

YORK TRAIL NETWORK CONCEPT PLAN

February 24, 2022



Prepared by Common Ground Trails Pty Ltd for the Shire of York

Acknowledgements

The authors of this Shire of York Trail Network Trail Concept Plan respectfully acknowledge that this land on which the trail network is located is traditional land of the Ballardong people who have a rich social, spiritual and historical connection to this country, which is as strong today, as it was in the past.

Common Ground Trails wishes to acknowledge the significant contribution of the Project Reference Group as well as the valuable input from stakeholders, organisation representatives, users and individuals.

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Revision	Description	Date
A	Draft Concept for Client Review	24/11/21
B	Draft Concept for Council Review	8/12/21
C	Final Draft for Council/PRG Review	15/02/22
D	Final Concept Plan	24/02/22



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Introduction

Project Overview

The Shire of York Trails Master Plan 2019 - 2028 outlined a number of recommendations for the development of trails in the Shire of York. Short term recommendations outlined a series of proposals for trails surrounding the town of York including at Walwalying/Mt Bakewell, Wongborel/Mt Brown and along the Gogulgar Bilya/Avon River.

Planning Context

The Western Australian Strategic Trails Blueprint 2017–2021 (Department of Local Government, Sport and Cultural Industries, 2017) is an over arching guide for consistent and coordinated planning, development and management of quality trails and trail experiences across Western Australia. It provides a vision, guiding principles, strategic directions and actions for consideration across the State for government, trail managers, landholders, trail support groups, tourism operators and the community.

The Shire of York Trail Master Plan identified potential to establish York as a trails destination through provision of high quality and accessible walk, mountain bike and equestrian trails in proximity to the town.

In accordance with the Trail Development Series developed by the Department of Local Government, Sport and Cultural Industries (DLGSC) and the Department of Biodiversity, Conservation and Attractions (DBCA) site assessments of the project area have been undertaken to inform development of this concept plan.

Project Objectives

The objectives of this project are to develop a concept for the trail network on Walwalying/Mt Bakewell, Wongborel/Mt Brown and along the Gogulgar Bilya/Avon River. The concept plan proposes to reinvigorate and enhance the existing trail network and proposes additional trails providing an accessible coherent and intuitive trail network for a range of trail users and capabilities that showcases the unique attributes of the landscape. The concept plan should also consider the existing trailheads and make recommendations for improvements. Overall objectives are outlined below:

- Ensure new trail proposals consider environmental and cultural heritage values and provide a sympathetic fit within the natural landscape.
- Ensure trail development is consistent with best practice planning, design and construction standards.
- Develop a high-quality trail system suitable for a diverse range of user ability.

Target Market & User Types

The York Trail Network is intended to cater for both locals, destination trail users and trail users while on holidays. In terms of the mountain bike cohorts the terrain available is best suited to a trail network that caters to leisure and gravity cohorts. These markets are comprised of a diverse mix of trail users, including general cyclists, recreational cyclists and highly skilled technical riders. Trail styles for these target markets will vary from accessible easy trails to purpose designed trails with technical trail features.

Trail types to be incorporated into the network include shared use trails, walk trails, equestrian trails and cross country (XC) and All Mountain/Enduro mountain bike trails, with adaptive mountain biking trails where the terrain is suitable.

Scope & Scale

The Concept Plan brief outlined the scope of the trail network to include:

Wongborel/Mt Brown

- Identify entry points bearing in mind current and future uses of the areas
- Identify possible new trail corridors, using geospatial mapping
- Identify and mark existing trails to use or retire, using geospatial mapping
- Concept Plan for a user-friendly Lookout, and associated infrastructure, including accessibility and interpretation that links to the park/picnic area.

Gogulgar Bilya/Avon River

- Identify requirements and content for creating a Trailhead at Avon Park
- Identify requirements for making a linked trail between the two mountains
- Identify possible improvements to the Avon River trail routes

Walwalying/Mt Bakewell

- Identify entry points bearing in mind current and future uses of the areas
- Identify possible new trail corridors, using geospatial mapping
- Identify requirements and site for a Lookout on Walwalying/Mt Bakewell that has minimal impact upon the environment whilst maximizing the opportunities for scenic viewing

Refer to Map 1 for project area location.

The Trail Master Plan outlined the following scale of trail development on public land for each site:

- Wongborel/Mt Brown (5km Walk, 20km MTB, 6km Equestrian)
- Gogulgar Bilya/Avon River (1km access for all, 5km shared use)
- Walwalying/Mt Bakewell (2km shared use, 1km Walk, 2km MTB, 5km Equestrian). Private landowners also have plans for development of mountain bike trails.

Revisions to Scope

Throughout the site assessment and consultation phase of developing the Concept Plan it was evident that trail development on Walwalying/Mt Bakewell needs to be considered, being mindful of the cultural heritage significance of the mountain to the local Ballardong people.

The Report of the Ethnographic Site Identification Noongar Cultural Heritage Survey, Shire of York, June 2021 was completed post commencement of the concept plan and recommended that both Walwalying/Mt Bakewell, Wongborel/Mt Brown and the special site of cultural significance located on Wongborel/Mt Brown be formally submitted to DPLH as potential Aboriginal Sites for inclusion on the AHIS. This cultural heritage survey report also recommends that trail development be excluded from Walwalying/Mt Bakewell on both public and private land. Based on this recommendation, the scope of work for this concept plan was reduced to focus on Wongborel/Mt Brown, the Gogulgar Bilya/Avon River and identification of a link trail to Walwalying/Mt Bakewell should trail development be considered by the Shire in the future.



MAP 1 - Project area

Engagement and Consultation

Project Reference Group

The Project Reference Group (PRG) comprised representatives from the Shire of York, Department of Local Government Sport and Cultural Industries (DLGSC), Avon Valley Tracks and Trails (AVTAT), River Conservation Society and York branch of Wildflower Society of WA. Department of Biodiversity Conservation and Attractions (DBCA) were invited to be apart of the PRG but declined.

The PRG were involved in development of the draft concept with meetings held during site assessment phase (to allow transfer of knowledge) and at broad concept phase (to allow feedback and approval of the direction of concept development).

The PRG will review the draft prior to release for community comment and will meet post community consultation to review the concept in light of changes made based on community feedback.

Key Stakeholders

Ballardong Noongar Elders/community were involved in development of the draft concept with several meetings held during the site assessment phase to ensure understanding of opportunities and constraints. Ballardong Noongar Elders/community will also review the draft concept.

Other key stakeholders that were consulted in the site assessment phase of the project included private property owners adjacent crown land on Walwalying/Mt Bakewell.

Consistent themes emerging from discussions included:

Experience

- Wongborel/Mt Brown should be accessible for a range of users with a mix of single use and shared use trails
- Potential to showcase the variety of landscapes in trail experiences - enclosed river corridor contrast with open views across the town and beyond
- Opportunity to deepen local and visitor connections to Ballardong Noongar cultural heritage through interpretation and artworks

Access

- Potential for multiple access points to Wongborel/Mt Brown dual use trails are supported as long as it is clear to users that this is the case
- Good directional signage is key
- Maintaining emergency access is critical
- Potential to pass the proposed environmental/cultural centre on South St/Clifford St

Events

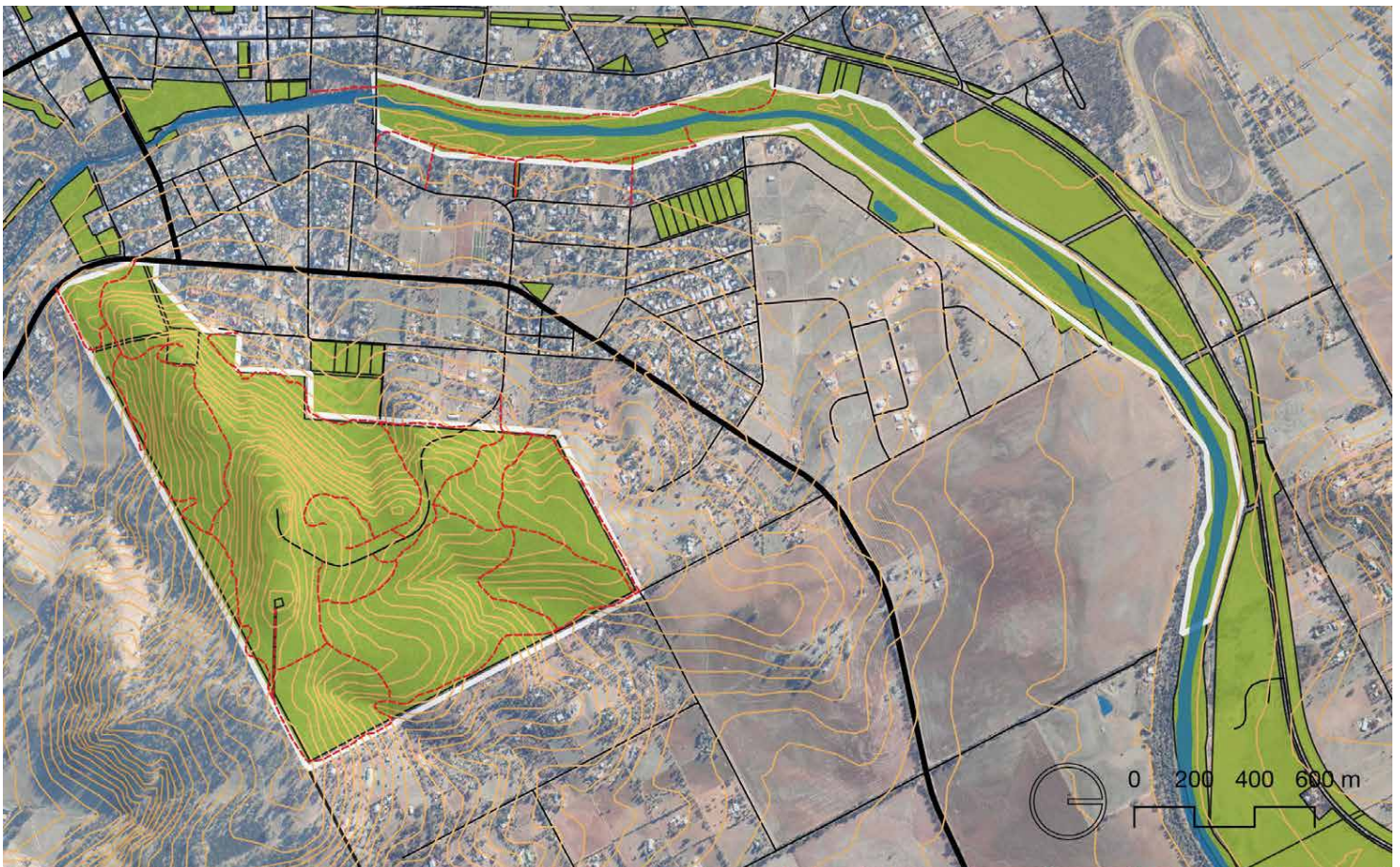
- Trail running events typically have a series of loop options 5km, 10km and 15km
- XC MTB events typically would be looking for 15km loop. Gravity Enduro events looking for multiple descents and climbs.

Site Assessment

Site assessment undertaken considered the inherent qualities of the landscape such as terrain and vegetation types, existing trails and infrastructure and constraints such as heritage values and threatened ecological community presence. The project area landscape includes native bushland, undulating hills, small gully's and the Gogulgar Bilya/Avon River.

Tenure

The project area is within Crown Reserves with the town of York. Wongborel/Mt Brown Reserve is vested with the Shire of York as a gazetted Class A reserve for the purposes of 'Parkland'. The reserves adjacent the Gogulgar Bilya/Avon River are also vested with the Shire of York. Land adjacent the project area is freehold.



Tenure
Crown Reserve (vested Shire of York)

Draft Concept segment:

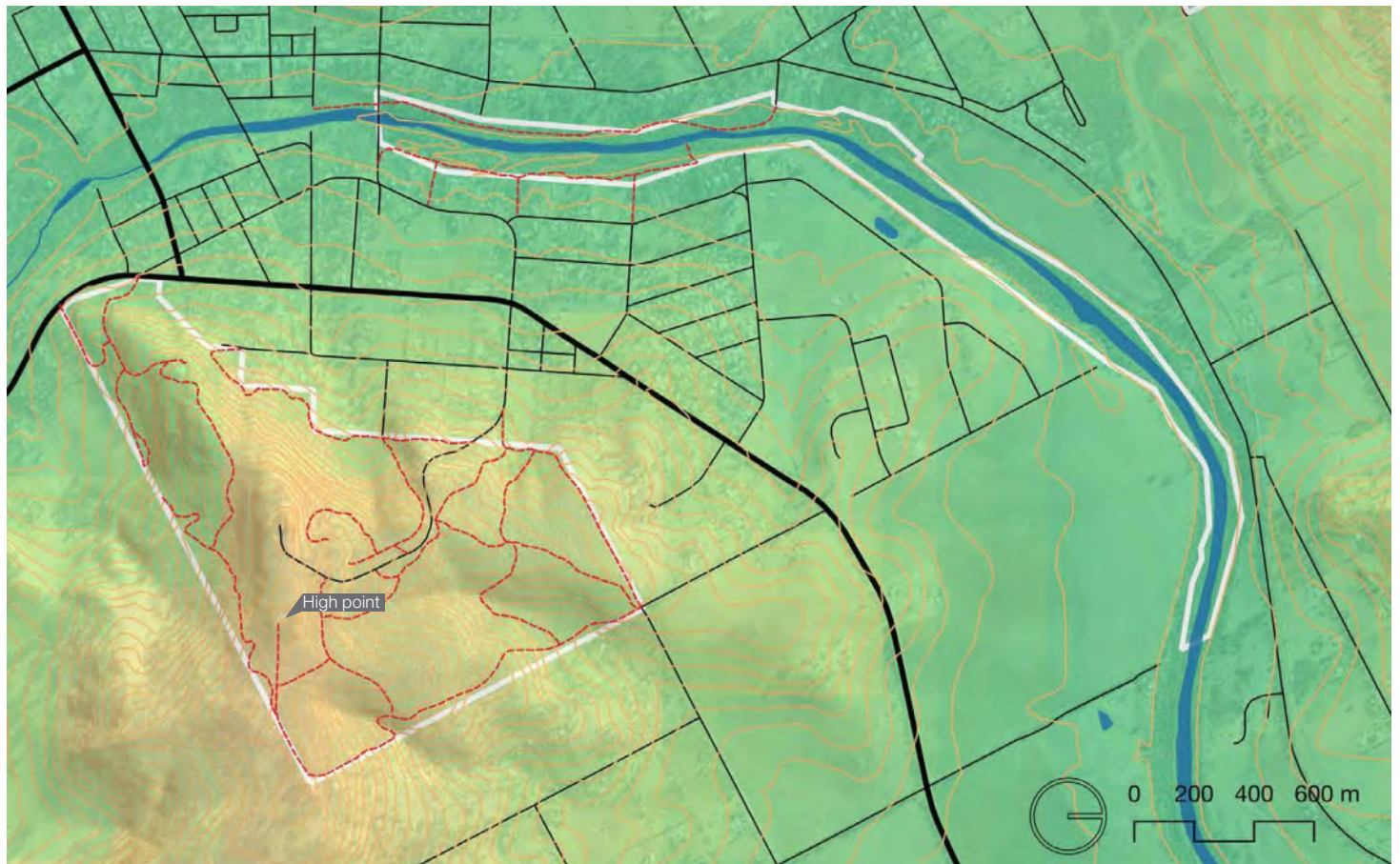
MAP 2 - Project area tenure

Topography & hydrology

Wongborel/Mt Brown is characterised by gently sloping flat topped ridges, with numerous rocky outcrops of granite. There is a dominant high point (342m) with several shallow spurs and gullies throughout. The site slopes in various directions providing up to 90m of elevation range in some parts and 50-65m in others. The spurs and gullies provide for a range of slope gradients, providing good opportunity for engaging trail with purposeful ascents mixed with exhilarating descents. The varied terrain provides for a range of slope aspects

providing opportunity to create a network that features an engaging variety of experiences. Several non-perennial streams occur in the gullies on Wongborel/Mt Brown.

The Gogulgar Bilya/Avon River traverses the project area with width of the River varying through the seasons. The Gogulgar Bilya/Avon River riparian zone is generally flat with slight variances due to river flow patterns.



Elevation		
165	289	414
206	331	455
248	372	

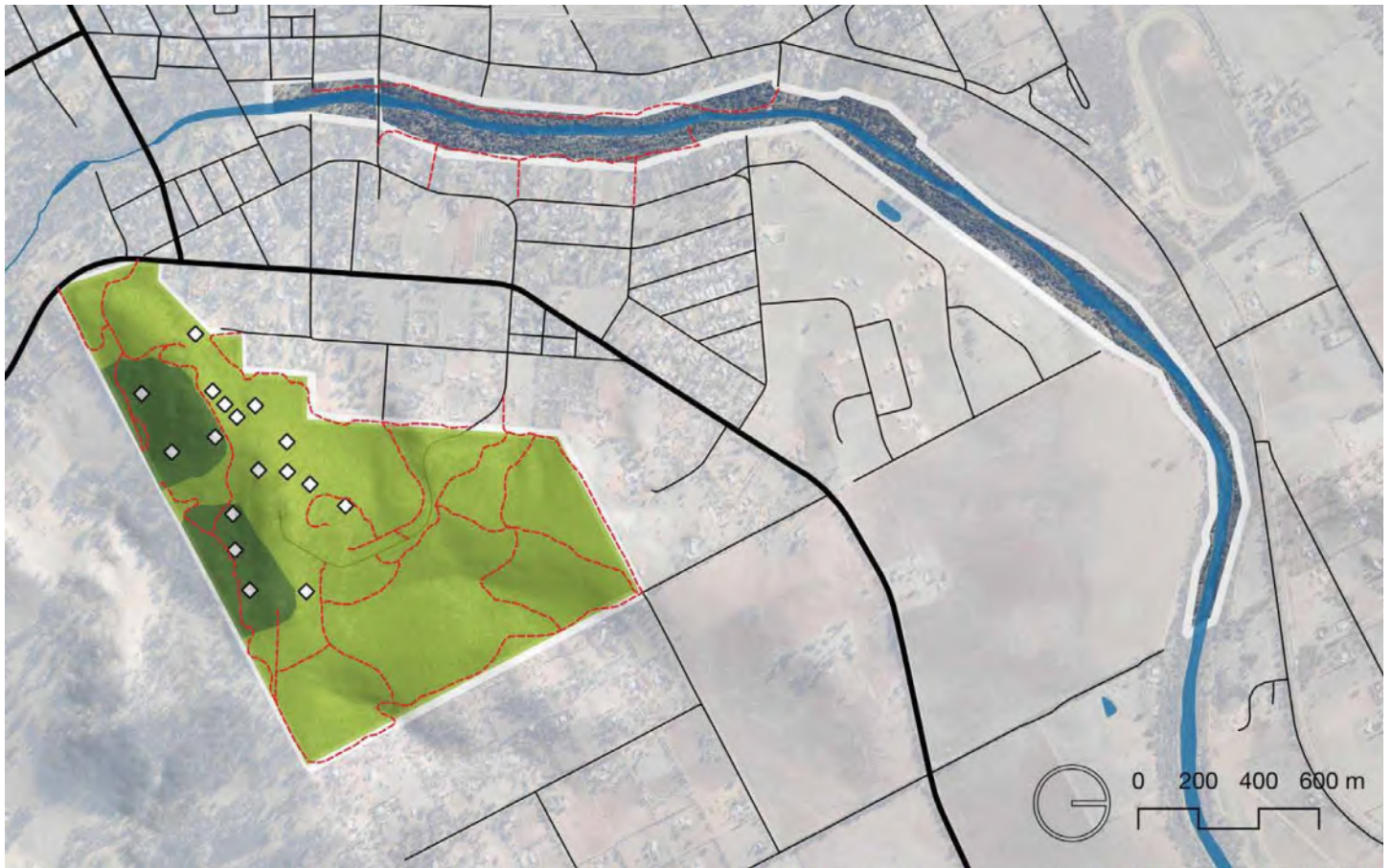
MAP 3 - Project area topography and hydrology

Ecological values

Reconnaissance survey undertaken by Del Botanics in 2019 indicated that the vegetation contained within Wongborel/Mt Brown Reserve is in a degraded condition. The vegetation onsite can be broadly categorised into three broad vegetation communities, York Gum Woodland, Sheoak Woodland and Granite outcrops. The riparian corridor of the Gogulgar Bilya/Avon River is also in a degraded state with the River Conservation Society embarking on a restoration program over a decade ago, establishing a revegetation strip 30m wide on both banks. This work continues and has restored some value to the ecosystems along the River.

The granite outcrops present sought after technical features for mountain bike riders however are also sensitive ecosystems and prone to lasting impacts from trail users. Protection of the granite outcrops within Wongborel/Mt Brown reserve should be a priority, allowing use of granite feature on a few key trails where existing use has had an impact already is considered appropriate to provide the experience riders are seeking. The intention is that by providing controlled access to such features riders will be less inclined to seek untouched granite outcrops and create unsanctioned trails.

The vegetation and landscape allow opportunity to create a varied trail experience and work towards fostering a greater understanding of the landscape and ecosystem values for visitors, through experience, appreciation and interpretation.



Vegetation communities
■ Sheoak Woodland
■ York Gum Woodland
◇ Granite outcrops

MAP 4 - Project area constraints (data source: Del Botanics Mt Brown Reserve Reconnaissance Survey 2019)

Cultural Values

The project area has many layers of cultural heritage including Aboriginal and European values. There are two AHIS registered Aboriginal sites within the project area - the Gogulgar Bilya/Avon River and the Marley Pool corroboree ground. The Report of the Ethnographic Site Identification Noongar Cultural Heritage Survey, Shire of York, June 2021 recommended that the Walwalying/Mt Bakewell, Wongborel/Mt Brown and the special site of cultural significance on Wongborel/Mt Brown are formally submitted to DPLH as potential Aboriginal Sites (as defined under section 5 of the AHA) for inclusion on the AHIS.

The Ballardong Noongar community have expressed a desire to work closely with the Shire of York in:

- development of a revitalised trail network on Wongborel/Mt Brown, aiming to restore the environment (and corresponding cultural landscape) of the mountain;
- development of updated interpretation material;
- ongoing management of trails and reserves.

There is opportunity in development of the trail network concept for interpretation of sites of cultural significance which can assist in maintaining a sense of place and informing visitors about the values of the area. Areas of known significance have been avoided in the development of the trail network concept. As the trail development process continues into detailed design, construction and management the Shire will continue to work closely with the Ballardong Noongar community.

It is also recommended that the Shire continue to pursue opportunities to establish a local Aboriginal Ranger program to enable opportunity for hands on management of Country and trails.

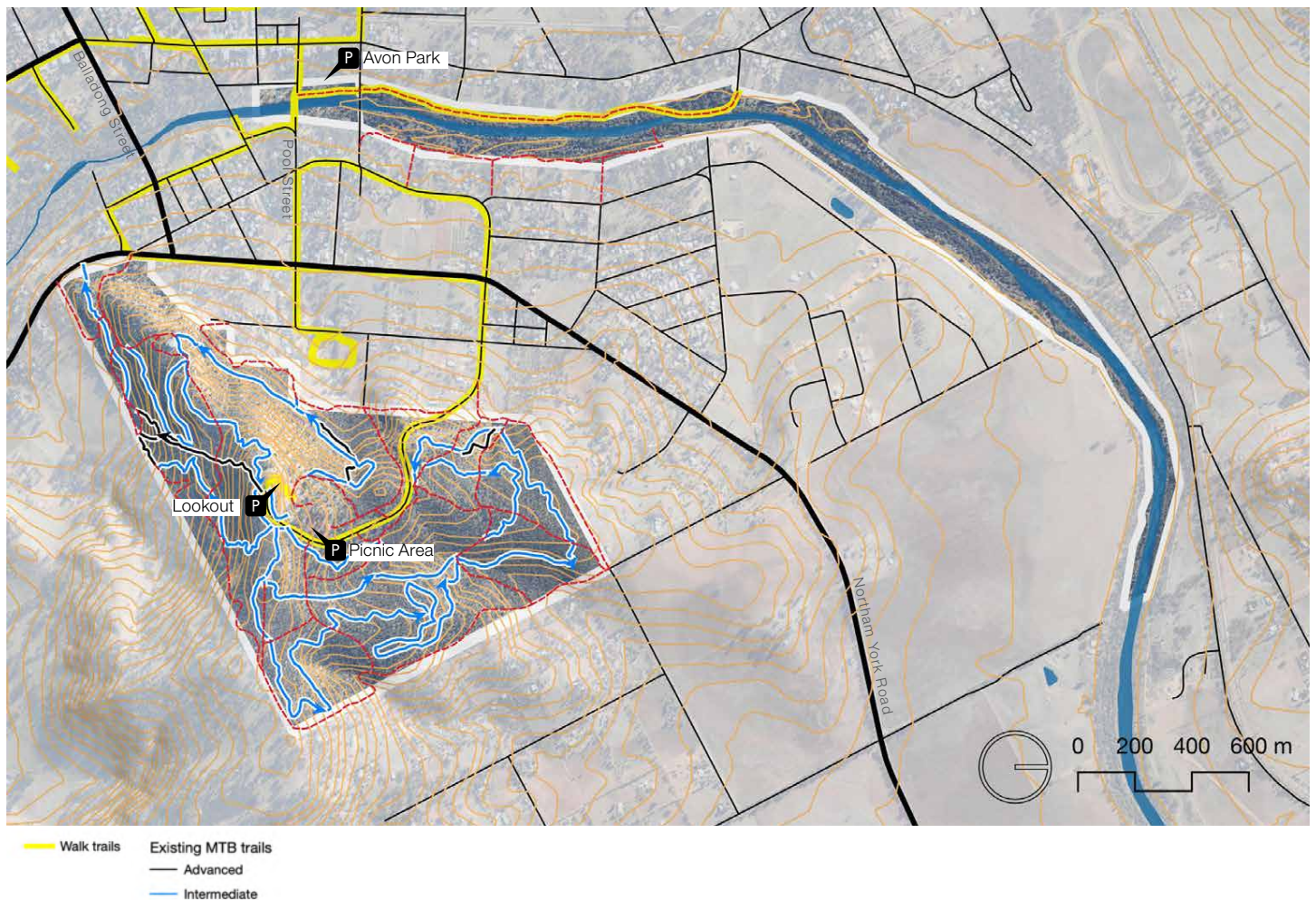


FIGURE 1 - Noongar seasons - identified potential interpretation theme (source: www.australiassouthwest.com)

Existing Trails and Facilities

The Avon River Trail currently follows established fire management tracks adjacent the Avon River. The swing bridge in Avon Park provides access across the river year round, fords at various locations along the river provide access across during summer months when the river flow is reduced. Wongborel/Mt Brown currently contains approximately 12km of unsanctioned singletrack trails and a network of fire management tracks, these are used by both mountain bike riders and walkers/trail runners. From a mountain bike trail style perspective the singletrack caters for cross country and gravity style riding. There are a number of promoted heritage trails which link the town and river to Wongborel/Mt Brown these mostly follow footpaths alongside roads. While there are no official trail counters on site, Strava heatmaps indicates significant use of the existing trails.

There is opportunity to reinvigorate the existing trail experience providing an engaging trail alignment that makes the most of the terrain features and of opportunity to tell the stories of ecological and cultural significance that the landscape holds.



MAP 5 - Existing trails

There are three significant visitor precincts within the project area – Avon Park, Wongborel/Mt Brown picnic area and Wongborel/Mt Brown lookout. Existing infrastructure at these sites is outlined in the table below. Existing facilities

Trailhead	Current facilities	Considerations
Avon Park	Playground BBQ/picnic facilities Shelter/tables Toilets Carpark (approximate capacity 20 vehicles, more in adjacent sites across road)	Close to town centre, ideal location for primary trailhead (as recommended in Trails Master Plan.)
Wongborel/Mt Brown picnic area	BBQ/picnic facilities Shelter/tables Toilets Carpark (approximate capacity 20 vehicles)	Carpark and site circulation is not well defined Memorial grove located on eastern edge below road.
Wongborel/Mt Brown lookout	Lookout Seating Carpark (approximate capacity 20 vehicles)	Lookout site is adjacent the identified special site of cultural significance Carpark is not well defined



Wongborel/Mt Brown Lookout



Wongborel/Mt Brown Picnic Area



Avon Park (source: Shire of York)

Opportunities and Constraints

Assessment of the current network and facilities alongside an analysis of the landscape features has enabled a clear picture of the opportunities and constraints presented in developing the concept plan.

Key constraints and issues identified include:

- Ensuring impacts to the flora, fauna and cultural values are minimised
- Roads and tenure limiting links between Wongborel/Mt Brown and the Avon River.
- Existing trails on roads and fire management tracks not offering the most appealing user experience

Key opportunities identified include:

- Improvement to existing trails to ensure the network provides for an engaging experience for a diverse range of trail users and abilities
- Formalising key access points and upgrading infrastructure
- Maximise the features in the terrain to provide engaging trail experiences
- Maximising interpretation opportunities

Characteristic zones

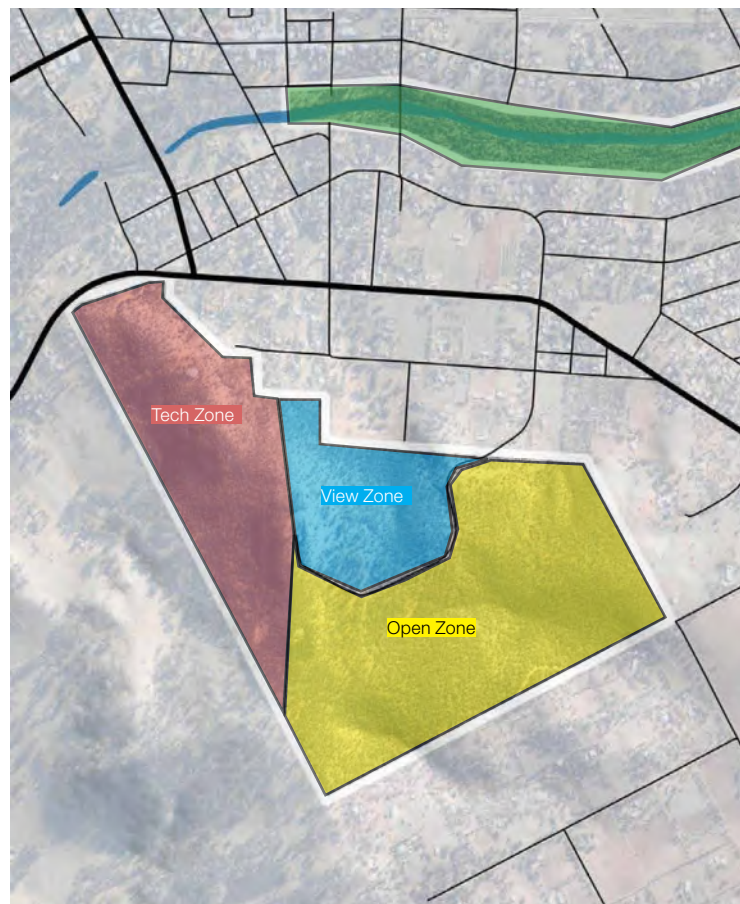
The result of the desktop analyses and on site ground truthing was the categorisation of characteristic zones. The diverse characteristics of each zone, from flat riparian to rocky steep slopes all suit different trail types. The characteristic zones informed the overall site zoning and placement of trails styles. Each of the zones are:

Contemplative/beginner zone: flat terrain offering potential for more intimate contemplative experiences and interpretation opportunities.

Open zone: Mellow slopes and more open vegetation type provide opportunity for cross country mountain bike trail and longer distance walk trails.

Tech zone: Steeper slopes and pockets of granite boulders provide challenging and varied terrain for more technical trails.

View zone: Aspect and elevation provide for commanding views over town towards Walwalying/Mt Bakewell offering opportunity for interpretation and a deeper connection with the landscape.



MAP 6 - Characteristic zones



View towards Walwalying/Mt Bakewell from Wongborel/Mt Brown

York Trail Network Concept

The York Trail Network has been designed to provide a series of experiences of varying length and difficulty which also allow for a number of connections and diversions enabling visitors to tailor their trail use experience to suit their needs and desires. The concept uses as much existing trail as possible, repurposing some sections and rehabilitating redundant sections. Where deemed appropriate the concept alignments also use some of the existing management roads. The network is proposed to be supported by a primary trailhead at Avon Park and a number of secondary trailheads and features a mix of trails purpose designed for single use (walk and mountain bike) as well as shared use trails. Poole Street, Clifford St and Brook St are proposed to be promoted as links from the Avon Park Primary Trailhead to Wongborel/Mt Brown.

Options for the future link to Walwalying /Mt Bakewell include from the proposed bridge along Eighth Road, past the Caravan Park and the western edge of the racetrack, or alternatively from the proposed northern bridge at Red Swamp Road along Sixth Road. These alignments are indicative only and will need review at time of implementation.

The York Trail Network adheres to the following best practice principles;

- The network avoids areas of environmental significance, problematic landforms, and is generally sympathetic to the landscape and viewsheds
- Where possible the trail network connects users with the natural environment and it's features
- Trail alignments are engaging and purposeful in their alignment and feature inclusion
- All trails are designed to be optimised for their intended user (walk/run, bike or shared)
- The overall system is accessible, intuitive and easy to navigate with pinch points and link trails strategically placed
- Provides a range of trail options suitable for hand cycle and other mobility equipment use

Table 1: Proposed Trails

ID	Provisional Name	Class	Length (m)	Direction	Style	Type	Adaptive suitable
1	Avon River Trail	Class 1/Easiest - white Class 2/Easy - green	7,000	Dual	Shared	Open	Y
2	Avon River Trail	Class 2/Easy - green	1,160	Dual	Shared	Open	Y
3	Wongborel challenge	Class 3	450	Dual	Walk	Open	
4	Wongborel walk	Class 2	1,460	Dual	Walk	Open	
5	Wongborel Shared Use	Class 2/Easy - green	1,600	Dual	Shared	Open	Y
6	Wongborel Shared Use	Class 2/Easy - green	1,800	Dual	Shared	Open	Y
7	Green descent	Easy -Green	1,700	Single	MTB - Gravity	Flowing	
8	Blue descent	Moderate - Blue	1,700	Single	MTB - Gravity	Technical	
9	Blue Climb	Moderate - Blue	1,920	Single	MTB - Cross Country	Open	
10	Black descent	Difficult - Black	680	Single	MTB - Gravity	Technical	
11	Green XC loop	Easy -Green	3,140	Single	MTB - Cross Country	Open	Y
12	Blue XC Loop 1	Moderate - Blue	1,320	Single	MTB - Cross Country	Technical	
13	Blue XC Loop 2	Moderate - Blue	3,100	Single	MTB - Cross Country	Technical	
14	Shared Use Link	Class 3/Moderate - Blue	740	Dual	Shared	Open	Y
Total			27,770				



MAP 7 - Proposed Trail Network

Trail network overview

Walkers/Trail Runners

Walkers and trail runners will have access to the Avon River Trail, the shared use trail on Wongborel/Mt Brown and the walk only trails proposed for Wongborel/Mt Brown. The Avon River Trail will provide an easy flat walk/run with opportunity to learn about the environmental and cultural values along the way through proposed interpretive elements and artworks. The proposed additional bridges north of Avon Park will allow for shorter loops to be created. Within Wongborel/Mt Brown walkers and trail runners have a few options including:

- tackling the proposed Wongborel Challenge stair climb from the Cemetery Trail Head,
- meandering along the proposed shared use link trail between the Cemetery Trailhead and York St Trailhead past the picnic area and lookout on the way,
- embarking on the longer walk trail which takes in expansive views over town towards Walwalying/Mt Bakewell and traverses through the cooler gullies on the east side of the mountain.

Mountain Bikers

For cyclists there are a range of options including the Avon River Trail, the shared use trail on Wongborel/Mt Brown and the variety of purpose designed mountain bike trails proposed for Wongborel/Mt Brown. The Avon River Trail will provide an easy flat ride suited to families and those looking for a more contemplative ride with opportunity to learn about the environmental and cultural values along the way through proposed interpretive elements and artworks. The proposed additional bridges north of Avon Park will allow for shorter loops to be created. Within Wongborel/Mt Brown riders have a few options including:

- an easy loop from Avon Park on the shared use trail taking in the picnic area and lookout
- tackling the gravity descending focussed trail on the steeper southern slope with options for beginner, intermediate and advanced riders
- tackling the longer cross country style loops with a intermediate options off the main beginner loop

Adaptive riders

It is proposed that the shared use trails and proposed beginner classified cross country trails be designed and constructed to be fully accessible for adaptive bikes, these trails will allow for a range of distance options for adaptive cyclists. It is also proposed that the whole network be audited post construction and each trail signposted indicating its adaptive rating.

Existing trails

The proposed network uses existing trails where they have been deemed appropriate for the proposed trail style and their condition and alignment is such that they can be sustainably maintained. Map 8 shows trails in the network that have been retained, those that are proposed to be rehabilitated and proposed new trails. Trails that are proposed to be rehabilitated will be raked and planted with appropriate demarcation to indicate to trail users that it is closed. Table 2 indicated length of trail in each category.

Table 2: Trail status

Trail status	Length
Existing trail retained	13,406
Existing trail rehabilitated	3,100
New	14,364

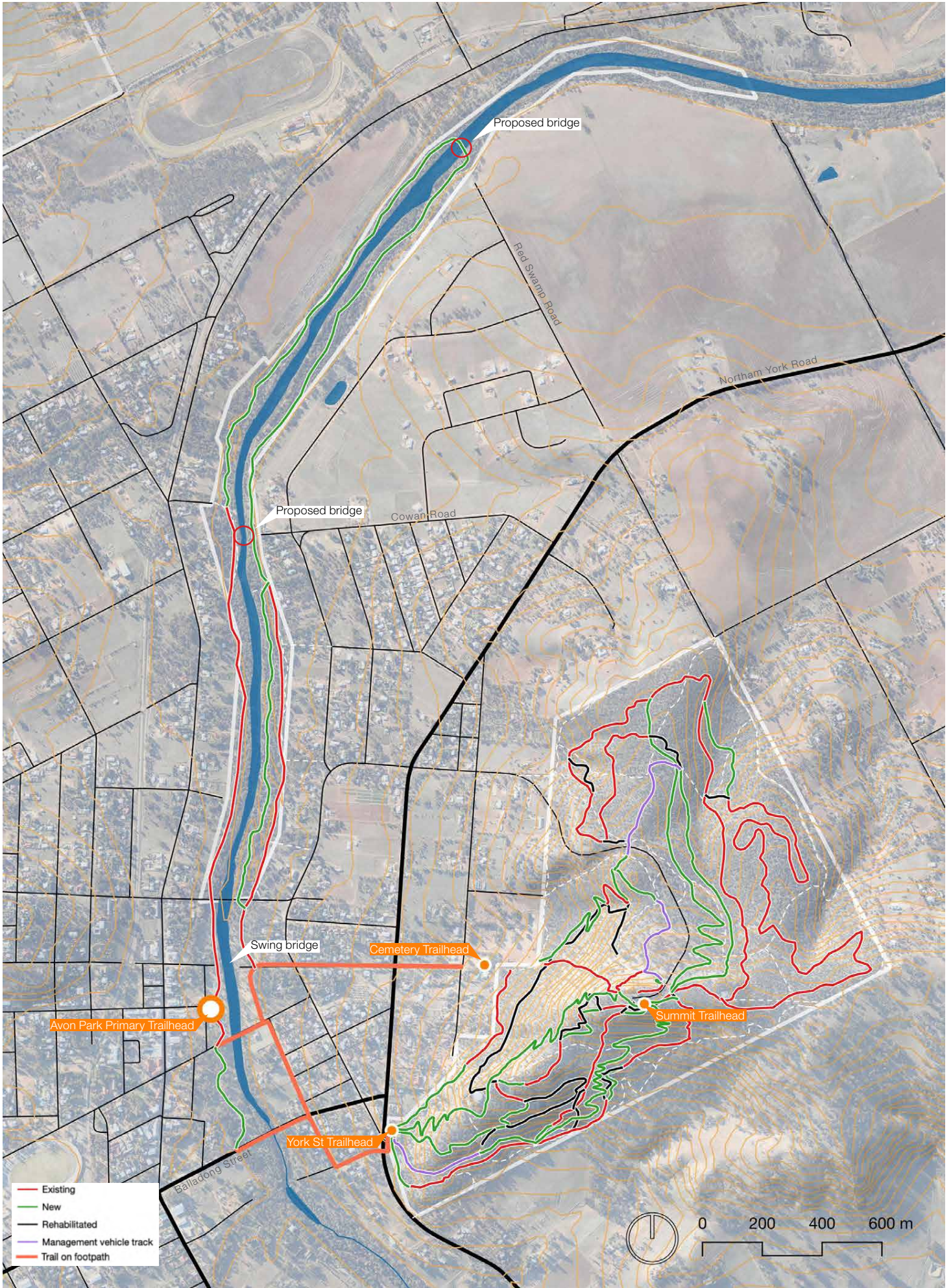
Access to Wongborel/Mt Brown from the Avon Park primary trailhead is proposed to utilise existing footpaths along Balladong Street, Clifford St and Brook Street to access the York Road secondary trailhead and Poole Street and Mount Street from the swing bridge to access the Cemetery secondary trailhead. These route will also take trail users past the proposed environmental and cultural centre on the corner of Clifford St and South St. It is recommended that The Shire investigate in consultation with Main Roads WA safety measures to allow for the safe crossing of Northam York Road.

Trail maintenance/management

It is recommended that a formal trail network management plan be established to ensure the ongoing longevity of the trails and minimise potential for unintended impacts. Well designed trails require less maintenance, but all trails require a certain level of ongoing management and maintenance. The trail maintenance program should consist of:

- A regular trail audit program– to identify any trail surface issues that require maintenance e.g. drainage, vegetation re-growth, condition of signage and condition of any build infrastructure.
- Schedule – The frequency of the maintenance required depends on the level of use that the trail receives and should allow for additional inspections following sever weather or trail events where there has been a concentrated volume of trail users over a shorter period of time.
- Standards – Trails should be maintained to the original classification, original trail standards and drainage standards. There should be no alteration to technical features or import/removal of material without extensive review and consultation.

There is opportunity to involve volunteers in the maintenance of trails and potential to include trail and landscape management activities in an Aboriginal ranger program.



MAP 8 - Proposed Trail Network - trail status

Infrastructure

Trailheads

Trailheads provide a number of important functions:

- Is visible and a safe place to leave a vehicle.
- Provides needs of trail users – water, toilets, bins, information and car parking
- Encourages social interaction as the primary meeting place and finishing point for users.
- Promotes positive use of the site through additional infrastructure such as seating, shelters, landscaping
- Is easily accessible and promoted to suit visitors of all mobility
- Provides all of the necessary trail information to plan a ride through good signage and also considers inclusion of interpretation signage.

The network has been designed around a primary trailhead and a series of secondary trailheads. It is proposed that Avon Park be established as the primary trailhead with space made for signs outlining the trail network and features of interest. Secondary trailheads are proposed at the Cemetery and York Rd entry's to Wongborel/Mt Brown reserve and at the summit. In order to make the most of the potential economic benefits of drawing visitors to York, it is proposed to direct trail users to park at Avon Park close to businesses and amenities. Most trail users will start their trail journey from Avon Park. Additional secondary trailheads have been identified at Wongborel/Mt Brown to cater for riders and walkers wishing to start their trail experience closer to the Wongborel/Mt Brown network. Existing and proposed infrastructure at each trailhead is outlined in Table 3 below.

The proposed upgrade of the Wongborel/Mt Brown picnic area and lookout considers the Summit Trailhead and provides for improved vehicle, pedestrian and rider flow through the precinct. A formal carpark is proposed at the Cemetery Trailhead and should factor in future provision for horse float parking. For riders wishing to shuttle the network, provision will be made at the Summit Trailhead and Cemetery Trailhead for drop off and pick up. From the base of the descending trails riders will use Trail 14 to link back to the Cemetery trailhead for pick up. It is recommended that the Shire monitor the use of the network and investigate a shuttle pick up bay on at the intersection of Brook Street and York Road opposite the York St Trailhead if it is evident riders aren't using the Cemetery Trailhead shuttle pick up point. The road reserve on the north side of Brook Street may allow enough space for a 5min standing zone for rider pick up.

Table 3: Trailhead infrastructure

Trailhead	Type	Existing infrastructure	Proposed infrastructure (additional to existing)
Avon Park	Primary	Toilets, parking, playground, BBQ, picnic tables, shelter	Trail network map.
Cemetery Trailhead	Secondary	Informal parking	Formalised parking and vehicle access, trail network map. Provision for float parking to service future equestrian trail should be factored into carpark layout design.
York Road	Secondary	None	Trail network map.
Summit	Secondary	Parking, lookout, seating	Trail network map, seating /gathering area around trailhead sign.

The following tables outline purpose and content of proposed sign hierarchy and are recommended as a minimum in ensuring adequate orientation, wayfinding and emergency information is conveyed to trail users on the ground. It is recommended that a supplementary online or mobile platform be developed to allow visitors to gather information pre-visit and to locate themselves on a map via their phone.

Bridges

There are two additional swing bridges proposed along the Gogulgar Bilya/Avon River which will enable all season access across the river and opens up options for shorter and longer loops along the Avon River Trail. Cowan Road is proposed as a short term priority and Red Swamp Road as a long term priority. Specific location and bridge design to be determined in detailed design.

Interpretation

There are many potential themes for interpretation and opportunity's to tell the stories contained within the landscape. Potential themes identified include:

- The Dreamtime story of Walwalying and Wongborel
- The emu print on the southern face of Walwalying
- The Noongar seasons
- History of York town's development

The trail network has been designed to make the most of vantage points to enable telling of these and other stories through interpretation signage and or guided tours. It is also understood that the Shire is working on a mobile application to tell the local stories. Key points within the trail network that have been identified for ideal locations for interpretation signage, artworks and/or locations to feature in digital apps include:

- Avon Park Primary Trailhead
- Avon River Trail between the Swing Bridge and Balladong Road
- Wongborel Mt Brown lookout
- At the high point on Wongborel Walk with views towards Walwalying/Mt Bakewell

As the trail development process continues into detailed design, construction and management the Shire will continue to work closely with the Ballardong Noongar community in developing the opportunities for interpretation of Noongar cultural heritage. There is also potential to include Noongar language in naming some or all of the trails.

Events

The existing network of singletrack on Wongborel/Mt Brown has been used in the past for WA Gravity Enduro events. The proposed trail network concept design allows for this style of event to continue to be held at Wongborel/Mt Brown and also allows options for cross country style mountain bike events and trail running events.

Primary Trailhead

Purpose	Identifies trails, nodes, supporting facilities, hazards and risks and emergency contact details, trail closures/warnings, fire danger ratings, trail user code of conduct
Wayfinding	Context map, network and zone map, trail network orientation map, list of trails (identifying name/zone, classification), route/loop potentials (optional)
Symbols	Available activities, amenities and facilities, regulatory requirements, hazards and risks, trail classification symbols with definitions
Interpretative content	General introduction to the area's context
Emergency management	Identifies key emergency contact details and emergency protocols

Secondary Trailhead

Purpose	Supports the trail network orientation and wayfinding
Wayfinding	Trail Network orientation map, direction to primary trailhead with km
Symbols	Trail classification symbols, regulatory requirements, hazards and risks
Interpretative content	None
Emergency management	Key emergency contact details

Directional marker (Trail decision point, road crossing)

Purpose	Supports the trail network orientation and wayfinding,
Wayfinding	Trail name, directional arrow
Symbols	Trail classification symbol, road crossing, no walk, no cycling
Interpretative content	None
Emergency management	Key emergency contact details

Avon Park Trailhead

Avon Park has been identified as the ideal location for a primary trailhead. The park already contains the necessary support infrastructure such as parking, toilets, shelter and picnic facilities. Located on the Gogulgar Bilya/Avon River and just a block from Avon Terrace the park offers an ideal location for trail users to start and finish their journey on the trails.

Additional infrastructure required to establish the trailhead include signs containing a map and details of the trail network. The Avon River Trail is proposed to start at the Avon Park Primary Trailhead this accessible trail will provide an easy and immersive trail experience alongside the Gogulgar Bilya/Avon River. It is proposed that the section from the swing bridge south to Balladong Road through Avon Park be designed and constructed to Class 1/Easiest classification and have a hardened surface to cater for wheelchairs and other mobility aides. This section of trail is proposed to also have a focus on interpretation opportunities relating to both environmental and cultural heritage values, through signage and/or artworks.



Primary Trailhead sign precedent images



LEGEND

- ① TRAILHEAD SIGN LOCATION
- ② EXISTING TOILETS
- ③ EXISTING PARKING
- ④ EXISTING PLAYGROUND
- ⑤ EXISTING PICNIC SHELTER
- ⑥ EXISTING SWING BRIDGE
- ⑦ RIVER CONSERVATION SOCIETY PROPOSED ENVIRONMENTAL AND CULTURAL CENTRE
- ⑧ PROPOSED SECTION OF TRAIL WITH FOCUS ON INTERPRETATION
- PROPOSED AVON RIVER TRAIL



0 20 60m
1:2,000 at A3

MAP 9 - Avon Park Trailhead Concept

Wongborel/Mt Brown picnic area & Lookout concept

The intent of the Wongborel/Mt Brown picnic area and lookout concept is to reinvigorate the spaces to complement the proposed trail network. While currently well used both the picnic area and lookout are dated and in need of improvements to vehicle and pedestrian flow and safety.

Picnic Area

The picnic area is proposed to be consolidated with formalisation of a parking area and limiting vehicle access. The proposed carpark will allow for approximately 18 bays and delineated with large boulders to control vehicle access. The existing BBQs and shelters will be retained with space around them formalised with planning. Two new picnic nodes are proposed to allow for smaller groups to enjoy a more secluded setting with views over town towards Walwalying/Mt Bakewell. A skills park is proposed in the pocket to the north of the picnic area, to enable riders to practice technical features. The skills park should include a range of different technical features which can be found on the trails within the network.

Lookout

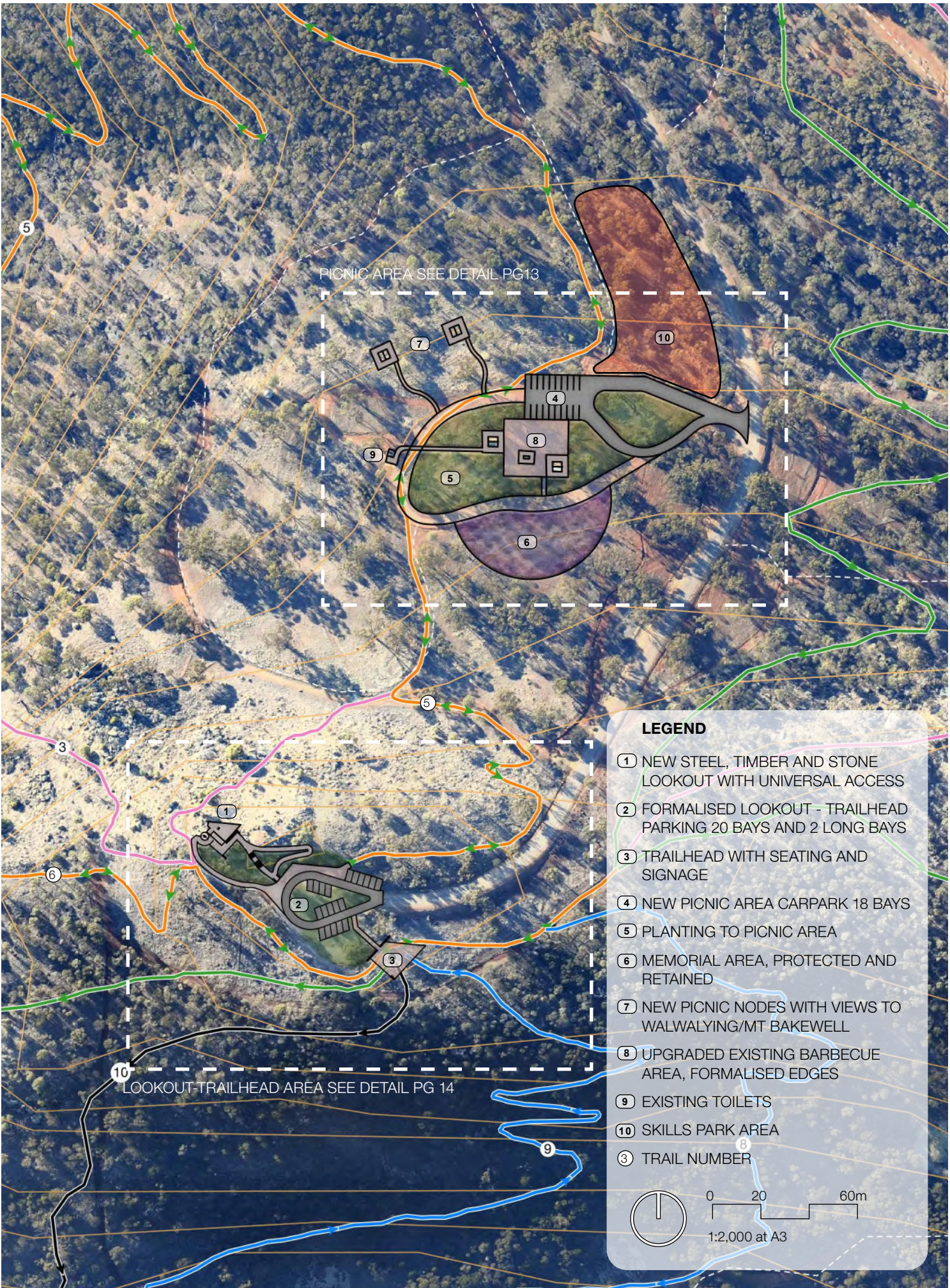
The lookout area is proposed to be significantly upgraded. The carpark layout will be formalised with designated parking bays and a one-way loop layout to enable buses to turn around easily. A new universal access path and stairs will lead to a new cantilevered steel, timber and stone lookout structure. The existing directional cairn will be reused and it is proposed that interpretation signage be upgraded in consultation with the local Ballardong people. The lookout will connect back to the picnic area via Trail 3 and Trail 5. South of the carpark the summit trailhead is proposed with a small shelter, seating and trail network map.

Note site layout and features depicted in this concept are indicative only and subject to further detailed design and engineering

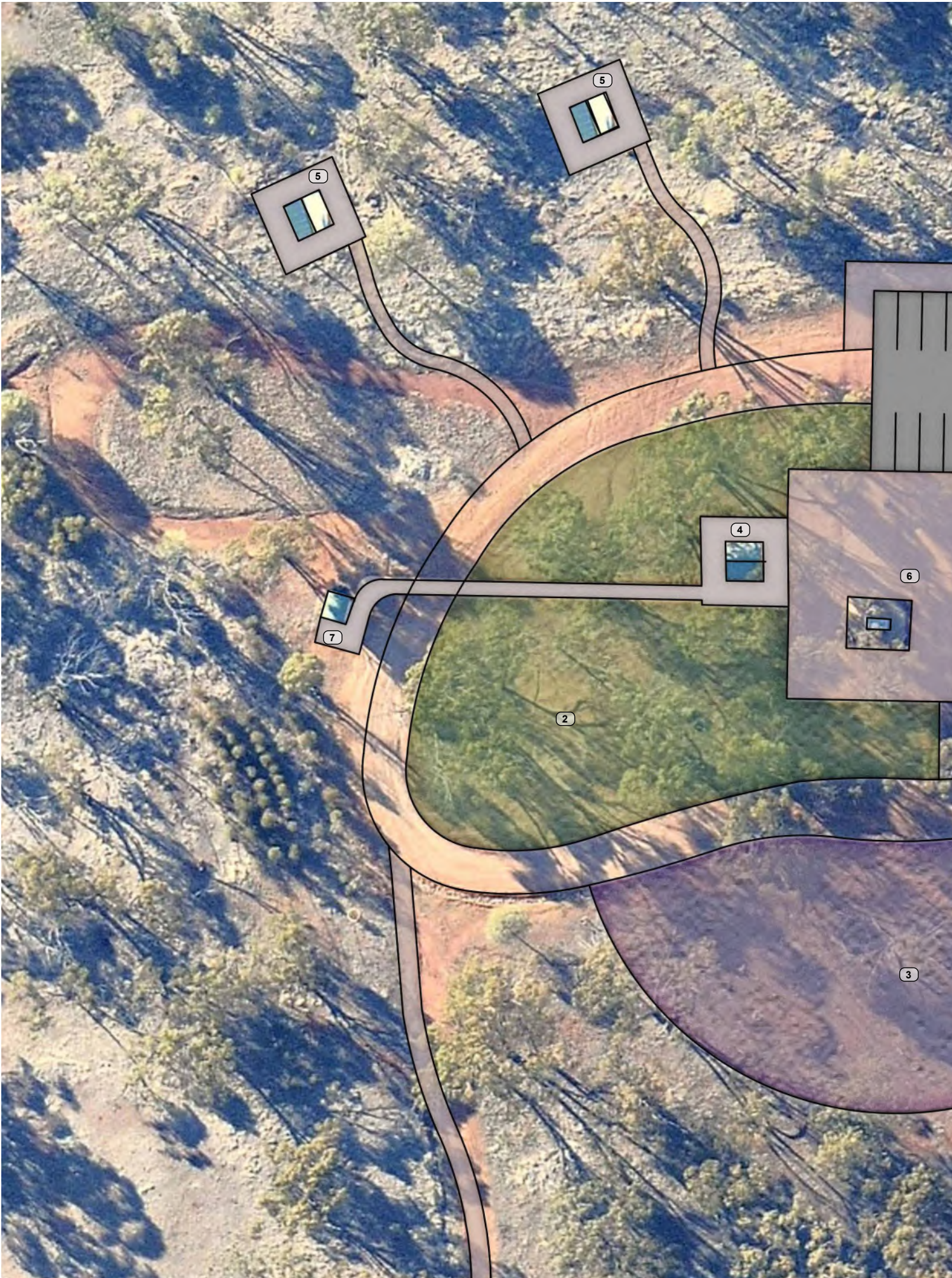


Precedent images





MAP 10 - Wongbore/Mt Brown picnic area, lookout and summit trailhead concept - overview



MAP 11 - Wongborel/Mt Brown picnic area concept



LEGEND

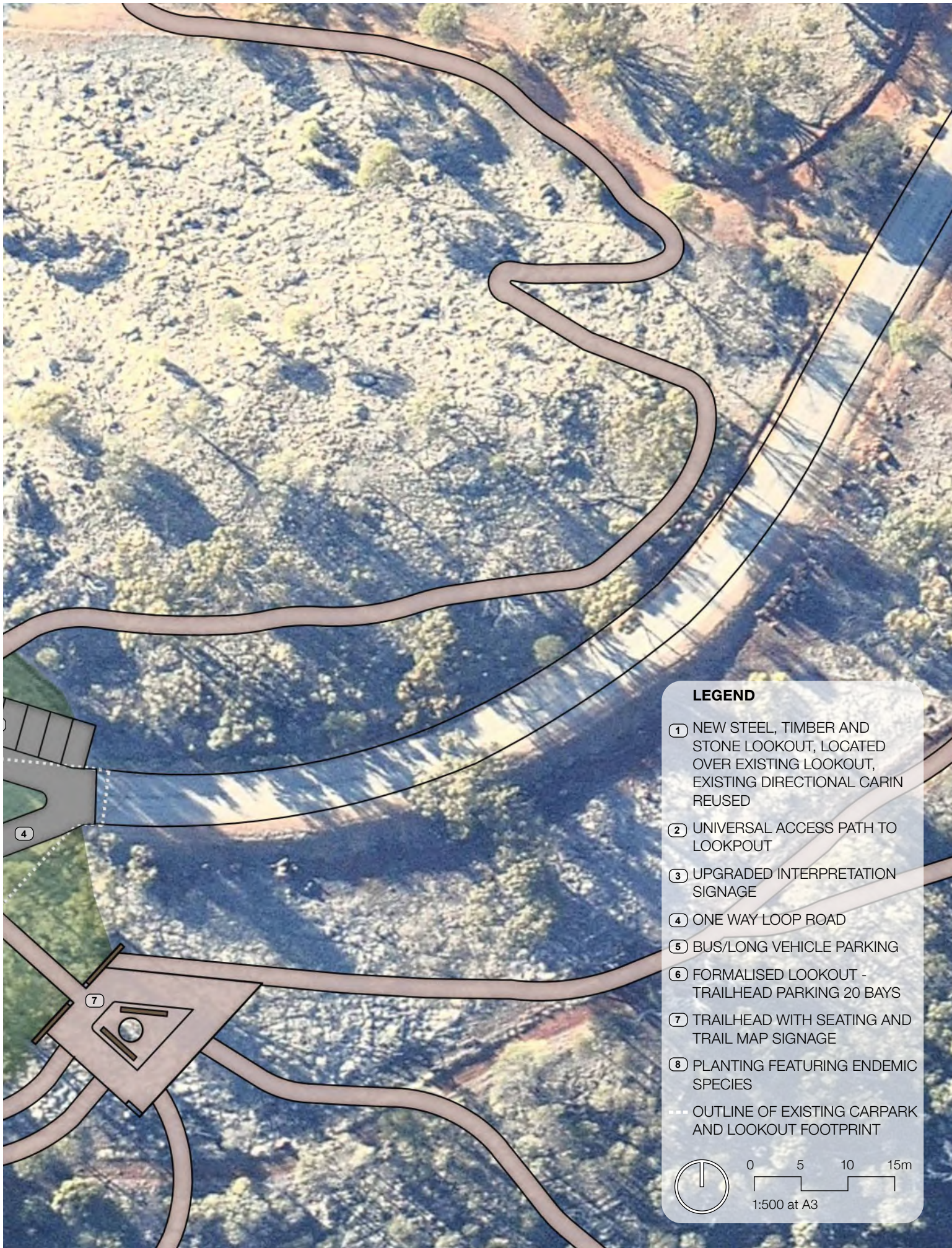
- ① NEW PICNIC AREA CARPARK 18 BAYS
- ② PLANTING TO PICNIC AREA
- ③ MEMORIAL AREA, PROTECTED AND RETAINED
- ④ EXISTING PICNIC NODES
- ⑤ NEW PICNIC NODES - VIEWS TO WALWALYING/MT BAKEWELL
- ⑥ UPGRADED EXISTING BARBECUE AREA, FORMALISED EDGES
- ⑦ EXISTING TOILETS
- ⑧ SKILLS PARK AREA



0 5 10 15m
1:500 at A3



MAP 12 - Wongborel/Mt Brown lookout and summit trailhead concept

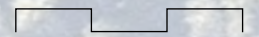


LEGEND

- ① NEW STEEL, TIMBER AND STONE LOOKOUT, LOCATED OVER EXISTING LOOKOUT, EXISTING DIRECTIONAL CARIN REUSED
- ② UNIVERSAL ACCESS PATH TO LOOKPOUT
- ③ UPGRADED INTERPRETATION SIGNAGE
- ④ ONE WAY LOOP ROAD
- ⑤ BUS/LONG VEHICLE PARKING
- ⑥ FORMALISED LOOKOUT - TRAILHEAD PARKING 20 BAYS
- ⑦ TRAILHEAD WITH SEATING AND TRAIL MAP SIGNAGE
- ⑧ PLANTING FEATURING ENDEMIC SPECIES
- OUTLINE OF EXISTING CARPARK AND LOOKOUT FOOTPRINT



0 5 10 15m



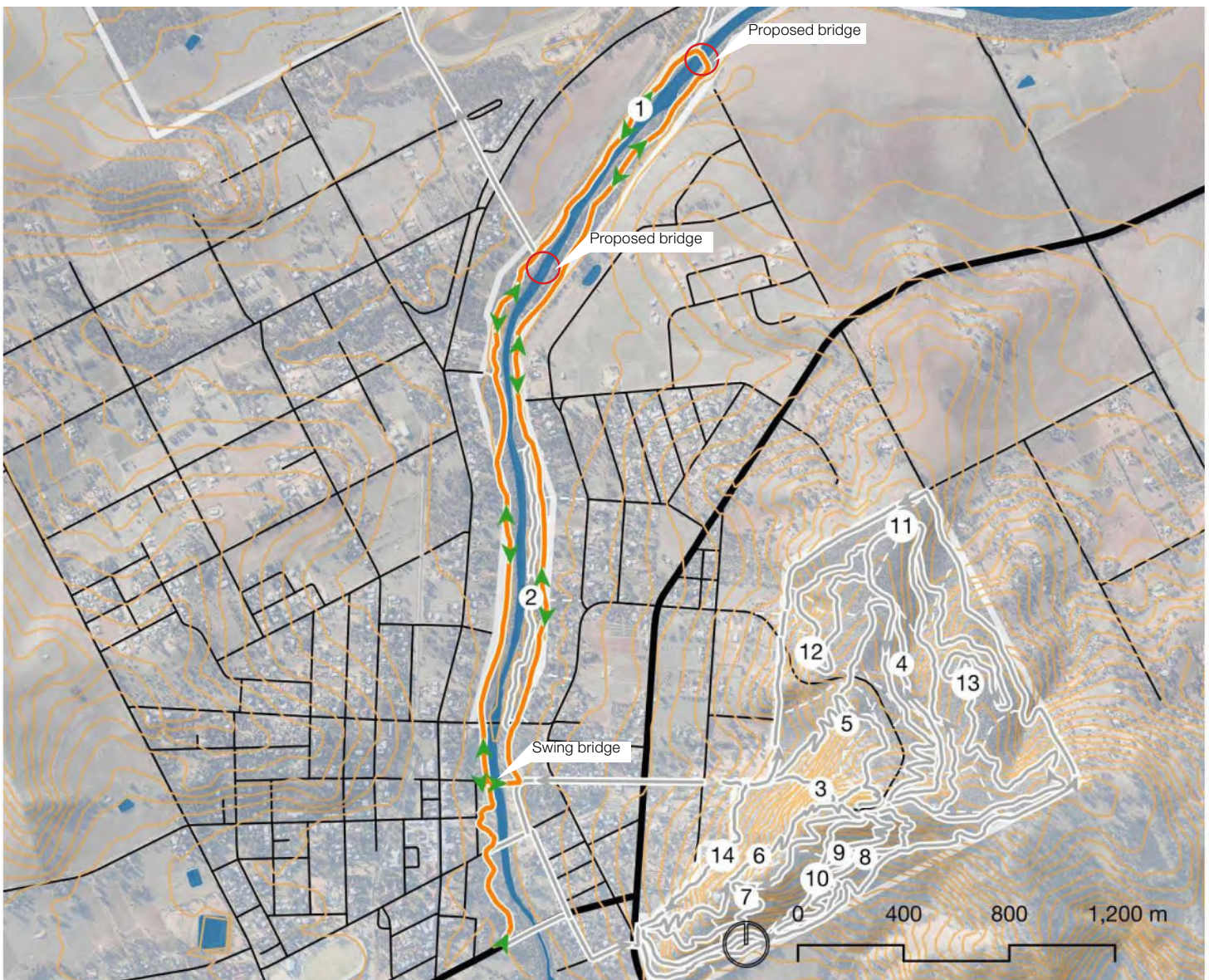
1:500 at A3

Trail Summaries

1. Avon River Trail

The Avon River Trail is proposed to be an extension of the existing Avon River Trail. Starting at the Avon Park Primary Trailhead this accessible trail will provide an easy and immersive trail experience alongside the Avon River. It is proposed that the section from the swing bridge south to Ballardong Road on the west bank be designed and constructed to Class 1/Easiest classification and have a hardened surface to cater for wheelchairs and other mobility aides. This section of trail is proposed to also have a focus on interpretation opportunities relating to both environmental and cultural heritage values. North of the swing bridge the trail will be Class 2/Easy

providing opportunity for longer adventures following the river downstream. A proposed bridge in the vicinity of Eighth Road will enable users to loop back to Avon Park on the Eastern bank in all seasons. An additional bridge in the vicinity of Red Swamp Road is proposed as a long term recommendation.



MAP 13 - Avon River Trail

Trail 1 Summary



Class 1



Easiest - White



Class 2



Easy - Green

Classification

Trail Length 7,000m

Trail Type Open

Corridor width 40m

Tread Width 2m

Use Walk/trail run/cycle

Direction Dual Direction

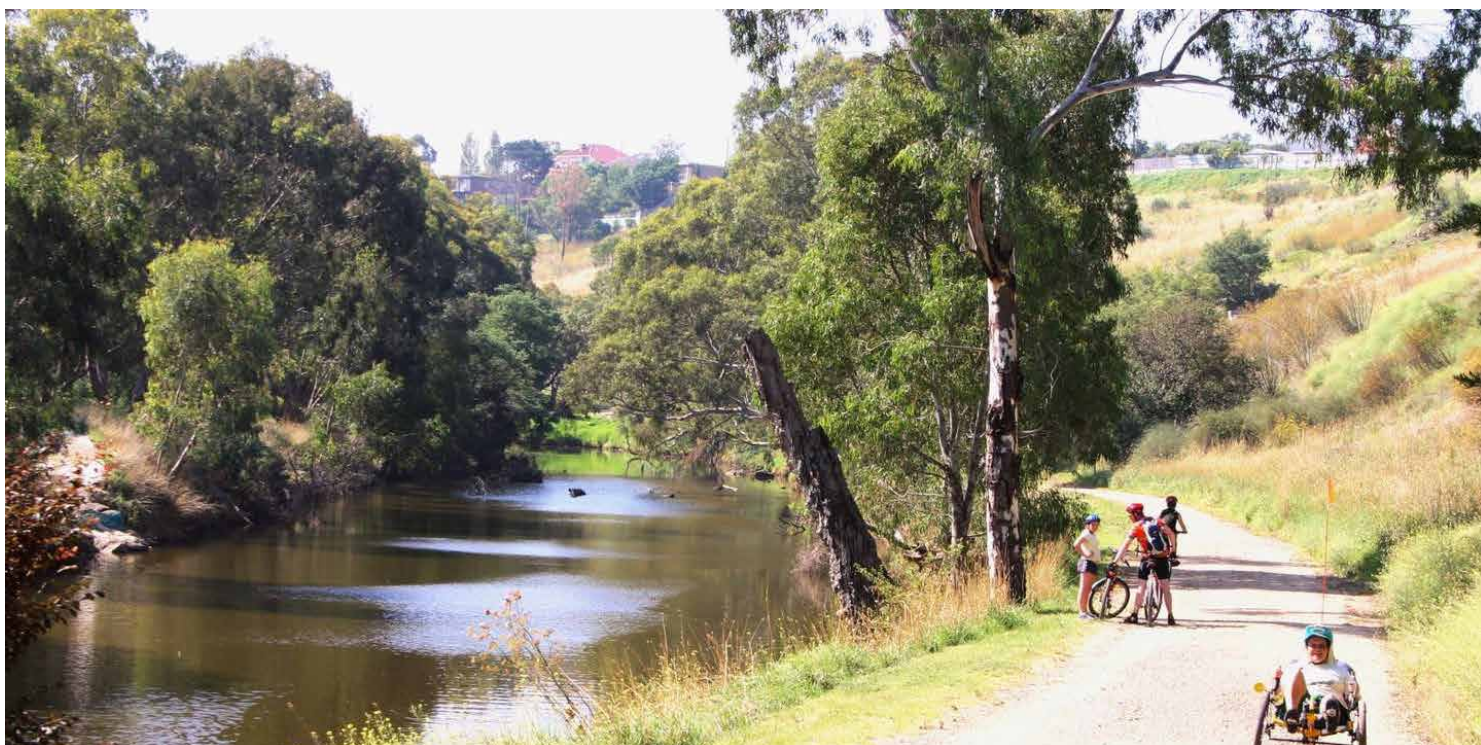
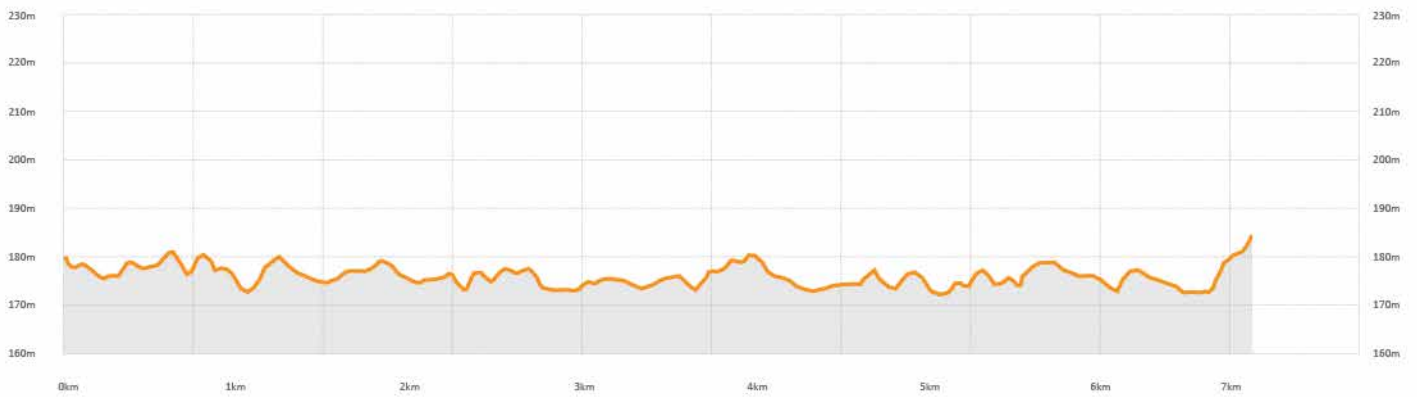
Total Ascent 129m

Total Descent 125m

Average Trail Gradient 4%

Anticipated TTFs

N/A



Precedent image

2. Avon River Trail

This section of the Avon River Trail is proposed to be a narrower natural surface alternative to the main trail offering an immersive experience closer to the river through groves of Sheoak trees. The trail will parallel the main trail between Cowan Road and Ford St



MAP 14 - Avon River Trail

Trail 2 Summary



Class 2



Easy - Green

Classification

Trail Length 450m

Trail Type Open

Corridor width 40m

Tread Width 1m

Use Walk/trail run/cycle

Direction Dual Direction

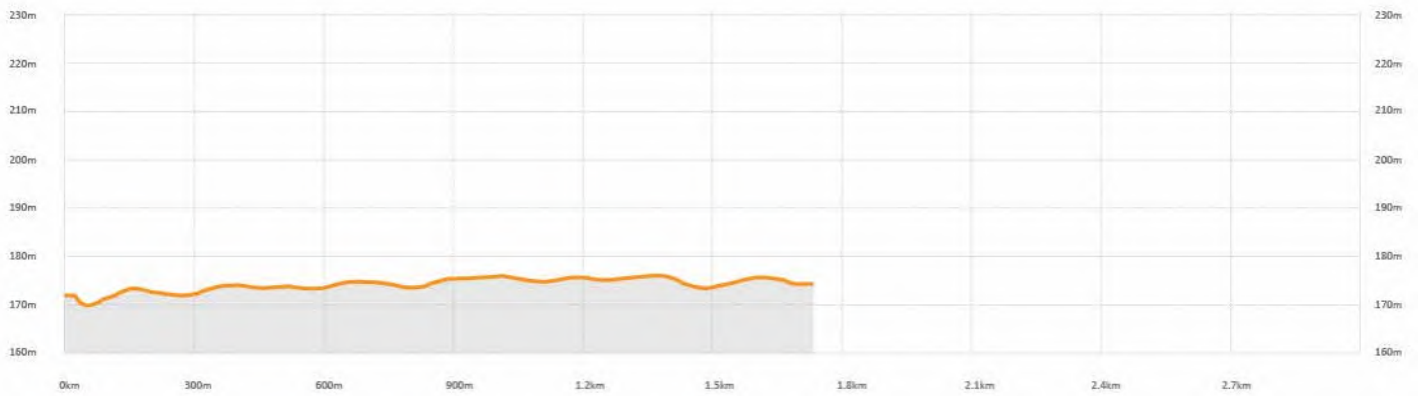
Total Ascent 18m

Total Descent 17m

Average Trail Gradient 3%

Anticipated TTFs

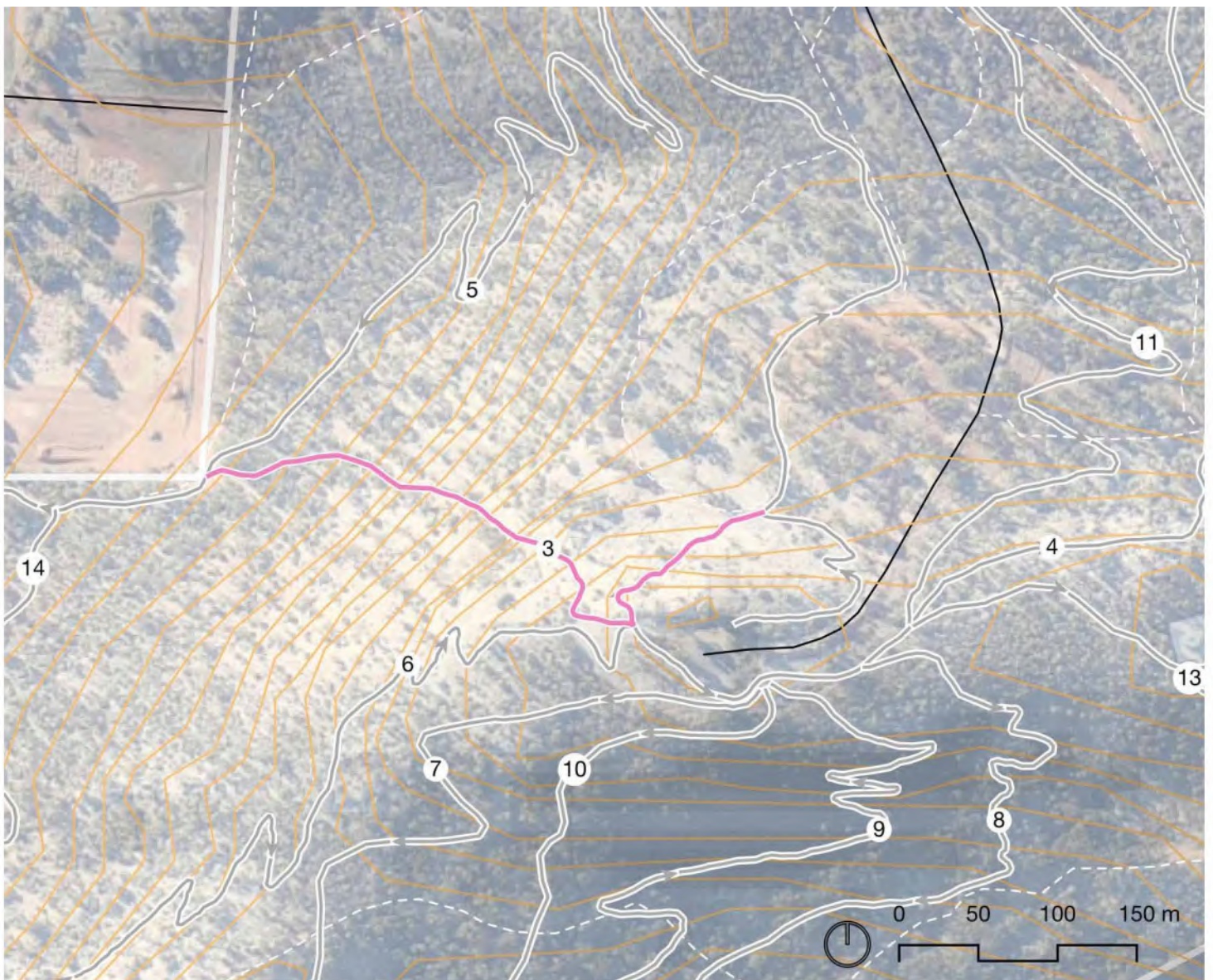
Rock armouring



Precedent image

3. Wongborel Challenge Trail

The Wongborel Challenge Trail is proposed to be a trail which will provide a physical challenge for locals and visitors. Aligned straight up the mountain from the Cemetery Trailhead to the Wongborel Lookout the trail will feature approximately 400 stairs. From the Wongborel Lookout the trail links to the Wongborel picnic area. Combined with Wongborel Shared Use Trail (Trail 5) a 2km loop trail from the Cemetery Trailhead is possible for walkers/trail runners.



MAP 15 - Wongborel Challenge Trail

Trail 3 Summary

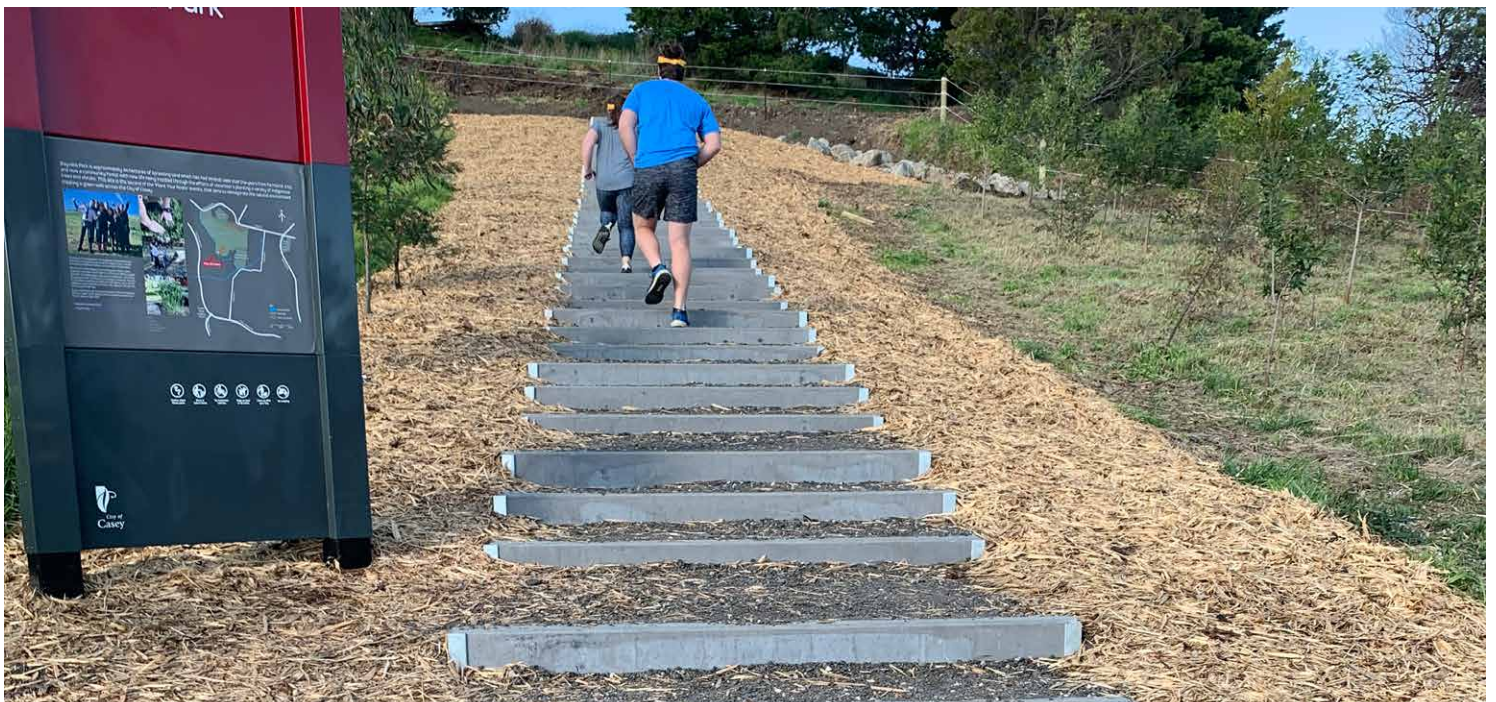
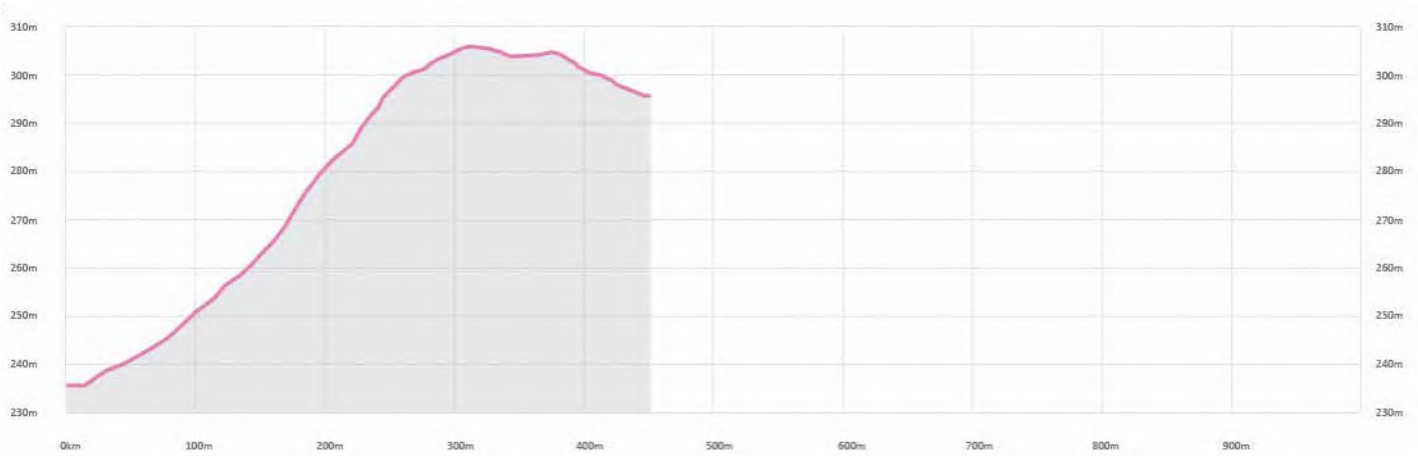


Class 3

- Classification** Class 3
- Trail Length** 450m
- Trail Type** Open
- Corridor width** 40m
- Tread Width** 3m
- Use** Walk/trail run
- Direction** Dual Direction
- Total Ascent** 70m
- Total Descent** 8m
- Average Trail Gradient** 17%

Anticipated TTFs

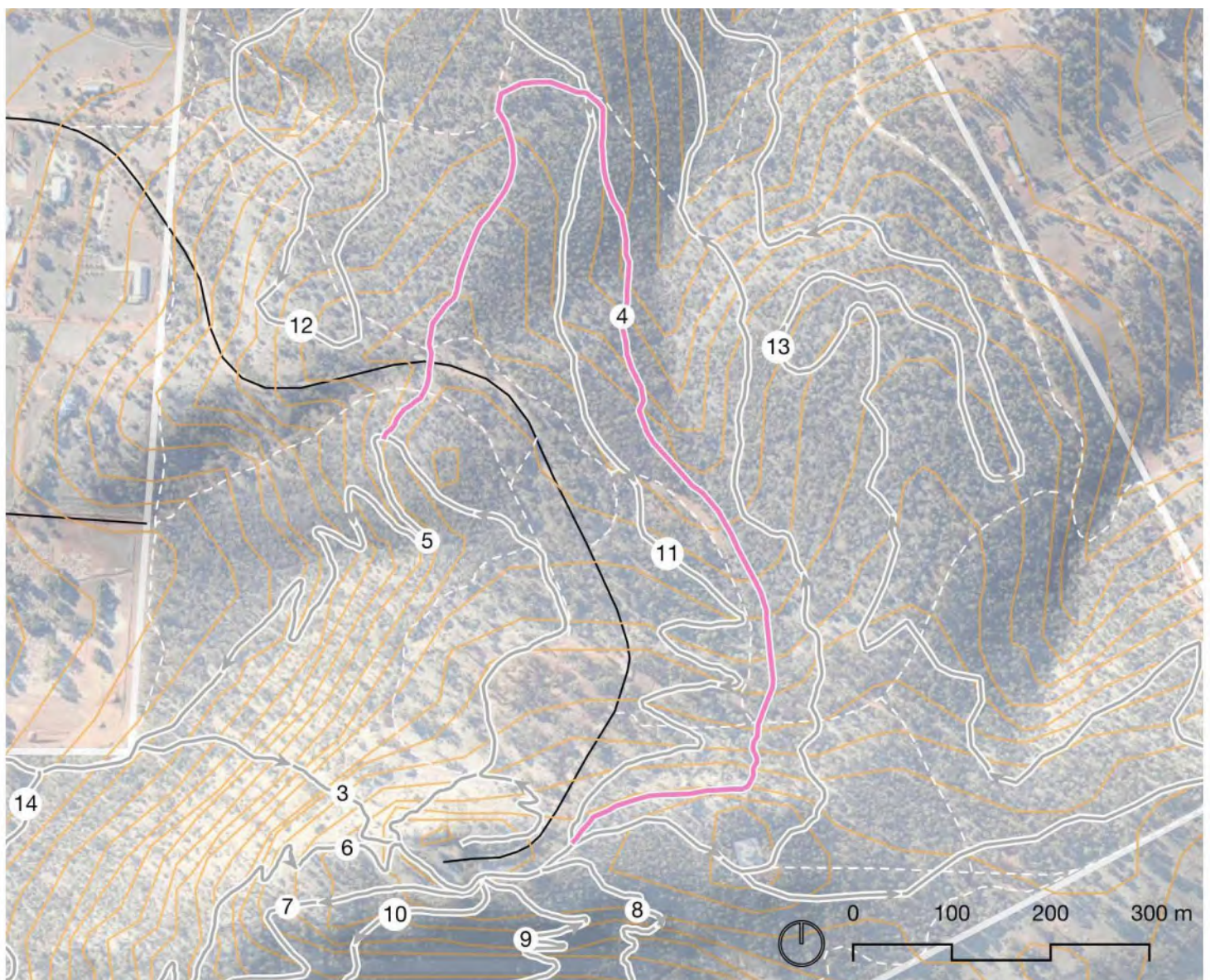
Stairs



Precedent image

4. Wongborel Walk

The Wongborel Walk Trail is a 1.4km walk trail which links Wongborel Picnic Area and Wongborel Lookout via a ridge and gully. Starting at the Summit Trailhead the trail traverses a small ridgeline offering commanding views over town towards Walwalying Mt Bakewell. A short section of stairs is proposed coming off the ridge before the trail traverses alongside a shallow gully. The trail then links into an existing management road which takes users back to the Wongborel Shared Use Trail and the picnic area or Cemetery Trailhead.



MAP 16 - Wongborel Walk

Trail 4 Summary

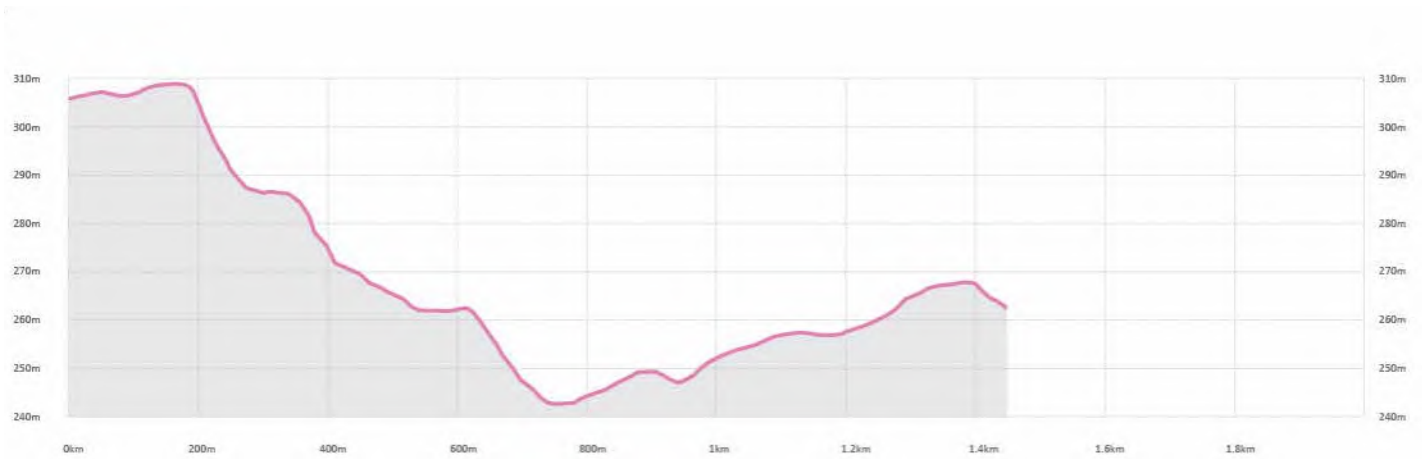


Class 2

- Classification** Class 2
- Trail Length** 1,460m
- Trail Type** Open
- Corridor width** 40m
- Tread Width** 1m
- Use** Walk/trail run
- Direction** Dual Direction
- Total Ascent** 27m
- Total Descent** 64m
- Average Trail Gradient** 6%

Anticipated TTFs

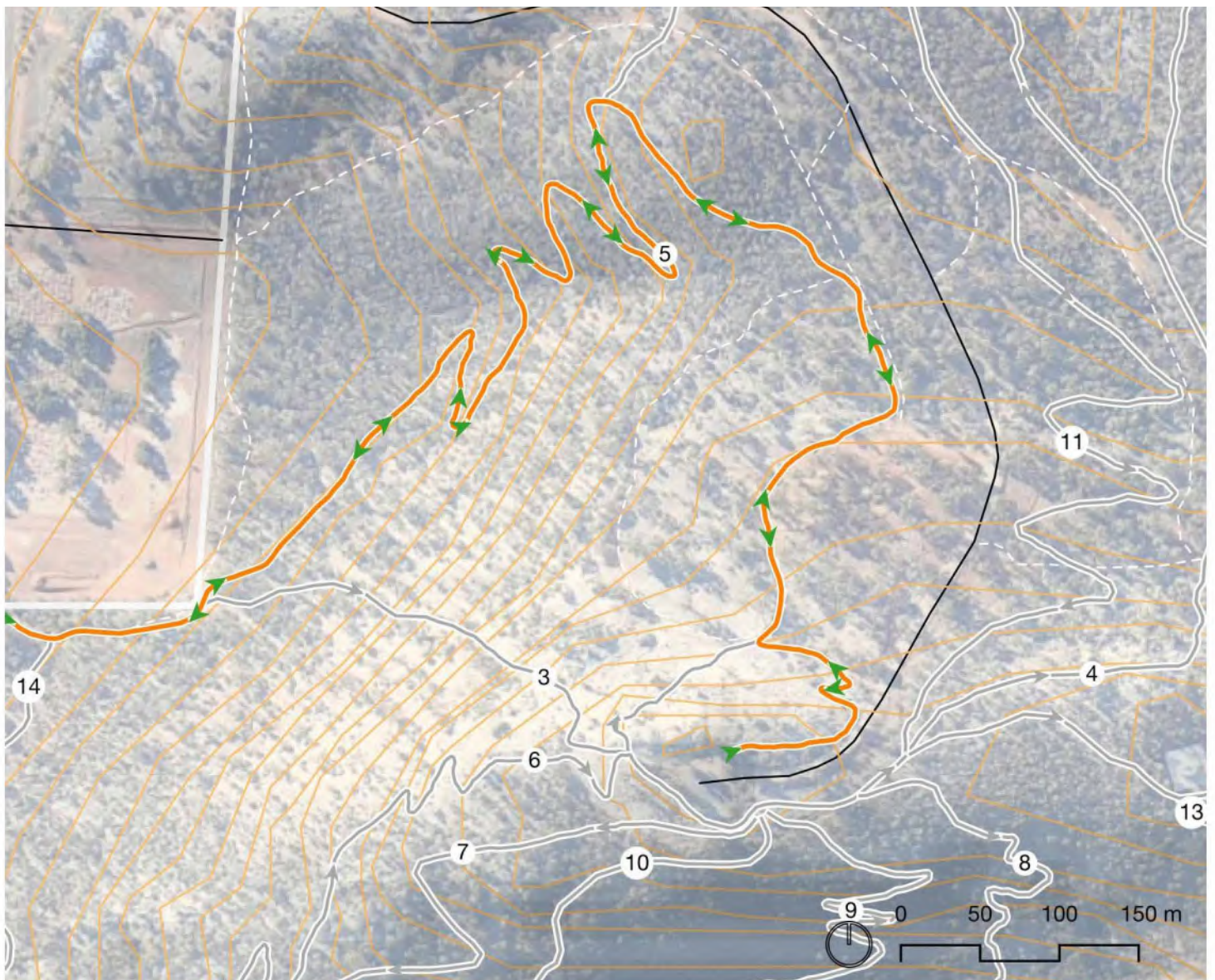
Stairs



Precedent image

5. Wongborel Shared Use

The Wongborel Shared Use Trail links the Cemetery Trailhead, Wongborel Picnic Area and lookout. Providing an alternative to the Challenge Trail, this trail will not have stairs and have a shallower average gradient. This trail will provide access up the mountain from the Cemetery Trailhead for those on a bike.



MAP 17 - Wongborel Shared Use

Trail 5 Summary



Class 2

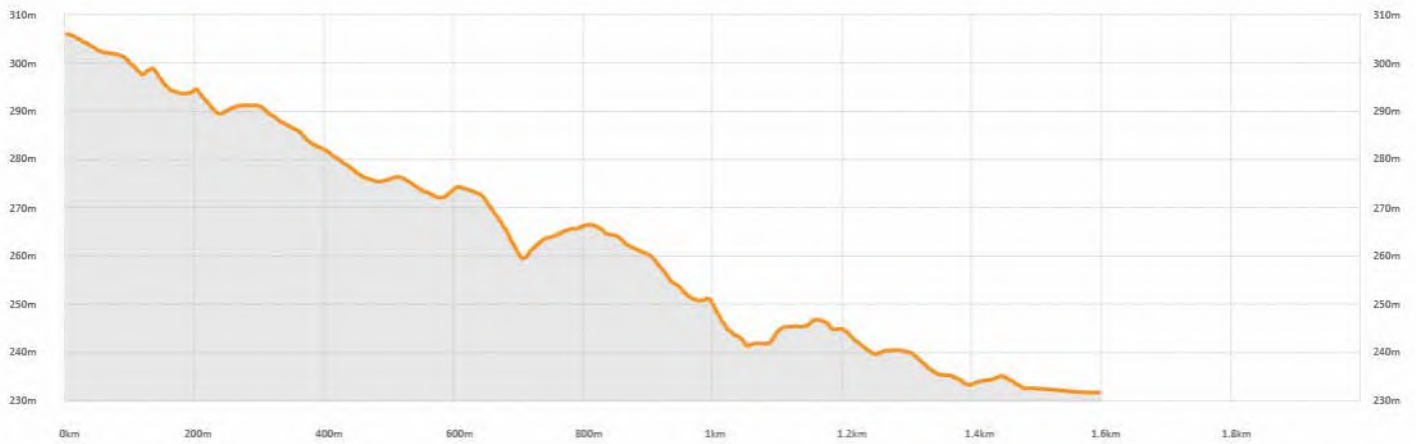


Easy - Green

- Classification** Class 2
- Trail Length** 1,600m
- Trail Type** Open
- Corridor width** 40m
- Tread Width** 1.5m
- Use** Walk/trail run/cycle
- Direction** Dual Direction
- Total Ascent** 17m
- Total Descent** 84m
- Average Trail Gradient** 6%

Anticipated TTFs

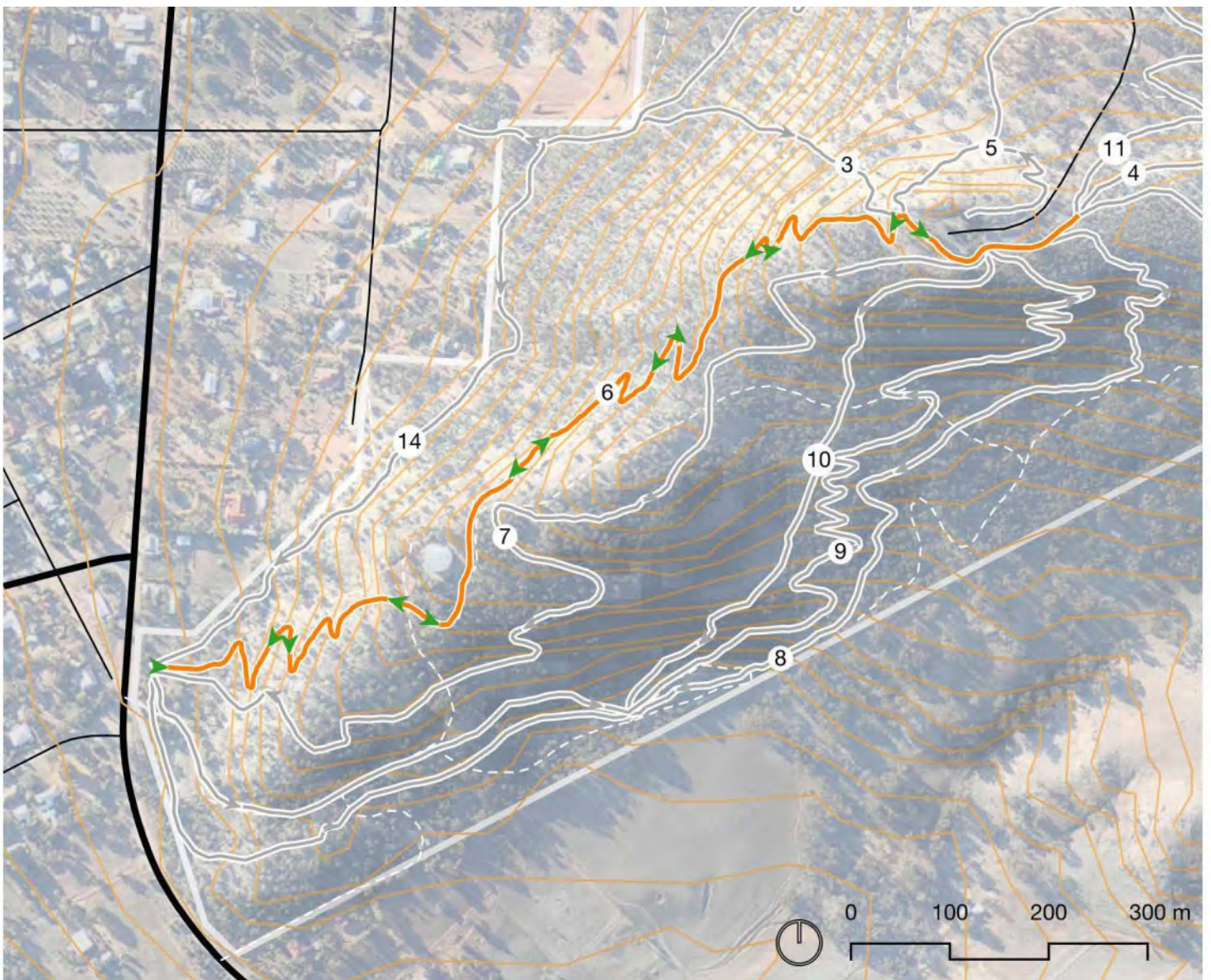
N/A



Precedent image

6. Wongborel Shared use

This section of the Wongborel Shared Use Trail links the York St Trailhead and the Summit Trailhead. This trail is critical for the mountain bike trail network providing the easy climb back up to the Summit Trailhead for riders using the gravity trails. Walkers and trail runners will be able to use this trail to create a longer loop from the Avon Park Trailhead up to the Wongborel Lookout and back.



MAP 18 - Wongborel Shared Use

Trail 6 Summary



Class 2



Easy - Green

- Classification** Class 2
- Trail Length** 1,800m
- Trail Type** Open
- Corridor width** 40m
- Tread Width** 1.5m
- Use** Walk/trail run/cycle
- Direction** Dual Direction
- Total Ascent** 101m
- Total Descent** 12m
- Average Trail Gradient** 7%

Anticipated TTFs

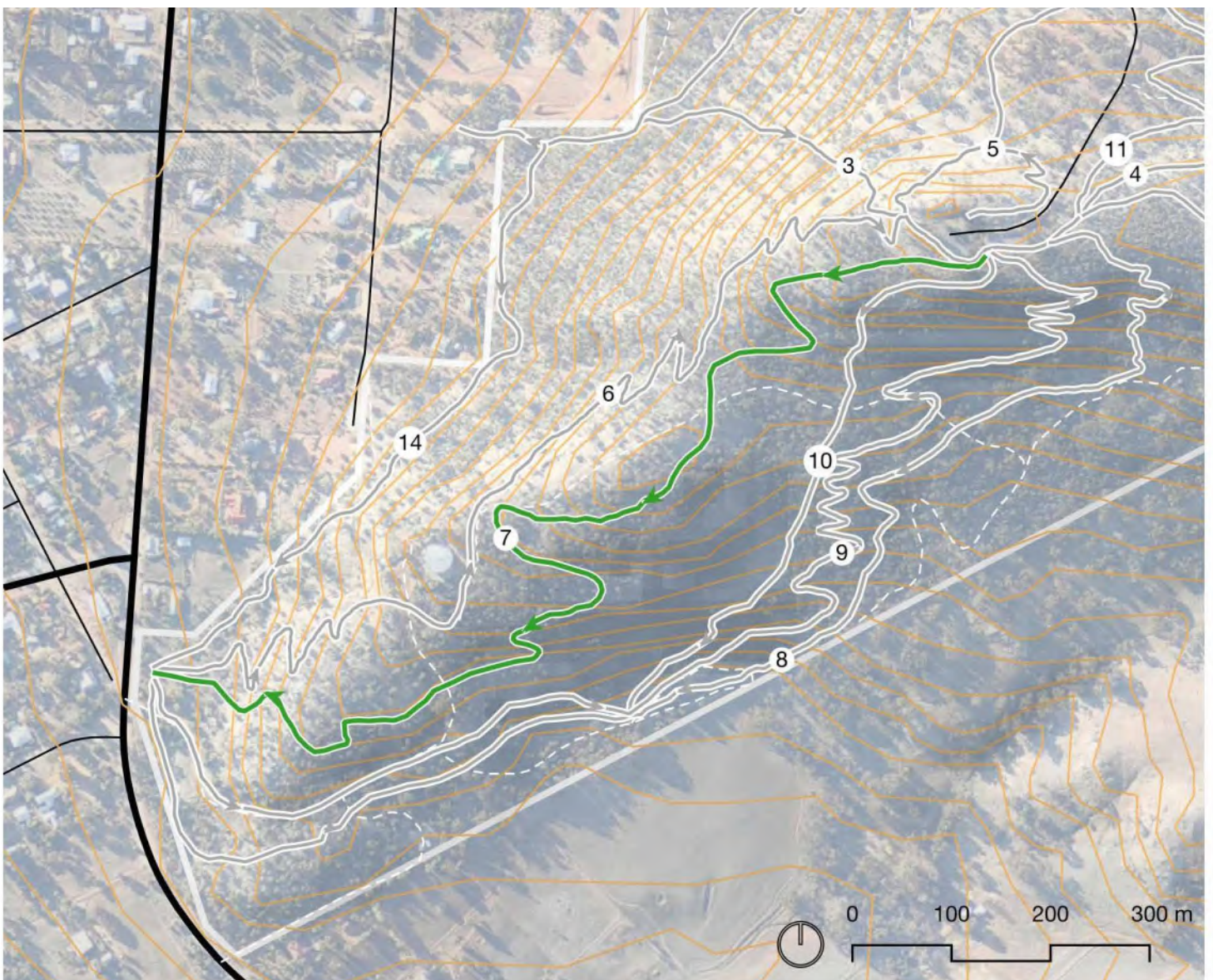
N/A



Precedent image


7. Green Descent

The Green Descent starts at the Summit Trailhead and provides an open flowing trail on the southern face of Wongborel/Mt Brown. Combined with the Wongborel Shared Use Trail beginner riders have a 3km loop to session and practice skills. The trail also contains a pinch point with Wongborel Shared Use trail which enables a shorter 1.3km easy loop from York St Trailhead. The Green Descent will have a wider width and feature rollers, berms and some rock feature to help encourage development of bike handling skills and enable progression to the blue and black descents. There is potential to also include some short optional blue lines and features in the lower half of the trail to further encourage progression.



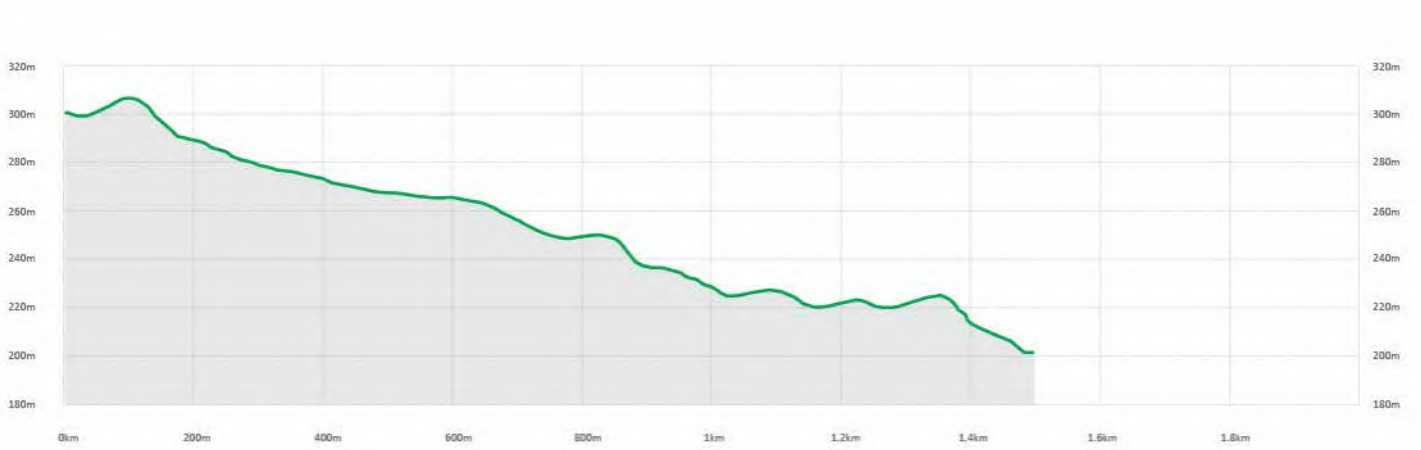
MAP 10 Green Descent

Trail 7 Summary

Classification	 Easy - Green
Trail Length	1,700m
Trail Type	Open
Corridor width	40m
Tread Width	1m
Use	MTB
Direction	Single descent
Total Ascent	13m
Total Descent	112m
Average Trail Gradient	7%

Anticipated TTFs

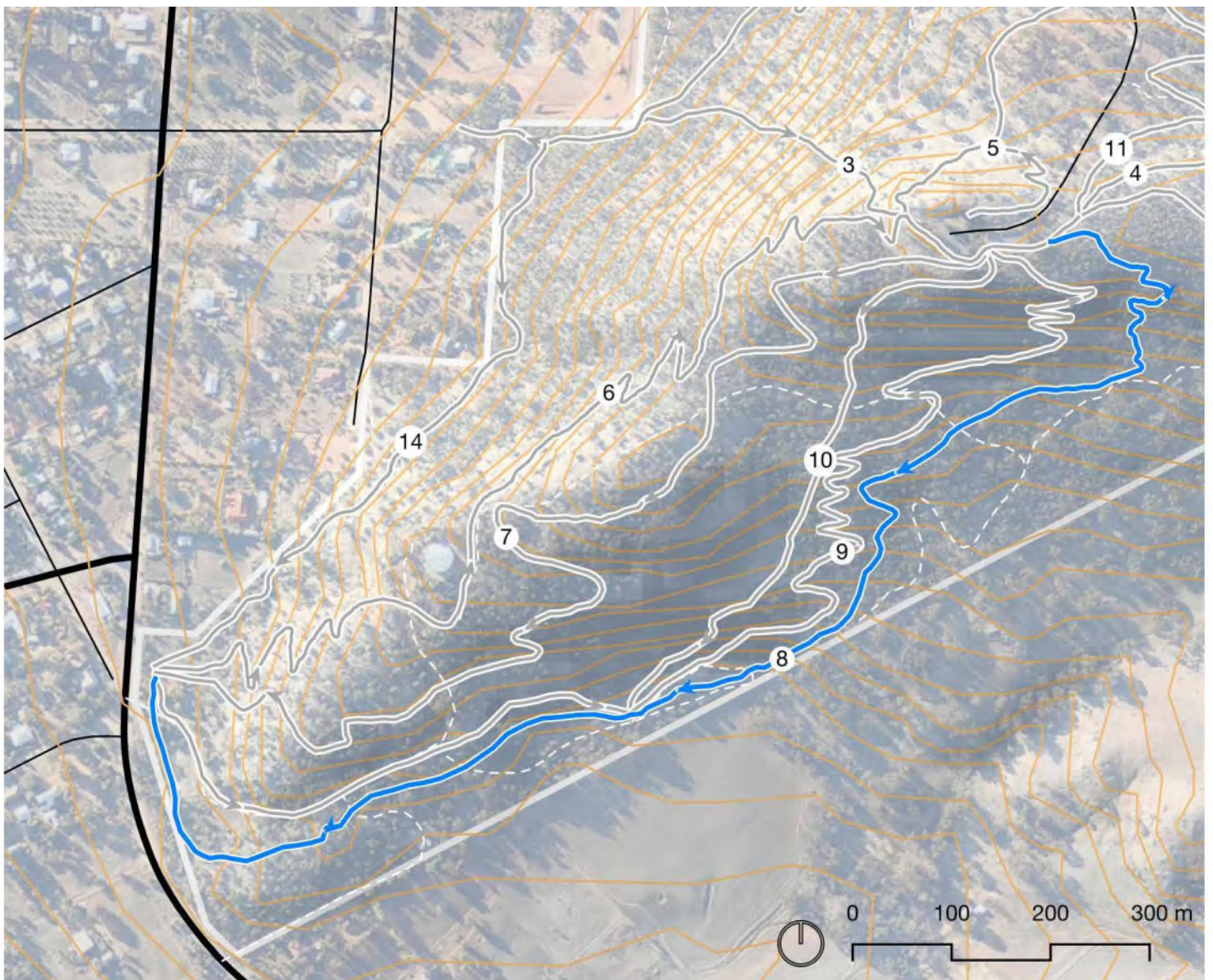
- Roller
- Berm
- Rock drop
- Insloped descending turn



Precedent image


8. Blue Descent

The Blue Descent starts at the Summit Trailhead and provides a technical descent trail on the southern face of Wongborel/Mt Brown. Utilising some sections of the existing 'Muddleup Trail' the Blue descent will feature use of natural rock to provide a technical challenge for intermediate level riders.



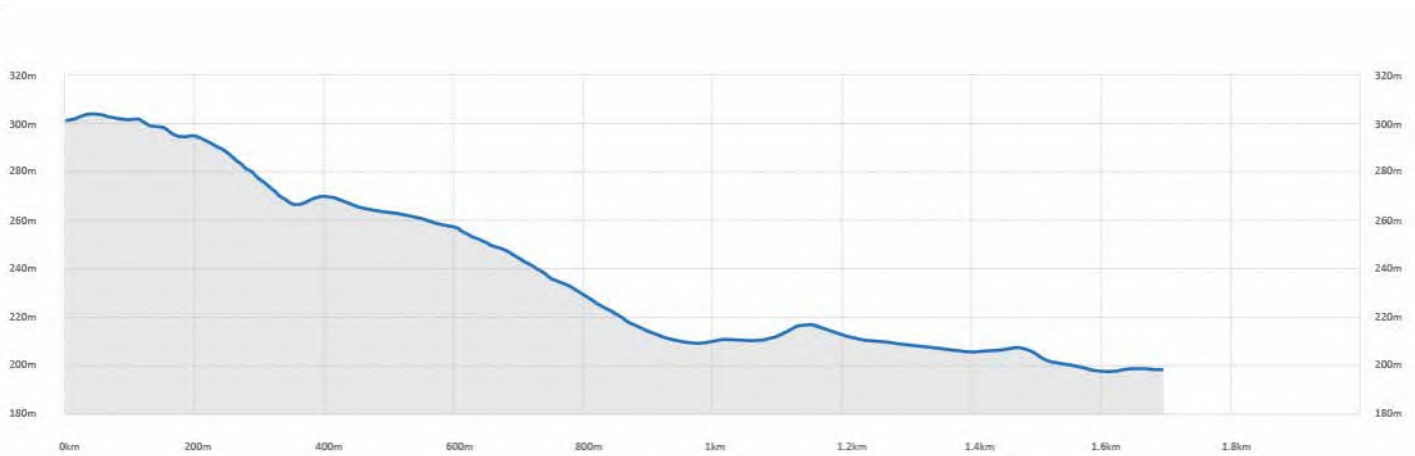
MAP 20 - Blue Descent

Trail 8 Summary

Classification	 Moderate - Blue
Trail Length	1,700m
Trail Type	Open
Corridor width	40m
Tread Width	0.9m
Use	MTB
Direction	Single descent
Total Ascent	14m
Total Descent	115m
Average Trail Gradient	11%

Anticipated TTFs

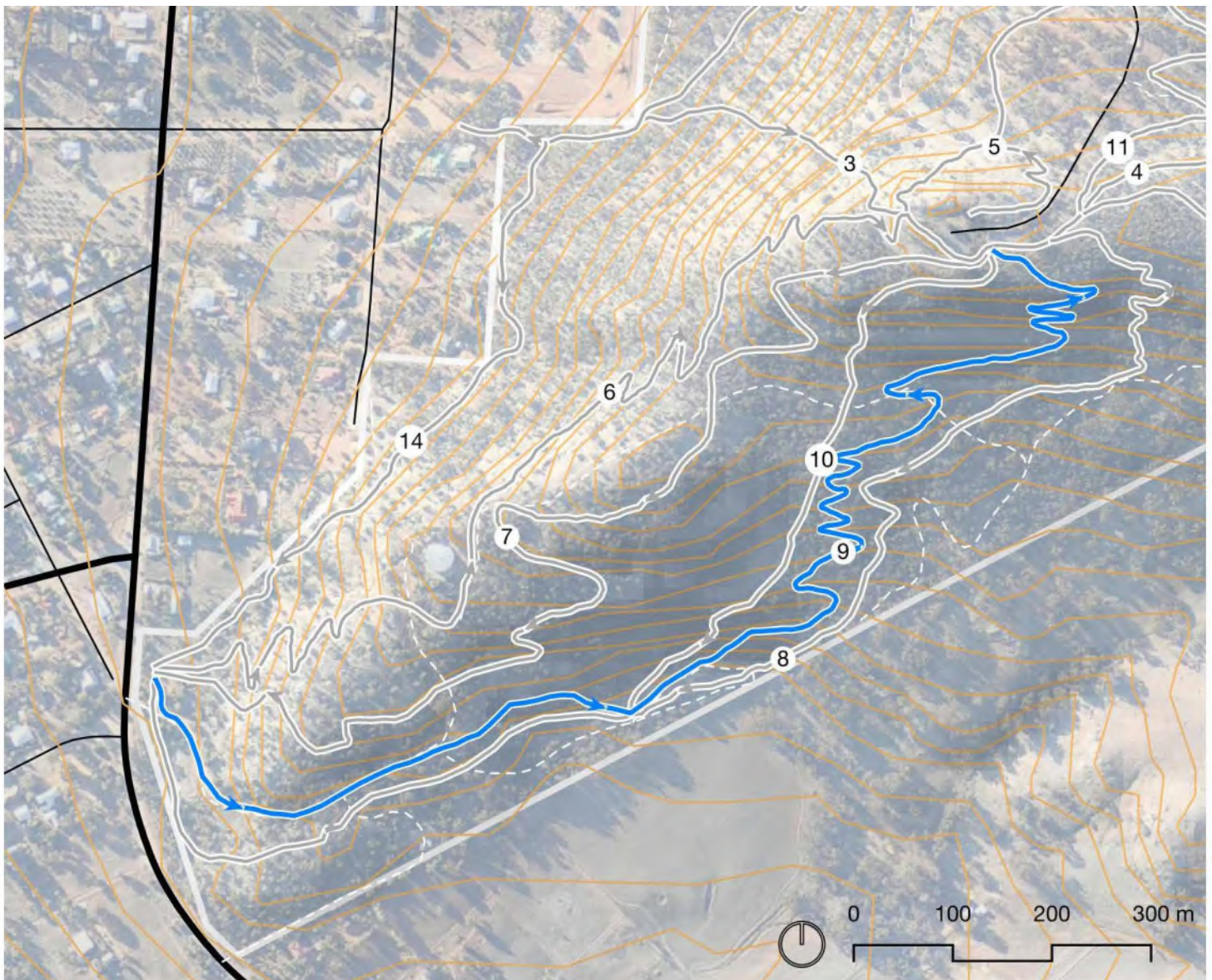
- Rock drop
- Rock rollover
- Insloped descending turn
- Chicane
- Choke




Precedent image

9. Blue Climb

The Blue Climb starts at the York St Trailhead and provides a more technical climb for intermediate and advanced riders looking for a more challenging climb than the Wongborel Shared Use Trail. The trail ascends through the rocky woodland of the southern aspect and is proposed to make use of the natural rock, including traversing across a rocky gully on a natural platform.

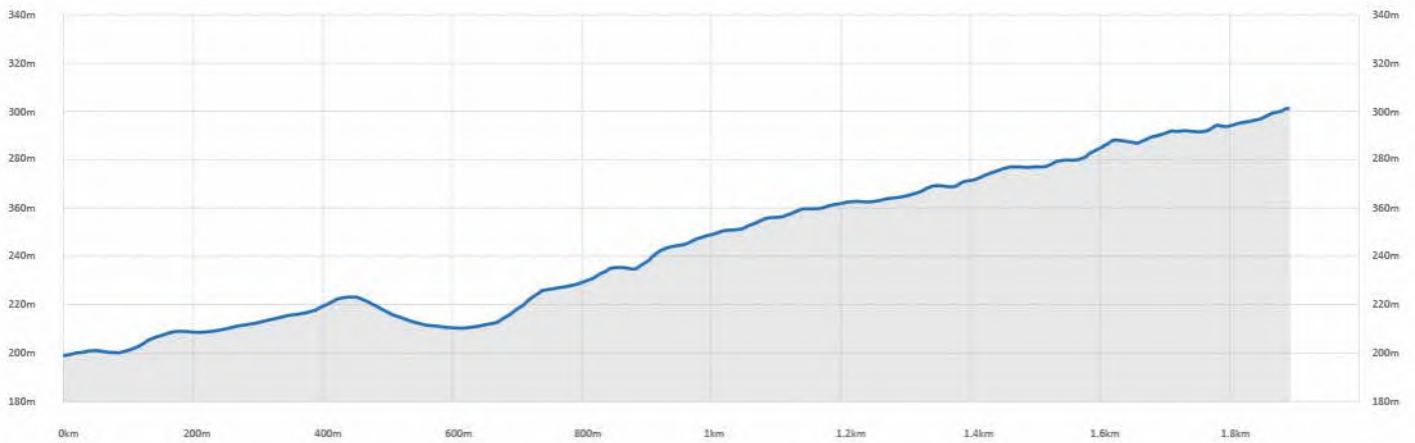


Trail 9 Summary

Classification	 Moderate - Blue
Trail Length	1,920m
Trail Type	Cross Country - Open
Corridor width	40m
Tread Width	0.9m
Use	MTB
Direction	Single ascent
Total Ascent	117m
Total Descent	16m
Average Trail Gradient	7%

Anticipated TTFs

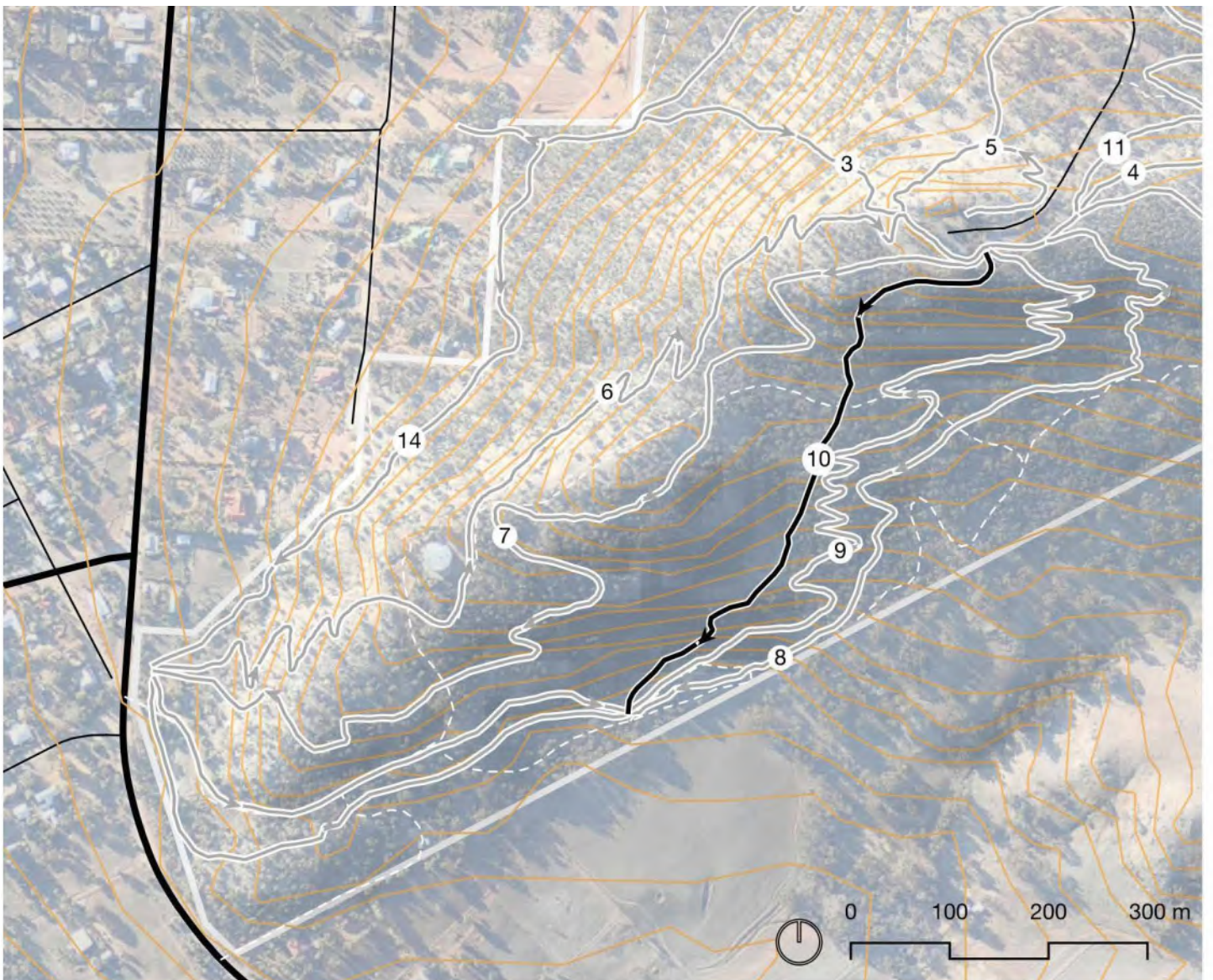
- Insloped turn
- Rising catch turn
- Climbing turn
- Climbing switchback
- Step up
- Rock armouring
- Outsloped turn
- Rollers Chicane
- Grade Reversal
- Choke
- Rock garden



Precedent image

10. Black Descent

The Black Descent utilises the existing trail 'York DH' trail and is proposed to maintain the alignment and character of the trail with some upgrades to features.



MAP 22 - Black Descent

Trail 10 Summary

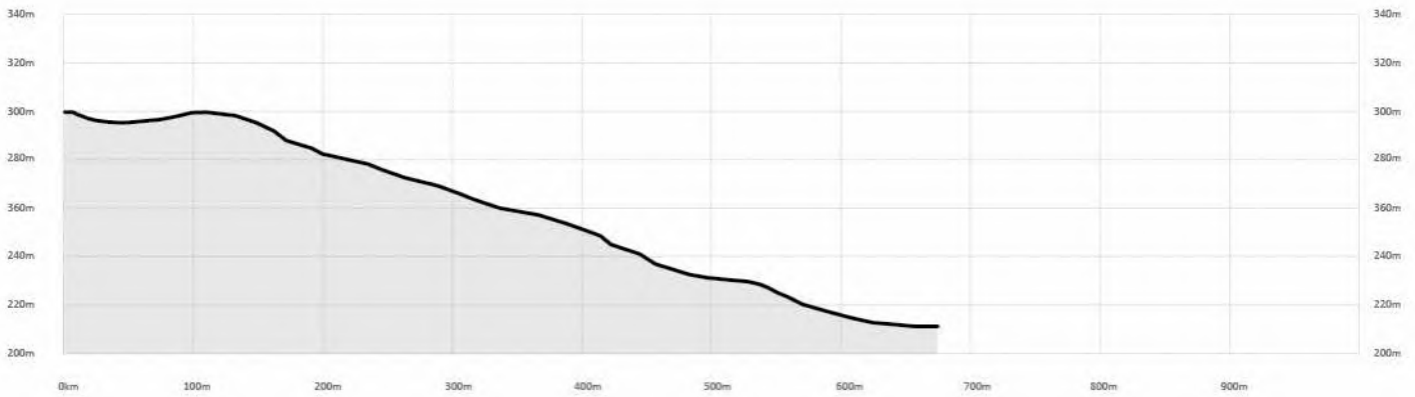


Difficult - Black

- Classification** Difficult - Black
- Trail Length** 680m
- Trail Type** Gravity - Technical
- Corridor width** 40m
- Tread Width** 0.6m
- Use** MTB
- Direction** Single descent
- Total Ascent** 3m
- Total Descent** 89m
- Average Trail Gradient** 14%

Anticipated TTFs

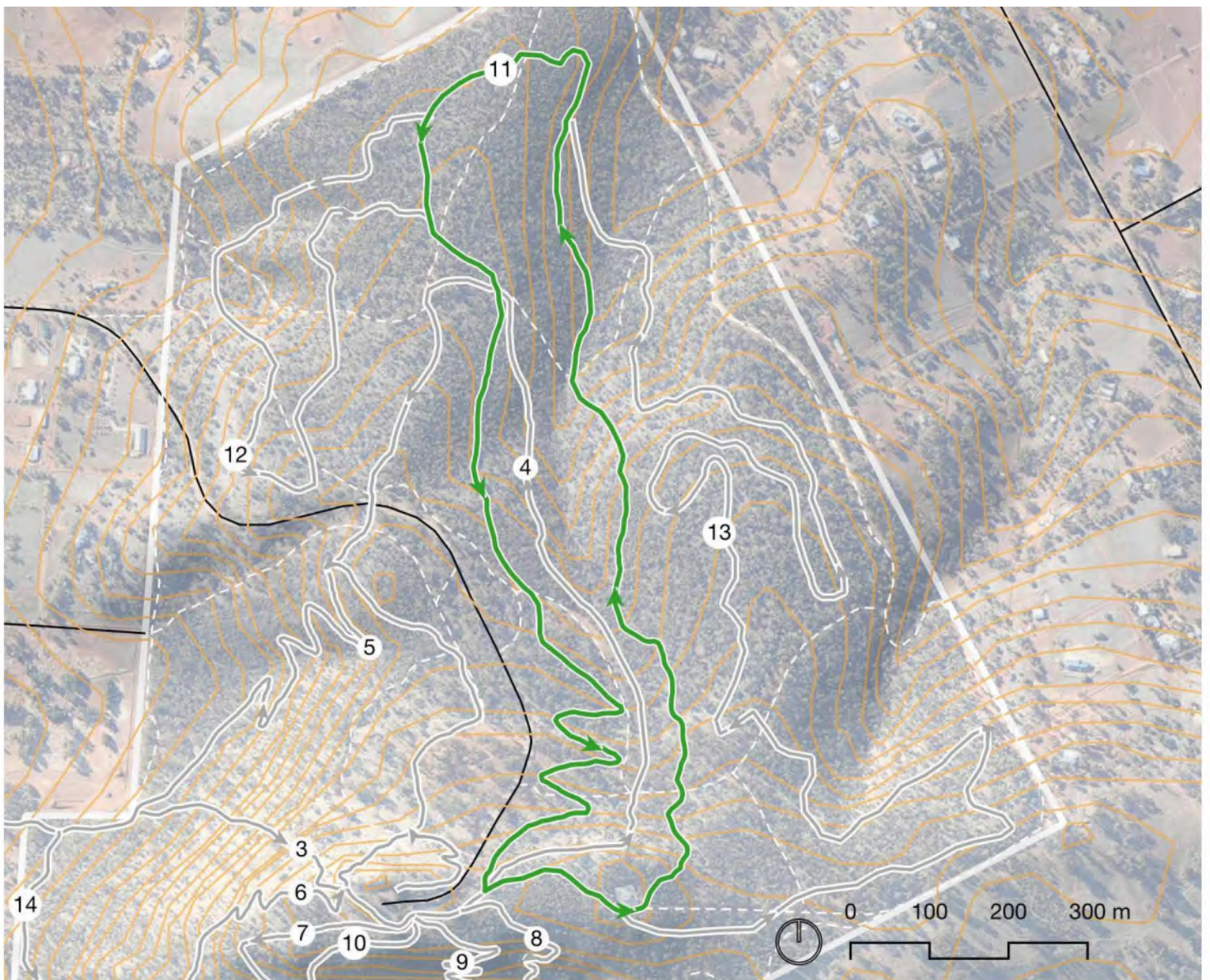
- Insloped descending turn
- Outsloped descending turn
- Rising catch turn
- Technical inside line
- Obstacle Drop Off
- Obstacle Drop off
- Grade Reversal
- Technical roll in
- Rock armouring
- Chicane
- Choke
- Rock garden
- Rock rollover



Precedent image

11. Green XC Loop

The Green Cross-country Loop provides a longer trail traversing the gullies and open woodland north of the summit. Starting and finishing at the Summit Trailhead the trail will feature an open style and be undulating in nature. The Blue Cross Country loops come off this loop.



Trail 11 Summary



Classification Easy - Green
Trail Length 3,140m
Trail Type Cross Country - Open
Corridor width 40m
Tread Width 1m
Use MTB
Direction Single traverse
Total Ascent 82m
Total Descent 82m
Average Trail Gradient 5%

Anticipated TTFs

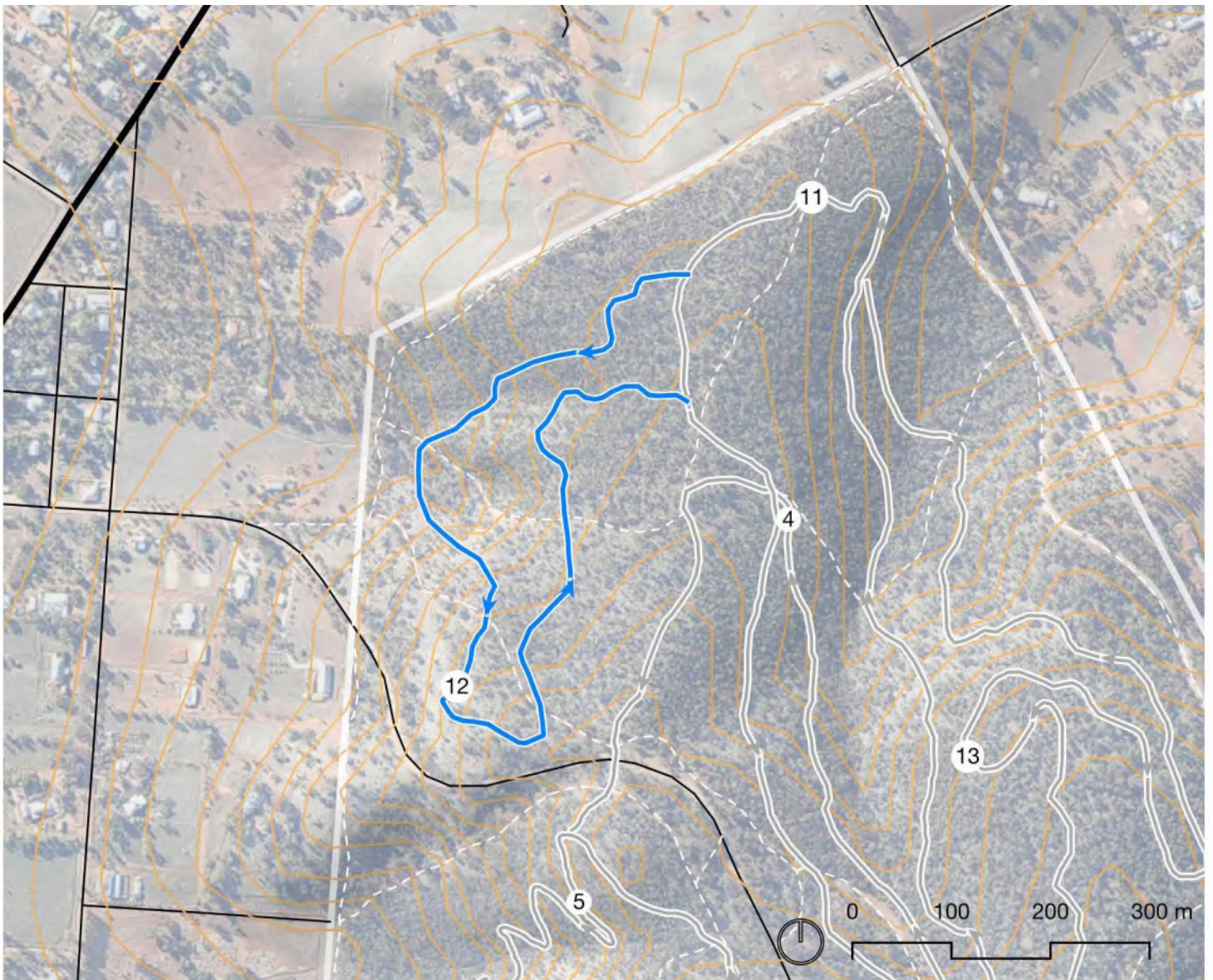
- Insloped turn
- Outsloped turn
- Rising catch turn
- Technical in-side line
- Step up
- Rollers
- Grade Reversal
- Rock armouring
- Chicane
- Choke
- Rock garden
- Rock rollover



Precedent image


12. Blue XC Loop 1

The Blue Cross Country Loop 1 utilises existing trails 'Murkwood', 'Dualway' and 'Outback'. The alignment is proposed to stay the same with an upgrade to surface and features proposed. This loop is accessed off the Green XC Loop and provides option for a longer ride for intermediate and advanced riders and opportunity for beginner riders to progress.



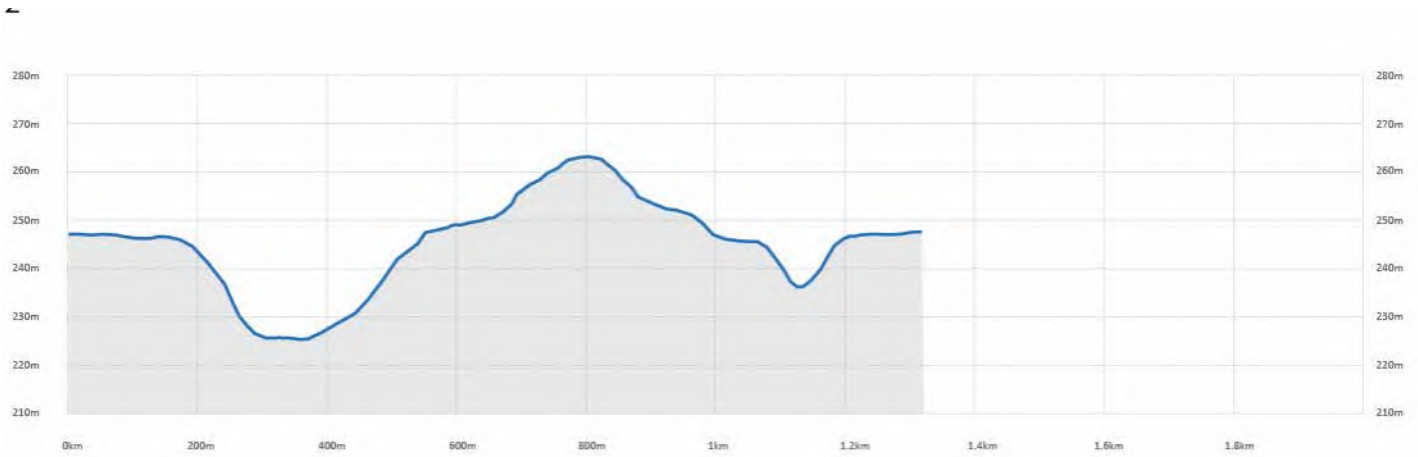
MAP 24 - Blue XC Loop 1

Trail 12 Summary

Classification	 Moderate - Blue
Trail Length	1,3120m
Trail Type	Cross Country - Open
Corridor width	40m
Tread Width	0.9m
Use	MTB
Direction	Single traverse
Total Ascent	52m
Total Descent	49m
Average Trail Gradient	8%

Anticipated TTFs

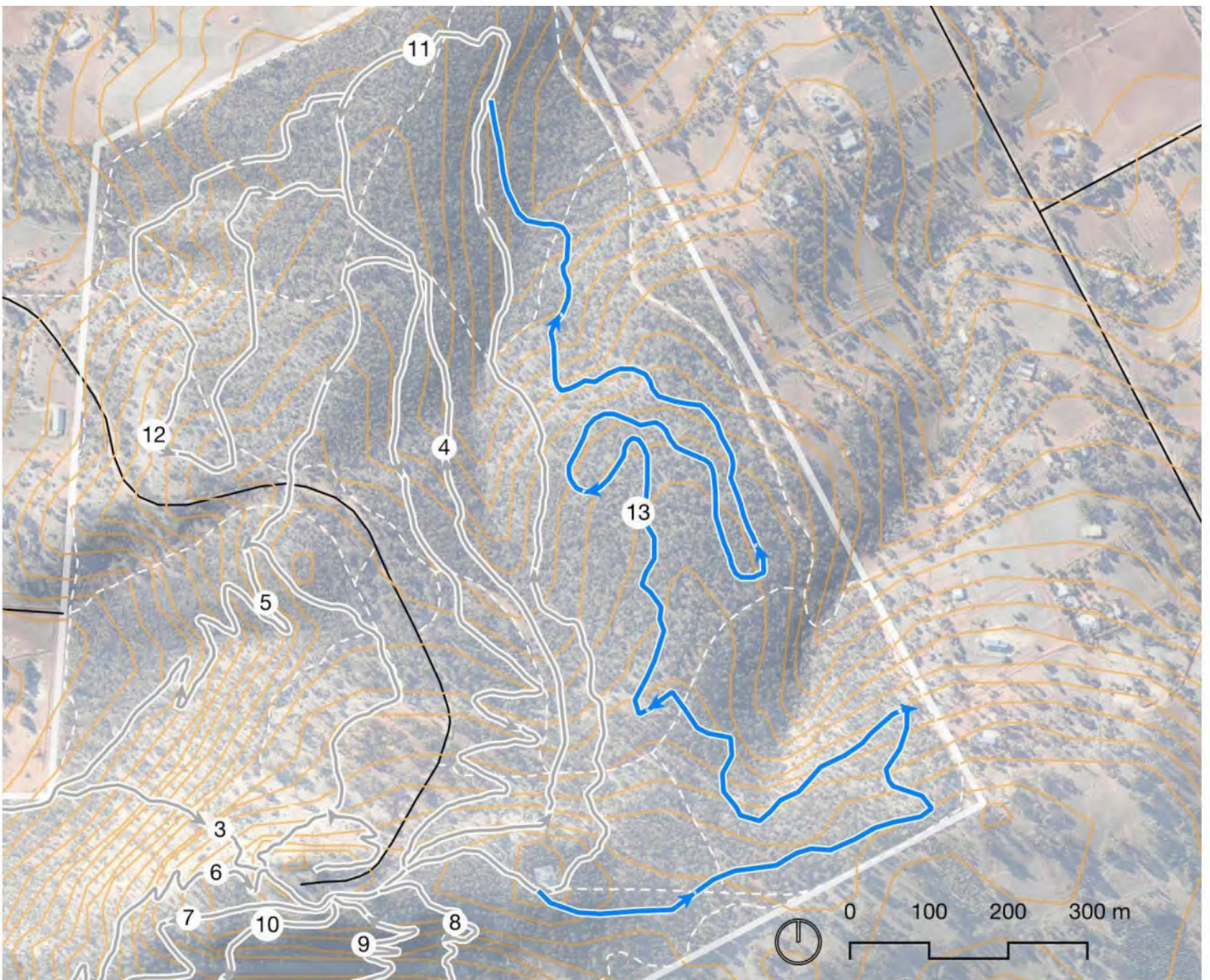
- Insloped descending turn Rock Garden
- Outsloped descending turn Rock Rollover
- Rising catch turn
- Berm
- Kicker Jump
- Grade Reversal
- Chicane
- Choke



Precedent image


13. Blue XC Loop 2

The Blue Cross Country Loop 2 utilises existing trails 'Outback 1', 'Outback 2' and 'Outback 3'. The alignment is proposed to stay the same with an upgrade to surface and features proposed. This loop is accessed off the Green XC Loop and provides option for a longer ride for intermediate and advanced riders and opportunity for beginner riders to progress.



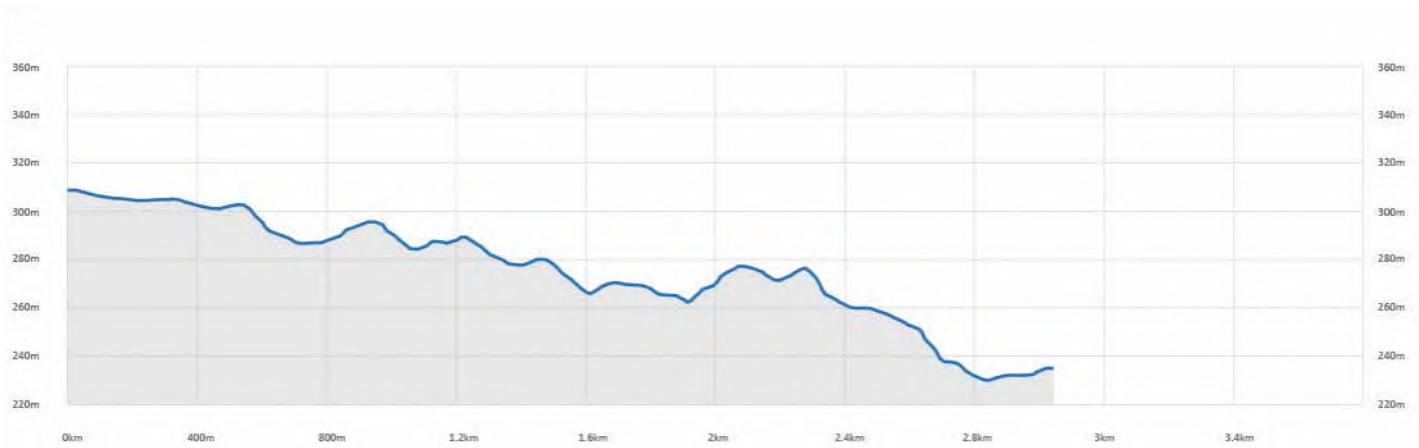
MAP 25 - Blue XC Loop 2

Trail 13 Summary

Classification	 Moderate - Blue
Trail Length	3,100m
Trail Type	Cross Country - Open
Corridor width	40m
Tread Width	0.9m
Use	MTB
Direction	Single traverse
Total Ascent	45m
Total Descent	116m
Average Trail Gradient	5%

Anticipated TTFs

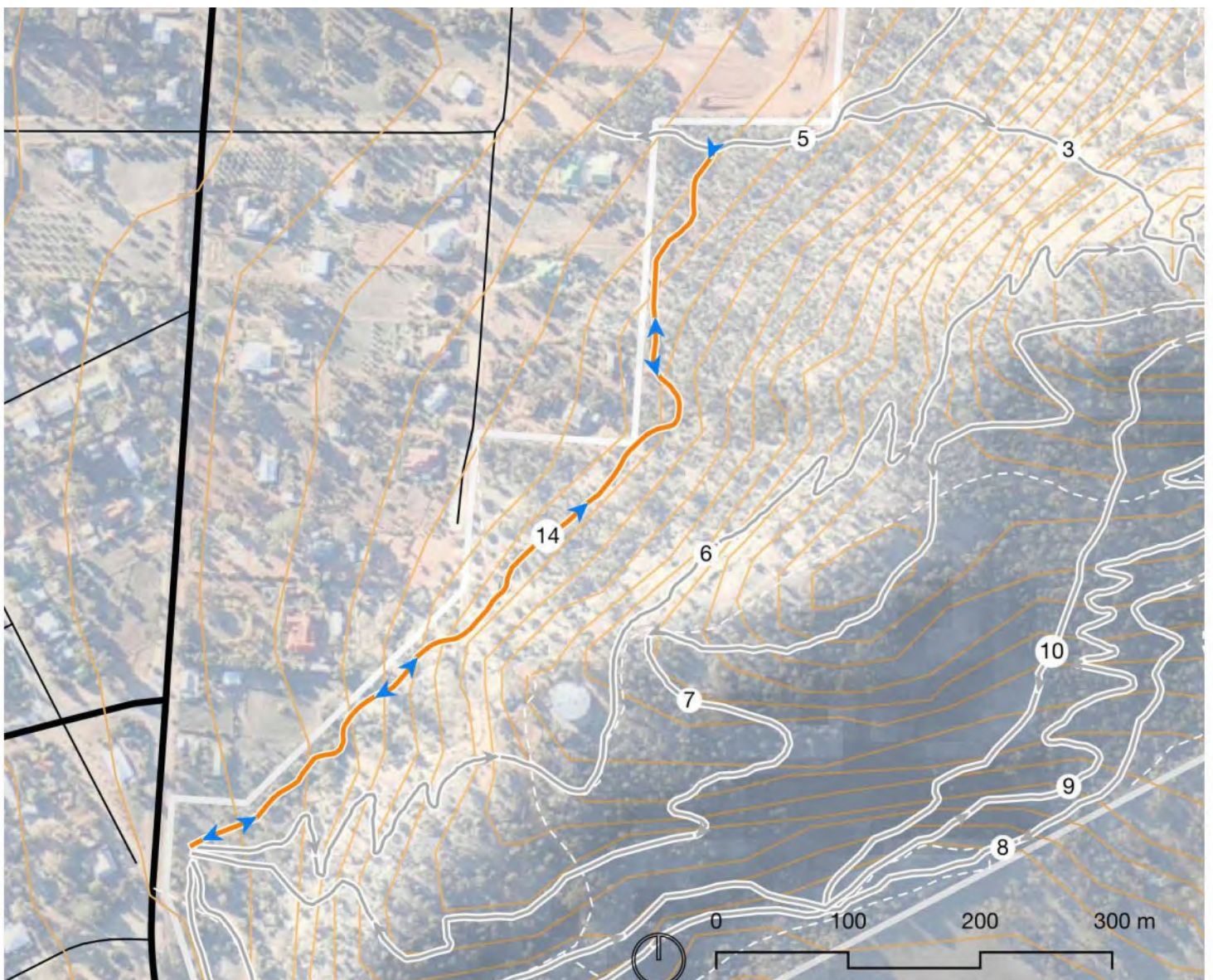
- Insloped descending turn
- Outsloped descending turn
- Rising catch turn
- Berm
- Kicker Jump
- Grade Reversal
- Chicane
- Choke
- Rock Garden
- Rock Rollover



Precedent image

14. Shared Use Link

Trail 14 is a proposed link trail that will be shared use and suitable for intermediate - blue level riders. This trail will provide a link from the York St Trailhead to the Cemetery Trailhead. It is proposed that riders wishing to shuttle the Wongborel network will get dropped off at the Summit Trailhead and picked up at the Cemetery carpark, this trail will provide a link from the base of the gravity trails to the shuttle pick up. Trail 14 will also enable walkers to link trailheads without climbing as far up the hill. The Trail is proposed to utilise part of an existing management vehicle road with approximately 340m of new trail required.



MAP 26 - Blue XC Loop 2

Trail 14 Summary

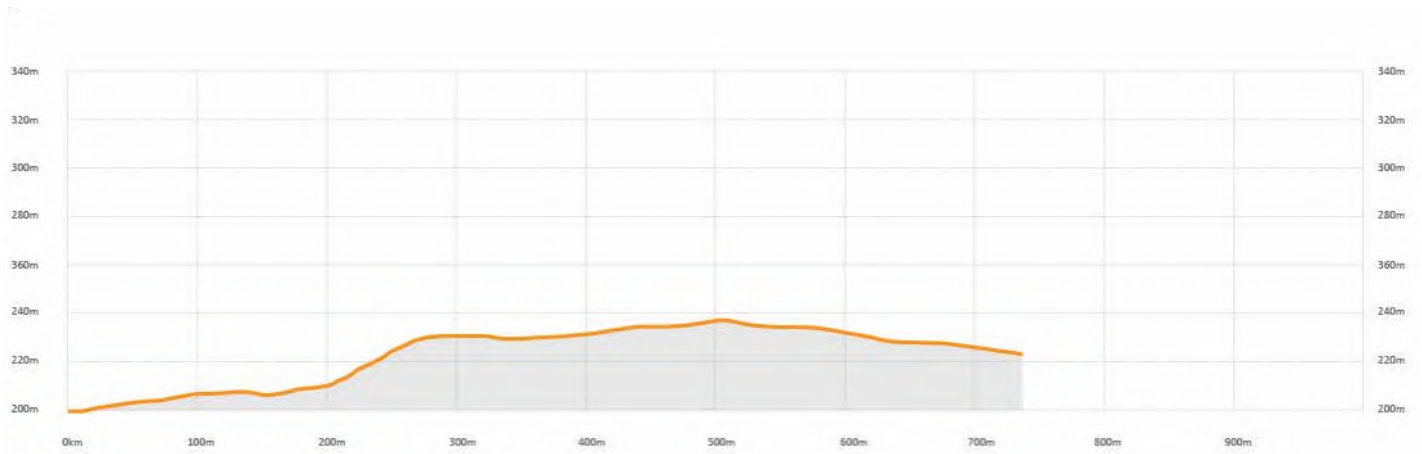


Class 3 ■ Moderate - Blue

- Classification** Class 3
- Trail Length** 740m
- Trail Type** Open
- Corridor width** 40m
- Tread Width** 0.9m
- Use** Shared
- Direction** Dual walkers, single MTB
- Total Ascent** 42m
- Total Descent** 23m
- Average Trail Gradient** 9%

Anticipated TTFs

N/A



Precedent image

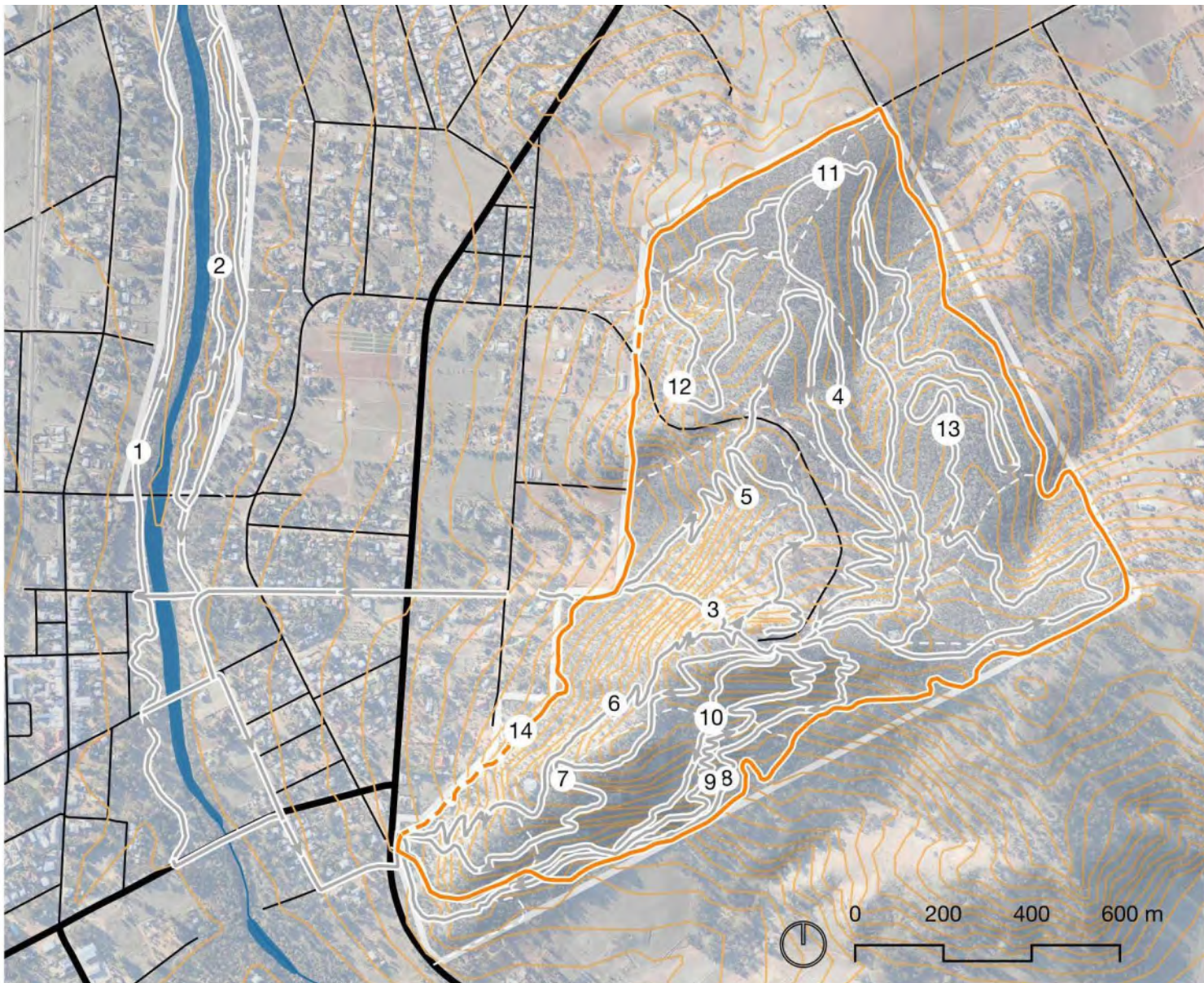
Equestrian Trail

The proposed equestrian trail utilises existing management vehicle tracks on the boundary of the reserve, two small sections of new trail will be required to complete the loop. It is proposed that float parking be allowed for in the design of the Cemetery secondary trailhead parking. In the southern part of the trail network where Trail 14 and Trail 9 are also proposed to also use the management vehicle road adequate signage will be required to warn trail users of likelihood of encounter. Trailhead signage should also alert users to appropriate conduct and respect for other trail users in the area.

Trail Summary

Classification	Management Road
Trail Length	5,741m
Trail Type	Open
Tread Width	4m
Use	Shared
Direction	Dual

- On existing management vehicle road
- - - Proposed section of new trail



MAP 27 - Equestrian Trail



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