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Scoping Report

Mount Canobolas Mountain Bike Trails

October 2021

Prepared for



The Environmental Factor



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Scoping Report – Mount Canobolas Mountain Bike Trail

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				Name	Date
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ABBREVIATIONS

Table 1 Abbreviations

Abbreviation	Description
ACHCR	Aboriginal Cultural Heritage Consultation Requirement
ACT	Australian Capital Territory
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
AOBV	Areas of Outstanding Biodiversity Value
Apex	Apex Archaeological
ARA	Appropriate Regulatory Authority
a.s.l	Above Sea Level
ASS	Acid Sulfate Soils
ASWG	Agency Stakeholder Working Group
BAM	Biodiversity Assessment Method
BC Act	<i>Biodiversity Conservation Act 2016</i>
BCA	Biodiversity Conservation Trust
BDAR	Biodiversity Development Assessment Report
BCAR	Biodiversity Certification Assessment Report
BOS	Biodiversity Offsets Scheme
CCA	Canobolas Conservation Alliance
CBD	Central Business District
CIV	Capital Investment Value
CEMP	Construction Environmental Management Plan
CWORBC	Central West Off Road Cycling Club
DA	Development Application
DAWE	Department of Agriculture, Water and the Environment
DP	Deposited Plans
DPI	Department of Primary Industries
DPIE	Department of Planning, Industry and Environment
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPA	Environment Protection Authority
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act 1999</i>
EPL	Environmental Protection Licence
ERSED	Erosion and Sediment Control
ESD	Ecologically Sustainable Development
FCNSW	Forestry Corporation New South Wales
FM Act	<i>Fisheries Management Act 1994</i>
IMBA	International Mountain Bicycling Association
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
LGA	Local Government Authority
LLS Act	<i>Local Land Services Act 2013</i>
MCMTB	Mount Canobolas Mountain Bike
MNES	Matters of National Environmental Significance
MTB	Mountain Bike

Abbreviation	Description
MTBA	Mountain Bike Australia
NPW Act	<i>National Parks and Wildlife Act 1972</i>
NPWS	National Parks and Wildlife Service
NSW	New South Wales
NT	Northern Territory
OCC	Orange City Council
OEH	Office of Environment and Heritage
OEMP	Operational Environmental Management Plan
OLALC	Orange Local Aboriginal Land Council
PCT	Plant Community Type
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
PoM	Plan of Management
RAP	Registered Aboriginal Party
REF	Review of Environmental Factors
RDP	Rapid Data Point
SAII	Serious and Irreversible Impacts
SCA	State Conservation Area
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SF	State Forest
SIS	Species Impact Statement
SMBS	Sustainable Mountain Bike Strategy
SoHI	Statement of Heritage Impact
SR	Scoping Report
SRD	State and Regional Development
SSD	State Significant Development
SSDA	State Significant Development Application
TEC	Threatened Ecological Community
TEF	The Environmental Factor
TFB	Total Fire Ban
WoNS	Weed of National Significance
WM Act	<i>Water Management Act 2000</i>

EXECUTIVE SUMMARY

This Scoping Report (SR) has been prepared by The Environmental Factor (TEF) at the request of Orange City Council (OCC or Council) to support an application to the Secretary of the Department of Planning, Industry and Environment (DPIE) to request the Secretary's Environmental Assessment Requirements (SEARs) to guide the preparation of an Environmental Impact Statement (EIS) for the proposed construction and operation of a network of mountain bike trails comprising up to 104.4 km of single-track across thirty-six (36) trails, and development of ancillary infrastructure, on Mount Canobolas to the south-west of Orange, NSW (hereafter 'the Proposal').

The Proposal involves submitting a development application (DA) for the Proposal under Division 4.7, section 4.36 of the *Environmental Planning and Assessment Act 1975* (EP&A Act). The Proposal is regarded as State Significant Development (SSD) through the effect of Schedule 1, clause 13(2)(b) of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP), being a recreational facility development with a capital investment value of more than \$10 million and is located in an environmentally sensitive area of State significance.

This report considers the potential environmental impacts that may result from the proposed works and proposes preliminary safeguards to avoid, minimise, mitigate or offset these impacts. Issues identified as potentially arising as part of the proposal have been categorised as Key and Non-Key Issues, as follows:

- Land – Key
- Aboriginal heritage – Key
- Historic heritage – Key
- Biodiversity – Key
- Access – Key
- Social – Key
- Economic – Key
- Amenity – Key
- Water – Key
- Built environment – Key
- Hazards and risks – Key
- Waste and resource use – Non-Key
- Air quality – Non-Key
- Climate change – Non-Key

To support the preparation of this SR, a review of previous reports, databases and stakeholder-sourced information and assessments has been carried out. This SR is intended to guide the development of the EIS during the preparation of all planning approval documentation to be undertaken at a later date.

This report requests the Secretary prepare Environmental Assessment Requirements (SEARs) to guide preparation of an Environmental Impact Statement for a State Significant Development (SSD) Application.

1 INTRODUCTION

1.1 Purpose of the Scoping Report

This scoping report (SR) supports an application to the Department of Planning Industry and Environment (DPIE) requesting the Proposal be assessed as SSD under the provisions of the *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP) and that the Secretary's Environmental Assessment Requirements (SEARs) be issued under Section 4.12 of the EP&A Act and Clause 3 of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* for preparation of an Environmental Impact Statement (EIS) for the Proposal.

This SR:

- Describes the Proposal.
- Discusses the Preliminary Environmental Impact Assessment (PEIA).
- Identifies key environmental issues and other issues relating to the Proposal.
- Provides a scope of the assessments to be prepared for the EIS.

1.2 Proponent

Orange City Council (OCC or Council) is the Proponent for this Proposal, notwithstanding the subject site falling entirely within the Cabonne Local Government Area (LGA).

Table 2 Proponent details

Item	Details
Full Name(s)	Orange City Council
Postal Address	PO Box 35, 135 Byng Street, ORANGE NSW 2800
ABN	85 985 402 386
Nominated Contact	Roxanne Betts
Contact Details	P: 02 6393 8166 A: PO Box 35, 135 Byng Street, ORANGE NSW 2800 E: rbetts@orange.nsw.gov.au W: www.orange.nsw.gov.au

This Scoping Report was prepared by Skye Rivett, Kate Farrell, Janet Sanderson and Emily Cotterill. Relevant qualifications of these personnel are provided in Table 3.

Table 3 Qualifications of person(s) who prepared the Scoping Report

Person	Qualifications
Emily Cotterill Director and Principal Consultant – The Environmental Factor (TEF)	BSc – Biological Science BA – Sociology and Anthropology Certified Environmental Practitioner (CEnvP 522) Biodiversity Assessment Method Accredited Assessor (BAAS 2011)
Skye Rivett Senior Environmental Consultant – TEF	Bachelor of Applied Science in Social Ecology Master of Science in Conservation Biology Post Graduate Certificate in Education

Person	Qualifications
Kate Farrell GIS and Environmental Consultant – TEF	BSc – Earth Science Graduate Diploma in Urban and Regional Planning Graduate Diploma in Teaching and Learning
Janet Sanderson GIS Specialist – TEF	Diploma Spatial Information Services Diploma Executive Secretary

1.3 Overview of the Proposal

Orange City Council is proposing to develop a series of purpose-built mountain bike trails and associated infrastructure on Mount Canobolas, in Orange, NSW. The proposed trail network is intended to be suitable to attract riders from farther afield, with enough trail length to entice individuals and families to the region for extended stays; the facility is also intended to be “World Class” suitable to attract State, National and International events, and will also be suitable for other events such as trail running. The Mount Canobolas Mountain Bike (MCMTB) Trail Project (‘the Proposal’) would involve construction of a proposed 104.4 km of single-track trail network across thirty-six (36) separate, interlinked trails. Approximately 71.1 km (68 %) of the proposed trail network is located within the Mount Canobolas State Conservation Area (SCA), 27 km (26 %) in State Forest (SF), and 6.3 km (6 %) in Crown and freehold land adjacent to the SCA zoned RU2 – Rural Landscape. The Proposal also includes development of ancillary infrastructure such as supplementary parking, trail head facilities and road upgrades as required.

Key features of the trail network include:

- Thirty-six (36) individual mountain bike trails, for a total length of 104.4 km
 - Eleven (11) trails totaling 33.3 km (32 %) rated as ‘green’ (easy)
 - Thirteen (13) trails totaling 40.7 km (39 %) rated as ‘blue’ (intermediate)
 - Eight (8) trails totaling 22.7 km (22 %) rated as ‘black’ (difficult)
 - Four (4) trails totaling 7.8 km (7 %) rated as ‘double black’ (advanced)

The Proposal also includes two trailhead facilities, intended to be sympathetic to the existing infrastructure on site, which can be used not only by mountain bikers, but also by other visitors to the region.

A key part of the Proposal will be the construction of a Visitors’ or Interpretation Centre at the trail head, which will not only provide general information to visitors about the trails and the SCA, but will facilitate business development opportunities and jobs for the Aboriginal community from activities such as:

- Mountain bike tours of culturally significant parts of the mountain
- Trail maintenance on behalf of OCC
- Bike hire and maintenance
- A trail ‘Hub’ which includes retail and hospitality trading venue(s), bike hire, toilet and barbeque facilities
- Information on cultural burn plans and other management activities

Council is currently in discussions with the Orange Local Aboriginal Land Council (OLALC) about forming a partnership to facilitate Aboriginal community involvement in the project, as part of Orange Council’s broader Aboriginal business development and employment strategy.

The construction of a world class mountain bike trail is hoped to provide further recreational possibilities for the area, tapping into a growing local, national, and international mountain biking

community. The project also seeks to offer improved amenities for other visitors to the SCA, whilst facilitating further business development opportunities and jobs for the local Aboriginal community. Improved management of, and increased funding for, feral species and weed control actions will also form an integral part of any future stages of project development and delivery.

The Proposal involves submitting a development application (DA) for the MCMTB Trail project under Division 4.7, section 4.36 of the *Environmental Planning and Assessment Act 1975* (EP&A Act). The Proposal is regarded as State Significant Development (SSD) through the effect of Schedule 1, clause 13(2)(b) of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP), being a recreational facility development with a capital investment value of more than \$10 million and is located in an environmentally sensitive area of State significance.

The design of the proposed Trail Plan takes into consideration considerable feedback from community and stakeholder groups wishing to see a more environmentally sympathetic design developed, as well as opportunities to construct a route which appeals to a wider audience and highlights the unique scenic qualities of the location.

1.4 Site location and description

The proposed trail network is located approximately 15 km southwest of the regional City of Orange in the Central-West of NSW within the Mount Canobolas SCA (zoned E1 – National Parks and Nature Reserves) and Glenwood SF (zoned RU3 – Forestry), with a small area in the eastern portion of the site zoned RU2 - Rural Landscape which is both Crown Land and freehold land, with a total area comprising 2207.89 ha (Figure 1 and Figure 2). This comprises a 2-metre-wide maximum area for direct construction impact footprint (17.2 ha) within a 20-metre-wide buffer (10 m either side) to allow for indirect impacts, for a Subject Land area comprising 169.61 ha (Figure 3).

Mount Canobolas is a high-altitude extinct volcano (1,397m a.s.l) supporting a large area of sub-alpine vegetation and numerous endemic and restricted plant species (Porteners, 2019). Within the SCA the proposed trail network passes through a range of native vegetation types dominated by Sub-Alpine and Wet Sclerophyll Forest vegetation communities with varying levels of weed encroachment and recent fire damage evident. A network of paved and unsealed roads, parking areas and visitor facilities (picnic and camping areas, toilets), as well as an extensive network of walking trails, occur throughout the SCA (Figure 2).

Glenwood SF is at a lower altitude than the SCA and is dominated by Radiata Pine plantation of varying ages, from recently harvested through to mature forest, with small stands of native vegetation and regrowth scattered throughout. Harvesting and fire trails are found throughout the SF, with bike and walking tracks also scattered throughout the SF (Figure 2).

Table 4 Site details

Item	Description
Road name / Property name Lot /DP	Mt Canobolas State Conservation Area and Glenwood State Forest, Crown Land and Freehold land, Canobolas, Orange NSW.
	Lot 72 DP750143 NSW Government
	Lot 88 DP750143 NSW Government
	Lot 69 DP750143 NSW Government

Item	Description
	Lot 44 DP 750143 NSW Government
	Lot 181 DP750143 NSW Government
	Lot 168 DP 750143 NSW Government
	Lot 54 DP750143 NSW Government
	Lot 191 DP750143 NSW Government
	Lot 87 DP750143 NSW Government
	Lot 190 DP750143 NSW Government
	Lot 2 DP260407 NSW Government
	Lot 1 DP260407 NSW Government
	Lot 265 DP750415 NSW Government
	Lot 293 DP750415 NSW Government
	Lot 266 DP750415 NSW Government
	Lot 259 DP 750415 NSW Government
	Lot 276 DP750415 NSW Government
	Lot 9028 DP1201721 NSW Government
	Lot 9027 DP1201721 NSW Government
	Lot 155 DP756910 NSW Government
	Lot 7002 DP1020355 NSW Government
	Lot 172 DP40556 NSW Government
	Lot 1 DP 610003 NSW Government
	Lot 165 DP 750371 NSW Government
	Lot 52 DP 750143 NSW Government
	Lot 42 DP 750143 NSW Government
	Lot 3 DP 260407 NSW Government
	Lot 6 DP 917280 NSW Government
	Lot A DP 380835 NSW Government
	Lot 119 DP 750143 NSW Government
	Lot 118 DP 750143 NSW Government
	Lot 95 DP 1200169 Crown

Item	Description
	Lot 1 DP258470 Crown Lot 1 DP442252 Crown Lot 1 DP409850 Crown Lot 149 DP756910 Crown Lot 144 DP1151224 Crown Lot 193 DP 1139390 Crown Lot 7300 DP 1154513 Freehold Lot 7301 DP1154513 Freehold Lot 124 DP756910 Freehold Lot 108 DP756910 Freehold Lot 128 DP756910 Freehold Lot 1 DP 1221281 Freehold Lot 1 DP 1129071 Freehold Lot 2 DP 610003 Freehold Lot 170 DP39656 Freehold Lot 1 DP 231900 Freehold
Closest crossroad(s)	Lake Canobolas Road; Pinnacle Road
Land zoning	Mount Canobolas SCA - E1 – National Parks and Nature Reserves Glenwood SF - RU3 – Forestry Crown land - RU2 - Rural Landscape
IBRA region	South-Eastern Highlands
IBRA sub region	Orange

Table 5 Definitions

Term	Description
Direct Impact Footprint (Trails)	The area to be directly affected by the Proposal, including earthworks and vegetation clearing. Includes: • 104.4 km length of single track (0.7 m single track) with a 2 m wide maximum direct construction impact area (17.2 ha). • Associated infrastructure (1.77 ha), including: ○ Trail head(s) with designated parking and signage ○ A trail 'Hub' which includes retail and hospitality trading venue(s), bike hire, toilet and barbeque facilities The proposed Direct Impact Footprint covers a total area of 18.97 ha (Figure 3).

Term	Description
Subject Land	Includes the Direct Impact Footprint (as described above) and any proximal areas that could be potentially directly or indirectly impacted by the Proposal. For the purposes of this report the study area has included a buffer area of 10 m either side of the centerline of the direct impact zone. Measuring a cumulative 169.61 ha of which native vegetation equals 123.26 ha (Figure 3).
Study Area	The parcels of land within which the Proposal is located (refer Table 4 above). The total study area encompasses 2207.89 ha (Figure 2).
Locality	Is the area within 10 kilometres of the subject site (Figure 1).

1.5 Constraints Identification and avoidance

To appropriately inform the design of the new Concept Trail Plan, a detailed Constraints Identification process within the SCA, adjacent Forestry Corporation of NSW (FCNSW) and Crown Lands has been undertaken. This Constraints Identification process was aimed at capturing any potential constraints mapped as occurring, present, or previously recorded to ensure sensitive areas were avoided in the new design. TEF completed extensive desktop investigations, collating available datasets derived from government databases and provided by a range of interested parties, community groups and individuals.

As part of the Constraints Identification process, the following was undertaken and considered:

- Collation of existing datasets from a range of online sources.
- Collation of datasets provided by interested parties, individuals and community groups.
- Rapid data point (RDP) field data collection for ecology to confirm Plant Community Types (PCTs) present and their relative condition.
- Heritage desktop constraints assessment prepared by specialist archaeologists, Apex Archaeology.
- Potential for listed threatened species and communities assessed by habitat assessment and previous records.
- Categorization of constraints as either no-go (black hatching), high (red), moderate (orange) or low (green) to provide a framework for the development of the new proposed design by Dirt Art.
- Observation of local roads, residences and accesses that will influence traffic, noise, air quality, sustainability, socio-economic and other considerations.

The detailed constraints identification, aimed at informing the design phase of the MTB trail, built on an existing opportunities and constraints discussion paper prepared by GHD Pty Ltd (2015).

Dirt Art also completed a comprehensive review of the previous trail concept developed by World Trail (Dirt Art 2021). The concept was reviewed against the following criteria:

- Environmental values analysis – minimising impacts on environmental values.
- Social values analysis, ensuring the trails do not have undue impacts on social values.
- Cultural values analysis, ensuring cultural impacts are minimised.
- Market analysis, reviewing the concept against current market demands and trends.
- Minimising development approval complexity by ensuring the trail concepts avoid significant assets onsite, thereby assisting to streamline the development approvals process.

- Minimising construction complexity by ensuring trail concepts avoid unnecessary construction complexity and costs through considered trail design.

The outcomes of the review identified opportunities for improvement on the previous design and highlighted guiding principles that helped steer the development of the current proposed design.

All thirty-six (36) new proposed trail alignments were ground-truthed for previously unidentified ecological and archaeological constraints (one (1) trail was discarded from the design during ground-truthing efforts). A ten (10) metre wide corridor was assessed by TEF and Apex Archaeology with the following constraints mapped for each proposed trail:

- Archaeologically and culturally significance artefacts and other findings not previously known/mapped.
- Threatened and other significance species (flora and fauna) encountered.
- Fauna habitat features: burrows, logs, hollow-bearing trees, habitat trees.
- Rocks and rocky outcrops with lichen present.
- Waterways including creek and drainage line crossings.
- Weeds of National Significance (WoNS) and other significant weed infestations.

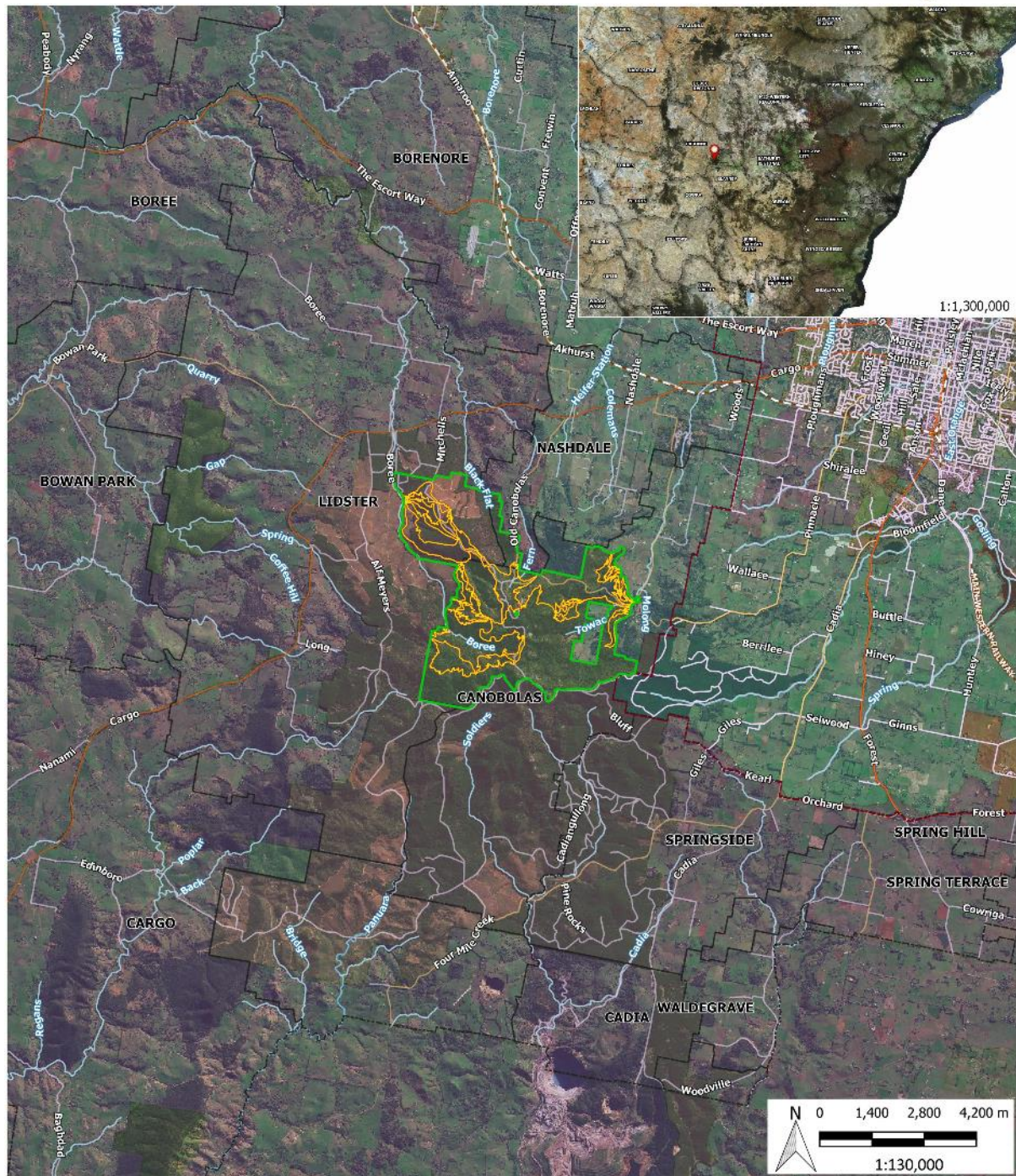
Avenza Maps version 3.7.2 Build (483) ARCH64 was used on a smartphone / tablet to record data points for each constraint encountered, with the following details recorded:

- Description of constraint.
- Count / size class of constraint.
- Any other important features applicable to the constraint.

Where possible, trails were realigned in real time around identified constraints. The remainder of constraints were provided to Dirt Art to inform the final design of the proposed trail network.

Full floristic Biodiversity Assessment Method (BAM) plots were also undertaken across the study area within the different Plant Community Types (PCT's) and condition classes encountered along the trails, which will be used to inform the Biodiversity Development Assessment Report (BDAR).

The Constraints Report is provided as Appendix B.



OCC Mountain Bike Trails - Regional Context and Land Zoning

Legend

 Study Area	 Suburb	 Primary Road	 River	 B3	 E1	 IN2	 RE1	 SP2
 Subject Land	Roads	 Sub Arterial Road	 Rivulet	 B4	 E2	 R1	 RE2	 SP3
 Subject Site	 Arterial Road	Waterways	 Land Zoning	 B5	 E3	 R2	 RU1	
 LGA Boundary	 Local Road	 Creek	 B1	 B6	 E4	 R3	 RU2	
	 Gully		 B2	 B7	 IN1	 R5	 RU3	

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Figure 1 Regional context of the Proposal

2 STRATEGIC CONTEXT

2.1 Proposal justification and public benefits

OCC have identified the Proposal as a potential key development consistent with Council's *ActivateOrange* Strategic Vision, and the recommendations in the Regional Economic Development Strategy undertaken by AgEcon Plus in 2018. The Proposal, while in OCC's neighboring LGA, is envisaged to drive tourism, enhance liveability, and contribute to the economic growth of the Orange, Blayney and Cabonne region (AgEcon Plus, 2018).

Mount Canobolas SCA is a popular recreational area for Orange residents and visitors alike, attracting approximately 75,000 visitors per annum to the region (NSW National Parks and Wildlife Service, 2019); this has likely increased significantly since the onset of the COVID-19 pandemic, according to major news outlets (Hannam, 2020), and in line with the long term trend of increased visitation recorded by National Parks and Wildlife Service (NSW National Parks and Wildlife Service, 2019). The construction of a world class mountain bike trail would provide further recreational possibilities for the area, tapping into a growing local, national, and international mountain biking community. The project also seeks to offer improved amenities for other visitors to the SCA, whilst facilitating further business development opportunities and jobs for the local Aboriginal community. Improved management of, and increased funding for, feral species and weed control actions will also form an integral part of any future stages of project development and delivery.

The Proposal has been developed in response to significant growth in mountain biking internationally and within Australia. The Proposal is an important component of Orange City Council's *ActivateOrange* Strategic Vision and is designed to drive tourism and enhance liveability of the Orange, Blayney and Cabonne Functional Economic Region, consistent with the recommendations in the Regional Economic Development Strategy undertaken by AgEcon Plus in 2018. The creation of new and refurbished cultural, recreational and tourism assets is a key component of that strategic vision.

The Proposal will:

- Attract additional visitors from across Australia and internationally to the region.
- Ensure that once visitors are in the region they stay for longer periods of time, due to the length and variety of trails in combination with other recreational activities such as hiking, which supports the visitor economy as a whole.
- Ensure that NSW mountain biking tourists stay in NSW, rather than travel to interstate or international destinations.
- Attract mountain biking events to the region.
- Encourage the community to leverage off these assets to create new economic development opportunities.
- Enhance the lifestyle benefits for residents to help attract and retain a skilled workforce for the region.
- Provide Indigenous management and employment opportunities.
- Provide opportunity for increased funding and delivery of feral species and weed control activities.

The Proposal offers excellent potential for development of a state and potentially nationally significant mountain bike destination, that respects and enhances the unique archaeological and environmental assets the area has to offer.

2.2 Cumulative Impacts

A cumulative impact assessment (CIA) of the Proposal is required at both a strategic level and a site-specific level, as per the *Cumulative Impact Assessment Guidelines for State Significant Projects* (DPIE, 2021).

From a strategic perspective, the Proposal is an important component of Orange City Council's *ActivateOrange* Strategic Vision and is designed to drive tourism and enhance liveability of the Orange, Blayney and Cabonne Functional Economic Region, consistent with the recommendations in the Regional Economic Development Strategy undertaken by AgEcon Plus in 2018. The overarching strategic vision of *ActivateOrange* is to 'Enable Orange to be the Powerhouse of Inland NSW'. The vision outlines how the city will operate and support economic and employment growth over the next 20 years and includes three (3) major elements:

- 1) The development of integrated economic activation precincts
- 2) The identification of strategic transport connections
- 3) The provision of a framework for the creation of new and refurbished cultural, recreational and tourism assets – current projects include this proposed mountain bike trail network, redevelopment of the Scout Camp (adjacent to the study area) and a Multi-sport Complex/Stadium, and enhanced facilities at Lake Canobolas (also proximal to the study area).

The *ActivateOrange* strategic vision has a number of main objectives, including to "drive tourism (visitor) growth and enhance the liveability of the region", this target is achieved through a number of various elements including:

- 1) **Strategic Transport Connections:** Reduce heavy traffic in the CBD to enable growth in events, destinations and attraction activity, and improve access to Orange from other parts of the region, state and country.
- 2) **Life Sciences Precinct:** Increase the number of medical and innovation professionals coming to Orange.
- 3) **FutureCity:** Activate additional retail and hospitality space in the city. Stimulate the night time economy. Activate the CBD by improving access and connectivity of its precincts. Install infrastructure to improve CBD based events that encourage participation and build greater diversity in the tourism economy.
- 4) **ActiveCreative Orange:** Increase accommodation options. Increase number of activities available in the region. Drive sport-based tourism including events that attract international and national participants.

At the site-specific level, there are a number of projects occurring simultaneously within the pre-construction stages, including both in the study area, and proximal to the study area. Within the study area NPWS are currently in the process of developing further tourism facility infrastructure at the Mount Canobolas summit. The work includes providing a new lookout at the north-east end of the summit for views toward Orange, separate pedestrian and vehicle areas, with all areas wheelchair accessible, the existing car park to be sealed, and the existing amenities block to be increased in size. In addition to upgrading the summit facilities, NPWS are also upgrading the Walls and Towac picnic areas, upgrading the existing network of walking trails and installing additional signage.

Proximal to the study area the redevelopment of the Scout camp and enhanced facilities at Lake Canobolas are currently in the planning stages of development.

3 PROJECT

3.1 Project overview

The proposed MTB trail network study area crosses multiple land tenures and zonings, and would involve construction of a proposed 104.4 km of single-track trail network across thirty-six (36) separate, interlinked trails. Approximately 71.1 km (68 %) of the proposed trail network is located within the Mount Canobolas State Conservation Area (SCA), 27 km (26 %) in State Forest, and 6.3 km (6 %) in Crown and freehold land adjacent to the SCA zoned RU2 – Rural Landscape. The Proposal also includes development of ancillary infrastructure such as supplementary parking, trail head facilities and road upgrades as required.

The Proposal is anticipated to have a Capital Investment Value (CIV) of greater than \$10 million.

Details of the project are provided in Table 6 below.

Table 6 Project overview

Term	Description
Address	Mt Canobolas SCA and Glenwood State Forest, Mount Canobolas Road, Orange, NSW.
Ownership	Mt Canobolas - National Parks Association administered Glenwood State Forest – NSW State Forestry Corporation administered Crown Land Freehold
LGA	Cabonne Shire Council
Zoning	Mount Canobolas SCA - E1 – National Parks and Nature Reserves Glenwood SF - RU3 – Forestry Crown land - RU2 - Rural Landscape Freehold land - RU2 - Rural Landscape
Permissibility	The project is permitted with consent in all three land hold leases
Project	Mount Canobolas Mountain Bike Trail
Capital investment value	Estimate > \$10 M: \$7.1M for trail development \$3 + M for building development, road upgrades, parking facilities

3.2 Options Considered

3.2.1 Delivery options and staging

Following the decision about the best location for the trail network, Council has also considered a number of alternate staging and delivery options as outlined in the Mount Canobolas MTB Trail Business Case (OCC, 2019) including:

- Do nothing - Mountain Biking in the area would be limited to the Lake Canobolas Mountain Bike Park and the Galinbundinya trails in Glenwood SF;

- Do a minimum option - Expand the Lake Canobolas Mountain Bike Park or develop/expand trails in the state forests adjoining Mt Canobolas SCA only (i.e. no trails in the State Conservation Area); and
- Do later.

Council has provided more detail on these options as described below.

Do Nothing

The “Do Nothing” option is the same as the base case option – i.e. mountain biking is limited to the Lake Canobolas Mountain Biking Park.

Do a Minimum Option

There is limited opportunity to expand the existing Lake Canobolas Mountain Bike Park, given the site is effectively land locked. The land surrounding the Park is prime agricultural land (being at the base of Mt Canobolas, the soils are fertile basalt soils), which is currently used for vineyards, horticulture and cattle grazing. Acquiring additional land would therefore likely to be cost prohibitive. In addition, the land in this area is considered by track designers and riders as gently undulating, as opposed to the steeper land in the SCA, which is more suitable for mountain biking tracks that suit varying levels of rider.

The Forestry Corporation of NSW (FCNSW) has indicated that the State Forests adjoining Mt Canobolas SCA do not provide a long-term alternative location for the entire extensive mountain bike track network due to ongoing timber harvesting and establishment operations which occur within the softwood plantation areas. Timber harvesting in the region has been conducted for the past 2 years and continues routinely as required by harvest operations.

The siting of proposed mountain biking trails within adjoining State forests has been developed in conjunction with (FCNSW), however due to the extent of planned harvesting the opportunity for the siting of extensive trails is limited.

Do Later

Mountain Bike tourism has developed significantly in recent years and international and interstate governments and private interests are investing significantly to meet the demand from NSW, interstate and international tourists, including:

- Tasmania is increasing its push to attract more cycling tourists. A number of world class facilities have been constructed or are in the planning phase, including Blue Derby, Wild Mersey, George Town, Maydena and the St Helens Mountain Bike Trail Network, as part of the Tasmanian Government’s Tasmanian Cycle Tourism Strategy;
- In October 2018, the Victorian government announced \$1 million to develop a business case and build the first stage of a new mountain bike trail in Omeo. The funding is provided through the Victorian State Government’s Regional Tourism Infrastructure Fund, along with \$1.52 million from East Gippsland Shire and \$1.5 million from the Federal Government. The proposed 112-kilometre trail aims to establish Omeo as an international mountain bike destination and attract more visitors to the region – boosting tourism and diversifying Omeo’s economy.
- Yarra Regional Council received \$3 million in funding from the Commonwealth Government Building Better Regions fund in August 2018 and will provide matching funds to develop more

than 100km of mountain bike trails in the hills surrounding Warburton. The destination is expected to attract 165,000 visitors per year.

- The ACT Government is planning to revive Mt Stromlo with a commitment of \$374,000 to undertake consultation, planning and design on a new MTB trail network. Presumably this will result in additional funding to extend those trails once the planning and design phase is complete. The funding is consistent with the ACT Government's budget commitment to make Canberra one of the best cycling destinations in Australia. It's also part of a wider 10-year cycling strategy which includes investment in MTB networks.

Queensland, Northern Territory and Western Australia have all recently developed mountain biking strategies, which will presumably result in new trails being developed.

The "Do Later" option would result in multiple destinations being developed ahead of Orange, which would:

- Result in a loss of tourism expenditure for the State of NSW over the period;
- Result in Orange losing the reputation it has developed in mountain biking (particularly given the loss of Kinross State Forest), making it more difficult to build up rider numbers in the future; and
- Potentially rendering it unviable to develop as a destination in the future if a saturation point is reached.

The "Do Later" option is therefore potentially akin to the do-nothing option.

3.2.2 Locations considered

A number of potential alternative options for the location and staging or delivery program of the MTB trail network were scoped by Council and the Orange Mountain Bike Club for suitability during the early stages of the Proposal development in 2014. These are discussed further below.

Kinross State Forest

This area of State Forest was deemed to lack the size and elevation required to create a varied world class Mountain Biking (MTB) location. The terrain undulates, which is suitable for cross-country riding experiences, but does not offer the desired gravity orientated trails. It is also a working pine plantation which both lacks in aesthetic appeal and will result in the eventual loss of the entire trail network during harvesting operations. Other considerations for this site included intermittent phone reception, a lack of dedicated car parking and infrastructure, unsealed access road, and possible conflict with other fire trail users.

Mullion Range State Conservation Area

Mullion Range SCA lacks elevation and has a current occupancy agreement with the local indigenous community. The site lacks easy emergency vehicle access and has poor phone reception. It is serviced by unsealed roads which are shared with residents and does not contain an easily identifiable car parking area. Further to this the site offers reduced complimentary business opportunities with limited access to utilities for accompanying infrastructure to the trail network.

Macquarie Woods, Vittoria State Forest

As with Kinross SF, this site is a working pine plantation with the same constraints for trail loss and aesthetics. The rolling terrain lacks the fundamental layout to build a gravity-based trail network, and, as with Mullion Range SCA, there is a lack of suitable area for utilities and facilities within a working pine forest.

Mount Canobolas State Conservation Area and adjacent State Forests

This site offers an aesthetically appealing location with the desired elevation to construct a varied trail network including gravity-based trails. The site contains existing road infrastructure and car parking facilities with complimentary business opportunities evident. It is also the closest location to the city of Orange of the four sites.

Based on the desired requirements for creating a world class trail network, it was determined that Mt Canobolas SCA offered the most preferred option based on a number of considerations. The topography, biodiversity, and general layout of Mt Canobolas across the various land tenures, combined with centrally paved roads and existing emergency access lends itself to a combination of trail types in a beautiful setting, without requiring additional impacts associated with basic infrastructure. Mt Canobolas, including the State Conservation Area and surrounding FCNSW lands, support existing trail networks for hikers and mountain bikers, and the construction of additional trails to complement and link into these areas makes more economic and environmental sense than creating an entirely new network elsewhere.

3.2.1 Preferred option

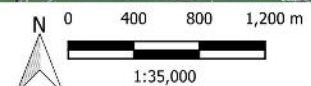
In consideration of the above, and with regard to consultation undertaken previously (discussed in Section 5) Council opted to undertake an environmentally-driven project design approach, to investigate whether a sympathetic layout could be developed on Mount Canobolas as the preferred location for a destination trail network. Council opted to commence the assessment and design process in 2020, with the understanding that comprehensive assessment and redesign would potentially be a lengthy process.



OCC Mountain Bike Trails - Proposal Site Location

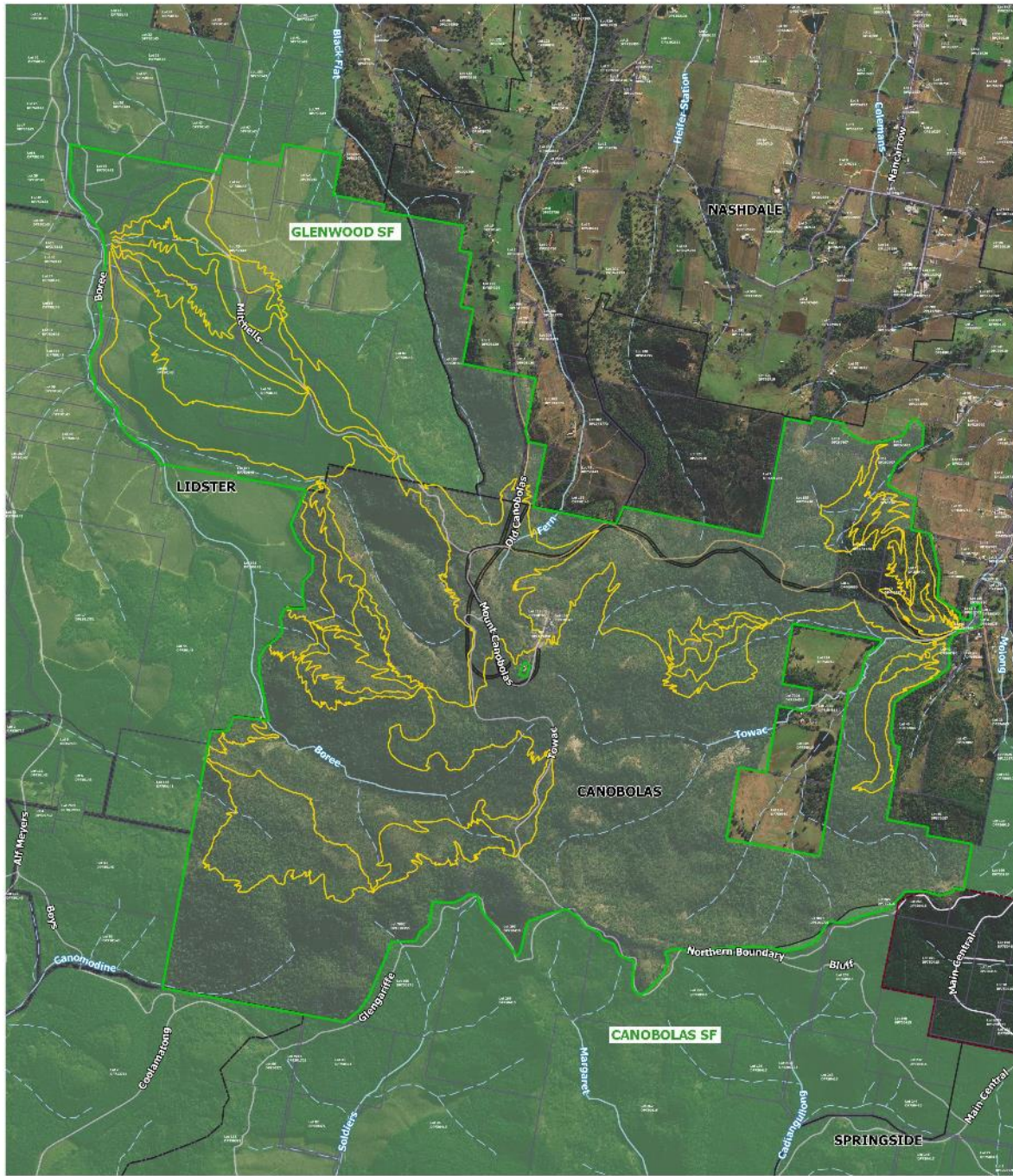
Legend

 Study Area	 Lot boundary	Roads	 Sub Arterial Road
 LGA boundary	 State Forest	 Arterial Road	Waterways
 Suburb	 NPWS Reserve	 Local Road	 Creek
			 1st & 2nd order unnamed waterways



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Figure 2 Proposal Site Location



OCC Mountain Bike Trails - Concept Trail Design

Legend

Study Area

Proposed Concept Trails

LGA Boundary

Suburb

Lot boundary

State Forest

NPWS Reserve

Roads

Arterial Road

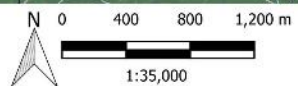
Local Road

Sub Arterial Road

Waterways

Creek

1st & 2nd order unnamed waterways



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Figure 3 Proposed Trail Design June 2021

3.3 Proposed infrastructure

The Proposal comprises the following key components:

- Construction of a proposed 104.4 km of single-track trail over a thirty-six (36) trail network with initial impacts equating to a maximum width of 1.5 – 2 m, reduced to an operational footprint of 600 – 700 mm across all trails including:
 - 71.1 km (68 %) located within the Mount Canobolas SCA
 - 27 km (26 %) located in Glenwood SF
 - 6.3 km (6 %) located in adjacent Crown and freehold land
 - Eleven (11) trails totaling 33.3 km (32 %) rated as 'green' (easy)
 - Thirteen (13) trails totaling 40.7 km (39 %) rated as 'blue' (intermediate)
 - Eight (8) trails totaling 22.7 km (22 %) rated as 'black' (difficult)
 - Four (4) trails totaling 7.8 km (7 %) rated as 'double black' (advanced)

Trail Head facilities proposed to be located at the entrance to the SCA on Mount Canobolas Road, will include:

Tea House Trailhead

- Located to the eastern side of the trail network on the corner of Mount Canobolas Rd and Lake Canobolas Rd.
- Signage
 - Incorporating the entire signage suite relating to a primary trailhead
 - Additional information regarding park closures or fire bans
 - Trail branding
- Carparking
 - Existing carparking includes large carpark accessed via Lake Canobolas Rd, plus small carpark accessed via Mt Canobolas Rd
 - Primary area for visitor parking: park and ride or shuttle service
- Amenities
 - Utilise existing onsite facilities including toilets, shelters and picnic areas
 - Potential to upgrade facilities to cater for greater visitor numbers including larger toilet block and provision of more shelter/seating areas
 - Develop bicycle-specific infrastructure such as storage racks and basic repair station
- Uplift Service
 - Primary shuttle pickup point for trail network
 - Potential to utilise small carpark and informal turning bay on Mount Canobolas Road (opposite Tea House) as shuttle pick-up point
 - One-way pick-up loop to be created and formalised

Summit Trailhead

- Signage
 - Incorporating the entire signage suite relating to a primary trailhead
 - Trail branding
- Carparking
 - Existing carparking includes medium carpark plus large carpark development planned by National Parks and Wildlife Service (NPWS) on western edge of existing summit
 - No additional carparking proposed by trail concept plan

- Not identified as place for riders to park vehicles. Proposed that riders will be dropped off at summit by private or commercial vehicles for trail descents
- Amenities
 - Utilise existing onsite facilities including toilets and lookouts
 - Potential to upgrade facilities to cater for greater visitor numbers including larger toilet block and provision of more shelter/seating areas
 - Develop bicycle-specific infrastructure such as storage racks, basic repair station and bicycle wash down station.
- Uplift Service
 - Primary shuttle drop-off point for trail network
 - Potential to utilise eastern side of summit area as designated shuttle drop-off area
 - One-way pick-up loop to be created and formalised

3.4 Design Philosophy

The current proposal was influenced by a set of guiding principles, to help ensure the project will have the farthest-reaching benefits and the smallest impacts.

The design philosophies were as follows:

1. *Reduce traffic movement through the SCA.*

- The two (2) Trailheads are proposed to be established at the base of the mountain, at the intersection of Lake Canobolas Road and Mount Canobolas Road, and along Mitchell Way. The Trailheads are located in existing disturbed areas adjacent the Tea House (Canobolas Road), and in Glenwood State Forest (Mitchell Way). This is intended to reduce traffic movement through the study area, as the majority of the tracks are gravity designed; this design encourages users to shuttle to the summit, rather than park there, as there are fewer ascending trails to ride up.
- All Trail Hubs have been designed to facilitate / encourage a shuttle system, offering a single drop off point at each Trail Hub which leads away from the summit.

2. *Avoid and reduce the impacts.*

- Trailheads and Trail Hubs are proposed to be located to utilise existing road infrastructure. Consequently, no new access roads are proposed; trails have been designed around existing public and emergency access.
- Trails have also been designed to completely avoid the sensitive environmental and Aboriginal cultural heritage areas identified as No-go areas, and reduce the impact footprint and volume of trails in all High and Moderate constraint areas.
- The total proposed impact footprint has also been minimised through siting the Trailhead infrastructure in existing disturbed areas.

3. *Be considerate of existing trails and other trail users (hikers, bushwalkers, other cyclists).*

- The proposed trails have been designed to be considerate of existing walking and cycling trails in the area, including ensuring minimal interaction between hiking / bushwalking trails, integrating with existing biking routes, and ensuring where interaction between hiking and biking routes cannot be avoided, crossing sites are proposed to be well located and sign-posted to maximise safety and visibility for all users.

4. *Maximise community and economic benefit.*

- Trail network and infrastructure designed with broad community benefit in mind, including:

- Facilitating opportunity for a commercial shuttle service
- Opportunities for local employment with a strong involvement from the Orange Aboriginal community.
- Opportunity for Aboriginal cultural management practices on the mountain, including
 - o Cultural burning practices
 - o Cultural ranger or weed and pest management services
- Length and styles of trails to encourage a broad range of skills and experience levels
- Opportunities for local business to benefit from increased tourism to the area.

5. Maximise environmental, recreational, and cultural heritage benefit through provision of funds.

- Council intends to service all construction and operation needs through provision of an annual budget and / or personnel to maintain the trail network. OCC intend to provide funding for the construction and ongoing maintenance of the proposed trails, including:
 - Independent auditing
 - Trail maintenance activities as required
 - Active weed and pest management program.

3.5 Construction and operation environmental management

Council intends to drive and fund the delivery and ongoing operation of the Proposal through provision of funds and / or personnel for both the construction and operation phases. Construction and operational of the Trails will be completed in accordance with the Master Plan (Dirt Art, 2021), any project approval requirements, and the Construction and Operation Environmental Management Plans (EMPs).

Construction and operational environmental matters are discussed further below.

3.5.1 Construction Environmental Management Plan

Construction works will be undertaken as per a project specific Construction Environmental Management Plan (CEMP) developed for the Proposal. The CEMP will outline the environmental protection measures to be implemented throughout the construction phase of project delivery, including but not limited to ecological and heritage protection actions, consultation requirements, monitoring and reporting obligations.

Indicative timings and equipment involved have been given below as per standard operating procedures from Dirt Art:

- Timing of works
 - All year round - winter may result in slower progress / difficult site conditions due to snowfall
 - Typically aim for 60-70 m of trail construction progress rate per day
- Construction hours
 - 7 am - 4pm
 - Monday to Friday
- Number of staff
 - A single construction team generally consists of the following personnel:
 - o (x 1) Machine operator
 - o (x 2) Trail labourers
 - Recommended 4-5 construction teams dependent upon construction timeframe / deadline
 - This would total approximately 12-15 staff onsite
- Equipment involved

- 1.7-2.5 t excavators in sensitive areas such as the SCA
- 1.7-13 t excavators in the disturbed areas such as Glenwood State Forest
 - o The larger machines (max. 13 t) in this case would be used to more efficiently shape the freeride features such as jumps and berms in cleared areas
 - o 1.7-5 t excavators would otherwise be used to complete the majority of the trail works
- Power Carriers
- Chainsaws
- Brushcutters
- Watercart
- 4WD Ute
- Vibratory plates
- All Environmental and Erosion sediment controls – as per CEMP and developed in accordance with the Blue Book (Landcom, 2004).

3.5.2 Trail Operation Environmental Management Plan

Operational management activities, including maintenance of the trail network and surrounding areas, will be undertaken as per the Trail Operation Environmental Management Plan (OEMP) developed for the Proposal. The OEMP will outline the management principles, strategies and actions to be completed and detail frequency and persons responsible for each.

Persons responsible for actions will be nominated in agreement with the relevant stakeholders. Actions included in the OEMP would include:

- Trail auditing schedule
- Trail maintenance activities, including repairs
- Trail use activation timeline
- Weed and pest management activities and targets
- Operating hours

It is also proposed that a stewardship, “Friends Of”, or equivalent group, will be established to take ownership of the trail network, to ensure the Mountain Biking community is aware of the current conditions on site, trail closures, working bee dates which would be communicated via social media, website, media release or other information gateway.

The detailed trail design will adopt internationally accepted best sustainable trail design practices identified by the International Mountain Bicycling Association (IMBA). Sustainable trails should have very little impact on the environment; resist erosion through proper design, construction and maintenance and blend with the surrounding area (IMBA, 2004). However, all trails require a level of maintenance to be sustainable for the life of the trail. Table 7 identifies the factors affecting the maintenance of the trails that will be addressed in the OEMP.

Table 7 Factors affecting the maintenance of mountain bike trails to be addressed in the OEMP (modified from TRC Tourism, 2021)

Trail Factor	Maintenance issue	Risk Implications	Maintenance Implications	Maintenance Strategy
Trail purpose standards and grades	Maintenance will need to ensure trails are maintained to the defined mountain	Duty of care is required to ensure trails are maintained to the defined difficulty	Higher level of maintenance diligence will be required for trails with significant	Trail maintenance programs to be developed that reflect the consideration of the

Trail Factor	Maintenance issue	Risk Implications	Maintenance Implications	Maintenance Strategy
	bike trail types and difficulty rating system levels, as per the IMBA trail difficulty rating system.	rating level. Users have chosen trails based on their level of comfort and approach to risk.	infrastructure e.g. bridges.	user and trail difficulty rating, and to ensure risk of impact to surrounding environment reduced.
Trail surface	Trail surface design and construction has the greatest influence on maintenance and trail difficulty.	Poor surface design increases duty of care issues and impacts on management resources and user satisfaction.	Trails with steep gradient, poor water management or do not fit trail difficulty rating standard will be a maintenance and management burden.	Good trail surface will lessen maintenance and inadvertent environmental impacts. Poorly designed trail surface will require upgrade or consider decommission.
Environmental considerations	Trail surface design and construction has significant influence on environmental protection particularly where trails and trail users access sensitive areas.	Risk of impact on ecosystems and habitats if trails poorly designed and maintained e.g. runoff impacting on vegetation off trail.	Good trail design will reduce runoff and being well designed will encourage users to remain on the trail and not create new trails or desired lines.	Environmental protection key consideration in trail management. Sustainable trails will protect the environment. Poorly planned, constructed or maintained trails in sensitive areas are unacceptable.
Vegetation	Vegetation provides the landscape setting and enhances the trail corridor.	Encroaching vegetation can be a risk to users level of risk relates to what is appropriate for trail difficulty rating	Overhanging vegetation can affect user experience and push users off the designated trail, creating new trails, braiding and risk. Vegetation management needs to be effective but not excessive.	Major maintenance impact on trails. Treatment needs to be effective and lasting e.g. sympathetic trim to base of stem in defined trail alignment area. Requires site specific vegetation management policy.
Water	Water in wet areas if not managed effectively has the greatest impact on trail sustainability.	Can create significant damage to tracks affecting all areas of risk including	If trails not well designed, heavy rain can lead to water-caused erosion. Low rain levels can lead	Monitor and manage water-caused erosion both periodically and

Trail Factor	Maintenance issue	Risk Implications	Maintenance Implications	Maintenance Strategy
		reputational risk from trail closures.	to very dry and loose surfaces.	following heavy rainfall events
Displacement	Movement of trail material through use wearing trails and causing trail shape change.	Change in trail shape can increase risk of damage and user satisfaction and risk issues.	Increased maintenance requirement if not rectified.	Greater displacement of material and trail shape change can be due to increased or change in use. Requires monitoring of trail use and upgrade if required.
Compactions	Compaction on trail material can be a track formation strategy or from traffic. Unplanned compaction can change trail tread shape.	When unplanned, this can increase risk of damage, user satisfaction and risk issues.	Compaction when unplanned can change trail profile and create ruts encouraging water flow where it is not wanted, resulting in damage.	Compaction of path material when planned and undertaken by builders correctly is effective. When unplanned will cause maintenance issues, therefore consider trail upgrade.
Trail users	Well-designed trails will be appreciated by users and be used in the manner intended.	Trail users choose and use trails to the trail difficulty rating that fits their comfort and ability and expect the trail condition and maintenance to fit.	Maintenance should be commensurate with the difficulty rating of the trail. Trail users will expect the trail and trail information to be provided and maintained.	Standard of trail and expectation of the users is an important consideration as is maintenance.
Budget and resources	Trail managers need to plan for resources required for the maintenance of sustainable trails.	Risk will increase where resources are not available or resources cannot keep up with trail maintenance commitments.	Resources should be available to manage the trails sustainably and commensurate with the standard of trails.	Resources can include volunteers and trail users working under and agreed maintenance plan. Strategic approach required for long term maintenance and upgrades.
Trail infrastructure	Other than trail network there is significant investment e.g.	Significant potential risk which requires monitoring, documentation and addressing of issues	Requires technical assistance possibly beyond local resources to ensure built infrastructure is checked and	Trail infrastructure should be used on trails that fits with the standard of the trail. Need to allow for life cycle

Trail Factor	Maintenance issue	Risk Implications	Maintenance Implications	Maintenance Strategy
	bridges, signs and car parks.	associated with built infrastructure.	maintained to standards.	maintenance of infrastructure. Strong link to duty of care.
Knowledge, skills and expertise	Training and development of key staff and volunteers in contemporary trail management vitally important.	Key staff are fundamental in ensuring user satisfaction, duty of care and effective maintenance.	Staff and volunteers are the eyes and ears of trails. Effective training and understanding of trail design principles is essential.	Trail management includes a focus on skill development to ensure effective maintenance programs are delivered. Use of skilled trail contractors is also an important investment for upgrades.
Trail infrastructure	Orientation and safety signs and associated infrastructure to be maintained to the appropriate standards for trail grade.	Nature of potential use including speed and interaction with other users and traffic requires maintenance of signs and other infrastructure to high standard.	Monitoring and quick attention to orientation and safety signs and other safety features e.g. condition of bridges is important. Maintenance of infrastructure important to protect asset and ensure users respect and enjoy trail experience.	Development of systems for the monitoring and maintenance of trail infrastructure to ensure standards are maintained for the life cycle of the trail important trail assets.
Budget and resources	Trail managers need to be aware of ongoing costs of maintaining smooth surface trails to ensure standards and safety are maintained.	Appropriate funding critical for trail maintenance and to ensure duty of care.	Maintenance planning including a strong monitoring component should be applied to ensure the identification of priority safety and user enjoyment issues are addressed within budget constraints.	Strong commitment to strategic monitoring and maintenance is a key factor in the planning of future trails. Repair and replacement costs need to be considered in business planning and life cycle planning for future trails.

Trail Factor	Maintenance issue	Risk Implications	Maintenance Implications	Maintenance Strategy
Knowledge, skills and expertise	High level of expertise required in the monitoring and development of systems to prioritise maintenance works.	Training and development of staff and volunteers in monitoring systems and initiating repairs will contribute to the safety and enjoyment of trail users.	Development of committed and enthusiastic monitoring and maintenance resource is vital. Explore opportunities for trail users and stakeholders to be involved in aspects of protection of the trail and the experience.	Explore opportunities for long term monitoring and maintenance program involving trail partners and users which include training and skill development.

4 STATUTORY CONTEXT

4.1 Power to Grant Consent

The *State Environmental Planning Policy (State and Regional Development 2011)* (SRD SEPP) identifies certain types of development and infrastructure to be of State and regional significance. Part 2, clause 8 of the SRD SEPP states development is declared to be of State Significant development for the purposes of the Act if:

- a) The development on the land concerned is, by the operation of an environmental planning instrument, not permissible without development consent under Part 4 of the Act (EP&A Act), and
- b) The development is specified in Schedule 1 or 2.

Schedule 1 of the SRD SPP states under clause 13 *Cultural, recreation and tourist facilities*:

(2) Development for other tourist related purposes (but not including any commercial premises, residential accommodation and serviced apartments whether separate or ancillary to the tourist related component) that:

- a) has a capital investment value of more than \$100 million, or
- b) has a capital investment value of more than \$10 million and is located in an environmentally sensitive area of State significance or a sensitive coastal location.

As such, and further to the above, Council proposes to submit the Proposal for assessment as SSD under Schedule 1 Clause 2b of the SEPP.

The *Environmental Planning and Assessment Act 1979* (EP&A Act) forms the legal and policy platform for the assessment and approval of works in NSW. The Proposal constitutes a State Significant Development (SSD) as dictated by the *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). SSD requires development consent to be sought from DP&E, supported by an EIS. The EIS is required to take into account all State and Commonwealth legislative requirements and any additional environmental assessment requirements issued by the Secretary.

As SSD, the project would be assessed under Part 4 Division 4.7 section 4.36 of the EP&A Act. The Minister for Planning is the consent authority for SSD. The Minister (or the Minister's delegate) is required to take into consideration the matters listed under section 4.15 of the EP&A Act when determining the development application.

4.2 Permissibility

The subject site for the Proposal is located in the Mount Canobolas SCA (managed by National Parks & Wildlife Service) and within State Forests (managed by NSW Forestry Corporation), on Crown land and Freehold land in the Cabonne Local Government Area (LGA).

Council has identified that:

- The proposal meets clause 13(2)(b) of Schedule 1 of the SEPP (State and Regional Development) 2011 and the Proposal is identified as State Significant Development (SSD)
- The land is zoned E1 National Parks and Nature reserves under the Cabonne Local Environmental Plan 2012 ("Cabonne LEP"), RU3 State Forest, and RU2 Rural Freehold.
- The proposal is an authorised use under the National Parks and Wildlife Act 1974

- The Proposal is identified in the Mount Canobolas State Conservation Area Plan of Management (2019)

In April 2021, in response to queries sent, DPIE advised Council that the Proposal can be assessed as SSD pursuant to Schedule 1, Clause 13(2)(b) of SEPP (State and Regional Development) 2011 as identified by Council per the above.

The Cabonne LEP does not list any development as permitted with consent in the E1 zone however uses authorised under the National Parks and Wildlife Act 1974 are permitted without consent. The Cabonne LEP permits commercial uses in land zoned RU2, where the trail head and ancillary facilities are proposed. In addition, the RU3 zone only lists 'aquaculture' as a permitted use with consent and uses authorised under the Forestry Act 2012 are permitted without consent.

As such, a concurrent planning proposal is required for the Proposal to be assessed as SSD, given that the proposed use is not permitted in either of the E1 or RU3 zones with consent, to seek approval to include the proposed use (mountain biking and trail running) to be permitted with consent in the relevant zone or through schedule 1.

Further to the above, the following legislation, policies and guidelines applicable to the SR have been reviewed, and the implications have been assessed accordingly as part of this SR.

4.3 Approvals

4.3.1 Consistent approvals

Council understands that an authorization of the following kind cannot be refused if it is necessary to carrying out SSD that is authorised by a development consent under Division 4.7 of the EP&A Act, and is to be substantially consistent with the consent:

- (a) an aquaculture permit under section 144 of the *Fisheries Management Act 1994*,
- (b) an approval under section 15 of the *Mine Subsidence Compensation Act 1961*,
- (c) a mining lease under the *Mining Act 1992*,

Note—

Under section 380A of the *Mining Act 1992*, a mining lease can be refused on the ground that the applicant is not a fit and proper person, despite this section.

- (d) a production lease under the *Petroleum (Onshore) Act 1991*,

Note—

Under section 24A of the *Petroleum (Onshore) Act 1991*, a production lease can be refused on the ground that the applicant is not a fit and proper person, despite this section.

- (e) an environment protection licence under Chapter 3 of the *Protection of the Environment Operations Act 1997* (for any of the purposes referred to in section 43 of that Act),
- (f) a consent under section 138 of the *Roads Act 1993*,
- (g) a licence under the *Pipelines Act 1967*.

For the current proposal, Council understands that none of the above consistent approvals is applicable, as the proposal does not include aquaculture, mining, petroleum extraction, road construction or upgrades, pipeline installation or environmental discharges.

4.3.2 *Environment Protection and Biodiversity Conservation Act (EPBC Act) Approval*

The EPBC Act ensures that actions likely to cause a significant impact on Matters of National Environmental Significance (MNES) undergo an assessment and approval process. Under the EPBC Act, an action includes a proposal, undertaking or activity. An action that 'has, will have or is likely to have a significant impact on a matter of national environmental significance' is deemed to be a 'controlled action' and may not be undertaken without prior approval from the Australian Government Minister for the Environment (the 'Minister').

MNES include:

- World Heritage properties
- National Heritage places
- Wetlands of international importance
- Listed threatened species and ecological communities
- Listed migratory species
- Commonwealth marine areas
- Nuclear actions

The likelihood of MNES occurring within the locality of the Proposal, and their potential to be impacted by the proposed activity will be addressed within the EIA (refer Section 6).

Under the environmental assessment provisions of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), the following Matters of National Environmental Significance (MNES) are required to be considered to assist in determining whether the Proposal should be referred to the Australian Government Department of Agriculture, Water and the Environment (DAWE).

Table 8 Compliance with EPBC Act 1999

Factor	Impact
Any impact on a World Heritage property?	Nil
Any impact on a National Heritage place?	Nil
Any impact on a wetland of international importance?	Nil
Any impact on a listed threatened species or communities?	Potential impacts
Any impacts on listed migratory species?	Potential impacts
Any impact on a Commonwealth marine area?	Nil
Any impact on the Great Barrier Reef Marine Park?	Nil
Does the proposal involve a nuclear action (including uranium mining)?	Nil
Additionally, any impact (direct or indirect) on Commonwealth land?	Nil

4.3.3 *Environmental Planning and Assessment Regulation, 2000 Checklist*

The factors which need to be taken into account when considering the environmental impact of an activity are listed in Clause 228(2) of the Environmental Planning and Assessment Regulation 2000. Those factors have been considered in this SR, and are summarised in Table 9 below to ensure that

the likely impacts of the proposed activities on the natural and built environment have been fully considered.

The items in the checklist in below also satisfy the specific matters to be taken into account (where relevant to the Proposal) in considering the effect of a lease or licence proposal on natural and cultural values, in accordance with the Sustainability Assessment Criteria for Visitor Use and Tourism in New South Wales national parks (DECCW, 2011).

Table 9 Compliance with Clause 228(2) of the EP&A Regulation 2000

Environmental Factor	Will there be an impact?	Comments
(a) Any environmental impact on a community?	Yes	Positive outcomes for the Orange and Cabonne communities
(b) Any transformation of a locality?	No	The study area already supports existing trail networks and infrastructure; the trails proposed are intended to be sympathetic with this existing development and the environment.
(c) Any environmental impact on the ecosystems of a locality?	Yes	Potentially; while known sensitive areas have been deliberately avoided, further assessment is necessary.
(d) Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality?	Yes	Potentially; the study area supports existing trail networks and infrastructure; the trails proposed are intended to be sympathetic with this existing development; and, while known sensitive areas have been deliberately avoided, further assessment is necessary.
(e) Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present generations?	No	Impacts to historical and Aboriginal heritage items are anticipated to be avoided.
(f) Any impact on habitat of any protected fauna (within the meaning of the National Parks and Wildlife Act 1974)?	Yes	Potentially; while known sensitive areas have been deliberately avoided, further assessment is necessary.
(g) Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air?	Unlikely	While known sensitive areas have been deliberately avoided and the impact footprint deliberately minimised, further assessment is necessary.
(h) Any long-term effects on the environment?	Possible	

Environmental Factor	Will there be an impact?	Comments
(i) Any degradation of the quality of the environment?	Possible	The design has avoided key sensitive areas of high biodiversity value as much as possible, and currently traverses sites with significant weed incursions present throughout.
(j) Any risk to the safety of the environment?	No	
(k) Any reduction in the range of beneficial uses of the environment?	No	
(l) Any pollution of the environment?	No	Assuming all Environmental Safeguards proposed are adhered to.
(m) Any environmental problems associated with the disposal of waste?	No	
(n) Any increased demands on resources, natural or otherwise which are, or are likely to become, in short supply?	Unlikely	The trails will be constructed from natural materials sourced on site where possible. The trail infrastructure will require use of finite resources for construction and operation.
(o) Any cumulative environmental effect with other existing or likely future activities?	Minimal	

4.3.4 Other approvals

Approvals, policies, guidelines and management plans that are not expressly integrated into the SSD assessment under the EP&A Act, but which are considered applicable to the Proposal, are outlined below.

Biodiversity Conservation Act 2016 (BC Act) and the Biodiversity Conservation Regulatory Act 2017 (BCR Act)

The *Biodiversity Conservation Regulation 2017* (BCR Act) provides a number of considerations and practices to be implemented as part of the BC Act, as follows:

- Identifies clearing thresholds and the Biodiversity Values Map for the application of the Biodiversity Offsets Scheme (BOS)
- Outlines principles for serious and irreversible impacts (SAII) to biodiversity
- Rules for meeting biodiversity offset obligations
- Biodiversity certification criteria

Details on each of the above are considered for the Proposal as follows:

a) Areas of High Biodiversity Value on the Biodiversity Values Map

The Biodiversity Values Map (Appendix C) shows a number of waterways mapped as containing High Biodiversity Values within both the SCA and Glenwood SF. These include:

- Federal Falls and Boree Creek – SCA and SF
- Black Flat Creek – SF
- Fern Creek – SCA

- Towac Creek – SCA

One (1) or more of these creeks are crossed by the current proposed trail network.

b) Area Criteria Threshold

Native vegetation clearing thresholds as outlined in Part 7 of the *Biodiversity Conservation Regulation 2017* (Table 10) indicates when a project would need to enter the BOS according to the minimum lot sizes and the corresponding native clearing thresholds.

The clearing threshold for native vegetation will be exceeded by this Proposal; therefore, participation in the BOS is required (refer Table 10 below).

Table 10 Area criteria – Biodiversity Offset Scheme threshold

Minimum lot size	Threshold for clearing (ha) to enter BOS
<1 ha	>0.25
1 ha < 40 ha	>0.5
40 ha – 1000 ha	>1
>1000 ha	>2

c) Areas of Outstanding Biodiversity Value

Mount Canobolas SCA has been nominated for listing as an Area of Outstanding Biodiversity Value; at the time of assessment this nomination is still pending. However, as this Proposal is being considered as State Significant Development, participation in the BOS is automatically required. Consideration of the AOBV nomination will be included within the BDAR.

Heritage Act 1997 (Heritage Act)

The Heritage Act seeks to identify and protect items of cultural heritage value. The Heritage Council of NSW within DPIE makes decisions about the care and protection of heritage places and items that have been identified as being significant to the people of NSW.

Automatic protection is afforded to ‘relics’ under the Heritage Act, defined as ‘any deposit or material evidence relating to the settlement of the area that comprised New South Wales, not being Aboriginal settlement, and which holds State or Local significance’. Formerly the Act protected any ‘relic’ that was more than 50 years old. Now the age determination has been dropped from the Act and relics are protected according to their heritage significance assessment rather than purely on their age.

The Cabonne Local Environmental Plan 2012 (Cabonne LEP 2012) identifies the Mount Canobolas SCA area as the Mount Canobolas Parklands heritage item. Lake Canobolas and Pump House, located approximately 2.6 km to the north east of the proposal are also listed as heritage items in the Cabonne LEP 2012.

Fisheries Management Act 1994

The objectives of the *Fisheries Management Act 1994* (FM Act) are to conserve, develop and share the fisheries resources of the State for the benefit of present and future generations. The FM Act provides for:

- The listing of threatened species, populations and ecological communities, with endangered species, populations and communities listed under Schedule 4,
- ‘Critically endangered’ species and communities listed under Schedule 4A’ and vulnerable species, and

- Communities listed under Schedule 5 of the Act.

Generally, projects will need a Part 7 Fisheries Management Act permit for activities involving dredging and reclamation work, activities temporarily or permanently obstructing fish passage, using explosives and other dangerous substances, and / or harming marine vegetation. The study area encompasses several waterways marked as Key Fish Habitat, which will require consideration under the FM Act for whether permits are required.

Water Management Act 2000

The Water Management Act 2000 (WM Act), administered by the Water division of NSW Department of Industry - Lands and Water, aims to ensure that water resources are conserved and properly managed for sustainable use benefiting both present and future generations. It provides formal means for the protection and enhancement of the environmental qualities of waterways and their in-stream uses as well as to provide for protection of catchment conditions.

There are a number of waterways mapped within the study area for the Proposal. Consideration of approvals for works within Waterfront Land will need to be included, and Controlled Activity applications sought if applicable.

NSW Biosecurity Act 2015 (Biosecurity Act)

The *NSW Biosecurity Act 2015* (Biosecurity Act) outlines mandatory measures that persons are to take with respect to biosecurity matters including the management of weeds (Part 2, Division 8 including Weeds of National Significance (WoNS)). Under the Biosecurity Act, the responsibilities for weed management by public and private landholders are consistent, reflecting that weed management is a shared community responsibility. The Act introduces the legally enforceable concept of a General Biosecurity Duty (GBD). Priority weeds are listed within Regional Strategic Weed Management Plans, however the GBD is not restricted to listed weeds.

The Biosecurity Act is administered by NSW Department of Primary Industries which determines the weed species covered by regulatory tools including Prohibited Matters, Control Orders and Biosecurity Zones. Existing Local Control Authorities (Councils) continue to be responsible for enforcing weed legislation.

Local Land Services Act 2013 (LLS Act)

The *Local Land Services Act 2013* (LLS Act) includes the management of natural resources in the consideration of the principles of Ecologically Sustainable Development (ESD).

Vegetation clearing provisions are considered under Part 5A of the LLS Act. The LLS Act regulates the clearing of native vegetation on all land in NSW mapped as Category 2 – Regulated Land as mapped on the Native Vegetation Regulatory Map. It does not include Excluded Land and Category 1 Exempt Land mapped on the Native Vegetation Regulatory Map.

Vegetation clearing which does not require development consent under the EP&A Act is considered for approval by the Native Vegetation Panel under the LLS Act.

Mt Canobolas SCA and Glenwood SF are mapped as Excluded Land under the LLS Act.

Local Land Services Amendment Act 2016 (LLSA Act)

The Local Land Services Amendment Act 2016 (LLSA Act), which amended the Local Land Services Act 2013, authorised the making of the Land Management (Native Vegetation) Code 2018 (Div 5, Sch 1 of

the LLSA Act). The aim of the Code is to authorise clearing of native vegetation on Category 2 regulated land under certain conditions and provide for the establishment and maintenance of set aside areas.

National Parks and Wildlife Act 1974

The NPW Act provides for the statutory protection of Aboriginal cultural heritage places, objects and features. This legislation aims to protect and preserve Aboriginal heritage values.

Part 6 of this Act refers to Aboriginal objects and places and prevents persons from impacting on an Aboriginal place or relic, without consent or a permit.

There are no gazetted Aboriginal Places within the Orange LGA, however, a number of Aboriginal objects have been recorded within the study area. Therefore, if development impact on an Aboriginal object is proposed, and Aboriginal Heritage Impact Permit (AHIP) must be issued by the Chief Executive of the Office of Environment and Heritage (OEH) under section 90 of the Act where harm to an Aboriginal object or gazetted Aboriginal Place cannot be avoided.

Section 30G of the NPW Act declares that a SCA is to be managed in accordance with the following principles:

- Conserve biodiversity, ecosystem function, natural phenomena and natural landscapes
- Conserve places, objects and features of cultural value
- Provide for permitted uses
- Provide for sustainable visitor or tourist use and enjoyment that is compatible with the conservation principles and permitted uses
- Provide for the sustainable use (including adaptive reuse) of any buildings or structures or modified natural areas having regard to the conservation principles and permitted uses.

Rural Fires Act 1997

Section 63(1) and 63(2) of the *Rural Fires Act 1997* stipulate it is the duty of a public authority to take all practicable steps to prevent the occurrence of bush fires on, and to minimise the danger of the spread of a bushfire on or from any land vested in or under its control or management.

Parts of the study area are mapped as being within a designated bush fire prone area.

Protection of the Environment Operations Act 1997

The POEO Act is the key piece of environment protection legislation administered by the EPA. The POEO Act regulates pollution of water and soil, as well as acoustic disturbances and emissions to air.

POEO Act is administered by the Environment Protection Authority (EPA), which is an independent statutory authority and the primary environmental regulator for NSW. The POEO Act regulates and requires licensing for environmental protection, including for waste generation and disposal, and for water, air, land and noise pollution.

As such, the EPA is the Appropriate Regulatory Authority (ARA) for the activities specified in Schedule 1 of the POEO Act (scheduled activities). In most cases, local Councils are the ARA for non-scheduled activities, except activities undertaken by a public authority, which the EPA will regulate, or where a public authority has been declared the ARA (see Chapter 7: Part 1 - *Protection of the Environment Operations (General) Regulation 2009* or POEO Reg). The EPA licenses scheduled activities. In general, local Councils can regulate non-scheduled activities through notice and enforcement powers in their LGA. However, the EPA can issue a Licence to regulate water pollution from a non-scheduled activity.

If it does, the EPA becomes the regulator for all environmental impacts from the activity under the POEO Act instead of the local council.

Consideration of impacts associated with Amenity (Section 6.9), Land (Section 6.2) and Water (Section 6.10) are considered herein, with Safeguards to be further developed to assist with prevention of Offences under the POEO Act through the EIS process.

State Environmental Planning Policy – Koala Habitat Protection

The State Environmental Planning Policy (Koala Habitat Protection) 2021 commenced on 17th of March 2021. The Koala SEPP 2021 reinstates the policy framework of SEPP Koala Habitat Protection 2019 to 83 Local Government Areas (LGA) in NSW. The SEPP 2019 replaced SEPP 44, which was in force from 1995 through to 2019.

The Koala SEPP 2021 largely replicates the provisions which existed under the repealed Koala SEPP 2019, as it stood when it was in force immediately before its repeal in November 2020. The Koala SEPP 2021 applies where:

- The development application requires clearance of an area of more than 1 hectare
- Or has, together with any adjoining land in the same ownership, an area of more than 1 hectare, whether or not the development application applies to the whole, or only part of the land.

Koala SEPP 2021 does not apply to land dedicated or reserved under the National Parks and Wildlife Act 1974 or to land dedicated under the Forestry Act 2012 as a State Forest or flora reserve. It also does not apply to land zoned RU1, RU2 or RU3, unless it falls within the nine specified LGAs. As the study area falls within both land reserved under the National Parks and Wildlife Act 1974, land dedicated as State Forest, and Zoned RU1, RU2 and RU3, Koala SEPP 2021 does not apply and the Koala SEPP 2020 holds.

The proposed trail network occurs in the Cabonne LGA on land zoned which is listed under Schedule 1 of the Koala SEPP 2020. The SEPP requires that before granting consent for development on land over 1 hectare in area, a consent authority must be satisfied as to whether or not the land contains “Potential Koala habitat” or ‘Core Koala habitat’.

- Potential Koala habitat means areas of native vegetation where trees of the types listed in Schedule 2 constitute at least 15 % of the total number of trees in the upper or lower strata of the tree component.
- Core Koala habitat is defined as “an area of land with a resident population of koalas, evidenced by attributes such as breeding females, being females with young, and recent sightings of and historical records of a population”.

Where Core Koala habitat occurs, the Koala Habitat Protection SEPP requires that a Koala Plan of Management be prepared.

The Koala is also listed as a Vulnerable species under the BC Act and EPBC Act, and requires assessment under these Acts, and consideration of the SEPP has been given to assist with assessment of likelihood of impact arising from the Proposal, i.e. whether the area contains ‘Potential’ or ‘Core’ Koala habitat.

State Environmental Planning Policy (Rural Lands) 2008

The Rural Lands SEPP aims to facilitate the orderly and economic use and development of rural lands and related purposes.

As the Proposal would result in the reduction of land available for rural activities, with a portion of the development on land zoned RU2 – Rural landscape, the impacts the development will have on other uses in the locality need to be considered as part of the EIS.

Policy and guidelines for fish habitat conservation and management (NSW DPI 2013)

The *Fisheries Management Act 1994* (FM Act) aims to conserve threatened species, populations and ecological communities of fish and marine vegetation native to NSW and to promote ecologically sustainable development, including the conservation of biological diversity. It also aims to reduce the threats faced by native fish and marine vegetation in NSW.

Section 220ZZ of the FM Act states that the determining authority must consider the effect of an activity on:

- Areas of Outstanding Biodiversity Value (AOBV) as defined by the BC Act, and
- Species, populations or ecological communities, or their habitats as listed under the FM Act, and whether there is likely to be a ‘significant effect’ on those species, populations or ecological communities.

If a planned development or activity is likely to have an impact on an aquatic threatened species, population, or ecological community this must be taken into account in the development approval process. If the impact is likely to be significant, as determined through an Assessment of Significance test, an SIS must be prepared.

NSW Guidelines for Controlled Activities on Waterfront Land (NSW DPI 2012)

The works proposed within the defined riparian zone of a creek are to be carried out in accordance with the WM Act. Works undertaken on waterfront land (i.e. near a river, lake or estuary) require a controlled activity approval under Section 91 of the WM Act, unless defined as exempt. As above, Council’s, as a defined public authority, are exempt from the need to gain a controlled activity approval pursuant to clause 38 of the WM Regulation.

Table 11 Riparian corridors based on stream order (NSW DPI)

Stream order	Vegetated Riparian Zone (each side of watercourse) (m)	Total Riparian Zone (m)
1 st	10	20 + channel width
2 nd	20	40 + channel width
3 rd	30	60 + channel width
4 th	40	80 + channel width

Cabonne Council Local Environmental Plan 2012

The subject site is located on land mapped within the *Cabonne Local Environmental Plan 2012* (LEP), and is located within the following land use zones:

- E1 – National Parks and Nature Reserves
- RU3 – Forestry
- RU2 – Rural Landscape

The majority of the subject site is within land zones as E1 and RU3, with a relatively small area near the proposed trail head zoned RU2.

The objectives of zone E1 are to enable the management and appropriate use of that land that is reserved under the *NPW Act*, and enable uses authorised under the *NPW Act*. The construction and operation of the Proposal is consistent with the objectives of the Mount Canobolas SCA Plan of Management (PoM).

The objectives of Zone RU3 are to enable development for forestry purposes, and to enable other development that is compatible with forestry land uses.

The objectives of zone RU2 are to encourage sustainable primary industry production by maintaining and enhancing the natural resource base, maintain the rural landscape character of the land, provide for a range of compatible land uses, encourage diversity in primary industry enterprises and systems appropriate for the area, provide for a range of tourism-related uses that support or are compatible with agriculture uses, and to protect drinking water catchments from the impacts of development by minimising impacts on the quality and quantity of water entering drinking water storages.

As an SSD recreation facility, the Proposal is permitted with consent under E1, RU2 and RU3. The Cabonne LEP permits commercial uses in land zoned RU2, where the trail head and ancillary facilities are proposed.

The Cabonne LEP does not list any development as permitted with consent in the E1 zone however uses authorised under the National Parks and Wildlife Act 1974 are permitted without consent. The Cabonne LEP permits commercial uses in land zoned RU2, where the trail head and ancillary facilities are proposed. In addition, the RU3 zone only lists 'aquaculture' as a permitted use with consent and uses authorised under the Forestry Act 2012 are permitted without consent.

Consequently, a separate and concurrent application will need to be made to have the area rezoned / have the activity listed as permissible in this zone.

DPIE Guideline for applying the Biodiversity Assessment Method at severely burnt sites

Following the catastrophic 2019-2020 bushfires, the DPI&E *Guideline for applying the BAM at severely burnt sites* (the Guideline) was developed. the Guideline assists BAM assessors when applying BAM Stages 1 and 2 on subject land severely burnt by bushfire for the purpose of preparing or finalising a BDAR/BCAR for development that requires consent under Part 4 of the *EP&A Act*.

The Guideline applies to Subject Land impacted by severe or catastrophic bushfire, which is taken to mean bushfire of high to extreme intensity resulting in significant modification of vegetation structure and composition such that the original vegetation type and condition is no longer identifiable; for example, bushfire that causes deep crown burn (in woodland and forest vegetation formations) or severe surface burns (in grassland vegetation formations).

The Guideline is not applicable to land burnt as part of controlled and other land management burns, traditional burns, or low intensity bushfires that result in minimal structural, compositional and functional changes to the vegetation.

Large swathes of vegetation on Mount Canobolas, in both the SF and SCA were subject to a bushfire of high to extreme intensity in early 2018. However, the structure and composition of vegetation in its current form allow for identification of species and vegetation communities present on the site. Therefore, the BAM bushfire assessment does not apply for this assessment.

Mount Canobolas State Conservation Area Plan of Management

The Mount Canobolas SCA Plan of Management (PoM) was updated in September 2019, to direct the management of the conservation area. Operations within the SCA must be consistent with the plan and its scheme of operations, as per Part 5, Section 72 of the *National Parks and Wildlife Act 1974*.

Chapter 4 of the PoM states further opportunities for mountain bike riding and associated facilities in the park may be provided if deemed appropriate. Appropriateness must be assessed in accordance with the *NPWS Cycling Policy* (DPIE Cycling Policy) and the *Sustainability Assessment Criteria for Visitor Use and Tourism in New South Wales National Parks*. Under the policy, decisions about the planning, development and management of cycling experiences are guided by:

- Ecological sustainability
- Appropriateness of the location
- The quality of the experience for cyclists
- The need to balance competing visitor demands
- Consideration of opportunities and demand for cycling across the region, including on other land tenures
- Visitor safety
- The availability of resources to provide and maintain the experience

The PoM Park use regulations identify Cycling as a permitted recreational activity on roads, management trails and, if constructed, on appropriately signposted single-track routes. No cycling on walking tracks or off-trail is permitted, and all organised group events require consent, irrespective of group size.

OEH Cycling Policy (2011)

The DPIE (formerly OEH) Cycling Policy provides the framework for cycling, including mountain biking in NPWS managed land. The relevant key elements of the policy, and the consistency of each element with the Proposal are identified in Table 12.

Table 12 Key elements of the DPIE (formerly OEH) Cycling Policy and consistency of each with the Proposal

Element	Reference	Description	Consistent with proposal	Context of proposal
Policy objectives	Objective	Ecologically sustainable	Yes	Section 6.5
	Objective	Safe quality experience and appreciation of park values	Yes	Section 6.7 and 4.3.4
	Objective	Proactive responsive management	Yes	Section 4.3.4
	Objective	Effective communication between park authorities, cycling communities and other land managers	Yes	Extensive stakeholder engagement has been undertaken between all relevant and interested parties. Section 5.
Policy	1 and 2	Range of cycling experiences	Yes	A range of trail difficulties and cycling experiences have been catered for within the design. Section 3.2.2
	3	Ecological sustainability	Yes	Section 6.5

Element	Reference	Description	Consistent with proposal	Context of proposal
	3	Appropriateness of the location/consideration for demand across tenure	Yes	Sections 1.4 and 2.1
Permissibility	4	State Conservation Area	Yes	Permitted on roads, management trails, and appropriately constructed and signposted trails. Cycling not permitted on walking trails or off track. Section 4.3.4
Plan of Management	5	Must be consistent with PoM	Yes	Section 4.3.4

In Summary, the Proposal is consistent with the objectives of the OEH Cycling Policy (2011), and the operation of the Proposal is permissible within the SCA, as per the PoM regulations.

Sustainable Mountain Bike Strategy (2011)

The Sustainable Mountain Bike Strategy (SMBS) was developed in 2011 in response to mountain biking growing in popularity every year, and the overwhelming response from the public supporting the initiative to provide better access for mountain biking within NPWS administered land. The SMBS is a guide for the provision of high-quality mountain biking experiences, ensuring the trails are deemed appropriate and safe, according to the most stringent environmental standards. The relevant key elements of the strategy and the consistency with the Proposal are identified in Table 13.

Table 13 Key elements of the SMBS and consistency with the Proposal

Summary Action/ response number	Description	Consistent with proposal	Context of proposal
1	Where regional planning identifies a high demand for new mountain bike experiences in a NPWS park that does not currently permit mountain biking in its PoM, and the proposed experiences satisfy criteria in the NPWS Cycling Policy, a draft amendment to the PoM will be prepared for public exhibition	Yes	Section 4.3.4 The Mount Canobolas SCA PoM was updated in September 2019. Chapter 4 of the PoM states further opportunities for mountain bike riding and associated facilities in the park may be provided if deemed appropriate.
2	Where cycling is permitted on land that becomes gazetted as a park under the NPW Act, this activity will be assessed against the NPWS Cycling Policy criteria to determine whether it should be allowed under the new park's POM	Yes	The Proposal can potentially be developed in accordance with NPWS Mountain Bike Policy. Refer Section 4.3.4 and Table 12
3	The NPWS will provide a few high-quality single-track experiences. Cycling will only be permitted on single-track in parks when the track is designated as suitable for cycling and clearly signposted	Yes	The Proposal includes 36 single-track trails. Refer Section 1.3 for detail.

Summary Action/ response number	Description	Consistent with proposal	Context of proposal
4	Subject to the NPWS Cycling Policy criteria, the NPWS will provide a diversity of cycling experiences that suit a variety of people, including families with children, road cyclists and mountain biking enthusiasts	Yes	Section 1.2 The Proposal includes a variety of trails from 'green' (easy) through to 'double black' (very difficult).
5	The NPWS will assess proposed mountain biking experiences against a set of planning, development and management criteria identified in the NPWS Cycling Policy, including considering: - opportunities and demand for mountain biking across the region, including other land tenures - appropriateness of the site - ecological sustainability - provision of a quality experience for riders - balancing competing visitor demands - availability of resources to provide and maintain the experience - visitor safety	No	The Proposal will be assessed as SSD; however, NPWS representatives have been involved in the design development to date as part of Council's Agency Stakeholder working group.
6	The NPWS will participate in whole-of-government, cross-tenure planning to pursue a variety of mountain bike experiences on publicly- and privately-owned lands	Yes	Section 1.3 and Section 2.1 The trail design includes developing and linking trails to new and existing trail networks on adjoining tenures, including across FCNSW and Crown Lands, as well as freehold land.
7	Where a mountain bike experience that passes through one or more other land tenures could be particularly enhanced by providing a link or section through NPWS parks, creating such a link will be considered a priority, subject to assessment in accordance with the criteria set out in the NPWS Cycling Policy.	Yes	Section 1.2 and Section 4.3.4 The trail design includes developing and linking trails to new and existing trail networks on adjoining tenures, in both the SCA and State Forest.
8	The NPWS will consider opportunities for creating longer tracks that can contribute to regional tourism, as well as 1 – 4 hour single-track loops situated near urban centres. Where necessary, the NPWS will work in partnership with other land managers to deliver these experiences	Yes	The proposed trail head is less than a 15 km drive from the Orange CBD. The proposed trail network includes options for large single track loops.
9	To determine whether a proposed mountain biking experience integrates with the existing site character and landscape context, relevant sections of the Sustainability assessment	Yes	Section 4.3.4 The trail network design has been developed to comply with the

Summary Action/ response number	Description	Consistent with proposal	Context of proposal
	criteria for visitor use and tourism in New South Wales national parks will be consulted.		requirements of the NPWS sustainability guidelines.
10	The NPWS will consider providing mountain biking experiences near existing facilities, car parks, mobile phone access, bike racks and railway stations or links to railway stations.	Yes	Section 1.4 The proposed trail network has been developed to compliment existing visitor infrastructure and facilities both within and external to the SCA.
11,17,34, 37, 38	- The NPWS will follow International Mountain Bicycling Association (IMBA) track standards for design, construction and maintenance, and will monitor mountain bike experiences in parks to identify conditions specific to NPWS parks, adapting IMBA standards as necessary - Where possible, mountain bike tracks and maintenance regimes will be designed to allow wet weather riding - The NPWS has adopted the IMBA Australia Trail Difficulty Rating System as the classification system for mountain bike tracks and this system is being incorporated into signage procedures - The NPWS will adopt the IMBA Rules of the Trail. The NPWS may seek the involvement of visitor groups in developing additions to the code of conduct for particular NPWS parks, using the IMBA Rules of the Trail as a basis - The NPWS will adopt the IMBA Rules of the Trail. The NPWS may seek the involvement of visitor groups in developing additions to the code of conduct for particular NPWS parks, using the IMBA Rules of the Trail as a basis - The IMBA Rules of the Trail will be promoted on track head signs, in printed guide materials, on the NPWS website, and in other collateral from authorised organisations promoting mountain biking in NPWS parks	Yes	The proposed trail network design complies with the requirements of the IMBA standards.
12, 14, 15, 23	- The capacity to maintain and resources for maintaining existing tracks will be assessed before constructing new tracks. - The NPWS encourages staff to develop their skills in construction and maintenance of mountain biking tracks	Yes	An initial cost benefit analysis has been completed by RedeConsult for Orange City Council. Once the trail network design is finalised, an appraisal of the

Summary Action/ response number	Description	Consistent with proposal	Context of proposal
	- The NPWS may seek the involvement of mountain biking groups in design, construction and maintenance of cycling tracks - All tracks will be recorded in OEH's asset management database and have a regular maintenance program established		capability requirements to undertake trail maintenance and the resources needed to fund this can be determined.
13, 18, 19, 20, 21	- before constructing new tracks, experts in trail design, planning and construction will be engaged on large projects that go beyond the skills set of NPWS staff. Consultants may also provide environmental or sustainability assessment. - Environmental assessment of a prospective mountain bike experience will consider the impact of wet weather and any necessary programs that will assist with compliance during wet weather closures - Specific criteria for wet weather track and trail closures will be discussed with mountain biking groups on a case-by-case basis. - Wet weather closures will be communicated using track signage, websites and, where appropriate and available, social networks	Yes	Dirt Art; a team of specialist consultants, designers and construction experts dedicated to the design, construction and management of sustainable mountain bike trails and facilities have been engaged to design the trail network. Wet weather impacts and management of trail closures are addressed in Section 6.2 and Section 6.10.
16	All proposed technical track features will be assessed against criteria identified in the NPWS Cycling Policy and approved through the PoM process	N/A	
22	NPWS cycling tracks may be closed at night, according to the relative park opening and closing times, plus at other times of the day if required to protect wildlife, to reduce disturbance to park neighbours and for visitor safety	Yes	The trail network within the SCA will be subject to NPWS designated opening times for the park.
24	Where a mountain bike experience may displace another activity, the following will be considered in the decision making process: the level of participation in the other activity, the supply of other opportunities for the other activity in the park or nearby area, the importance or uniqueness of the location for the other activity, the opportunities for providing mountain biking elsewhere in the	Yes	The proposed trail network design has been developed to minimise the potential for conflict with other SCA visitors such as walkers, sightseers, campers etc

Summary Action/ response number	Description	Consistent with proposal	Context of proposal
	park or nearby area, and measures available to manage any conflicts		
25	Existing walking tracks may be designated 'multi-use' to also allow cycling and mountain biking where a track meets IMBA standards for visibility, width, surface condition and gradient for multi-use tracks	No	The Mount Canobolas SCA PoM does not permit cycling on existing walking tracks. The proposed trail network minimises walking track and bike trail intersections, and where unavoidable the trail design enforces cyclists to slow and/or dismount at crossings.
26	Cyclists must give way to walkers on multi-use tracks.	No	Walkers will not be permitted to use the trail network for safety reasons. The SCA contains an existing walking trail network. However, there remains an option for trail runners to utilise the network.
27	Multi-use tracks and preferred-use tracks must be adequately signposted to ensure visitor safety. Additional awareness programs may be considered.	Yes	Signage will be erected giving visitors information about the trail use policies and safety precautions.
28	Multi-use tracks and preferred-use tracks may be designated one-way to ensure visitor safety or optimise the experience for visitors	Yes	All trails will be one way / unidirectional to ensure maximum safety for visitors and maximise user experiences.
29-33, 35-36, 39, 41	NPWS initiatives, research, and management	N/A	N/A
40	Prospective mountain bike events will be assessed under the NPWS Events, Functions and Venues Policy. They will also be assessed for their potential impacts on natural or cultural heritage values, susceptibility of soils to erosion, the presence of natural hazards, potential conflicts with other visitors and available facilities in the park; and in the context of other available venues	Yes	Section 4.3.4 As per the PoM, all organised group events require consent, irrespective of group size. Events would be considered on a case by case basis.

Sustainability Assessment Criteria for Visitor Use and Tourism in National Parks

The Sustainability Assessment Criteria for Visitor Use and Tourism in New South Wales National Parks (the Assessment Criteria) is a tool used to assist the Minister in determining before granting a lease or licence whether certain matters, which are detailed in s.151B of the NPW Act are satisfied. These include: the compatibility of the proposal with natural and cultural values; the sustainable and efficient use of natural resources, energy and water; and the appropriate form and scale of any new buildings or structures, or modifications to existing facilities.

In determining whether those matters have been satisfied the Minister must also have regard to the Assessment Criteria adopted by the Director General of the Department of Environment, Climate

Change and Water (DECWW) in 2011. The Assessment Criteria assist the Minister in deciding whether the matters detailed in s.151B have been satisfied, and consequently whether to grant a lease or licence. There are three (3) criteria which range from strategic decisions about the location of the lease and licence proposals and potential effects on natural and cultural values, down to detailed consideration of resource and materials use.

Table 14 Sustainability Assessment Criteria for Visitor Use and Tourism in NSW National Parks, matters for consideration

Matter for Consideration	Objective	Consistent with proposal	Context of proposal
Criterion 1 – Site suitability and compatibility with natural and cultural values			
Site Suitability	Proposals support the existing natural or cultural heritage condition of a site and the surrounding locality, or facilitate planned improvements	Yes	The site character and landscape context of the study area is identified as ‘partially modified natural and cultural heritage condition’. The Proposal is consistent with the <i>physical, social</i> and <i>management</i> character of a site identified as partially modified.
Conservation of natural and cultural values	Proposals demonstrate that they are compatible with the conservation of natural and cultural values	Yes	Table 9 demonstrates compliance with the EP&A Regulation 2000 as per Clause 228(2), which are consistent with the specific matters to be taken into consideration for the Sustainability Assessment criteria document (DECCW, 2011).
Matter for Consideration	Objective	Consistent with proposal	Context of proposal
Criterion 2 – Sustainable resource use			
	All proposals incorporate sustainability in planning, design, construction and ongoing operation	Yes	Sustainable resource use is addressed in Section 6.13 of this SR.
Criterion 3 – Appropriate built form and scale			
	Proposals involving built structures or facilities are appropriate to the park setting, are unobtrusive and sympathetic to the landscape	TBC	The scale and design of built structures and/or facilities, for example a visitor centre, parking, and retail space are yet to be determined.

4.4 Pre-conditions to exercising the power to grant consent

The pre-conditions to exercising the power to grant consent for the Proposal that may be relevant to setting the SEARs are identified in Table 15. The pre-conditions include mandatory conditions that must be satisfied before the consent authority may grant consent.

Table 15 Pre-conditions to exercising the power to grant consent

Statutory Reference	Pre-condition	Relevance
The <i>Biodiversity Conservation Regulation 2017</i> , Part 7	Native vegetation clearing thresholds as outlined in Part 7 of the Act indicates when a project would need to enter the BOS according to the minimum lot sizes and the corresponding native clearing thresholds	The clearing threshold for native vegetation will be exceeded by this Proposal; therefore, participation in the BOS is required.
<i>Fisheries Management Act 1994</i> , Schedule 4 and 5	projects will need a Part 7 Fisheries Management Act permit for activities involving dredging and reclamation work, activities temporarily or permanently obstructing fish passage, using explosives and other dangerous substances, and / or harming marine vegetation	The study area encompasses several waterways marked as Key Fish Habitat, which will require consideration under the FM Act for whether permits are required
<i>NSW Biodiversity Act 2015</i> , Part 2, Division 8	The Act outlines mandatory measures that persons are to take with respect to biosecurity matters including the management of weeds, including Weeds of National Significance (WoNS). The Act introduces the legally enforceable concept of a General Biosecurity Duty (GBD). Priority weeds are listed within Regional Strategic Weed Management Plans	WoNS and Priority weeds are identified within the SCA
<i>National Parks and Wildlife Act 1974</i>	the Act declares that an SCA is to be managed in accordance with the following principles: • Conserve biodiversity, ecosystem function, natural phenomena and natural landscapes • Conserve places, objects and features of cultural value • Provide for permitted uses • Provide for sustainable visitor or tourist use and enjoyment that is compatible with the conservation principles and permitted uses • Provide for the sustainable use (including adaptive reuse) of any buildings or structures or modified natural areas having regard to the conservation principles and permitted uses.	A number of Aboriginal objects have been recorded within the study area
<i>National Parks and Wildlife Act 1974</i> , Part 5, Section 72	Operations within the SCA must be consistent with the plan of management (PoM) and its scheme of operations. Chapter 4 of the PoM states further opportunities for mountain bike riding and associated facilities in the park may be provided if deemed appropriate	Appropriateness must be assessed in accordance with the <i>NPWS Cycling Policy</i> (DPIE Cycling Policy) and the <i>Sustainability Assessment Criteria for Visitor Use and Tourism in New South Wales National Parks</i>
<i>National Parks and Wildlife Act 1974</i> , Section 151(b)	The Sustainability Assessment Criteria for Visitor Use and Tourism in New South Wales National Parks (the Assessment Criteria) is a tool used to assist the Minister in determining before granting a lease or licence whether certain matters, which are detailed in s.151B of the NPW Act are satisfied	These include: the compatibility of the proposal with natural and cultural values; the sustainable and efficient use of natural resources, energy and water; and the appropriate form and scale of any new buildings or structures, or modifications to existing facilities

Statutory Reference	Pre-condition	Relevance
<i>Rural Fires Act 1997, Section 63(1) and 63(2)</i>	The Act stipulates it is the duty of a public authority to take all practicable steps to prevent the occurrence of bush fires on, and to minimise the danger of the spread of a bushfire on or from any land vested in or under its control or management.	Parts of the study area are mapped as being with a designated bush fire prone area
<i>Koala Habitat Protection SEPP</i>	The SEPP requires that before granting consent for development on land over 1 hectare in area, a consent authority must be satisfied as to whether or not the land contains "Potential Koala habitat" or 'Core Koala habitat'. Where Core Koala habitat occurs, the Koala Habitat Protection SEPP requires that a Koala Plan of Management be prepared	The proposed trail network occurs in the Cabonne LGA on land zoned which is listed under Schedule 1 of the Koala SEPP 2020

4.5 Mandatory matters for consideration

Matters that the consent authority is required to consider in deciding whether to grant consent to any development application for the project, that may be relevant to setting the SEARs, are outlined in Table 16 below.

Table 16 Mandatory considerations

Statutory Reference	Mandatory consideration
Consideration under the EP&A Act and Regulation	
EP&A Act, Part 4	Following the catastrophic 2019-2020 bushfires, the DPI&E <i>Guideline for applying the BAM at severely burnt sites</i> (the Guideline) was developed. the Guideline assists BAM assessors when applying BAM Stages 1 and 2 on subject land severely burnt by bushfire for the purpose of preparing or finalising a BDAR/BCAR for development that requires consent under Part 4 of the EP&A Act
Mandatory relevant considerations under the Environmental Planning Instruments (EPIS)	
Rural Lands SEPP 2008	the Proposal would result in the reduction of land available for rural activities, with a portion of the development on land zoned RU2 – Rural landscape, the impacts the development will have on other uses in the locality need to be considered as part of the EIS
Considerations under other legislation	
<i>Heritage Act 1997</i>	The Cabonne Local Environmental Plan 2012 (Cabonne LEP 2012) identifies the Mount Canobolas SCA area as the Mount Canobolas Parklands heritage item
<i>Water Management Act 2000</i>	There are a number of waterways mapped within the study area for the MTB Proposal. Consideration of approvals for works within Waterfront Land will need to be included, and Controlled Activity applications sought if applicable
<i>Protection of the Environment Operations Act 1997</i>	Consideration of impacts associated with Amenity, Land, Air and Water are considered herein, with Safeguards to be further developed to assist with prevention of Offences under the POEO Act through the EIS process
Development Control Plans	
<i>Cabonne Local Environmental Plan 2012</i>	• E1 – National Parks and Nature Reserves • RU3 – Forestry • RU2 – Rural Landscape The majority of the subject site is within land zones as E1 and RU3, with a relatively small area near the proposed trail head zoned RU2

Statutory Reference	Mandatory consideration
Concept Approval	
<i>Fisheries Management Act 1994</i>	Consideration of waterway crossings and concurrence with Fisheries is likely required
<i>WM Act and Natural Resources Access Regulator (NRAR)</i>	Consideration of the approval by the Natural Resources Access Regulator for works on Waterfront Land should be considered for the detailed design

5 ENGAGEMENT

A range of consultation activities have been undertaken to inform the design of the proposed trail network at Mount Canobolas, with further consultation planned for the next stages. The following sections summarise the consultation objectives and approach for the Proposal, and the process undertaken to date in relation to community and stakeholder engagement.

5.1 Consultation objectives

Stakeholder engagement for the Proposal is focused on creating open dialogue to assist with mitigating direct impacts arising from the Proposal, while at the same time creating benefits for the local community. In particular, Council and the teams involved in developing the Proposal are working to achieve the following objectives:

- Ensure open, transparent communication about the Proposal, and to provide a range of opportunities and mediums for dialogue to enable receipt of feedback from a wide cross-section of the community.
- Engage with stakeholders to understand local support for, and concerns regarding, the Proposal to ensure that all parties involved in development of the Proposal are fully aware of such.
- Incorporate feedback into the design of the Project, where possible, and outline where such feedback has been incorporated.
- Build and maintain positive relationships with community, interest group and agency stakeholders to enable ongoing conversation about the Proposal.

The approach to consultation taken for the MTB Proposal has been to create early engagement with key stakeholders, groups and individuals throughout the preliminary assessment and design phases.

5.2 Consultation background and community views

In 2014 Orange City Council commissioned a report by RedeConsult to identify the potential economic benefit that would be derived from the establishment of a world class MTB facility. Following the submission of that assessment and the potential benefit to the community Council decided to further investigate the matter.

In 2015 Council commissioned GHD to conduct a preliminary constraints and opportunities analysis with the objective of determining if an MTB trail network was possible. Essentially a proof of concept. To support the process Council established a reference group to liaise with during the process. This included representatives and Councillors from Orange City and Cabonne Councils, NPWS, Central West Off Road Bicycle Club (CWORBC), Orange Field Naturalist and Conservation Society, Environmentally Concerned Citizens of Orange (ECCO) and Central West Environment Council (CWEC). Apologies were received from Orange Aboriginal Land Council.

As a component of that GHD process individual meetings with key stakeholder groups were conducted to obtain their feedback regarding the proposal were held on Monday 18 May and Tuesday 19 May 2015 with the reference group.

A summary of responses during that initial phase is included below:

- All stakeholders were supportive of the concept of the development of a mountain bike track facility and recognised the significant potential tourism, environmental awareness, health and economic benefits it may bring to Orange and Cabonne Council areas. They did not however all agree that Canobolas SCA was an appropriate place for such a development and

that there are more suitable alternative areas. Some stakeholders identified that no new tracks should be constructed within Mount Canobolas SCA.

- There is a demand for mountain biking facilities both within the region and from outside the region. There is a need to find alternative mountain biking locations due to the potential loss of access to Kinross State Forest and Mullions Range State Forest due to plantation harvest and replanting operations in the coming years.
- State Forests adjoining Mt Canobolas SCA potentially do not provide a long term alternative location for an intensive mountain bike track network due to ongoing timber harvesting and establishment operations which occur with the softwood plantation areas. This includes site preparation and planting, spraying, thinning (at approximately 14 and 22 years old) and harvest (at approximately 30-34 years old), and the movement of heavy trucks to transport timber offsite.
- The construction of a mountain bike facility on Mount Canobolas will provide significant financial benefit to Orange as evidenced by similar facilities in Rotorua, Mount Stromlo (ACT), Atherton Tablelands, Tasmania and even internationally in Wales.
- The creation of a track once initially established will be a lasting legacy for the town, which will fund itself over time.
- The Canobolas SCA is an attractive location for such a facility due to its elevation, the large 'underutilised' areas within it, and the native vegetation areas which are more attractive to riders.
- Large scale mountain bike events are waning in popularity, with smaller events and individual group activities now more popular. Smart phone applications which geo-reference the speed taken to complete mountain bike routes provide a means of 'virtual' racing against times other riders have logged, without the need for a large-scale event to find out who is fastest.
- Family groups may be interested in a range of tourism opportunities in the Mount Canobolas precinct, with inexperienced riders using trails near Lake Canobolas and more experienced riders riding within the rougher topography of Mount Canobolas.
- Mountain bike tourism will have flow on effects to the local wineries, accommodation, restaurants and other tourism ventures.
- There is a range of existing management issues within the SCA, such as weeds and ongoing maintenance, which NPWS does not seem to have sufficient funding to address. The construction of a mountain bike facility will put further strains on agency budgets.
- Mount Canobolas is a significant and unique refuge area for flora and fauna, within a largely cleared and disturbed broader landscape, particularly with emerging climate change impacts. Construction of a mountain bike facility within it will only have negative impacts through vegetation modification and removal, potential introduction/expansion of weeds, pathogens and pests, degradation of the soils and increasing the potential for illegal activities such as trail bike use and arson.
- Some of the soils within the SCA are fragile and, when combined with the steep slopes in some areas, will not support mountain bike tracks without a significant need for ongoing maintenance. Ongoing maintenance in a higher elevation environment, where access is constrained and there are steep slopes, can be expensive.
- A mountain bike facility will not be viable unless it can attract large numbers of people from outside the region who will fill up local hotels, motels, restaurants and tourist facilities. If it is just used by locals there will be no return on investment for the community as a whole. Without evidence of this potential return it could not be supported by local government.

On 1 September 2015 the report from GHD was presented to Council and available to the public who had the ability to attend the meeting and make representations to Councillors via a public forum at the commencement of the meeting.

At that meeting Council agreed to appoint a trail designer to further develop the concept.

World Trail (WT) were appointed on 6 November 2015 to develop a concept trail network. This involved site visits, field work and consultation with interested parties. Fieldwork was undertaken between the 15th of December 2015 by WT Director Mr Glen Jacobs, and WT General Manager, Mr Gerard McHugh.

During this time WT met with a range of stakeholders, representing a variety of organisations, including:

- Orange City Council
- Cabonne Council
- National Parks and Wildlife Service (NPWS)
- Central West Off Road Bicycle Club (CWORBC)
- Orange Field Naturalists
- Environmentally Concerned Citizens of Orange
- Members of the local mountain bike community

Based on those field visits and consultations the Mt Canobolas Mountain Bike Trail Concept Plan was developed and presented to Council on 20 September 2016. Together with the report were submissions on the proposal from environmental groups and supporters of the project.

A barrier to the proposal proceeding was the requirement for an amendment to the Plan of Management (PoM) to permit the establishment of a MTB Network in the SCA. The process to amend the plan of management was conducted by DPIE which involved extensive consultation and engagement with environmental groups and a formal referral process. The new PoM was published on 9 September 2019.

Whilst not approving the establishment of a MTB trail network, the PoM permits mountain biking as an activity, which provides an opportunity for MTB trails to be designed and submitted for approval, subject to the relevant approvals processes. Council sought funding from both NSW and Australian Governments for the project however were unsuccessful as approval was not in place. As part of the 2020-21 budget Council allocated funding to conduct the initial works required to seek those approvals, part of which includes this document.

5.3 Community and stakeholder consultation

5.3.1 Agency Stakeholder Working Group

In December 2020, Council established the Canobolas MTB Trails Agency Stakeholder Working Group, to commence discussions with relevant agencies and landholders likely to be affected by the Proposal. The group includes representatives from the following organisations:

- National Parkes and Wildlife Service (NPWS)
- Forestry Corporation of NSW (FCNSW)
- Department of Planning, Industry and Environment (DPIE) – threatened species division
- Crown Lands
- Orange City Council (OCC)
- Cabonne Council

- Orange Local Aboriginal Land Council
- Heritage NSW
- The Environmental Factor (TEF)
- Apex Archaeology (Apex)
- Dirt Art

Members of this group have been open in providing information, recommended contacts for specialist information, and comments on the Constraints Identification and avoidance process reporting provided for their feedback. All comments received were addressed and incorporated. No party in this group has provided any negative feedback on the trails designed or the process followed.

4.3.2 Community consultation

Further to the Agency Stakeholder Working Group, TEF and Council have been in contact with a range of community groups and individuals that have wanted to provide input or data on the area or Proposal, including interest group Canobolas Conservation Alliance (CCA) who are openly opposed to the Proposal. Amongst others, CCA provided shapefiles and their own reporting directly to TEF for consideration in the Constraints Identification and avoidance process; any files provided, from CCA or otherwise, were included, with areas marked out avoided as part of the design development accordingly.

A community forum was held at the Orange Civic Centre on 25 February 2021 at which OCC, TEF, Dirt Art and Apex Archaeology presented the preliminary findings from the desktop assessment and outlined the approach to Proposal development. The session included a one-hour long Q&A session, in which questions were raised by members of the community in attendance. The questions raised were not recorded, however topics covered included:

- Management of Erosion and Sediment (ERSED) during construction and operation
- The assessment pathway (EIS or REF)
- Potential ecological impacts, particularly of fauna
- The nomination of the Mt Canobolas SCA as an Area of Outstanding Biodiversity Value (AOBV)
- Location of Trail
- Endangerment to threatened species
- What type of trails (skill level)
- Benefits to the community
- Emergency access to the summit

After the forum was held, members of the community approached project staff to provide additional information, give support / positive feedback, provide negative feedback, and / or to ask questions or provide contact details.

The forum attracted 155 community members; and, attendees registered through Council, who will be advised of the next community forum as well as the broader public.

Media releases and online engagement

Council has issued media updates through media releases and social media to report on the project progress. These media releases are available on Council's website and are circulated to local media in Bathurst, Dubbo, Molong, Orange and Wellington. Council has released three media releases since TEF commenced their investigations to continue to update the community and Council will continue to provide information to the community as the project continues to progress.

Local media has also published opinion pieces, letters to the editor and other articles written by those opposed to the trails.

5.3.2 *Aboriginal community involvement*

The *Aboriginal cultural heritage consultation requirements for proponents 2010* provide the process for undertaking consultation with the Aboriginal community. This process includes identification, registration, engagement and consultation with those Aboriginal people who may have cultural knowledge which is relevant to determining the cultural significance of Aboriginal objects and places which may be within the study area.

The Consultation Guidelines detail a number of stages for consultation, as follows:

- Identification of those people who should be consulted for the project
- Inviting Aboriginal people to register their interest in being consulted for the project
- Providing information regarding the nature and scope of the project to the Aboriginal people who have registered an interest in being consulted – the registered Aboriginal parties (RAPs)
- Providing opportunities for RAPs to comment on the proposed methodology for cultural heritage consultation
- Presenting information about the potential impacts of the proposed development for the RAPs to comment on
- Providing opportunities for RAPs to comment on the cultural significance of the proposed development area
- Providing opportunities for RAPs to comment on the draft reports detailing the results of the archaeological and cultural assessments for the project

The archaeological investigation was undertaken to meet the requirements of the Code of Practice and ACHCRs. The purpose of the archaeological investigation is to understand and establish the potential harm the proposed development may have on Aboriginal cultural heritage within the study area, both tangible and intangible.

Aboriginal community consultation was undertaken for the project with the aim of:

- Identifying the Aboriginal community members who can speak for Country within which the study area is located.
- Involving the Aboriginal community in making decisions about the management of their cultural heritage.
- Identifying, assessing and recording Aboriginal heritage values within the study area.
- Preparing an assessment of the cultural heritage values in consultation with the Aboriginal community.
- Identifying the potential impact of the proposed development on the assessed cultural heritage values.
- Developing conservation and mitigation strategies for these values, with the aim of minimising impacts to cultural heritage wherever possible.

In addition, the Apex Archaeology report provides a significance assessment of the identified Aboriginal heritage values, as defined by the registered Aboriginal stakeholders (RAPs) for the project. Aboriginal people are the primary determinants of the significance of their cultural heritage and therefore Apex Archaeology cannot make a determination on the cultural significance without the input of the RAPs. As a result of the consultation undertaken for the project, a total of nine (9) Registered RAPs registered their interest in being consulted. Details of the proposed project and the

proposed methodology for undertaking the cultural heritage and archaeological assessments for the project were provided in writing to each of the RAPs on 3 February 2021. Comments were accepted until 4 March 2021, a period of 28 days. Responses were received from Neil Ingram, Terry Maclean and Bradley Bliss CEO of Wellington Valley Wiradjuri Aboriginal Corporation. The recommendations made regarding the survey approach and areas requiring assessment were incorporated into the methodology for the project and implemented during the survey for the project. All responses were acknowledged and appreciated.

Any development works which disturb the ground surface have the potential to impact Aboriginal archaeological deposits and therefore an assessment of whether the study area contains such deposits is required prior to the commencement of construction works. An assessment of whether the proposed development would impact these deposits (if present) is also necessary, and identification of to what extent the deposits would be impacted is also required. The degree of impact which may be allowable is determined, in part, with consideration of the level of cultural significance attributed to the cultural values of the study area, both tangible and intangible. All RAPs were invited to assist with the field assessment. A total of ten days were initially proposed for the fieldwork, and as such each RAP was invited to assist with at least one (1) day of survey.

5.3.3 *Engagement to be carried out*

Engagement has been ongoing and multi-faceted throughout the planning and design phases of the proposal. Covid-19 has limited the face-to-face meeting and forums, however media releases and updates were provided to the community in other formats. OCC is committed to ongoing community engagement during the preparation of the EIS including through the Council website, *Have Your Say* page and stakeholder engagement events and forums.

Additionally, in light of the sensitive archaeological artefacts and Aboriginal Cultural Heritage values of the Mountain, an Aboriginal cultural facilitator will be engaged through the next stages to ensure the concerns of the Aboriginal community are heard, and engagement on the Proposal is culturally appropriate and inclusive.

6 PROPOSED ASSESSMENT OF IMPACTS

This section provides an overview of the key environmental aspects that have arisen and are likely to arise through delivery of the Proposal and includes identification of further detailed assessment that would be undertaken as part of the EIS process.

6.1 Methodology

A desktop assessment has been undertaken to provide high level information used to inform the potential impacts associated with the Proposal and the level of associated environmental risk from undertaking the project. Potential impacts have been assessed through the consideration of likely and possible environmental impacts of the Proposal, and with consideration of the effective mitigation of identified impacts through the implementation of environmental safeguards, in accordance with the principles of Avoid, Minimise, Mitigate, Offset, in order to minimise adverse impacts on the environment.

This preliminary environmental assessment is useful in informing the scope of environmental investigation and assessment required for the Proposal, as well as informing the Proposal design, and helps identify appropriate mitigation measures and management responses in advance.

The specific environmental considerations for the Proposal have been broken down into Key and Non-Key issues (Table 17). Key issues refer to those which have the potential for (actual or perceived) moderate to high impacts, and require detailed assessment to determine the level of potential impact and develop appropriate environmental safeguard measures to manage those impacts. Non-key issues refer to those which have the potential for low to moderate impacts, and which can be mitigated through the application of standard environmental safeguard measures; non-key issues are assumed to not require additional specialist investigation at this stage and will be considered through preparation of the EIS and approval documentation.

Table 17 Identification of key issues associated with the Proposal

Environmental Aspect	Issue category
Land	Key
Aboriginal heritage	Key
Non-Aboriginal heritage	Key
Biodiversity	Key
Access	Key
Social	Key
Economic	Key
Amenity	Key
Water	Key
Built environment	Key
Hazards and Risks	Key
Waste and resource use	Non-key
Air quality	Non-key
Climate change	Non-key

KEY ISSUES

The following chapters outline the existing environment, potential impacts for both construction and operation phases of the Proposal, and the anticipated assessment requirements for each Key Issue identified.

6.2 Land

6.2.1 Existing environment

The study area comprises heavily vegetated undulating to steep terrain, with large areas of rocky outcrops and cliff formations. The study area has experienced varying levels of fire disturbance in recent years.

Mitchell Landscape Soils

Canobolas Peaks is the dominant Mitchell Landscape Soils type (Figure 4). This soil type forms the highest peaks in the area, composed of a number of volcanic features in the Tertiary Canobolas volcanic complex. This landscape experiences high local rainfall, and seasonal snow and frost, with a general elevation between 122 – 1400 m. Thin stony alpine humus soils are characteristic of the Canobolas Peaks. The north west of the study area within the State Forest is mapped as Canobolas Sheet Basalts. This Mitchell Landscape Soil type is described as widespread and undulating high-level plateaus with a general elevation between 950 – 1200 m. The Canobolas Sheet Basalts landscape is characterised by shallow red brown to black stony loams, yellow-brown texture contrast soils and lower slopes and alluvial loams and black clay in swampy valley floors.

Australian Soil Landscapes

Figure 5 shows the Australian Soil Classification (ASC, 2020) within 5 km of the study area. Rudosols and Tenosols make up the majority of the study area. Rudosols and tenosols are characterised by weak or negligible pedologic organisation. They are usually young soils in the sense that soil forming factors have had little time to pedologically modify parent rock or sediments. Rudosols are characterised by minimal development of an A1 horizon or the presence of less than 10 % of B horizon material in fissures in the parent rock or saprolite. The soils are apedal or only weakly structured in the A1 horizon and show no pedological colour changes apart from the darkening of an A1 horizon.

The area around the Lidster trail head is mapped as Ferrosols. Ferrosols have B2 horizons in which the major part has a free oxide content greater than 5 % iron and does not have clear or abrupt textural B horizons. These soils are almost entirely formed on either basic or ultrabasic igneous rocks. Although these soils do not occupy large areas in Australia, they are widely recognised and often intensively used for agriculture because of their favourable physical properties. The most common forms have B2 horizons with strong polyhedral compound peds up to 10-15 mm, however forms also occur with a very fine granular structure which may appear massive in place.

Acid Sulphate Soils

Figure 6 shows the Acid Sulphate Soils (ASS) within 5 km of the study area. The entire study area is mapped as containing Cq(p4) soils – these have an extremely low probability (1-5 %) of being ASS, generally within wet/riparian areas.

6.2.2 Potential land impacts – construction

The potential impacts relating to land as a result of the construction of the Project include:

- Approximately 104.4 km of track is proposed, which equates to approximately 17.2 ha of ground disturbance with a direct construction impact footprint of a maximum of up to 2 m.

This ground disturbance may directly result in erosion impacts due to the exposure and mobilisation of soils during construction.

- An additional ground disturbance of approximately 1.77 ha for development of trail head and other infrastructure. This ground disturbance may also directly result in erosion and sediment migration impacts.
- Ground disturbance increasing the risks of erosion and therefore sediment migration offsite into waterways immediately adjacent to the study area. This could result in an impact to water quality, resulting in Pollution of Waters (an offence under s120 POEO Act), if appropriate erosion and sediment (ERSED) controls are not implemented and maintained.
- The compaction of soils, by movement of plant and other heavy vehicles through the site during construction. This could hinder rehabilitation (i.e. revegetation) post completion of works, leaving surfaces liable to erosion in the longer term.
- Pollution of soils on site, associated with the spill of hydrocarbons generated from construction plant and equipment.
- The duration and intensity of rainfall during and after construction of the trails will greatly influence the potential impacts to soils, particularly on the steeper slopes, with contingency planning and preparation required to ensure these risks are minimised.
- High winds have the potential to create dust/sedimentation/deposition issues during the construction phase. There is potential for erosion if work sites are left exposed for long periods without adequate safeguard measures to prevent runoff/wind erosion.

6.2.3 Potential land impacts – operation

Potential impacts relating to land as a result of the operation of the Proposal include:

- Increase in sediment loads in adjacent waterways due to track surface water runoff and erosion as a result of heavy rainfall and storm damage, particularly on steeper and looser slopes if trails are not constructed and maintained appropriately.
- Soil compaction of areas surrounding trails due to trail users going off trail for example to look at views or to avoid obstacles, if the design does not adequately allow for this.
- Climate change can potentially:
 - Increase the risk of soil migration off the tracks, risking the widening of proposed tracks.
 - Increase the risk of muddiness of tracks, rendering them unusable and / or resulting in track widening.
- Erosion can become self-perpetuating when tracks erode below the surrounding soil level, hindering efforts to divert water from the trail and causing accelerated erosion and muddiness.
- Prolonged drought can soften the soil. When followed by rain, this can cause the compaction and lowering of part of the track, thereby increasing the risk of erosion.
- Low lying areas are more likely to experience prolonged mud accumulation.
- Potential for surface erosion and soil migration down the slopes over time if trails are not constructed and maintained appropriately.

6.2.4 Environmental safeguards – Land

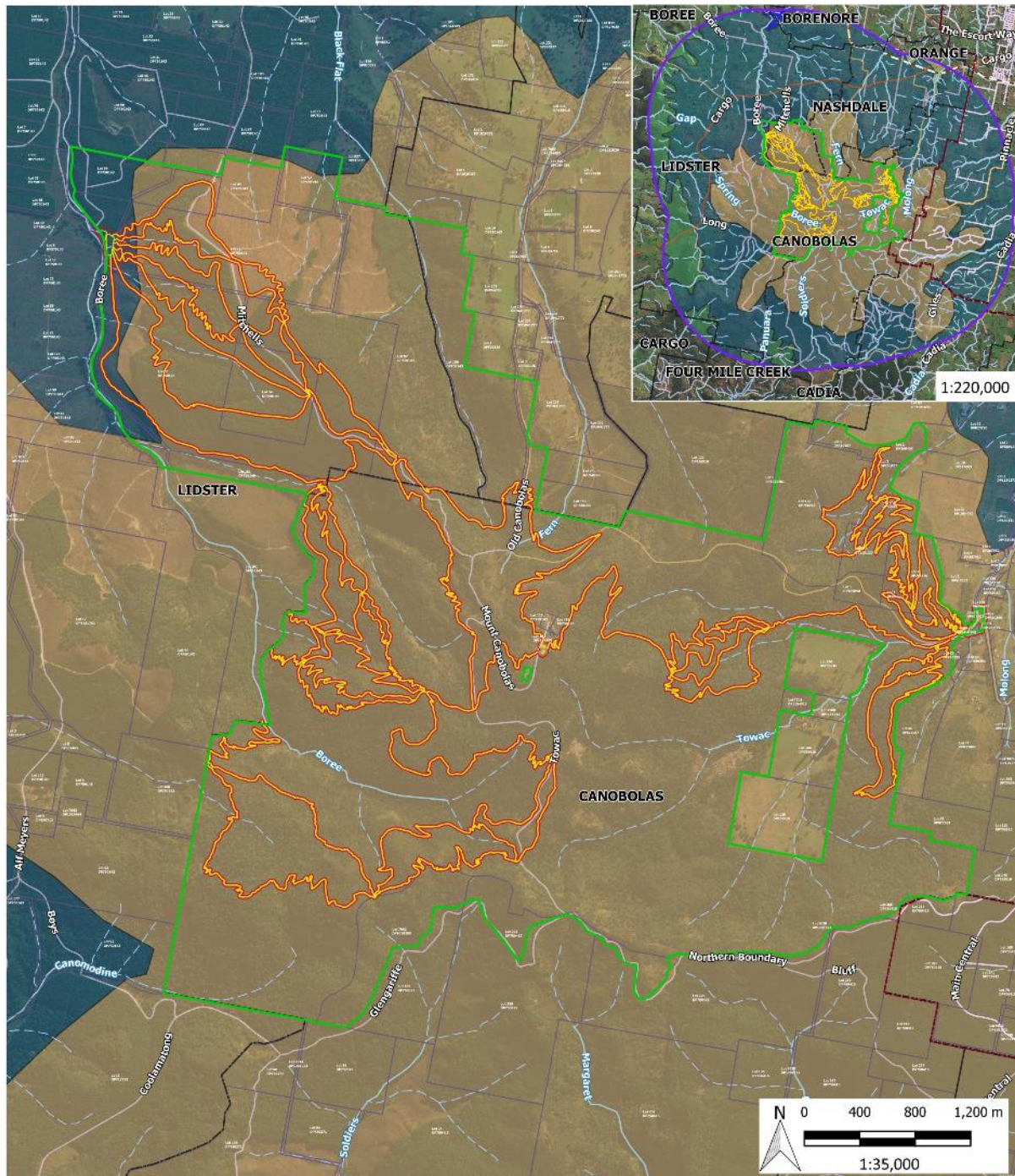
Preliminary Safeguards to be implemented and maintained for land include:

- No vegetation outside the approved direct impact footprint is to be harmed or removed.
- Erosion and Sediment (ERSED) control measures should be implemented and remain in place to:
 - Prevent sediment moving off-site and sediment laden water entering any water course, drainage lines, or drain inlets, and
 - Reduce water velocity and capture sediment on site.
- ERSED controls are to be installed prior to the commencement of works and checked and maintained on a regular basis (including clearing of sediment from behind barriers as required). ERSED control measures are not to be removed until the works are complete, and areas are stabilised.
- Monitoring and response actions with regards to ERSED controls will need to be incorporated within the Construction Environmental Management Plan (CEMP) for the project.

6.2.5 *Scope of the assessment for the EIS*

The impact to land is considered a key issue for the SEARs, and therefore a detailed soils and erosion impact assessment would form part of the EIS. This erosion impact assessment would address:

- Geotechnical investigations.
- Assessment of the risk of erosion and sedimentation according to appropriate ERSED management procedures.
- Assessment of drainage along the trail network.



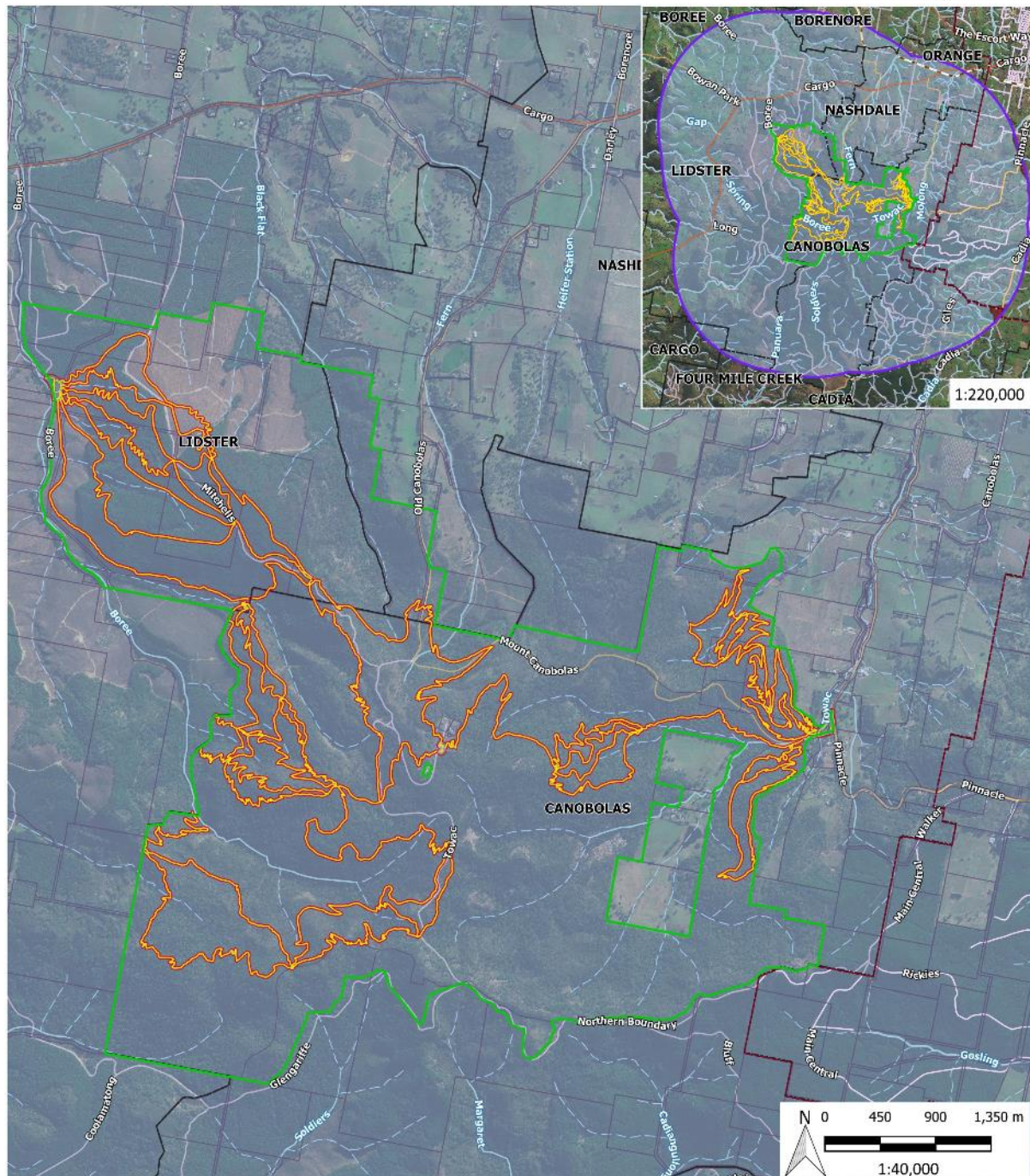
OCC Mountain Bike Trails - Mitchell Landscape Soils within the a 5km radius of the Study Area

Legend

5km Radius	LGA boundary	Local Road	Gully	Canobolas Sheet Basalts
Study Area	Suburb	Sub Arterial Road	Rivulet	Canobolas Slopes
Subject Land	Roads	Waterways	1st & 2nd order unnamed waterways	Mullion Slopes
Subject Site	Arterial Road	Creek	Mitchell Landscape Soils	Wellington - Molong Karst
			Canobolas Peaks	

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Figure 4 Mitchell Landscape Soils mapping for the study area



OCC Mountain Bike Trails - Acid Sulfate Soils within a 5km radius of the Study Area

Legend

- | | | | |
|--------------|---------------|-------------------|--|
| 5km Radius | LGA boundary | Sub Arterial Road | 1st & 2nd order unnamed waterways |
| Study Area | Suburb | Waterways | Acid Sulfate Soils |
| Subject Land | Roads | Creek | Aq(p4) - ASS in inland lakes, waterways, wetlands and riparian zones |
| Subject Site | Arterial Road | Gully | Bn(p4) - ASS in inland lakes, waterways, wetlands and riparian zones |
| | Local Road | Rivulet | Cq(p4) - ASS in inland lakes, waterways, wetlands and riparian zones |

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Figure 6 Acid Sulphate Soils within 5 km

6.3 Aboriginal heritage

6.3.1 Existing environment

The traditional custodians of the Orange district, defined in the Orange Aboriginal Heritage Report, 2012 as a broad area from north of Molong, to South of the Mount Canobolas SCA, are the Wiradyuri people. The Wiradyuri tribe was the largest in the state of NSW, and the 40,000+ year old culture has left many artefacts within the locality.

The first European incursion into the district occurred after May 1813. Occupation of the Orange district (originally called Blackman's Swamp) commenced in the late 1820's and a village at the site of Orange was established in 1846. A comprehensive written record exists of the indigenous people in the Orange area following white settlement and is detailed in the Orange Aboriginal Heritage Report, 2012.

Despite intensified European land-use through pastoralism, agriculture and gold mining, Aboriginal people not only maintained a presence in the Orange district into the 1850s, but sustained cultural practices and links with groups to the east, south and west. Another means by which Aboriginal men (and sometimes women) were able to preserve traditional skills and knowledge was by working as trackers for the local police. Skilled observers of the land, trackers helped to apprehend escaped convicts and find settlers lost in the bush.

The name 'Canobolas' is thought to be derived from the Aboriginal words coona (meaning 'shoulder') and booloo (meaning 'two'). It was used by the Wiradyuri in reference to the twin peaks, known to many as Old Man Canobolas and Young Man Canobolas.

A visual pedestrian inspection, examining the Aboriginal archaeological values of the study area, was undertaken between March and May 2021 by Apex Archaeology and the Registered Aboriginal Parties (RAPs) for the project, as well as a representative of the Orange Local Aboriginal Land Council (OLALC). This assessment was designed to satisfy the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (April 2011)*; the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW, April 2010) (the ACHCRs)*; and the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (September 2010) (the Code of Practice)*.

A basic search of the Aboriginal Heritage Information Management System (AHIMS) database was initially undertaken on 3rd September 2020 by Apex Archaeology for the area. A search box of 15km x 15km was centred over Mt Canobolas with 17 sites being identified within the subject area. This search was repeated in November 2020 with an additional 15 sites being added in the intervening time and again in January 2021, with several more sites having been added.

All known Aboriginal sites at the time of assessment were avoided by the trail design team and Apex Archaeology, and no newly identified sites will be impacted by the proposed mountain bike trail network. These new sites identified as part of the process were given additional buffers, and rerouting of the network was undertaken in the field to avoid these areas. No additional mitigation is necessary, however in the unlikely event Aboriginal cultural material is identified during trail construction an Aboriginal Heritage Management Plan has been recommended to advise on the appropriate

mitigation measures that will need to be implemented. This would be developed in consultation with the RAPs for the project.

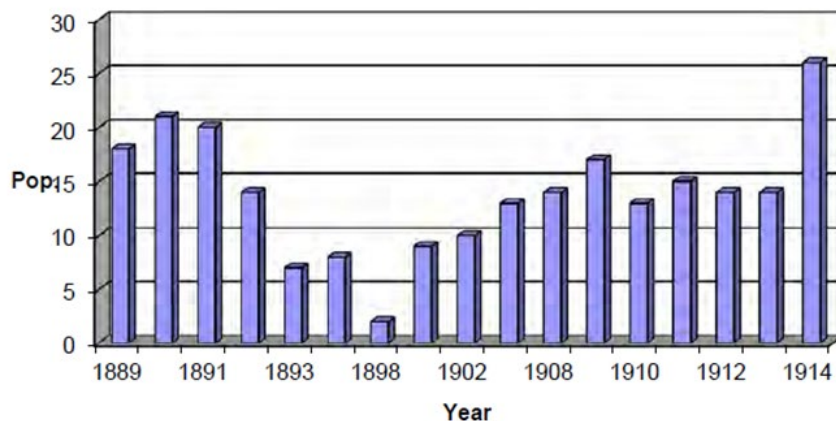


Figure 7 Aboriginal population in Orange between 1889 – 1914 (Orange Aboriginal Heritage Report, 2012)

6.3.2 Potential Aboriginal heritage impact – construction

Through a combination of options analysis and on the ground assessment, the trail network has been designed to avoid impacts to all identified tangible expressions of Aboriginal sites during construction. It is acknowledged that the assessment of impact on intangible cultural and spiritual values is in the process of being completed and can only be determined by the Aboriginal community themselves.

6.3.3 Potential Aboriginal heritage impact – operation

Once constructed, the trail network is not considered likely to impact on any tangible expressions of Aboriginal cultural heritage. However, an assessment of potential impact on intangible cultural and spiritual values is in the process of being completed and can only be determined by the Aboriginal community themselves.

Typically, the specific location of known Aboriginal sites is not made publicly available, and therefore sites are generally not visited regularly. Some sites would be accessible from the proposed trail network, and a number are located along existing trails or picnic areas; these areas are currently being impacted by the ongoing visitation of the area.

There is the potential for climate change to detrimentally effect Aboriginal heritage, particularly due to increased flooding events. The trail network may lead to a potential increase in runoff resulting in larger flows downslope and in waterways, in addition to potential increase in downslope sediment migration which may adversely impact Aboriginal sites.

6.3.4 Environmental safeguards – Aboriginal heritage

Preliminary Safeguards identified to be implemented and maintained for Aboriginal heritage include:

- All identified items on site are to be avoided, and buffer zones maintained, to ensure ongoing protection of Aboriginal heritage objects and places in proximity to the Proposal.
- Potential Artefact Deposits (PADs) or sites recorded during the due diligence investigation are to be clearly identified and avoided during construction.
- Construction crews are to be inducted on what PAD and artefacts may look like whilst undertaking excavations.

- The proposed works must be contained in the area assessed during the due diligence assessment. If the location of the subject site is altered, further archaeological assessment is necessary to determine if the proposed works will impact any Aboriginal objects or archaeological deposits.
- An 'unanticipated finds' protocol must be enacted for the works, namely:
If any Aboriginal heritage items are uncovered during the works, all works in the vicinity of the find must cease immediately, and the Council's Town Planner (Strategic) – Development Services, Manager Building and Environment and an archaeologist are to be contacted to investigate. Works in the vicinity of the find must not re-commence until clearance has been received from those Council officers and the NSW Office of Environment & Heritage. Further archaeological assessment and Aboriginal community consultation may be required prior to recommencement of works.
- Any objects identified on site confirmed to be Aboriginal in origin must be reported to DPIE under Division 1, Section 89A of the NPW Act.

6.3.5 *Scope of the assessment for the EIS*

The impact to Aboriginal heritage is considered a key issue for the SEARs, and therefore a detailed ACHA report would form part of the EIS which would address impacts of the trail network on:

- Known significant Aboriginal cultural heritage
- Potential cultural artifacts not identified through the preliminary assessment process
- Intangible cultural and spiritual values

6.4 Historic heritage

6.4.1 Existing environment

The Mt Canobolas SCA has been identified as a heritage item on the local environment plan pertaining to the environmental value of the site. No other historic heritage items have been identified in the vicinity of the trail network.

Orange has a rich European history, including a number of heritage-listed sites, historic buildings and houses. Captain Percy Simpson named the convict settlement “Blackman’s Swamp” in 1822. British graziers began occupying the area in 1829 and small settlements became larger towns. Blackman’s Swamp was proclaimed a village in 1844 and named Orange in honour of Prince William of Orange. The Gold Rush in 1851 saw Orange become a central trading centre and in 1946, 100 years after it was established as a village, Orange was proclaimed as a minor city.

6.4.2 Potential historic heritage impacts – construction

As the entire SCA is listed as a heritage item, the construction of the trail network will be directly impacting this item. One (1) mine shaft was identified during constraints identification and ground-truthing surveys, however the heritage value of this item is yet to be determined. No other heritage items pertaining to non-aboriginal heritage are known to occur within a 500 m radius of the study area.

6.4.3 Potential historic heritage impacts – operation

No further impacts to the SCA heritage item are anticipated during the operation stage of the Proposal. No other heritage items pertaining to non-aboriginal heritage are known to occur within a 500 m radius of the study area.

6.4.4 Environmental safeguards – historic heritage

Preliminary Safeguards identified to be implemented and maintained for historic heritage include:

- The proposed works must be contained to the area defined during the assessment. If the proposed location is amended, further archaeological assessment may be necessary to determine if the proposed works will impact any items of historical significance.
- Should unanticipated archaeological material be encountered during site works, all work must cease and an archaeologist contacted to make an assessment of the find. Further archaeological assessment may be required prior to the recommencement of works. Any historical objects must be reported to DPIE under Division 9, Section 146 of the Heritage Act.
- No works, vehicle movement or ground disturbance to occur outside the designated subject site.

6.4.5 Scope of the assessment for the EIS

The impact to historic heritage is considered a key issue for the SEARs as the works for the Proposal would occur within a listed heritage area, and therefore a detailed Statement of Heritage Impact (SoHI) report would form part of the EIS which would address impacts of the trail network on the Mt Canobolas SCA heritage item and any other historic heritage items found within the study area.

6.5 Biodiversity

6.5.1 Existing environment

Mount Canobolas is a sub alpine extinct volcanic peak (1,397 m asl) that houses a rich diversity of native flora and fauna species, surrounded by State Forest Pine plantations and agricultural land (Figure 2). The SCA is covered with expansive native vegetation and contains a number of endemic and range-restricted species. The bushfires of 2018 caused considerable changes to the vegetation communities across the mountain, with some areas showing signs of larger impacts than others, including partial to total loss of live overstorey trees, and modified community structures. Dense areas of regeneration are occurring within some heavily fire-affected areas of the trail network, along with extensive weed invasion observed throughout gullies and wetter slopes within the SCA; these include both annual and perennial invasive weed types including heavy infestations of Blackberry (*Rubus fruticosus*) and Serrated Tussock (*Nassella trichotoma*) which are Weeds of National Significance (WoNS), and large areas of Ivy (*Hedera helix*), amongst others. Feral Pig (*Sus scrofa*) herds and activity (scats, diggings) were noted at a number of locations across the SCA along with numerous Red Fox (*Vulpes vulpes*) individuals captured on camera traps during preliminary ecological surveys. Additional pest fauna species individuals have likely moved into the SCA, in response to FCNSW harvesting on adjacent blocks and following the fires, in search of forage and shelter.

Glenwood State Forest is a Radiata Pine (*Pinus radiata*) plantation of varying ages ranging from newly harvested coupes to maturing lots with scattered patches of native vegetation and regrowth occurring throughout. State Forest areas contained heavy weed infestations including WoNS and Priority weed species including Serrated Tussock (*Nassella trichotoma*), Blackberry (*Rubus fruticosus*), and Broom Rape (*Orabanche minor*).

Hunter (2000; 2002) has defined seven (7) vegetation communities within the SCA, with Porteners (2018) recognising five (5) main community types across the SCA. Central Tablelands PCT mapping indicates nine (9) PCTs occurring across the study area (Figure 8). Medd and Bower (2019) reviewed the vegetation present against currently described Plant Community Types (PCTs) and identified seven (7) main plant community types present on the site, suggesting the mapping does not entirely align, which is consistent with the findings of the current surveys being undertaken. However, for the purposes of this report, the community types defined by Porteners and the PCTs defined by Medd and Bower have been used as they are the most recent, with mapping presenting the Central Tablelands PCTs.

The PCT's present within the SCA align with three (3) Threatened Ecological Communities (TEC's):

- *Tableland Basalt Forest in the Sydney Basin and South Eastern Highlands Bioregions Endangered Ecological Community (Tableland Basalt Forest).*
- *Werriwa Tablelands Cool Temperate Grassy Woodland in the South Eastern Highlands Bioregion Critically Endangered Ecological Community (Werriwa Tablelands Grassy Woodland).*
- *Mt Canobolas Xanthoparmelia Lichen Community*

It should be noted that further assessment as part of the Biodiversity Development Assessment Report (BDAR) being prepared for the Proposal is likely to reveal more clarification on the type and extent of PCT's and TEC's present within the trail network Subject Land.

Extensive rocky outcrops and features throughout the SCA known to support the *Mount Canobolas Xanthoparmelia Lichen* TEC have been avoided by the trail network design. However, rocky outcrops

are a natural and regular feature of the SCA, and a number of smaller outcrops and individual rocks with lichen species visible that may conform to the TEC do occur within the trail network Subject Land.

Priority weeds listed under the NSW Biosecurity Act 2015 for Cabonne LGA, including Blackberry (*Rubus fruticosus species aggregate*), St John's Wort (*Hypericum perforatum*), Broomrape (*Orobancha minor*) and Serrated Tussock (*Nassella trichotoma*), occur throughout the study area. Extensive areas of Blackberry occur along the trail alignment within both the SCA and SF, with St John's wort, and Broomrape occurring as small patches throughout. Serrated tussock was recorded predominantly within the SF, with smaller patches present within the SCA.

A database search for the site identified three (3) threatened flora species and twenty (20) threatened fauna species recorded within a 10 km radius of the study area (Bionet 2021; Figure 9). A further seven (7) species of threatened flora and twelve (12) species of threatened fauna are predicted to occur within the study area (PMST 2021).

One (1) species of threatened flora, Silver-leaf Candlebark (*Eucalyptus Canobolensis*), was recorded at higher elevations within the study area. Numerous regenerating juveniles of this species occur along the proposed trail network, a result of vigorous regenerative response to recent bushfires within the SCA. Six (6) threatened fauna species were recorded during preliminary surveys within the study area including Barking Owl (*Ninox connivens*), Dusky Woodswallow (*Artamus cyanopterus*), Flame Robin (*Petroica phoenicea*), Powerful Owl (*Ninox strenua*), Yellow-bellied Glider (*Petaurus australis*) and Yellow-bellied Sheath-tailed Bat (*Saccolaimus flaviventris*).

A number of notable, rare and endemic species have also been recorded for the SCA. As described in the NPWS (2019) Orchid Monitoring Report, to date thirty-four (34) species of native orchids are known to occur in the Mt Canobolas SCA. Orchid species recorded on Mt Canobolas (Bower, 2019), but not in nearby lower altitude areas include:

- *Caladenia boweri*, Canobolas Spider Orchid (no Bionet records available)
- *Prasophyllum canobolense*, Canobolas Leek Orchid (no Bionet records available)
- *Diuris sp. aff. chryseopsis* (recorded during current survey November 2020, and 3 records previously recorded Bionet search Jan 2021)
- *Dipodium sp. aff. atropurpureum* (recorded during current survey December 2020, and 10 records previously recorded – Bionet search Jan 2021)
- *Gastrodia sesamoides*, Potato Orchid (recorded during current survey November 2020) (7 records previously recorded Bionet search Jan 2021)
- *Pterostylis aestiva*, Long-tongued Summer Greenhood (2 records previously recorded Bionet search Jan 2021)
- *Pterostylis decurva*, Summer Greenhood (no Bionet records available)
- *Pterostylis laxa*, Antelope Greenhood (no Bionet records available)
- *Pterostylis coccinea*, Scarlet Greenhood (no Bionet records available)

The following species have been proposed for listing as threatened species under the BC Act:

- *Prasophyllum canobolense* (Canobolas Leek Orchid)
- *Caladenia boweri* (Canobolas Spider Orchid).

Additional species which may be recognised as endemic to Mt Canobolas (Medd & Bower, 2019; Bower, 2019) in the future include:

- *Bulbine glauca* (no Bionet records available)
- *Craspedia sp. aff. lamicola* (1 record previously recorded; Bionet search January 2021)
- *Asterolasia sp* (10 records previously recorded; Bionet search January 2021)
- *Melichrus sp* (8 records previously recorded; Bionet search January 2021)
- *Phebalium sp* (29 records previously recorded; Bionet search January 2021)

Varying densities of hollow-bearing trees, large habitat trees, wombat burrows, and waterways occur throughout the study area. No trees are to be impacted as a result of the trail network construction. However, impacts to these features as a result of infrastructure upgrades, such as carparks and visitor centres, are yet to be determined – the proposed design estimates a direct impact area for development of ancillary infrastructure of **1.77 ha, 0.27 ha** of which is mapped as native vegetation. The trail network also bisects a number of unnamed waterways and creek lines within the study area.

There is also potential for vegetation within the SCA portion of the study area to be classified as ‘potential koala habitat’ based on identification of feed tree species in accordance with *State Environmental Planning Policy No 44 – Koala Habitat Protection*. No records of Koala occur within the locality of the Proposal; and no evidence of Koala was recorded within the study area during surveys, and only minor occurrences of Schedule 2 Feed Trees occur within the study area. A broader suite of species would be considered as part of the detailed biodiversity investigations for the EIS.

6.5.2 Potential biodiversity impacts – construction

The trail network will directly impact on one (1) or more TEC’s present within the SCA. Impacts to Silver-leaf Candlebark saplings are also likely to occur at higher elevations throughout areas of the trail network affected by recent bushfires. Impacts to other threatened flora species are also possible. Vegetation removal would also contribute to the loss of some habitat resources within the direct construction footprint, however, impacts to hollow-bearing or large habitat trees will be avoided for the trail construction. Impacts to species and habitat resources for associated facilities has yet to be determined.

Construction of the Proposal would need to take into consideration the Limits of Acceptable Change (further detail in Section 6.7.1), and use the methodology identified in the document to avoid or manage over-tourism within the SCA.

Construction of the Proposal has the potential for the following additional biodiversity related impacts:

- Potential impacts on habitat corridor and wildlife connectivity within the locality
- Possible introduction or spread of environmental weeds or diseases
- Possible increase in mortality/injury to fauna species during Proposal construction and operation
- Potential sediment run-off into adjacent vegetation and animal habitats
- Noise and vibration disturbances to fauna
- Increased risk of erosion resulting in the widening of tracks which in turn can potentially affect surrounding native flora and fauna
- There is the potential for trail users to go off the designated trail, thereby promoting trackside biodiversity degradation.

6.5.3 Potential biodiversity impact – operation

Operational impacts on biodiversity for the trail network are considered to be low. Nevertheless, there remains potential for the following additional biodiversity related impacts:

- Possible introduction or spread of environmental weeds or diseases
- Possible increase in mortality/injury to fauna species from increased vehicular activity on access roads
- Potential risk of fauna injury/mortality from trail use
- Potential sediment run-off into adjacent vegetation and animal habitats
- Noise and vibration disturbances to fauna

6.5.4 Environmental safeguards – biodiversity

Preliminary Safeguards identified to be implemented and maintained for biodiversity include:

Weed and Pest Management

- Develop and implement an active weed and pest management plan prior to construction commencing, to reduce the risk of weed spread and safety issues arising from pest and weed presence (e.g. pigs and dense blackberry infestations).
- Declared weeds must be managed according to requirements under the Biosecurity Act 2015. It is recommended that all Weeds of National Significance should be managed to ensure they do not spread, and where possible are eradicated.
- Any use of herbicide is to be safe for environmentally sensitive areas and registered for use within waterways to reduce potential for impacts to aquatic fauna and amphibia.
- Weed control to extend as far beyond the impact area as practicable, to provide longer term control and prevent the newly constructed trails from being grown over.
- Use of Aboriginal cultural burning and other traditional land management practices to be investigated as part of immediate and longer-term weed and pest management for the site.

Timing of Vegetation Clearing

- Where practicable, it is recommended to time the works outside of key breeding (e.g. fledging of active nests/roosts) and winter torpor (microbat) seasons (approximately June to January) for species likely to utilise the site to avoid nest abandonment, injury or death to native fauna.

Vegetation Removal and trail construction

- Clearly delineate vegetation to be removed/retained with the assistance of an ecologist, or similarly qualified professional, and induct all site personnel as to the approved extent of clearing. Ensure that no clearing of vegetation occurs outside of the marked boundary.
- The removal of habitat trees is to be avoided where possible. Where any trees requiring removal contain hollows, nests or other signs of occupation (habitat trees), a staged clearing approach must be undertaken where hollow limbs are removed carefully and incrementally by a qualified tree surgeon/arborist. Care should be taken to inspect limbs for fauna prior to their removal.
- Prior to clearing, a preclearance survey should be undertaken including inspection of hollows, nests, burrows and / or dens to confirm occupation by fauna. Care should be taken to identify nests and/or roosting sites. If fauna habitat is present, the project ecologist should provide further advice prior to clearing.
- Ensure the presence of an ecologist or fauna spotter/catcher at all times during pre-clearing and clearing activities to remove and relocate wildlife as necessary, and to attend to any wildlife that are injured as a result of works.
- Removal of hollows is to be avoided where possible. Any tree hollows removed are to be replaced with artificial hollows (nest boxes or augmented hollows) at a rate of 2:1. The size of augmented hollow entrances is to be suited to the requirements of the threatened species

that occupy the area/matched to those that have been removed. Nest boxes should be erected near the habitat to be removed in a suitable position prior to the commencement of vegetation clearing works. The project ecologist should be consulted to determine appropriate size and number to be erected.

- Felled trees / large limbs must be placed strategically and in proximity to the work site to provide refuge and potential habitat in the understorey whilst ensuring no further damage to surrounding vegetation. Placement of logs and felled trees will also aid in the regeneration of the area, provide soil stabilisation and direct surface water flows.
- Where additional vegetation removal is proposed this must first be assessed to consider the cumulative impacts against the approved clearance footprint and approved and supervised by a qualified ecologist.

Vegetation protection

- Clearly delineate vegetation to be removed/retained with the assistance of an ecologist, or similarly qualified professional, and induct all site personnel as to the approved extent of clearing. Ensure that no clearing of vegetation occurs outside of the marked boundary.
- No-go zones identified are to be avoided.
- The presence of a suitably qualified arborist (or equivalent) is recommended during earthworks occurring near retained trees to avoid rootzone impacts.

Rehabilitation

- Revegetation activities will be undertaken using native species sourced from local seed wherever possible. Areas to be re-seeded will be marked in the CEMP / OEMP as a record of rehabilitation efforts made. Vegetation cover should be returned to the site within a reasonably practicable timeframe post clearing to reduce soil exposure and loss.

General

- Vehicles and machinery to work from established roads and not to extend beyond the direct impact footprint.
- Ensure vehicles and machinery are cleaned and checked for any traces of weeds, seeds and mud prior to entering work site; all machinery and vehicles are to be clean and inspected prior to arriving onsite to reduce the spread of weeds and disease (e.g. *Phytophthora cinnamomi*) to the site.
- Locate stockpile sites away from waterways, drainage lines and native vegetation. Ensure these are appropriately stabilized in accordance with the 'Blue Book' (Landcom 2004).
- Appropriate erosion and sediment migration reduction / control measures should be in place.
- Heavy vehicles are not to be parked under tree drip lines/ leaf canopy to avoid compaction of soil, which is damaging to mature native trees and can cause dieback or tree mortality.
- Strict hygiene protocols must be followed to ensure that no environmental weeds spread around during works or are introduced to site as a result of the proposed works. If weeds are accidentally transported to site, or identified during construction activities, all weed material should be immediately contained and removed from site.
- Ensure that vehicles stay on the marked tracks and do not enter areas that are not within the delineated impact area (2 m corridor).
- Ensure appropriate erosion prevention and sediment reduction measures should be in place and that all trails constructed are stabilised progressively to reduce soil exposure times.

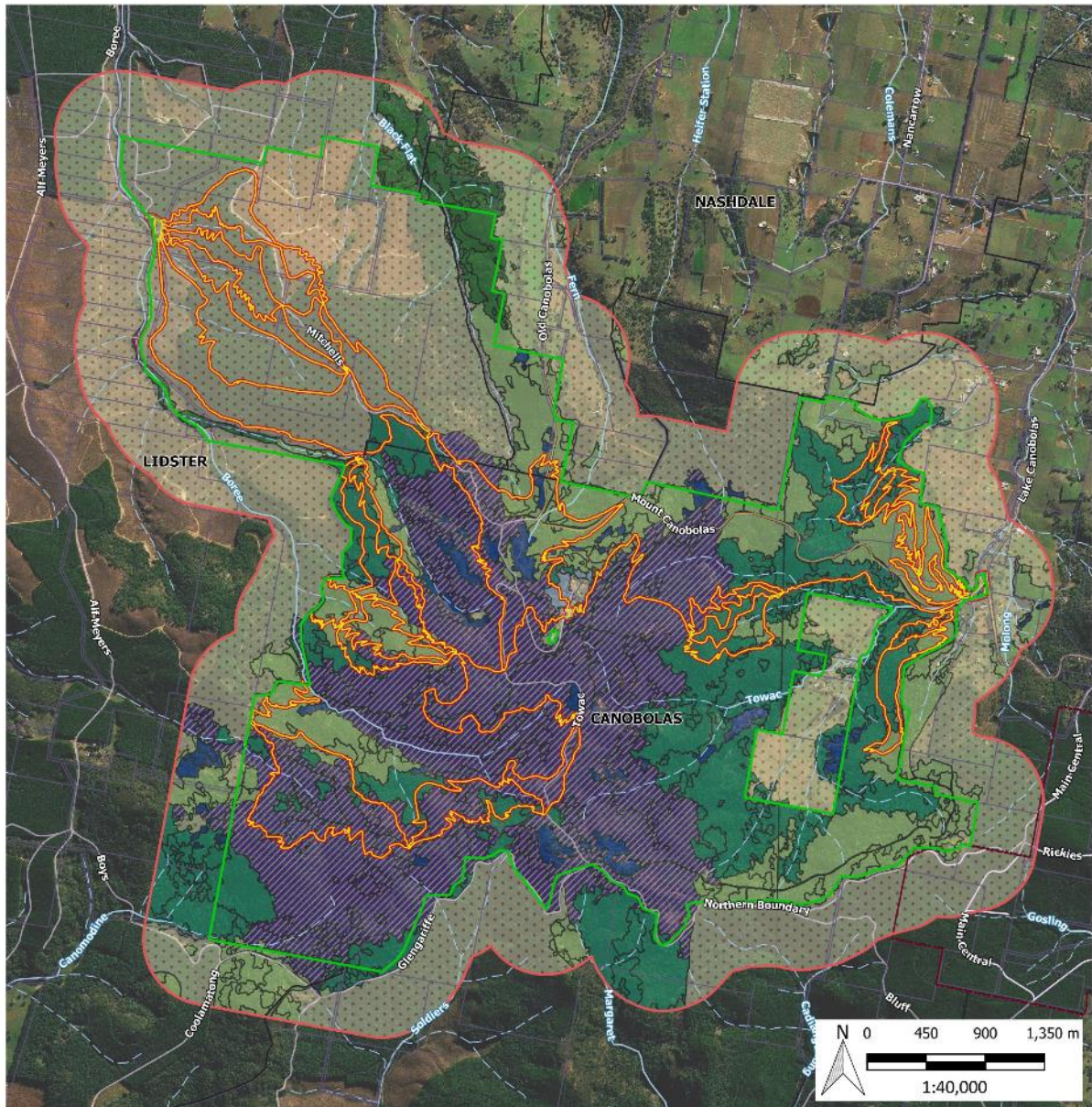
- Heavy vehicles are not to be parked under tree drip lines/ leaf canopy to avoid compaction of soil.

6.5.5 Scope of the assessment for the EIS

Biodiversity is considered a key issue for the SEARs and a detailed biodiversity impact assessment would accompany the EIS. Biodiversity impacts related to the Proposal would be assessed in accordance with the BAM and section 7.9 of the BC Act and documented in a BDAR. The BDAR must include information in the form detailed in the BC Act (s6.12), Biodiversity Conservation Regulation 2017 (s6.8) and BAM, unless OEH and DPIE determine that the proposed development is not likely to have any significant impacts on biodiversity values. A referral to the Commonwealth Department of Environment and Energy may also be required to satisfy assessment obligations under the EPBC Act.

The BDAR would assess the following **construction** and **operation** biodiversity aspects of the Proposal:

- A detailed impact assessment for all threatened biota, including populations and ecological communities, known or predicted to occur within the study area and with the potential to be impacted by the Proposal, as required under the BC and EPBC Acts.
- Investigations into the design process for avoiding and minimising impacts on threatened biota (or their habitat), as far as practicable.
- Identification of PCTs to be impacted and requiring offsetting.
- Quantification of impacts of the Proposal on biodiversity values and generation of credit profiles for ecosystem credits and species credits within the study area.
- Generation of a credit price report for payment to the Biodiversity Conservation Trust (BCT) as an indication of offset costs.
- Consideration of appropriate avoidance, minimisation, and mitigation measures to be put in place for both construction and operation to ensure the Proposal does not have undue impacts on biodiversity, including but not limited to recommendations for:
 - Construction scheduling
 - ERSER controls
 - Acoustic protections for construction
 - Operating times / seasons
 - Auditing and maintenance schedules
- Recommendations for ongoing weed and pest management regimes, including using Aboriginal cultural heritage techniques where feasible, such as cultural burning, in respect of the significant Aboriginal cultural heritage value of the site.



Mt Canobolas Mount Bike Trails - Plant Community Types within a 500m radius of the Study Area

Legend

- 500m Radius
- Study Area
- Subject Land
- Subject Site
- LGA Boundary
- Suburb
- Lot boundary
- Roads**
- Arterial Road
- Local Road
- Sub Arterial Road

Waterways

- Creek
- 1st & 2nd order unnamed waterways

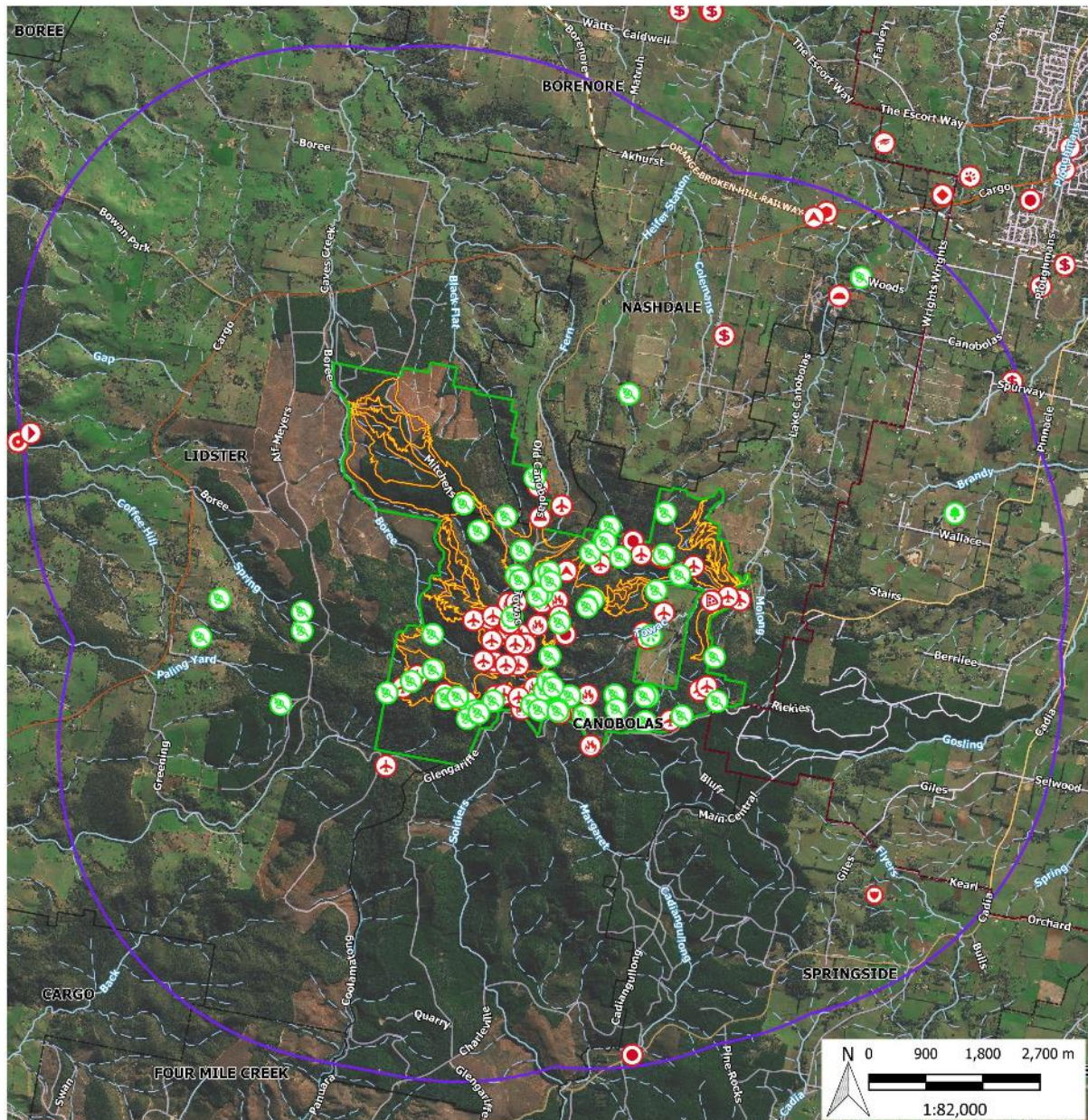
Central Tablelands PCT's

- PCTID: 0 - Non Native
- PCTID: 1191 - Snow Gum - Candle Bark woodland on broad valley flats of the tablelands and slopes; South Eastern Highlands Bioregion
- PCTID: 1197 - Snow Gum - Mountain Gum tussock grass-herb forest of the South Eastern Highlands Bioregion

- PCTID: 266 - White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
- PCTID: 287 - Long-leaved Box - Red Box - Red Stringybark mixed open forest on hills and hillslopes in the NSW South Western Slopes Bioregion
- PCTID: 727 - Broad-leaved Peppermint - Brittle Gum - Red Stringybark dry open forest on the South Eastern Highlands Bioregion
- PCTID: 731 - Broad-leaved Peppermint - Red Stringybark grassy open forest on undulating hills; South Eastern Highlands Bioregion
- PCTID: 759 - Burgan - tea-tree - Fringe Myrtle dry heathland on rocky outcrops; South Eastern Highlands Bioregion

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Figure 8 Mapped PCTs of the study area



OCC Mountain Bike Trails - Threatened Species within a 5km Radius of the Study Area

Legend

- 5km Radius
- Study Area
- Subject Land
- Subject Site
- LGA boundary
- Suburb
- Arterial Road
- Local Road
- Sub Arterial Road
- Creek
- Gully
- Rivulet
- 1st & 2nd order unnamed waterways

Threatened Species

- Black Gum
- Diamond Firetail
- Dusky Woodswallow
- Flame Robin
- Greater Glider
- Grey-headed Flying-fox
- Koala

- Large Bent-winged Bat
- Large-eared Pied Bat
- Little Eagle
- Little Lorikeet
- Pied Honeyeater
- Powerful Owl
- Prostanthera gilesii
- Scarlet Robin

- Silver-Leaf Candlebark
- Speckled Warbler
- Squirrel Glider
- Superb Parrot
- Varied Sittella
- White-throated Needletail
- Yellow-bellied Glider
- Yellow-bellied Sheath-tail-bat

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Figure 9 BioNet- threatened species records for the locality

6.6 Access

6.6.1 Existing environment

Orange is situated on the Mitchell Highway, which links the city to several towns including Molong, Wellington, Dubbo and Bourke to the northwest, Bathurst (60 km) and Sydney (260km) to the east, and Parkes due west (100 km). The town is located approximately 15 km northeast of the study area.

From Orange, the study area can be accessed via a number of roads, including Cargo Road, Old Canobolas Road, Lake Canobolas Road, Mount Canobolas Road, and Pinnacle Road. Four-wheel drive access is also achievable using the network of fire trails throughout the State Forest and SCA (Figure 10). The study area contains a number of paved and unpaved roads that are frequented by locals and tourists recreationally, with four (4) small formal carparks and several other informal pullover areas / carparks located throughout the SCA. The State Forest does not currently contain any carparking facilities. Currently no public transport services are available for the study area.

One (1) private property occurs within the Study Area bounded by the SCA with access to this property made along Pine Ridge Fire Trail. The Mountain Teahouse also occurs at the entrance to the SCA. There are no other private access or private property identified within the study area.

The proposed trail network intersects the roads and fire trails at several points within the study area, with many trail hubs located in close proximity to an existing carpark facility.

6.6.2 Potential access impact – construction

The primary impacts on access associated with the Proposal are likely to be disturbance to local and tourist traffic movements accessing Mount Canobolas for recreational activities. Construction of the trail network would likely have minimal impact on traffic movements during construction, as construction would take place outside of the road corridor. However, construction of associated infrastructure throughout the study area may temporarily impact on traffic movement.

6.6.3 Potential access impact – operation

An increase in recreational users to the study area is a key outcome for this Proposal. As such it is likely that an increase in traffic flow into and around the park, and throughout the township of Orange, will occur as a result of the operational phase of the Proposal.

Within the SCA this is likely to require expanded parking facilities near major trail hubs to cater for trail users and other recreational visitors to the SCA. The increase in impact areas for this is estimated to be minor, with the total impact footprint for infrastructure (exclusive of current carparking areas and amenities) approximately 1.77 ha; 0.27 ha of this is mapped as native vegetation.

A public shuttle bus has been proposed to shuttle prospective recreational users, including hikers and mountain bikers from the town to the SCA. This addition would reduce the amount of traffic entering the study area, particularly during events, as well as reduce the requirements for carparking spaces. People riding bikes along access roads will also need to be considered, as this may increase from current usage levels.

6.6.4 Environmental safeguards – access

Preliminary Safeguards identified to be implemented and maintained for access include:

- Notify residents, landholders and other stakeholders of timing of works, including erection of signage to prevent vehicles entering the study area during construction activities.
- A Traffic Management Plan (TMP) will be prepared as part of the standard safety and site induction materials within the project CEMP, to ensure that staff undertaking the road works

are suitably inducted to site, that traffic flow is minimally disrupted during the works and that appropriate traffic safety measures are employed.

- The location of designated parking areas and access routes must be considered in regards to other environmental constraints such as those relating to land (Section 6.2), Water (Section 6.10), and Amenity (Section 6.9).
- During construction, the contractor shall each morning, prior to commencing work, ensure all signage is erected in accordance with the TMP and is clearly visible to any potential motorists. Each evening, upon completion of work, the contractor is to ensure signage is either covered or removed as required.
- Where possible, current traffic movements and property accesses are to be maintained during the works. Any disturbance is to be minimised and adequately communicated to the impacted resident/property owner.
- Prior to commencement of works on site, the contractor will inform neighbouring properties of proposed works, anticipated impacts and site contact information. Notification can be provided by various means including, but not limited to letterbox drops, contact via telephone, and notification of works on the Council website.
- Any complaints received are to be formally recorded, investigated, rectified and monitored, and forwarded to the Superintendent as soon as possible

6.6.4.1 *Scope of the assessment for the EIS*

Access is anticipated to be a key issue for the Proposal and a specialist traffic and transport study would be required to inform the EIS. The specialist study would identify potential traffic-related impacts associated with the project and nominate mitigation measures to minimise identified impacts.

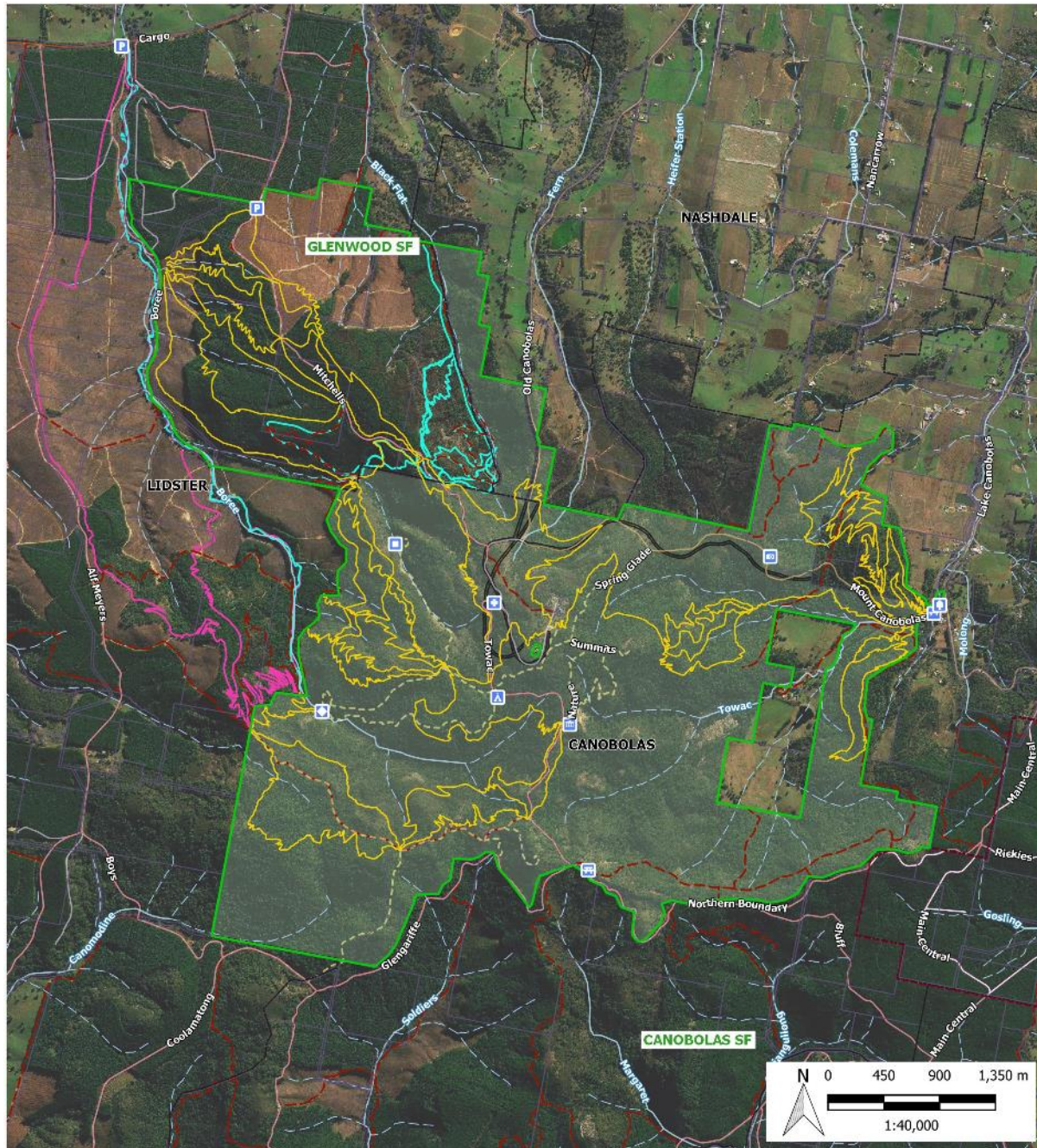
The specialist study would assess the following **construction** traffic impacts of the Proposal:

- Consideration of route identification and predicted transport movements.
- The number, frequency and size of both construction and operational related vehicles (passenger, commercial and heavy vehicles).
- The nature of existing traffic (types and number of movements) on construction access routes (including consideration of peak traffic times and parking arrangements).
- Transportation of materials and equipment to site.
- Access constraints and impacts on recreational users of the SCA and State Forestry workers within Glenwood SF.
- Access arrangements to the proposed works areas as well as any temporary access points and constraints (e.g. Forestry harvesting scheduled during construction within the SF)
- The need to close, divert or otherwise reconfigure elements of the road and walking trails
- associated with construction of the project.

The specialist study would assess the following **operational** traffic impacts of the Proposal:

- Forecast travel demand and traffic volumes for the Proposal and the surrounding road.
- Proposed public shuttle network to and from the study area.
- Carparking and infrastructure requirements and discrepancies between proposed facilities and modelled parking requirements.
- Performance of the primary access intersections.

- Performance of access roads including safety standards and requirements for upgrades to road infrastructure between the study area and Orange, and within the study area.
- Wider transport interactions (local and regional roads)
- Impacts on pedestrian access and safety within the study area.
- Opportunities to integrate cycling and pedestrian elements with surrounding infrastructure and networks surrounding the study area and the broader locality.



OCC Mountain Bike Trails - Existing Transport and Tourist Infrastructure within the Study Area



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Figure 10 Existing roads and transport infrastructure

6.7 Social

6.7.1 Existing environment

Orange is a city in the Central West region of NSW with an estimated population of 39,283 (June 2021). The city is a well-known fruit growing district, producing pears, apples, plums, cherries, peaches, apricots and other stone fruit. The successful agricultural industry in the region can in part be attributed to the rich volcanic soils surrounding Mount Canobolas.

Mount Canobolas is a popular destination for locals and visitors to the region, with the summit affording visitors the highest vantage point in the region. The SCA also offers a campground at the Federal Falls trail head, a network of walking trails and picnic facilities, and birdwatching.

Mountain biking has been identified as one of the fastest growing recreational activities, both in Australia and internationally. In Australia Mountain Bike Australia (MTBA) reported an increase of 60% in memberships between 2015 to 2020 (GHD Advisory, 2021).

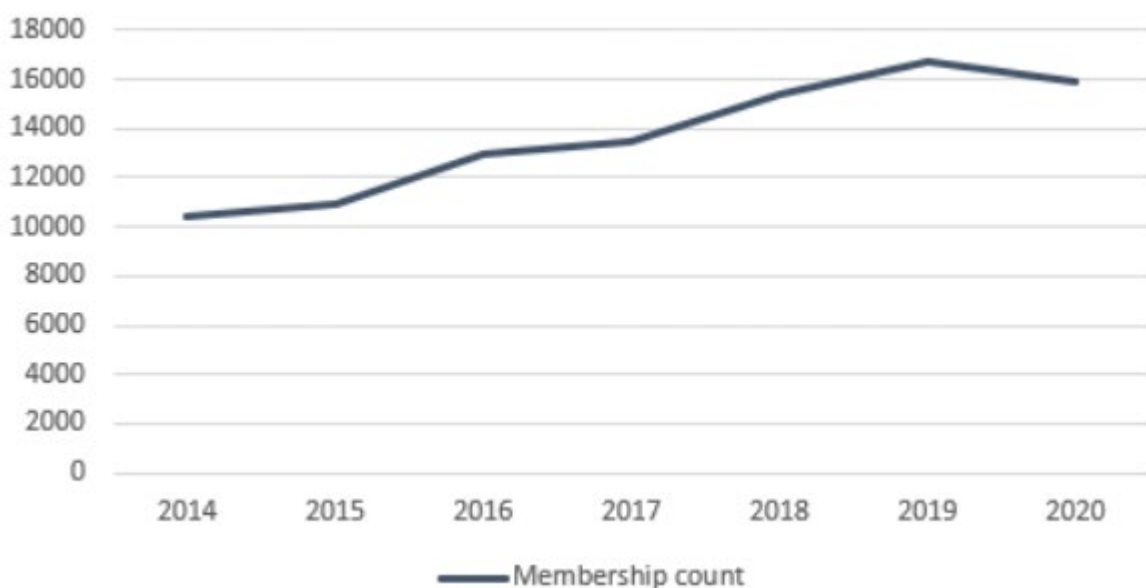


Figure 11 MTBA membership count (GHD Advisory 2021)

Limits of Acceptable Change

Responsible tourism partnerships *Limits of Acceptable Change* (Goodwin 2019) examines the range of carrying capacity methodologies developed for transport, rangeland ecology and tourism used in national parks. Through this publication, the most useful methodology identified for avoiding or managing overtourism within national parks is generally Limits of Acceptable Change (LAC).

It states that the challenge for developing and managing protected areas is to plan for tourism without degrading the socio-cultural and physical environment on which it depends, whilst generating income to meet the objectives of the conservation and preservation of natural and cultural resources. “It is important to remember that carrying capacity is not ‘a fixed value based on tourist presence’ (Cooper et al, 2008:230). It is a dynamic, fluid concept, dependent upon and influenced by a multitude of factors.” These factors include both ‘local’ factors coming from the site itself and ‘alien’ factors such as tourists visiting the park, and how tolerant the locality is of these factors and their particular characteristics and activities.

The philosophy surrounding LAC is that change is an inevitable consequence of resource use, and that a framework is required to tackle resource management problems from the perspective of the extent

to which change is acceptable. The LAC model was developed for managing protected landscapes by determining what environmental impacts from 'desirable' social activities are acceptable, and then determining management actions to ensure that the activities remain constrained within the LAC.

Defining the LAC related to the Proposal would help inform management decisions for the site and help define roles of responsibility and timeframes for management actions between the relevant stakeholders.

6.7.2 Potential social impacts – construction

Potential impacts on social considerations from the construction phase of the trail network include:

- Impacts of increased traffic on recreational users within the SCA
- Temporary disruption to existing walking trails (expected to be minor and short-lived)

6.7.3 Potential social impacts – operation

A wide range of environmental, social and health benefits are documented, including increasing access to local trails in local open spaces creates a sense of connection between the land and the community and fosters a long-term positive outcome for conservation of the area. GHD Advisory (2021) list a number of social and health benefits, including:

- Improved mental and physical health outcomes (in turn health care costs and enhanced productivity).
- Increased community connection and reduced social isolation.
- Opportunities for friends and family to socialise in a healthy environment.
- Provides an 'outdoor classroom' for children to learn about culture, history and nature.
- Provides opportunities for people to volunteer and cooperate to achieve a positive outcome.
- Reduced risk of 'homemade' trails being built – posing risk to safety of users.

6.7.4 Environmental safeguards – social

Safeguards to be implemented and maintained for social impacts include:

- The construction site is to be left in a clean and tidy manner at the end of each workday.
- Disruption of traffic and property access is to be minimised wherever possible.
- Considerate construction practices are to be implemented for all aspects of the project, including but not limited to:
 - Expediting the construction period as much as practicable
 - Minimising time spent in front of private residences, businesses and/or public facilities
 - Minimising noise, air quality and traffic impacts on neighbouring properties and the wider community
 - Maintaining a tidy construction site and respecting private property
- All construction works sites should be left in a tidy manner at the end of each workday.
- Road works are to be avoided and/or appropriately managed during times of increased traffic flow (school pick up and drop off/ peak tourist season or during harvest, as applicable).
- The local community is to be kept informed of work plans, and any concerns raised by the community or local businesses or landholders are to be promptly addressed.

6.7.5 Scope of the assessment for the EIS

Socio-economic considerations are a key issue for the SEARs and a detailed social impact assessment would be conducted to assess impacts of the Proposal on local and regional communities and would accompany the EIS. The assessment would include:

- A description of the socio-economic profile for the communities and businesses surrounding the Proposal.
- Identification of community values that may be affected by the Proposal including local access to the study area, amenity and character of the study area, and business and industry opportunities.
- Detailed assessment of the potential impacts (positive and negative) of the Proposal on the socioeconomic values of the study area for both construction and operation, and parties likely to benefit. Identification of the LAC associated with the Proposal and incorporating this principle into identifying an appropriate management strategy for the study area, including measures to enhance the Proposals benefits and avoid or mitigate potential impacts.

6.8 Economic

6.8.1 Existing environment

A large industrial complex, located approximately 20 km south of Orange, is the Cadia gold mine, an open cut gold and copper mine. It is the second largest open cut mine in Australia and is a major employer in the region, employing approximately 4.2 % of the employed people in Orange. Approximately 60 % of the population was employed full-time at the time of the 2016 census. The unemployment rate was approximately 6.5 %. The most common occupations in Orange (State Suburbs) included Professionals 21.0 %, Technicians and Trades Workers 14.7 %, Clerical and Administrative Workers 13.0 %, Community and Personal Service Workers 11.8 %, and Labourers 10.8 % (ABS, 2021).

Vineyards and wineries are a rapidly expanding industry in the locality which in turn supports Orange's status as a prominent tourist destination.

The Proposal is anticipated to have a Capital Investment Value (CIV) of greater than \$10 million, and is anticipated to provide an economic return to the region of \$20 Million over 10 years (Rede Consult, 2017).

6.8.2 Potential economic impacts – construction

Potential impacts on economic considerations from the construction phase of the trail network include:

- Increased patronage of local accommodation and services to house workers during the construction stage of the Proposal

6.8.3 Potential economic impacts – operation

Previous investigations into the economics of mountain bike trail development conducted for the site (RedeConsult 'Economic Value Of Mountain Bike Tourism To Orange' 2014 in World Trail 2016) concluded that the development of a trail network at Mt. Canobolas would provide:

- The creation of 18 FTE jobs and \$1.2 million in household income and generate an additional \$2.3 million to the Orange economy when measured as gross regional product.
- Increased health benefits for the community.
- Increased visitation to existing tourist activities in the Orange region.
- A positive benefit/cost ratio and be an efficient use of funds by OCC.

As the popularity of MTB continues to grow the positive social, health, and economic benefits have been increasingly documented. Many MTB destination case studies both nationally and internationally verify direct positive economic impacts felt within local communities from increased visitation and spending associated with the MTB trails. As an example, the Blue Derby trail network in northeast Tasmania showcases economic returns multiple that of initial and ongoing investment. For instance, in 2015, \$3.1 million dollars was invested into the Blue Derby trail network with an estimated annual return of \$30 million into the Tasmanian economy from the 30,000 + individuals who visited the trails that year (GHD 2015 in World Trail 2016).

6.8.4 Environmental safeguards – economic

Safeguards to be implemented and maintained for economic impacts include:

- All materials purchased for the project are to be of highest quality and most sustainable as possible, to reduce impacts to community and rate-payers through replacement of low-quality or fault equipment in the future.
- Quality assurance is to be applied to all aspects of the project, including design and construction to ensure best value for LGA constituents.

6.8.5 *Scope of the assessment for the EIS*

Economic considerations are a key issue for the SEARs and a detailed economic impact assessment would be conducted to assess impacts of the Proposal on local and regional communities and would accompany the EIS. The assessment would include:

- A detailed economic impact assessment to determine the estimated monetary return and employment impact to the region.
- Detailed assessment of the potential impacts (positive and negative) of the Proposal on the economic values of the study area for both construction and operation, and parties likely to benefit.

6.9 Amenity

6.9.1 Existing environment

The study area exists within a State Conservation Area and the active Glenwood Forestry pine plantation. These areas are subject to differing intermittent levels of noise and vibrational impacts from a variety of sources. Within the SCA, variable vehicular and human traffic occur along roadways and walking tracks. Overall, the level of noise exposure within the SCA is generally low.

Glenwood SF is currently exposed to higher levels of noise on an intermittent basis due to the presence of dirt bike riders and large harvesting and haulage machinery during forestry operations. General background levels within the SF are generally low.

The visual amenity of the Mount Canobolas SCA is primarily a forested recreational park containing rocky escarpments and outcrops, waterfalls, mountain peaks, as well as recreational facilities including walking trails, toilet facilities at the summit, and camping, BBQ and toilet facilities within Federal Falls camping and picnic area. The summit also houses a large visitors carpark (unpaved) and information placard, as well as a series of Communications towers and views to the surrounding valley. A network of sealed and unsealed roads crisscross the SCA. The SCA is primarily covered in native vegetation however some exotic weed species are visible throughout the park including at the entrance to the SCA and along a number of trail edges.

Glenwood SF is an active Pine Plantation that is subject to regular harvesting and planting schedules. Radiata Pine is the dominant species throughout the SF, with small patches of native forest and regeneration occurring throughout. Unsealed fire trails, walking trails and bike trails crisscross the SF. Potential amenity impacts - construction

The construction phase of the trail network would involve the operation of a number of small plant and machinery for trail construction and larger plant and machinery for associated infrastructure construction. Both of these would have associated visual, noise and vibrational impacts which could affect nearby receivers including park users and native biota. Temporary stockpiles of soil and other materials during construction of amenities also has the potential to impact on the visual amenity of the study area. The Proposal is anticipated as having a lengthy construction period beyond one month.

6.9.2 Potential amenity impacts - operation

The operational stage of the trail network is not considered likely to increase noise to a significant extent along the bike trail network. However, increased human and vehicular traffic within the study area around associated infrastructure hubs, carparks, and recreational facilities is likely to increase noise levels within these areas.

The operational stage of the trail network has the potential to have the following impacts on visual amenity of the study area:

- The addition of associated infrastructure including buildings, car parks, and additional toilet and BBQ facilities
- Additional permanent trails throughout the SCA and SF

6.9.3 Environmental safeguards – amenity

Safeguards to be implemented and maintained for amenity include:

- Community and stakeholder consultation to notify residences, stakeholders and community groups of the intention to undertake the proposed works by Council at least five (5) days prior to works commencing. Communication must inform residents of planned construction

activities, time periods and expected durations, potential impacts, proposed mitigation measures and contact details.

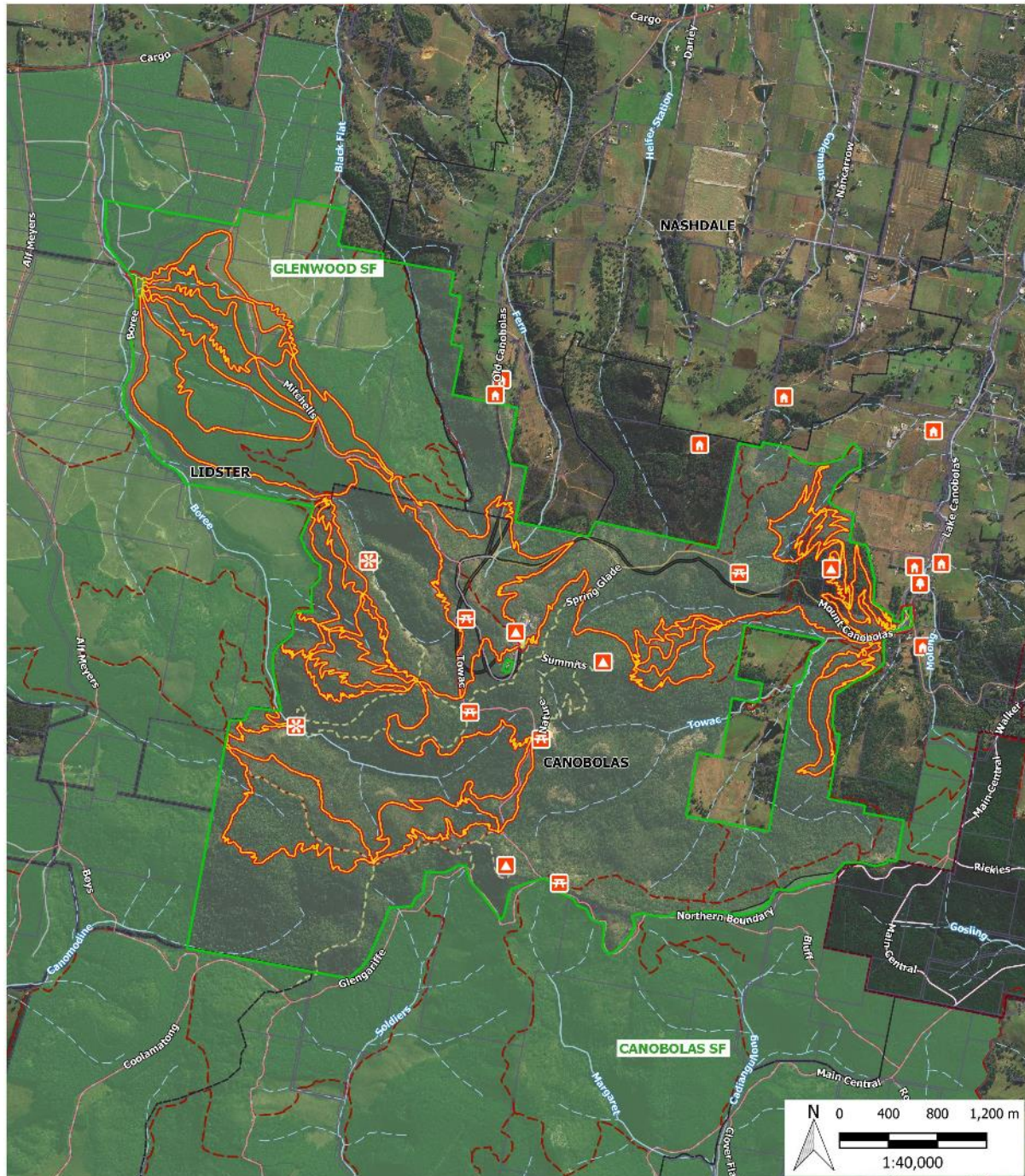
- Any high noise activities, if required, will be carried out in continuous blocks followed by appropriate respite periods.
- Setbacks from properties are to be observed wherever possible, to increase the distance between sensitive receivers and construction activities.
- The appointed contractor will incorporate Noise and Vibration Management strategies in the CEMP, and suitably induct all staff operating machinery on the site to ensure the standard working hours are adhered to, and that machinery movement (revving, reverse beepers) is kept to a minimum. This management plan must include the general noise and vibration management practices (AS 2436-2010).
- High noise generating activities, such as jack hammering, should be carried out in continuous blocks, not exceeding 3 hours with a minimum respite period between blocks of one hour.
- Low-pitch tonal beepers should be installed where possible and reversing minimised on site.
- All engine covers are to be closed and machines that are not in use, shut down.
- Noise monitoring to occur in response to any complaints received.
- High noise generating activities should be planned to occur during times of low visitation rates to Mount Canobolas (i.e. during the school term).
- All work is to be completed during standard working hours, in accordance with the Interim Construction Noise Guideline (ICNG).
- Machinery and plant to be switched off when not in use.
- Unidirectional driving is recommended wherever possible, to limit the use of reverse alert beepers.
- The works area is to be kept free from rubbish (i.e. rubbish or wastes generated as part of the works are to be managed in accordance with the Safeguards in Section 6.13.4) and all rubbish encountered on site is to be removed.
- Vehicles are to be parked in designated areas only, to reduce visual impacts of scattered vehicles and unnecessary damage to vegetation which could be unsightly.
- No additional, unauthorised clearing or destruction of vegetation is to occur.
- Cleared, bare patches of earth that are not part of the proposal are to be revegetated and restored following cessation of works, to restore the amenity, function and biodiversity functionality of the site.
- Temporary visual barriers should be put in place if community complaints occur

6.9.4 Scope of the assessment for the EIS

Amenity would be a key issue during the construction phase of the Proposal, and a detailed noise and vibration impact assessment, and visual amenity impact assessment would be undertaken to accompany the EIS. This assessment would include the following elements:

- A detailed assessment of construction and operational noise and vibration impacts to be included in a noise and vibration report. This assessment would include measuring existing noise levels, predicting construction and operational (predicted traffic) noise levels, and development of appropriate noise mitigation measures.

- The noise and vibration assessment would consider potential vibration impacts on sensitive biota during construction of the trail network.
- The assessment of noise and vibration impacts for construction and operation would be undertaken with the following guidelines as relevant:
 - Department of Environment, Climate Change and Water (DECCW) (2011) NSW Road Noise Policy
 - EPA (2021) Draft Construction Noise Guideline
- Quantification of impacts to visual amenity in the short-term during construction of the trail network and associated infrastructure, including earth works and vegetation removal, and how the design stage has aimed to minimise impacts on vegetation and surrounding landscape where practicable.
- Impacts of the proposed buildings and recreational facilities during the operational phase of the trail network on the visual amenity of the study area.
- Strategies to minimise impacts to the visual amenity of the study area, in particular within the SCA, including suggested infrastructure and building design and layout. Architectural plans and a landscape strategy would be prepared as part of the supporting information for the DA and included in the EIS.



OCC Mountain Bike Trails - Sensitive Receivers within a 1km radius of the Concept Trails

Legend

Study Area	LGA Boundary	NPWS Reserve	Sub Arterial Road	Sensitive Recievers Homestead Mountain/Hill/Peak Park Picnic Area Waterfalls
Proposed Concept Trails	Suburb	Roads	Classified Fire Trail	
Subject Land	Lot boundary	Arterial Road	Waterways	
Subject Site	State Forest	Local Road	Creek	
		Path	1st & 2nd order unnamed waterways	

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Figure 12 Sensitive receivers

6.10 Water

6.10.1 Existing environment

A number of creeks and unnamed waterways are mapped as occurring within the study area, with the proposed trail network intersecting Fern Creek, Towac Creek and Boree Creek at various locations (Figure 13). The Proposal is also less than 500 m from Molong Creek, which is the main feeder waterway for Lake Canobolas. Lake Canobolas is a large man-made reservoir historically used as a water supply for the city of Orange, but since the 1970s the lake has been primarily used for recreational purposes. The eastern extent of the proposal, defined by the water catchment area for Towac Creek and Molong Creek, are classified as a Drinking Water Catchment area (Cabonne LEP 2012).

6.10.2 Potential water impacts – construction

Potential impacts to downstream surface waters relate directly to erosion and increased sedimentation during construction. There is also the potential for spills of fuels and other contaminants arising from plant and machinery, which could enter surface waters during any works completed in proximity to drainage lines and waterways. Groundwater vulnerability mapping indicates sensitive ground water receivers throughout the eastern portion of the study area (Figure 13).

Construction of the Proposal has the potential for the following surface and groundwater related impacts:

- Potential increase in erosion and sediment pollution loads from earthworks and construction activities.
- Potential to encounter sub surface waters during trail construction.

6.10.3 Potential water impacts – operation

Operation of the Proposal has the potential for the following surface and groundwater related impacts:

- Impacts to instream features increasing erosion potential along ephemeral waterways.
- Increase in sediment and pollution loads in adjacent creek lines and waterways due to increase in visitors and associated use issues including potential impacts on water quality through trail runoff containing suspended solids, rubbish from visitors, and other pollutants from discarded equipment/visitor items.
- Potential reduction in the groundwater recharge area as a result of increased hard surface areas, including trails, roads and other site facilities.
- Potential increase in runoff resulting in larger flows in waterways.
- Potential Increase in sediment loads in adjacent waterways due to track surface water runoff and erosion as a result of heavy rainfall and storm damage, particularly on steeper and looser slopes if trails are not constructed and maintained appropriately.
- Potential for increased sediment to be tracked into surface water at creek crossings. No ford or level crossings are to be constructed.

6.10.4 Environmental safeguards – water

Safeguards to be implemented and maintained for water include:

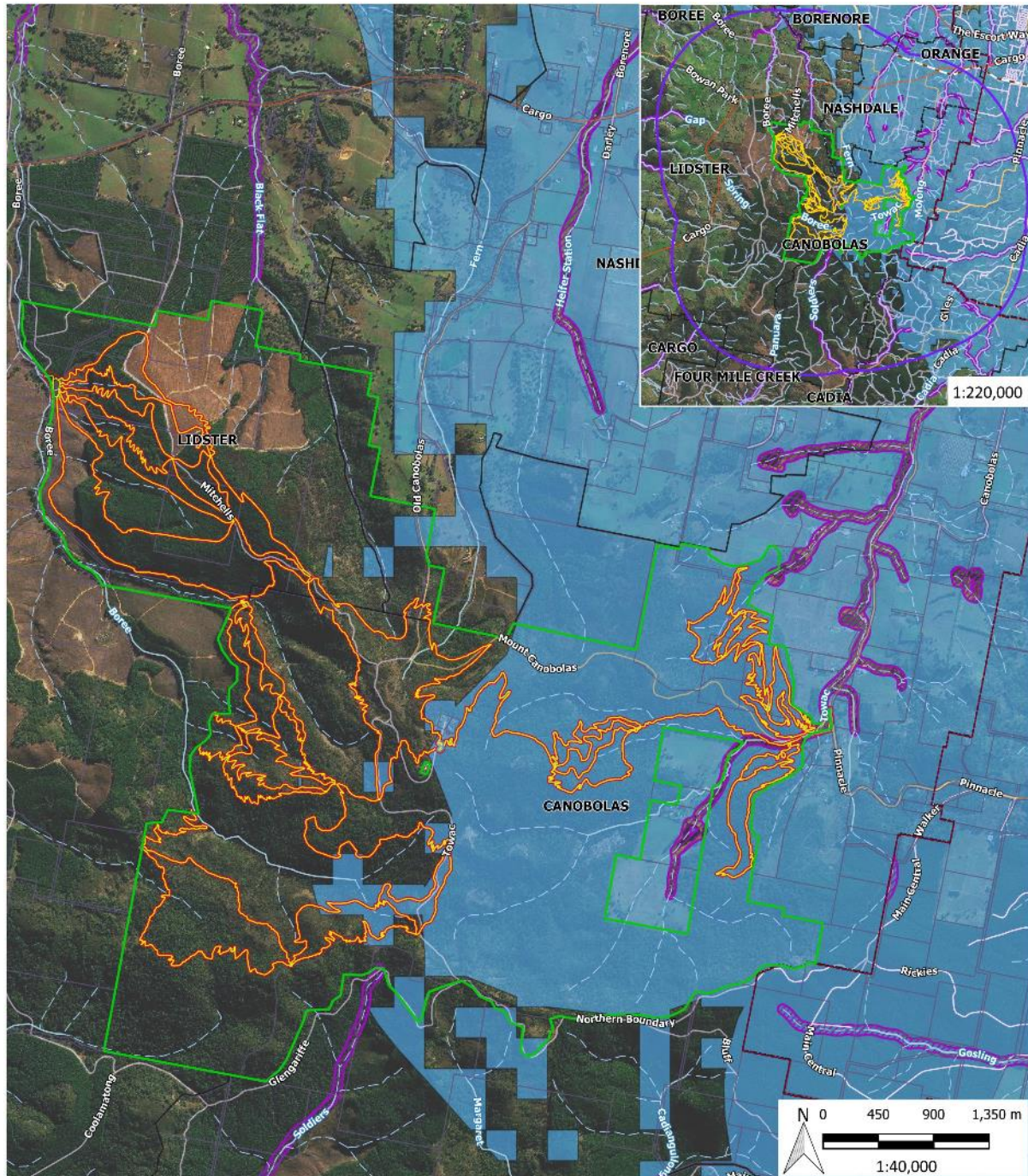
- Appropriate ERS&D controls are to be installed and maintained during construction, to ensure sediment and pollutant laden surface water runoff does not enter any waterways or drainage lines, or groundwater.
- Where the study area intersects stream tributaries and creeks, construction method is required to include use of a bridge structure to avoid the trail passing directly through the waterway. No ford or level crossings are to be constructed.
- All litter, including cigarette butts and food wrappers, is to be collected in a suitable receptacle and disposed of appropriately offsite throughout the construction phase.
- Re-fuelling of plant and equipment is to occur offsite where possible, or in impervious bunded areas located a minimum of 40 metres from drains, drainage lines or waterways.
- Vehicle wash-down and/or cement truck washout (if required) is to occur offsite unless it forms part of sediment control, where it is to occur in a suitably bunded area with controlled run-off.
- All construction works are to be undertaken during periods of low predicted rainfall.
- Segregate and stockpile topsoil removed from the area a minimum of 40 m from any waterway, and use measures such as silt fences and holding ponds to prevent stockpile runoff from entering waterways.
- Minimise the length of time that soils are exposed by stabilising as soon as practical by seeding, spreading mulch or installing erosion control blanket as appropriate.
- Ensure soils/sediment disturbed by construction works do not migrate into creeks by strategic placement of sediment filters in conjunction with the abovementioned soil stabilisation techniques.
- Biosecurity and water health protection measures should be implemented throughout the construction phase, including
 - Machinery should arrive on site in a clean, washed condition, free of fluid leaks, pests and/or weeds/spores.
 - Regular weed control should be undertaken in disturbed areas throughout the construction period to prevent weed spread into waterways, if notifiable/listed weed material is present (very likely).
 - Ensure all pesticide / herbicides used are registered for use within a waterway, as per NSW DPI guidelines. Alternatively, opt to remove weeds mechanically where possible.
- Spill response protocols for plant, equipment and chemicals used or stored on site during construction are to be available and accessible at all times to prevent and minimise potential for Pollution of Waters (s120 POEO Act).
- A Soil and Water Management Plan will be developed as part of the CEMP for the project, detailing:
 - Water quality parameters
 - Appropriate monitoring locations and frequency
 - Location and types of ERS&D controls
 - Proposed revegetation and stabilisation measures to be undertaken

6.10.4.1 Scope of the assessment for the EIS

Assessment of hydrology and flooding is considered a key issue for the assessment and a detailed report would be included in the EIS. This assessment would include:

- Surface and groundwater flows including the quality and quantity of these flows
- Existing and potential issue relating to salinity, acidity, waterlogging and erosivity
- The requirement for a Section 201 and/or a Section 219 permit from DPI Fisheries for instream works within waterways and creeklines.

- Recommendations for specific mitigation measures relating to surface runoff and additional drainage/water diverting capacity required along the trail network to reduce surface water runoff and associated erosion risks. Identification of specific areas where these are needed would also be included.



OCC Mountain Bike Trails - Ground and Surface water within a 5km radius of the Study Area

Legend

5km Radius	Subject Site	Roads	Sub Arterial Road	Rivulet
Study Area	LGA boundary	Arterial Road	Waterways	1st & 2nd order unnamed waterways
Subject Land	Suburb	Local Road	Creek	Groundwater Vulnerability
			Gully	Riparian Lands Watercourses and Key Fish Habitats

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Figure 13 Surface and Groundwater vulnerability in proximity to the Proposal

6.11 Built environment

6.11.1 Existing environment

The study area is within the Mount Canobolas SCA and the Glenwood active Forestry pine plantation. There is one (1) private property occurring within the study area, bounded by the SCA. There are no other private access or private property identified within the study area. The Mountain Teahouse is identified adjacent to the study area at the entrance to the SCA via Mount Canobolas Road.

Within the study area there are recreational facilities including walking trails, toilet facilities at the summit, and camping, BBQ and toilet facilities within Federal Falls camping and picnic area. The summit also houses a large visitors carpark (unpaved) and information placard, as well as a series of Communications towers and views to the surrounding valley. The study area contains a number of paved and unpaved roads that are frequented by locals and tourists recreationally, with four (4) small formal carparks and several other informal pullover areas / carparks located throughout the SCA.

6.11.2 Potential built environment impacts – construction

The potential impacts to the built environment have been previously identified in previous sections, including Section 6.6 – Access, Section 6.7 – Social, and Section 6.9 – Amenity. These impacts include:

- Disturbance to local and tourist traffic movements accessing Mount Canobolas for recreational activities
- Construction of associated infrastructure throughout the study area may temporarily impact on traffic movement on the road network throughout the SCA and Glenwood Forest
- The operation of a number of small plant and machinery for trail construction and larger plant for associated infrastructure construction would have associated visual, noise and vibrational impacts which could affect nearby receivers, including the one (1) private property and the Mountain Teahouse.

6.11.3 Potential built environment impacts – operation

The operational stage of the trail network has the potential to have the following impacts to the built environment:

- Increased recreational users to the study area is likely to increase traffic flow and require expanded parking facilities near major trail hubs to cater for trail users and other recreational visitors to the SCA.
- A wide range of environmental, social and health benefits are documented, including increasing access to local trails in local open spaces creates a sense of connection between the land and the community and fosters a long term positive outcome for conservation of the area.
- The addition of associated infrastructure including buildings, car parks, and additional toilet and BBQ facilities
- Additional permanent trails throughout the SCA and SF

6.11.4 Environmental safeguards – built environment

Safeguards to be implemented and maintained for built environment include:

- Where possible, current traffic movements and property accesses are to be maintained during the works. Any disturbance is to be minimised and adequately communicated to the impacted resident/property owner.
- Prior to commencement of works on site, the contractor will inform neighbouring properties of proposed works, anticipated impacts and site contact information. Notification can be

provided by various means including, but not limited to letterbox drops, contact via telephone, and notification of works on the Council website.

- Considerate construction practices are to be implemented for all aspects of the project, including but not limited to:
 - Expediting the construction period as much as practicable
 - Minimising time spent in front of private residences, businesses and/or public facilities
 - Minimising noise, air quality and traffic impacts on neighbouring properties and the wider community
 - Maintaining a tidy construction site and respecting private property
- The local community is to be kept informed of work plans, and any concerns raised by the community or local businesses or landholders are to be promptly addressed.
- Setbacks from properties are to be observed wherever possible, to increase the distance between sensitive receivers and construction activities

6.11.5 Scope of the assessment for the EIS

The Built Environment is anticipated to be a key issue for the Proposal and a specialist studies, as identified in Section 6.6 – Access, Section 6.7 – Social, and Section 6.9 – Amenity would be required to inform the EIS. Specialist studies include:

- Traffic and transport study to identify potential traffic-related impacts associated with the project and nominate mitigation measures to minimise identified impacts
- social impact assessment would be conducted to assess impacts of the Proposal on local and regional communities
- A detailed noise, vibration and visual amenity impact assessment, with regard to the built environment.

6.12 Hazards and risks

6.12.1 Existing environment

Mount Canobolas is a sub alpine extinct volcanic peak (1,397 m asl) that comprises heavily vegetated undulating to steep terrain, with large areas of rocky outcrops and cliff formations. The study area has experienced varying levels of fire disturbance in recent years, with the bushfires of 2018 causing considerable changes to the vegetation communities across the mountain, with some areas showing signs of larger impacts than others.

Extensive weed invasion had been observed throughout gullies and wetter slopes within the SCA; these include both annual and perennial invasive weed types including heavy infestations of Blackberry (*Rubus fruticosus*) and Serrated Tussock (*Nassella trichotoma*) which are Weeds of National Significance (WoNS), and large areas of Ivy (*Hedera helix*), amongst others. Feral Pig (*Sus scrofa*) herds and activity (scats, diggings) were noted at a number of locations across the SCA along with numerous Red Fox (*Vulpes vulpes*) individuals captured on camera traps during preliminary ecological surveys. State Forest areas contained heavy weed infestations including WoNS and Priority weed species including Serrated Tussock (*Nassella trichotoma*), Blackberry (*Rubus fruticosus*), and Broom Rape (*Orabanche minor*).

There is potential for flooding, with a number of creeks and unnamed waterways are mapped as occurring within the study area, with the proposed trail network intersecting Fern Creek, Towac Creek and Boree Creek at various locations (Figure 13). Groundwater vulnerability mapping indicates sensitive ground water receivers throughout the eastern portion of the study area (Figure 13).

6.12.2 Potential hazards and risks impact – construction

The operational stage of the trail network has the potential to have the following hazards and risk impacts:

- Possible introduction or spread of environmental weeds or diseases transported by inadequately cleaned construction vehicles
- Pollution of soils on site, associated with the spill of hydrocarbons generated from construction plant and equipment
- Ground disturbance from trail construction and associated infrastructure may directly result in erosion and sediment migration
- Possible sediment migration into waterways within and adjacent to study area, which could result in Pollution of Waters (an offence under s120 POEO Act), if appropriate erosion and sediment (ERSED) controls are not implemented and maintained
- Operating equipment and machinery during extreme heat conditions in bushfire prone areas increases the risk of starting a fire
- Potential to encounter sub surface waters during trail construction, increasing the risk of groundwater contamination

6.12.3 Potential hazards and risks – operation

Operational impacts on potential hazards and risks for the trail network are considered to be low. Nevertheless, there remains potential for the following additional hazards and risks related impacts:

- Possible introduction or spread of environmental weeds or diseases
- Increased visitation to the SCA, particularly larger numbers of visitors increase the risk of bushfire
- Potential reduction in the groundwater recharge area as a result of increased hard surface areas, including trails, roads and other site facilities.

- Potential increase in runoff resulting in larger flows in waterways, and potential flooding during extreme rainfall events

6.12.4 Environmental safeguards – hazards and risks

The impact to hazards and risks is considered a key issue for the SEARs, and therefore a hazard and risk impact assessment would form part of the EIS. This hazard and risk impact assessment would address:

- Develop and implement an active weed and pest management plan prior to construction commencing, to reduce the risk of weed spread and safety issues arising from pest and weed presence (e.g. pigs and dense blackberry infestations).
- Declared weeds must be managed according to requirements under the Biosecurity Act 2015. It is recommended that all Weeds of National Significance should be managed to ensure they do not spread, and where possible are eradicated
- Develop and implement a bushfire management plan specific to the construction and operation of the Proposal
- Observe Total Fire Ban (TFB) directives, and cease work and activities that are prohibited by the TFB, including gas cutting in open air, grinding, welding, soldering, chain sawing, and slashing, and any activity that requires an open flame (eg campfires).
- Assessment of the risk of erosion and sedimentation according to appropriate ERSED management procedures.
- Assessment of drainage along the trail network, and potential for flooding

6.12.5 Scope of the assessment for the EIS

Assessment of hazards and risks associated with both the construction and operational phases of the Proposal would be undertaken. This assessment would help identify:

- Identification and management of environmental weeds
- Bushfire risk and management
- Potential for flooding events and avoidance
- Identifying best practice erosion and sediment control management measures to be implemented during construction and operation of the Proposal.

NON-KEY ISSUES

6.13 Waste and resource use

6.13.1 Existing environment

Construction of the trail network would primarily rely on utilising existing displaced materials (e.g. rocks, soil). However, some additional processed materials will be required for trail and infrastructure/facility construction. The amount and type of materials required will be further defined during the detailed design phase.

Given the existing ecological and heritage constraints of the SCA, planning of waste generated during the construction and operational stages of the trail network will need to be carefully considered.

6.13.2 Potential waste and resource impacts – construction

Potential waste and resource use impacts from the construction phase of the trail network include:

- Waste generation from track network and facility construction including removed materials such as vegetation and rock.
- Use of resources for track construction including sand, gravel, timber, steel.
- General construction waste including litter, packaging.
- Possible leaks and spills from equipment, and materials required for cleanup efforts.

6.13.3 Potential waste and resource impacts – operation

The operational phase of the trail network has the potential to have waste and resource use impacts including:

- Litter generation from visitors including track and facility users.
- Waste generated from the operation of associated facilities.
- Resource use from maintenance of track surfaces and weed control efforts.
- Peak waste production during events.

6.13.4 Environmental safeguards – waste and resource use

Safeguards to be implemented and maintained for waste and resource Use include:

- To encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of Ecologically Sustainable Development (ESD),
- To ensure that resource management options are considered against a hierarchy of the following order:
 1. Avoidance of unnecessary resource consumption,
 2. Resource recovery (including reuse, reprocessing, recycling and energy recovery),
 3. Disposal.
- To provide for the continual reduction in waste generation,
- To minimise the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste,
- To ensure that industry shares with the community the responsibility for reducing and dealing with waste,
- To ensure the efficient funding of waste and resource management planning, programs and service delivery,
- To achieve integrated waste and resource management planning, programs and service delivery on a State-wide basis,

- To assist in the achievement of the objectives of the *Protection of the Environment Operations Act 1997*.
- Waste may also constitute environmental pollution, which is regulated under the NSW *Protection of the Environment Operations Act 1997*, administered by the EPA and Local Government.

6.13.5 Scope of the assessment for the EIS

Assessment of waste and resource use impacts and management requirements to be included in the EIS include:

- Identification of resources required for the Proposal and an assessment of their impacts.
- Identification of potential waste impacts of the Proposal, including construction and operational phases, and the development of appropriate waste management strategies for both phases of the Proposal, to be included in the CEMP.
- Identification of strategies for reducing waste during construction including the use of recycled materials, bulk delivery of resources, and prudent ordering of materials to help minimise waste.
- Identification of strategies for utilising excavated materials on site, reducing off-site disposal requirements.
- Identification of opportunities to relocate fallen timber (logs) and rocks into adjacent areas for retention of habitat features.

6.14 Air quality

6.14.1 Existing environment

The past year (June 2020- June 2021) has seen the Orange region enjoying air quality ranging from AQI <10 (very good) to just above AQI 40 (good) throughout the year (DPIE 2021). The primary air pollution emission sources that contribute to existing ambient air quality levels in the Orange region include:

- Wind generated dust from exposed areas within the locality
- Dust emissions from agricultural activities
- Dust entrainment due to vehicle movements along unsealed and sealed town and rural roads with high silt loadings
- Diesel and petrol fuel combustion emissions from road and non-road sources
- Seasonal emissions from household wood burning
- Episodic emissions from dust storms and vegetation fires (local and regional)

6.14.2 Potential air quality impacts – construction

It is anticipated that the impacts of dust and other emissions to air quality will be of short duration and minor in nature, and the Proposal is not expected to have a large or prolonged impact on air quality in the area during construction works.

6.14.3 Potential air quality impacts – operation

The operational stage of the trail network is not considered likely to increase dust or impact air quality to a significant extent along the bike trail network. However, increased vehicular traffic within the study area around associated infrastructure hubs, carparks, and recreational facilities is likely to have some impact on air quality within these areas, particularly during peak times.

Prolonged periods of drought do however have the potential to cause excessive dust migration during track operation.

6.14.4 Environmental safeguards – air quality

Safeguards to be implemented and maintained for air quality include:

- Dust generating activities should be avoided during periods of high wind.
- Visual dust monitoring should occur, and dampening of exposed soils should be used during weather conditions conducive to visible dust formation.
- Provide an adequate water supply to aid dust suppression during construction.
- Only remove vegetation / ground cover in small areas during works. Re-vegetate earthworks and exposed areas / soil stockpiles to stabilise surfaces progressively, and as soon as practicable.
- Vegetation and other materials are not to be burnt on site.
- Construction plant and equipment should be maintained in a good working condition in order to limit impacts on air quality through vehicle emissions.
- Construction plant, equipment and personnel vehicles to utilise existing roads and site access where available, to minimise dust emissions associated with traversing unsealed roads.
- Fuel operated plant and equipment should not be left idle when not in use.

6.14.5 Scope of the assessment for the EIS

Assessment of air quality impacts of both the construction and operational phases of the Proposal would be undertaken. This assessment would help identify:

- Sensitive receivers for air quality impacts
- Possible sources of air quality impacts

- Identifying best practice air quality management measures to be implemented during construction activities.

6.15 Climate change

6.15.1 Existing environment

Climate change is forecast to affect many aspects of our lives over the coming decades including our natural, social and economic environments (DPIE 2021). Changes that have already been observed include the frequency and intensity of heat waves, bush fire events, and precipitation patterns, and understanding how climate change may impact on local environments and communities can help regions better prepare and adapt.

The Orange region is located approximately 879 m above sea level and has a mild temperate climate, with an average annual maximum temperature of 18.2 degrees Celsius and rainfall around 914.8 mm per annum. January is the hottest month, with a mean maximum temperature of 26.8 degrees Celsius with July being the coldest month, experiencing a mean maximum temperature of 9.6 degrees Celsius.

Table 18 Weather data for Orange (Orange Agricultural College, BoM 2021)

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean max. temp (°C)	26.8	25.9	22.8	18.6	14.2	10.6	9.6	11.1	14.3	18.1	21.5	24.7	18.2
Mean min. temp (°C)	13.5	13.1	10.8	7.3	4.6	2.6	1.5	2.0	4.2	6.7	9.2	11.3	7.2
Mean rainfall (mm)	86.1	75.3	67.4	52.3	67.3	72.9	87.4	93.7	78.8	78.4	74.9	80.0	909.6
Median rainfall (mm)	70.0	60.6	51.4	37.7	61.8	63.6	72.7	89.1	68.6	71.4	63.2	66.6	914.8
Mean no. rain days ≥ 1 mm	6.5	5.8	5.8	4.8	6.4	7.8	9.2	9.0	7.9	7.5	7.3	6.6	84.6

Based on NSW government projections for the Central West region between 2020 – 2039 (DPIE 2021), the annual mean number of days with temperatures above 35 C is set to increase by 1-5. The severity and frequency of bushfires within the region are also set to increase in this time.

Outcomes of the modelling are summarised for the region as follows:

- Average temperatures will continue to increase in all seasons
- More hot days and warm spells are projected with fewer frosts
- Average rainfall across all seasons is projected to decrease
- Increased intensity of extreme rainfall events is projected

The study area occurs within densely vegetated land parcels recently affected by severe bushfires. Whilst not officially zoned, the study area falls within a designated bushfire prone area (NSW Rural Fire Service, 2021).

6.15.2 Potential climate change impacts – construction

Potential impacts on Climate change from the construction of the trail network include:

- Loss of vegetation and potential emissions associated with the decomposition of removed vegetative material.
- Emissions from machinery and plant equipment.
- Emissions inherent in materials used for construction.
- Emissions from vehicles used by construction and project management crew.

6.15.3 Potential climate change impacts – operation

Potential impacts on Climate change from the operation of the trail network include:

- Emissions from the transportation of trail users to and from the site.
- Potential use of fossil fuels for energy use within associated infrastructure including lighting, building heating and cooling, and BBQ facilities.

Considerations of the impacts of Climate change on the operation of the trail network are summarised below:

- Damage to the trail network from extreme weather events including storm event.
- Damage to the trail network from increased natural disasters including more frequent and severe bushfires.

6.15.4 Environmental safeguards – climate change

Safeguards to be implemented and maintained for climate change include:

- Design and construction principles to be in line with sustainability requirements; i.e. designed and built to withstand predicted extremes in climate variability associated with Climate Change.
- Infrastructure sustainability to be a top consideration, with ethically sources materials used and built to last.
- Quality assurance and life cycle of materials are to be considered when purchasing, to ensure the newly built infrastructure is resilient and structurally sound.
- Resource management hierarchy principles are to be followed to reduce adding to the environmental pollution contributing to climate change:
 - Avoid unnecessary resource consumption as a priority,
 - Avoidance is followed by resource recovery (including reuse of materials, reprocessing, recycling and energy recovery),
 - Disposal is undertaken as a last resort (in accordance with the Waste Avoidance & Resource Recovery Act 2001).
- Council may elect to make a contribution to green power to offset greenhouse gas emissions.
- Local resources are to be used wherever possible, to reduce waste and increase efficiencies.

6.15.5 Scope of the assessment for the EIS

Impacts from and contributions to Climate change as a result of the proposed trail network will be assessed within the EIA including:

- The quantification of emissions from both construction and operational impacts from the use of fossil fuel energy sources.
- Identifying strategies to reduce or avoid both construction and operational emissions.
- Identifying opportunities to use “Green and Renewable” energy sources for the operational component of the Proposal.
- Identifying opportunities to use low-emission products in the construction and maintenance phases of the project, including the use of recycled or alternative materials.

7 SUMMARY

This Scoping Report has been prepared to support an application to the Secretary of DPIE to request the SEARs for the proposed Canobolas MTB Trails project. The SEARs will be used to guide the preparation of the EIS for the proposed construction and operation of a network of mountain bike trails comprising up to 104.4 km of single-track across thirty-six trails, and development of ancillary infrastructure, on Mount Canobolas to the south-west of Orange.

The Proposal will be subject to assessment under Division 4.7, section 4.36 of the EP&A act, as the proposal is regarded as SSD through the effect of Schedule 1, clause 13(2)(b) of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). The EIS will examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed activity. This will include consideration of other environmental planning instruments as well as other NSW and Commonwealth legislation.

This Scoping Report considers the potential environmental impacts that may result from the proposed works that have been assessed to date, and proposes appropriate safeguards to avoid, minimise, mitigate or offset these impacts.

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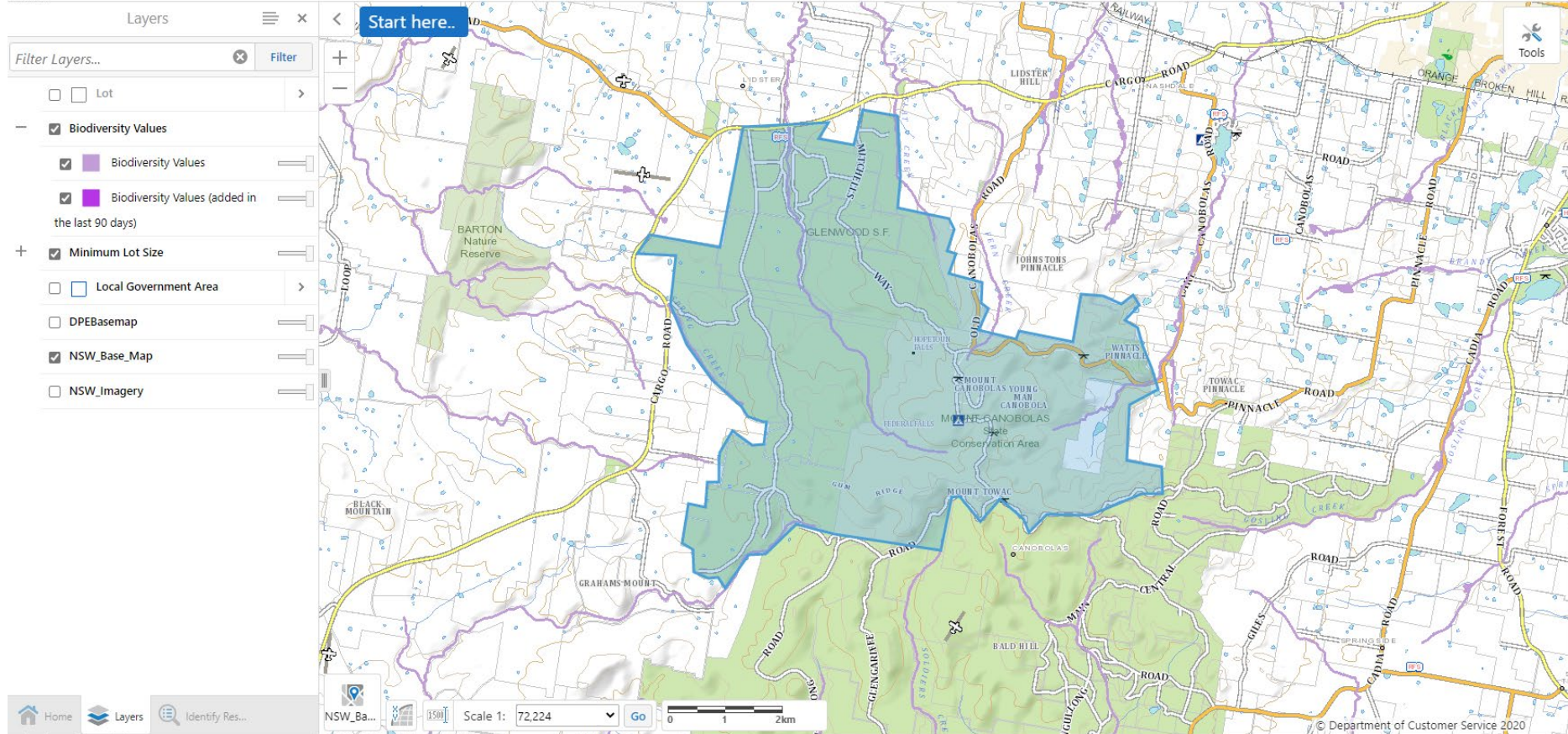
9 APPENDICES

Appendix	Description
Appendix A	Scoping Checklist
Appendix B	Constraints Summary Report
Appendix C	Biodiversity Values Map
Appendix D	AHIMS search results
Appendix E	Trail Master Plan - Mt Canobolas (Dirt Art)

APPENDIX A – SCOPING CHECKLIST

APPENDIX B – CONSTRAINTS SUMMARY REPORT

APPENDIX C – BIODIVERSITY VALUES MAP



APPENDIX D – AHIMS SEARCH RESULTS

APPENDIX E – TRAIL MASTER PLAN – MOUNT CANOBOLAS