<ul style="list-style-type: none"> <li>Dust, odour and noise would be restricted to the construction/installation work period.</li> <li>Construction activities would be limited to the period 6.00 am to 7.00 pm Monday to Saturday.</li> <li>Compliance of all vehicles and machinery with industry noise guidelines.</li> </ul>

## 9.2 Biodiversity impacts during all stages of the activity

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
1. affect any declared area of outstanding biodiversity value or critical habitat or environmental asset of intergenerational significance?	No	N/A.	Through reference to the Australian Government's Register of Critical Habitat (DCCEEW 2023c), and the AOBV register (DPE 2023c) (in conjunction with Part 3 of the Biodiversity Conservation Regulation 2017), per listings provided under the EPBC and BC Acts, no	N/A.

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
			gazetted areas of critical habitat or AOBV for any terrestrial species or communities occur within or near the proposal area.	
2. result in the clearing or modification of vegetation, including ecological communities and plant community types of conservation significance? ^	Yes	Low.	<p>During this construction phase, 22,742 m<sup>2</sup> of vegetation would be potentially cleared.</p> <p>The following MNES had been recorded or were considered likely to occur within or near the proposal area:</p> <p>Temperate Highlands Peat Swamps on Sandstone – listed as an endangered ecological community</p> <p>The proposed work has the potential to affect the following biota listed on the BC Act:</p> <ul style="list-style-type: none"> <li>Newnes Plateau Shrub Swamp in the Sydney Basin Bioregion – listed as an endangered ecological community</li> </ul> <p>Assessments drawing on the criteria provided under section 7.3 of the BC Act were undertaken on the community and each of these species. It was found that, provided the recommended mitigative measures were undertaken, the proposed work would not significantly affect the community, the species, or their habitats. As such, the preparation of a SIS/BDAR is not required (Appendix A).</p> <p>The proposed activity has the potential to introduce the plant pathogens <i>Phytophthora cinnamomi</i> and Myrtle Rust. In particular, the BC Act listed <i>Persoonia hindii</i>, is at risk of infection by <i>Phytophthora</i>.</p>	<ul style="list-style-type: none"> <li>Clearing of native vegetation/plants would not be more than that required to permit the scope of work.</li> <li>Near the occurrences of the Newnes Plateau Shrub Swamp, the track would be slightly elevated off the ground and constructed of stepping stones. This would permit ground traversing fauna to negotiate the walking track unrestricted and enable light to penetrate and promote the growth of ground cover plants.</li> <li>Construction should be undertaken sequentially along the track, with exposed/disturbed areas being compacted and stabilised.</li> <li>As works progress along the proposed track alignment, NPWS or similar qualified personnel should conduct pre-clearing inspections of each planned section (i.e. works that are planned to progress the track over the next several days will affect areas A, B and C, these being checked before works commence). These should be conducted to determine any unexpected finds and permit any slight track deviations/realignments.</li> <li>Known locations of <i>Persoonia hindii</i> would be marked on plans provided to the works contractor.</li> <li>Contract staff would be briefed by NPWS staff of the conservation significance of <i>Persoonia hindii</i>, its indicative features and the need to avoid removal and/or direct/indirect disturbance</li> <li>Known <i>Persoonia hindii</i> habitat adjacent to the track would be temporarily marked with exclusion tape or similar where necessary.</li> <li>As far as practical, sufficient buffers beyond the plants recorded will be established to prevent the individuals</li> </ul>

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
				<p>present being indirectly affected.</p> <ul style="list-style-type: none"> <li>• To permit future maintenance works to be conducted, the <i>Persoonia hindii</i> locations will be included in the NSW BioNet and any internal NPWS databases.</li> <li>• No mature or hollow-bearing trees are to be removed or indirectly disturbed unless required for safety reasons as a result of a quantitative risk assessment. Any maintenance or management of high value trees must be completed in accordance with NPWS's Tree risk management procedures (NPWS 2019) and advice from a suitably qualified arborist and ecologist.</li> <li>• All vehicles/machinery would enter the site via the existing trail network and stabilised access areas to prevent the introduction and spread of weed propagules and/or pathogens.</li> <li>• Refrain from parking any vehicle/storing machinery near tree trunks.</li> <li>• Where possible, construction machinery will be washed prior to entering and leaving site to ensure weed propagules are not transported.</li> <li>• Work must avoid the potential spread of plant pathogens as far as possible, with contractors adhering to the following hygiene protocols:</li> <li>• Before entering and leaving the work site, workers are to remove excess soil and mud and then spray boots, tools, gloves and small equipment with recommended disinfectant supplied by the contractor (70% Methylated spirits / 30% Water) until runoff is clear.</li> <li>• Avoid unnecessary soil disturbance.</li> <li>• In addition to these work-related hygiene protocols, boot cleaning devices should be installed at each end of the multi-day walk to prevent visitors spreading plant pathogens.</li> </ul>

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
				<ul style="list-style-type: none"> <li>• Inadvertent disturbed areas not part of the proposed scope of work will be permitted to naturally revegetate.</li> <li>• Any animals injured during the proposed work would be collected and taken to a local veterinarian or wildlife carer for treatment</li> <li>• Once rehabilitated, native animals must be released at their point of capture.</li> <li>• It is expected injured exotic fauna would be ethically treated.</li> </ul>
3. endanger, displace or disturb terrestrial or aquatic fauna, including fauna of conservation significance, or create a barrier to their movement?	Yes	Low	<p>The following MNES had been recorded or were considered likely to occur within or near the proposal area:</p> <ul style="list-style-type: none"> <li>• Gang-gang Cockatoo – listed as an endangered species</li> <li>• Blue Mountains Water Skink – listed as an endangered species.</li> </ul> <p>The proposed work has the potential to affect the following biota listed on the BC Act:</p> <ul style="list-style-type: none"> <li>• Flame Robin –vulnerable species</li> <li>• Scarlet Robin –vulnerable species</li> <li>• Varied Sittella –vulnerable species</li> <li>• Blue Mountains Water Skink - endangered species</li> <li>• Giant Dragonfly - endangered species</li> <li>• Gang-gang Cockatoo – vulnerable species.</li> </ul> <p>Assessments drawing on the criteria provided under section 7.3 of the BC Act were undertaken on the community and each of these species. It was found that, provided the recommended mitigative measures were undertaken, the proposed work would not significantly affect the</p>	<ul style="list-style-type: none"> <li>• No further safeguards/mitigation measures than those already provided above.</li> </ul>



Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
			<p>community, the species, or their habitats. As such, the preparation of a SIS/BDAR is not required.</p> <p>While the proposed work may temporarily disturb fauna species during construction/installation work due to associated noise, the proposal would not significantly endanger, displace or disturb native fauna, or create a barrier to their movement patterns.</p>	
4. result in the removal of protected flora or plants or fungi of conservation significance?	Yes	Low.	<p>The following MNES had been recorded or were considered likely to occur within or near the proposal area:</p> <ul style="list-style-type: none"> <li>Deane's Boronia – listed as a vulnerable species</li> </ul> <p>The proposed work has the potential to affect the following biota listed on the BC Act:</p> <ul style="list-style-type: none"> <li><i>Persoonia hindii</i> – listed as an endangered species</li> <li>Deane's Boronia – listed as a vulnerable species</li> <li>Small Pale Grass-lily – listed as an endangered species</li> </ul> <p><i>Persoonia hindii</i> has been recorded at numerous locations along the southern half of the proposed walking track alignment. In order to upgrade the existing informal motorcycle trail to a walking track of 1 m width, the proposed work has the potential to directly remove some stems of the species that are currently growing adjacent to the extant track which is generally less than one metre wide. At these locations the track would be diverted to avoid removal of these stems.</p>	<p>In addition to those measured listed above:</p> <p><u>Deane's Boronia</u></p> <ul style="list-style-type: none"> <li>a pre-works survey for Deane's Boronia be undertaken where the alignment traverses affected potential habitat (Newnes Plateau Shrub Swamp [PCT 3945] and adjacent Upper Blue Mountains Fringing Swamp Woodland [PCT 3691) during the appropriate survey season (September to November)</li> <li>should any plants be detected, the track would be re-routed to avoid their removal</li> <li>should any plants be detected, their location would be marked on the works plans</li> <li>contract staff would be briefed by NPWS staff of the conservation significance of Deane's Boronia and the need to avoid removal and disturbance, should it occur.</li> <li>confirmed Deane's Boronia habitat areas adjacent to the track would be marked with exclusion tape or similar where necessary.</li> </ul> <p><u>Persoonia hindii</u></p> <ul style="list-style-type: none"> <li>known locations of <i>Persoonia hindii</i> would be marked on the works plans</li> <li>contract staff would be briefed by NPWS staff of the</li> </ul>

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
			<p>Assessments drawing on the criteria provided under section 7.3 of the BC Act were undertaken on the community and each of these species. It was found that, provided the recommended mitigative measures were undertaken, the proposed work would not significantly affect the community, the species, or their habitats. As such, the preparation of a SIS/BDAR is not required (Appendix A).</p> <p>Provided the safeguards for track construction and subsequent visitor use are adopted, the local population of <i>Persoonia hindii</i> is unlikely to be placed at risk of extinction.</p> <p>Provided the safeguards are adopted, there would be no removal of any individuals of Small Pale Grass-lily during the proposed work</p>	<p>conservation significance of <i>Persoonia hindii</i> and the need to avoid removal and disturbance</p> <ul style="list-style-type: none"> <li>• <i>Persoonia hindii</i> areas adjacent to the track would be marked with exclusion tape or similar where necessary.</li> <li>• Hygiene protocols to prevent the spread of <i>Phytophthora</i> adopted and implemented.</li> <li>• Upon completion of track construction, boot cleaning devices be provided at the start of the walk with accompanying signage highlighting the conservation significance of the species and the importance of this practice in maintaining and protecting the population.</li> </ul> <p><u>Small Pale Grass-lily</u></p> <ul style="list-style-type: none"> <li>• pre-works assessment for Small Pale Grass- lily be undertaken where the alignment traverses affected potential habitat (PCTs 3687, 3688 and 3945). Assessments to be completed by NPWS staff or contractors, ideally during the appropriate survey season (October to February). If identified, track re-alignments should be considered to minimise impacts. If significant habitat is found, a suitably qualified ecologist should be engaged for additional surveys and recommendations on mitigation measures.</li> <li>• known locations of the Small Pale Grass-lily (including the North Ridge Road record) would be marked on the works plans</li> <li>• contract staff would be briefed by NPWS staff of the species conservation significance and need to avoid removal and disturbance</li> <li>• known and confirmed Small Pale Grass-lily habitat adjacent to the track would be marked with exclusion tape or similar where necessary.</li> </ul>
5. contribute to a key	Yes	Low.	Of the KTP listed under the EPBC, BC and/or FM	In addition to any safeguards/mitigation measures already

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
threatening process to biodiversity or ecological integrity?			<p>Acts, those that are relevant to the proposal are identified below. Based on the adherence of those recommendations provided in Section 5.3 and 7 of this report, the proposal can proceed as planned without contributing to, or increasing the impact of, the following KTPs:</p> <ul style="list-style-type: none"> <li>• Clearing of native vegetation (BC Act)</li> <li>• Degradation of native riparian vegetation along NSW water courses (FM Act)</li> <li>• Infection of native plants by <i>Phytophthora cinnamomi</i> (BC Act)</li> <li>• Dieback caused by the root-rot fungus (<i>Phytophthora cinnamomi</i>) (EPBC Act)</li> <li>• Introduction and establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae (Myrtle Rust) (BC Act).</li> </ul>	<p>provided above:</p> <ul style="list-style-type: none"> <li>• <i>Phytophthora cinnamomi</i> and Myrtle Rust are area associated with the dieback of native plant species in Australia. Work must therefore avoid the potential spread of these organisms as far as possible by adhering to the following hygiene protocols:</li> <li>• Remove excess soil and mud and then spray boots, tools, gloves and small equipment with recommended disinfectant supplied by the contractor (70% Methylated spirits / 30% Water) until runoff is clear.</li> <li>• Avoid unnecessary soil disturbance.</li> </ul>
6. introduce weeds, pathogens, pest animals or genetically modified organisms into an area?	Yes	Low	<p>The scope of work proposed would not intentionally introduce, or benefit the presence of noxious weeds, vermin or feral species, or genetically modified organisms to the local area. Soil disturbance associated with construction of the track could favour the establishment of invasive plant species such as annual and perennial species of the Asteraceae (daisy) family such as Catsear (<i>Hypochaeris radicata</i>) which was observed at one of the locations where the proposed track alignment crossed the swamp. Were this to occur, such plants would be confined to these disturbed edges and unlikely to spread into the extant, intact area of swamp. Weed invasion is an identified threat to the Blue</p>	<p>In addition to any safeguards/mitigation measures already provided above:</p> <ul style="list-style-type: none"> <li>• All equipment and vehicles would enter the site via stabilised accesses to prevent the introduction and spread of weed seeds and/or pathogens.</li> <li>• Vehicles transporting any exotic vegetation off site would ensure that their loads are covered.</li> <li>• Weeds could readily be controlled during routine maintenance and monitoring operations along the track.</li> </ul>

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
			Mountains Water Skink. The disturbance during construction and proposed activities of the area post works may aid colonisation of it by opportunistic weeds such as Blackberry ( <i>Rubus ulmifolius</i> ). Disturbance of the habitat may also permit introduced predators access to portions of the swamp community not previously accessible to these species. Provided the recommended mitigative measures proposed are adopted, the activity would not result in invasive species harmful to the Blue Mountains Water Skink becoming established in its habitat beyond what may already be extant.	

### 9.3 Community impacts during all stages of the activity

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
1. affect community services or infrastructure?	No	N/A.	N/A.	N/A.
2. affect sites important to the local or broader community for their recreational or other values or access to these sites?	Yes	Long-term positive Short-term negative	Short-term adverse impact includes the track construction activities. Long-term benefits associated with the track's construction would offer improved infrastructure and service, conserving the natural, cultural heritage and recreational values of the area, and provide improved public safety for those visitors who frequent the area.	<ul style="list-style-type: none"> <li>To facilitate public awareness and safety regarding work in progress, management structures (i.e., fencing and signage) would be installed to manage visitor access where necessary, and ensure safety.</li> <li>No work would be carried out on Sundays or during public holidays unless otherwise authorised by NPWS.</li> </ul>
3. affect economic factors,	Yes	Positive.	The anticipated increase in tourism to the region as	No further safeguards/mitigation measures than those

Review of Environmental Factors: Gardens of Stone Multi-day Walk, Section One

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
including employment, industry and property value?			a result of the proposal would increase employment opportunities, both directly linked to the Multi-day Walk, and indirectly.	already provided above.
4. have an impact on the safety of the community?	Yes	Positive.	The proposed track work will improve visitor safety by addressing current infrastructure, safety and environmental hazards associated with the current track.	No further safeguards/mitigation measures than those already provided above.
5. cause a bushfire risk?	Yes	Negligible	Some equipment may generate sparks	All contractors will be required to have basic firefighting equipment (e.g., fire extinguisher etc.) on site at all times.
6. affect the visual or scenic landscape?	Yes	Positive	<p>The works will not affect the visual or scenic character of the locality. The track will be consistent with similar walks present within national parks, and will upgrade the existing motorcycle track alignment to complement the surrounding environment.</p> <p>Short-term, temporary noise, visual and/or vibration impact may be experienced by visitors to the surrounding area due to the presence of personnel, use of machinery and occupation of the site during the work.</p> <p>Minor emissions may occur as a result of the proposed work.</p> <p>No glare or overshadowing would occur as a result of the proposal.</p>	<ul style="list-style-type: none"> <li>Contractor will act on any noise, vibration and other complaints.</li> <li>All vehicles and machinery will be checked, and where appropriate maintained, prior to commencement of the project.</li> <li>Compliance of all vehicles and machinery with industry noise guidelines.</li> </ul>



## 9.4 Natural resource impacts during all stages of the activity

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
1. result in the degradation of the park or any other area reserved for conservation purposes?	No	N/A	N/A	N/A
2. affect the use of, or the community's ability to use, natural resources?	Yes	Long-term positive.	Temporary, short-term disruptions may occur to the community's ability to use natural resources; however, ultimately the objective of the proposal is to permit the construction of a walking track that increases the community's ability to use the natural resources present within this portion of RNP.	No further safeguards/mitigation measures than those already provided above.
3. involve the use, wastage, destruction or depletion of natural resources including water, fuels, timber or extractive materials? ^	Yes	Low.	Natural resources including fuel, water, timber and stone will be used during the construction of the track.	<ul style="list-style-type: none"> <li>Site-won or local materials to be used wherever possible.</li> </ul>
4. provide for the sustainable and efficient use of water and energy?	No	N/A.	N/A.	N/A.

## 9.5 Aboriginal cultural heritage impacts during all stages of the activity

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
1. disturb the ground surface or any vegetation likely to	Yes	Low.	<p>The proposed work will involve minor ground disturbance.</p> <p>Sites of ACH identified in the ADD will be avoided</p>	<ul style="list-style-type: none"> <li>In the event unexpected ACH is discovered during the course of the work, the work will cease within that area immediately and an archaeologist called</li> </ul>

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
contain culturally modified trees?			<p>during construction (refer to section 8.3.1 and Appendix B).</p> <p>No culturally modified trees are present in the study area.</p>	<p>to assess the find(s). Workers must contact the Project Manager to implement the NPWS unexpected finds procedure.</p> <ul style="list-style-type: none"> <li>• If ACH is identified, Heritage NSW must be notified.</li> <li>• Appropriate management and avoidance, or AHIP, should then be sought if Aboriginal objects are to be moved or harmed.</li> <li>• If human remains are found, the following will occur: <ul style="list-style-type: none"> <li>• stop work</li> <li>• secure the site</li> <li>• notify the NSW Police and DPE.</li> </ul> </li> </ul>
<p>2. affect or occur near known Aboriginal objects, Aboriginal places or an Aboriginal cultural asset of intergenerational significance?</p> <p>If so, can impacts be avoided? How?</p>	Yes	Low.	<p>Recorded ACH are present within the study area (Figure 9). With reference to the ADD, two previously registered Aboriginal archaeological sites, CC 3 Newnes SF (AHIMS 45-1-0177) and CC 4 Newnes SF (AHIMS 45-1-0178) were revisited and assessed during the visual inspection. These sites were confirmed to be located within the Gardens of Stone Multi-Day Walk – Section 1 study area. Four newly recorded rockshelter sites were identified as a result of the visual inspection, including two rockshelters with artefact deposit and two rockshelters with art.</p> <p>These sites were located within proximity to the study area. Refer to Appendix B, section 6.4 for detailed site descriptions and photographic records.</p> <p>The proposal will be conducted within previously disturbed/modified areas; as such, no unexpected ACH is anticipated to be present.</p> <p>There are no nearby declarations under s153G of the NPW Act of cultural assets of intergenerational significance (AIS) for Aboriginal cultural value. The</p>	<p>Impacts to all known ACH sites will be avoided. Opportunities exist to establish signage and site-specific interpretation in consultation with Aboriginal stakeholders.</p> <p>If Aboriginal objects are unexpectedly disturbed, work in the vicinity will cease and the NPWS Aboriginal Partnerships and Heritage Unit will be contacted immediately. The NPWS Unexpected Finds Procedures would be followed.</p> <p>If impact to identified Aboriginal archaeological sites cannot be avoided an AHIP issued by Heritage NSW under section 90(1) of the National Parks and Wildlife Act 1974 would be required for the project.</p>

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
			study area has not been declared an Aboriginal Place under s.84 of the NPW Act.	
<p>3. affect areas:</p> <ul style="list-style-type: none"> <li>• within 200 m of waters</li> <li>• within a sand dune system</li> <li>• on a ridge top, ridge line or headland</li> <li>• within 200 m below or above a cliff face</li> <li>• in or within 20 m of a cave, rock shelter or a cave mouth?</li> </ul> <p>If so, can impacts be avoided? How?</p>	Yes	Low.	<p>The proposed walking track alignment is within 200m and traverses one named waterway, Carne Creek, this present in the northern half of the area investigated (Figure 5). Multiple ephemeral drainage lines that feed this creek would also be traversed. The alignment traverses ridge tops/lines and is within 200m below or above cliff faces, and within 20m of caves and rock shelters. Sites of ACH have been identified within the ADD, and any impact to these areas would be avoided during the proposed work.</p> <p>The proposed track alignment is predominantly located within the footprint of a previously disturbed/modified track alignment, as such, it is considered that no ACH would be directly or indirectly impacted by the proposal.</p>	No further safeguards/mitigation measures than those already provided above.
4. affect wild resources which are used or valued by the Aboriginal community or affect access to these resources?	No	N/A.	N/A.	N/A.
5. affect access to culturally important locations?	No	N/A.	N/A.	N/A.

## 9.6 Other cultural heritage impacts during all stages of the activity

Is the proposed activity likely to...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
1. affect or occur near places, buildings or landscapes of heritage significance?	Yes	Negligible.	<p>A desktop review of relevant heritage databases indicated the following within, or near to, the study area:</p> <ul style="list-style-type: none"> <li>The Wolgan Valley Railway - listed on the SHI (item # 33 3900332), Schedule 5 of the Lithgow LEP (item # 1245) and on the HHIMS (item ID 308)</li> </ul> <p>This runs approximately 2km to the east of the proposed Section One walking track, with the southernmost 50 metres of the proposed walking track and carpark area following the railway track through an approximate 2m high rock cutting (Figure 10).</p>	<ul style="list-style-type: none"> <li>Contractors will be made aware of the significance of the heritage listing of the study area and to avoid any impact to the any structures associated with the item.</li> <li>In the unlikely event that any significant non-Aboriginal [European] cultural heritage items are discovered during the work, a stop work protocol would be in place for unexpected archaeological finds.</li> <li>All work in the area of the find would cease and a qualified archaeologist engaged to conduct an assessment. Should the assessment identify the exposed remains as 'relics' as defined by the Heritage Act, Heritage NSW would be notified in accordance with s.146 of the Heritage Act.</li> </ul>
2. impact on relics or moveable heritage items, or an area with a high likelihood of containing relics?	No	N/A.	N/A.	N/A.
3. impact on vegetation of cultural landscape value (e.g. gardens and settings, introduced exotic species, or evidence of broader remnant land uses)?	No	N/A.	N/A.	N/A.

## 9.7 Impacts on matters of national environmental significance

Is the proposal likely to affect MNES, including:	Applies?	Likely impact	Reasons	Safeguards/mitigation measures
1. listed threatened species or ecological communities)?	Yes	Low.	<p>PCT 3945 Newnes Plateau Shrub Swamp, which the proposed track route traverse at four locations (Figure 6), is part of the Temperate Highland Peat Swamps on Sandstone EEC.</p> <p>The track alignment has been designed to minimise impacts on the TECs.</p> <p>The following flora species may be present as it has been recorded in proximity to the proposed track alignment and suitable habitat is present along it:</p> <ul style="list-style-type: none"> <li>Deane's Boronia – Vulnerable, EPBC Act</li> </ul> <p>One fauna species recorded during the field investigations is listed as under the EPBC Act:</p> <ul style="list-style-type: none"> <li>Gang-gang Cockatoo (<i>Callocephalon fimbriatum</i>) –Endangered EPBC Act.</li> </ul> <p>With reference to the BAR (Appendix A), a review of the DCCEE's PMST and the NSW BioNet Atlas databases (DCCEE 2023a, DPE 2023a) identified 43 threatened flora species and 72 threatened fauna species listed under the Schedules of the EPBC, FM and/or BC Acts that have been previously recorded, or are considered to have habitat, within a 10 km radius of the study area (Appendix 1 of the BAR).</p> <p>The scale of work proposed is not considered to have an adverse impact on any of these species or their lifecycle</p>	<ul style="list-style-type: none"> <li>Clearing of native vegetation/plants would not be more than that required to permit the scope of work.</li> <li>Near the occurrences of the Newnes Plateau Shrub Swamp, the track would be slightly elevated off the ground and constructed stepping stones. This would permit ground traversing fauna to negotiate the walking track unrestricted and enable light to penetrate and promote the growth of ground cover plants.</li> <li>Construction should be undertaken sequentially along the track, with exposed/disturbed areas being compacted and stabilised.</li> <li>As works progress along the proposed track alignment, NPWS or similar qualified personnel should conduct pre-clearing inspections of each planned section (i.e. works that are planned to progress the track over the next several days will affect areas A, B and C, these being checked before works commence). These should be conducted to determine any unexpected finds and permit any slight track deviations/realignments.</li> <li>Known locations of <i>Persoonia hindii</i> would be marked on plans provided to the works contractor.</li> <li>Contract staff would be briefed by NPWS staff of the conservation significance of <i>Persoonia hindii</i>, its indicative features and the need to avoid removal and/or direct/indirect disturbance.</li> <li>Known <i>Persoonia hindii</i> habitat adjacent to the track would be temporarily marked with exclusion tape or similar where necessary.</li> <li>As far as practical, sufficient buffers beyond the plants recorded will be established to prevent the individuals present being indirectly affected.</li> <li>To permit future maintenance works to be conducted, the</li> </ul>



Is the proposal likely to affect MNES, including:	Applies?	Likely impact	Reasons	Safeguards/mitigation measures
			<p>requirements, would not cause the local extinction of these species, nor would it present any significant barriers to their movement patterns.</p> <p>Beyond the existing conditions presented within the site, the work will not fragment or isolate any of their habitat areas.</p> <p>These animals are expected to be tolerant of the current disturbance cause by the creation of an unauthorised motorcycle track and, post-work, are expected to be present within, and disperse across, both the proposed walking track and surrounding area.</p>	<p>Persoonia hindii locations will be included in the NSW BioNet and any internal NPWS databases.</p> <ul style="list-style-type: none"> <li>• No mature or hollow-bearing trees are be removed or indirectly disturbed unless required for safety reasons as a result of a quantitative risk assessment. Any maintenance or management of high value trees must be completed in accordance with NPWS's <i>Tree risk management procedures</i> (NPWS 2019) and advice from a suitably qualified arborist and ecologist.</li> <li>• All vehicles/machinery would enter the site via the existing trail network and stabilised access areas to prevent the introduction and spread of weed propagules and/or pathogens.</li> <li>• Refrain from parking any vehicle/storing machinery near tree trunks.</li> <li>• Construction machinery will be washed prior to entering and leaving site to ensure weed propagules are not transported.</li> <li>• The proposed activity has the potential to introduce the plant pathogens <i>Phytophthora cinnamomi</i> and Myrtle Rust. In particular, the BC Act listed <i>Persoonia hindii</i>, is at risk of infection by <i>Phytophthora</i>. Work must therefore avoid the potential spread of plant pathogens as far as possible, with contractors adhering to the following hygiene protocols:</li> <li>• Before entering and leaving the work site, workers are to remove excess soil and mud and then spray boots, tools, gloves and small equipment with recommended disinfectant supplied by the contractor (70% Methylated spirits / 30% Water) until runoff is clear.</li> <li>• Avoid unnecessary soil disturbance.</li> <li>• In addition to these work-related hygiene protocols, boot cleaning devices should be installed at each end of this stage of the multi- day walk to prevent visitors spreading plant pathogens.</li> <li>• Inadvertent disturbed areas not part of the proposed scope of work will be permitted to naturally revegetate.</li> </ul>

Is the proposal likely to affect MNES, including:	Applies?	Likely impact	Reasons	Safeguards/mitigation measures
				<ul style="list-style-type: none"> <li>Any animals injured during the proposed work would be collected and taken to a local veterinarian or wildlife carer for treatment</li> <li>Once rehabilitated, native animals must be released at their point of capture.</li> <li>It is expected injured exotic fauna would be ethically treated</li> </ul>
2. listed migratory species?	No	N/A.	N/A.	N/A.
3. the ecology of Ramsar wetlands?	No	N/A.	N/A.	N/A.
4. world heritage values of World Heritage properties?	No	N/A.	N/A.	N/A.
5. the national heritage values of national heritage places?	No	N/A.	N/A.	N/A.

## 9.8 Cumulative impacts during all stages of the activity

A number of infrastructure projects are planned to take place across the Gardens of Stone State Conservation Area, as outlined in the draft Master Plan. The Gardens of Stone Multi-Day Walk marks the first new walking track project in the Forest Camp precinct, supported by road repairs and upgrades around Western Boundary and North Ridge Road.

The Lost City Walking Track marks another similar walking track project within the Lost City precinct, noting that natural landscape and biodiversity values are quite distinct with notable differences in ecological communities observed. These projects do not interact with the current proposal at the construction or remediation phase, but will exist as part of a coordinated park management strategy once operational.

This proposal represents the first section of the Gardens of Stone Multi-Day Walk, to be followed by sections 2-3. Cumulative impacts will be considered for these subsequent projects.

A consideration of the cumulative impacts of the proposal when associated with other activities proposed, or being undertaken within, Gardens of Stone State Conservation Area is present below.

When considered with other projects, is the proposed activity likely to affect...	Applies?	Impact level	Reasons	Safeguards/mitigation measures
1. natural landscape or biodiversity values through cumulative impacts?	Yes	Low	Other projects directly associated with the proposal include construction and operation of Forest Camp, a dedicated mountain bike network and ancillary roads. Clearing will be required for these projects, in addition to construction works which may have the potential to disturb and displace fauna.	REFs in preparation for these projects would identify mitigation measures (if any) and residual impacts.
2. cultural (Aboriginal, shared and historic heritage) values through cumulative impacts?	No	N/A		
3. social (amenity, recreation, education) values through cumulative impacts?	Yes	positive	Social amenity will be improved through improved accessibility and formalised walking tracks. This will reduce inappropriate activities in the park.	
4. the community through cumulative impacts on any other part of environment (e.g. due to traffic, waste generation or perceived over-development?	Yes	Low	Increased traffic through local roads in Lithgow to access the State Conservation Area via State Mine Gully Road	Keeping community informed about the project through direct communications where practicable.

## 10. Proposals requiring additional information

N/A

## 11. Summary of impacts and conclusions

Environmental factor	Consideration	Significance of impact
(a) the environmental impact on the community	Social, economic and cultural impacts as described in sections 9.3, 9.5 and 9.6	Not significant
(b) the transformation of the locality	Human and non-human environment as described in sections 9.1, 9.2 and 9.4	Not significant
(c) the environmental impact on the ecosystems of the locality	Amount of clearing, loss of ecological integrity, habitat connectivity/ fragmentation and changes to hydrology (both surface and groundwater) as described in sections 9.1, 9.2 and 9.4 and, for nationally listed threatened ecological communities, in section 9.7.	Not significant
(d) reduction of the aesthetic, recreational, scientific or other environmental quality or value of the locality	Visual, recreational, scientific and other impacts as described in section 9.3.	Not significant
the effects on any locality, place or building that has— aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance, or other special value for present or future generations	Impacts to Aboriginal and historic heritage associated with a locality (including intangible cultural significance), architectural heritage, social/community values and identity, scenic values and others, as described in sections 9.3, 9.5 and 9.6 and (for MNES heritage places) section 9.7.	Not significant
(f) the impact on the habitat of protected animals, within the meaning of the Biodiversity Conservation Act	Impacts to all native terrestrial species, including but not limited to threatened species, and their habitat requirements, as described in section 9.2.	Not significant
(g) the endangering of a species of animal, plant or other form of life, whether living on land, in water or in the air	Impacts to all listed terrestrial and aquatic species, and whether the proposal increases the impact of key threatening processes, as described in section 9.2	Not significant
(h) long-term effects on the environment	Long-term residual impacts to ecological, social and economic values as described in all parts of section 9.	Not significant
(i) degradation of the quality of the environment	Ongoing residual impacts to ecological, social and economic as described in section 9.4.	Not significant

Environmental factor	Consideration	Significance of impact
(j) risk to the safety of the environment	Impacts to public and work health and safety, from contamination, bushfires, sea level rise, flood, storm surge, wind speeds, extreme heat, rockfall and landslip, and other risks likely to increase due to climate change as described in sections 9.1, 9.3 and 9.4.	Not significant
(k) reduction in the range of beneficial uses of the environment	Impacts to natural resources, community resources and existing uses as described in sections 9.3 and 9.4.	Not significant
(l) pollution of the environment	Impacts due to air pollution (including odours and greenhouse gases); water pollution (water quality health); soil contamination; noise and vibration (including consideration of sensitive receptors); or light pollution, as described in sections 9.1 and 9.3.	Not significant
(m) environmental problems associated with the disposal of waste	Transportation, disposal and contamination impacts as described in section 9.3.	Not significant
(n) increased demands on natural or other resources that are, or are likely to become, in short supply	Impacts to land, soil, water, gravel, minerals and energy supply as described in section 9.4.	Not significant
(o) the cumulative environmental effect with other existing or likely future activities	The negative synergisms with existing development or future activities as considered in section 9.8.	Not significant
(p) the impact on coastal processes and coastal hazards, including those under projected climate change conditions	Impacts arising from the proposed activity on coastal processes, and impacts on the proposed activity from those coastal processes and hazards, both current and future, as considered in section 9.1.	Not significant
(q) applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1	Inconsistency with the objectives, policies and actions identified in local, district and regional plans, as considered in section 3.2.2.	Not significant
(r) other relevant environmental factors.	Other factors relevant in assessing impacts on the environment to the fullest extent, such as: native title as considered in section 5.1; and permissibility under the NPW Act (inclusive of the plan of management) as considered in section 3.1.1.	Not significant

#### In conclusion:

- There is **not** likely to be a significant effect on the environment and so an environmental impact statement is **not** required.

The proposed work would not have a significant negative effect. The proposal would have long-term beneficial effects, providing a new and desirable level of infrastructure and service required for walking tracks within the park, increasing recreational opportunities within both the SCA and the broader region. The works will maintain a conservation area and provide for the conservation of natural, cultural heritage and recreational values of the locality.



- There is **not** likely to be a significant effect on threatened species, populations, ecological communities or their habitats and so a species impact statement is **not** required

By the completion of the field investigation the following biota listed under the BC Act were recorded:

- Newnes Plateau Shrub Swamp – listed as an endangered ecological community
- *Persoonia hindii* – endangered species
- Flame Robin – vulnerable species
- Scarlet Robin – vulnerable species
- Varied Sittella – vulnerable species
- Gang-gang Cockatoo – vulnerable species.

As they have been previously recorded within the locality, and as suitable habitat is present, it is considered necessary to adopt the precautionary approach to the potential presence of the:

- Small Pale Grass-lily – endangered species
- Deane's Boronia – vulnerable species
- Blue Mountains Water Skink – endangered species
- Giant Dragonfly – endangered species.

In preparing the BAR, impact assessments that drew on the criteria provided under s.7.3 of the BC Act were conducted on the EEC and recorded/predicted species, these concluding that the proposal is unlikely to significantly affect the threatened species, ecological community, or their habitats (Appendix A [Appendix 3]). As such, the preparation of a SIS/BDAR that further considers the impact of the proposal on these entities is not required, and the BOS is not triggered.

- The activity is **not** likely to have a significant impact on matters of national environmental significance listed under the Cwth Environment Protection and Biodiversity Conservation Act

By the completion of the field investigation, the following MNES had been recorded, or were considered likely to occur, within or near the proposal area:

- Temperate Highlands Peat Swamps on Sandstone – listed endangered ecological community
- Deane's Boronia – vulnerable species
- Blue Mountains Water Skink – endangered species
- Gang-gang Cockatoo – endangered species.

In preparing the BAR, assessments prepared in accordance with the significant impact guidelines provided under this Act (DE 2013) were undertaken on each of these MNES. It was concluded that, provided the recommended mitigative measures were undertaken, the proposed works would not have a significant impact on Temperate Highlands Peat Swamps on Sandstone, Deane's Boronia, the Blue Mountains Water Skink or Gang-gang Cockatoo. As such, the proposal is not a controlled action that requires referral to the Federal Minister for the Environment for further consideration or approval.

- The activity **will** require certification to the Building Code of Australia, Disability (Access to Premises – Buildings) Standards 2010 or Australian Standards in accordance with the NPWS Construction Assessment Procedures.

## 12. Supporting documentation

Document title	Author	Date
1. Flora and Fauna Biodiversity Assessment Report (BAR)	Lesryk	August 2023
2. Aboriginal Cultural Heritage Due Diligence Report (ADD)	Kelleher Nightingale Consulting	July 2023
3. Protected Matters Search Tool (PMST) Report	Lesryk	August 2023
4. Scope of Works	NPWS	July 2023
5. Fisheries Management Act cl.199 Referral	DPI	March 2024

## 13. Declarations

As the person responsible for the preparation of the REF, I certify that, to the best of my knowledge, this REF is in accordance with the EP&A Act, the EP&A Regs and the Guidelines approved under section 170 of the EP&A Regs, and the information it contains is neither false nor misleading.

Signature



Name (printed)

Deryk Engel

Position

Director

Date

15 February 2024

**By endorsing the REF, the proponent confirms that the information in the REF is accurate and adequate to ensure that all potential impacts of the activity can be identified.**

Signature



Name (printed)

Tobias Settree

Position

A / Area Manager

Date

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